

**CASING PROFILE**

**CASING SECTION**

**MINIMUM STEEL CASING SIZES\***

NOMINAL DIAMETER	PIPE THICKNESS	CASING SPACERS		STEEL CASING	
		SPACER WIDTH	SPACER THICKNESS	MINIMUM WALL THICKNESS	MINIMUM WALL THICKNESS
4	0.1875	3.0	0.1875	11.5	11.5
6	0.250	4.5	0.250	13.5	13.5
8	0.3125	6.0	0.3125	15.5	15.5
10	0.375	7.5	0.375	17.5	17.5
12	0.4375	9.0	0.4375	19.5	19.5
14	0.500	10.5	0.500	21.5	21.5
16	0.5625	12.0	0.5625	23.5	23.5
18	0.625	13.5	0.625	25.5	25.5
20	0.6875	15.0	0.6875	27.5	27.5
24	0.84375	18.0	0.84375	33.5	33.5
30	1.0625	22.5	1.0625	41.5	41.5
36	1.28125	27.0	1.28125	49.5	49.5
42	1.500	31.5	1.500	57.5	57.5

**NOTES:**

- CASING SPACERS SHALL:
  - BE MADE FROM 1-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS
  - HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER
  - HAVE 1.5" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER FROM THE CASING
- SPACERS TO BE MANUFACTURED BY CASCADE WATERWORKS MFG. CO., (P/S) PIPELINE SEAL AND INSULATOR, INC. OR EQUAL
- 4" THRU 12" DIAMETER PIPELINE SHALL USE 8" WIDE BANDS
- CENTERED RESTRAINED CASING SPACERS SHALL BE SPACED AT A MAXIMUM OF TEN FEET APART WITH A MINIMUM OF TWO SPACERS PER JOINT OF PIPE

**MISCELLANEOUS DETAILS**

**ENCASEMENT W/ STAINLESS STEEL SPACERS**

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**THRUST BLOCK NOTES**

- KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.
- CONCRETE THRUST BLOCKING SHALL BE POURER AGAINST UNDISTURBED EARTH.
- FRIGID WOLVES AND BEARING AREAS AT JOINTS SHALL BE AS INDICATED IN TABLE BELOW. ADJUST, IF NECESSARY, TO CONFORM TO THE TEST PRESSURES AND ALLOWABLE SOIL BEARING STRENGTHS STATED IN THE SPECIFICATIONS.
- THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD INSTANTANEOUS THRUSTS ARE BASED ON A TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE OF 150 LB/CU FT. TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME = (TEST PRESS./150) \* 4 (CONST. VALUE)
- BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON A TEST PRESSURE OF 150 PSIG AND AN ALLOWABLE SOIL BEARING STRENGTH OF 2000 LBS/SQ. FT. TO COMPUTE BEARING AREAS FOR DIFFERENT TEST PRESSURES AND SOIL BEARING STRENGTHS, MULTIPLY TABLE VALUES BY THE FACTOR (1.0) \* (TEST PRESS./150) \* (2000/SOIL STRENGTH)
- THRUST BLOCKS FOR VERTICAL BENDS HAVING DOWNWARD INSTANTANEOUS THRUSTS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.
- WHERE: P = ALLOWED TEST PRESSURE, PSIG; S = ALLOWABLE SOIL BEARING STRENGTH, PSF
- THRUST BLOCKS FOR VERTICAL BENDS HAVING DOWNWARD INSTANTANEOUS THRUSTS SHALL BE THE SAME AS FOR HORIZONTAL BENDS.
- BEARING AREAS OF THRUST BLOCKS SHALL NOT BE LESS THAN 1.0 SQ. FT.
- WHERE CONSERVATIVE BEARING AREAS, VOLUMES, AND SPECIAL BEARING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER THIS STANDARD.
- BEARING AREAS OF THRUST BLOCKS SHALL NOT BE LESS THAN 1.0 SQ. FT.
- VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 8 CU YD. SHALL REQUIRE SPECIAL BEARING DETAILS.

**TYPICAL THRUST BLOCK CONFIGURATIONS**

**BEARING AREA OF THRUST BLOCKS IN SQ. FT. (HORIZONTAL BENDS)**

FITTING SIZE	TEE, WYE, FLUG OR CAP	90° BEND PLUGGED CROSS		TEE PLUGGED CROSS		BEND ANGLE	
		A <sub>1</sub>	A <sub>2</sub>	A <sub>1</sub>	A <sub>2</sub>	45°	20°/2'
4	1.0	1.4	1.9	1.4	1.0	1.0	1.1/2"
6	2.1	3.0	4.3	3.0	1.6	1.0	1.0
8	3.0	5.1	7.2	5.1	2.9	1.5	1.0
10	3.9	8.4	11.8	8.4	4.8	2.4	1.2
12	4.8	12.0	17.0	12.0	6.8	3.4	1.7
14	5.7	16.3	23.0	16.3	9.9	4.0	2.3
16	6.6	21.3	30.0	21.3	13.6	5.0	3.0
18	7.5	27.0	38.0	27.0	18.6	7.0	3.8
20	8.4	33.3	47.0	33.3	24.1	9.0	4.7
24	12.0	45.0	63.0	45.0	32.2	12.0	6.8

**MISCELLANEOUS DETAILS**

**THRUST BLOCK SIZING DETAIL**

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**PROFILE**

**PLAN**

**NOTES:**

- SANITARY SEWER MAINS ARE PREFERRED IN CENTER (10') OF THE RIGHT OF WAY.
- WATER MAINS ARE PREFERRED ON SOUTH AND EAST SIDES OF ROW WITHIN THE LIMITS OF THE PAVED STREET.
- ALL TRENCHES WITHIN STREET BOUNDARIES (UNDER ASPHALT) SHALL BE COMPACTED TO CITY OF MONTGOMERY STANDARD SPECIFICATIONS.
- MAIN LINE WATER VALVES AT INTERSECTIONS SHALL BE LOCATED WITHIN THE LIMITS OF THE PAVED STREET.
- ELECTRIC IRON SEWER LATERALS SHALL BE REQUIRED BEARINGS OR DIRECTED BY WATER WORKS INSPECTOR.
- WATER METERS SHALL BE INSTALLED AS SHOWN.
- FIRE HYDRANTS SHOULD BE SPACED AT INTERVALS WITH STEEL LATERALS OR MEDIAN SEPARATION UNITS.
- SANITARY SEWER LATERALS SHALL END SUBJECT TO BEYOND LIMITS OF UTILITY EASEMENTS IN BOTH SIDES OF STREET.

**MISCELLANEOUS DETAILS**

**TYPICAL STREET LAYOUT**

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**HYDRANT SECTION VIEW**

**HYDRANT PLAN VIEW**

**VALVE BOX SECTION VIEW**

**VALVE BOX PLAN VIEW**

**WATER DISTRIBUTION DETAILS**

**LOOKED TEE FIRE HYDRANT SET**

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**SHORT SIDE PLAN VIEW**

**LONG SIDE PLAN VIEW**

**SIDE VIEW**

**END VIEW**

**NOTES:**

- TOP OF ALL METER BOXES SHALL BE FLUSH WITH THE FINAL GRADE.
- BACKFLOW DEVICE SHALL BE INSTALLED WITH CONCRETE METER BOX SHALL BE LOCATED ON PROPERTY DIRECTLY BEHIND THE METER.
- ALL METER AND BACKFLOW DEVICE ASSEMBLIES SHALL BE CENTERED AND FACED UPRIGHT UNDER CAST IRON METER LID FOR EASE OF SERVICING.
- CAUTION MUST BE EXERCISED WHEN SETTING THE BOTTOM SECTION OF A METER BOX TO ASSURE THAT THE COPPER LATERAL HAS SUFFICIENT CLEARANCE. THE WEIGHT OF THE METER BOX MUST NOT BE RESTING ON THE SERVICE PIPING.

**WATER DISTRIBUTION DETAILS**

**WATER METER AND BACKFLOW PLACEMENT**

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**PLAN VIEW**

**SIDE VIEW**

**NOTES:**

- ALL 1/2" OR 3/4" WATER LATERALS SHALL BE INSTALLED WITH LINE OF A CEMENT LINED, DUCTILE IRON TAPPED TEE. TAPPED TEE TO HAVE ANWACD THREADS AND SIZED FROM FACTORY TO MATCH WATER LATERAL. THE USE OF NPT THREADS OR SLUSHINGS WILL NOT BE ALLOWED.
- INSTALL QUARTER BEND AT COPORATION STOP IN LINE WITH WATER MAIN. BEND WATER LATERAL IN SHAPE OF "QUESTION MARK" AS IT IS LEAVING QUARTER BEND TOWARD CURB STOP. THIS WILL ALLOW SLACK IN LATERAL SHOULD IT BE INADVERTENTLY PULLED AFTER INSTALLATION.
- TOP OF THE METER BOX SHALL BE FLUSH WITH THE FINAL GRADE.
- WHEEL VALVE SHALL BE LOCATED WITHIN THE METER BOX.
  - 1" FROM INSIDE METER BOX SURFACE TO QUARTER BEND AT WHEEL VALVE.
  - 3" FROM TOP OF METER BOX TO CENTER LINE OF THE WHEEL VALVE.
- CAUTION MUST BE EXERCISED WHEN SETTING THE BOTTOM SECTION OF A METER BOX TO ASSURE THAT THE SERVICE PIPING HAS CLEARANCE IN THE HOTCH AREA.
- THE WEIGHT OF THE METER BOX MUST NOT BE ON THE SERVICE PIPING.
- INSTALL ELECTRONIC LOCATOR TO MARK LOCATION OF CURB STOP.

**WATER DISTRIBUTION DETAILS**

**TAPPED TEE (1 1/2" AND 2") METER SET (TYPICAL)**

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ENGINEER

**FORESITE**  
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DEVELOPER

**LifeStorage**

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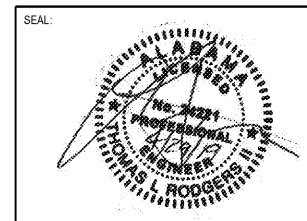
CONTACT: ROBERT FISHER

PROJECT:

**LifeStorage**

**LIFE STORAGE #357**

115 SOUTH ARROWHEAD DRIVE  
MONTGOMERY, AL



REVISIONS	DATE
SD PLANS	04/22/2019

PROJECT MANAGER: TLR  
DRAWING BY: JFG  
JURISDICTION: MONTGOMERY, AL  
DATE: 04/29/2019  
SCALE: AS SHOWN  
TITLE:

CITY OF MONTGOMERY  
UTILITY DETAILS

SHEET NUMBER: **C-8**

COMMENTS: RELEASED FOR CONSTRUCTION

JOB/FILE NUMBER: 1208.002