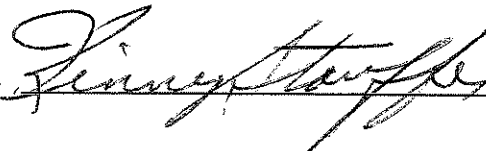


BOROUGH OF WAYNESBORO
55 EAST MAIN STREET
WAYNESBORO, PENNA. 17268

SANITARY SEWER LINE SPECIFICATIONS

Approved this 16th day of March, 1994

President



BOROUGH OF WAYNESBORO

SANITARY SEWER LINE SPECIFICATIONS

ALL SANITARY SEWER MAINS, SERVICE CONNECTIONS AND FORCE MAINS CONSTRUCTED WITHIN THE BOROUGH OF WAYNESBORO SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE SPECIFICATIONS AND/OR THE CURRENT PLUMBING CODE OF THE BOROUGH OF WAYNESBORO.

1. MATERIALS: All materials incorporated into the sanitary sewer lines of the Borough of Waynesboro shall be new and unused, and shall conform to the following requirements.

- (a) PVC PIPE PVC pipe shall be suitable for use as a gravity sewer conduit. Provisions must be made for contraction and expansion at each joint with a rubber ring. The bell shall consist of an integral wall section with a solid cross-section rubber ring. Sizes and dimensions shall be as shown on the approved drawings.

Pipe and fittings shall meet the requirements of ASTM Specification D-3034 for 4" - 15" SDE-35 and F-679 for 18" - 27".

The pipe shall be made of PVC plastic having a cell classification of 12454-B or 12454-C or 12235-C or 13364-b with a minimum tensile modulus of 3450 MPA (500 psi) as defined in Specification D-1784. Fittings shall be made of PVC plastic having a cell classification of 12454-B, 12454-C, 13343-C as defined in Specification D-1784. Compounds that have different cell classifications because one or more properties are superior to those of the specified compounds are also acceptable.

PVC pipe and fittings shall be produced by an extrusion process and shall be homogeneous throughout, free from cracks, holes, foreign inclusions or other defects. The pipe and fittings shall be uniform in color.

All PVC sewer pipe and fittings shall have the National Sanitation Foundation (NSF) seal of approval.

Pipe with blisters, bubbles, cuts or scrapes on inside or outside surfaces, which appreciably damage the wall thickness, or other imperfections which impair the performance or life of the pipe, will be rejected.

- (b) JOINTS Joints for pipe and fittings shall be push on with elastomeric gasket, ASTM D-3212; and ASTM F-477

for gasket specifications. Gaskets shall be locked to pipe bell to prevent displacement when pipes are joined.

- (c) MANHOLE BASES Manhole bases shall be as shown on the attached drawing "SS-1 Precast Concrete Manhole". They shall be of type B concrete. On straight through runs the concrete may be poured around the pipe. After the concrete has set up the top section of the pipe shall then be carefully removed. At angle points, the channels shall be carefully formed to provide a continuous, smooth pathway for efficient hydraulic performance. The interior shall slope to the flow line on a slope of one-inch per foot. The base shall be of 8" minimum thickness at the flow line to be equal to 3/4 of the nominal diameter of the manhole. The concrete shall not be poured until after all pipe entering and leaving has been carefully set to grade.
- (d) PRECAST MANHOLES Walls of manholes shall be constructed of precast reinforced concrete manhole sections. The risers and top sections shall be manufactured in compliance with the requirements of specifications for precast reinforced concrete manhole sections, ASTM Designation C478. Riser sections shall have tongue and groove ends and a minimum wall thickness of 5 inches. The top section shall have a top width of such design as to properly support the required manhole frame and cover.

Joints of all manhole sections shall be formed entirely of concrete employing a round rubber gasket or butyl gasket in flexible rope form (at the contractor's option) and when assembled shall be self-centering and make a uniform water tight joint.

For joints sealed with rubber gasket, the joint design and rubber gasket shall conform with the applicable requirements specified in ASTM Specifications Designation C361.

For joints sealed with butyl gasket in flexible rope form, the joint design shall conform with the applicable requirements of ASTM Specifications Designation C361. Joint surfaces shall be cleaned and the joint made in strict conformance with the written specifications of the butyl gasket manufacturer.

Manhole steps shall be of Aluminum alloy 6061-T6, ASTM Designation B308; or co-polymer polypropylene conforming to ASTM 2146-82, Type II Grade 43758 encapsulating a deformed

1/2" reinforcing rod grade 60 conforming to ASTM A-615 as shown on Drawings "SS-4 Cast Iron Manhole Step"; "SS-5 Aluminum Manhole Step"; "SS-6 Co-Polymer Polypropylend Manhole Step".

All manholes shall be constructed as shown on the attached Drawings "SS-1 Precast Concrete Manhole"; SS-2 Drop Manhole"; "SS-3 Force Main Connection".

- (e) MANHOLE FRAMES AND COVERS Manhole frames and covers shall be of grey iron, free of imperfections and meeting the requirements of ASTM Designation A48, Class 30. The castings shall be cleaned by means of sand blast, with metal bearing areas machine ground to insure satisfactory seating. Castings shall receive one coat of black asphaltum paint at the factory. The cover shall have the word "SEWER" cast thereon in letters not less than two inches high. The frame and cover shall be of the heavy duty traffic type as shown on the attached Drawings "SS-7 Standard Manhole Frame and Cover"; "SS-8 Watertight Manhole Frame and Cover" and as manufactured by Frederick Iron and Steel, or approved equal.
- (f) FORCE MAINS All force mains from pumping stations shall be ductile iron pipe conforming to A.N.S.I. Specification A21.51, latest edition, Class 50 with push on joints complete with rubber gaskets and lubricant conforming to A.N.S.I. Specification A21.11, latest edition. Pipe shall be cement lined with a minimum thickness of 1/8 inch and shall be seal coated conforming to A.N.S.I. Specifications A21.4, latest edition.

All fittings shall have mechanical joints conforming to A.S.A. Specification A21.10 and A21.11, Class 150. Fittings shall be cement lined and seal coated.

2. CONSTRUCTION All sanitary sewer lines shall be constructed in conformance with the specifications herein.

- (a) EXCAVATION AND BACKFILL: Details of pipe line trench excavation and backfill are shown on the attached Drawings, "SS-9 Bedding and Backfill". In general, trenches may be excavated and backfilled either by machinery or by hand, provided however, that hand excavation may be required where necessary to protect existing structures, utilities or private or public properties, and provided further, that backfilling shall be done by hand to the extent hereinafter specified. All excavation shall conform to the current regulations of the Pennsylvania Department of Labor and Industry for Excavations and Constructions.

The term "subgrade" as used herein shall mean the bed of the trench, prepared as specified to receive the pipe.

From the bottom of the trench to an elevation at least 12 inches above the top of the outside barrel of the pipe, the banks of the trenches shall not be less than 12 inches nor more than 16 inches wider than the outside diameter of the barrel of the pipe to be laid therein. If sheeting is required, the foregoing dimensions shall be applicable to the inside faces of the sheeting.

From a point 12 inches above the top of the outside barrel of the pipe to the surface, the banks of trenches shall be kept as nearly vertical as possible, and in no case shall the width of the trench at the top exceed the outside diameter of the pipe plus 40 inches.

Where in the opinion of the Borough of Waynesboro, the ground does not afford a sufficiently firm foundation, a timber foundation, reinforced concrete cradle, reinforced concrete encasement shall be installed or the bottom of the trench shall be excavated to such increased depth as may be required by the Borough of Waynesboro and then the bottom of the trench shall be brought up to the required level with such material as may be approved by the Borough of Waynesboro.

Except at locations where excavation of unsuitable material is required, care shall be taken not to excavate below the depths required for placement of the required pipe bedding. If trenches are excavated beyond the specified depths without written requirement of the Borough of Waynesboro, they shall be backfilled to the proper grade with suitable, thoroughly tamped material.

All excavations shall be kept free of water at all times during performance of the work. The grading in the vicinity of trenches shall be controlled so that the ground surface is properly pitched to prevent water running into the trenches.

The use of explosives shall be governed by the "Regulations for the Storage, Handling and Use of Explosives" of the Pennsylvania Department of Labor and Industry.

In trenches, "First Class Bedding" shall be provided for all pipe for a gravity sewer or force main, unless another type of bedding is specified. "First Class

Bedding" shall be constructed in accordance with the details shown on the Drawings "SS-9 Bedding and Backfill". In earth trenches bedding material shall consist of good earth, sand or crushed stone. In rock trenches bedding material shall consist of crushed stone.

The Borough of Waynesboro shall have the right to limit the amount of trench opened in advance of pipe laying and the amount of pipe laid in advance of backfilling, but in no case shall these amounts exceed three hundred (300) feet and one hundred (100) feet respectively. Trench excavation shall be fully completed at least twenty (20) feet in advance of the pipe placement and shall be kept free from obstructions, except that at the close of work at night, or at the discontinuance of work, the pipe laying may be completed to within five (5) feet of the end of the open trench.

After the sewer line and its appurtenances have been installed, the trench, to a height of at least two (2) foot above the top of the pipe shall be refilled with clean earth deposited in four (4) inch layers. Each layer shall be solidly compacted with tampers and proper tools made especially for this purpose. The operation shall be done in such manner as not to disturb the structure. The earth, to the height specified above, shall be thrown in with hand shovels, under no condition shall any means other than hand shoveling, such as pushing in by heavy equipment, be used. The remainder of the trench, shall then be refilled evenly to the required height in layers, each layer not to exceed six (6) inches in thickness after compaction. Mechanical tampers shall be used so as to produce a density of backfill (as determined by weight) at the bottom of each layer of not less than ninety-five (95) per cent of the density of the material in its original undisturbed state. Care shall be taken to carry the fill up evenly on opposite sides of the sewer.

No house ashes, putrescible refuse, frozen material or other material of unsatisfactory character shall be used in backfilling.

Along and across State Highways, and Borough roads and streets the entire trench shall be backfilled with crushed stone.

When the repaving over trenches is required the base and surface material shall be of the type and thickness required by the governing governmental agency.

- (b) LAYING OF SANITARY SEWER LINE: Following the trench preparation, pipe laying shall proceed up-grade with the pipe laid carefully, hubs up-grade, spigot ends fully entered into adjacent hubs, and true to lines and grades. The grade and alignment of each length of pipe shall be carefully checked.

Every pipe shall be carefully inspected before laying and any containing cracks or defects shall not be used. Extreme care shall be exercised to prevent breakage when the pipe is handled. Sockets shall be carefully cleaned before pipes are lowered into trenches. The pipes shall be so lowered as to avoid unnecessary handling in the trench. Each section of pipe shall rest upon the pipe bed for the full length of its barrel, with recessed excavated so that the invert forms a continuous grade with the invert of the pipe previously placed. The interior of all pipe and the inside of the bell and outside of the spigot shall be thoroughly cleaned of all foreign matter before being lowered into the trench, and shall be kept clean during laying operations by means of plugs or other approved devices. In all cases the mouth of the pipe shall be provided with a circular board or stopper, carefully fitted to the pipe, to prevent earth or other substances from washing or entering into the pipe.

Under no conditions shall pipe be laid in water or on subgrade containing frost, and no pipe shall be laid when trench conditions are unsuitable for such work.

Walking or working on the completed pipe line, except as may be necessary in tamping or backfilling, shall not be permitted until the trench has been backfilled to a height of at least two (2) feet over the top of the pipes.

Any pipe that has its grade or joint disturbed after laying shall be taken up and re-laid. Any section of pipe already laid and found to be defective, shall be taken up and replaced.

All joints shall be water-tight and any leaks or defects discovered shall be immediately repaired. After joints are made, any material inside the pipe shall be removed.

- (c) LAYING OF FORCE MAIN Before being lowered and while suspended the pipe shall be inspected for defects and rung with a light hammer to detect cracks. Defective, damaged or unsound pipe will be rejected. Force Main shall be laid uniformly with no low or high spots.

Mechanical joint and rubber gasket joint pipe shall be laid in strict conformance with the written installation directions of the manufacturer of the particular type of pipe installed. Where it becomes necessary to cut ductile iron pipe in the field for proper fitting, such cutting shall be done by the use of a pipe cutter, chain saw, hammer and chisel, or other method approved by the Borough of Waynesboro, the cutting of ductile iron pipe by the use of a torch or arc is prohibited.

It will be mandatory to provide concrete anchorage for all fittings, and at all locations where horizontal and/or vertical deflections of more than one degree are made in the joints of the Force Main. Concrete encasement shall be provided by the contractor where required by the Borough of Waynesboro. Concrete anchorage and encasement shall be constructed in accordance with the details indicated on the Drawings "SS-10 Concrete Cradle"; "SS-11 Concrete Encasement"; "SS-12 Standard Reaction Backings".

- (d) FIELD TESTS All sanitary sewers, service connections (laterals) and force mains shall be tested. All tests shall be made in the presence of the Borough of Waynesboro and to the complete satisfaction of the Borough.

(1) Sanitary sewer and service connections After a section of sewer pipe between adjacent manholes, including the main sewer and service connections (laterals), has been backfilled, a low pressure air test shall be performed in accordance with the test procedures specified hereinafter.

A low pressure test shall be performed by air testing equipment consisting of an air-compressor and storage tank of adequate capacity; and air control panel equipped with all necessary piping, valves and pressure gauges to control the rate at which the air flows to the test section and to monitor the air pressure inside the test section; and all required plugs. In order to prevent loading the test section with the full pressure of the compressor, the test equipment must be provided with an approved pressure relief device set to blow out at ten (10) psi. An extra pressure gauge of known accuracy must also be provided so that the gauges of the test equipment can be frequently checked. The air testing equipment and components thereof and all accessories for use therewith shall be adequate in all respects to conduct the required test and shall be subject to the approval of the Borough of Waynesboro.

Before any test is performed, all pipe lines in the section of sewer to be tested (including the main and service connections) shall be thoroughly clean. After the section of sewer to be tested has been cleaned, all pipe outlets shall be plugged. The ends of branch fittings and service connection piping shall be plugged with plugs properly designed to withstand the test pressures to which they will be subjected. Each plug shall be securely braced after installation. The ends of the sewer main piping shall be plugged with pneumatic plugs at the upstream and downstream manholes. The pneumatic plugs shall be inflated to twenty five (25) psig.

Immediately after the section of sewer pipe to be tested has been properly cleaned and sealed as described hereinbefore, low pressure air shall be slowly introduced into this sealed section of sewer piping.

After an internal pressure of 4.0 psig. is obtained, allow at least two minutes for the air temperature to stabilize, adding only the amount of air required to maintain pressure. After the stabilization period (3.5 psig. minimum pressure in the pipe), the air supply shall be disconnected, and then the rate of air loss shall be determined by measuring the time interval required for the internal pressure to decrease from 3.5 psig. to 2.5 psig. greater than the average back pressure of any ground water that may submerge the pipe.

To allow for the presence of ground water, the maximum height in feet between the invert of the sewer pipe and the existing ground surface in the section of sewer pipe to be tested shall be determined, and this height shall be divided by 2.3 to establish the pounds of pressure that shall be added to the 3.5 psig. stated herein, (For example, if the maximum height determined is 11.5 feet, then the added pressure will be 5 psig. This increases the 3.5 psig. to 8.5 psig., and the 2.5 psig. to 7.5 psig. The allowable drop of one pound and the timing remain the same.)

The section of sewer pipe being tested shall be considered "Acceptable", when tested at an average pressure of 3.0 psig. greater than the average back pressure of any ground water that may submerge the pipe, if (1) the total rate of all loss from any section tested does not exceed 2.0 cfm., or (2) the section under test does not lose air at a rate greater than 0.0030 cfm. per sq. ft. or internal pipe surface.

The requirements of this specification shall be considered satisfied if the time required in seconds for the pressure to decrease from 3.5 psig. to 2.5 psig., greater than the average back pressure of any ground water that may submerge the pipe is not less than shown for the given diameters of the Air Test Tables included hereinafter.

If any section of sewer piping fails to meet the test requirements specified hereinbefore, it shall be repaired or replaced and additional tests conducted as required to demonstrate that the sewer piping meets the test requirements specified.

(2) TESTING FORCE MAIN After the Force Main has been installed and the joints completed, it shall be tested with clear water under a hydrostatic pressure of 100 psi. The test pressure shall be maintained for a period of not less than 2 hours if joints are exposed and 4 hours when joints are covered. The measured leakage shall not exceed the rate of 70 gallons per day per mile per inch of pipe diameter.

AIR TEST TABLES

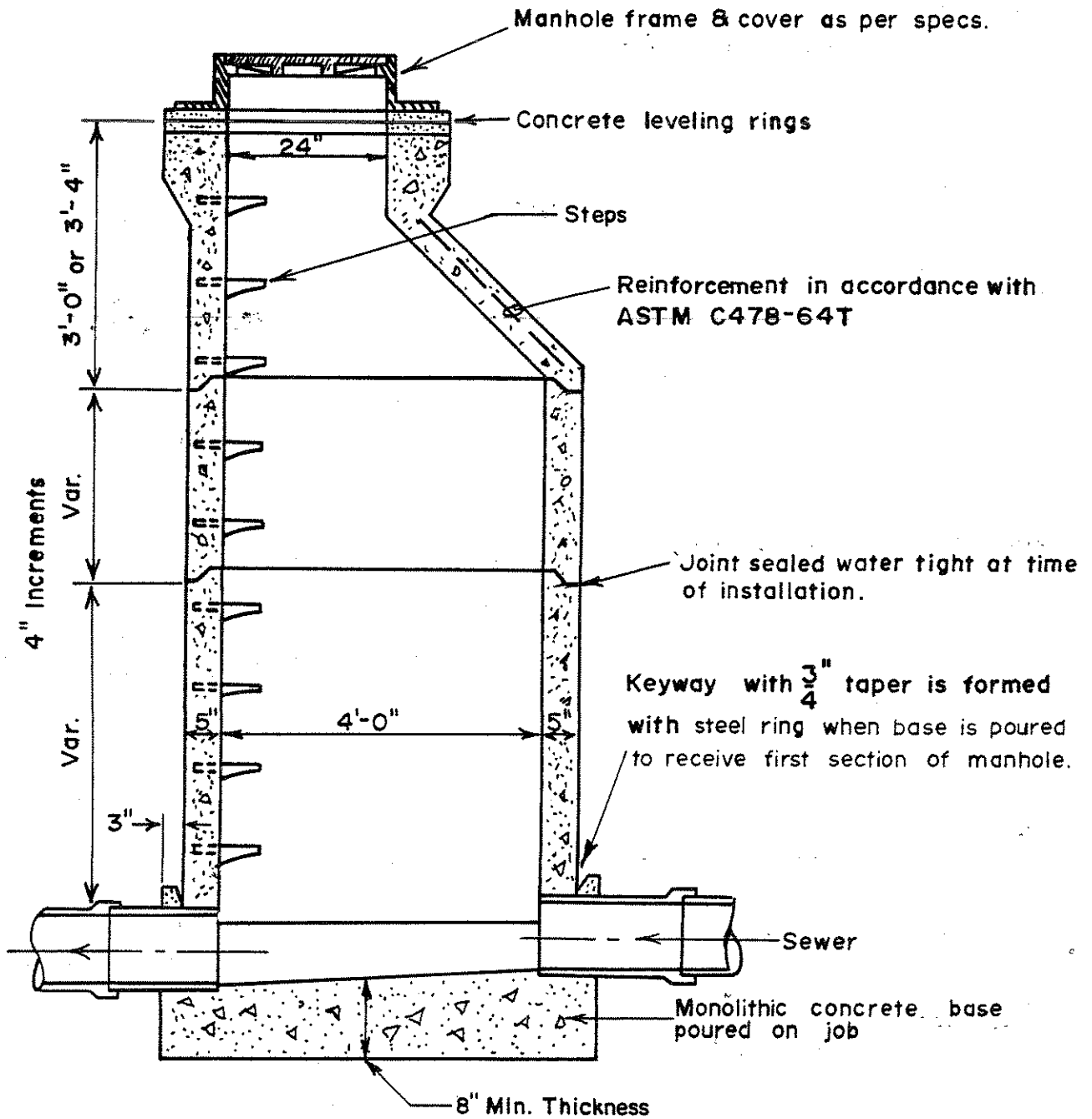
MINIMUM HOLDING TIME IN SECONDS REQUIRED FOR PRESSURE TO DROP FROM 3 1/2 TO 2 1/2 PSIG.

LENGTH OF MAIN LINE IN FEET

| ** | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0 | 18 | 35 | 53 | 70 | 88 | 106 | 123 | 141 | 158 | 176 | 194 | 211 | 227 | 227 | 227 | 227 | 227 | 227 | 227 | 227 | 227 |
| 25 | 28 | 45 | 63 | 80 | 98 | 116 | 133 | 151 | 168 | 186 | 204 | 221 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 | 224 |
| 50 | 37 | 55 | 73 | 90 | 108 | 125 | 143 | 161 | 178 | 196 | 213 | 220 | 221 | 221 | 222 | 222 | 222 | 222 | 222 | 222 | 222 |
| 75 | 47 | 65 | 83 | 100 | 118 | 135 | 153 | 171 | 188 | 206 | 217 | 218 | 218 | 219 | 219 | 220 | 220 | 220 | 220 | 220 | 221 |
| 100 | 57 | 75 | 92 | 110 | 128 | 145 | 163 | 180 | 198 | 214 | 215 | 215 | 216 | 217 | 217 | 218 | 218 | 219 | 219 | 219 | 219 |
| 125 | 67 | 85 | 102 | 120 | 138 | 155 | 173 | 190 | 208 | 211 | 212 | 213 | 214 | 215 | 215 | 216 | 216 | 217 | 217 | 217 | 218 |
| 150 | 77 | 95 | 112 | 130 | 147 | 165 | 183 | 200 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 214 | 215 | 215 | 216 | 216 | 216 |
| 175 | 87 | 105 | 122 | 140 | 157 | 175 | 193 | 204 | 208 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 213 | 214 | 214 | 214 | 215 |
| 200 | 97 | 114 | 132 | 150 | 167 | 185 | 201 | 202 | 204 | 205 | 207 | 208 | 208 | 210 | 210 | 211 | 212 | 213 | 213 | 213 | 214 |
| 225 | 107 | 124 | 142 | 160 | 177 | 195 | 199 | 201 | 202 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 211 | 212 | 212 | 212 |
| 250 | 117 | 134 | 152 | 169 | 187 | 195 | 197 | 199 | 201 | 202 | 204 | 205 | 206 | 207 | 208 | 209 | 209 | 210 | 211 | 211 | 211 |
| 275 | 127 | 144 | 162 | 179 | 191 | 194 | 196 | 198 | 200 | 201 | 202 | 204 | 205 | 206 | 207 | 207 | 208 | 209 | 210 | 210 | 210 |
| 300 | 136 | 154 | 172 | 187 | 190 | 193 | 195 | 197 | 198 | 200 | 201 | 202 | 204 | 205 | 205 | 206 | 207 | 208 | 208 | 208 | 209 |
| 325 | 146 | 164 | 182 | 187 | 189 | 192 | 194 | 196 | 197 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 207 | 207 | 208 |
| 350 | 156 | 174 | 183 | 186 | 188 | 191 | 193 | 195 | 196 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 207 | 207 |
| 375 | 166 | 179 | 182 | 185 | 187 | 190 | 192 | 194 | 195 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 206 | 206 |
| 400 | 174 | 178 | 181 | 184 | 187 | 189 | 191 | 193 | 194 | 196 | 197 | 198 | 199 | 201 | 202 | 202 | 203 | 204 | 205 | 205 | 205 |
| 425 | 174 | 178 | 181 | 184 | 186 | 188 | 190 | 192 | 193 | 195 | 196 | 197 | 199 | 200 | 201 | 202 | 202 | 203 | 204 | 205 | 205 |
| 450 | 174 | 177 | 180 | 183 | 185 | 187 | 189 | 191 | 193 | 194 | 195 | 197 | 198 | 199 | 200 | 201 | 202 | 202 | 203 | 204 | 204 |
| 475 | 174 | 177 | 180 | 182 | 185 | 187 | 189 | 190 | 192 | 193 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 202 | 202 | 203 |
| 500 | 174 | 177 | 179 | 182 | 184 | 186 | 188 | 190 | 191 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 202 | 202 |
| 525 | 173 | 176 | 179 | 181 | 184 | 186 | 187 | 189 | 191 | 192 | 193 | 195 | 196 | 197 | 198 | 199 | 199 | 200 | 201 | 201 | 202 |
| 550 | 173 | 176 | 179 | 181 | 183 | 185 | 187 | 189 | 190 | 191 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 200 | 200 | 201 |
| 575 | 173 | 176 | 178 | 181 | 183 | 185 | 186 | 188 | 189 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 200 | 200 |

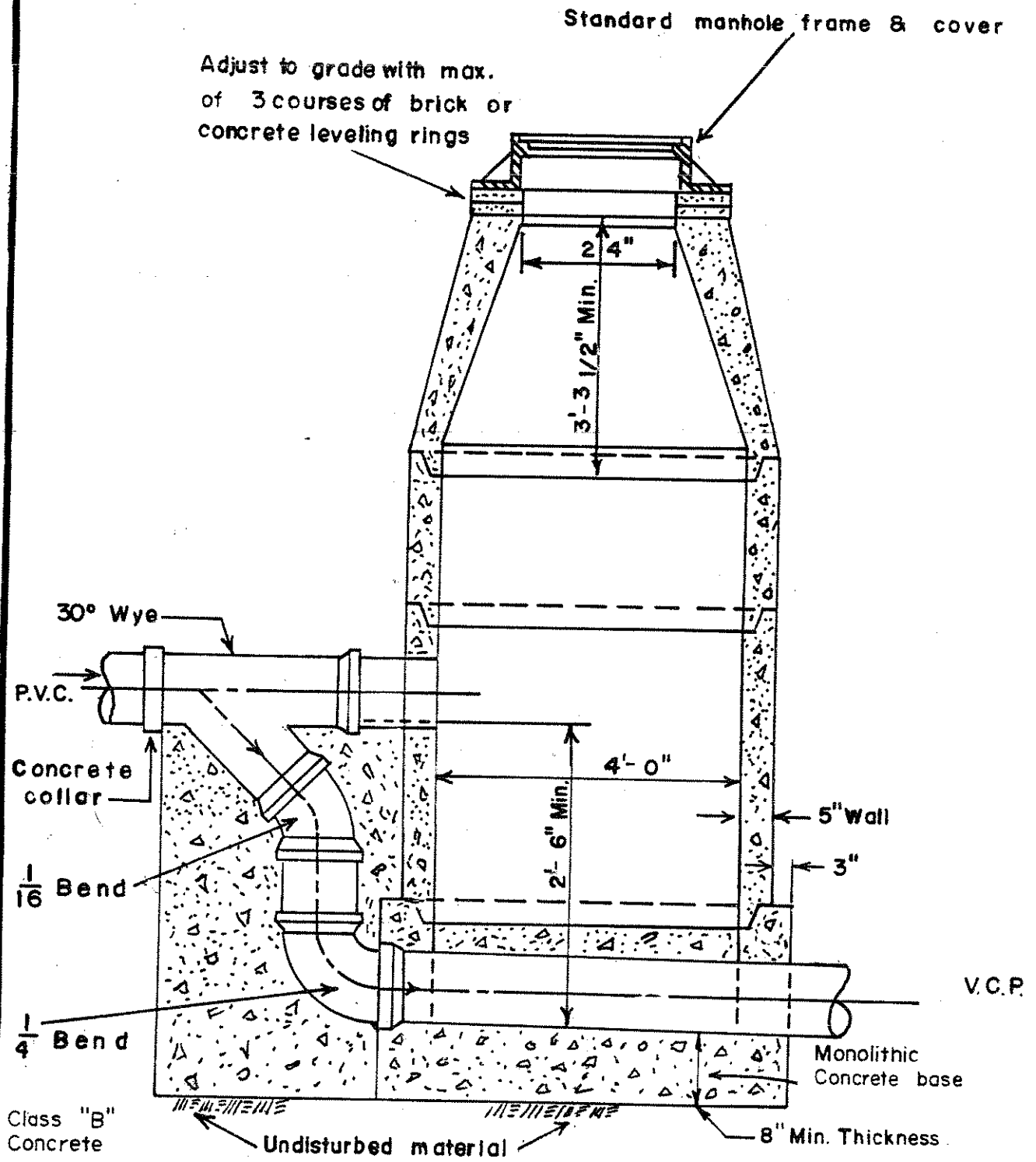
** = LENGTH OF 6" DIAMETER LATERAL IN FEET

BOROUGH OF WAYNESBORO
STANDARD DETAIL



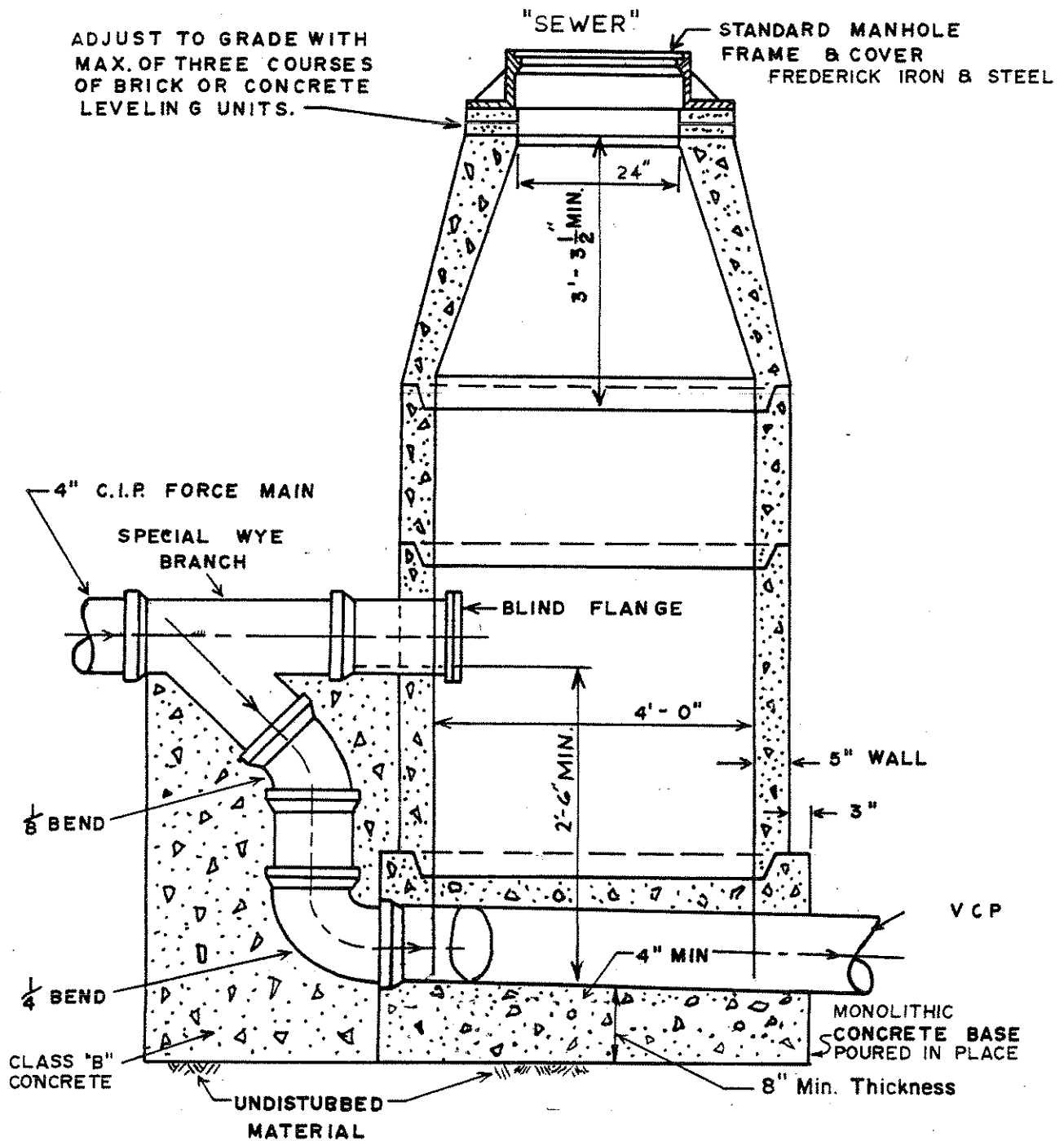
PRECAST CONCRETE MANHOLE

BOROUGH OF WAYNESBORO
STANDARD DETAIL

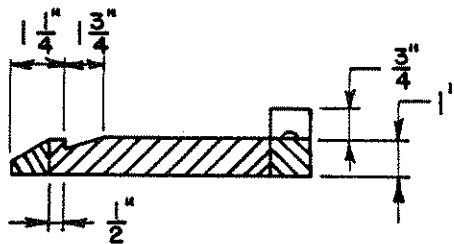
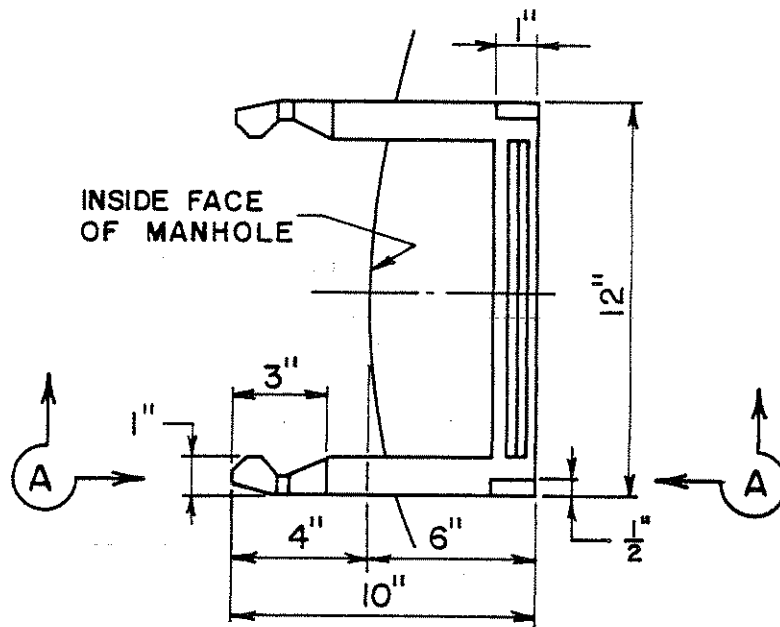


DROP MANHOLE

BOROUGH OF WAYNESBORO
STANDARD DETAIL



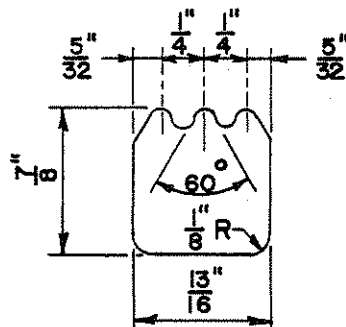
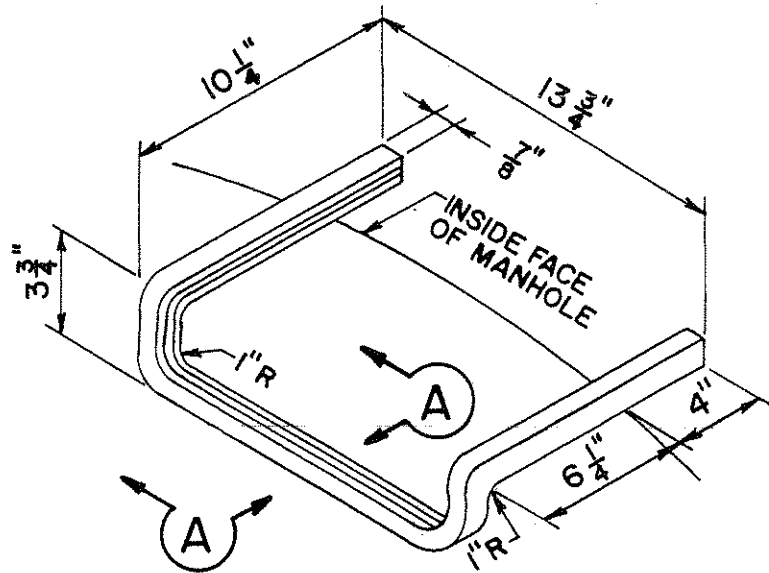
FORCE MAIN CONNECTION



SECTION A-A

CAST IRON
MANHOLE STEP

NO SCALE

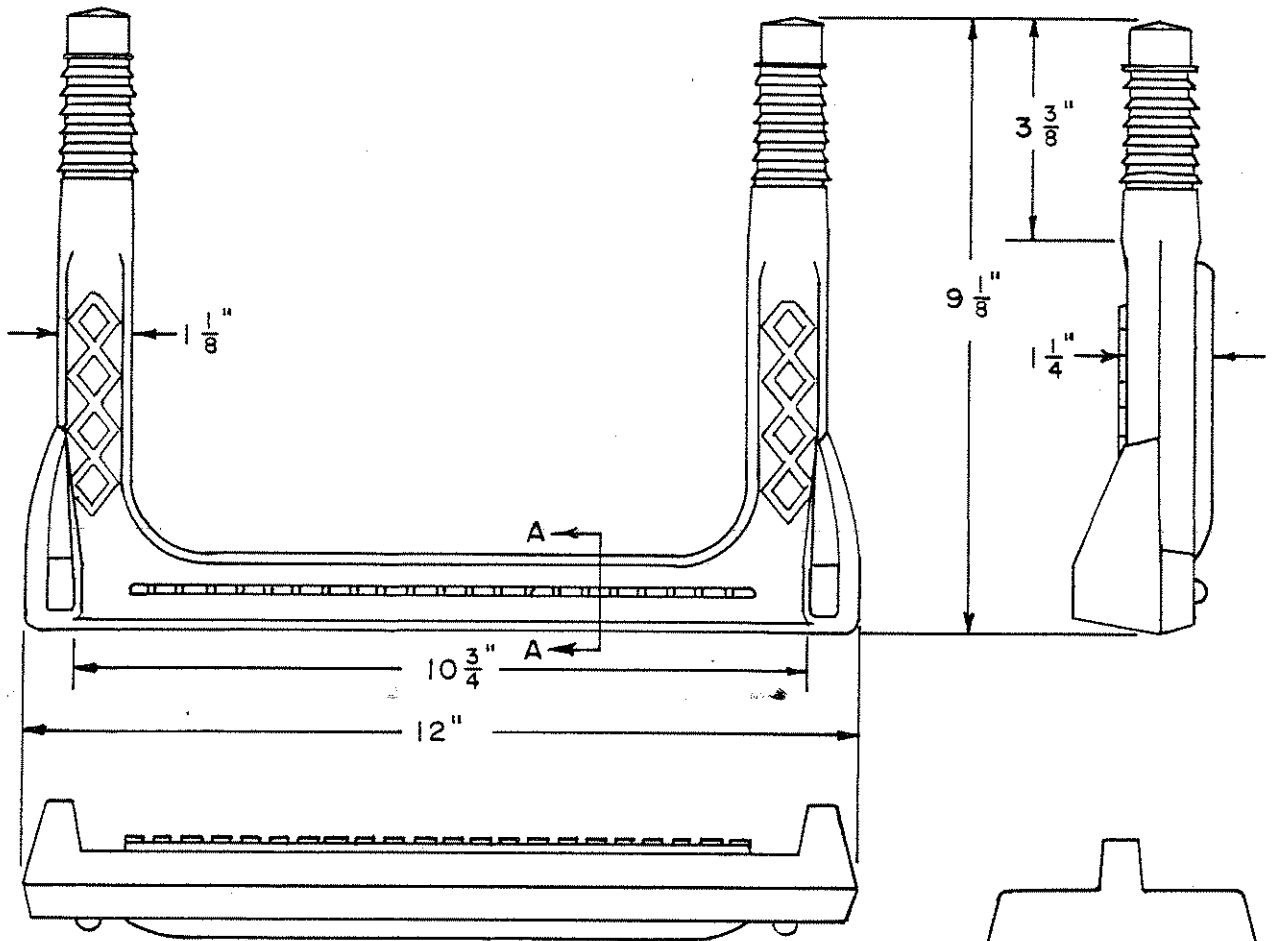


SECTION A-A

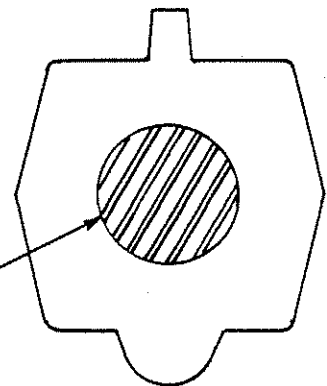
NO SCALE

ALUMINUM MANHOLE STEP

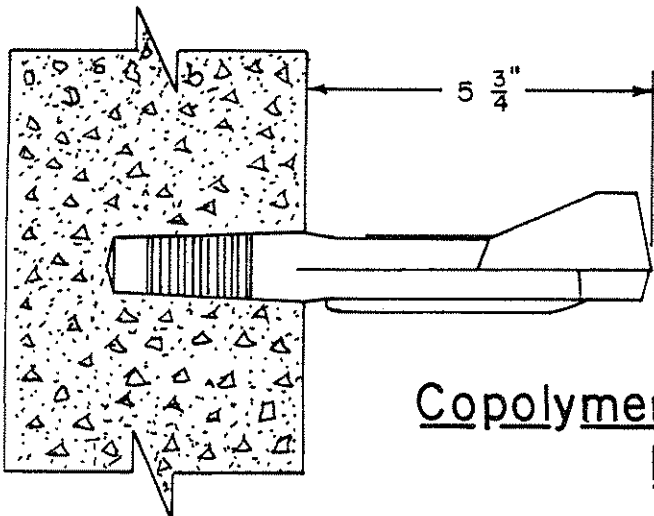
NOTE: STEPS TO BE FABRICATED OF ALUMINUM ALLOY 6061-T6
 PORTIONS OF STEPS TO EMBEDDED IN WALLS OF MANHOLES OR CHAMBERS TO BE DIPPED IN HEAVY BODIED BITUMINOUS PAINT.



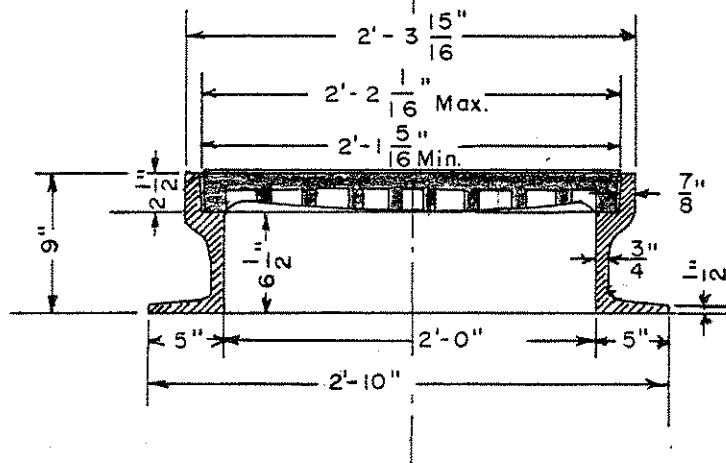
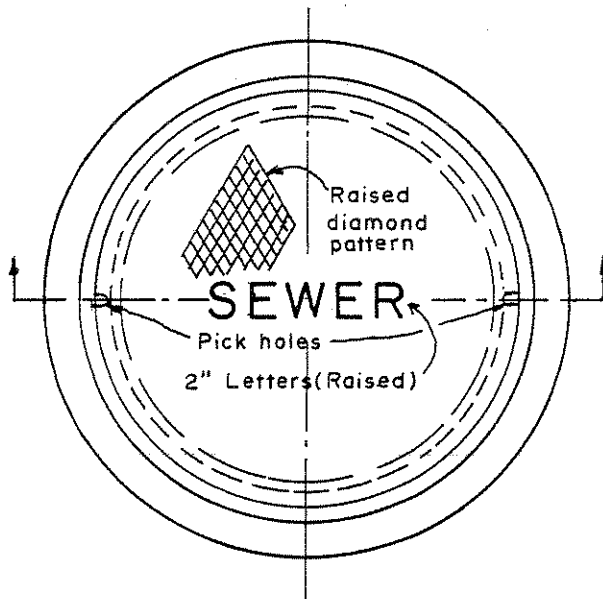
1/2" GRADE 60 STEEL REINFORCEMENT



SECTION A-A



Copolymer Polypropylene Plastic
Manhole Step



SS-7

NOTES: All manhole frame and cover dimensions shall be considered with the exception of the pick hole.

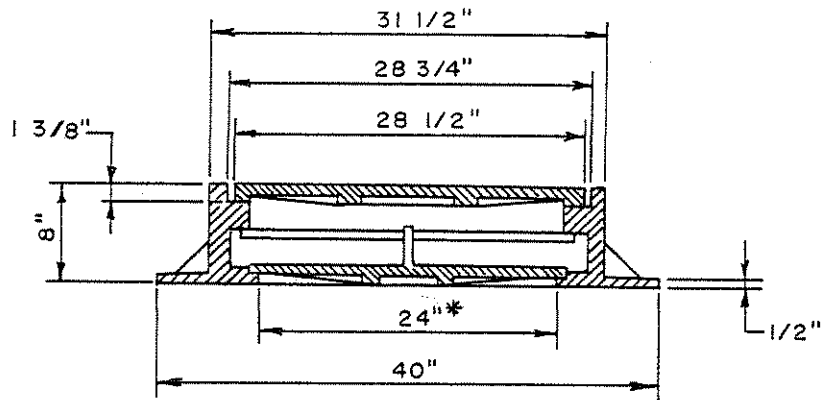
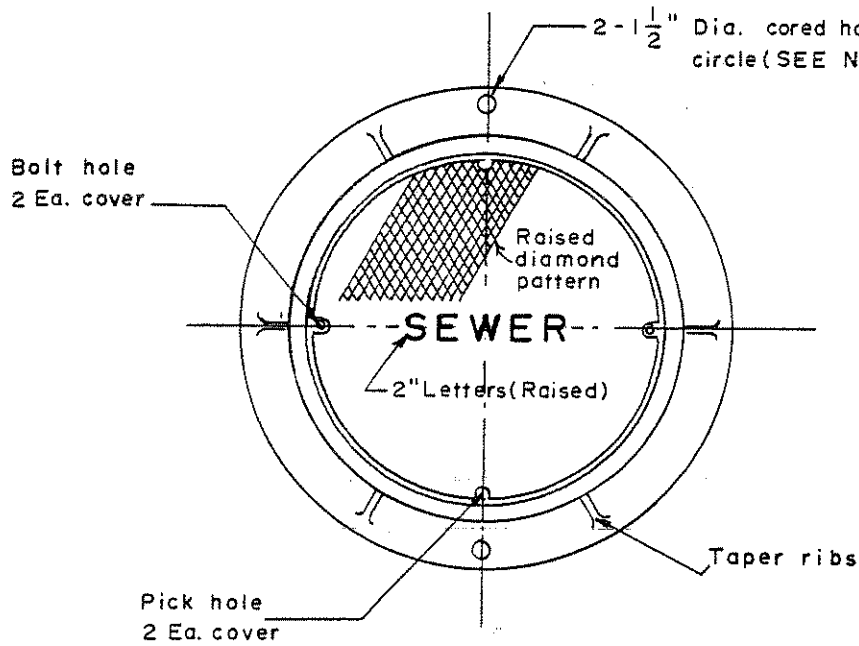
All manhole frames & covers shall be for heavy duty traffic.

BOROUGH OF WAYNESBORO
 STANDARD MANHOLE
 FRAME & COVER

NO SCALE

NOV., 1977

DRAWN BY: I.G. MICKLEY
 CHECKED BY: J.C. VALENTINE, R.S.



* 24" Min 25" Max.

NOTE: All manhole frame & cover dimensions shall be considered minimum with exception of the pick hole, bolt hole and cored hole dimensions.

All manhole frames & covers shall be for heavy duty traffic.

All manhole frames shall be bolted to the cone section or concrete slab with 2-3/4" dia. bolts with washers and nuts. Bolts to be at 180° on a 36" dia. bolt circle.

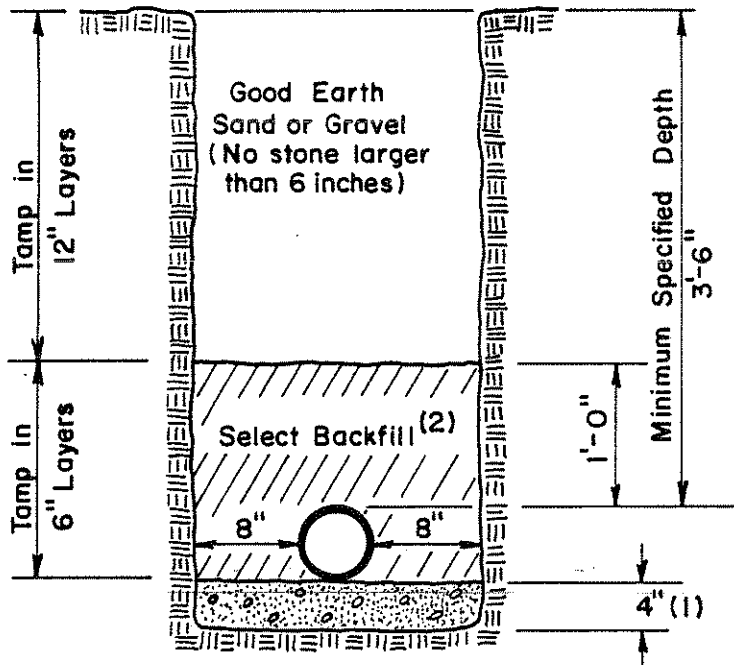
SS-8

BOROUGH OF WAYNESBORO
 WATERTIGHT MANHOLE
 FRAME & COVER

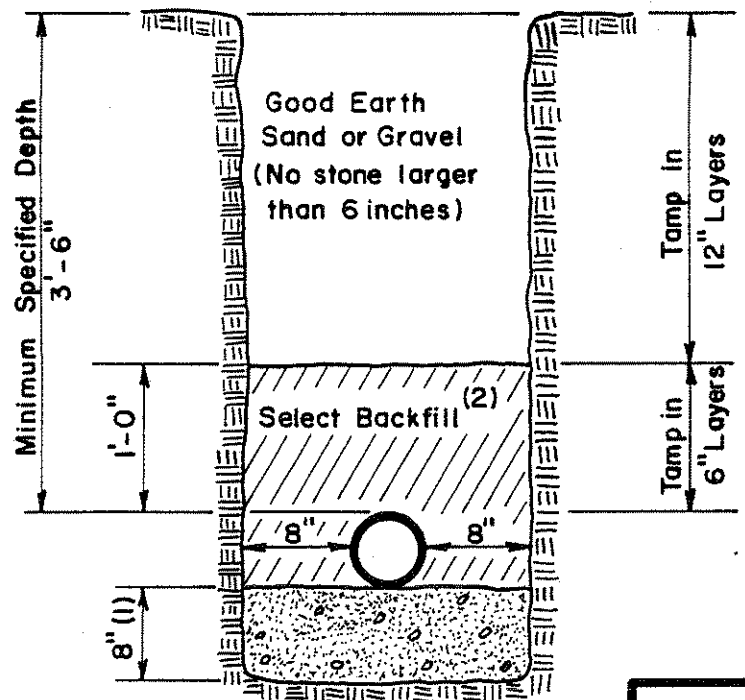
NO SCALE

NOV, 1977

DRAWN BY: J.G. MICKLEY
 CHECKED BY: J.C. VALENTINE, R.S.



EARTH TRENCH



ROCK TRENCH

SS-9

- (1) **CLASS "A" BEDDING** - Native soil, Coarse sand, Gravel, or Crushed stone with a maximum size of 1/2".
- (2) **SELECT BACKFILL** - Clean dry earth with a maximum stone size of 2".

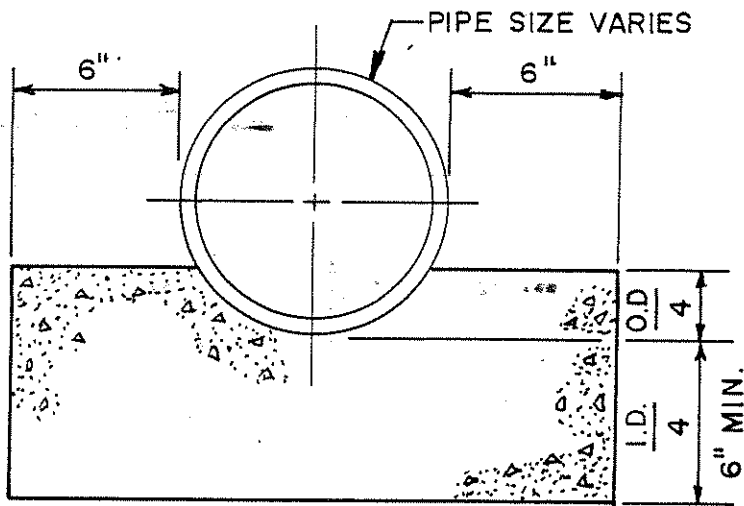
BOROUGH OF WAYNESBORO

BEDDING & BACKFILL

NO SCALE

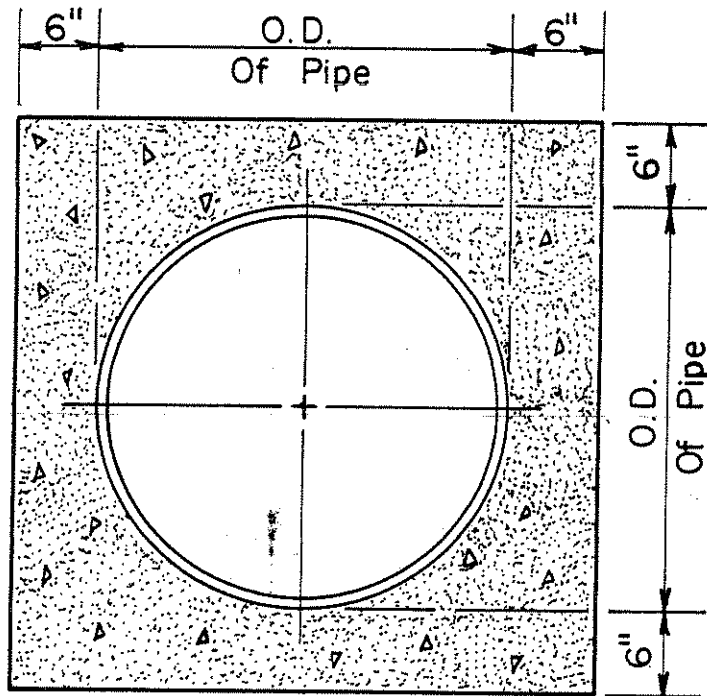
July, 1992

K. Grubbs



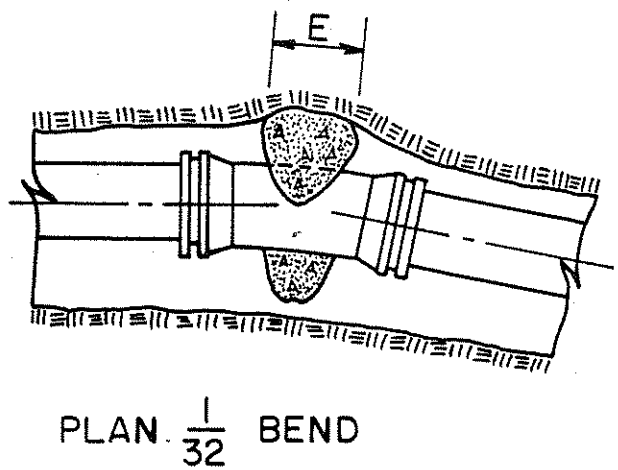
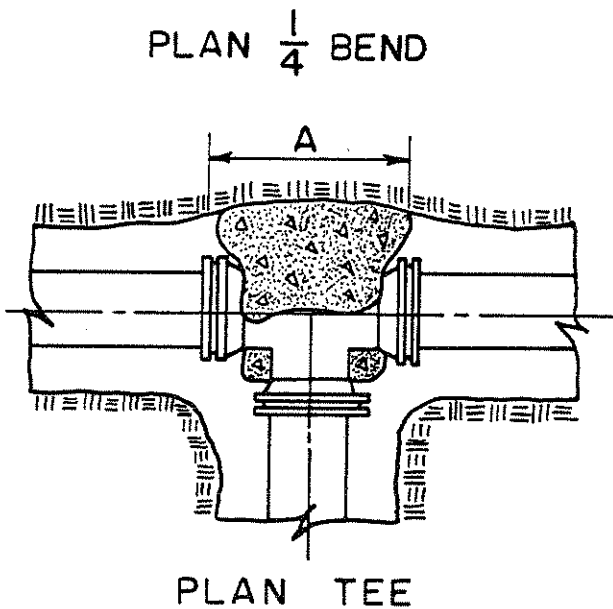
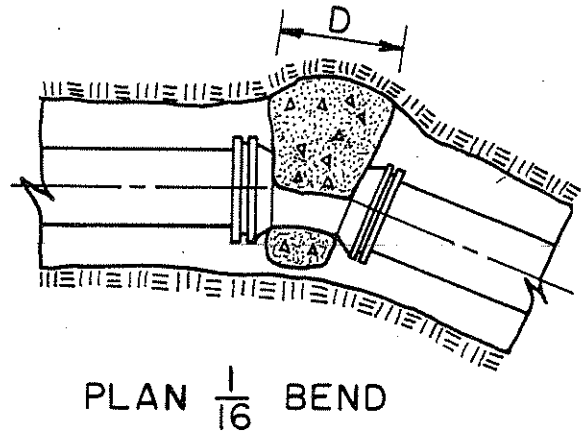
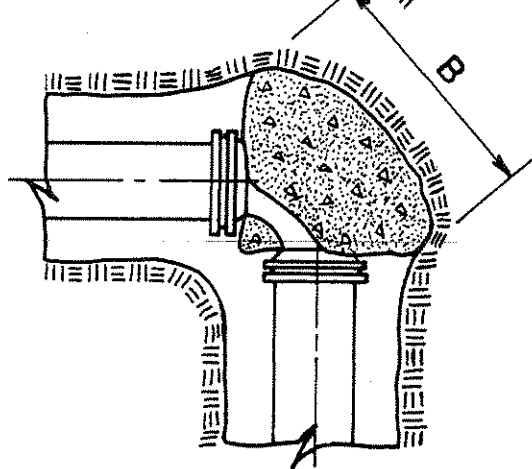
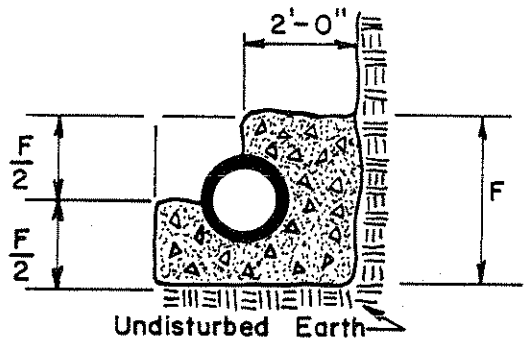
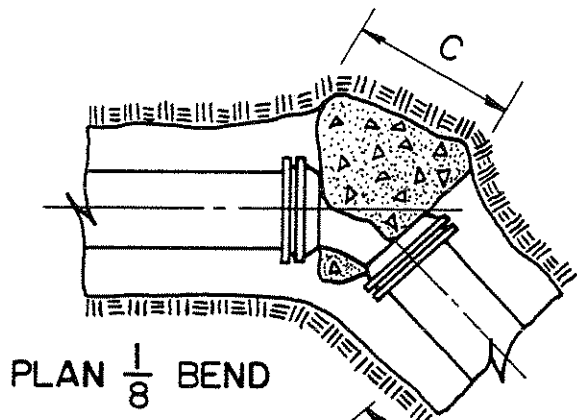
CONCRETE CRADLE

No Scale



CONCRETE
ENCASEMENT

NO SCALE



SS-12

| PIPE DIA. | REACTION BACKING DIMENSIONS | | | | | |
|-----------|-----------------------------|-------|--------|-------|--------|-------|
| | A | B | C | D | E | F |
| 12" | 5'-1" | 7'-2" | 5'-4" | 2'-9" | 1'-5" | 2'-6" |
| 10" | 4'-0" | 5'-8" | 4'-7" | 2'-5" | 1'-3" | 2'-1" |
| 8" | 2'-11" | 4'-2" | 3'-10" | 2'-0" | 1'-0" | 1'-8" |
| 6" | 1'-8" | 2'-4" | 3'-0" | 1'-6" | 0'-10" | 1'-3" |

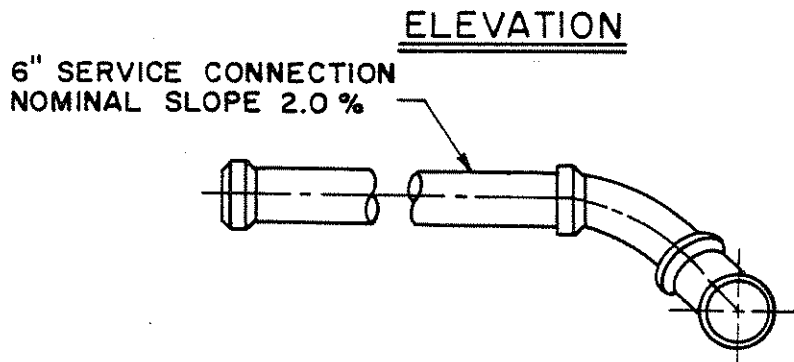
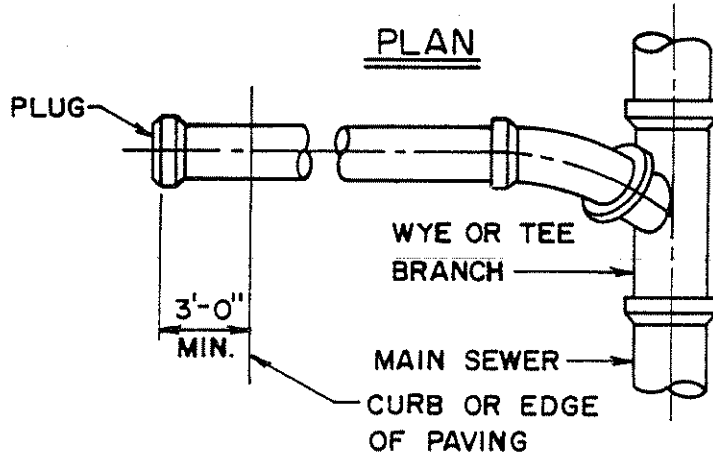
BOROUGH OF WAYNESBORO

STANDARD REACTION BACKINGS

NO SCALE

JULY, 1992

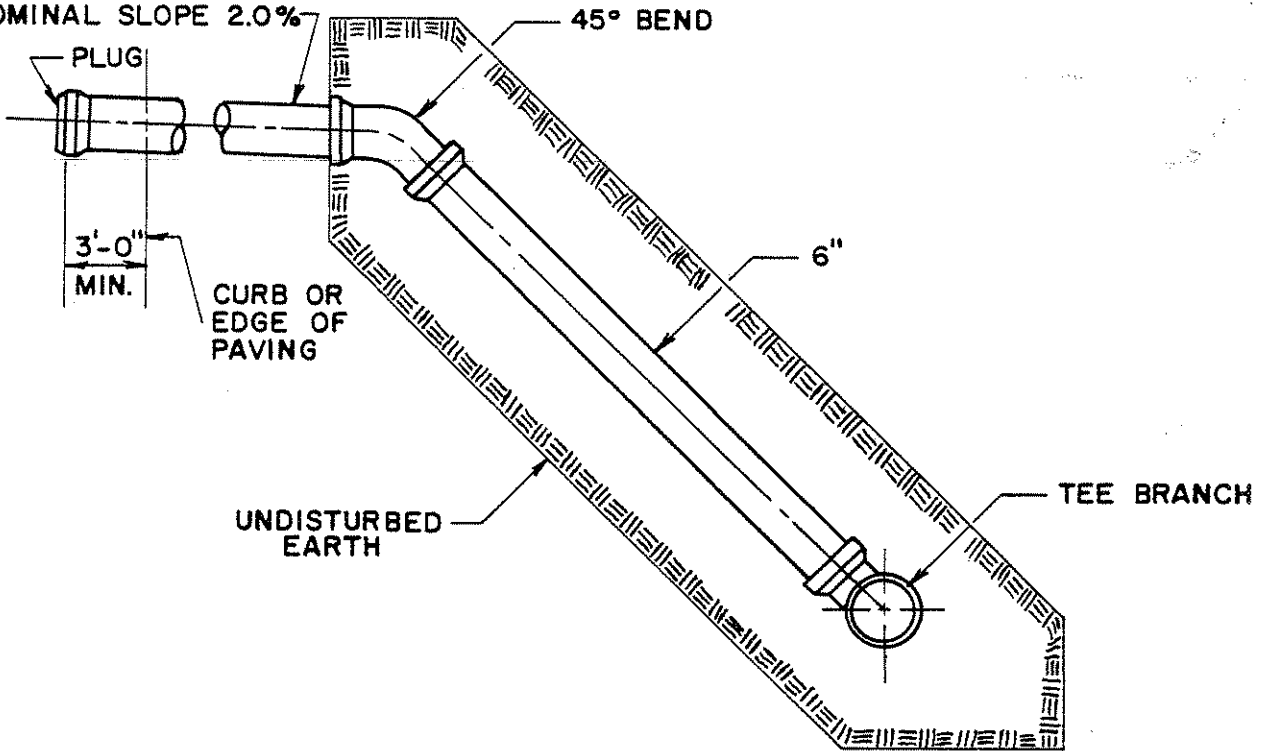
REDRAWN BY : K. GRUBBS



SERVICE CONNECTION
SHALLOW SERVICE

NO SCALE

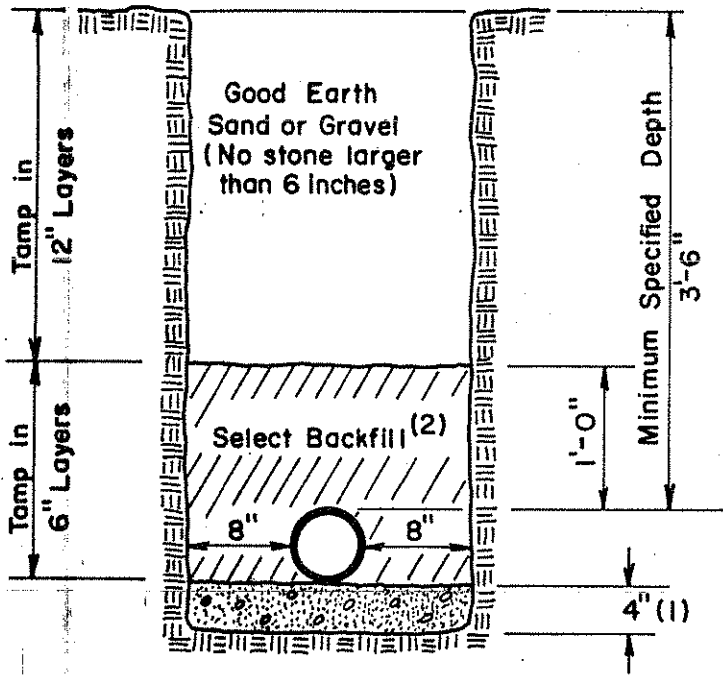
6" SERVICE CONNECTION
NOMINAL SLOPE 2.0%



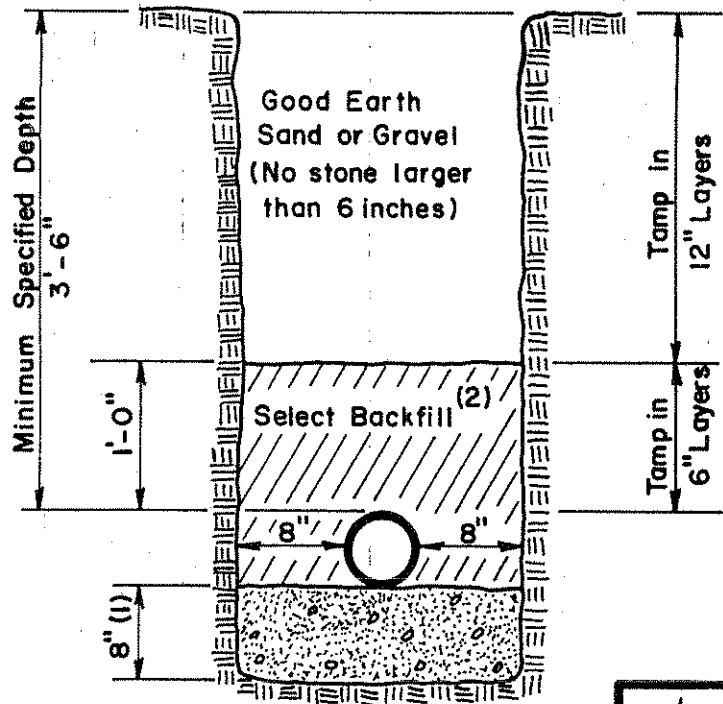
SERVICE CONNECTION

DEEP SEWER

NO SCALE



EARTH TRENCH



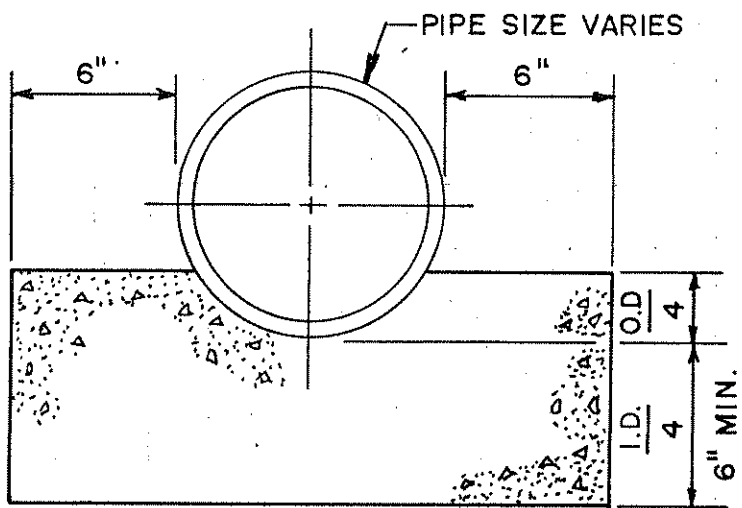
ROCK TRENCH

SS-9

(1) **CLASS "A" BEDDING** - Native soil, Coarse sand, Gravel, or Crushed stone with a maximum size of 1/2".

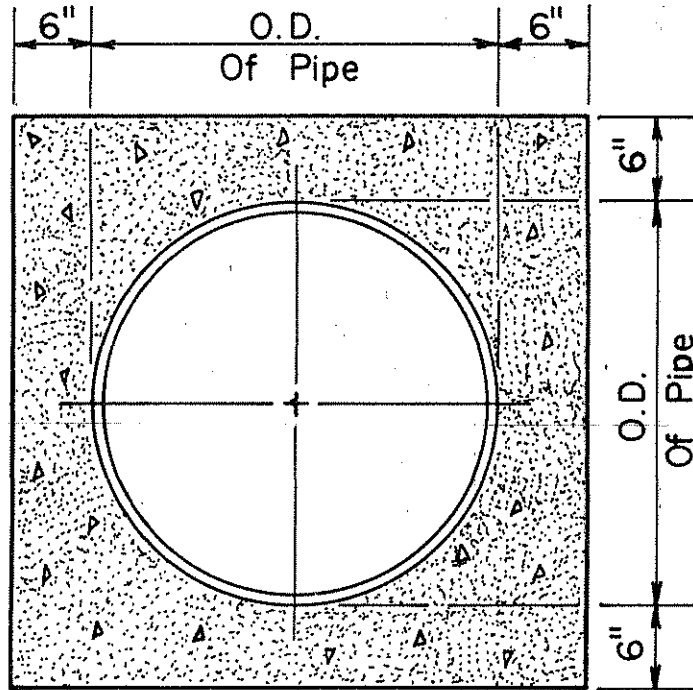
(2) **SELECT BACKFILL** - Clean dry earth with a maximum stone size of 2".

| | |
|-----------------------|-----------|
| BOROUGH OF WAYNESBORO | |
| BEDDING & BACKFILL | |
| NO SCALE | |
| July, 1992 | K. Grubbs |



CONCRETE CRADLE

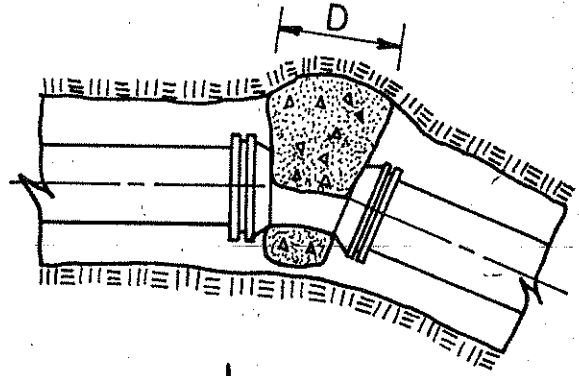
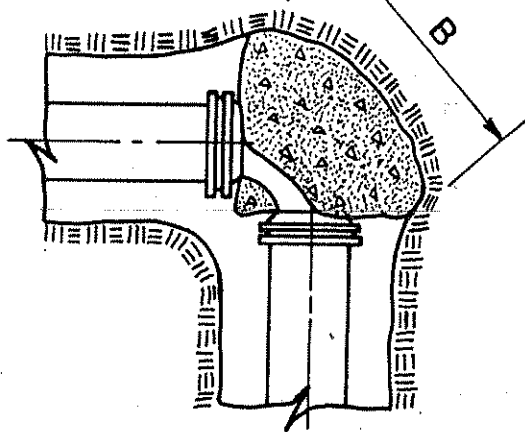
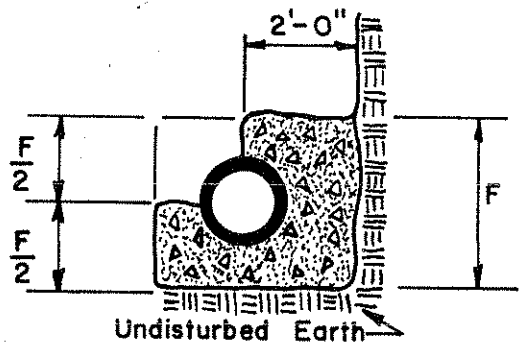
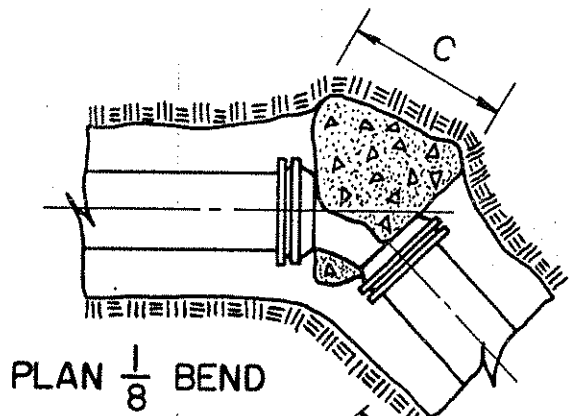
No Scale



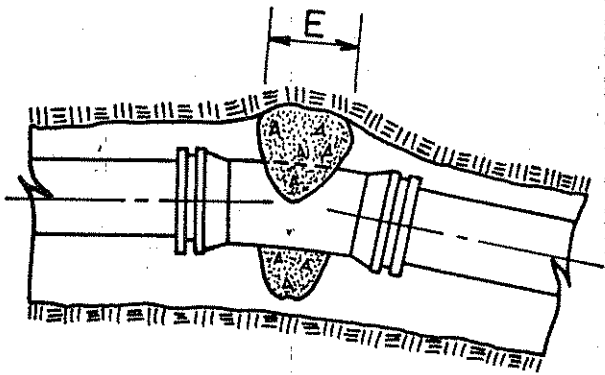
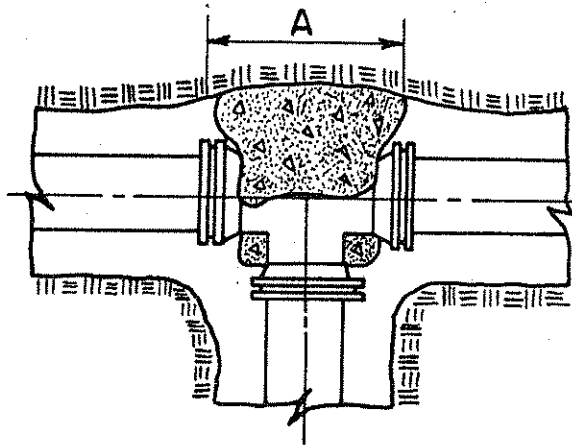
CONCRETE
ENCASEMENT

NO SCALE

SS-II



PLAN $\frac{1}{4}$ BEND



PLAN TEE

PLAN. $\frac{1}{32}$ BEND

SS-12

| PIPE DIA. | REACTION BACKING DIMENSIONS | | | | | |
|-----------|-----------------------------|-------|--------|-------|--------|-------|
| | A | B | C | D | E | F |
| 12" | 5'-1" | 7'-2" | 5'-4" | 2'-9" | 1'-5" | 2'-6" |
| 10" | 4'-0" | 5'-8" | 4'-7" | 2'-5" | 1'-3" | 2'-1" |
| 8" | 2'-11" | 4'-2" | 3'-10" | 2'-0" | 1'-0" | 1'-8" |
| 6" | 1'-8" | 2'-4" | 3'-0" | 1'-6" | 0'-10" | 1'-3" |

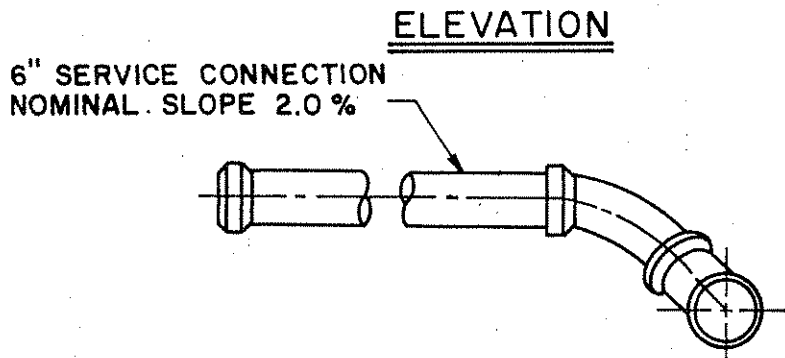
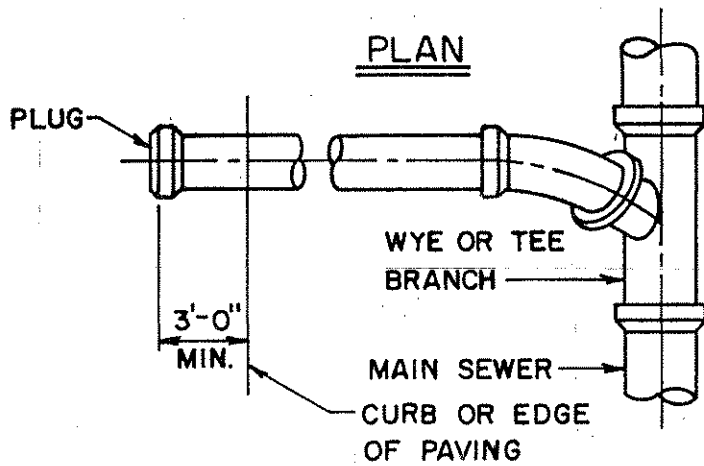
BOROUGH OF WAYNESBORO

STANDARD REACTION BACKINGS

NO SCALE

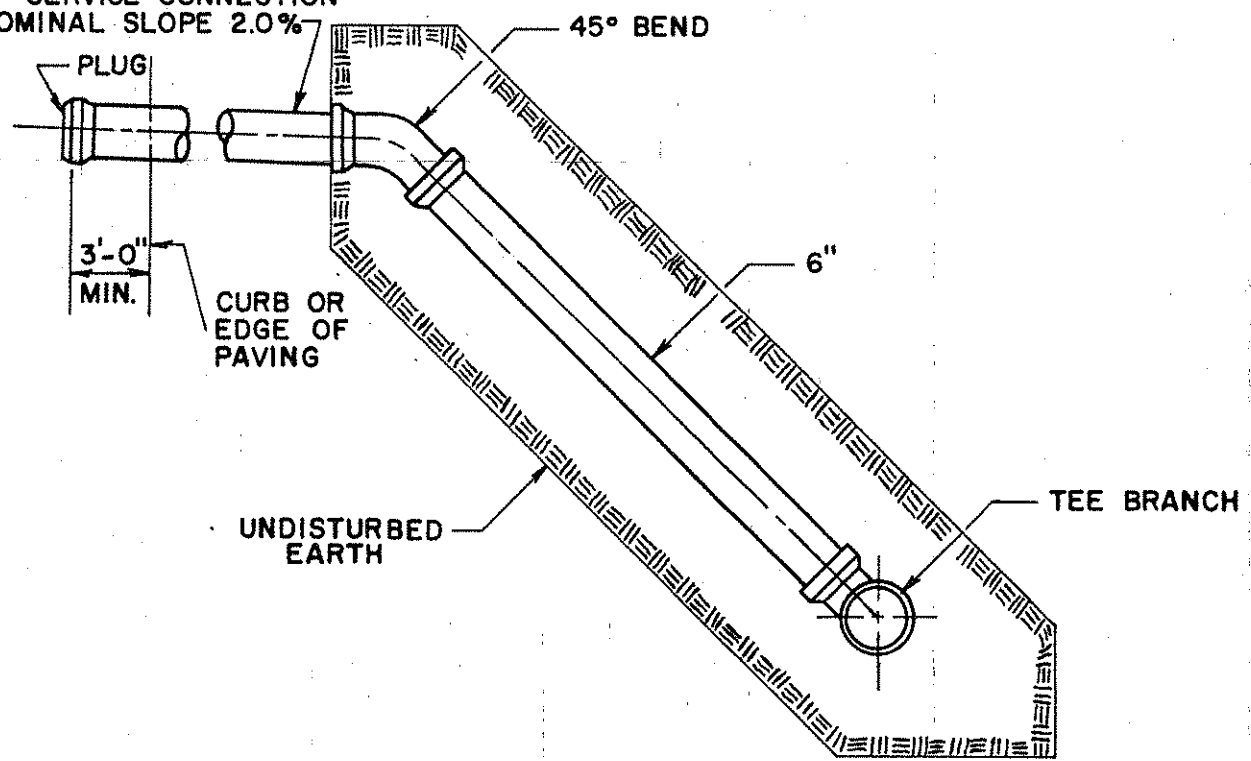
JULY, 1992

REDRAWN BY: K. GRUBBS



SERVICE CONNECTION
SHALLOW SERVICE
NO SCALE

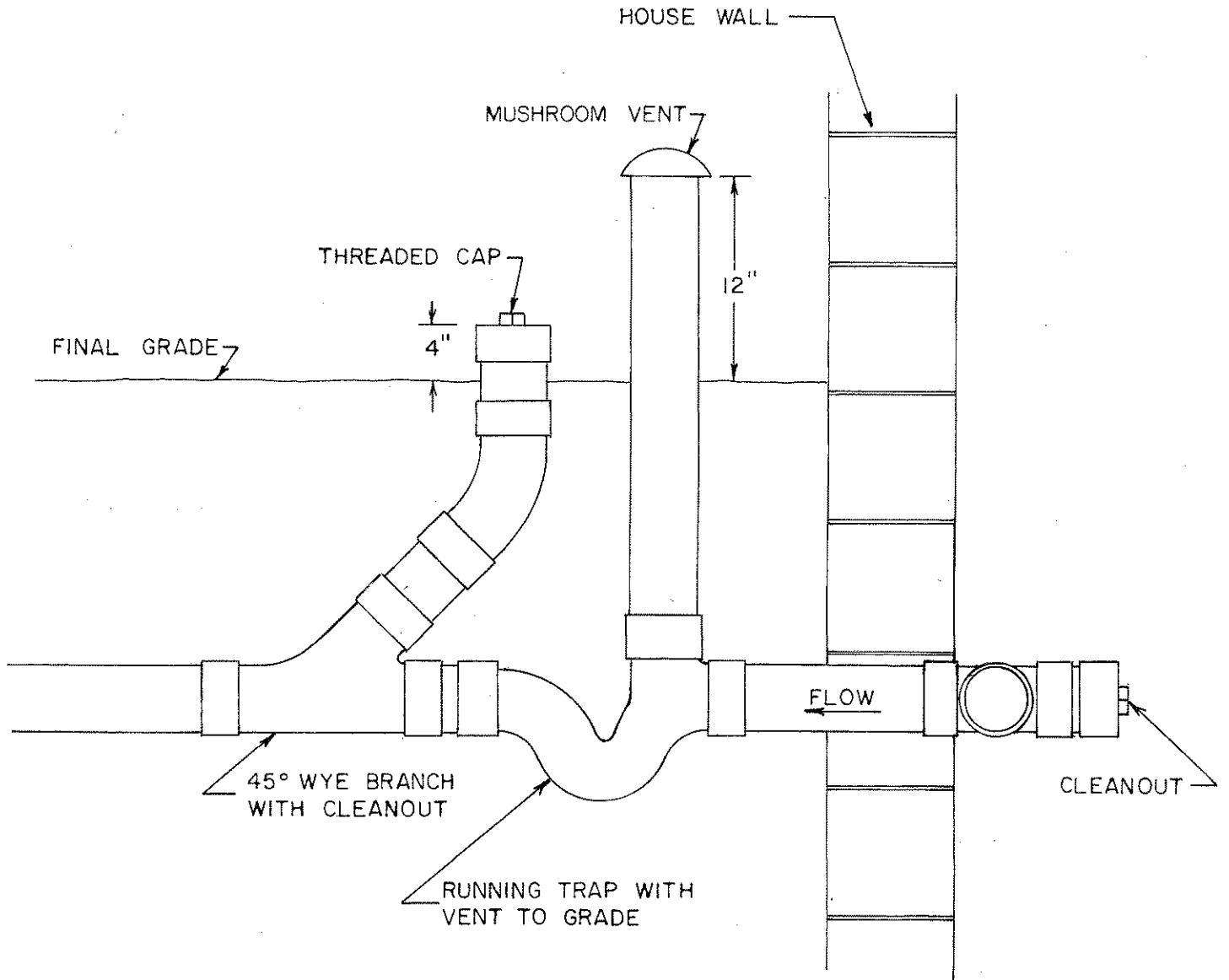
6" SERVICE CONNECTION
NOMINAL SLOPE 2.0%



SERVICE CONNECTION

DEEP SEWER

NO SCALE



BOROUGH OF WAYNESBORO

HOUSE TRAP DETAIL

| | | |
|--------------------------|--------------|-----------------|
| SCALE N.T.S. | DESIGNER | DWN BY SAC |
| DATE October 26, 2004 | FLD.BK. REF. | CHKD. BY KDG |

POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS SPECIFICATIONS

These are specifications for polyvinyl chloride plastic gravity sewer pipe for the conveyance of domestic sewage.

Materials

Pipe and fittings shall meet the requirements of ASTM Specification D-3034 for 4" - 15" SDE-35 and F-679 for 18" - 27".

The pipe shall be made of PVC plastic having a cell classification of 12454-B or 12454-C or 12235-C or 13364-B with a minimum tensile modulus of 3450 MPA (500 psi) as defined in Specification D-1784. Fittings shall be made of PVC plastic having a cell classification of 12454-B, 12454-C, 13343-C as defined in Specification D-1784. Compounds that have different cell classifications because one or more properties are superior to those of the specified compounds are also acceptable.

PVC pipe and fittings shall be produced by an extrusion process and shall be homogeneous throughout, free from cracks, holes, foreign inclusions or other defects. The pipe and fittings shall be uniform in color.

All PVC sewer pipe and fittings shall have the National Sanitation Foundation (NSF) seal of approval.

Pipe with blisters, bubbles, cuts or scrapes on inside or outside surfaces, which appreciably damage the wall thickness, or other imperfections which impair the performance or life of the pipe, will be rejected.

Pipe

Pipe shall be suitable for use as a gravity sewer conduit. Provisions must be made for contraction and expansion at each joint with a rubber ring. The bell shall consist of an integral wall section with a solid cross-section rubber ring. Sizes and dimensions shall be as shown in the specifications. Standard laying lengths shall be in 13' lengths.

Joints

Push on with elastomeric gasket, ASTM D-3212; and ASTM F-477 for gasket specifications. Gaskets shall be locked to pipe bell to prevent displacement ^{when} pipes are joined.