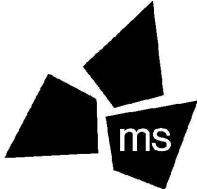
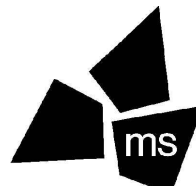


INTERCHANGEABILITY: ALL VALVE BOXES AND PARTS SHALL BE INTERCHANGEABLE WITH VALVE BOXES ALREADY IN SERVICE IN THE YOUNGSTOWN WATER SYSTEM. VALVE BOX RISER SPECIFICATIONS: VALVE BOX RISERS SHALL FIT IN THE SOCKET OF AN EXISTING INSTALLED VALVE BOX AND SHALL RAISE THE VALVE BOX AS SPECIFIED IN THE PROPOSAL. NO LIDS. VALVES: MAIN LINE VALVES 4” THROUGH 12” ARE TO BE RESILIENT SEATED GATE VALVES IN ACCORDANCE WITH AWWA STANDARDS C500. ALL MAIN LINE VALVES MUST OPEN TO THE RIGHT (CLOCKWISE). THE OPERATING NUT SHALL BE 2 INCHES SQUARE WITH ARROW CAST SHOWING DIRECTION OF OPERATION. THE INTERIOR OF ALL VALVES MUST BE COATED WITH EPOXY COATING. MAIN LINE VALVES 16” AND LARGER ARE TO BE BUTTERFLY VALVES, WITH THE SAME OPERATING AND COATING REQUIRED FOR THE RESILIENT SEATED GATE VALVES, IN ACCORDANCE WITH AWWA STANDARDS C509. ALL VALVES ARE TO INCLUDE ACCESSORIES (NUTS, BOLTS, GASKETS AND GLANDS). CORPORATION STOPS: CORPORATION STOPS SHALL BE MADE OF BRONZE AND SHALL HAVE AWWA STANDARD THREADS ON THE INLET SIDE, AND THE OUTLET SHALL BE FOR COPPER SERVICE PIPE WITH A FLARE COUPLING. CORPORATION STOPS SHALL BE MUELLER PRODUCTS PART NUMBER H-15000 OR APPROVED EQUAL. ALL CORPORATION STOPS SHALL COMPLY WITH AWWA STANDARDS C800-84. CURB STOPS: CURB STOPS SHALL BE ¼ TURN WITH CHECK AND SOLID TEE HEAD. CURB STOPS SHALL BE MUELLER ORISEAL, A.Y. MCDONALD 6100, OR APPROVED EQUAL. THE INLET AND OUTLET ENDS TO BE FLARED COPPER CONNECTION FOR TYPE “K” COPPER PIPE. CURB STOPS SHALL MEET AWWA STANDARDS C800-8 COPPER TO COPPER UNIONS (FLARED): COPPER TO COPPER FLARE UNIONS SHALL BE MADE OF BRONZE AND SHALL BE A THREE PART CONNECTION TYPE. BOTH CONNECTIONS SHALL BE CAPABLE OF ACCEPTING FLARED COPPER CONNECTIONS. THREE PART UNIONS SHALL BE MUELLER PRODUCTS PART NUMBER H-15400, HAYS PRODUCT PART NUMBER 5615, OR APPROVED EQUAL. COPPER TO COPPER UNIONS (COMPRESSION): COPPER TO COPPER COMPRESSION UNIONS SHALL BE MADE OF BRONZE AND SHALL BE A THREE PART CONNECTION TYPE. BOTH CONNECTIONS SHALL BE CAPABLE OF ACCEPTING COMPRESSION TYPE COPPER CONNECTIONS. THREE PART UNIONS SHALL BE FORD PRODUCTS PART NUMBER C44 TYPE. NUMBERS WILL VARY DEPENDING ON SIZE OF FITTINGS. ALL COMPRESSION UNIONS MUST HAVE LOCKING TYPE SET SCREW (PACK JOINT COUPLING). COPPER TO LEAD UNIONS (COMPRESSION): SERVICE LINE ADAPTERS (OR COUPLINGS) SHALL BE MADE OF BRONZE AND SHALL BE ABLE TO FIT LEAD PIPE ON ONE END AND COPPER PIPE ON THE OTHER END. THEY SHALL BE COMPRESSION TYPE. SERVICE LINE ADAPTERS SHALL BE FORD PRODUCTS PART NUMBER Q 24-33 ¾” EXTRA STRONG TO ¾” COPPER AND Q 34-33 ¾” DOUBLE EXTRA STRONG TO ¾” COPPER. ALL COMPRESSION UNIONS MUST HAVE LOCKING TYPE SET SCREW. REPAIR CLAMPS: REPAIR CLAMPS SHALL BE DESIGNED TO FIT PIPES AS SPECIFIED OF 4”, 6”, 8”, 10”, 12” AND 16” DIAMETER. REPAIR CLAMPS SHALL PROVIDE A FAST ECONOMICAL MEANS OF REPAIRING ALL CIRCUMFERENTIAL AND OTHER TYPES OF BREAKS ON CAST IRON PIPES. REPAIR CLAMPS SHALL BE DRESSER 364, ALL AROUND REPAIR CLAMPS, SMITH BLAIR SINGLE BAND FULL CIRCLE 261, ROMAC SS-1 OR APPROVED EQUAL. REPAIR CLAMPS SHALL BE FULLY STAINLESS STEEL. ALL REPAIR CLAMPS SHALL HAVE A CROSS HATCH PATTERN, WAFFLE, OR RUBBER IN LIEU OF THE SMOOTH FINISH TYPE. ALL REPAIR CLAMPS SHALL HAVE A SINGLE ROW OF BOLTS.	BOLTED COUPLINGS: BOLTED COUPLINGS BELOW SHALL BE OF THE XR501 EXTENDED RANGE TYPE AS MANUFACTURED BY ROMAC INDUSTRIES, INC. OR APPROVED EQUAL. MINIMUM PIPE O.D. RANGES ARE LISTED BELOW: 4"- 4.50" - 5.60" 6"- 6.60" - 7.60" 8"- 8.60" - 9.75" 10"- 10.70" - 12.15" 12"- 12.70" - 14.41" BOLTED COUPLINGS BELOW SHALL BE OF THE MAXFIT TYPE AS MANUFACTURED BY VIKING JOHNSON OR APPROVED EQUAL. MINIMUM PIPE O.D. RANGES ARE LISTED BELOW: 16"- 17.28" - 17.95" 16"- 17.32" - 19.20" COPPER PIPE: ALL COPPER PIPES SHALL BE A TYPE KNOWN AS TYPE "K" SOFT ANNEALED, AND SHALL BE OF STANDARD WEIGHTS AND THICKNESS AND SHALL CONFORM TO FEDERAL SPECIFICATIONS WW-T-799 AND S.S.T.M. B88-55. COPPER PIPE IS TO BE MADE IN THE U.S.A. ALL ¾" SIZE COPPER PIPE 100' LENGTH COIL, IN SEPARATE INDIVIDUAL CARTON. ALL 1" SIZE COPPER PIPE 100' LENGTH COIL, IN SEPARATE INDIVIDUAL CARTON. ALL 1-1/2" SIZE COPPER PIPE 100' LENGTH COIL, IN SEPARATE INDIVIDUAL CARTON. ALL 2" SIZE COPPER PIPE 100' LENGTH COIL, IN SEPARATE INDIVIDUAL CARTON. SERVICE SADDLES: SERVICE SADDLES SHALL BE SUPPLIED WITH CLOSE GRAIN BRONZE. STRAPS SHALL BE STRONG BRONZE, AND FLATTENED FOR MAXIMUM BREAKING ON THE PIPE. ALL NUTS ARE TO BE BRONZE. THEY SHALL HAVE A SINGLE BRONZE STRAP FOR ¾" AND 1" AND DOUBLE BRONZE STRAP FOR 1-1/2" AND 2". THEY SHALL BE MADE FOR USE ON ASBESTOS CEMENT, CAST IRON, OR STEEL PIPE. GASKETS SHALL BE NEOPRENE. SERVICE CLAMPS SHALL BE TAPPED MUELLER CORPORATION THREAD. SERVICE SADDLES SHALL BE SINGLE STRAP ROCKWELL 323, OR AS MANUFACTURED BY JAMES JONES, OR APPROVED EQUAL. CURB BOX RODS & ADAPTERS: TWO TYPES OF CURB BOX RODS ARE USED BY THE YOUNGSTOWN WATER DEPARTMENT. A SAMPLE OF EACH MAY BE OBTAINED AT THE WATER DEPARTMENT YARD. EACH ROD IS TO BE DUPLICATED TO MATCH THE SAMPLE OBTAINED. SPECIAL CURB STOP: A SPECIAL CURB STOP ADAPTER IS USED BY THE YOUNGSTOWN WATER DEPARTMENT TO ADAPT THE OLD STYLE CURB BOXES TO A CURB BOX ROD. EACH ADAPTER MUST DUPLICATE THE SAMPLES IN MATERIAL AND ALL DIMENSIONS. FOR SAMPLES, PLEASE CONTACT: YOUNGSTOWN WATER DEPARTMENT 160 N. WEST AVENUE YOUNGSTOWN, OHIO 44502 ATTN: LOU ZORELLA (330) 743-5338. DUCTILE IRON PIPE MATERIAL: DUCTILE IRON PIPE FOR WATER LINES SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST REVISION OF AWWA STANDARDS C150 AND C151. ALL PIPES SHALL BE CEMENT LINED IN ACCORDANCE WITH THE LATEST REVISION OF AWWA STANDARDS C104. CLASS SHALL BE CLASS 52. PIPE JOINTS SHALL BE PUSH-ON JOINTS, AND SHALL BE JOINTED BY THE USE OF A RUBBER RING GASKET INSERTED IN THE BELL END. ACCESSORIES: COUPLING RUBBER RINGS AND LUBRICANTS SHALL BE FURNISHED AND INCLUDED IN THE PRICE OF THE PIPE. ALL RUBBER GASKETS SHALL BEAR THE IDENTIFYING MARK OF THE PIPE MANUFACTURER, GASKET SIZE AND THE YEAR OF MANUFACTURER. RUBBER SHALL BE ALL NEW NATURAL OR SYNTHETIC RUBBER, HAVING THE MECHANICAL PROPERTIES REQUIRED FOR THE SERVICE. MARKING: ALL DUCTILE IRON PIPES SHALL BE MARKED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS. MARKINGS SHALL INCLUDE THE MANUFACTURER'S NAME OR INITIALS, YEAR CAST AND CLASS LETTER OR NUMBER.	SHOP TESTING: EACH PIECE OF EQUIPMENT SHALL BE SHOP TESTED BY HYDROSTATIC PRESSURE BEFORE SHIPMENT FROM THE FACTORY. EACH INDIVIDUAL SHIPMENT SHALL BE ACCOMPANIED BY THE MANUFACTURER'S SWORN CERTIFICATE IN DUPLICATE CERTIFYING THAT ALL PIPES MEET THE REQUIREMENTS OF THESE SPECIFICATIONS. PIPE LENGTH: STANDARD PIPE LENGTH SHALL BE 18 FEET. NOTE: PIPE SHALL BE ALL THE SAME LENGTH, NO RANDOM LENGTHS ACCEPTED. FIRE HYDRANTS AND RISERS: R3 - 7-15-26 - NOTE REVISED ALL BIDDERS MUST SUBMIT WITH THEIR BIDS TWO COPIES OF DETAILED DRAWINGS, CERTIFIED FLOW AND PRESSURE LOSS CHARTS, AND SPECIFICATIONS OF THE HYDRANT THEY PROPOSE TO FURNISH. THE HYDRANT SHALL CONFORM IN ALL RESPECTS WITH THE REQUIREMENTS OF THE LATEST REVISION OF AWWA STANDARDS C502 FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, EXCEPT AS HEREINAFTER SPECIFICALLY MODIFIED. HYDRANTS SHALL BE OF THE POST TYPE WITH COMPRESSION TYPE MAIN VALVE THAT CLOSSES WITH THE LINE PRESSURE. HYDRANT RISERS SHALL BE MANUFACTURED BY THE ORIGINAL EQUIPMENT SUPPLIER AS NOT TO INTERFERE WITH ANY WARRANTIES. EXAMPLE, RISERS FOR B-62-B SHALL BE MANUFACTURED BY AMERICAN DARLING ONLY. THE CITY OF YOUNGSTOWN PRESENTLY USES AND STOCKS PARTS FOR TWO BRANDS OF HYDRANTS. THEY ARE AS FOLLOWS: 1. AMERICAN DARLING B-62-B (WITH THREADED ON FLANGES). 2. MUELLER SUPER CENTURION A-423 NONE OTHER THAN THE TWO ABOVE LISTED HYDRANTS SHALL BE ACCEPTED BY THE CITY. BONNET SECTION: THE BONNET SECTION SHALL BE OF THE DRY TOP DESIGN USING AT LEAST TWO “O” RINGS TO SEAL THE STEM OPERATING THREADS AND LUBRICANT CHAMBER AWAY FROM THE LINE OF PRESSURE. THE PORTION OF THE STEM THAT PASSES THROUGH “O” RING SEALS SHALL BE LINTED BY A BRONZE SLEEVE AND SEALED WITH AN “O” RING OR THE PRESSURE-SEALING DEVICE. THE DESIGN OF THE MECHANICAL MECHANISM SHALL BE SUCH THAT ALL THREADS AND BEARING SURFACES CAN BE LUBRICATED BY AN EXTERNAL MEANS. THE SIZE AND SHAPE OF THE OPERATING NUT SHALL BE 1” TAPERED SQUARE AND OPEN BY TURNING TO THE LEFT (COUNTER CLOCKWISE). THE OPERATING NUT THRUST COLLAR SHALL BEAR AGAINST ANTI-FRICTION WASHER BEARING WHEN THE OPERATING NUT IS TURNED IN THE OPENING DIRECTION. THE BONNET SECTION MUST BE AS WEATHER PROOF AS POSSIBLE. UPPER STANDPIPE: THE UPPER STANDPIPE SHALL BE MADE OF CAST IRON CLASS “B” (ASTM 126) WITH INTEGRALLY CAST FLANGES. THE STANDPIPE SHALL BE FURNISHED WITH 2-1/2” AND ONE 4- 1/2” HOSE OUTLETS, COMPLETE WITH CAPS AND CHAINS. THE NIPPLES SHALL BE MADE OF BRASS, WHICH ARE TO BE LOCKED IN PLACE. THE SEAL BETWEEN HOSE NIPPLE AND STANDPIPE WILL BE MADE BY AN “O” RING. THE UNION BETWEEN THE UPPER AND LOWER STANDPIPE SHALL BE MADE BY MEANS OF A TRAFFIC SAFETY DEVICE WHICH WILL BREAK CLEANLY UPON TRAFFIC IMPACT. THE DESIGN SHALL BE SUCH THAT THE UPPER STANDPIPE CAN BE ROTATED FROM 1-360 DEGREES WITHOUT TOTAL DISASSEMBLY OF THE DEVICE. INSIDE DIAMETER OF THE STANDPIPE SHALL BE NOT LESS THAN 7”. LOWER STANDPIPE: THE LOWER STANDPIPE SHALL BE MADE OF CAST IRON CLASS “B” (ASTM 126) WITH ALL FLANGES INTEGRALLY CAST. DUCTILE IRON IS ACCEPTABLE MATERIAL FOR THIS APPLICATION. THREADED ON FLANGES SHALL ALSO BE ACCEPTABLE IN LIEU OF INTEGRALLY CAST FLANGES. FLANGES RELYING ON SNAP TYPE RETAINING RINGS TO BE HELD IN PLACE ARE NOT ACCEPTABLE.	SEAT RING AND MAIN VALVE ASSEMBLY: THE MAIN VALVE OPENING SHALL BE NOT LESS THAN 5-1/4” INSIDE DIAMETER. THE VALVE GASKET SHALL BE MADE OF SYNTHETIC RUBBER AT LEAST 1-1/8” THICK. THE SEAT RING AND MAIN VALVE ASSEMBLY SHALL BE SUCH THAT IT CAN BE REMOVED FROM ABOVE GROUND THROUGH THE UPPER STANDPIPE WITHOUT EXCAVATION BY MEANS OF A LIGHT WEIGHT SEAL REMOVAL WRENCH. THE SEAT RING SHALL THREAD DIRECTLY INTO A BRONZE SEAT BUSHING. THE SEAT RING IN CONJUNCTION WITH THE SEAT BUSHING SHALL BE FROM AN ALL BRONZE DRAIN WAY. ALL BRONZE PARTS MUST CONTAIN LESS THAN 16 PARTS ZINC ACCORDING TO AWWA C-502, LATEST REVISION. ALL PRESSURE SEALS BETWEEN THE SEAT RING AND BRONZE BUSHING SHALL BE MADE BY RUBBER “O” RINGS. ALL UPPER VALVE PLATES SHALL BE BRONZE. WATER HAMMER: HYDRANTS MUST BE SO DESIGNED, PARTICULARLY WITH REGARD TO THE PITCH OF THE THREAD OF THE OPERATING STEM, THAT WHEN PROPERLY OPERATED, A WATER HAMMER WILL NOT BE CAUSED WHICH WILL GIVE AN INCREASE PRESSURE EXCEEDING THE WORKING PRESSURE, WHEN SUCH PRESSURE IS OVER 60 POUNDS, WHEN OPERATING UNDER LESS THAN 60 POUNDS WORKING PRESSURE, PRESSURE SHALL NOT INCREASE MORE THAN 60 POUNDS. STEM: THE HYDRANT STEM SHALL BE A TWO-PART STEM JOINTED BY A BREAKABLE STEM COUPLING WITH STAINLESS STEEL PINS OR STAINLESS STEEL BOLTS AND NUTS. THE STEM COUPLINGS SHALL BE LOCATED AT THE SAME ELEVATION AS THE GROUND COUPLING. HYDRANT SHOE: THE HYDRANTS SHOE SHALL BE FURNISHED WITH AN OVERSIZED 6” MECHANICAL JOINT INLET, RANGE UP TO 7.10”, COMPLETE WITH GLAND, GASKET, BOLTS AND NUTS. THE DEPTH OF BURY SHALL BE 5' UNLESS OTHERWISE CALLED FOR IN THE BID DOCUMENT. THE INSIDE OF THE HYDRANTS SHOE SHALL BE COATED BY A FUSION BONDED EPOXY COATING. LETTERING: LETTERING SHALL BE CAST ON TOP OF THE HYDRANT IN CHARACTER RAISED 1/8” AND ARROW AT LEAST 2-1/2 INCHES LONG, AND THE WORD “OPEN” IN LETTERS ½” HIGH AND 1/8” IN RELIEF INDICATION TO TURN OPEN THE HYDRANT. CAPS: HOSE CAPS MUST BE PROVIDED FOR ALL OUTLETS AND MUST BE SECURELY CHAINED TO THE BARREL WITH A CHAIN CONSTRUCTED OF MATERIAL NOT LESS THAN 1/8” IN DIAMETER OR EQUAL MATERIAL. CAP NUT: HOSE CAP NUT MUST BE OF THE SAME SIZE AND SHAPE AS THE TOP OF THE OPERATING NUT, 1-1/8” LENGTH. HOSE NOZZLE CAP WASHER CAP: A COMPOSITION WASHER MUST BE PROVIDED IN THE HOSE CAP, SET IN A GROOVE TO PREVENT FALLING OUT WHEN THE CAP IS REMOVED. OPERATING WRENCHES: ONE OPERATING WRENCH TO BE INCLUDED WITH EACH FIVE HYDRANTS PURCHASED. SEAT-REMOVING WRENCHES: ONE FOR MAXIMUM DEPTH HYDRANT TO BE FURNISHED. MARKINGS: THE HYDRANT MUST BE MARKED WITH THE DATE AND NAMES OR THE PARTICULAR MARK OF THE MANUFACTURER, ALL LETTERS AND FIGURES MUST BE CAST ON THE HYDRANT BARREL ABOVE THE GROUND LINE.	WATER WORKS GENERAL NOTES DESIGN AGENCY  DESIGNER EMB REVIEWER CJM PROJECT ID 115790 SHEET P.5 TOTAL 35
--	--	--	--	--

TESTING: AFTER BEING ASSEMBLED, ALL HYDRANTS SHALL BE TESTED HYDRAULICALLY TO A PRESSURE OF 300 PSI, BEFORE LEAVING THE FACTORY. THIS TEST MUST BE MADE WITH VALVE OPEN IN ORDER TO TEST THE ENTIRE BARREL FOR POROSITY AND STRENGTH OF THE HYDRANT BODY. A SECOND TEST MUST BE CONDUCTED WITH THE VALVE SHUT IN ORDER TO TEST THE STRENGTH AND TIGHTNESS OF THE VALVE. THE MANUFACTURER SHALL SUBMIT TO THE ENGINEER AND THE CITY, A CERTIFIED WRITTEN STATEMENT OF THE RESULTS OF THE HYDRANT TESTS. DELIVERY: HYDRANTS SHALL BE DELIVERED ASSEMBLED IN ONE PIECE, INCLUDING GLANDS, GASKETS AND ALL GLAND BOLTS. NO HYDRANT WILL BE ACCEPTED IF BOLTS, GLANDS OR GASKETS ARE DELIVERED IN SEPARATE PACKAGE. PRESSURE LOSS AND QUANTITY OF FLOW TESTS: A GREAT AMOUNT OF CONSIDERATION IN THE AWARD OF THE CONTRACT WILL BE MADE FOR HYDRANTS THAT MEET THE FOLLOWING SPECIFICATIONS, AND ARE CAPABLE OF THE MAXIMUM FLOWS AT MINIMAL PRESSURE LOSS. PRESSURE LOSS THROUGH THE HYDRANT SHALL NOT EXCEED THE FOLLOWING: 1. 2-1/2" NOZZLE @ 250 GPM FLOW: 0.50 PSI 2. 2-1/2" NOZZLE @ 500 GPM FLOW: 1.50 PSI 3. 4-1/2" STEAMER @ 1000 GPM FLOW: 2.90 PSI FLOWS THROUGH THE HYDRANT STEAMER NOZZLE AT THE STATED PRESSURE LOSS SHALL EXCEED THE FOLLOWING: FLOW @ 5 PSI: 1,300 GPM FLOW @ 20 PSI 2,500 GPM TESTING PROCEDURES AND RESULTS: ALL PRESSURE LOSS AND QUANTITY OF FLOW TESTING MUST BE DONE BY A QUALIFIED REPUTABLE TESTING LABORATORY OR WITNESSED BY A KNOWLEDGEABLE INDEPENDENT PROFESSIONAL ENGINEER VERSED IN HYDRAULIC TESTING AND MUST HAVE BEEN DONE WITHIN THE LAST FIVE YEARS ON AN EXACT PRODUCTION LINE MODEL CONTRACT. THE TESTING PROCEDURE SHALL BE IN ACCORDANCE WITH AWWA STANDARDS C502 AS MODIFIED TO OBTAIN THE RESULTS OF THE ABOVE FLOWS AND LOSS OF PRESSURE TESTS. THE RESULTS AND THE PROCEDURES OF THE TESTING ON THE EXACT PRODUCTION LINE MODEL OF HYDRANT TO BE FURNISHED UNDER THIS CONTRACT SHALL BE CERTIFIED BY THE TESTING LABORATORY OR INDEPENDENT PROFESSIONAL ENGINEER. THE REPORT SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THE FOLLOWING: 1. THE NAME OR CATALOG NUMBER AND YEAR OF PRODUCTION OF THE HYDRANT BEING TESTED. 2. SCHEMATIC OF TESTING ARRANGEMENT WITH ALL PERTINENT DIMENSIONS SUCH AS (BUT NOT LIMITED TO), THE FOLLOWING: A) INTERIOR OF DIAMETER INLET PIPING. B) DISTANCE FROM THE METER FLANGE TO MANOMETER INLET TUBE. C) DISTANCE FROM THE METER FLANGE TO THE HYDRANT INLET. D) DISTANCE FROM NOZZLE TO THE MANOMETER. E) DEPTHS OF HYDRANT BURY. F) INTERIOR DIAMETER AND LENGTH OF DISCHARGE TUBE. 3. IF USED ON THESE TESTS, RECENT ACCURACY TESTS OR CURVES OF METER USED IN MEASURING THE FLOWS. 4. ACCURACY OF ALL OTHER MEASURING DEVICES. PAINTING: AFTER BEING THOROUGHLY CLEANED, ALL IRON PARTS EXCEPT THE OUTSIDE PORTION OF THE UPPER STANDPIPE SHALL BE PAINTED ON EXPOSED SURFACES WITH TWO COATS OF ASPHALTUM VARNISH. THE UPPER STANDPIPE AND BONNET SHALL BE GIVEN TWO COATS. THE FIRST COAT SHALL BE A GOOD PRIMER AND SECOND COAT SHALL BE SHERWIN WILLIAMS - SW4083 OR APPROVED EQUAL.	FIRE HYDRANT STEAMER AND NOZZLE CAPS: STEAMER CAPS SHALL BE MADE OF GRAY IRON, ASTM A-126, AND GRADE B. THE OPERATING NUTS SHALL BE 1" TAPERED SQUARE 1-1/8" IN LENGTH. THE CAP SHALL BE SUPPLIED WITH A COMPOSITION WASHER SET IN A GROOVE TO PREVENT ITS FALLING OUT WHEN THE CAP IS REMOVED. THE THREADS ARE YOUNGSTOWN STANDARD. HOSE NOZZLE CAPS SHALL BE MADE OF GRAY IRON, ASTM A-126, AND GRADE B. THE OPERATING NUTS SHALL BE 1" TAPERED SQUARE 1-1/8" IN LENGTH. THE CAP SHALL BE SUPPLIED WITH A COMPOSITION WASHER SET IN A GROOVE TO PREVENT ITS FALLING OUT WHEN THE CAP IS REMOVED. THE THREADS SHALL BE NATIONAL STANDARD. FIRE HYDRANT RISERS: ALL FIRE HYDRANT RISERS SHALL BE MANUFACTURED BY THE ORIGINAL EQUIPMENT SUPPLIER SO AS NOT TO INTERFERE WITH ANY WARRANTIES. EXAMPLE, RISERS FOR THE AMERICAN DARLING B-62-B MUST BE MANUFACTURED BY AMERICAN DARLING CO. ONLY. ITEM 202 - ABANDON MISC.: WATER VALVE BOX: THIS ITEM SHALL CONSIST OF ABANDONING VALVE BOXES AS INDICATED ON THE CONSTRUCTION PLANS. THE CONTRACTOR SHALL REMOVE THE TOP OF THE VALVE BOX AND A MINIMUM OF 18 INCHES OF THE VALVE BOX RISER. THE VALVE BOX SHALL BE FILLED WITH QC1 CONCRETE TO THE FINISHED GRADE. ANY PAVEMENT, CURB, SIDEWALK, OR LANDSCAPE AREA REMOVED FOR WATER VALVE BOX ABANDONMENT THAT IS NOT SHOWN TO BE REPLACED ELSEWHERE IN THE PLAN SHALL BE REPLACED IN-KIND AND ITS COST, INCLUDING REMOVAL, IS INCLUDED IN THE COST OF THE WATER VALVE BOX ABANDONMENT ITEM. PAYMENT BE MADE BY EACH (EA) UNDER ITEM 202 - ABANDON MISC.: WATER VALVE BOX. ITEM 638 - WATER WORK MISC.: 6" CLASS 52 DIP SERVICE BRANCH, COMPLETE: THIS ITEM SHALL INCLUDE LOCATING EXISTING SERVICE LINES HORIZONTALLY AND VERTICALLY, EXCAVATION, REMOVAL/DISPOSAL OF EXCAVATED MATERIAL, TRENCH SUPPORT, SUPPORT AND PROTECTION OF PARALLEL AND PERPENDICULAR UTILITIES AS WELL AS NEARBY STRUCTURES, REMOVAL OF SECTION OF EXISTING SERVICE AND CURB BOX, PLUGGING/ABANDONMENT OF EXISTING SERVICE, PIPE, CONNECTIONS, ANCHOR TEES, FITTINGS AND APPURTENANCES, PIPE BEDDING, INITIAL AND FINAL BACKFILL AND COMPACTION TO SUBGRADE (PREMIUM BACKFILL), TESTING AND CONNECTION BACK TO EXISTING WATER SERVICE WHERE INDICATED ON THE PLAN. PAYMENT FOR ALL WORK ASSOCIATED WITH THE INSTALLATION OF WATER SERVICE SHALL BE MADE BY LINEAR FEET OF SERVICE BRANCH INSTALLED UNDER ITEM 638 - WATER WORK MISC.: 6" CLASS 52 DIP SERVICE BRANCH, COMPLETE. ITEM 638 - WATER WORK MISC.: 8" CLASS 52 DIP SERVICE BRANCH, COMPLETE: THIS ITEM SHALL INCLUDE LOCATING EXISTING SERVICE LINES HORIZONTALLY AND VERTICALLY, EXCAVATION, REMOVAL/DISPOSAL OF EXCAVATED MATERIAL, TRENCH SUPPORT, SUPPORT AND PROTECTION OF PARALLEL AND PERPENDICULAR UTILITIES AS WELL AS NEARBY STRUCTURES, REMOVAL OF SECTION OF EXISTING SERVICE AND CURB BOX, PLUGGING/ABANDONMENT OF EXISTING SERVICE, PIPE, CONNECTIONS, ANCHOR TEES, FITTINGS AND APPURTENANCES, PIPE BEDDING, INITIAL AND FINAL BACKFILL AND COMPACTION TO SUBGRADE (PREMIUM BACKFILL), TESTING AND CONNECTION BACK TO EXISTING WATER SERVICE WHERE INDICATED ON THE PLAN. PAYMENT FOR ALL WORK ASSOCIATED WITH THE INSTALLATION OF WATER SERVICE SHALL BE MADE BY LINEAR FEET OF SERVICE BRANCH INSTALLED UNDER ITEM 638 - WATER WORK MISC.: 8" CLASS 52 DIP SERVICE BRANCH, COMPLETE. ITEM SPECIAL - 8" GATE VALVE WITH VALVE BOX, CITY OF YOUNGSTOWN: INCLUDE ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE GATE VALVE AND VALVE BOX IN ACCORDANCE WITH ODOT SPECIFICATIONS, WITH EXCEPTION TO THE CITY OF YOUNGSTOWN SPECIFICATIONS HEREIN. PAYMENT SHALL BE MADE BY EACH (EA) UNDER ITEM SPECIAL - 8" GATE VALVE WITH VALVE BOX, CITY OF YOUNGSTOWN.	ITEM 638 - WATER WORK MISC.: 6" FIRE SUPPRESSION LINE, COMPLETE: THIS ITEM SHALL INCLUDE ALL EXCAVATION, DISPOSAL OF EXCAVATED MATERIAL, TRENCH SUPPORT, SUPPORT/PROTECTION OF NEARBY UTILITIES, BEDDING, STRUCTURAL BACKFILL, COMPACTION, PIPE, CONNECTIONS, ANCHOR TEES, FITTINGS AND APPURTENANCES, BUILDING BASEMENT PENETRATIONS, ACCESS COORDINATION, SHUTOFF VALVE, END CAP (WITHIN BASEMENT) AND REQUIRED TESTING, REMOVAL OF EXISTING CURB BOX, CUT CAP, AND PLUGGING OF THE EXISTING FIRE SUPPRESSION LINE, DISPOSAL OF MATERIAL, AND ANY WORK ASSOCIATED WITH LOCATING AND COORDINATING TIE-INS TO THE EXISTING SERVICES, AS REQUIRED FOR A COMPLETE FIRE SUPPRESSION WATER SUPPLY TO THE STRUCTURES INDICATED. FIRE SUPPRESSION LINE CONSTRUCTION MUST MEET ALL LOCAL FIRE PROTECTION CODES/REQUIREMENTS AND REQUIREMENTS OF THE LOCAL FIRE MARSHAL. PAYMENT FOR ALL WORK ASSOCIATED WITH THE INSTALLATION OF FIRE SUPPRESSION LINE SHALL BE MADE BY LINEAR FEET (LF) AT THE PRICE BID FOR UNDER ITEM 638 - WATER WORK MISC.: 6" FIRE SUPPRESSION LINE, COMPLETE. ITEM 638 - WATER WORK MISC.: 8" FIRE SUPPRESSION LINE, COMPLETE: THIS ITEM SHALL INCLUDE ALL EXCAVATION, DISPOSAL OF EXCAVATED MATERIAL, TRENCH SUPPORT, SUPPORT/PROTECTION OF NEARBY UTILITIES, BEDDING, STRUCTURAL BACKFILL, COMPACTION, PAVEMENT REPLACEMENT PER PAVEMENT REPLACEMENT DETAIL, PIPE, CONNECTIONS, ANCHOR TEES, FITTINGS AND APPURTENANCES, BUILDING BASEMENT PENETRATIONS, ACCESS COORDINATION, SHUTOFF VALVE, END CAP (WITHIN BASEMENT) AND REQUIRED TESTING, REMOVAL OF EXISTING CURB BOX, CUT CAP, AND PLUGGING OF THE EXISTING FIRE SUPPRESSION LINE, DISPOSAL OF MATERIAL, AND ANY WORK ASSOCIATED WITH LOCATING AND COORDINATING TIE-INS TO THE EXISTING SERVICES, AS REQUIRED FOR A COMPLETE FIRE SUPPRESSION WATER SUPPLY TO THE STRUCTURES INDICATED. FIRE SUPPRESSION LINE CONSTRUCTION MUST MEET ALL LOCAL FIRE PROTECTION CODES/REQUIREMENTS AND REQUIREMENTS OF THE LOCAL FIRE MARSHAL. PAYMENT FOR ALL WORK ASSOCIATED WITH THE INSTALLATION OF FIRE SUPPRESSION LINE SHALL BE MADE BY LINEAR FEET (LF) AT THE PRICE BID FOR ITEM 638 - WATER WORK MISC.: 8" FIRE SUPPRESSION LINE, COMPLETE. ITEM SPECIAL - 8" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS, CITY OF YOUNGSTOWN: FOR 8" WATER MAIN, FOLLOW THE CITY OF YOUNGSTOWN SPECIFICATIONS, AND THE NOTES AND DETAILS CONTAINED HEREIN. THIS ITEM SHALL INCLUDE ALL EXCAVATION, DISPOSAL OF EXCAVATED MATERIAL, TRENCH SUPPORT, SUPPORT/PROTECTION OF NEARBY UTILITIES, REMOVAL/DISPOSAL OF EXISTING CONDUIT, PIPE, WIRE, ETC., LESS THAN 4" DIAMETER, NECESSARY FOR PROPOSED WATERLINE INSTALLATION, BEDDING, STRUCTURAL BACKFILL, COMPACTION, PIPE, POLYETHYLENE ENCASEMENT, CONNECTIONS, ANCHOR TEES, FITTINGS, COST OF MATERIALS AND INSTALLATION OF CONNECTION COUPLING TO EXISTING 12" WATER LINE, SYSTEM FLUSHING, WATER LINE TESTING AND DISINFECTION, IN ACCORDANCE WITH THE WATER WORK NOTES AND SPECIFICATIONS SHALL BE INCLUDED IN ITEM SPECIAL - 8" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS, CITY OF YOUNGSTOWN. WHERE PROPOSED WATERLINE REPLACEMENT IS LOCATED WITHIN THE SAME TRENCH LIMITS AS THE EXISTING WATERLINE, REMOVAL/DISPOSAL OF EXISTING WATERLINE PIPE, FITTINGS, AND APPURTENANCES SHALL BE CONSIDERED INCIDENTAL TO THE PROPOSED WATERLINE INSTALLATION AND SHALL BE INCLUDED IN ITEM SPECIAL - 8" WATER MAIN DIP CLASS 52 PUSH ON JOINTS AND FITTINGS, CITY OF YOUNGSTOWN. ITEM SPECIAL – 8" INSERTING VALVE WITH VALVE BOX, CITY OF YOUNGSTOWN: INCLUDE ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE GATE VALVE AND VALVE BOX ON ACTIVE WATERLINES IN ACCORDANCE WITH ODOT SPECIFICATIONS, WITH EXCEPTION TO THE CITY OF YOUNGSTOWN SPECIFICATIONS HEREIN. INSERTING VALVE SHALL BE PROVIDED WITH RESILIENT SEAT GATE, MEETING CITY OF YOUNGSTOWN STANDARD SPECIFICATIONS WHERE APPLICABLE, AND HAVING A MAXIMUM WORKING PRESSURE OF AT LEAST 250 PSI. EQUIPMENT SHALL COMPLY WITH AWWA C515 STANDARDS, WITH DUCTILE IRON BODY AND EPOXY COATING MEETING THE REQUIREMENTS OF AWWA C550. INSTALLATION OF ITEM SPECIAL – 8" INSERTING VALVE AND VALVE BOX, CITY OF YOUNGSTOWN, SHALL MAINTAIN CONTINUOUS WATER SERVICE THROUGHOUT THE PROJECT AREA. ALL EQUIPMENT IS SUBJECT TO THE APPROVAL OF THE CITY OF YOUNGSTOWN.	PAYMENT SHALL BE MADE BY EACH (EA) UNDER ITEM SPECIAL - 8" INSERTING VALVE WITH VALVE BOX, CITY OF YOUNGSTOWN. ITEM SPECIAL - FIRE HYDRANT REMOVED AND DISPOSED OF, CITY OF YOUNGSTOWN: THIS ITEM SHALL INCLUDE ALL WORK ASSOCIATED WITH REMOVING THE EXISTING HYDRANT AND RETURN TO CITY OF YOUNGSTOWN WATER DEPARTMENT, IN ACCORDANCE WITH ODOT 638 SPECIFICATIONS, WITH THE EXCEPTION TO THE CITY OF YOUNGSTOWN SPECIFICATIONS HEREIN. CONTRACTOR TO DELIVER THE FIRE HYDRANT AND RISER PIPE ONLY TO THE CITY OF YOUNGSTOWN WATER DEPARTMENT. CONTRACTOR SHALL CALL THE WATER DEPARTMENT AT (330) 743-5338 TO MAKE ARRANGEMENTS FOR DELIVERY. PAYMENT SHALL BE MADE BY EACH (EA) UNDER ITEM SPECIAL - FIRE HYDRANT REMOVED AND DISPOSED OF, CITY OF YOUNGSTOWN. ITEM SPECIAL - 6" FIRE HYDRANT, CITY OF YOUNGSTOWN: INCLUDE ALL WORK ASSOCIATED WITH THE INSTALLATION OF THE FIRE HYDRANTS IN ACCORDANCE WITH ODOT SPECIFICATIONS, WITH EXCEPTION TO THE CITY OF YOUNGSTOWN SPECIFICATIONS HEREIN. THIS ITEM SHALL INCLUDE ALL ANCHOR TEES, PIPE, FITTINGS AND APPURTENANCES (INCLUDING TO TIE TO THE WATER MAIN), VALVE AND VALVE BOXES BETWEEN THE WATER MAIN AND HYDRANT. ANY PAVEMENT, CURB, SIDEWALK, OR LANDSCAPE AREA REMOVED FOR FIRE HYDRANT ASSEMBLY CONSTRUCTION THAT IS NOT SHOWN TO BE REPLACED ELSEWHERE IN THE PLAN SHALL BE REPLACED IN-KIND AND ITS COST, INCLUDING REMOVAL, IS INCLUDED IN THE COST OF THE FIRE HYDRANT, CITY OF YOUNGSTOWN ITEM. HYDRANTS TO BE INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS WITH A WASHED GRAVEL DRAINAGE POCKET AND SHALL CONTAIN NO STONES LARGER THAN TWO (2) INCHES IN DIAMETER. #57 SLAG IS NOT TO BE USED. THE HYDRANT SHALL BE SET PLUMB AND THE PUMPER NOZZLE SHALL FACE IN THE DIRECTION ORDERED BY THE WATER ENGINEER (TO THE STREET). PAYMENT SHALL BE MADE BY EACH (EA) UNDER ITEM SPECIAL - 6" FIRE HYDRANT, CITY OF YOUNGSTOWN. ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT, 8": THIS ITEM SHALL INCLUDE ALL WORK ASSOCIATED WITH FILLING, PLUGGING, AND ABANDONING THE EXISTING 8-INCH DIAMETER WATER LINE, INCLUDING BUT NOT LIMITED TO MATERIALS, EQUIPMENT, AND TOOLS REQUIRED TO EXCAVATE, UNCOVER, CUT THE EXISTING PIPE AND REMOVE AS NECESSARY TO FACILITATE THE INSTALLATION OF A DUCTILE IRON MECHANICAL JOINT TYPE PLUG, WITH RETAINER GLANDS CONFORMING TO AWWA C110, AS INDICATED ON THE PLANS, AND FILLING THE AREA SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER. LOCATE THE PLUGS AT THE LIMITS OF THE AREA TO BE FILLED. PUMP THE FILL MATERIAL INTO PLACE OR BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH IS FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR IS THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE. PAYMENT SHALL BE MADE BY LINEAR FEET (LF) AT THE PRICE BID FOR ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT, 8".	
	WATER WORKS GENERAL NOTES			
	DESIGN AGENCY			
				
	DESIGNER	EMB		
	REVIEWER	CJM		
	PROJECT ID	115790		
	SHEET	P.6	TOTAL	35