

GENERAL NOTES:

THE VILLAGE HAS ADOPTED THE FOLLOWING STANDARDS FOR INSTALLATION WATER MAIN AND RELATED APPURTENANCES. STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS - SIXTH EDITION JULY 2009, EXCEPTIONS AND/OR ADDITIONS TO THE ABOVE STANDARDS ARE COVERED IN SECTIONS THAT FOLLOW THIS SECTION.

ALL WATER MAIN MATERIALS INCORPORATED INTO THE SYSTEM SHALL BE OF DOMESTIC MANUFACTURE (I.E. MANUFACTURED WITHIN THE UNITED STATES) AND SHALL MEET ALL APPLICABLE SPECIFICATIONS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

SHOP DRAWINGS SHALL BE TO THE VILLAGE OF DUNLAP AND INCLUDE THE MATERIAL DESCRIPTION, NAME OF THE MANUFACTURER, AND THE NAME OF THE SUPPLIER.

WATER MAIN MATERIALS SHALL INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

WATER MAIN PIPE VALVES	WATER MAIN FITTINGS VALVE BOXES/LIDS	BOLTS HYDRANTS
GLANDS AND RETAINERS RESTRAINT DEVICES	CORP. STOPS	GASKETS

MINIMUM DEPTH OF COVER SHALL BE 42 INCHES, UNLESS STATED OTHERWISE ON THE PLANS

TRAFFIC CONTROL

TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH ILLINOIS DEPARTMENT OF TRANSPORTATION UTILITY PERMIT.

HDPE PIPE:

WATER MAIN SHALL BE DIRECTIONALLY DRILLED WITH HDPE PIPE.

ALL HDPE PIPE APPROVED FOR USE AS WATER MAIN SHALL BE SDR 11.0, 200 PSI PRESSURE RATING, 40 - 50 FT. STICKS (COILED PIPE NOT ALLOWED)

FOLLOWING ARE APPROVED PIPE MANUFACTURERS FOR HDPE WATER MAIN PIPE:

RINKER POLY-PIPE GENERAL OFFICE: 2706 N. I-35 GAINESVILLE, TX 76240-0390 1(800) 433-5632	THE PERFORMANCE PIPE GENERAL OFFICE: PO BOX 269006 PLANO, TX 75026-9006 1(800) 527-0662
JM EAGLE GENERAL OFFICE: NINE PEACH TREE HILL ROAD LIVINGSTON, NJ 07039 1(973) 535-1633	JM EAGLE GENERAL OFFICE: 5200 WEST CENTURY BLVD LOS ANGELES, CA 1(800) 621-4404

CARE SHOULD BE EXERCISED DURING THE TRANSPORTATION OF POLYETHYLENE PIPE/TUBING TO PROTECT AGAINST SCRATCHING, GOUGING, OR ABRASIONS OF THE PIPE. UPON DELIVERY, ANY PIPE INSPECTED AND FOUND TO BE LESS THAT SATISFACTORY IN MARKING AND/OR HANDLING WILL BE REJECTED AND REFUSED WITHOUT UNLOADING. ALL POLYETHYLENE PIPE/TUBING IN STRAIGHT LENGTH FORM, SHALL BE SHIPPED BY TARPING THE LEADING ENDS OF ALL STACKS ON THE TRUCK.

HDPE PIPE USED FOR WATER MAIN MAY ONLY BE JOINED BY USE OF ONE OF THE FOLLOWING APPROVED METHODS:

- BUTT HEAT FUSION
- ELECTRO-FUSION
- DUCTILE IRON MECHANICAL JOINT FITTINGS W/ HDPE MJ ADAPTER
- MUELLER AQUAGRIP – USED W/ MUELLER RESILIENT SEAT GATE VALVES

ANY CONTRACTOR INSTALLING HDPE FOR USE AS WATER MAIN IN THE VILLAGE MUST BE QUALIFIED BY TRAINING AND TESTING TO MAKE APPROVED JOINTS WITH HDPE WATER PIPE.

POLYETHYLENE MJ ADAPTERS MUST BE PRODUCED FROM A PRE-BLENDED VIRGIN RESIN THAT HAS A PPI LISTING OF PE3408 AND HAVE BEEN QUALIFIED AND MANUFACTURED IN COMPLIANCE WITH ASTM D3350. THIS RESIN MUST CARRY A NSF STANDARD 61 LISTING FOR USE WITH POTABLE WATER. THE FITTINGS MUST BE TESTED TO THE REQUIREMENTS OF ANSI/AWWA C906.

PVC PIPE:

WATER MAIN SHALL BE DIRECTIONALLY DRILLED PVC PIPE.

ALL PVC PIPE APPROVED FOR USE AS WATER MAIN SHALL BE RESTRAINED JOINT PVC PIPE, DR 18, 235 PSI.

FOLLOWING ARE APPROVED PIPE MANUFACTURERS FOR PVC WATER MAIN PIPE:

JM EAGLE GENERAL OFFICE: NINE PEACH TREE HILL ROAD LIVINGSTON, NJ 07039 1(973) 535-1633	JM EAGLE GENERAL OFFICE: 5200 WEST CENTURY BLVD LOS ANGELES, CA 1(800) 621-4404
CERTAINTEED CORPORATION P.O. BOX 860 VALLEY FORGE, PA. 19482 1(800) 233-8990	UNITED PLASTIC PIPE CORPORATION 1390 NEUBRECHT RD LIMA, OHIO 45801-3196 1(800) 809-4217

CARE SHOULD BE EXERCISED DURING THE TRANSPORTATION OF PVC PIPE TO PROTECT AGAINST SCRATCHING, GOUGING, OR ABRASIONS OF THE PIPE. UPON DELIVERY, ANY PIPE INSPECTED AND FOUND TO BE LESS THAT SATISFACTORY IN MARKING AND/OR HANDLING WILL BE REJECTED AND REFUSED WITHOUT UNLOADING. ALL PVC PIPE IN STRAIGHT LENGTH FORM, SHALL BE SHIPPED BY TARPING THE LEADING ENDS OF ALL STACKS ON THE TRUCK.

PVC PIPE SHALL BE PUSH-ON RESTRAINED JOINTS.

VALVES:

ALL VALVES SHALL BE RESILIENT WEDGE TYPE RATED FOR 250 PSIG, COLD WORKING PRESSURE. VALVES SHALL MEET THE AWWA C515 STANDARD WITH THE VALVE BODY, BONNET, WEDGE, STUFFING BOX AND OPERATING NUT CONSTRUCTED OF DUCTILE IRON. THE DUCTILE IRON WEDGE SHALL BE ONE PIECE CASTING COVERED INTERNALLY AND EXTERNALLY WITH EPDM RUBBER. THE STEM SHALL BE SEALED BY THREE O-RINGS. THE TOP TWO O-RINGS SHALL BE REPLACEABLE UNDER FULL OPERATING PRESSURE WITH THE VALVE IN THE FULL OPEN POSITION. ALL INTERNAL AND EXTERNAL SURFACES OF THE VALVE BODY AND BONNET SHALL HAVE A FUSION-BONDED COATING THAT COMPLIES WITH THE ANSI/AWWA C550 STANDARD. ALL BOLTS AND NUTS SHALL BE HEX HEAD INCH SIZES. (SOCKET HEAD AND METRIC NOT ALLOWED) ALL FASTENERS SHALL BE 300 SERIES (18-8) STAINLESS STEEL (INSTALLED AT THE FACTORY PRIOR TO PRESSURE TESTING).

MUELLER A-2360 (AWWA C509) AND AMERICAN FLOW CONTROL SERIES 2500 (AWWA C515) ARE APPROVED RESILIENT SEAT VALVES.

ALL VALVES SHALL BE PROVIDED WITH APPROVED RETAINER FITTINGS, GASKETS AND ACCESSORIES.

ALL VALVES SHALL BE SUPPLIED WITH 5 1/4", "SCREW-TYPE"–CAST IRON VALVE BOXES, TYLER AND MUELLER BRAND ONLY WITH LID THAT HAS THE WORD "WATER" INSCRIBED ON IT.

ALL VALVE BOXES SHALL BE INSTALLED UPON THE VALVE WITH THE USE OF A VALVE BOX ADAPTOR II AS MANUFACTURED BY ADAPTOR INC., OR AN APPROVED EQUAL. THE VALVE BOX ADAPTOR II SHALL BE SIZED FOR THE APPROPRIATE VALVE APPLICATION (E.G. SIZE, MAKE, MODEL).

HYDRANTS:

ALL HYDRANTS SHALL BE 3-WAY, 5 1/4" MUELLER A-423 "SUPER CENTURION" OR 2-WAY, 5 1/4" MUELLER A420 "SUPER CENTURION," OPEN LEFT, 1 1/2" PENTAGON OPERATING NUT, (2)- 2 1/2" NOZZLES, (1) AND 4 1/2" NOZZLE (3 WAY ONLY), NATIONAL STANDARD THREADS.

EACH HYDRANT SHALL BE INSTALLED WITH A 6" AUXILIARY VALVE.

HYDRANT LEADS SHALL BE: 6" DI (CLASS 350)

ALL HYDRANTS AND AUXILIARY VALVE SHALL BE PROVIDED WITH APPROVED RETAINER FITTINGS AND ACCESSORIES.

WATER MAIN FITTINGS:

WATER MAIN FITTINGS INCLUDE: TEES, CROSSES, REDUCING FITTINGS, SLEEVES, CAPS, PLUGS, GRADE-LOCK ADAPTERS, ETC.

ALL FITTINGS SHALL BE: MADE OF CEMENT LINED, DUCTILE IRON.

ALL FITTINGS SHALL BE: MECHANICAL JOINT

ALL FITTINGS SHALL BE PROVIDED WITH APPROVED RETAINER FITTINGS AND ACCESSORIES.

SADDLES FOR DUCTILE IRON PIPE

- MUELLER BR 1 B SINGLE STRAP SADDLE FOR DIP.
- MUELLER BR 2 B DOUBLE STRAP SADDLE FOR DIP.
- ALTERNATE: FORD 101B SINGLE STRAP SADDLE FOR DIP.
- FORD 202B DOUBLE STRAP SADDLE FOR DIP.

SADDLES FOR HDPE

JCM 406 DOUBLE STRAP COATED SERVICE SADDLE.

CORPORATION STOPS FOR 3/4" AND 1"

MUELLER GROUND KEY CORPORATION VALVES H15008.

CORPORATION STOPS FOR 1 1/2" AND 2"

MUELLER B25008.

CURB STOPS

MUELLER B25209 CURB VALVE.

CURB BOXES

MUELLER H10314 (WITH 1" X 27" STATIONARY ROD) FOR 3/4" AND 1" CURB STOPS.
MUELLER H10386 (WITH 1 1/4" X 27" STATIONARY ROD) FOR 1 1/2" AND 2" CURB STOPS.

RETAINER FITTINGS:

ALL MECHANICAL JOINT (MJ) FITTINGS INCLUDING VALVES AND HYDRANTS SHALL HAVE RETAINER GLANDS INSTALLED USING THE MANUFACTURER INSTALLATION SPECIFICATIONS.

FOLLOWING ARE APPROVED RETAINER GLANDS FOR DUCTILE IRON:
UNI-FLANGE (SERIES 1400) – FORD METER BOX CO., INC.

MUELLER AQUAGRIP SYSTEM – MUELLER CO. (FOR HYDRANTS & VALVES)

OTHERS OF THE AFOREMENTIONED TYPE MAY BE USED IF APPROVED BY THE VILLAGE OF DUNLAP.

RETAINER GLANDS OF THE "SET SCREW" TYPE (E.G. COLUMBUS STANDARD) ARE NOT APPROVED FOR USE.

JOINT RESTRAINT DEVICES:

THE VILLAGE REQUIRES THAT AN ADDITIONAL LENGTH OF PIPE MUST BE RESTRAINED ON EACH SIDE OF BENDS OR VERTICAL OFFSETS, BRANCH OUTLETS OF TEES, BEFORE REDUCERS, AND BEFORE DEAD-ENDS (VALVES OR HYDRANTS). IN ADDITION TO RETAINING THE FITTINGS THEMSELVES, ANY PIPE THAT CONTAINS JOINTS (BELL AND SPIGOT, BOLTED COUPLINGS) THAT FALL WITHIN THESE LENGTHS MUST BE RESTRAINED.

THESE RESTRAINED LENGTHS OF PIPE VARY ACCORDING TO THE PARAMETERS OF THE JOB, PIPE SIZE AND TYPE, TEST PRESSURES, DEPTH OF BURY, SOIL CONDITIONS, AND TRENCH PREPARATION. CONTRACTOR SHALL USE WITH MANUFACTURERS RECOMMENDATIONS TO CALCULATE RESTRAINED LENGTHS PRIOR TO INSTALLING:

FOLLOWING ARE APPROVED JOINT RESTRAINT DEVICES:
DUCTILE IRON AND PVC – PIPE X MECHANICAL JOINT
UNI-FLANGE (SERIES 1300-C) FOR DUCTILE IRON AND C-900 PVC
FORD METER BOX CO.,INC.

ROMAC (STYLE 612) FOR DUCTILE IRON AND C-900 PVC
ROMAC INDUSTRIES, INC.

DUCTILE IRON - PIPE BELL JOINTS
UNI-FLANGE (SERIES 1390-C)
FORD METER BOX CO., INC.

ROMAC (STYLE 611)
ROMAC INDUSTRIES INC.

LEAKAGE / PRESSURE TEST

LEAKAGE AND PRESSURE TESTING SHOULD BE PERFORMED BEFORE WATER SAMPLES ARE TAKEN TO A CERTIFIED LAB FOR BACTERIOLOGICAL ANALYSIS.

PRESSURE TESTING WILL BE PERFORMED AT A MINIMUM OF 100 PSI (WITH NO VARIATION OF PLUS OR MINUS 5 PSI) FOR A DURATION OF AT LEAST ONE (1) HOUR. ANY DEFECTIVE PIPE, FITTINGS, SERVICES, HYDRANTS OR OTHER APPURTENANCES SHALL BE REPLACED AND THE TEST REPEATED UNTIL SATISFACTORY TO THE ENGINEER.

AFTER THE COMPLETION OF THE PRESSURE TEST, A LEAKAGE TEST WILL BE PERFORMED USING A MINIMUM TEST PRESSURE OF 100 PSI FOR A DURATION OF ONE (1) HOUR WITH NO LEAKAGE ALLOWED GREATER THAN SHOWN ON THE CHART SHOWN IN THE STANDARD SPECIFICATIONS

DISINFECTION OF WATER MAINS

AS PER ILLINOIS STANDARD 41-2.148: "BEFORE BEING PLACED INTO SERVICE, ALL NEW MAINS SHALL BE CHLORINATED SO THAT THE INITIAL CHLORINE RESIDUAL IS NOT LESS THAN 50 MG/L AND THAT A CHLORINE RESIDUAL OF NOT LESS THAN TWENTY-FIVE (25 MG/L) REMAINS IN THE WATER AFTER STANDING TWENTY-FOUR (24) HOURS IN THE PIPE."

THIS CAN BE DONE BY LIQUID CHLORINE OR OTHER CHLORINE-BEARING COMPOUNDS. THE EASIEST METHOD, HOWEVER, IS WITH TABLET DISINFECTION DURING THE INSTALLATION OF NEW PIPE. TABLET DISINFECTION IS BEST SUITED TO SHORT EXTENSIONS (UP TO 2500 FT.) AND SMALL DIAMETERS (UP TO 12 IN.). BECAUSE PRELIMINARY FLUSHING IS NOT POSSIBLE WITH THIS METHOD, CLEANLINESS IS OF THE UTMOST IMPORTANCE AND IT SHALL NOT BE USED IF TRENCH WATER OR FOREIGN MATERIAL HAS ENTERED THE MAIN.

TABLETS SHOULD BE PLACED IN THE TOP HALF OF EACH SECTION OF PIPE AND ATTACHED BY USE OF PERMATAX NO. 1 ADHESIVE.

FILLING THE MAIN WITH WATER SHOULD BE DONE SLOWLY, SO THAT THE WATER VELOCITY SHALL BE LESS THAN ONE (1) FOOT PER SECOND.

TREATED WATER SHALL BE RETAINED FOR AT LEAST TWENTY-FOUR (24) HOURS. AFTER THIS PERIOD, THE CHLORINE RESIDUAL SHALL BE AT LEAST TWENTY-FIVE (25) MG/L.

ALL VALVES CONNECTED TO THE EXISTING SYSTEM, SHALL REMAIN IN THE CLOSED POSITION DURING THE DISINFECTION PROCESS TO ENSURE THAT THE STRONGLY CHLORINATED WATER DOES NOT FLOW BACK INTO THE WATER SUPPLY. ALL OTHER VALVES WITHIN THE NEW SYSTEM (LINE VALVES, HYDRANT VALVES) SHOULD BE OPERATED AND REMAIN OPEN DURING THE DISINFECTION PROCESS.

FLUSHING AND BACTERIAL TESTING

ALL WATER MAINS SHALL BE SATISFACTORILY DISINFECTED PRIOR TO USE. IN ACCORDANCE WITH THE REQUIREMENTS OF AWWA 651-99, AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED FROM EVERY 1,200 FEET OF NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. SATISFACTORY DISINFECTION SHALL BE DEMONSTRATED IN ACCORDANCE WITH THE REQUIREMENTS OF 35 ILL. ADM. CODE 625.203.

AFTER PRESSURE/LEAKAGE TESTING AND DISINFECTION OF WATER MAINS, ALL CHLORINE TREATED WATER SHALL BE FLUSHED FROM THE SYSTEM TO A POINT WHERE THE CHLORINE RESIDUAL IS LESS THAN 1 MG/L OR TO A RESIDUAL THAT IS NO MORE THAN IS NORMALLY CARRIED IN THE SYSTEM.

FLUSHING SHOULD BE ACCOMPLISHED BY USE OF A HYDRANT METER SO THAT "UNACCOUNTED" WATER CAN BE CALCULATED.

SAMPLING IS BEST DONE FROM A SERVICE TAP WITH A COPPER TUBING OUTLET.

A SINGLE SAMPLE WILL BE TAKEN TO A CERTIFIED LAB FOR BACTERIOLOGICAL TESTING AND MUST BE SHOWN TO BE FREE OF BACTERIAL CONTAMINATION BEFORE BEING PLACED INTO SERVICE.

SHOULD ANY SAMPLE NOT PASS, CHLORINATION PROCEDURE FOR DISINFECTION SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED ON SUCCESSIVE SAMPLES TAKEN AT LEAST 24 HOURS APART.

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DESIGNED	WFS	REVISED
DRAWN	DEH	REVISED
CHECKED	WFS	REVISED
DATE	08-30-13	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL RTE 91 WATER MAIN PLANS GENERAL NOTES		
SCALE: -	SHEET NO. 2 OF 17 SHEETS	STA. - TO STA. -

F.A. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1380	7W-1, RS-3	PEORIA	617	256
CONTRACT NO. 88792				
ILLINOIS FEDERAL ROAD DIST NO.				