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Blacksburg, VA
Greensboro, NC

Anderson
and
Associates, Inc.
Engineers
Surveyors
Planners

SUPERVISED BY R. WORLEY, T. STOVE
DESIGNED BY A. D. PYLES CONSULTING ENGINEERS
COORDINATED BY J. MARSTON

PLAN	DATE	BY	REVISION	REVISION	REVISION
NOTE BOOK					
NO.					

7 AUG 92

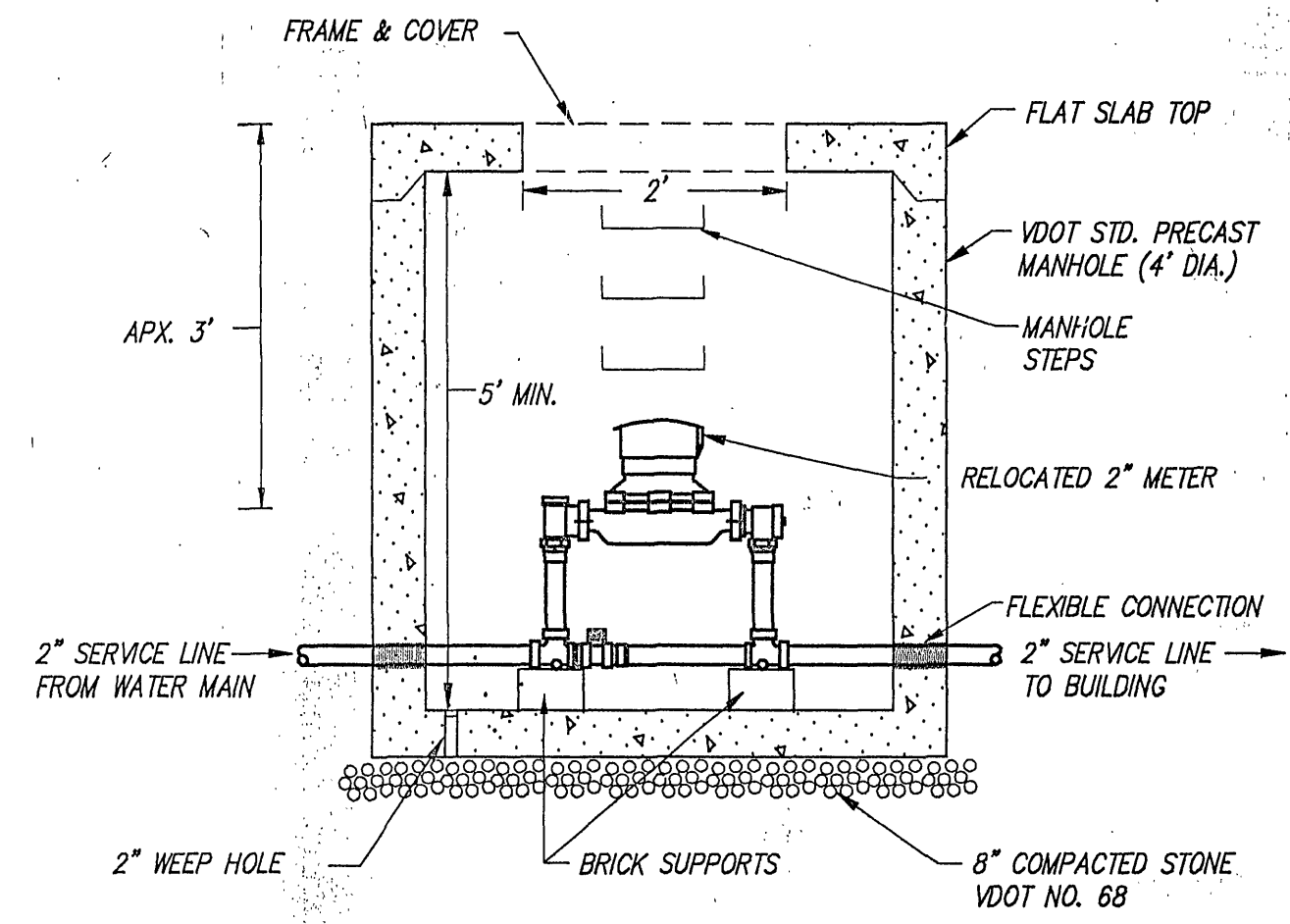
UTILITY ADJUSTMENT QUANTITIES & NOTES

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

THIS SHEET FOR UTILITY RELOCATION/ADJUSTMENT ONLY

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
	3	VA.			U000-128-V18,PE-101 U000-128-V18,RW-201 U000-128-V18,C-501 U000-128-V18,B-611	9(10)

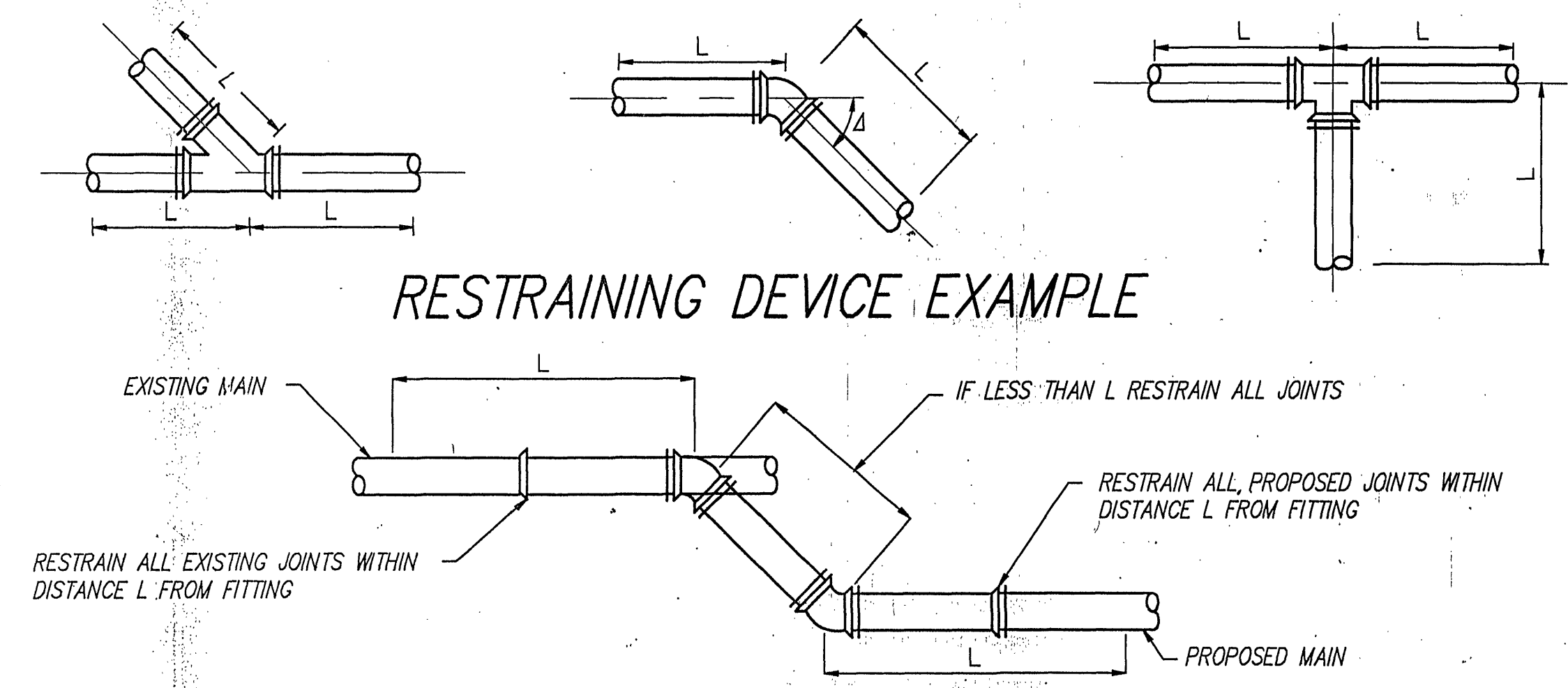
WATER METER MANHOLE DETAIL



NOTES

- MANHOLE FRAME & COVER SHALL BE IN ACCORDANCE WITH VDOT STANDARD F&C-1.
- FLAT SLAB TOP SHALL BE IN ACCORDANCE WITH VDOT STANDARD T-MH-2.
- PRECAST MANHOLE SHALL BE IN ACCORDANCE WITH VDOT STANDARD SMH-1.
- MANHOLE STEPS SHALL BE IN ACCORDANCE WITH VDOT STANDARD ST-1.
- 2" SERVICE LINE SHALL BE IN ACCORDANCE WITH MATERIAL NOTE 1 ON SHEET (1).
- 2" WATER METER SHALL BE RELOCATED FROM EXISTING WATER METER MANHOLE LOCATED AT SHENANDOAH AVENUE STATION 17+38.18 RT. TO STATION 17+55.20 RT.
- WATER METER MANHOLE, INCLUDING RELOCATION OF THE EXISTING 2" WATER METER, WILL BE MEASURED IN UNITS OF EACH, COMPLETE IN PLACE AND WILL BE PAID FOR AT THE CONTRACT PRICE PER EACH. THIS PRICE SHALL INCLUDE EXCAVATION, GRADING, RESTORING PROPERTY, AND COMPLETE INSTALLATION OF THE FOLLOWING ESTIMATED MATERIALS:
- APPROXIMATE QUANTITIES**
- 6 L.F. SANITARY SEWER MANHOLE
 - MANHOLE FRAME & COVER
 - 10 L.F. 2" WATER SERVICE LINE
 - 2 TONS NO. 68 STONE FOR MANHOLE BEDDING
 - RELOCATE WATER METER
 - 5 MANHOLE STEPS

MECHANICAL RESTRAINING DEVICE DETAIL AND NOTES

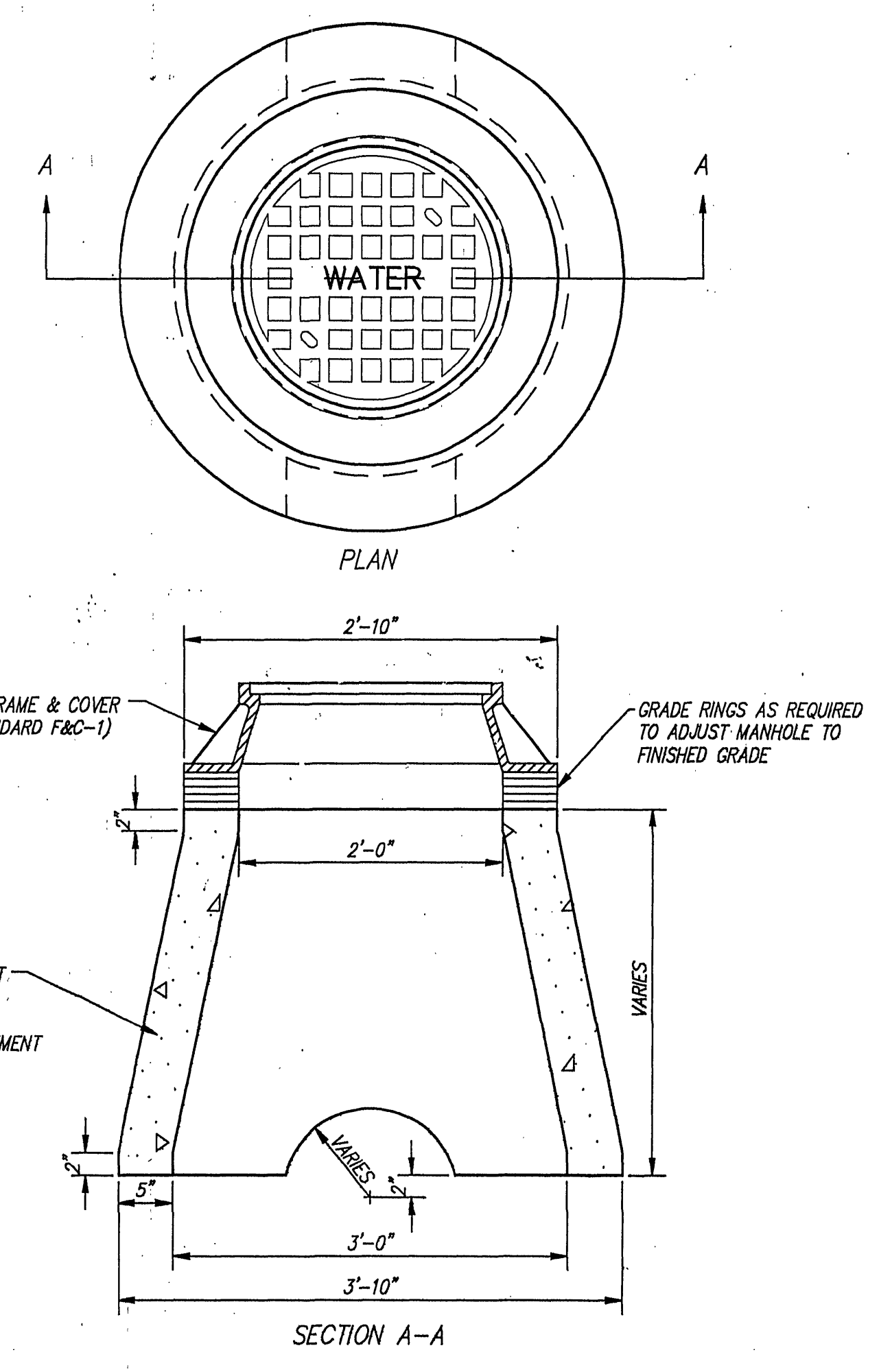


RESTRAINING DEVICE EXAMPLE

- NOTES:
- RESTRAINED LENGTH BASED ON INTERNAL PRESSURE OF 150 PSI AND 3' OF COVER.
 - VALVES, TEES, AND PLUGS SHALL BE RESTRAINED BASED ON RESTRAINED LENGTH FOR 90° BENDS UNLESS OTHERWISE NOTED.
 - EXISTING PIPE ADJACENT TO PROPOSED BENDS, WYES, VALVES, TEES, AND PLUGS SHALL BE UNCOVERED AND THE JOINTS RESTRAINED FOR THE LENGTHS INDICATED WITH A MECHANICAL JOINT RESTRAINING MECHANISM WHICH, WHEN ACTUATED, IMPARTS MULTIPLE WEDGING ACTION AGAINST THE PIPE.

PIPE SIZE	MINIMUM LENGTH OF PIPE WITH RESTRAINED JOINTS (L)							
	$\Delta=90^\circ$		$\Delta=45^\circ$		$\Delta=22\frac{1}{2}^\circ$		$\Delta=11\frac{1}{4}^\circ$	
	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.	HORIZ.	VERT.
4"	20	35	8	14	4	7	2	3
6"	29	49	12	20	6	10	3	5
8"	38	64	16	27	8	13	4	6
10"	45	77	19	32	9	15	4	8
12"	53	90	22	37	11	18	5	9

PRECAST VALVE VAULT DETAIL



PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	U000-128-V18	60 8 3	9(10)

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