

GENERAL NOTES

- ALL WATER MAIN AND WATER SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE VILLAGE. DETAILED WRITTEN SPECIFICATIONS ARE AVAILABLE AT THE VILLAGE DEPARTMENT OF PUBLIC WORKS. MINIMUM MAIN SIZE IS 8".
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING AT A TIME AND PLACE AS ARRANGED BY THE OWNER'S ENGINEER, IN WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT. THE OWNER'S ENGINEER SHALL SUBMIT APPROVED PLANS TO ALL UTILITY COMPANIES AND GOVERNMENTAL AGENCIES 4 DAYS PRIOR TO PRECONSTRUCTION MEETING. THE CONTRACTOR SHALL NOTIFY MISS DIG, THE VILLAGE DEPARTMENT OF PUBLIC WORKS AT 586-749-5301, THE DETROIT WATER AND SEWERAGE DEPARTMENT (INSPECTION DIVISION) AT 313-833-8649 THREE DAYS PRIOR TO CONSTRUCTION.
- DUCTILE IRON PIPE SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.5 FOR CLASS 54, DOUBLE CEMENT LINED WITH PUSH ON TYPE JOINTS. PUSH ON JOINTS SHALL BE TYTON, SUPER BELLITE OR APPROVED EQUAL WITH SERRATED BRASS WEDGES. 6" THRU 12" PIPE REQUIRES 2 WEDGES PER JOINT, 16" AND LARGER REQUIRES 4 WEDGES PER JOINT. CEMENT LINING SHALL CONFORM TO ANSI/AWWA C104/A21.4 PROVIDED WITH AN ASPHALTIC SEAL COAT. POLYVINYL CHLORIDE (PVC) - ANSI/AWWA C900 PRESSURE CLASS 200 (OR 14), 4" THROUGH 12" ONE-COMPONENT PUSH ON TYPE JOINTS. NOTE: PVC WATER MAIN SHALL ONLY BE USED WITH WRITTEN AUTHORIZATION OF THE VILLAGE DEPARTMENT OF PUBLIC WORKS OR THE VILLAGE ENGINEER.
- ALL WATER MAIN AND APPURTENANCES SHALL BE ENCASED IN 8 MIL. POLYETHYLENE TUBES OR SHEETS IN ACCORDANCE WITH A.W.A. C105.
- HYDRANTS SHALL BE SET ON PROPERTY LINE SIDE OF THE DITCH SO THEY ARE NOT IN THE DITCH LINE OR BACK SLOPE OF DITCH. WHEN HYDRANTS AND VALVES ARE INSTALLED IN OPEN DITCH AREAS, CULVERTS WITH END SECTIONS SHALL ALSO BE INSTALLED TO ALLOW ACCESS.
- ALL NUTS AND BOLTS BELOW GRADE SHALL BE 304 STAINLESS STEEL. THE 6" SHOE CONNECTION SHALL BE 6" M.I. THE DRAIN HOLES WILL BE PLUGGED, UNLESS STATED OTHERWISE, HAVING AMPLE BLOCKING PADS FOR STURDY SETTING.
- ALL HYDRANTS SHALL BE EAST JORDAN IRON WORKS MODEL 5BR-250 WITH A BREAKAWAY FLANGE (OR APPROVED EQUAL). HYDRANTS SHALL OPEN TO THE LEFT (COUNTER-CLOCKWISE) AND BE SUPPLIED WITH (2) 2.5" NST NOZZLES HAVING NATIONAL STANDARD THREAD AND (1) 5" STORZ PUMPER NOZZLE HAVING A NOZZLE COMPATIBLE WITH A 4" STORZ COUPLED LARGE DIAMETER FIRE HOSE. THE 5" NOZZLE SHALL BE AN INTEGRAL PART OF THE HYDRANT ASSEMBLY AND ADD-ON STORZ COMPATIBLE ADAPTERS ARE NOT ACCEPTABLE.
- PRIOR TO FINAL ACCEPTANCE BY THE MUNICIPALITY, ALL HYDRANTS MUST BE DEWATERED, PAINTED AND FACED. PAINT SHALL BE MARINE ENAMEL OR RUSTOLEUM, COLOR CHROME YELLOW, WITH 2 APPLICATIONS.
- UNLESS OTHERWISE SHOWN ON PLANS HYDRANTS SHALL BE TYPE "L". HYDRANTS SHALL BE SET TO THE ELEVATION OF THE EXISTING GROUND. WHEN THE EXISTING GROUND IS HIGHER THAN THE ROAD CENTERLINE, THE HYDRANT SHALL BE EXTENDED UPWARD (FROM ROAD CENTERLINE) BY INSERTING BARREL EXTENSIONS BETWEEN THE HEAD AND THE TOP BARREL FLANGE. (THE PURPOSE OF THIS REQUIREMENT IS TO PROVIDE FOR THE FUTURE LOWERING OF THE HYDRANT TO THE ELEVATION OF THE ROAD CENTERLINE). HYDRANT EXTENSIONS SHALL BE INCIDENTAL TO HYDRANT ASSEMBLY.
- GATE VALVES SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C-500 CURRENT SPECIFICATIONS. ALL VALVES LESS THAN 16" SHALL BE MUELLER RESILIENT SEATED OR E.J.W. EQUIVALENT. ALL VALVES 16" OR LARGER SHALL HAVE DOUBLE DISKGATES WITH PARALLEL SEATS. THE VALVE SHALL BE CAST WITH AN IRON BODY AND BRONZE MOUNTED WITH A BRONZE NON-RISING STEM, DOUBLE "O" RING REPLACEMENT SEALS AND MECHANICAL JOINTS. THE VALVE SHALL BE FURNISHED WITH A 2" SQUARE OPERATING NUT, AND SHALL TURN COUNTER-CLOCKWISE TO OPEN. GATE VALVES 16" & LARGER SHALL BE SUPPLIED WITH A BYPASS IN ACCORDANCE WITH ANSI/AWWA C-500.
- GATE VALVES AND TAPPING VALVES SHALL BE HOUSED WITHIN A PRECAST CONCRETE GATEWELL. HYDRANT VALVES SHALL BE HOUSED IN A 3-PIECE SCREW TYPE BOX (5-1/4" SHAFT) WITH AN ENLARGED BASE. GATEWELL TOPS SHALL BE SET TO THE ELEVATION OF EXISTING GROUND OR 0.5' ABOVE EXISTING ROAD CENTERLINE, WHICHEVER IS HIGHER.
- ALL END-OF-THE-LINE GATEWELLS SHALL HAVE A CAPPED STUB EXTENDING 10 FEET BEYOND THE GATEWELL. THE VALVE, PIPE AND CAP SHALL BE INSTALLED WITH LOCKABLE RETAINER GLANDS AND A CONCRETE TRUST BLOCK AT THE CAP.
- ALL FITTINGS SHALL BE DUCTILE IRON IN ACCORDANCE WITH ANSI/AWWA C153/A21.53 (COMPACT FITTINGS), 350 PSI PRESSURE RATINGS WITH DOUBLE CEMENT LINING, MECHANICAL JOINTS AND LOCKABLE RETAINING GLANDS OR FIELD LOK JOINTS. SPLIT RETAINERS NOT ALLOWED.
- RETAINER GLANDS SHALL BE EBAA IRON - MEGALUG - 1100 SERIES OR APPROVED EQUAL.
- ALL APPROVED USE OF MECHANICAL JOINTS AND FITTINGS OUTSIDE A GATEWELL SHALL BE COATED WITH BITUMINOUS MASTIC AND ENCASED IN 8 MIL. POLYETHYLENE.
- CONCRETE TRUST BLOCKS ARE REQUIRED AT ALL BLENDS, TEES, CAPS OR PLUGS. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 2500 PSI (MIN.) AT 28 DAYS.
- STEPS ARE TO BE E.J.W. NO. 8503, MA INDUSTRIES P.S.I. POLYPROPYLENE OR APPROVED EQUAL AND INSTALLED BY THE GATEWELL MANUFACTURER.
- A ONE (1) INCH CORPORATION SHALL BE INSTALLED, FOR TESTING PURPOSES, IN ALL STUBS AND POINTS OF CONNECTION TO THE EXISTING MAIN. UPON SUCCESSFUL COMPLETION OF THE TESTS AND WITH THE APPROVAL OF THE VILLAGE, THE CONTRACTOR SHALL REMOVE THE TESTING CORPORATION AND INSTALL PLUGS.
- A VERTICAL CLEARANCE OF 1.5 FEET (MIN.) MUST BE MAINTAINED BETWEEN THE WATER MAIN AND ANY UTILITIES AND 5 FEET (MIN.) BELOW DITCHES, PERMANENT PAVEMENT CENTERLINE, AND EXISTING GROUND ELEVATION (WHICHEVER RESULTS IN A LOWER ELEVATION). MAXIMUM DEPTH OF COVER SHALL NOT EXCEED SEVEN (7) FEET. ADJUSTMENTS TO THE WATER MAIN DEPTH IN ORDER TO OBTAIN THE DESIRED CLEARANCES MUST BE ACCOMPLISHED WITH 2 1/2" VERTICAL BLENDS, THRUST BLOCKS AND ANCHORAGES.
- DEFLECTION OF PIPE JOINTS TO OBTAIN THE DESIRED CLEARANCES OR ALIGNMENT SHALL ONLY BE ACCOMPLISHED WITH THE OWNER'S APPROVAL. THE MAXIMUM ALLOWABLE DEFLECTION (FOR 1' FULL LENGTH OF PIPE) IS 14 INCHES FOR 4" THRU 12" PIPE AND 8 INCHES FOR 16" THRU 24" PIPE.
- WITH THE APPROVAL OF THE DIRECTOR OF THE VILLAGE DEPARTMENT OF PUBLIC WORKS, THE BEDDING MATERIAL MAY BE MODIFIED, DEPENDING ON EXISTING GROUND CONDITIONS, ANY OR ALL OF THE BEDDING MATERIAL MAY BE CHANGED TO EXCAVATED MATERIAL. ALL DECISIONS WILL BE MADE BY THE DIRECTOR, IN THE FIELD AT THE TIME OF CONSTRUCTION, AND SAID DECISION MAY BE REVERSED AT ANY TIME THROUGHOUT THE JOB, IF EXISTING CONDITIONS AND/OR CONSTRUCTION METHODS WARRANT.
- THE MAXIMUM PERMISSIBLE LEAKAGE, DURING HYDROSTATIC TESTING, SHALL NOT EXCEED 0.18 GAL. PER INCH DIAMETER OF MAIN PER 1000 FEET OF PIPE IN 2 HOURS AT A TEST PRESSURE OF 150 PSI. THE MAXIMUM TEST LENGTH IS 3000 FEET. THE VILLAGE RESERVES THE RIGHT TO TEST SHORTER LENGTHS. THE CONTRACTOR IS TO SUPPLY ALL TESTING EQUIPMENT AND PERFORM THE TEST. THE VILLAGE DEPARTMENT OF PUBLIC WORKS WILL PROVIDE THE MEASURING DEVICE AND WITNESS THE TEST.
- A DOUBLE CHECK VALVE ASSEMBLY, FOR BACK FLOW PREVENTION, SHALL BE UTILIZED ON ALL TEMPORARY LINES USED TO FILL AND FLUSH THE NEWLY INSTALLED MAIN.
- THE CONTRACTOR SHALL PROVIDE A 2 YEAR MAINTENANCE AND GUARANTEE BOND TO THE VILLAGE, DATED FROM THE TIME OF FINAL ACCEPTANCE BY THE VILLAGE, FOR 10% OF THE CONSTRUCTION COSTS.
- CONNECTIONS TO THE EXISTING WATER SYSTEM SHALL NOT BE MADE UNTIL THE NEW MAIN HAS BEEN SUCCESSFULLY PRESSURE TESTED AND HAS PASSED BACTERIOLOGICAL TESTING IN ACCORDANCE WITH VILLAGE OF NEW HAVEN AND CITY OF DETROIT STANDARDS. FINAL CONNECTIONS SHALL BE COORDINATED WITH THE VILLAGE DEPARTMENT OF PUBLIC WORKS.
- IN NEW DEVELOPMENTS, WATER MAIN SHALL NOT BE INSTALLED UNTIL ROUGH GRADING IS COMPLETED TO WITHIN 12" OF PROPOSED FINISH GRADE.
- VERTICAL TOLERANCES FOR HYDRANTS AND VALVES SHALL BE:  
HYDRANTS (ANY LOCATION).....+0.25 FT.  
GATE WELL NOT IN R.O.W.....+0.25 FT.  
GATE WELL IN R.O.W.....0.00 TO +0.30 FT.
- BEFORE FINAL ACCEPTANCE A FINAL INSPECTION MUST BE MADE BY THE VILLAGE DEPARTMENT OF PUBLIC WORKS DEPARTMENT AND AS-BUILT SEPIA MYLARS AND THREE SETS OF BLUE LINE PRINTS SHALL BE SUBMITTED TO THE VILLAGE.
- THE CONTRACTOR SHALL SUPPLY AND PLACE A PLUG OR COVER OVER THE END OF THE PIPE AT THE END OF EACH WORK DAY.
- CATHODIC PROTECTION SHALL BE INCLUDED ON ALL NEW WATER MAIN.

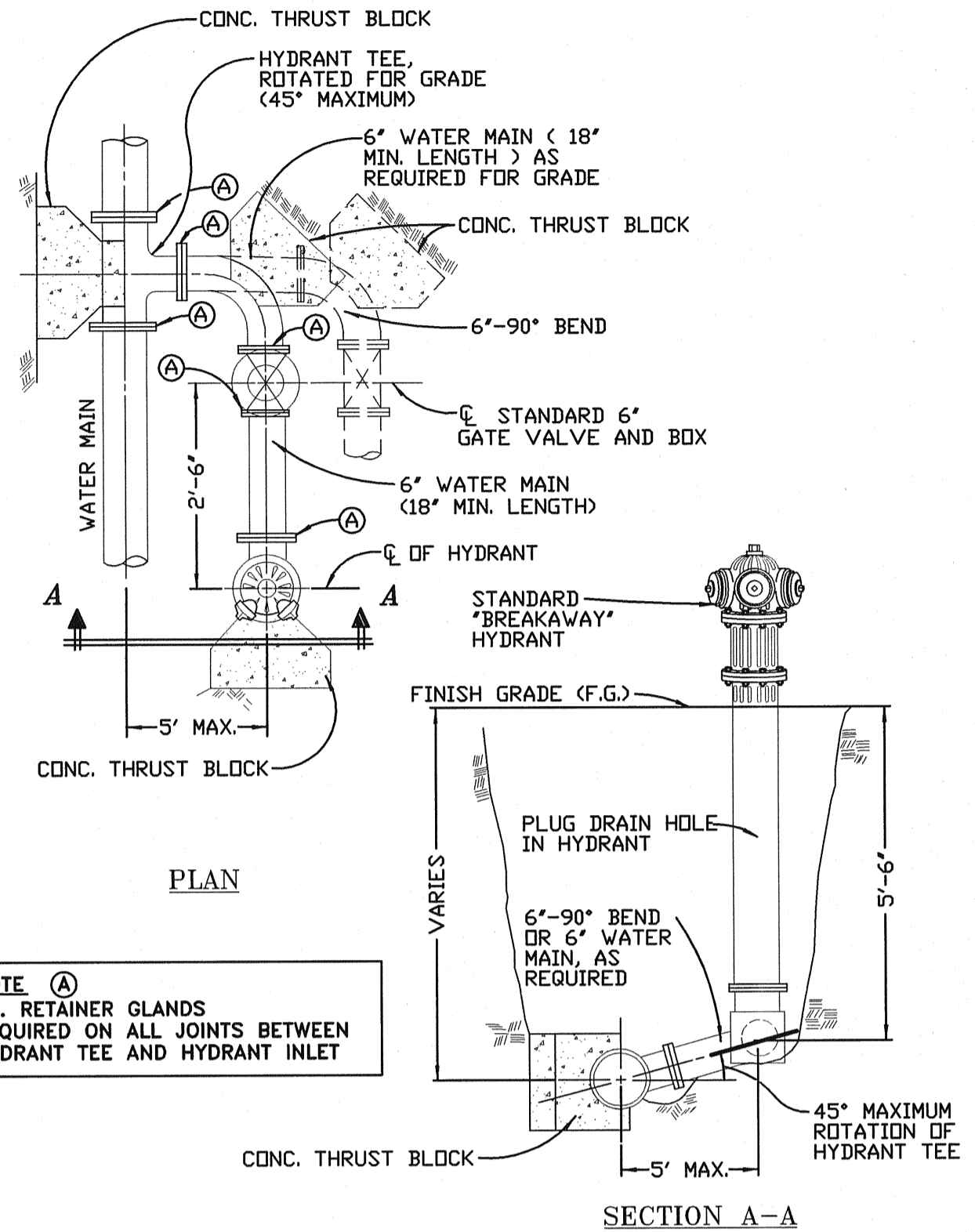
NOTE:  
D.I. LOCKING GLANDS OR FIELD LOK JOINTS ARE REQUIRED ON ALL JOINTS BETWEEN HYDRANT TEE AND HYDRANT INLET

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D.I. RETAINER GLANDS REQUIRED ON ALL JOINTS BETWEEN HYDRANT TEE AND HYDRANT INLET

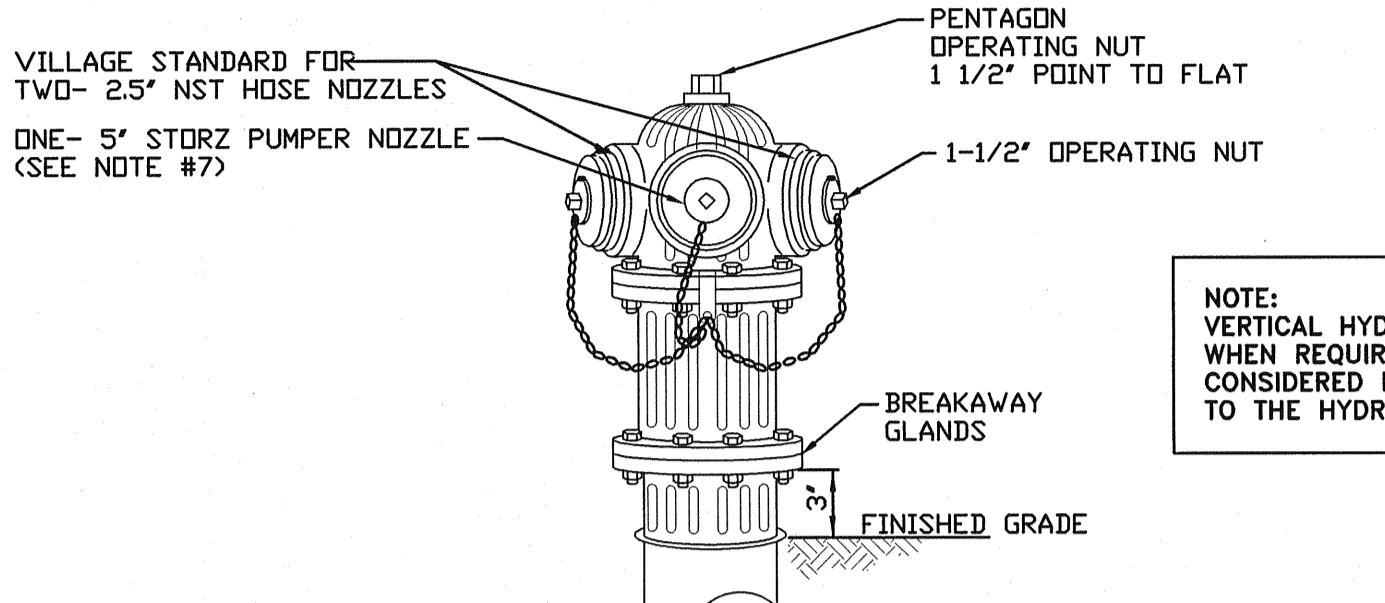
NOTE:  
VERTICAL HYDRANT EXTENSIONS, WHEN REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO THE HYDRANT

NOTE (A)  
D.I. RETAINER GLANDS REQUIRED ON ALL JOINTS BETWEEN HYDRANT TEE AND HYDRANT INLET

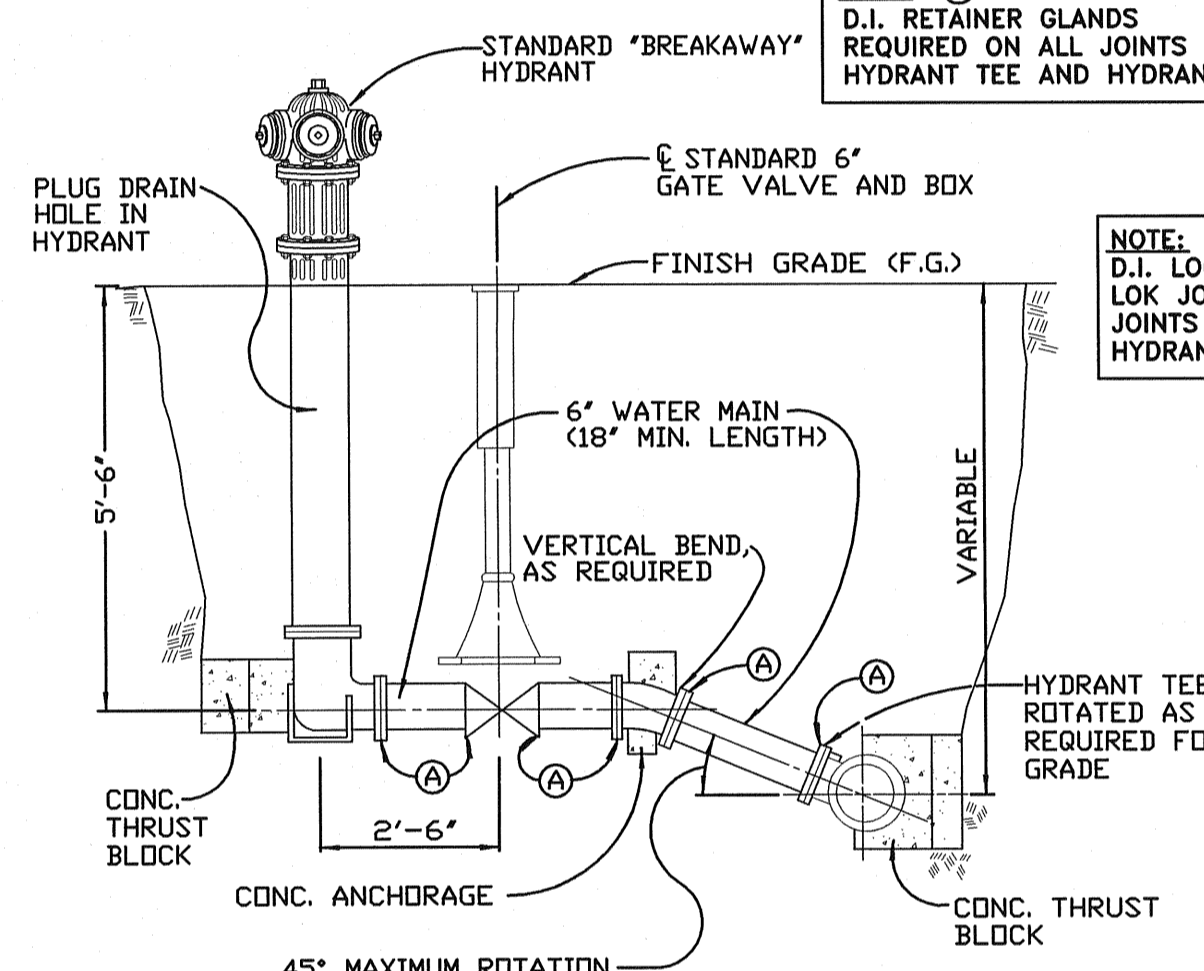
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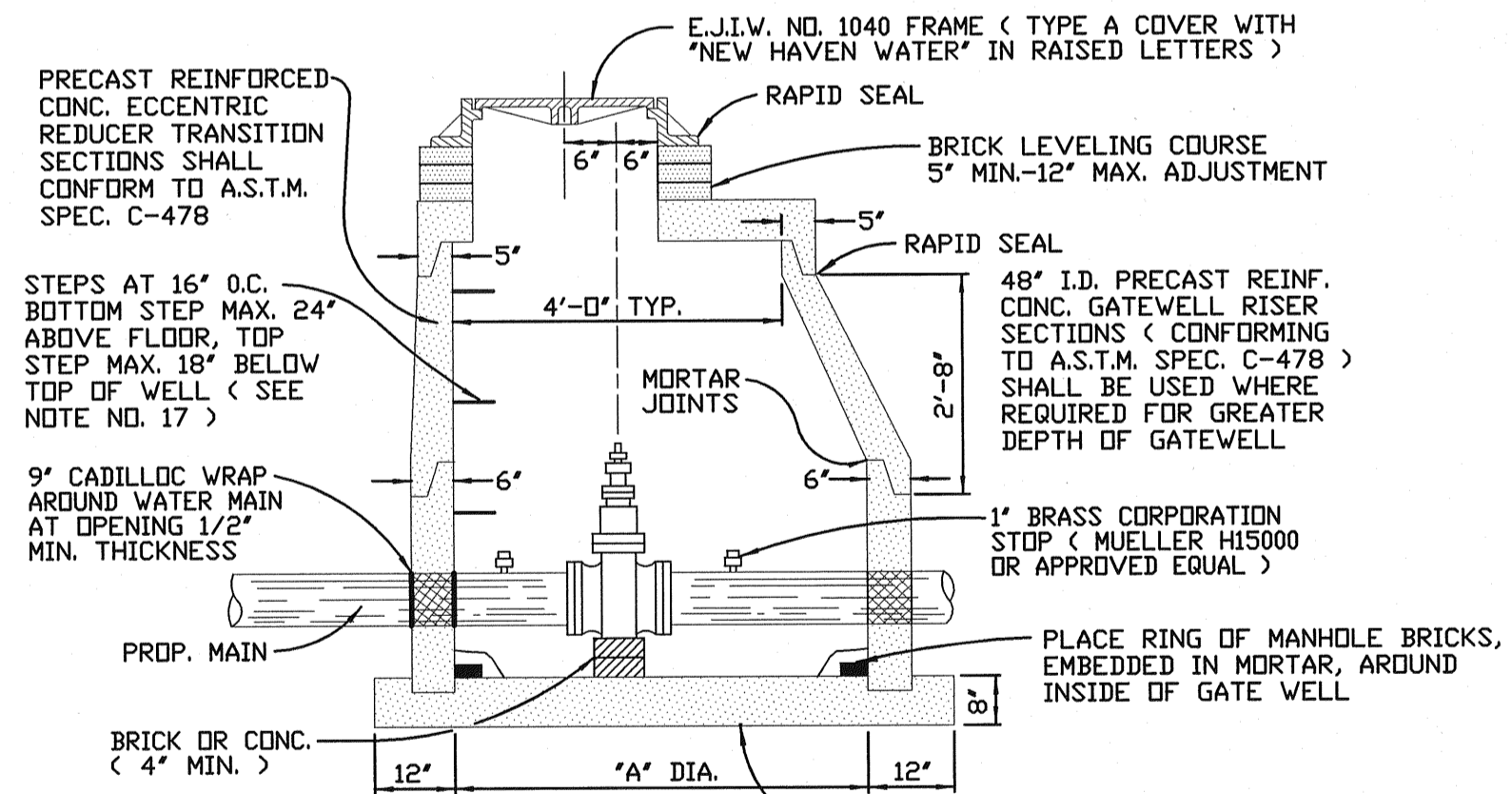
"L" HYDRANT CONNECTION



HYDRANT DETAIL  
NOT TO SCALE

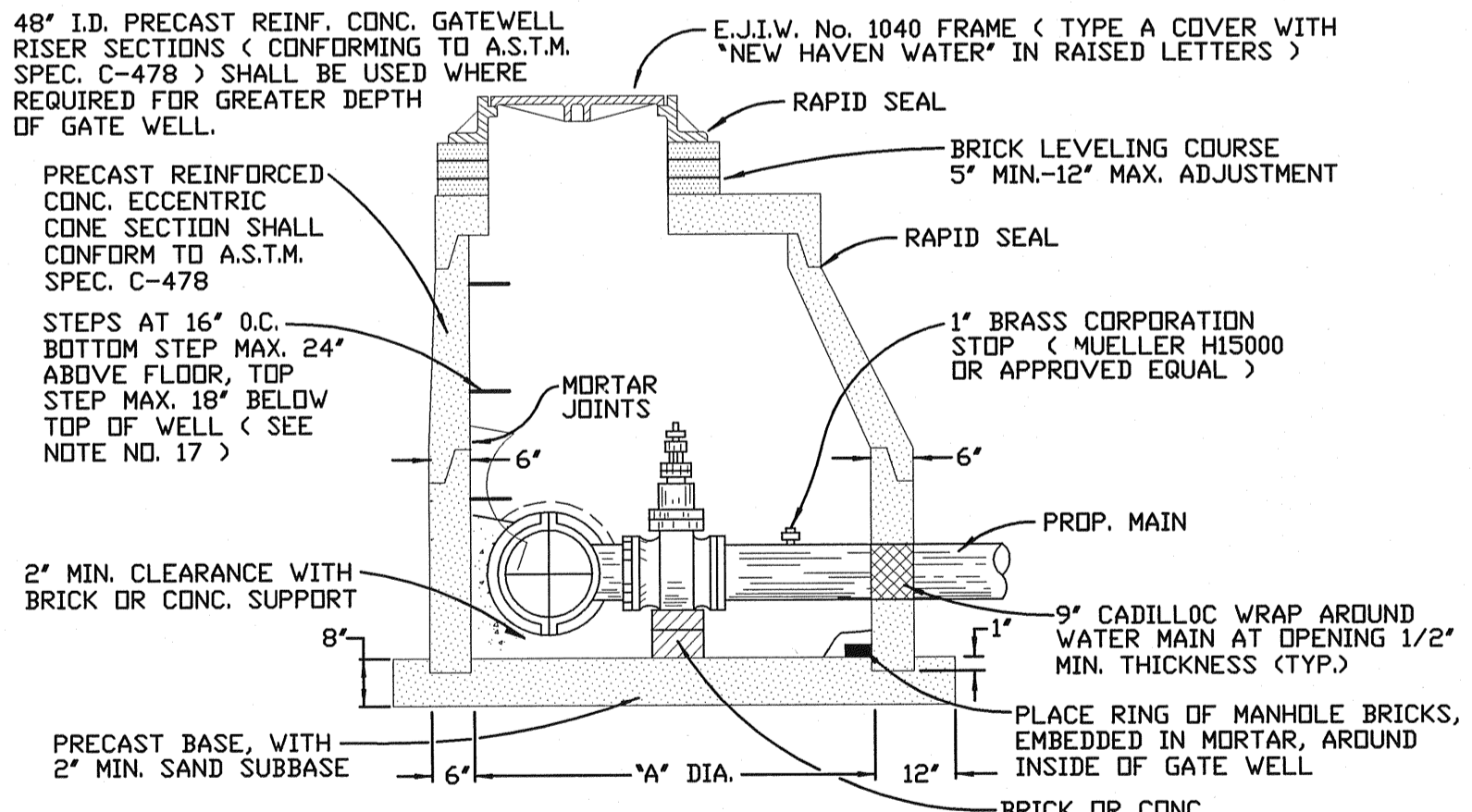


"T" HYDRANT CONNECTION  
(TO BE INSTALLED ONLY WITH ENGINEERS APPROVAL)



GATE VALVE & WELL

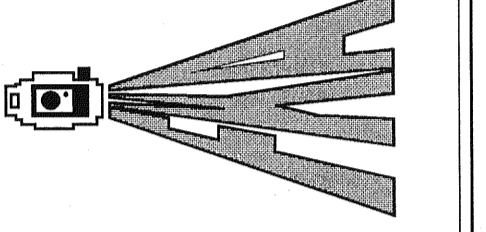
VALVE SIZE	"A" DIA.
6" & 8"	60"
12" & 16"	72"



TAPPING VALVE & WELL

VALVE SIZE	"A" DIA.
6" & 8"	60"
12" & 16"	72"

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DEPARTMENT OF PUBLIC WORKS

APPROVED BY: *Michael Barnett*  
MICHAEL BARNETT  
DIRECTOR OF PUBLIC WORKS  
DATE: 8-1-07

**VILLAGE OF NEW HAVEN**  
STANDARD DETAILS  
FOR WATER MAIN  
(1 OF 2)