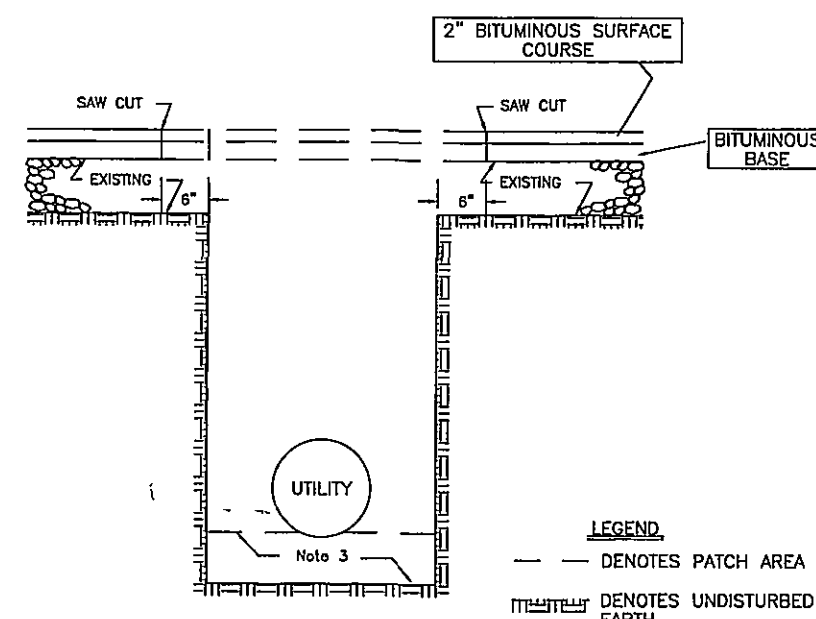


- NOTES:**
- ALL PAVEMENTS SHALL BE SAW CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION.
 - PIPE BEDDING MATERIAL SHALL BE CRUSHER RUN (VDOT NO. 25 OR 26) OR OPEN GRADED AGGREGATE (VDOT NO. 57, 65, 7, OR 8). ALTERNATE MATERIAL MUST BE APPROVED BY THE CITY ENGINEER.
 - MAXIMUM DEPTH OF PIPE BEDDING MATERIAL IF USING OPEN GRADED AGGREGATE FOR BEDDING.
 - OPTIONAL CONCRETE ENCASEMENT FOR POWER OR COMMUNICATION CONDUIT. PROVIDE A MINIMUM OF 4" CONCRETE COVER FROM ALL SIDES OF CONDUIT.
 - BACKFILL MATERIAL SHALL BE VDOT NO. 21A AGGREGATE, PLACED IN LIFTS NOT EXCEEDING 8", AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY WITHIN 2% OPTIMUM MOISTURE (ASTM D 698) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER COMPACTION IS NOT PERMITTED. TYPE I SELECT MATERIAL MAY BE USED AS BACKFILL UPON PRIOR APPROVAL BY THE CITY ENGINEER. MATERIAL CLASSIFICATION SHALL BE PERFORMED ON THE ACTUAL SOIL TO VERIFY THAT SOIL MEETS VDOT SPECIFICATIONS BY A QUALIFIED TESTING LABORATORY AND TEST RESULTS SHALL BE CERTIFIED BY A VIRGINIA REGISTERED PROFESSIONAL ENGINEER. COMPACTION REQUIREMENTS ARE THE SAME AS ABOVE.
 - ALL COMPACTION TESTING SHALL BE PERFORMED BY A VDOT-CERTIFIED TECHNICIAN. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE.
 - ALL PAVEMENTS SHALL BE RESTORED TO MATCH DEPTHS OF EXISTING SURFACE, BASE, AND AGGREGATE LAYERS. THE ASPHALT SURFACE LAYER SHALL BE A MINIMUM OF 2" THICK AND EXTEND OVER UNDISTURBED BASE A MINIMUM OF 12" ON ALL SIDES. ALL PAVEMENT MATERIALS SHALL MEET VDOT REQUIREMENTS FOR SURFACE MIX (SM-9.5A, SM-9.5A, OR SM-12.5D), BASE MIX (BM-25), AND STONE AGGREGATE (21A OR 21B). PLANT CERTIFICATION FOR EACH MIX INCORPORATED INTO THE WORK SHALL BE PROVIDED TO THE INSPECTOR. WHEN MATCHING NON-STANDARD MATERIALS, THE INSPECTOR SHALL DETERMINE AN ACCEPTABLE MATERIAL.
 - THE REPAIR SHALL BE RECTANGULAR AND SAW CUT IN STRAIGHT, UNIFORM LINES THAT ARE ALIGNED WITH THE STREET CENTERLINE. WHEN EDGES OF PAVEMENT HAVE BEEN UNDERMINED, PAVEMENT SHALL BE REMOVED TO A NEAT LINE 12" BEYOND THE UNDERMINED AREA. THE FINISHED PATCH SURFACE SHALL BE WITHIN 1/4 INCH AT ANY POINT ACROSS THE PATCH AS IT RELATES TO THE SURROUNDING STREET SURFACE.
 - A FULL COVERAGE TACK COAT IS REQUIRED ON ALL SURFACES THAT WILL CONTACT THE NEW SURFACE LAYER.

UTILITY TRENCH REPAIR IN PAVEMENT USING VDOT NO. 21A AGGREGATE

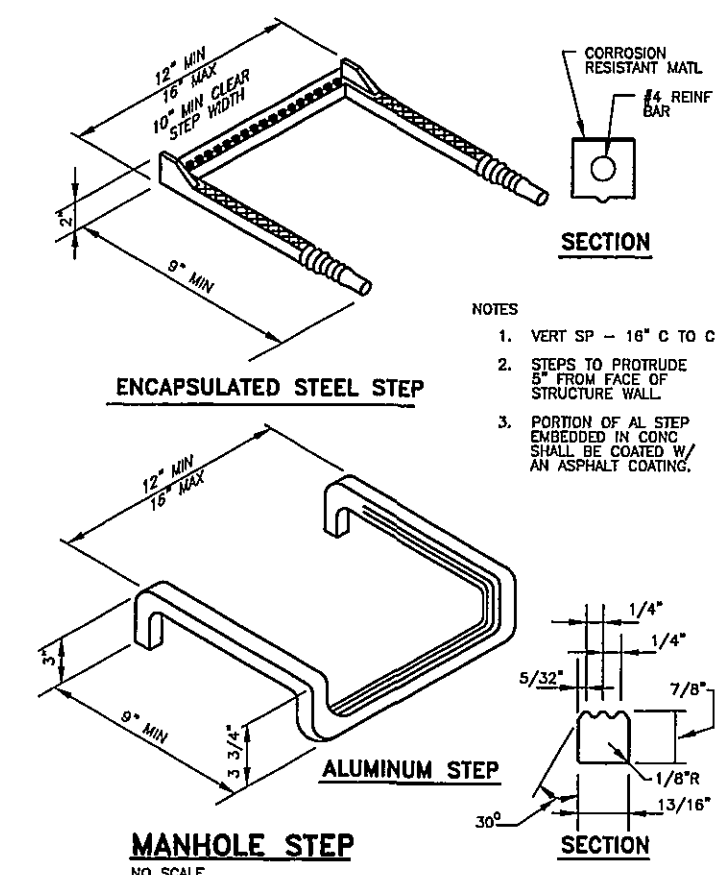
NO SCALE



- NOTES:**
- Surface and base replacement will generally be required to match existing asphalt layers and shall be compacted in lifts according to Virginia Department of Transportation Road and Bridge Specifications.
 - Bedding material shall be according to requirement of each utility.
 - Saw cut to be made with mechanical saw and slides to be tacked with bituminous material type RC-250 or equal.
 - Street opening permit required before any work in public right-of-way. Contact City Development Assistance Center for permit, Phone (853-1030).
 - Contact City Engineering Inspector 48 hours prior to beginning any work, Phone (853-2958).

TYPICAL DETAIL PAVEMENT CUTTING AND REPLACEMENT

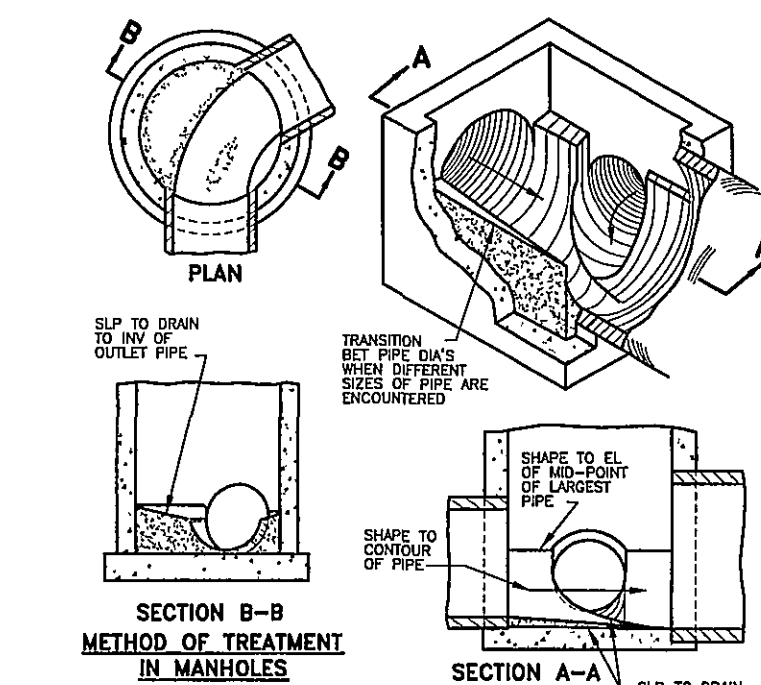
NO SCALE



- NOTES:**
- VERT. SP. - 16" C TO C.
 - STEPS TO PROTRUDE 5" FROM FACE OF STRUCTURE WALL.
 - PORTION OF AL STEP EMBEDDED IN CONC. SHALL BE COATED W/ AN ASPHALT COATING.

MANHOLE STEP

NO SCALE



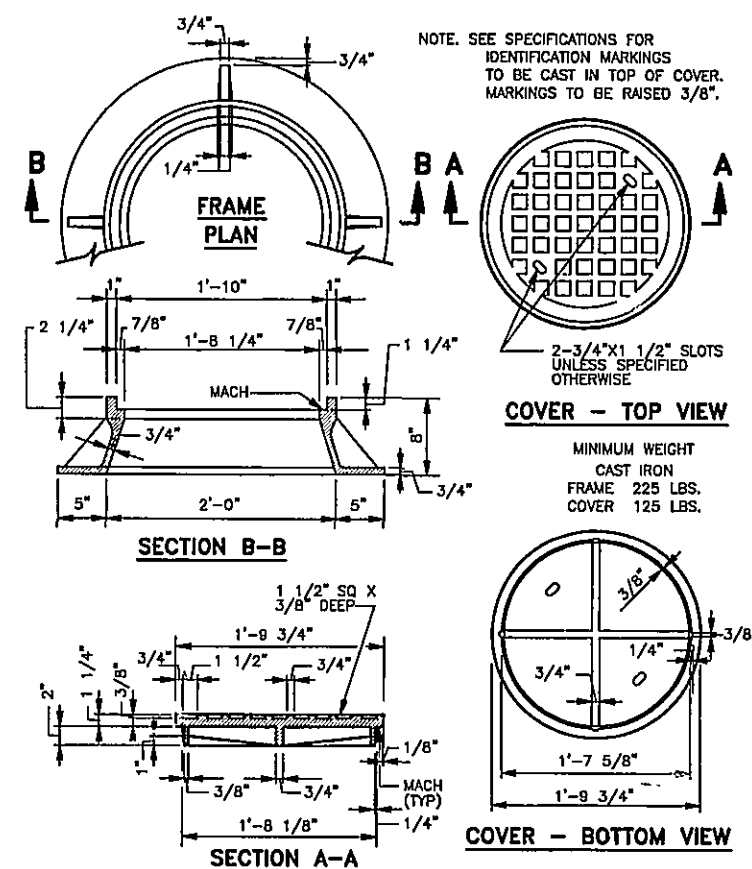
SECTION B-B METHOD OF TREATMENT IN MANHOLES

NO SCALE

- NOTES:**
- SURFACES SHALL BE LEFT SMOOTH BY HAND TROWELING. COARSE AGG. SHALL NOT REMAIN EXPOSED.
 - DET'S OF HW SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. GA MH OR DI SHALL BE SHAPED INDIVIDUALLY TO FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.

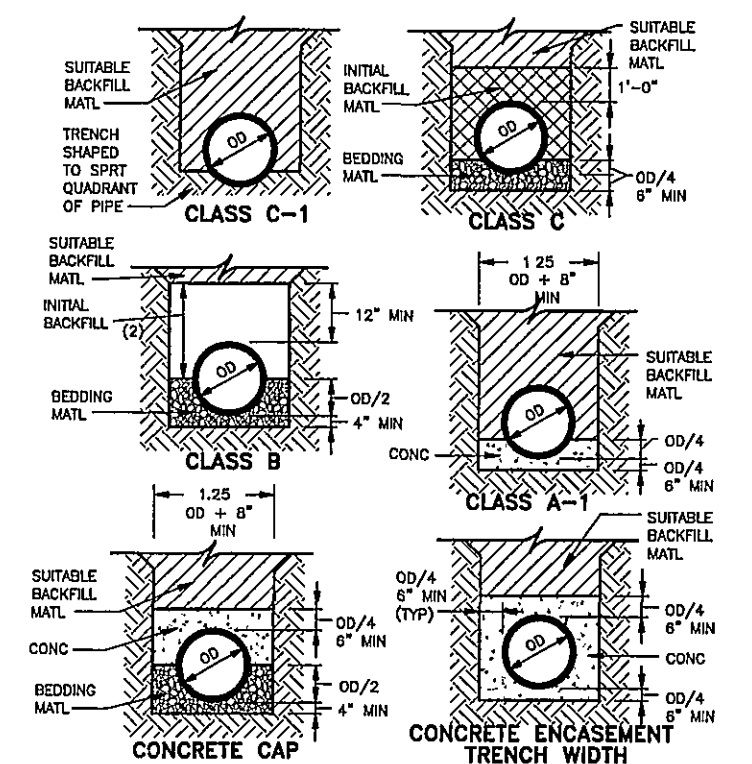
METHOD OF SHAPING MANHOLE AND INLET INVERTS

NO SCALE



STANDARD MANHOLE FRAME & COVER

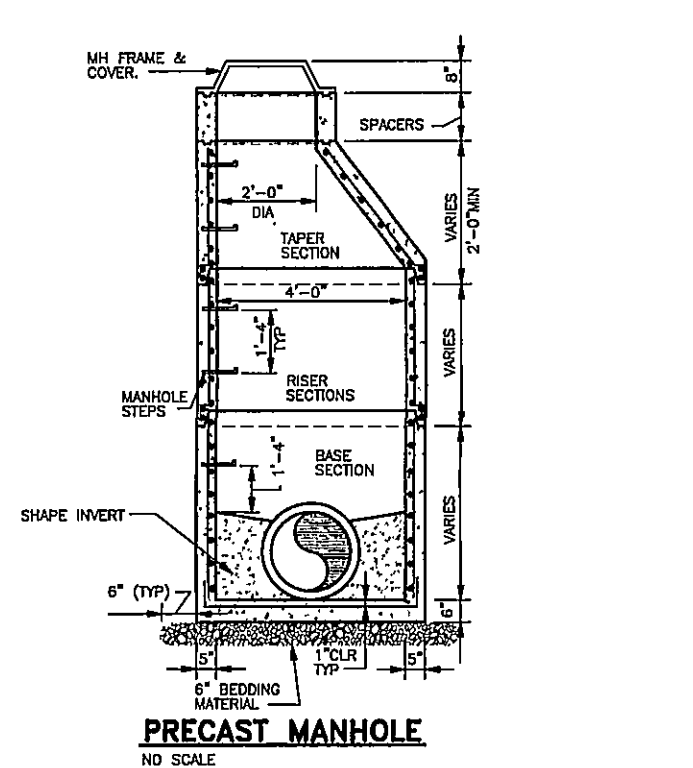
NO SCALE



- NOTES:**
- WIDTHS SHOWN ARE MAX TRENCH WIDTH FROM 12" ABOVE TOP OF PIPE TO BOT. OF TRENCH. TRENCH WIDTHS SHALL ALSO CONFORM W/ THE MIN. WIDTHS INDICATED.
 - MATERIAL FOR INITIAL BACKFILL SHALL BE AS SPECIFIED.

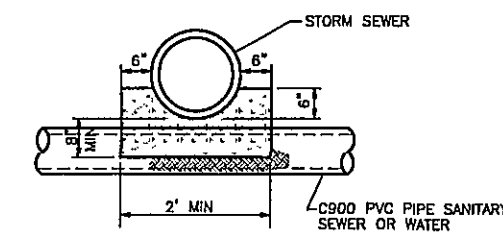
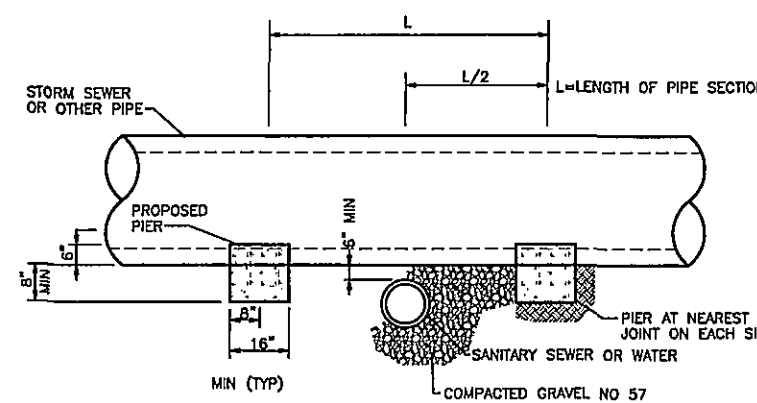
PIPE TRENCH

NO SCALE



PRECAST MANHOLE

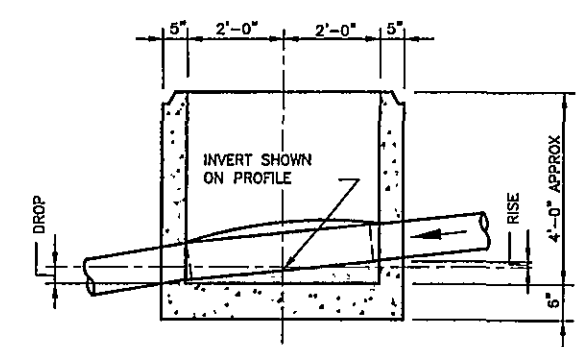
NO SCALE



- NOTES:**
- PIER REQUIRED WHEN STORM DRAIN OR OTHER PIPES CROSSES OVER THE OTHER UTILITY WITH A VERTICAL CLEARANCE OF LESS THAN 18".
 - PIER TO BE BUILT ON UNDISTURBED EARTH.
 - CONCRETE TO BE VDOT CLASS A3.

CONCRETE PIERS

NO SCALE

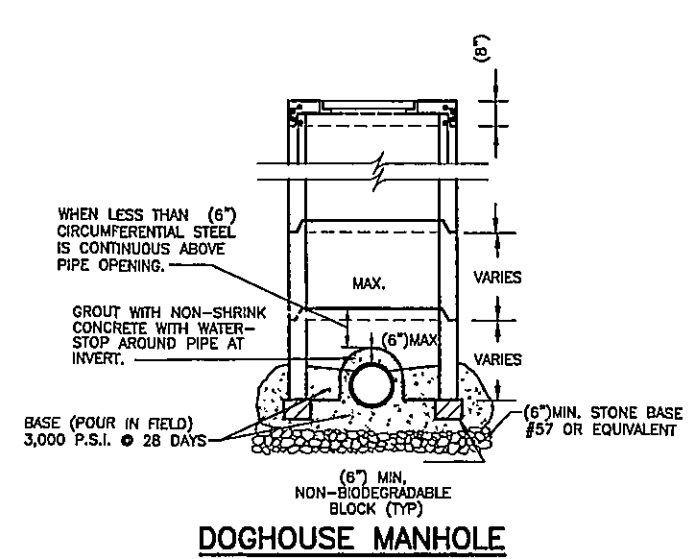


SECTION

SLOPE	DROP	RISE
5%	.15'	.10'
6%	.15'	.10'
8%	.20'	.15'
10%	.25'	.20'
12%	.30'	.20'
14%	.35'	.25'
16%	.40'	.30'
18%	.45'	.35'
20%	.50'	.40'

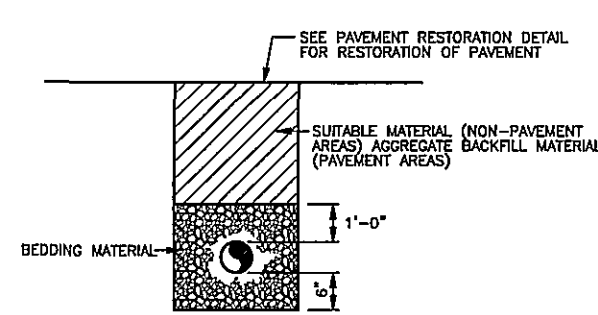
PRECAST BASE UNIT-INSTALLATION

NO SCALE



DOGHOUSE MANHOLE

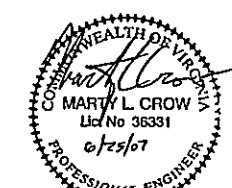
NO SCALE



- NOTES:**
- MAXIMUM AND MINIMUM TRENCH WIDTHS ARE 2'-0" - 1'-2" FOR 4" PIPE AND 2'-8" - 1'-6" FOR 8" PIPE, MEASURED 1 FOOT ABOVE THE TOP OF THE PIPE.

TRENCH DETAIL (PVC DETAIL)

NO SCALE



REV	DATE	DESCRIPTION	APP
1	06/25/07	ISSUE DATE	
2	06/25/07	DESIGNED BY: SMS	
3	06/25/07	CHECKED BY: DMH	
4	06/25/07	SUBMITTED BY: B&P	
5	06/25/07	BY: HAYES, SEAY, MATTERN & MATTERN, INC.	
6	06/25/07	ALL RIGHTS RESERVED.	