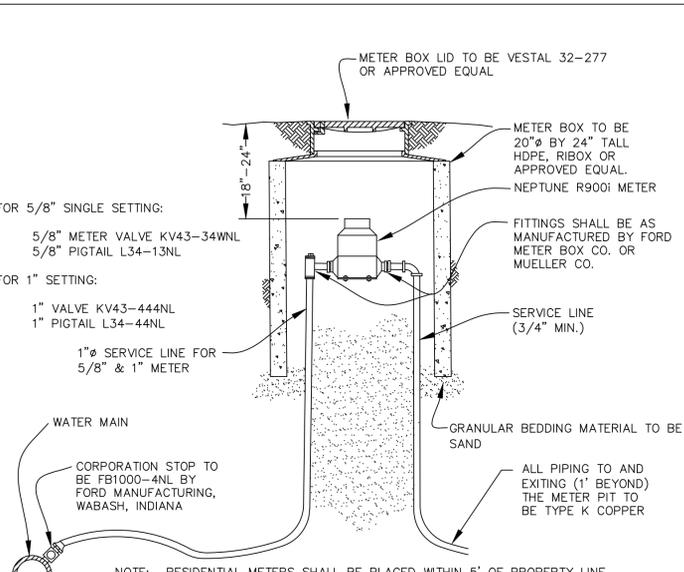


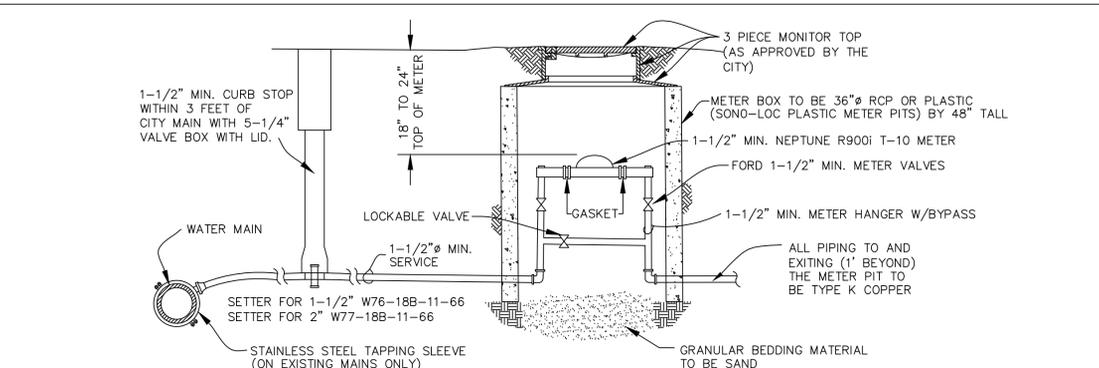
**WW WATER MAIN NOTES**

**01**

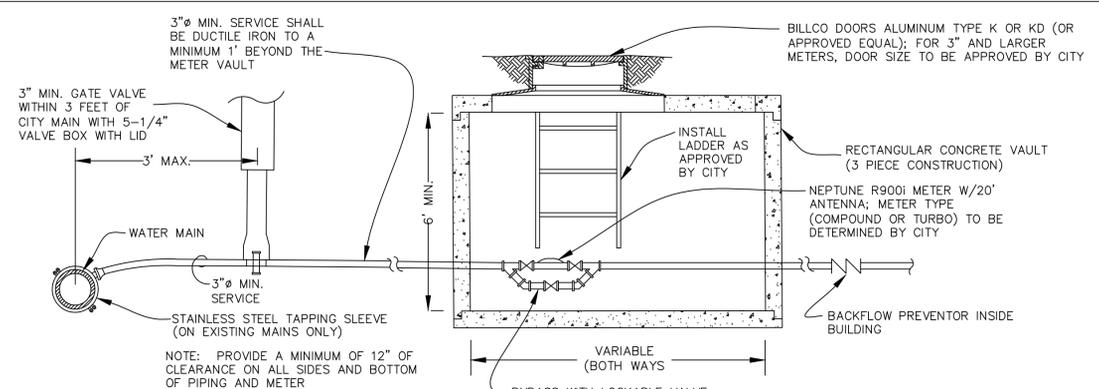
- ALL WATER MAINS SHALL BE CEMENT LINED DUCTILE IRON (D.I.) (PRESSURE CLASS 250 MIN., SLIP JOINT PIPE CONFORMING TO AWWA C-110, C-111, C-150 AND C-151 AS APPLICABLE AND NSF-61).
- ALL WATER MAINS TO HAVE POLY-WRAP.
- ALL FITTINGS TO BE DUCTILE IRON (D.I.) WITH MECHANICAL JOINTS (M.J.) CONFORMING TO AWWA C-110, C-111, C-153 AND NSF-61.
- ALL WATER SERVICE LINES SHALL BE 1" DIAMETER (MINIMUM) TYPE K COPPER TUBING TERMINATING WITH A CURB STOP. SERVICE LINE LOCATIONS SHALL BE MARKED BY STAMPING OR SAW CUTTING A "W" IN THE CURB. THE CURB STOP/WATER SERVICE SHOULD BE LOCATED ON P/L OR WITHIN 5'.
- THE MANUFACTURER'S ALLOWABLE PIPE DEFLECTION SHALL BE USED TO MAINTAIN THE VERTICAL AND HORIZONTAL ROUTE UNLESS OTHER FITTINGS (I.E. TEES AND ELBOWS) OR METHODS ARE SPECIFICALLY CALLED OUT, OR ARE DIRECTED BY THE CITY.
- MEG-A-LUG RETAINER GLANDS BY EBBA IRON, INC., EASTLAND, TEXAS SHALL BE USED ON EACH SIDE OF FITTINGS WHERE THE WATER MAIN CHANGES DIRECTION. ADDITIONAL SETS OF RETAINER GLANDS ARE TO BE PLACED AT PIPE LENGTHS ABOVE AND BELOW THE FITTINGS AS REQUIRED (SEE DETAIL 08 ON THIS SHEET). FIELD-LOK GASKETS OR ONE BOLT RESTRAINED FITTINGS CAN BE USED IN LIEU OF RETAINER GLANDS.
- THE MINIMUM SIZE REQUIREMENT FOR ALL COMMERCIAL WATER SERVICE LATERALS IS ONE (1) INCH (1" SERVICE LINE AND 1" METER).
- ALL INDUSTRIAL/COMMERCIAL DEVELOPMENTS SHALL HAVE A MINIMUM 6" X "MAIN SIZE" TEE INSTALLED TO EACH PROPOSED LOT FOR FUTURE FIRE/ DOMESTIC SERVICE.
- WATER MAINS SHALL HAVE A MINIMUM OF 5'-0" COVER. WATER MAIN COVER SHALL NOT EXCEED 11' WITHOUT CITY APPROVAL. ANY DEVIATIONS FROM PLAN GRADE MUST BE SHOWN ON THE "AS-BUILT" DRAWINGS.
- DEVELOPMENT OF PROPERTY MAY REQUIRE CONSTRUCTION OF ADDITIONAL FIRE HYDRANTS, GENERALLY AT 500' MINIMUM INTERVAL, AND AS REQUIRED BY THE LAFAYETTE FIRE DEPARTMENT.
- THE COMPLETED WATER MAIN SHALL BE SUBJECTED TO A 150 PSI HYDROSTATIC TEST AND SHALL BE DISINFECTED. ALL VALVES AND HYDRANTS MUST BE COMPLETELY OPENED AND CLOSED AND ALL CORPORATION STOPS AND SERVICE LINES IN PLACE PRIOR TO PERFORMING THE HYDROSTATIC TEST. THE HYDROSTATIC TEST SHALL BE OF AT LEAST 2-HR DURATION. TEST PRESSURE SHALL NOT VARY MORE THAN +/- 5 PSI FOR THE DURATION OF THE TEST. GAUGES FOR TESTING SHALL BE RATED FOR 200 PSI OR GREATER AND SHALL INDICATE PRESSURE IN 5 PSI (MAX) INCREMENTS. THE TEST WILL BE PERFORMED IN ACCORDANCE WITH CITY TESTING PROCEDURES, AND IN CONFORMANCE WITH AWWA C-600. ALL VALVES INCLUDING THE WATCH VALVES AT THE HYDRANTS SHALL BE OPEN DURING THE PRESSURE AND BACTERIA TESTS. HYDROSTATIC AND BACTERIAL TESTING SHALL BE COMPLETED WITHIN 30 DAYS AFTER THE COMPLETED WATER MAIN HAS BEEN CHARGED (FILLED). AFTER FINAL FLUSHING AND AGAIN AFTER 24 HOURS, SAMPLES SHALL BE COLLECTED FROM THE WATER MAIN, AND SHALL BE TESTED FOR BACTERIOLOGICAL QUALITY IN ACCORDANCE WITH THE STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER (AT AN APPROVED LABORATORY), AND SHALL SHOW THE ABSENCE OF COLIFORM ORGANISMS. THE CONTRACTOR MUST CONTACT THE WATER WORKS PUBLIC WORKS INSPECTOR TO DETERMINE THE LOCATION AND NUMBER OF BACTERIA SAMPLES TO BE TAKEN, AND TO SET A SAMPLING DATE AND TIME. THE ORIGINALS OF ALL TEST RESULTS AND CHAIN OF CUSTODY FORMS ARE TO BE SENT TO THE WATER WORKS WITHIN 5 DAYS OF TESTING WITH A COPY TO THE CITY ENGINEER'S OFFICE.
- VALVE OPENING DIRECTION SHALL BE CONSISTENT WITH THE EXISTING UTILITY SYSTEM. (LEFT HAND OPEN/COUNTER CLOCKWISE) VALVE LOCATIONS SHALL BE MARKED BY STAMPING OR CUTTING A "V" IN THE CURB, AND PLACING A PARTIALLY BURIED 2x4 AT THE LOCATION.
- TRENCHES UNDER PAVED AREAS (EXCLUDING SIDEWALKS) SHALL BE BACKFILLED WITH GRANULAR MATERIAL PER INDIANA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", LATEST EDITION, SECTION 211, AND COMPACTED IN LIFTS. GRANULAR MATERIAL TO EXTEND FIVE FEET BEYOND THE LIMITS OF THE PAVED AREA WITH A 1:1 SLOPE TO THE BOTTOM OF THE TRENCH. GRANULAR BEDDING IS REQUIRED UNDER ALL PAVED AREAS (EXCLUDING SIDEWALKS).
- 18" VERTICAL SEPARATION AND 10'-0" HORIZONTAL SEPARATION TO BE MAINTAINED BETWEEN WATER MAINS, HYDRANTS AND SEWERS (SANITARY AND STORM).
- TAPS AND FITTINGS ARE NOT TO BE INSTALLED UNDER PAVEMENTS OR IN EASEMENTS WITHOUT PRIOR APPROVAL OF THE CITY.
- WATER WORKS ONLY SHALL OPEN VALVES TO CHARGE NEW LINES.
- TAPPING OF A CITY MAIN CAN ONLY BE DONE UNDER SUPERVISION OF THE CITY. TAPPING SLEEVES AND VALVES FOR PRESSURE TAPS ON MAINS UP TO 24"Ø SHALL BE MUELLER 304 SS. TAPPING VALVES SHALL BE 2360 SERIES BY MUELLER OR THE AFC 2500. TEES FOR MAINS WILL BE CUT-IN ONLY WHEN THE NEW MAIN IS TO BE LARGER THAN OR OF EQUAL SIZE TO THE EXISTING MAIN OR WHEN A NEW VALVE IS TO BE INSTALLED ON THE EXISTING MAIN NEAR THE LOCATION OF THE NEW TEE. SIZE-ON-SIZE IS PERMISSIBLE FOR MAINS 12"Ø AND UNDER. STAINLESS STEEL SLEEVES SHALL MEET THE FOLLOWING REQUIREMENTS:
  - DUCTILE IRON OR STAINLESS STEEL FLANGE.
  - 304 STAINLESS STEEL FULL BODY WITH STAINLESS STEEL BOLTS AND NUTS.
- WATER TAP SERVICE TO BE PROVIDED FOR BOTH SHORT AND LONG SIDES.
- ALL FIRE PLANS, SPRINKLER PLANS SHALL BE SUBMITTED TO THE LAFAYETTE FIRE DEPARTMENT (LFD) FOR REVIEW AND APPROVAL.
- FLOW TEST DATA SHALL BE OBTAINED BY THE DEVELOPER/OWNER AT NO COST TO THE CITY AND UNDER THE SUPERVISION OF THE LFD AND WATER WORKS DEPT. TEST RESULTS AND LFD CERTIFICATION TO BE SUBMITTED TO THE CITY ENGINEER'S OFFICE.
- ALL DOMESTIC (LAWN) SPRINKLER SYSTEMS SHALL BE 1-INCH SERVICE.
- WHENEVER PROPRIETARY EQUIPMENT IS SPECIFIED, OR APPROVED EQUAL IMPLIED, ALL PROPOSALS FOR SUBSTITUTION SHALL BE SUBMITTED TO THE CITY IN WRITING FOR THEIR APPROVAL.
- CITY APPROVED BACKFLOW PREVENTER REQUIRED ON ALL IRRIGATION SERVICES.
- TRACER WIRE: REQUIRED FOR 12" OR GREATER TRANSMISSION MAINS (NOT REQUIRED FOR SUBDIVISIONS):
  - TRACER WIRE SHALL BE PLACED ON TOP OF THE WATER MAIN AS THE MAIN IS INSTALLED.
  - THE TRACER WIRE SHALL BE #10 - 600V SOLID COPPER WITH BLUE COLORED INSULATION BY SOUTHWIRE, OR APPROVED EQUAL.
  - ANY SPLICES THAT NEED TO BE MADE SHALL BE MADE USING WATER TIGHT WIRE NUTS AND TAPED TO INSURE A DRY AND TIGHT CONNECTION IS MAINTAINED.
  - THE LOCATED LOOP SHALL BE BROUGHT TO THE SURFACE BY MEANS OF A CURB BOX PLACED AT EACH VALVE AND FIRE HYDRANT, OR PER THE DIRECTION OF THE CITY WATER WORKS DEPT.
  - THE CURB BOX SHALL BE PLACED ON A 4"x8"x16" SOLID BLOCK TO ALLOW THE TRACER WIRE TO BE TURNED UP WITHOUT THE CHANCE OF DAMAGE TO WIRE. THERE SHALL BE A SIGNIFICANT AMOUNT OF WIRE LEFT AT EACH LOCATION SO THAT THE UTILITY LOCATER CAN, WITH EASE, ATTACH LOCATE EQUIPMENT.
- METER TO BE SUPPLIED BY OWNER EXCEPT FOR SINGLE-FAMILY DOMESTIC USES.
- IN SUBDIVISIONS WITH PHASED CONSTRUCTION, WATER MAINS ARE TO BE TERMINATED WITH A FIRE HYDRANT AND A LINE VALVE THE SAME SIZE AS THE MAIN WHEN THE MAIN IS TO BE EXTENDED IN THE FUTURE. IF NOT REQUIRED AT THE TERMINATION POINT DURING THE FUTURE EXTENSION, THE FIRE HYDRANT MAY BE MOVED TO AN APPROVED LOCATION.



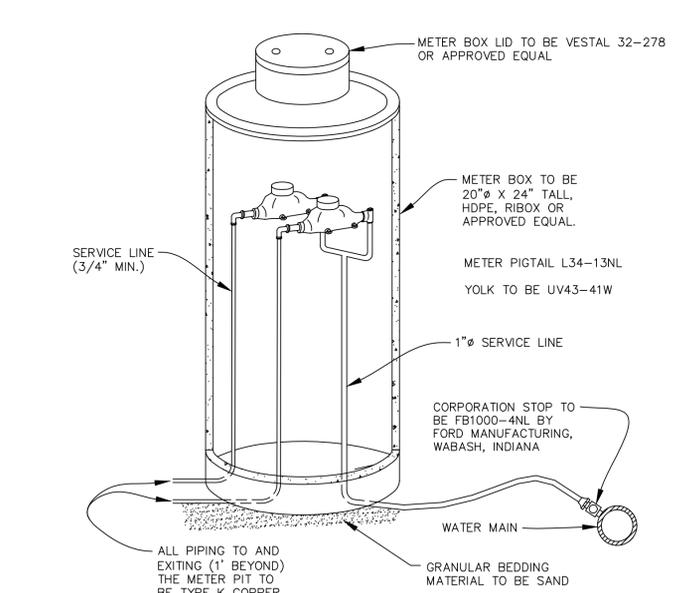
**WW WATER METER PIT DETAIL FOR 5/8" AND 1" METERS**  
02 NOT TO SCALE



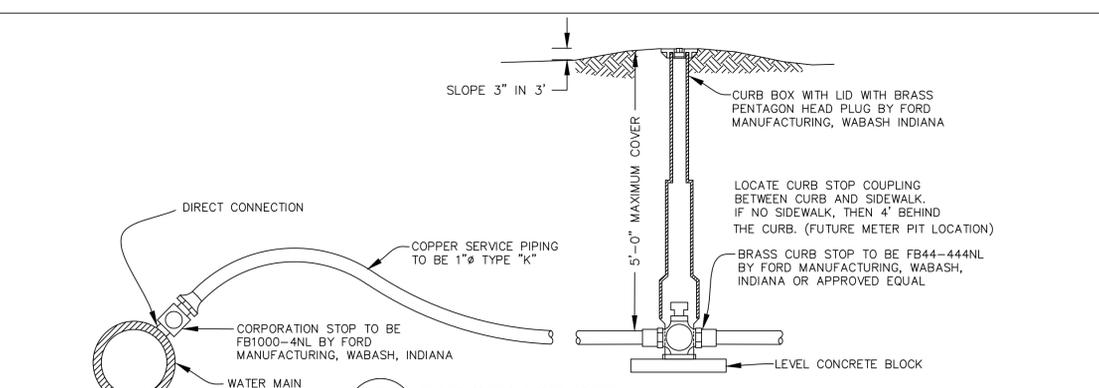
**WW WATER METER PIT DETAIL FOR 1-1/2" AND 2" COMMERCIAL METERS**  
04 NOT TO SCALE



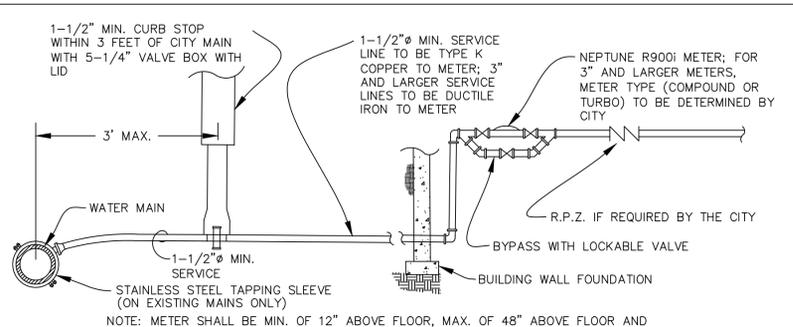
**WW WATER METER VAULT DETAIL FOR 3" AND LARGER COMMERCIAL METERS**  
05 NOT TO SCALE



**WW STANDARD DOUBLE METER PIT INSTALLATION FOR 5/8" METERS**  
03 NOT TO SCALE



**WW TAP SERVICE DETAIL**  
06 NOT TO SCALE



**WW INTERIOR METER INSTALLATION DETAIL**  
07 FOR 1-1/2" AND LARGER COMMERCIAL METERS  
NOT TO SCALE

THIS TABLE IS NOT APPLICABLE TO ALL SITUATIONS.

THE DESIGN AND CONSTRUCTION OF THRUST RESTRAINT SHALL CONFORM TO THE CURRENT EDITION OF THE "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" PUBLISHED BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION.

THIS PUBLICATION AND A THRUST RESTRAINT CALCULATOR ARE AVAILABLE AT WWW.DIPRA.ORG.

PIPE SIZE	DUCTILE IRON PIPE, CLAY SOIL, GRANULAR BEDDING REQUIRED RESTRAINT IN FEET AT 6' DEPTH (COVER) AND 150 PSI			
	90°	45°	22½°	11¼°
6"	32	14	7	4
8"	41	17	9	4
10"	50	21	10	5
12"	59	25	12	6
14"	69	29	14	7
16"	78	33	16	8
18"	87	37	18	9
20"	96	40	20	10
24"	114	48	23	12

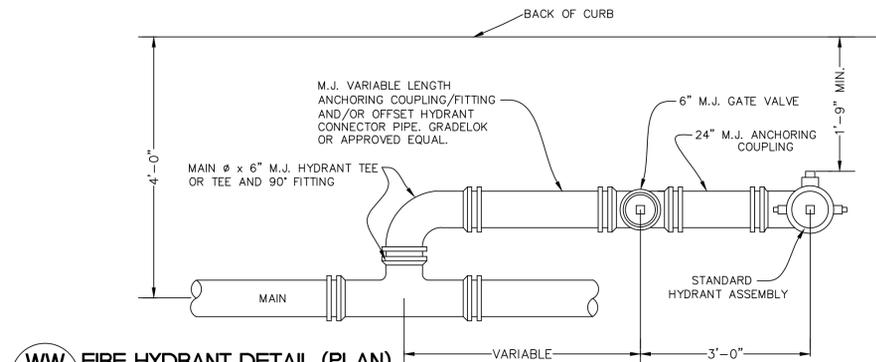
**WW RESTRAINED JOINTS**  
08

PROJECT NAME	PROJECT SHEET NUMBER
	of

**CITY OF LAFAYETTE**

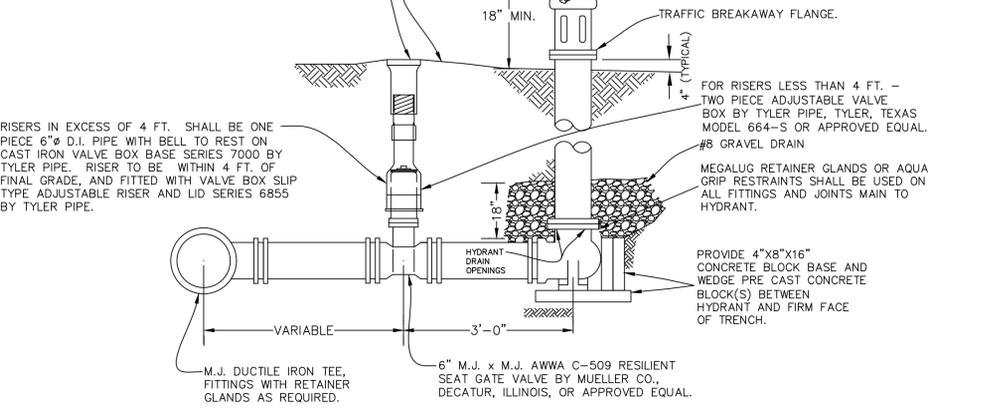
(800) 382-5544 HOLEY MOLEY	20 NORTH SIXTH STREET LAFAYETTE, INDIANA 47901	DATE 10/22/19
(765) 807-1050 CITY ENGINEER		SHEET 1
(765) 807-1210 POLICE DEPT.	WATER WORKS (WW) STANDARD DETAILS AND NOTES	OF 3
(765) 807-1600 FIRE DEPT.		
(765) 807-1700 WATER WORKS		
(765) 807-1800 RENEW (SEWERS)		





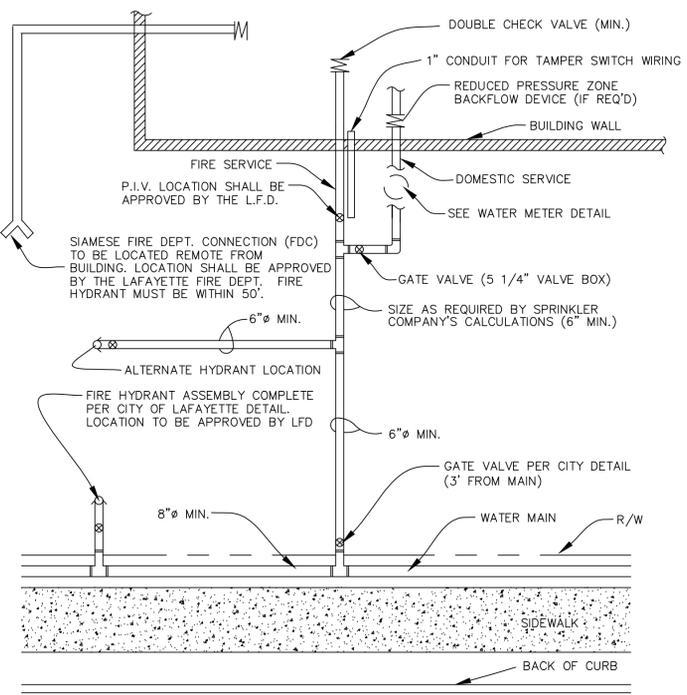
**WW FIRE HYDRANT DETAIL (PLAN)**  
14 NOT TO SCALE

TOP OF VALVE BOX TO BE 3" ABOVE SURROUNDING GRADE EXCEPT IN TRAVELED WAYS. SLOPE GRADE AWAY FROM THE BOX FOR A DISTANCE OF 3'-0" IN ALL DIRECTIONS.

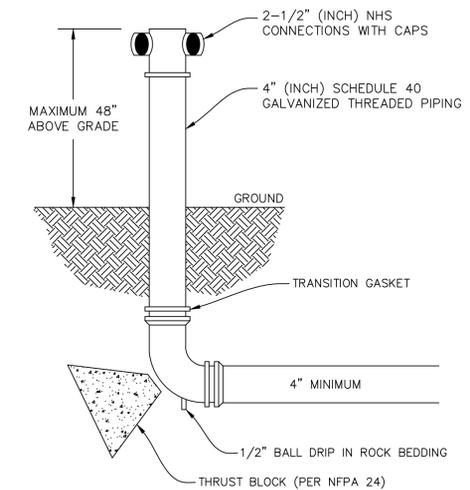


**NOTE: FIRE HYDRANTS USED AS AIR RELEASE**  
1) PROVIDE POSITIVE SLOPE UPWARD FROM HYDRANT TEE TO FIRE HYDRANT BASE.  
2) M.J. DUCTILE IRON PIPE AND FITTINGS WITH RETAINER GLANDS AT EACH FITTING REQUIRED.  
3) TEE INTO MAIN AT TOP OF PIPE.

**WW FIRE HYDRANT DETAIL (PROFILE)**  
15 NOT TO SCALE



**WW COMMERCIAL LOT WITH FIRE SERVICE DETAIL (TYP.)**  
17 NOT TO SCALE



- FIRE DEPARTMENT CONNECTIONS (FDC)**
1. FIRE DEPARTMENT CONNECTIONS SHALL BE "SIAMESE" 2-1/2" (INCH) NHS CONNECTIONS WITH CAPS. THE CONNECTIONS MUST BE LOCATED AT LEAST 18" (INCHES) FROM THE GROUND AND NO MORE THAN 48" (INCHES) ABOVE THE LEVEL OF THE ADJOINING GROUND, SIDEWALK, OR GRADE SURFACE.
  2. ALL FIRE DEPARTMENT CONNECTION PIPING SHALL BE MINIMUM 4" (INCHES).
  3. ALL FIRE DEPARTMENT CONNECTIONS MUST BE LOCATED NO MORE THAN 100 FEET FROM A FIRE APPARATUS ACCESS ROAD, AND NO MORE THAN 50 FEET FROM AN ACCESSIBLE FIRE HYDRANT.
  4. THE HYDRANT SERVING THE FDC MUST NOT REQUIRE THE BLOCKING OF MAIN DRIVEWAYS OR ACCESS INTO THE FACILITY.
  5. ALL FDC'S MUST BE IDENTIFIED BY A SIGN (912.4).
  6. ALL FDC'S AND PIV'S SUBJECT TO VEHICLE IMPACT SHALL BE EQUIPPED WITH IMPACT PROTECTION PER IFC 2014 (912.3.3/312). POSTS SHALL BE NO CLOSER THAN 36" TO THE FDC OR PIV AND SHALL NOT INTERFERE WITH THEIR OPERATION.
  7. THE SYSTEM DESIGNER SHOULD CONTACT THE LAFAYETTE FIRE DEPARTMENT PRIOR TO ESTABLISHING THE LOCATION OF THE FIRE DEPARTMENT CONNECTION.
- FDC SIGNS**
1. ALL FDC'S MUST BE IDENTIFIED BY A SIGN (912.2.2).
  2. ALL FDC'S MUST ALSO HAVE A SIGN OR PLACARD WITH AT LEAST 1" HIGH LETTERS INDICATING THE TYPE OF FDC. SUCH SIGNS SHALL READ: "AUTOMATIC SPRINKLERS" OR "STANDPIPES" OR "TEST CONNECTION", OR A COMBINATION OF THESE WORDS AS APPLICABLE.
  3. IF THE LOCATION OF THE FDC IS NOT IMMEDIATELY OBVIOUS OR VISIBLE FROM THE STREET, A SIGN INDICATING THE LOCATION OF THE FDC IS ALSO REQUIRED.

**WW FIRE DEPARTMENT CONNECTIONS**  
16 NOT TO SCALE

TYPICAL CONSTRUCTION GUIDELINES AND DETAILS - 2008  
RESIDENTIAL FIRE SUPPRESSION SUPPLEMENT  
EFFECTIVE APRIL 19, 2017

- SCOPE:**  
AS REQUIRED BY CODE, NEW OR REMODELED STRUCTURES WITHIN THE CITY OF LAFAYETTE INTENDED TO CONTAIN A RESIDENTIAL USE OF MORE THAN TWO UNITS SHALL HAVE A FIRE SUPPRESSION SYSTEM INSTALLED WITHIN THE STRUCTURE. EXCEPT: "TOWNHOUSE" PER IC 22-12-1-5 (C).
- STANDARD DESIGN REQUIREMENTS:**
1. HYDRAULIC CALCULATIONS AND COMPLETE SYSTEM DESIGN INFORMATION FOR THE FIRE SUPPRESSION SYSTEM REQUIRED ABOVE SHALL BE SUBMITTED TO LAFAYETTE FIRE FOR REVIEW PRIOR TO PERMITTING OR CONSTRUCTION.
  2. CONNECTION TO THE EXISTING CITY OF LAFAYETTE WATER MAINS SHALL BE PER THE EXISTING CITY DETAIL TITLED 'COMMERCIAL LOT WITH FIRE SERVICE DETAIL (DETAIL 08 ON SHEET 6)'. THE MAIN TAP SHALL BE A MINIMUM DIAMETER OF 6" AND SHALL EXTEND TO THE SUBJECT BUILDING LOT WITHOUT REDUCTION IN DIAMETER.
  3. MINIMUM DIAMETER OF ANY CONNECTION TO A PROPOSED OR REQUIRED FIRE HYDRANT SHALL BE 6".
  4. SITE DRAWINGS INDICATING LOCATION OF POST INDICATOR VALVE, SIAMESE FIRE DEPARTMENT CONNECTION AND REQUIRED FIRE HYDRANTS SHALL BE SUBMITTED TO LAFAYETTE FIRE AND LAFAYETTE CITY ENGINEER'S OFFICE FOR REVIEW.
- FIRE LINE SIZE REQUIREMENTS FOR QUALIFIED PROJECTS**  
FOR INDEPENDENT STRUCTURES CONTAINING ONLY RESIDENTIAL USES AND CONTAINING THREE STORIES OR LESS, THE PORTION OF THE UNDERGROUND FIRE LINE THAT DOES NOT SUPPLY A FIRE HYDRANT MAY BE A MINIMUM OF 3 INCHES IN DIAMETER SUBJECT TO THE RESTRICTIONS AS SPECIFIED BY CODE, SPECIFICALLY NFPA 13: 23-1.3 - 2010 EDITION "SIZE OF FIRE MAINS". FOR PURPOSES OF THIS PARAGRAPH, THE TERM "INDEPENDENT" SHALL MEAN PHYSICALLY SEPARATED FROM ANY ADJACENT BUILDING BY AT LEAST 10 FEET. SUPPORTING HYDRAULIC CALCULATIONS SHOWING THE MAIN IS ABLE TO SUPPLY THE TOTAL DEMAND AT THE APPROPRIATE PRESSURE MUST BE PRESENTED TO LAFAYETTE FIRE FOR APPROVAL. ALL REQUIREMENTS FOR 6" MINIMUM MAIN TAP, 6" MINIMUM DIAMETER FIRE LINE TO SUBJECT LOT AND 6" MINIMUM DIAMETER CONNECTION TO ANY FIRE HYDRANTS SHALL REMAIN IN FORCE PER CURRENT DETAILS.

**WW RESIDENTIAL FIRE SUPPRESSION**  
18 NOT TO SCALE

PROJECT NAME	PROJECT SHEET NUMBER
	of

CITY OF LAFAYETTE

(800) 382-5544 HOLEY MOLEY	20 NORTH SIXTH STREET LAFAYETTE, INDIANA 47901	DATE 10/22/19
(765) 807-1050 CITY ENGINEER		SHEET
(765) 807-1210 POLICE DEPT.	WATER WORKS (WW) STANDARD DETAILS AND NOTES	3
(765) 807-1600 FIRE DEPT.		OF
(765) 807-1700 WATER WORKS		3
(765) 807-1800 RENEW (SEWERS)		