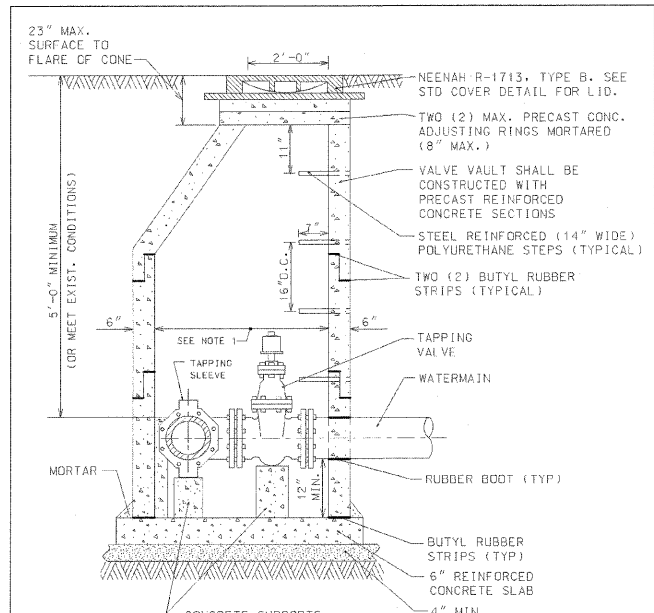


GENERAL NOTES WATER MAIN

- ALL WATER MAINS SHALL BE DUCTILE CAST IRON, CLASS 52, IN ACCORDANCE WITH ANSI SPECIFICATION A21.51 OR AWWA C-151. FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA C-104. JOINTS SHALL BE PUSH ON OR MECHANICAL. ELECTRICAL CONDUCTIVITY SHALL BE PROVIDED WITH BRASS WEDGES.
- ALL SURPLUS EXCAVATED MATERIAL FROM THE TRENCH WILL BE DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE.
- THE UNDERGROUND CONTRACTOR SHALL BE RESPONSIBLE TO PLACE AT GRADE AND COORDINATE WITH OTHER CONTRACTORS ALL UNDERGROUND STRUCTURE FRAMES SUCH AS CATCH BASINS, INLETS, MANHOLES, HYDRANTS, BUFFALO BOXES, VALVES, ETC. NO ADDITIONAL COMPENSATION WILL BE PAID AND SAID ADJUSTMENTS SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF CONSTRUCTION. ADJUSTMENT SHALL NOT EXCEED 8 INCHES.
- THE EXPLORATION TRENCH AND ANY NECESSARY WATER MAIN PROTECTION WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT. NO ADDITIONAL COMPENSATION WILL BE GIVEN.
- SERVICE TAPS**
WATER SERVICES MAY ONLY BE INTERRUPTED WHEN THE TRANSFER OF SERVICES TO THE NEW MAIN TAKES PLACE. SERVICES SHALL BE TRANSFERRED SUBSEQUENT TO TESTING AND CHLORINATION OF THE PROPOSED MAIN. THE CONTRACTOR SHALL CONTACT THE ST. CHARLES WATER DIVISION AT 630-377-4405 PRIOR TO TRANSFER OF SERVICES. RESIDENTS MUST BE INFORMED OF ANY INTERRUPTION TO THEIR WATER SERVICES 24 HOURS IN ADVANCE.
SERVICE TAPS TO WATER MAINS ARE NOT PERMITTED UNTIL AFTER BACTERIOLOGIC SAMPLING AND ANALYSIS HAS BEEN COMPLETED TO THE SATISFACTION OF THE APPROPRIATE ENGINEERING DIVISION. NO WATER SERVICE CONNECTION SHALL BE MADE BY ANY PERSON OR FIRM OTHER THAN A STATE OF ILLINOIS CONTRACTOR, WITH A STATE OF ILLINOIS LICENSED PLUMBER ON THE JOB, BONDED WITH THE CITY.
- BOLTS AND FASTENERS**
ALL BELOW GRADE, BOLTS AND FASTENERS SHALL BE 304 GRADE STAINLESS STEEL, EXCEPT ON MJ FITTINGS.
- VALVES AND VAULTS**
STRUCTURES FOR WATER MAIN VALVE VAULTS SHALL BE IN ACCORDANCE WITH THESE IMPROVEMENT PLANS AND THE APPLICABLE STANDARD SPECIFICATIONS. WHERE GRANULAR TRENCH BACKFILL IS REQUIRED AROUND THESE STRUCTURES, THE COST SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE STRUCTURES.
VALVE VAULTS ARE TO BE PRECAST REINFORCED CONCRETE, CONCENTRIC TYPE (REFER TO STANDARD DETAIL AND MATERIALS SECTION FOR SIZING SPECIFICATIONS). A MAXIMUM OF (8-INCHES) OF ADJUSTING RINGS SHALL BE USED.
ALL VALVE VAULT STRUCTURES SHALL HAVE A NEENAH FOUNDRY COMPANY R-1713 FRAME AND TYPE "B" LID WITH CONCEALED PICK HOLE. LIDS SHALL BE FURNISHED WITH THE CITY STANDARD LOGO, SEE DETAIL SHEET.
- VALVE SPACING**
RIGHT-HAND CLOSING RESILIENT WEDGE GATE VALVES AT INTERVALS NOT OVER 600 FEET.
- COVER DEPTH**
ALL WATER MAIN, HYDRANT LEADS, AND SERVICES MUST HAVE A MINIMUM COVER OF FIVE (5) FEET, AND A MAXIMUM COVER OF (10) FEET. VARIATION FROM THESE STANDARDS WILL REQUIRE APPROVAL OF APPROPRIATE ENGINEERING DIVISION.
- HYDRANT SPACING**
HYDRANTS MUST BE PLACED AT A MINIMUM OF 400-FOOT INTERVALS, AND MAY NOT BE LESS THAN FIVE (5) FEET FROM BACK OF CURB. NO BUILDABLE AREA SHALL BE FURTHER THAN 300' FROM A FIRE HYDRANT, AND A MINIMUM OF ONE HYDRANT SHALL BE LOCATED AT EACH INTERSECTION. FOR LARGER PROJECTS, HYDRANTS SHALL BE PROPOSED AT HIGH POINTS FOR AIR RELEASE. ALL HYDRANTS SHALL BE COORDINATED WITH THE CITY OF ST. CHARLES FIRE DEPARTMENT AND APPROPRIATE ENGINEERING DIVISION.
- FIRE HYDRANTS**
FIRE HYDRANTS SHALL BE INSTALLED WITH A MAXIMUM OF ONE EXTENSION KIT USED, AND A MAXIMUM EXTENSION OF 36". FIRE HYDRANT EXTENSION KITS MUST BE OF THE SAME MANUFACTURE AS THE HYDRANT, AND MUST BE INSTALLED ACCORDING TO THE MANUFACTURERS SPECIFICATIONS.
- CONNECTION TO EXISTING WATER MAINS**
CONNECTION TO THE END OF AN EXISTING WATER MAIN SHALL BE WITH A VALVE ONLY. NO NEW WATER MAIN SHOULD BE CONNECTED TO THE EXISTING WATER MAIN UNLESS THE NEW WATER MAIN CAN BE PRESSURE TESTED SEPARATELY. CONNECTION TO AN EXISTING WATER MAIN SHALL BE DONE BY PRESSURE CONNECTION ONLY UNLESS AUTHORIZED BY THE APPROPRIATE ENGINEERING DIVISION. PRESSURE CONNECTION AND VALVE SHALL BE LOCATED WITHIN THE VALVE VAULT, NO PRESSURE CONNECTION SHALL BE WITHIN 3 FEET OF AN EXISTING WATER MAIN JOINT, IF PRESSURE CONNECTION CANNOT BE DONE, USE A CUT IN SLEEVE AND TEE CONNECTION. ALL FITTINGS WILL BE SWABBED OUT WITH A CHLORINE SOLUTION OF AT LEAST 50 MG/L. A CITY REPRESENTATIVE MUST TEST THIS SOLUTION.
- JOINT RESTRAINT**
ALL MECHANICAL JOINT FITTINGS SHALL HAVE RESTRAINING GLANDS INSTALLED. RESTRAINT DEVICE SHALL BE UNI-FLANGE BY FORD COMPANY OF MEGA-LUG BY EBAA IRON. PUSH JOINT PIPE RESTRAINT SHALL BE FIELD LOCK GASKETS BY US PIPE OR SERIES (700 MEGA-LUG OR SERIES 1390 PIPE RESTRAINT BY FORD. LENGTHS OF PIPE RESTRAINT SHALL BE DETERMINED FROM MANUFACTURERS INSTALLATION SPECIFICATIONS (REFER TO WATER MAIN RESTRAINT DETAIL).
- APPURTENANCE SEPARATION**
WATER APPURTENANCES SHALL BE A MINIMUM OF (20) FEET FROM PERMANENT STRUCTURES; THIS APPLIES TO ANY STRUCTURE THAT MAY REQUIRE A BUILDING PERMIT (I.E. RETAINING WALLS, POOLS, SHED, GARAGES, ECT.)

- ABANDONING AND REPLACING EXISTING SERVICES
ALL EXISTING SERVICES SHALL BE ABANDONED AT THE CORPORATION STOP (CLOSE CORPORATION STOP, SERVICES, AND INSTALL COPPER DISK). EXISTING SERVICES SHOULD BE REPLACED FROM THE NEW MAIN TO THE B-BOX IF SERVICE IS LEAD. IF SERVICE IS COPPER, IT SHOULD BE CUT AND TAPPED INTO THE NEW MAIN. APPROVED TRENCH BACKFILL MATERIAL IS TO BE PLACED WHERE ANY TRENCH LIES WITHIN (3) FEET OF THE EDGE OF PAVEMENT, CURB, OR SIDEWALK. IT IS ASSUMED ALL LINES ARE LEAD AND MUST BE REPLACED TO B-BOX.
- THRUST BLOCKING**
PREFORMED CONCRETE BLOCK THRUST BLOCKING SHALL BE PROVIDED AT ALL BENDS GREATER THAN 10 DEGREES, AT ALL MECHANICAL JOINT CONNECTIONS, AND AT ALL FIRE HYDRANTS (REFER TO CITY THROST BLOCKING DETAIL).
- TRENCH BACKFILL:**
ALL UTILITY AND SERVICE TRENCHES WITHIN (3) FEET OF PAVED SURFACES, OR AT A DISTANCE SPECIFIED BY THE ENGINEER, SHALL BE BACKFILLED WITH CA-7 (VIRGIN CRUSHED LIMESTONE). FA-6 (CLEAN BEACH SAND) MATERIAL SHALL BE USED IN ALL OTHER UNPAVED LOCATIONS. ALL BACKFILL MATERIAL SHALL BE PROPERLY COMPACTED UNLESS OTHERWISE DIRECTED BY THE APPROPRIATE ENGINEERING DIVISION. BACKFILL UNDER EXISTING PAVEMENTS, WHERE AND OPEN CUT OF THE EXISTING PAVEMENT HAS BEEN APPROVED, SHALL BE FLOWABLE FILL THAT MEETS THE IDOT STANDARDS OF CONTROLLED LOW STRENGTH MATERIAL (CLSM) MIXTURE "1. NO FLY ASH WILL BE PERMITTED IN THIS MIX (REFER TO CITY PIPE TRENCH DETAIL).
- WATER MAIN PIPES:**
A. DUCTILE IRON CLASS 52, CONFORMING TO AWWA STANDARD C-151
1. CEMENT LINING, CONFORMING TO AWWA STANDARD C-104.
2. MECHANICAL OR PUSH-ON JOINTS SHALL CONFORM TO AWWA STANDARD C-111.
3. AT MINIMUM, TYPE 3 LAYING CONDITIONS SHALL BE PROVIDED, CONFORMING TO AWWA STANDARD C-600 (ATTACHED)
B. ALL WATER MAINS SHALL BE ENCASED IN A HIGH DENSITY POLYETHYLENE ENCASUREMENT WITH ITS MATERIAL SPECIFICATIONS AND INSTALLATION METHOD IN ACCORDANCE WITH ANSI, AWWA C105/A21.5, ASTM A674, USING "METHOD A" INSTALLATION.
C. ALL SIDE YARD AND REAR YARD WATER MAINS NOT DIRECTLY ADJACENT TO PUBLIC ROADWAYS OR PAVED SURFACES SHALL BE DUCTILE PIPE CLASS 55 WITH TYPE 5 LAYING CONDITION.
D. BRASS WEDGES SHALL BE INSTALLED TO PROVIDE ELECTRICAL CONDUCTIVITY.
- COPPER SERVICE LINES:**
A. ONE- INCH DIAMETER MINIMUM
B. TYPE K COPPER TUBING
C. COMPRESSION FITTINGS ONLY

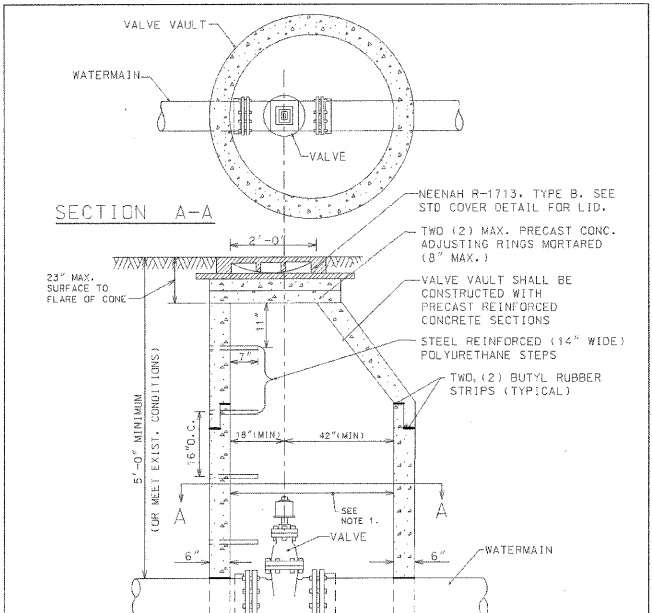
1-INCH SERVICE CONNECTIONS ONLY MAY BE CONNECTED UTILIZE THE DIRECT TAP METHODS TO 6-INCH MAINS AND LARGER ONLY. IF THERE IS INSUFFICIENT DIAMETER WATER MAIN TO INSTALL A DIRECT TAP, THEN A SADDLE TAP SHALL BE ALLOWED. SERVICE TAPS OF 1-1/4", 1-1/2", & 2" REQUIRE THE USE OF A TAPPING SADDLE. SADDLES SHALL BE FULL CIRCLE, 304-GRADE STAINLESS STEEL, WITH NYLON WASHERS AND NITRILE GASKET, AS MANUFACTURED BY SMITH -BLAIR, MODEL #372, OR APPROVED EQUAL.
- TAPPING SLEEVES:**
A. 4" THROUGH 8" DIAMETER:
1. ROMAC SST-945 STAINLESS STEEL OR APPROVED EQUAL OR SMITH-BLAIR 666 STAINLESS STEEL OR APPROVED EQUAL, OR MUELLER H-615 CAST IRON OR APPROVED EQUAL.
B. 10" AND LARGER DIAMETER:
1. MUELLER H-615 CAST IRON OR APPROVED EQUAL.
2. FLANGE FASTENERS SHALL BE 304-GRADE STAINLESS STEEL.
- HORIZONTAL SEPARATION - WATER MAINS AND SEWERS**
A. WATER MAINS SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED DRAIN, STORM SEWER, SANITARY SEWER, COMBINED SEWER, OR SEWER SERVICE CONNECTION.
B. WATER MAINS SHALL BE LOCATED CLOSER THAN 10 FEET TO A SEWER LINE WHEN:
1) LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET; AND
2) THE WATER MAIN INVERT IS AT LEAST 18 INCHES ABOVE THE CROWN OF THE SEWER; AND
3) THE WATER MAIN IS EITHER IN A SEPARATE TRENCH OR IN THE SAME TRENCH ON AN UNDISTURBED EARTH SHELF LOCATED TO ONE (1) SIDE OF THE SEWER.
C. WHEN IT IS IMPOSSIBLE TO MEET A OR B ABOVE, BOTH THE WATER MAIN AND DRAIN OR SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, ASBESTOS-CEMENT PRESSURE PIPE, PRE STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION. THE DRAIN OR SEWER SHALL BE PRESSURE TESTED TO THE MAXIMUM EXPECTED SURCHARGE HEAD BEFORE BACKFILLING.
- VERTICAL SEPARATION - WATER MAINS AND SEWERS**
A. A WATER MAIN SHALL BE SEPARATED FROM A SEWER SO THAT ITS INVERT IS A MINIMUM OF 18 INCHES ABOVE THE CROWN OF THE DRAIN OR SEWER WHENEVER WATER MAINS CROSS STORM SEWERS, SANITARY SEWERS, OR SEWER SERVICE CONNECTIONS. THE VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN 10 FEET HORIZONTALLY OF ANY SEWER OR DRAIN CROSSED. A LENGTH OF WATER MAIN SHALL BE CENTERED OVER THE SEWER TO BE CROSSED WITH JOINTS EQUIDISTANT FROM THE SEWER OR DRAIN.
B. BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT CAST OR DUCTILE IRON PIPE, ASBESTOS-CEMENT PRESSURE PIPE, PRE STRESSED CONCRETE PIPE, OR PVC PIPE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION WHEN:
1) IT IS IMPOSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION AS DESCRIBED IN A ABOVE; OR
2) THE WATER MAIN PASSES UNDER A SEWER OR DRAIN
C. A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE INVERT OF THE SEWER OR DRAIN AND THE CROWN OF THE WATER MAIN SHALL BE MAINTAINED WHERE A WATER MAIN CROSSES UNDER A SEWER. SUPPORT THE SEWER OR DRAIN LINES TO PREVENT SETTLING AND BREAKING THE WATER MAIN, AS SHOWN ON THE PLANS APPROVED BY THE ENGINEER.
CONSTRUCTION SHALL EXTEND ON EACH SIDE OF THE CROSSING UNTIL THE PERPENDICULAR DISTANCE FROM THE WATER MAIN TO THE SEWER OR DRAIN LINE IS AT LEAST 10 FEET.



NOTES:

- 60" (MIN) INSIDE DIA. FOR ALL PRESSURE CONNECTION VAULTS.
- ALL NON-PRECAST PIPE OPENINGS TO BE CORED AND RUBBER BOOTED.
- BACKFILL MATERIAL SHALL BE IDOT CA-7 VIRGIN CRUSHED LIMESTONE.
- a) MECHANICAL JOINT BOLTS & NUTS SHALL BE COMPOSED OF CORE-TEN.
b) ALL OTHER HEXAGONAL BOLTS, NUTS & WASHERS SHALL BE COMPOSED OF 304 GRADE STAINLESS STEEL.
- USE ECCENTRIC CONE ONLY.
- VALVE VAULT MUST CONFORM TO ASTM C-478.
- ALL SECTIONS TO BE TONGUE AND GROOVED.
- BLOCKING SHALL NOT INTERFERE WITH BOLT MAINTENANCE OR REPLACEMENT.
- PRIOR TO THE PLACEMENT OF FINAL LAYER OF ROADWAY, FRAMES AND ADJUSTING RINGS LOCATED WITHIN PAVED AREAS SHALL BE SET IN AN IDOT APPROVED CONCRETE "S1" MIXTURE. DATE: 7-27-10

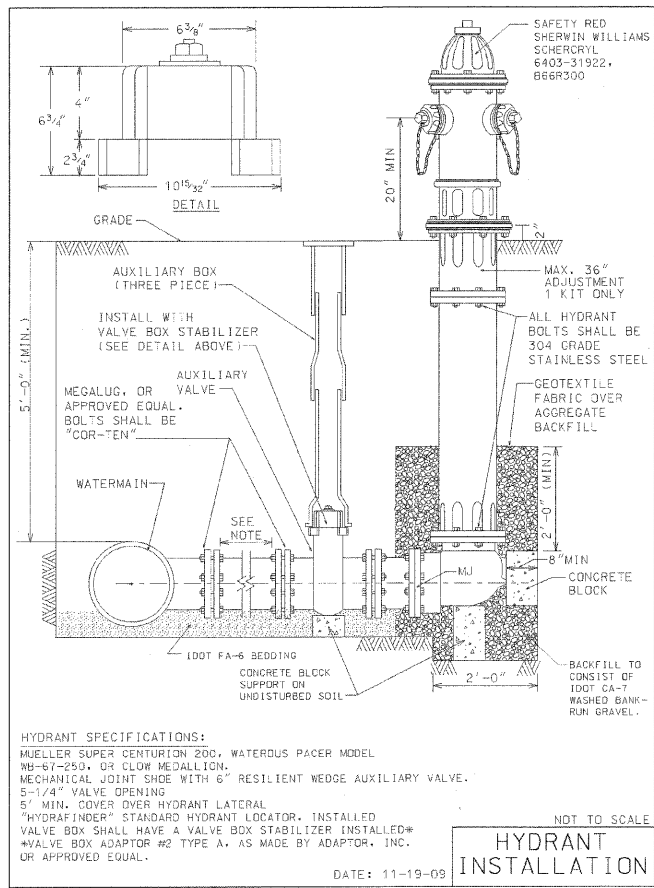
NOT TO SCALE
PRESSURE CONNECTION DETAIL



NOTES:

- 48" MIN. INSIDE DIA. FOR VALVES LESS THAN 6" DIA.
60" MIN. INSIDE DIA. FOR ALL OTHER VALVE VAULTS.
- VALVE VAULT MUST CONFORM TO ASTM C-478.
- USE ECCENTRIC CONE ONLY.
- VALVE SECTIONS TO BE TONGUE AND GROOVED.
- NON-PRECAST PIPE OPENINGS TO BE CORED AND RUBBER BOOTED.
- BACKFILL MATERIAL SHALL BE IDOT CA-7 VIRGIN CRUSHED LIMESTONE.
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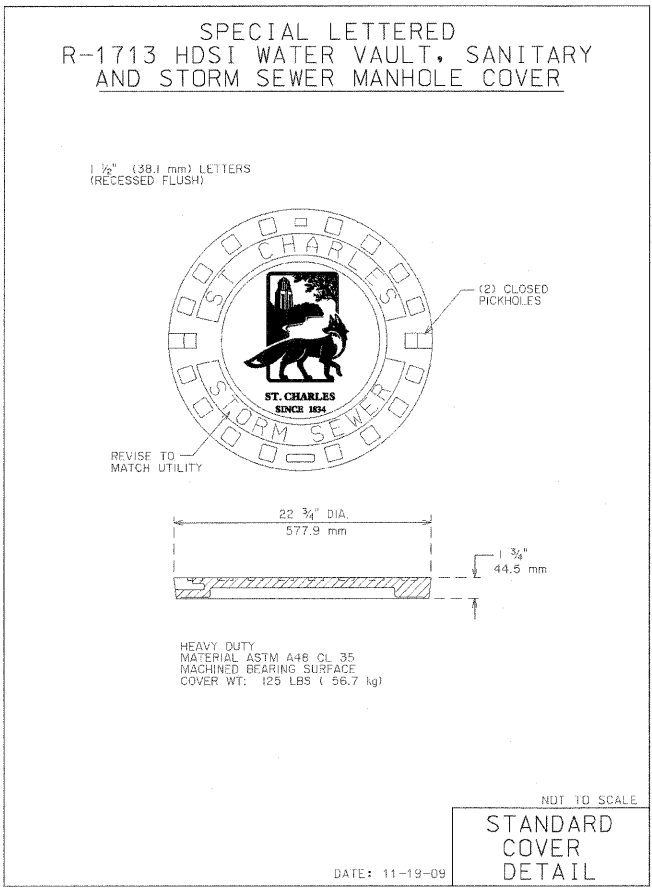
NOT TO SCALE
VALVE VAULT DETAIL



HYDRANT SPECIFICATIONS:
MUELLER SUPER CENTURION 200, WATEROUS PACER MODEL MB-67-250, OR CLOW MEDALLION.
MECHANICAL JOINT SHOE WITH 6" RESILIENT WEDGE AUXILIARY VALVE.
5-1/4" VALVE OPENING
5' MIN. COVER OVER HYDRANT LATERAL "HYDRAFINDER" STANDARD HYDRANT LOCATOR. INSTALLED VALVE BOX SHALL HAVE A VALVE BOX STABILIZER INSTALLED*
*VALVE BOX ADAPTOR #2 TYPE A, AS MADE BY ADAPTOR, INC. OR APPROVED EQUAL.

NOT TO SCALE
HYDRANT INSTALLATION

DATE: 11-19-09



SPECIAL LETTERED R-1713 HDSI WATER VAULT, SANITARY AND STORM SEWER MANHOLE COVER

1 1/2" (38.1 mm) LETTERS (RECESSED FLUSH)

22 3/4" DIA. 577.9 mm

1 3/8" 44.5 mm

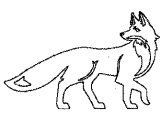
HEAVY DUTY MATERIAL ASTM A48 CL 35 MACHINED BEARING SURFACE COVER WT: 125 LBS (56.7 kg)

NOT TO SCALE
STANDARD COVER DETAIL

DATE: 11-19-09

NO.	REVISIONS	BY	DATE
1.	UPDATES TO PRESSURE CONNECTION & VALVE VAULT DETAILS	BH.	10-9-10
2.	REVISED FRAME NUMBER IN NOTE 8	BH.	4-25-11

PREPARED UNDER THE SUPERVISION OF:	
JAMES J. BERNAHL	
062-041(33)	11/30/2011
P.E. NO.	DATE
DRAWN	CHECKED



CITY OF ST. CHARLES
ENGINEERING DEPARTMENT
2 EAST MAIN STREET, ST. CHARLES, ILLINOIS 60174 (630) 377-4486

PHEASANT RUN WATER MAIN REPLACEMENT
KAUTZ ROAD TO PHEASANT RUN ENTRANCE

PROJECT NO.
DATE: JUNE 4, 2010
SCALE: P - 30'
FILE: PHEASANT RUN WP/SHEET 5/1000
SHEET 197 of 6