

VIRGINIA DEPARTMENT OF TRANSPORTATION NOTES:

- QUALITY CONTROL**
STREETS TO BE GRADED, PAVED AND ALL STRUCTURAL COMPONENTS ERECTED IN ACCORDANCE WITH CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS AND ROAD DESIGN STANDARDS AND ROANOKE COUNTY DESIGN STANDARDS AND SPECIFICATIONS. ALL MATERIALS USED SHALL BE TESTED IN ACCORDANCE WITH STANDARD POLICIES. THE DEVELOPER MUST CONTACT THE OFFICE OF THE RESIDENT ENGINEER, PRIOR TO BEGINNING ANY CONSTRUCTION AT WHICH TIME AN INSPECTION AND TESTING PROCEDURE POLICY WILL BE DRAWN. THE DEVELOPER WILL PRODUCE TEST REPORTS FROM APPROVED INDEPENDENT LABORATORIES AT THE DEVELOPER'S EXPENSE.

THE PAVEMENT DESIGNS SHOWN ARE BASED ON A SUBGRADE CBR VALUE OF 10 OR GREATER. THE SUBGRADE SOIL IS TO BE TESTED BY AN INDEPENDENT LABORATORY AND THE RESULTS SUBMITTED TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO BASE CONSTRUCTION. SHOULD THE SUBGRADE CBR VALUES BE LESS THAN 10, THEN ADDITIONAL BASE MATERIAL WILL BE REQUIRED IN ACCORDANCE WITH DEPARTMENTAL SPECIFICATIONS.

THE SUBGRADE MUST BE APPROVED BY VIRGINIA DEPARTMENT OF TRANSPORTATION PRIOR TO PLACEMENT OF THE BASE. BASE MUST BE APPROVED BY VIRGINIA DEPARTMENT OF TRANSPORTATION FOR DEPTH, TEMPLATE AND COMPACTION BEFORE SURFACE IS APPLIED.
- UTILITIES**
ALL NECESSARY UTILITY LATERALS ALONG WITH PROVISIONS FOR CONDUITS (I.E. WATER, SEWER, STORM, GAS AND TELEPHONE) WILL BE CONSTRUCTED PRIOR TO PLACEMENT OF BASE MATERIAL.

GAS OR PETROLEUM TRANSMISSION LINES WILL NOT BE PERMITTED WITHIN THE PAVEMENT OR SHOULDER ELEMENT (BACK OF CURB TO BACK OF CURB) OF THIS DEVELOPMENT. SERVICE LATERALS CROSSING AND PIPE LINES LOCATED OUTSIDE THE PAVEMENT BUT INSIDE THE RIGHT OF WAY WILL BE CONSTRUCTED IN CONFORMITY WITH ASA B 31.8 SPECIFICATIONS AND SAFETY REGULATIONS. DISTRIBUTION LINES WITH PRESSURES LESS THAN 120 LBS. ARE UNEXCEPTED BY THE ABOVE.

PERMITS WILL BE REQUIRED FOR ALL UTILITIES WITHIN STREET RIGHT OF WAY PRIOR TO ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM. ANY EASEMENTS GRANTED TO A UTILITY COMPANY FOR PLACEMENT OF POWER, TELEPHONE, ETC. MUST BE RELEASED PRIOR TO ACCEPTANCE.
- PRIVATE ENTRANCES**
MODIFIED CO-9D GUTTER WILL BE PROVIDED AT ALL ENTRANCES TO PRIVATE LOTS WHERE STANDARD CO-6 CURB AND GUTTER IS APPROVED FOR USE.

DRIVEWAYS CONNECTING TO ROADS WITHOUT CURB & GUTTER SHALL CONFORM TO THE PAVEMENT, SHOULDER & SLOPE.

PERMITS WILL BE REQUIRED FOR ALL PRIVATE ENTRANCES CONSTRUCTED ON STREET RIGHTS OF WAY AFTER ACCEPTANCE INTO THE SECONDARY HIGHWAY SYSTEM.

ALL PRIVATE ENTRANCES WITHIN THE RIGHT-OF-WAY AREA SHOULD NOT EXCEED EIGHT PERCENT (8%) MAXIMUM GRADE.
- EROSION CONTROL AND LANDSCAPING**
CARE MUST BE TAKEN DURING CONSTRUCTION TO PREVENT EROSION, DUST AND MUD FROM DAMAGING ADJACENT PROPERTY, CLOGGING DITCHES, TRACKING PUBLIC STREETS AND OTHERWISE CREATING A PUBLIC OR PRIVATE NUISANCE TO SURROUNDING AREAS.

THE ENTIRE CONSTRUCTION AREA INCLUDING DITCHES, CHANNELS, BACK OF CURBS AND OR PAVEMENT ARE TO BE BACKFILLED AND SEEDED AT THE EARLIEST POSSIBLE TIME AFTER FINAL GRADING.

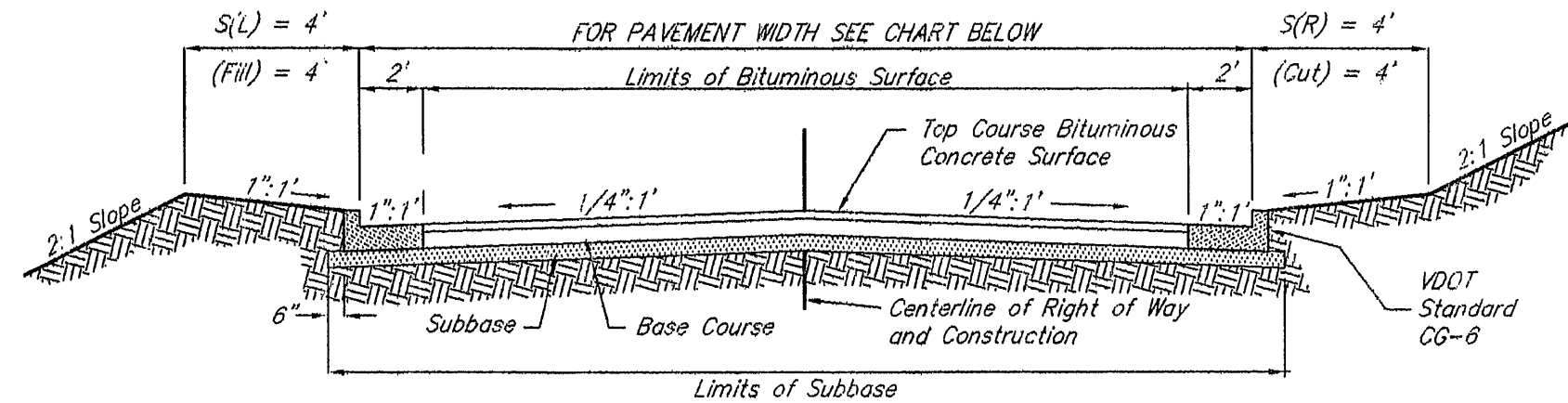
DRAINAGE EASEMENTS MUST BE DEFINED BY EXCAVATED DITCHES OR CHANNELS FOR THEIR FULL LENGTH TO WELL DEFINED EXISTING NATURAL WATERCOURSES.

THE ROAD WILL BE REVIEWED DURING CONSTRUCTION FOR THE NEED OF PAVED DITCHES. IF EROSION IS ENCOUNTERED IN ANY DRAINAGE EASEMENT, IT WILL BE THE RESPONSIBILITY OF THE DEVELOPER TO SOD, RIP RAP, GROUT, PAVE OR TO DO WHATEVER IS NECESSARY TO CORRECT THE PROBLEM.

ALL VEGETATION AND OVERBURDEN TO BE REMOVED FROM SHOULDER TO SHOULDER PRIOR TO THE CONDITIONING (CUTTING AND/OR PREPARATION) OF THE SUBGRADE.
- INTERSECTION PAVEMENT RADIUS**
MINIMUM PAVEMENT RADIUS OF 25 FEET IS REQUIRED AT ALL STREET INTERSECTION.
- CONNECTIONS TO STATE-MAINTAINED ROADS**
WHILE THESE PLANS HAVE BEEN APPROVED, SUCH APPROVAL DOES NOT EXEMPT CONNECTIONS WITH EXISTING STATE-MAINTAINED ROADS FROM CRITICAL REVIEW AT THE TIME PERMIT APPLICATIONS ARE MADE. THIS IS NECESSARY IN ORDER THAT THE PREVAILING CONDITIONS BE TAKEN INTO CONSIDERATION REGARDING SAFETY ACCOMPANIMENTS SUCH AS TURNING LANES.
- GUARDRAILS**
STANDARD GUARDRAIL WITH SAFETY END SECTIONS MAY BE REQUIRED ON FILLS AS DEEMED NECESSARY BY THE RESIDENT ENGINEER. AFTER COMPLETION OF ROUGH GRADING OPERATIONS, THE OFFICE OF THE RESIDENT ENGINEER, SHALL BE NOTIFIED SO THAT A FIELD REVIEW MAY BE MADE OF THE PROPOSED LOCATIONS.

WHERE GUARDRAILS ARE TO BE INSTALLED THE SHOULDER WIDTH SHALL BE INCREASED IN ACCORDANCE WITH VDOT ROAD AND BRIDGE STANDARDS.
- STORM DRAINAGE**
FIELD REVIEW WILL BE MADE DURING CONSTRUCTION TO DETERMINE THE NEED AND LIMITS OF PAVED DITCHES AND/OR DITCH STABILIZATION TREATMENTS AND TO DETERMINE THE NEED AND LIMITS OF ADDITIONAL DRAINAGE EASEMENTS. ALL DRAINAGE EASEMENTS MUST BE CUT AND MADE TO FUNCTION TO A NATURAL WATERCOURSE. ANY EROSION PROBLEMS ENCOUNTERED IN AN EASEMENT MUST BE CORRECTED BY WHATEVER MEANS NECESSARY PRIOR TO SUBDIVISION ACCEPTANCE.

DITCH SLOPES ARE TO BE FOUR TO ONE (4:1) FOR SHOULDER WIDTHS OF SIX FEET (6') OR GREATER AND THREE TO ONE (3:1) FOR SHOULDER WIDTHS OF FOUR FEET (4') OR FIVE FEET (5'), UNLESS OTHERWISE SPECIFIED IN THE PLANS.
- ENTRANCE PERMIT**
CONTRACTOR SHALL OBTAIN ENTRANCE PERMIT TO THE EXISTING VIRGINIA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY FROM RESIDENT ENGINEER PRIOR TO ROAD CONSTRUCTION.
- INSPECTION**
AN INSPECTOR WILL NOT BE FURNISHED EXCEPT FOR PERIODIC PROGRESS INSPECTION, THE ABOVE MENTIONED FIELD REVIEWS AND CHECKING FOR REQUIRED STONE DEPTHS. THE DEVELOPER WILL BE REQUIRED TO POST A SURETY TO GUARANTEE THE ROAD FREE OF DEFECTS FOR ONE YEAR AFTER ACCEPTANCE BY THE DEPARTMENT OF TRANSPORTATION.
- STREET MAINTENANCE**
THE STREETS MUST BE PROPERLY MAINTAINED UNTIL ACCEPTANCE. AT SUCH TIME AS ALL REQUIREMENTS HAVE BEEN MET FOR ACCEPTANCE, ANOTHER INSPECTION WILL BE MADE TO DETERMINE THAT THE STREET HAS BEEN PROPERLY MAINTAINED.
- UNDERGROUND UTILITIES**
CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK BY CONTACTING MISS UTILITY. CONTACT SITE ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS. IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON THIS PLAN, CALL "MISS UTILITY" OF CENTRAL VIRGINIA AT 1-800-562-7001.
- REVISIONS OF SPECIFICATIONS AND STANDARDS**
APPROVAL OF THESE PLANS WILL BE BASED ON SPECIFICATIONS AND STANDARDS IN EFFECT AT THE TIME OF APPROVAL AND WILL BE SUBJECT, UNTIL COMPLETION OF THE ROADWAY AND ACCEPTANCE BY THE DEPARTMENT, TO FUTURE REVISIONS OF THE SPECIFICATIONS AND STANDARDS.

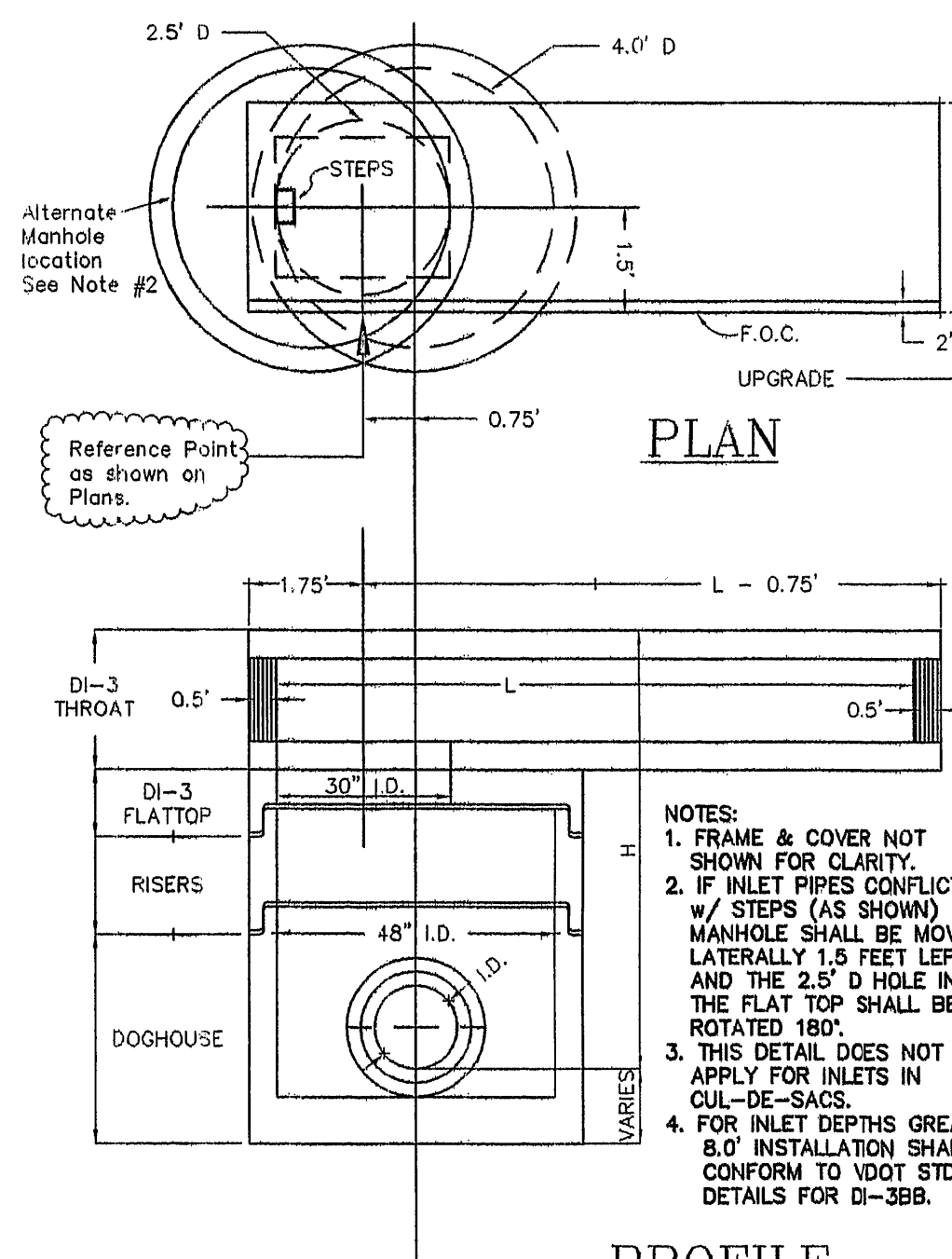


TYPICAL STREET SECTION

NO SCALE

PAVEMENT SPECIFICATIONS:				
STREET NAME	FROM STATION TO STATION	CATEGORY	PAVEMENT WIDTH	PAVEMENT SPECIFICATION
WATERSIDE DRIVE	STA 90+00.00 TO CUL DE SAC	I	28'	220 PSY ASPH. CONCRETE (2"), TYPE SM-9.5A 8" AGGREGATE BASE-21B, -- SEE NOTE BELOW

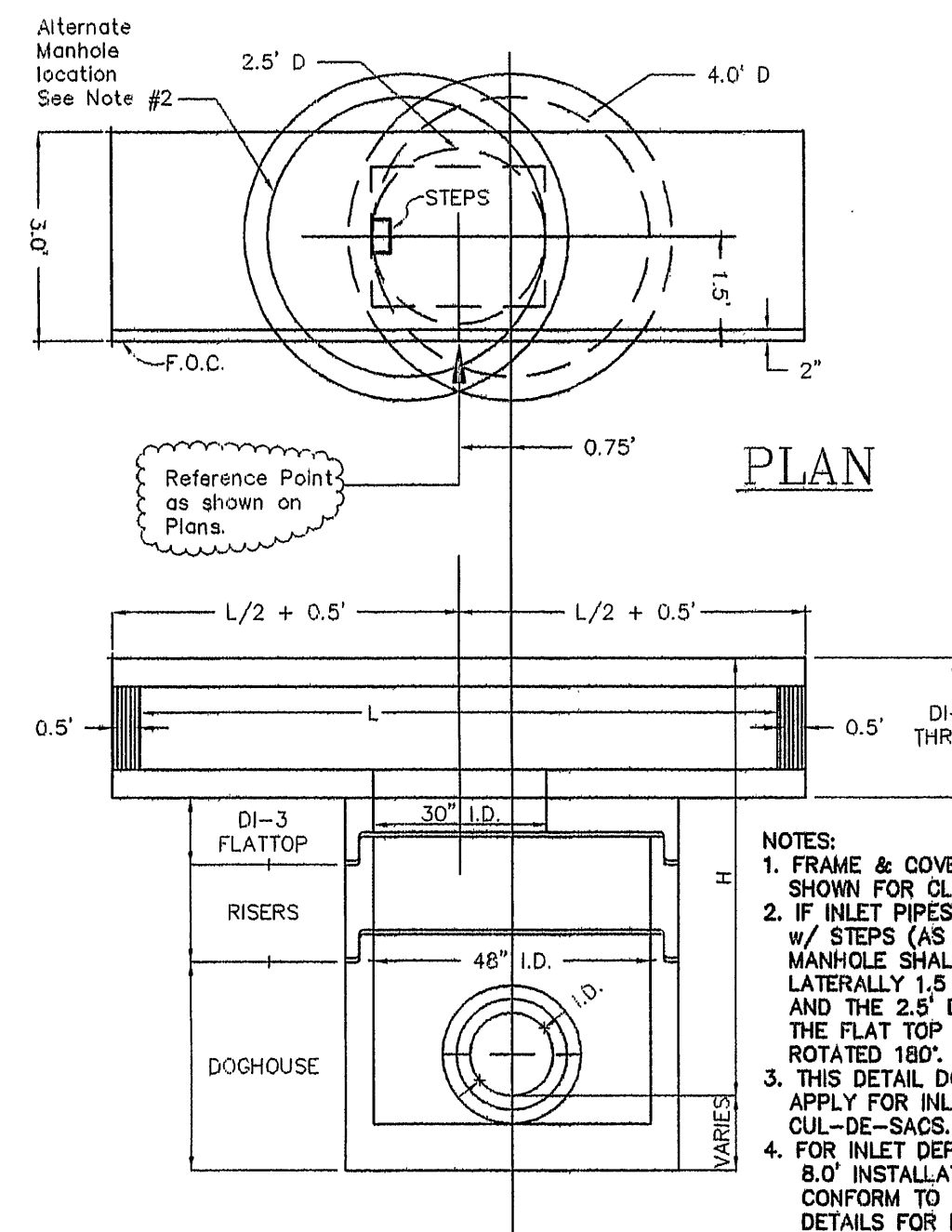
NOTE: THE SIZE 21B AGGREGATE SHALL BE PRIMED WITH APPROXIMATELY 0.35 GAL/S.Y. OF CRS-2 ASPHALT AND COVERED WITH 16 TO 18 LBS/S.Y. OF SIZE 8-P AGGREGATE BEFORE PLACING OF THE SM-9.5A.



PROFILE

LOCATION DETAIL FOR DI-3B (PRECAST)

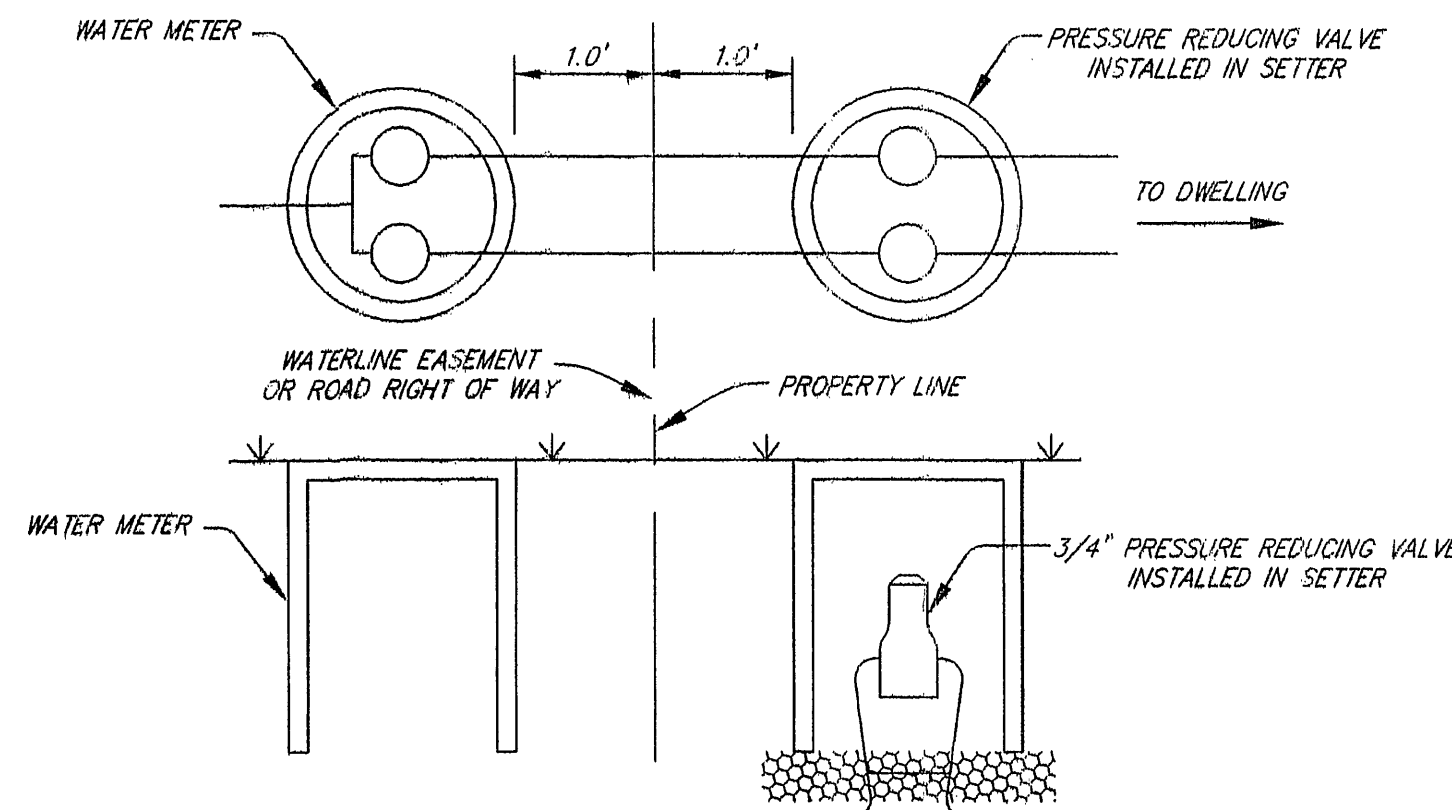
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PROFILE

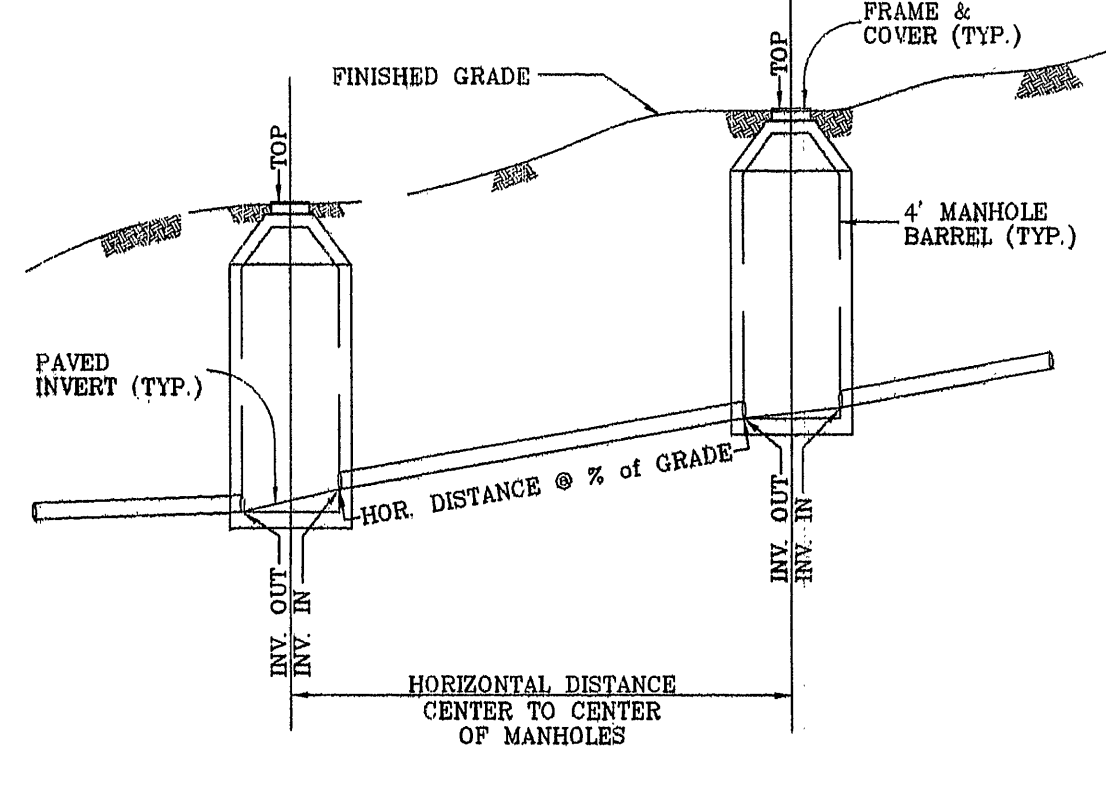
LOCATION DETAIL FOR DI-3A AND DI-3C (PRECAST)

NO SCALE



WATER METER AND PRESSURE REDUCING VALVE DETAIL

NO SCALE



SANITARY SEWER HORIZONTAL AND SLOPE DISTANCE DETAIL

NO SCALE

SITE AND ZONING TABULATIONS

CURRENT ZONING: PLANNED RESIDENTIAL DEVELOPMENT (CLUSTER DEVELOPMENT AREA - CU)
PROPOSED USE: SINGLE FAMILY DETACHED DWELLINGS
SITE ACREAGE: 4.28 ACRES
PROPOSED NUMBER OF LOTS: 15
MINIMUM LOT AREA REQUIRED: 2,500 S.F.
MINIMUM LOT AREA PROPOSED: 8,248 S.F.
MINIMUM FRONTAGE REQUIRED: 28'
MINIMUM REQUIRED SETBACKS:
FRONT: 15'
REAR: 20'
SIDE YARD: 10'
SIDE YARD ON A CORNER LOT: 15'
MAXIMUM HEIGHT ALLOWED: 45' (PRINCIPAL STRUCTURE)
MAXIMUM BUILDING COVERAGE: 70%
MAXIMUM LOT COVERAGE: 80%

GENERAL NOTES

- THE PROPERTY SHOWN ON THESE PLANS IS LOCATED AT ROANOKE COUNTY TAX ASSESSMENT MAP 96.02-01-46.04.
- OWNER/DEVELOPER: PALM LAND COMPANY, L.C.
P.O. BOX 8614
ROANOKE, VA 24014
- THE BOUNDARY IS THE DIRECT RESULT OF A FIELD SURVEY BY LUMSDEN ASSOCIATES, P.C. IN 2004.
- TOPOGRAPHY DATA BASED ON AN FIELD SURVEY PREPARED BY LUMSDEN ASSOCIATES, P.C.
- NO TITLE REPORT WAS FURNISHED FOR THIS PROPERTY.
- THE DEVELOPMENT SHOWN ON THESE PLANS SHALL BE SERVED BY COUNTY WATER AND SEWER.
- THE PROPERTY ON THESE PLANS SHALL BE ACCESSED BY PUBLIC ROADS.
- ALL EXTERIOR LIGHTS SHALL BE DESIGNED, ARRANGED, AND LOCATED SO AS NOT TO DIRECT GLARE ON ADJACENT PROPERTIES OR RIGHT OF WAYS. THE MAXIMUM LIGHTING DENSITY AT ADJOINING PROPERTIES OR RIGHT OF WAYS SHALL NOT EXCEED 0.5 FOOT CANDLES.
- A SEPARATE SIGN PERMIT WILL BE REQUIRED FOR ANY PROPOSED SITE SIGNAGE. A MINIMUM SETBACK OF 15' OFF THE RIGHT OF WAY IS REQUIRED FOR ANY SITE SIGN.
- WATER METER SIZE SHALL BE 5/8" FOR ALL LOTS.
- ALL WATER LINE SERVICE CONNECTIONS REQUIRE PRESSURE REDUCING VALVES.
- STORMWATER MANAGEMENT COMPLIANCE FOR THIS SITE IS ACHIEVED THROUGH THE EXISTING FACILITY DESIGNED AND CONSTRUCTED WITH "THE GROVES", SEC. 1.

CONSTRUCTION NOTES

- ALL WATER AND SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE WESTERN VIRGINIA WATER AUTHORITY'S WATER AND SANITARY SEWER REGULATIONS.
- ALL CONNECTIONS TO EXISTING WATER FACILITIES SHALL BE PERFORMED BY THE ROANOKE COUNTY UTILITY DEPARTMENT. ALL CONNECTIONS TO EXISTING SANITARY SEWER FACILITIES SHALL BE PERFORMED BY THE CONTRACTOR WITH A WESTERN VIRGINIA WATER AUTHORITY INSPECTOR ON SITE. COORDINATE ALL WORK WITH THE WESTERN VIRGINIA WATER AUTHORITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
- NO SUBSOIL INVESTIGATIONS HAVE BEEN FURNISHED TO THE DESIGNING ENGINEER. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION.
- SEE VDOT ROAD AND BRIDGE STANDARDS FOR CONCRETE CURB AND STORM DRAINAGE DETAILS.
- THE CONTRACTOR AND OR OWNER SHALL PROVIDE A STORAGE CONTAINER FOR TEMPORARY STORAGE AND DISPOSAL OF LAND CLEARANCE DEBRIS AND BUILDING MATERIALS. ON-SITE BURIAL OF MATERIAL SHALL NOT BE PERMITTED.
- FOR EXISTING AND PROPOSED EASEMENT INFORMATION, SEE THE RECORD PLAT.
- CONNECTION TO EXISTING SANITARY SEWER MANHOLE SHALL BE DONE BY ROANOKE COUNTY UTILITY DEPARTMENT. CONTRACTOR SHALL EXCAVATE TO THE BASE OF THE EXISTING SANITARY SEWER MANHOLES, SHORE PER OSHA REQUIREMENTS, AND PROVIDE CENTERMARKS ON THE SIDES OF THE MANHOLES FOR TAPPING.
- ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT OR FACE OF CURB UNLESS OTHERWISE NOTED.

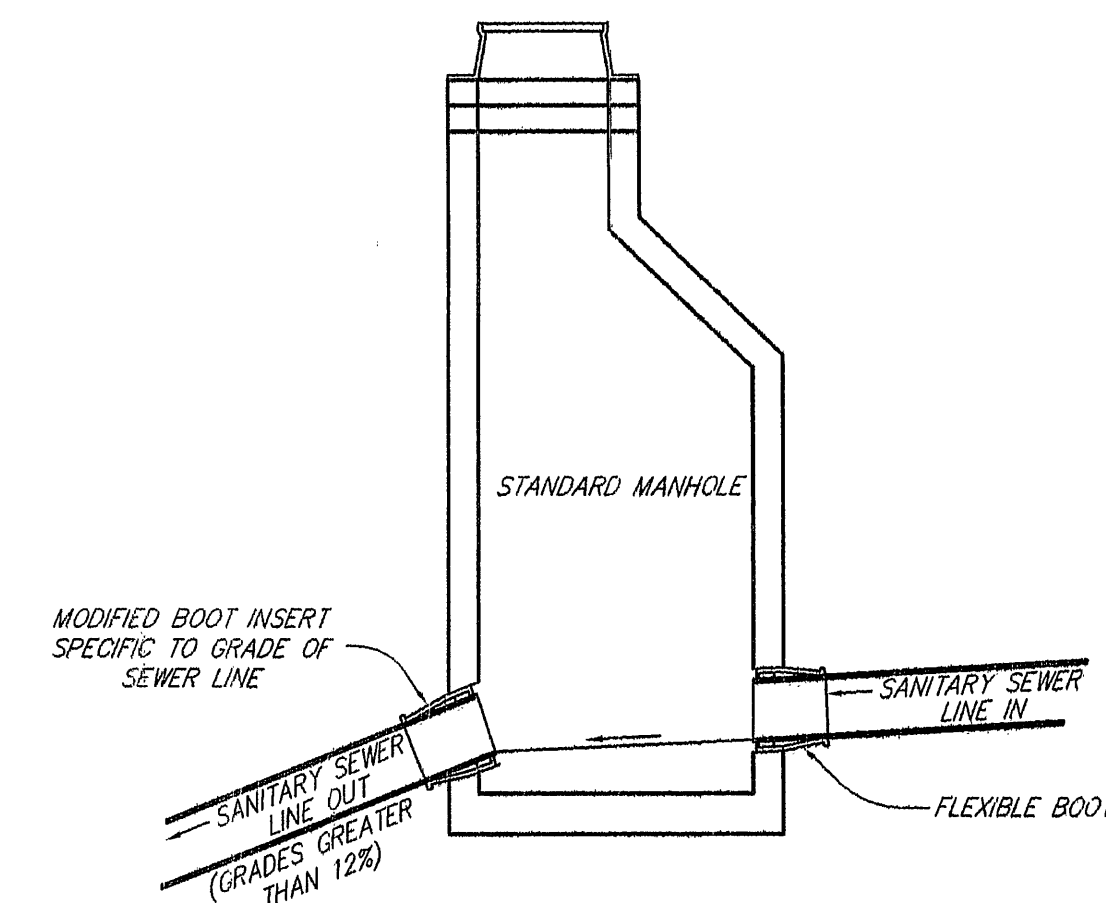
GRADING NOTES

- AREAS TO BE GRADED SHALL BE CLEARED OF ALL VEGETATION, STRUCTURES, AND OTHER PHYSICAL FEATURES IN PREPARATION OF GRADING.
- TOPSOIL SHALL BE REMOVED FROM THE CLEARED AREA AND STOCKPILED FOR FUTURE USE.
- FILL MATERIAL SHALL BE FREE FROM ORGANIC MATTER AND ROCKS LARGER THAN 6 INCHES IN DIAMETER. FILL MATERIAL SHALL BE PLACED AND COMPACTED IN 8 INCH LIFTS TO 95% MINIMUM DENSITY, STANDARD PROCTOR.

DEVELOPMENT SUMMARY

SECTION	AREA	LOTS
SECTION 1	7.88 AC	22
SECTION 2	5.16 AC	20
SECTION 3	7.80 AC	19
SECTION 4	4.93 AC	17
SECTION 5	8.42 AC	15
SECTION 6	5.60 AC	17
SECTION 7	3.35 AC	12
SECTION 8	16.82 AC	31
SECTION 9	6.73 AC	20
SECTION 11	4.28 AC	15
TOTALS	71.05 AC	187

DENSITY FOR SECTION 11 - 3.05 LOTS/AC
AVERAGE DENSITY, SECTION 1 THROUGH SECTION 9 & 11 - 2.67 LOTS/AC
CURRENT AVERAGE DENSITY FOR TOTAL SITE (69.7 AC) - 2.32 LOTS/AC
MAXIMUM DENSITY ALLOWED FOR TOTAL SITE - 2.50 LOTS/AC



SEVERE GRADE MANHOLE CONSTRUCTION

WVWA ID# 8GTD06

LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

SECTION No. 11
THE GROVES
PREPARED FOR
PALM LAND COMPANY, L.C.
GAYE SPRING MAGISTERIAL DISTRICT
ROANOKE COUNTY, VIRGINIA

PHONE: (540) 774-4111
FAX: (540) 772-9445
E-MAIL: MAIL@LUMSDENPC.COM

4664 BRAMBLETON AVENUE
P.O. BOX 20669
ROANOKE, VIRGINIA 24018

NOTES & DETAILS

COMMONWEALTH OF VIRGINIA
THOMAS C. DALE
No. 033002
7/28/04
PROFESSIONAL ENGINEER

REVISIONS
DATE
NO.
1
2
3
4
5

DATE: JULY 28, 2004
SCALE: AS SHOWN
COMMISSION NO.: 03-352
CADD FILE: D:\031\033519\ENR\033535\COMP
SHEET 4 OF 9