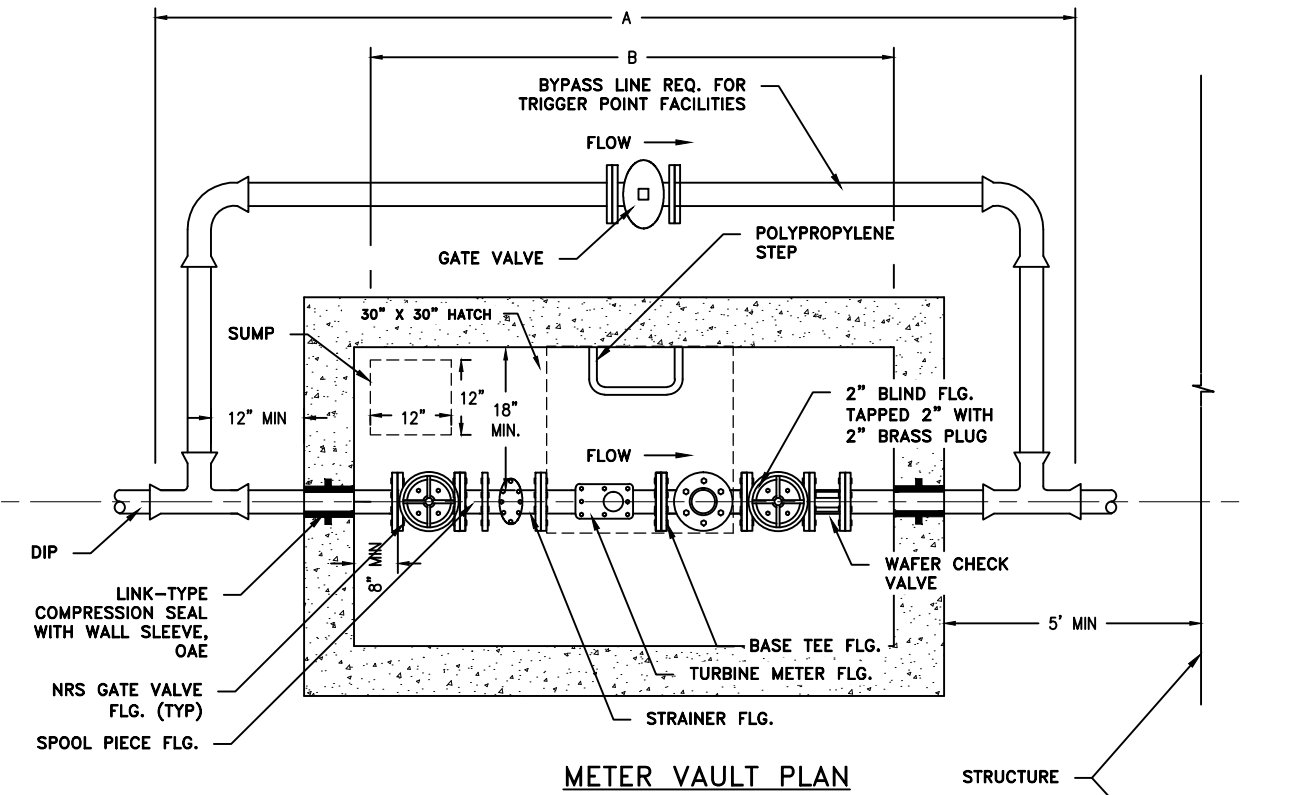


**ACCESS HATCH NOTES:**

1. PROVIDE AN H1W SERIES (SINGLE LEAF) ACCESS FRAME AND COVER, AS MANUFACTURED BY HALLIDAY PRODUCTS, OR APPROVED EQUAL.
2. FRAME AND COVER SHALL HAVE A 1/4" THICK, ONE-PIECE, MILL FINISH, EXTRUDED ALUMINUM CHANNEL FRAME, INCORPORATING A CONTINUOUS CONCRETE ANCHOR. A 1-1/2" DRAINAGE COUPLING SHALL BE LOCATED IN THE FRONT LEFT CORNER OF THE CHANNEL FRAME. THE INSIDE OF THE FRAME SHALL HAVE A DOOR-SUPPORT LEDGE ON TWO (2) SIDES.
3. FRAME, SUPPORT ANGLES AND LEDGE SHALL BE SUPPORTED BY A FULL BED OF 4000 PSI CONCRETE.
4. THE DOOR PANEL SHALL BE 1/4" ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A LIVE LOAD OF 300 LBS/FT<sup>2</sup>.
5. DOOR SHALL OPEN TO 90-DEGREES AND AUTOMATICALLY LOCK WITH A STAINLESS STEEL HOLD OPEN ARM WITH ALUMINUM RELEASE HANDLE.
6. FOR EASE OF OPERATION, DOOR SHALL INCORPORATE ENCLOSED STAINLESS STEEL COMPRESSION SPRING ASSISTS. DOOR SHALL CLOSE FLUSH WITH THE FRAME.
7. HINGES AND ALL FASTENING HARDWARE SHALL BE STAINLESS STEEL.
8. UNIT SHALL LOCK WITH STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY AND HAVE A NON-CORROSIVE HANDLE.
9. UNIT SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND/OR WORKMANSHIP FOR A PERIOD OF 10 YEARS.

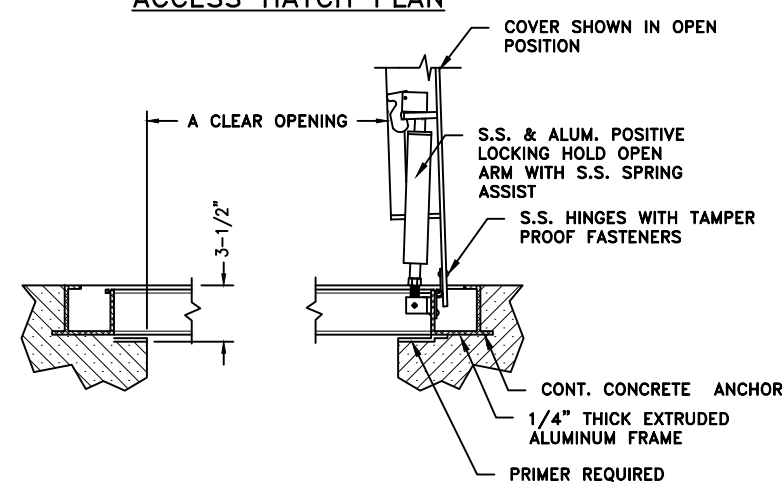
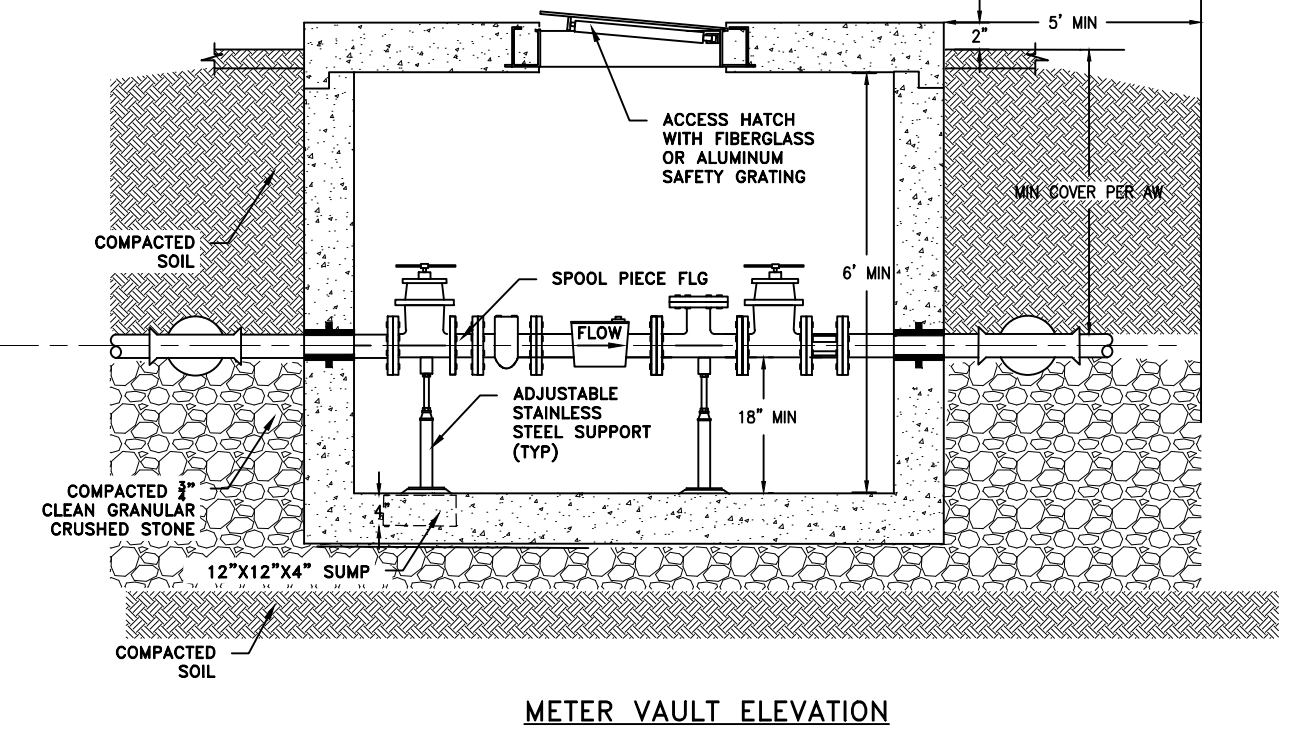
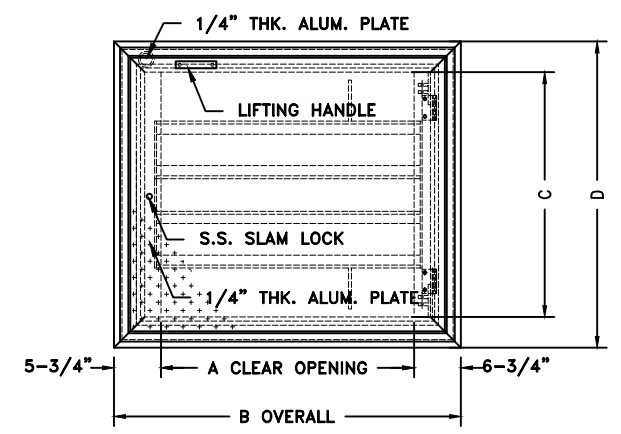
**CONCRETE STRUCTURE NOTES:**

1. PRECAST CONCRETE METER VAULT SHALL BE DESIGNED FOR THE FOLLOWING CONDITIONS STATED BELOW (1.1 THROUGH 1.5). SUBMIT CALCULATIONS TO AMERICAN WATER FOR REVIEW. ALL CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE CONSTRUCTION IS TO TAKE PLACE.
  - 1.1. STRUCTURE FILLED TO TOP WITH NO EXTERNAL SOIL PRESSURE.
  - 1.2. STRUCTURE EMPTY WITH SOIL BACKFILL TO FINISHED GRADE. ASSUME SOIL DRY DENSITY AT 95 LBS/C.F. ASSUME SOIL SATURATED TO FINISHED GRADE.
  - 1.3. STRUCTURE SHALL NOT FLOAT WITH SATURATED SOIL TO FINISHED GRADE. ASSUME SOIL LOAD ON CONCRETE LIP AT 32 LBS/C.F. A SAFETY FACTOR OF 1.5 SHALL BE PROVIDED IN THE FLOATATION CALCULATIONS.
  - 1.4. SOIL BEARING PRESSURE OF 2,500 PSF.
  - 1.5. EFFECTS OF ALL VERTICAL LOADS ANTICIPATED ON THE FINISHED STRUCTURE SHALL BE INCLUDED IN THE ANALYSIS AND DESIGN. LOADING FROM PIPING AND EQUIPMENT, HOIST, SUPERSTRUCTURES, SNOW, H-20 LIVE LOAD, AND ACTUAL DEPTH OF SOIL COVER SHALL BE INCLUDED.
2. PRECAST VAULT STEPS SHALL BE MADE OF POLYPROPYLENE ENCASED STEEL AS MANUFACTURED BY M.A. INDUSTRIES, OR APPROVED EQUAL, AND SHALL CONFORM TO ASTM C478.
3. THE EXTERIOR OF ALL PRECAST PRODUCTS SHALL BE COATED WITH TWO COATS OF BITUMASTIC PAINT, 16 TO 20 MIL DFT, TO FINISHED GRADE. USE PROMASTIC 900 COAL TAR WATERPROOFING MANUFACTURED BY PROGUARD COATING, INC., OR APPROVED EQUAL.
4. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH 2 COATS OF COAL TAR EPOXY OR ISOLATED FROM THE CONCRETE WITH 1/8" THICK NEOPRENE PADDING. ALL STEEL THRUST RESTRAINT ANGLES SHALL BE WIRE BRUSHED AND PAINTED WITH 2 COATS OF COAL TAR EPOXY.
5. ALL PIPE COUPLINGS IN CONTACT WITH SOIL SHALL BE WIRE BRUSHED AND PAINTED WITH 2 COATS OF COAL TAR EPOXY.
6. ALL CONCRETE ANCHORS AND HARDWARE SHALL BE STAINLESS STEEL.
7. PROVIDE COMMON KEYED LOCKS FOR ALL HATCHES, PANELS, DOORS AND QUICK DISCONNECT CAPS ASSOCIATED WITH THIS PROJECT.
8. ALL STRUCTURES SHALL BE WATERTIGHT AND SHALL BE TESTED FOR WATER TIGHTNESS BY FILLING PRECAST STRUCTURE WITH WATER PRIOR TO BACK FILLING. AN ACCEPTABLE LEAKAGE IS DEFINED AS A LOSS OF LESS THAN 1/2" IN 24 HOURS AND NO VISIBLE LEAKS. REPAIR OF LEAKS IS REQUIRED USING METHODS APPROVED BY AMERICAN WATER.
9. DUAL SEAL II GASKETS DISTRIBUTED BY DUAL SEAL CORP., OR APPROVED EQUAL, SHALL MEET ASTM C923 REQUIREMENTS.
10. JOINTS IN STRUCTURE SHALL BE SEALED WITH BITUMEN CONSEAL CS-102-B JOINT SEALANT MATERIAL MANUFACTURED BY CONCRETE SEALANTS, INC AND MEET FEDERAL SPECIFICATION SS-S-00210 (210-A).
11. CONCRETE STRUCTURES SHALL MEET THE REQUIREMENTS OF ASTM C478. DESIGN SHALL FOLLOW ACI 318-95 USING LOAD FACTOR DESIGN.
12. CONCRETE:  $f_c = 4,000$  PSI AT 28 DAYS. TYPE III CEMENT. AIR ENTRAINMENT 7% ± 2%. ASTM C33 NO. 57 OR NO. 67 COARSE AGGREGATE.
13. REINFORCEMENT: WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. BAR REINFORCEMENT SHALL BE GRADE 60, CONFORMING TO ASTM A615.
14. VERTICAL BAR REINFORCEMENT REQUIRED BETWEEN BASE SLAB AND FIRST VERTICAL SECTION OF STRUCTURE.



METER SIZE	MIN METER VAULT DIMENSIONS			
	A	B	C	D
3"	10'-6"	6'-0"	4'-0"	8"
4"	12'-0"	6'-6"	4'-0"	8"
6"	14'-0"	8'-0"	4'-0"	8"
8"	14'-6"	8'-6"	4'-0"	8"
10"	17'-0"	10'-6"	4'-0"	8"
>10"	CONTACT AMERICAN WATER			

MODEL NO.	ACCESS HATCH DIMENSIONS				UNIT WT.
	A	B	C	D	
H1W3030	30"	42-1/2"	30"	37-1/2"	104 LBS



**WATER METER NOTES:**

1. ALL PIPE AND FITTINGS TO BE THE SAME SIZE AS THE METER. REDUCERS ARE PERMITTED ONLY WITH PRIOR AUTHORIZATION FROM AMERICAN WATER.
2. ADJUST SPOOL PIECE TO PROVIDE MANUFACTURER RECOMMENDED STRAIGHT RUN OF PIPE UPSTREAM AND DOWNSTREAM OF THE METER, OR AS DIRECTED BY AW PROJECT MANAGER.
3. ALL PIPING BETWEEN THE TEES UPSTREAM AND DOWNSTREAM OF THE METER SHALL BE DUCTILE IRON PIPE FOR SERVICE LINES 3" AND GREATER.
4. NEWLY CONSTRUCTED WATER LINES SHALL BE DISINFECTED IN ACCORDANCE WITH AMERICAN WATER STANDARD SPECIFICATIONS.
5. TRACER WIRE REQUIRED FROM EXISTING WATER MAIN TO METER VAULT.
6. ROUND METER VAULTS MAY BE SUBSTITUTED AS AN ALTERNATE TO THE DEPICTED RECTANGULAR BOX. MINIMUM CLEARANCES SHALL STILL BE PROVIDED.
7. PROVIDE BYPASS LINE WHEN DIRECTED BY AW PROJECT MANAGER. THRUST BLOCKS REQUIRED ON ALL BYPASS LINE FITTINGS.
8. NON-RESIDENTIAL WATER METERS GREATER THAN 3" IN SIZE SHALL BE NEPTUNE HP TURBINE WATER METERS WITH NEPTUNE PIT STYLE R900I REGISTER COMPLETE WITH 6-FT OF ANTENNA WIRE.
9. FOR WATER METER APPLICATIONS LARGER THAN 10", DESIGN ENGINEER SHALL COORDINATE WITH AMERICAN WATER.
10. PROVIDE ADDITIONAL PIPE SUPPORTS AS REQUIRED.
11. INSTALL A FLANGED COUPLING ADAPTER IN THE VAULT.

REVISIONS REVISED 4/25/2011 REVISED 7/23/2012 6/13 - MSG EDITS 7/14 - MSG EDITS 1/16 - MSG EDITS		AMERICAN WATER MILITARY SERVICES GROUP CIVIL 3" AND LARGER METER VAULT DETAIL AMERICAN WATER MILITARY SERVICES GROUP CAMDEN, NJ 08102
AMERICAN WATER M.S.G. 1 WATER STREET CAMDEN, NJ 08102 DRAWN BY J. HIGGINS PROJECT ENG'R PDK APPROVED		