

INSTALLATION OF PRESSURE PIPELINES:

- PRESSURE PIPELINES COVERED BY THIS SPECIFICATION INCLUDE: WATER LINES, FORCE MAINS, SIPHONS, PRESSURIZED IRRIGATION LINES AND OTHER LINES THAT OPERATE UNDER A HYDRAULIC HEAD.
- LAYING PRESSURE PIPE: WATER LINES, FORCE MAINS AND OTHER PIPELINES THAT WILL OPERATE UNDER PRESSURE SHALL BE LAID ON THE ALIGNMENT SHOWN ON THE PLANS. UNLESS OTHERWISE SPECIFIED OR APPROVED, ALL PRESSURE PIPELINES SHALL BE LAID TO A DEPTH TO PROVIDE A MINIMUM COVER OF 36" MEASURED FROM THE FINAL GROUND SURFACE TO THE TOP OF THE PIPE. PRESSURE PIPELINES PLACED IN SERVICE BEFORE FINAL SURFACE GRADING HAS BEEN COMPLETED SHALL HAVE A MINIMUM COVER OF 24" DURING THE WINTER SEASON. THE INSIDE OF WATER PIPE AND JOINTING SURFACES SHALL BE KEPT CLEAN AND FREE FROM MUD, DIRT, GRAVEL, GROUND WATER, AND OTHER FOREIGN MATERIAL. WHENEVER DIRT OR DEBRIS ENTERS THE PIPE, THE CONTRACTOR SHALL CLEAN THE PIPE BY SWABING OR OTHER APPROVED METHOD. AFTER CLEANING, THE INSPECTOR SHALL DETERMINE IF THE PIPE IS CLEAN ENOUGH TO BE INSTALLED. WHEN PIPE LAYING IS NOT IN PROGRESS THE OPEN ENDS OF THE PIPELINE SHALL BE KEPT CLOSED WITH WATERTIGHT PLUGS. LONG RADIUS HORIZONTAL OR VERTICAL CURVES MAY BE LAID WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS OF RIGID PIPE OR BY DEFLECTING THE ENTIRE LENGTH OF FLEXIBLE PIPE. MAXIMUM DEFLECTIONS AT PIPE JOINTS SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS OR APPLICABLE AWWA STANDARDS.
- ELECTRICAL CONTINUITY, ALL WATER MAINS AND OTHER PRESSURE PIPELINES SHALL BE BURIED WITH A CONTINUOUS ELECTRICAL TRACING WIRE TO ENABLE FUTURE LOCATION OF THE PIPE. TRACING WIRE SHALL BE TAPED TO THE TOP OF THE PIPE AT 10-FOOT INTERVALS TO PREVENT DISLOCATION OF THE WIRE DURING BACKFILLING. THE TRACING WIRE SHALL BE SPLICED AND EXTENDED TO THE TOP OF THE SOUTHERLY MOST VALVE BOX IN EACH STREET INTERSECTION AND TO THE BASE OF ALL FIRE HYDRANTS. ON WATER TRANSMISSION LINES OR MAINS NOT LOCATED IN STREETS, THE TRACING WIRE SHALL BE EXTENDED TO THE TOP OF EACH GATE VALVE BOX AND THE ISOLATION VALVE BOX AT EACH AIR RELEASE VALVE. TRACING WIRE SHALL BE TERMINATED AT THE ENDS OF ALL PRESSURE PIPELINES. TRACING WIRE SHALL BE SPLICED WITH A WIRE NUT, WRAPPED WITH TBT-20 RUBBER TAPE AND COVERED WITH AN EXTERIOR GRADE FINISH. ON WATER TRANSMISSION LINES OR MAINS NOT LOCATED IN STREETS, THE TRACING WIRE SHALL BE EXTENDED TO THE TOP OF EACH GATE VALVE BOX AND THE ISOLATION VALVE BOX AT EACH AIR RELEASE VALVE. TRACING WIRE SHALL BE TERMINATED AT THE ENDS OF ALL PRESSURE PIPELINES. TRACING WIRE SHALL BE SPLICED WITH A WIRE NUT, WRAPPED WITH TBT-20 RUBBER TAPE AND COVERED WITH AN EXTERIOR GRADE FINISH.
- POLYETHYLENE ENCASEMENT. PRIOR TO BACKFILLING, ALL CAST IRON AND DUCTILE IRON PIPE FITTINGS, VALVES AND MANHOLES AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT MATERIAL. POLYETHYLENE FILM SHALL HAVE A MINIMUM THICKNESS OF 0.008 INCHES (BML). INSTALLATION OF THE POLYETHYLENE ENCASEMENT SHALL BE IN ACCORDANCE WITH ONE OF THE METHODS DESCRIBED IN AWWA C-105. IF A SOIL SURVEY HAS BEEN PERFORMED IN ACCORDANCE WITH APPENDIX A OF AWWA C-105 AND THE SOIL IS FOUND TO NOT BE CORROSIVE TO DUCTILE IRON, THE CONTRACTOR MAY SUBMIT A WRITTEN REQUEST TO THE CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR) TO INSTALL DUCTILE IRON PIPE AND FITTINGS WITHOUT A POLYETHYLENE ENCASEMENT. DUCTILE IRON VALVES AND FITTINGS SHALL BE FULLY ENCASED BY THE POLYETHYLENE ENCASEMENT, EXCEPT THE VALVE OPERATING NUT. THE ENDS OF THE POLYETHYLENE SHALL BE TAPED AROUND THE FULL CIRCUMFERENCE OF THE PIPE. IF THE POLYETHYLENE IS CUT OR MORE THAN ONE PIECE IS USED TO WRAP THE VALVE OR FITTING, THE PIECES SHALL OVERLAP A MINIMUM OF 12 INCHES AND THE FULL SEAM SHALL BE TAPED.
- THRUST RESTRAINT. THRUST RESTRAINT SHALL BE PROVIDED AT ALL PIPE BENDS, TEES, CAPS, VALVES, HYDRANTS AND AT THE END OF ALL STUB OUTS OR DEAD END LINES. THRUST RESTRAINT BEYOND THE PHYSICAL FITTING MAY BE PROVIDED BY CONCRETE BLOCKING OR MECHANICAL RESTRAINT OF PIPE JOINTS. IF PIPE JOINT RESTRAINT IS USED IN LIEU OF CONCRETE THRUST BLOCKS, THE MINIMUM DISTANCE FOR JOINT RESTRAINT OF ALONG THE PIPE AWAY FROM THE FITTING SHALL BE DETERMINED UTILIZING EBAA IRON THRUST RESTRAINT CALCULATIONS. THIS IS AVAILABLE ON LINE AT <http://rcp.ebaa.com/> RESTRAINT LENGTH CALCULATOR V5. IN-LINE VALVES WITH A MINIMUM OF 20 FEET OF PIPE ARE NOT REQUIRED TO BE SEPARATELY RESTRAINED.
- CONCRETE BLOCKING. THE SIZE AND LOCATION OF CONCRETE BLOCKING SHALL BE AS SHOWN ON THE PLANS OR IN ACCORDANCE WITH THE DETAIL W-07. THRUST BLOCKS SHALL BE POURED ON FIRM, STABLE FOUNDATION MATERIAL AND ON BEARING SURFACES SHALL BE AGAINST UNDISTURBED EARTH. CONCRETE FOR THRUST BLOCKS SHALL BE MADE WITH MODIFIED TYPE II PORTLAND CEMENT AND SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS. REINFORCING STEEL AND BOLTS USED TO ANCHOR VALVES, FITTINGS, ETC., TO THRUST BLOCKS SHALL MEET TENSILE REQUIREMENTS OF ASTM GRADE 40. ALL ANCHORING STEEL NOT EMBEDDED IN CONCRETE SHALL BE FACTORY EPOXY COATED OR COR-TEN STEEL. FIRE HYDRANTS SHALL BE DRY BLOCKED AS WELL AS MECHANICALLY RESTRAINED, AS SHOWN ON DETAIL W-09.
- INSTALLATION OF GATE VALVES AND VALVE BOXES. EACH GATE VALVE SHALL BE INSTALLED IN A VERTICAL POSITION AND SET ON A CONCRETE SUPPORT BLOCK. AN ADJUSTABLE SLIP TYPE VALVE BOX SHALL BE SET INTO POSITION DURING BACKFILL OPERATIONS. THE UPPER SECTION OF THE UNIT SHALL BE PLACED IN PROPER ALIGNMENT AND ADJUSTED SO THAT ITS TOP WILL BE AT FINAL GRADE. THE COMPLETED VALVE BOX SHALL BE VERTICALLY CENTERED OVER THE VALVE OPERATING NUT. EACH VALVE SHALL BE CHECKED FOR PROPER ACCESS AND OPERATION PRIOR TO PAVING.
- INSTALLATION OF FIRE HYDRANTS. HYDRANTS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE CONSTRUCTION DRAWINGS. THEY SHALL BE PLUMB AND SET SO THAT THE BOTTOM OF THE PUMPER NOZZLE IS NO LESS THAN EIGHTEEN (18) INCHES AND NO MORE THAN TWENTY-TWO (22) INCHES ABOVE FINISHED GRADE. THE DEPTH OF THE WATER LINE SHALL BE ADJUSTED SO THE FIRE LINE, FROM THE MAIN TO THE HYDRANT, CAN BE INSTALLED HORIZONTALLY AND THE FIRE HYDRANT SET WITH THE GROUND LINE WITHIN 1" INCH OF THE FINISHED GROUND LEVEL. IF THE DEPTH OF THE WATER LINE CANNOT BE ADJUSTED BECAUSE OF CONFLICTING UTILITIES OR OTHER CONSTRAINTS, AN OFFSET SHALL BE INSTALLED ON THE FIRE LINE AND ROTATED TO ACHIEVE THE PROPER BURIED DEPTH OF THE HYDRANT OR FIRE HYDRANT WITH A DIFFERENT BARREL HEIGHT SHALL BE USED. A MINIMUM OF 1/4 CUBIC YARD OF WASHED GRAVEL SHALL BE PLACED AROUND THE BASE OF THE HYDRANT TO INSURE PROPER DRAINAGE OF THE HYDRANT AFTER USE. ALL PIPE AND FITTINGS BETWEEN THE WATER LINE AND THE FIRE HYDRANT SHALL BE RESTRAINED WITH DRY CONCRETE THRUST BLOCKS BEHIND THE HYDRANT AND MECHANICAL RESTRAINTS. THE TEE SHALL BE RESTRAINED WITH CONCRETE THRUST BLOCK. WEAP HOLES, WHICH DRAIN THE HYDRANT, SHALL NOT BE COVERED WITH CONCRETE.
- INSTALLATION OF WATER SERVICE PIPE. WHERE POSSIBLE, UNDERGROUND WATER SERVICE PIPES SHALL BE LAID NOT LESS THAN TEN (10) FEET HORIZONTALLY FROM THE BUILDING SEWER DRAIN. WHERE THIS SEPARATION IS NOT POSSIBLE, THE SERVICE LINE SHALL BE AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE BUILDING SEWER LINE. IF PLACED IN A COMMON TRENCH WITH THE SEWER SERVICE, THE WATER SERVICE LINE SHALL BE ON A SOLID SHELF EXCAVATED TO ONE SIDE OF THE TRENCH. WHERE A SEWER SERVICE IS PROPOSED WITH LESS THAN 5 FEET OF COVER, THE WATER SERVICE LINE SHALL BE CONSTRUCTED IN A SEPARATE TRENCH AND THE SEWER SERVICE LINE SHALL BE CONSTRUCTED WITH SCHEDULE 40 PVC PIPE. WATER SERVICES ON DUCTILE IRON PIPE SHALL BE DIRECT TAPPED. TAPPING SADDLES SHALL BE USED ON PVC PIPE. TAPS SHALL BE AT 45 ABOVE THE SPRING LINE OF THE PIPE. IF THE TAP IS MADE WHILE THE MAIN LINE IS IN SERVICE, A CORPORATION STOP SHALL BE INSTALLED IN THE TAP AND TURNED SO THE T-HANDLE WILL BE ON TOP. IF THE TAP IS MADE WHEN THE MAIN LINE IS NOT IN SERVICE AND THE METER SETTER AND THE SERVICE LINE FROM THE TAP TO THE METER SETTER ARE INSTALLED BEFORE THE MAIN LINE IS ACTIVATED, IT IS NOT NECESSARY TO INSTALL A CORPORATION STOP.
- SERVICE STUB OUTS. THE SERVICE LINE SHALL BE INSTALLED FROM THE MAIN TO THE LOCATION SHOWN ON THE CONSTRUCTION DRAWINGS OR DESIGNATED BY THE ENGINEER. THE SERVICE LINE SHALL BE MARKED EITHER BY A 4" X 4" BOARD OR STEEL FENCE POST BURIED VERTICALLY. THE BOARD OR POST SHALL EXTEND 3 FEET ABOVE THE GROUND SURFACE WITH THE EXPOSED PORTION PAINTED BLUE. THE END OF THE SERVICE LINE SHALL BE CAPPED WITH WATERTIGHT A PLUG.
- BACKFLOW PREVENTION DEVICES & VACUUM BREAKERS SHALL BE REQUIRED ON ALL IRRIGATION SPRINKLER SYSTEMS, AND ANY OTHER CONNECTION TO THE SERVICE LINE, WHICH PRESENTS A BACKFLOW OR SIPHON POTENTIAL, AND CONTAMINATION RISK. ALL BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE AND MANUFACTURER'S RECOMMENDATIONS. FOR WATER SERVICES TO MEDIUM AND HIGH RISK INSTALLATIONS, THE ASSEMBLIES SHALL BE REVIEWED AND APPROVED BY THE COTR, OR DESIGNATED REPRESENTATIVE, PRIOR TO INSTALLATION.
- SERVICE LINE REPLACEMENTS AND RECONNECTIONS. EXISTING LEAD AND GALVANIZED STEEL

- WATER SERVICE LINES SHALL BE REPLACED WITH APPROVED WATER SERVICE LINE MATERIALS AS SPECIFIED. OTHER SERVICE LINES MAY BE REPLACED AS DIRECTED BY THE VA. THE NEW SERVICE LINES SHALL BE CONNECTED TO THE EXISTING METER WITH THE APPROPRIATE FITTINGS. EXCAVATION OF THE EXISTING METER PIT SHALL BE DONE IN A CAREFUL MANNER TO KEEP THE PIT INTACT FOR CONTINUED USE. WATER SERVICES TO BE RELOCATED SHALL BE CAREFULLY EXCAVATED AND DISCONNECTED TO PRESERVE THE INTEGRITY OF THE COMPONENTS. THE NEW LINE SHALL BE RECONNECTED TO THE CUSTOMER'S SERVICE LINE WITH THE APPROPRIATE FITTINGS. FOR ALL SERVICE LINE RECONNECTIONS AND RELOCATIONS THE CONDITION AND CONFIGURATION OF THE EXISTING FITTINGS SHALL BE INSPECTED BY THE COTR. THE COTR MAY DIRECT ANY OR ALL OF THE COMPONENTS TO BE REPLACED OR RECONFIGURED TO CONFORM TO CURRENT STANDARDS.
- CONNECTIONS TO EXISTING MAINS. NEW WATER LINES SHALL NOT BE CONNECTED TO EXISTING MAINS IN SERVICE UNTIL THE NEW LINES HAVE BEEN TESTED, DISINFECTED, AND ACCEPTED WHERE THE CONNECTION OF THE NEW LINES TO OLD REQUIRES INTERRUPTION OF SERVICE. THE ENGINEER AND CONTRACTOR SHALL MUTUALLY AGREE UPON A DATE AND TIME FOR CONNECTIONS WHICH WILL ALLOW AMPLE TIME TO ASSEMBLE LABOR AND MATERIALS.
 - RELATIONSHIP BETWEEN WATER LINES AND SANITARY SEWERS. TO REDUCE THE POSSIBILITY OF CONTAMINATION OF THE DOMESTIC WATER SUPPLY IN THE EVENT OF A WATER LINE BREAK OR REPAIR, THE FOLLOWING CONSTRUCTION TECHNIQUES SHALL BE USED WHEN A WATER LINE AND A SANITARY SEWER LINE ARE INSTALLED IN CLOSE PROXIMITY TO EACH OTHER. THESE REQUIREMENTS SHALL APPLY TO MAIN LINES.
 - IF THE SEWER LINE IS ABOVE AND WITHIN 10 FEET HORIZONTALLY OF THE WATER LINE, THE SEWER LINE SHALL BE INSTALLED THROUGH A STEEL OR DUCTILE IRON CASING PIPE OR ENCASED IN REINFORCED CONCRETE. THE CASING PIPE OR CONCRETE ENCASEMENT SHALL EXTEND A MINIMUM OF 10 FEET ON EITHER SIDE OF THE WATER LINE, MEASURED PERPENDICULAR TO THE WATER LINE.
 - IF THE SEWER LINE IS 18" OR LESS CLEAR DISTANCE BELOW AND WITHIN 5 FEET HORIZONTALLY OF THE WATER LINE, THE SEWER LINE SHALL BE INSTALLED THROUGH A STEEL OR DUCTILE IRON CASING PIPE OR CAPPED WITH CONCRETE. THE CASING PIPE OR CONCRETE CAP SHALL EXTEND A MINIMUM OF 10 FEET ON EITHER SIDE OF THE WATER LINE, MEASURED PERPENDICULAR TO THE WATER LINE. IN ALL CASES, SUITABLE BACKFILL OR OTHER STRUCTURAL PROTECTION SHALL BE PROVIDED TO PRECLUDE THE SETTLING OR FAILURE OF BOTH PIPES. CROSSINGS OF SEWER AND WATER LINES SHALL NOT BE AT AN ANGLE LESS THAN 45 DEGREES NOR SHALL A SEWER LINE OR WATER LINE BE INSTALLED WITHIN 10 FEET OF EACH OTHER UNLESS APPROVED BY THE OWNER.
 - RESTORATION OF GROUNDS. THE CLEANUP AND RESTORATION OF GROUNDS SHALL BE A CONTINUOUS PROCESS FROM THE BEGINNING OF CONSTRUCTION TO FINAL COMPLETION OF THE WORK. THE CONTRACTOR SHALL REPLACE ALL LANDSCAPED AREAS REMOVED OR DAMAGED BY OPERATION. THE INTENT IS TO SEED (HYDRO MULCH) THE MAJORITY OF SOD AREAS DISTURBED, ALTHOUGH, IT IS UNDERSTOOD SOME AREAS MAY REQUIRE SOIL. USE A PLANNING FACTOR OF 90% HYDRO/10% SOD. ALL LANDSCAPE RESTORATION WORK SHALL BE ACCORDANCE WITH THE COTR. THE CONTRACTOR SHALL KEEP THE WORK SITE FREE FROM ACCUMULATION OF DEBRIS AND WASTE MATERIAL CAUSED BY HIS OPERATION. AFTER THE PIPELINE IS BACKFILLED, THE AREA SHALL BE CLEANED AND RESTORED TO THE ORIGINAL GRADE AND CONDITION. FINAL STABILIZATION AND RESTORATION OF GROUNDS SHALL BE IN ACCORDANCE WITH THE STORM WATER MANAGEMENT PLAN (SWMP). EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED UNTIL THE REQUIRED VEGETATIVE COVER IS REESTABLISHED. THE CLEANUP AND RESTORATION SHALL BE KEPT TO A GREATER DEPTH BEHIND THE BACKFILL OPERATIONS UNLESS THE CONSTRUCTION DRAWINGS OR CONTRACT DOCUMENTS INDICATE OTHERWISE. ALL FENCES, UTILITIES, CULVERTS, DITCHES, STRUCTURES, GRASSED AREAS AND PLANTINGS SHALL BE REPLACED AND RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT AT THE BEGINNING OF CONSTRUCTION. IN THE CASE OF POINT-LOCATION WORK TO BE PERFORMED LATER IN THE CONSTRUCTION PROCESS, SUCH AS WATER LINE TRENCHING, THE RESTORATION (BUT NOT THE CLEAN UP) OF THE AREA ADJACENT TO THE POINT LOCATION MAY BE DELAYED UNTIL THE POINT-LOCATION WORK IS PERFORMED.
 - RESTORATION OF PAVED SURFACES. THE CONTRACTOR SHALL REPLACE ALL PAVED (HARD) SURFACES REMOVED OR DAMAGED BY OPERATION. ALL PAVING, PATCHING, AGGREGATE BASE COURSE AND CONCRETE REPLACEMENT WORK SHALL BE IN ACCORDANCE WITH VA SPECIFICATION 32-12-16. THE RESTORATION OF ASPHALT AND CONCRETE SURFACES AND STRUCTURES SHALL BE PERFORMED AT THE COMPLETION OF EACH SEGMENT OF THE PROJECT (INCLUDING ALL REQUIRED TESTING) UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE COTR. A SEGMENT IS DEFINED AS ONE CONTIGUOUS LENGTH OF PIPE INSTALLED. TRENCHES IN STREETS MAY BE REPAVED AS A SINGLE OPERATION AFTER ALL PIPE AND APPURTENANCES HAVE BEEN INSTALLED, TESTED AND ACCEPTED UNLESS OTHERWISE SPECIFIED. PRIOR TO PAVING OR PATCHING OF ALL PAVEMENT EDGES THAT HAVE BEEN BROKEN, RAVELED OR OTHERWISE DAMAGED SHALL BE RE-CUT TO A NEAT LINE.
 - EROSION CONTROL. EROSION CONTROL MEASURES SHALL BE CONSTRUCTED, INSTALLED, MAINTAINED, MOVED (IF NEEDED) AND REMOVED IN ACCORDANCE WITH THE PROJECT STORM WATER MANAGEMENT PLAN (SWMP). EROSION CONTROL MEASURES SHALL BE MAINTAINED DURING THE LIFE OF THE CONTRACT TO PREVENT OR MINIMIZE EROSION, SEDIMENTATION, AND POLLUTION OF ANY STATE WATERS AND WETLANDS.
 - WHAT INSPECTION AND ACCEPTANCE. THE ACCEPTANCE OF ALL PIPELINES BY THE VA WILL BE BASED ON THE FOLLOWING:
 - RED-LINED AS-BUILT CONDITIONS OF INSTALLED UTILITIES TO INCLUDE ALL EXISTING UNENCOUNTERED
 - PASSING A FINAL INSPECTION OF THE WORK BY THE ENGINEER OF RECORD AND COTR
 - SUBMITTAL OF ALL QUALITY ASSURANCE TEST RESULTS IN ACCORDANCE WITH TABLE 10-1-1 RECORDED QUANTITY ASSURANCE TESTING
 - SUBMITTAL OF SATISFACTORY RESULTS OF REQUIRED TEST (SUCH AS PRESSURE TEST, LEAKAGE TESTS, COMPACTION TESTS, ETC.) CERTIFIED BY THE ENGINEER OR AN APPROVED INDEPENDENT LABORATORY.
 - SUBMITTAL OF "AS-BUILT" CONSTRUCTION DRAWINGS ELECTRONICALLY SHALL BE IN PDF FORMAT. ALL "AS-BUILT" DRAWINGS SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER AND SHALL STATE THE DATES OF INSTALLATION AND THE NAME OF THE CONTRACTOR WHO INSTALLED THE SYSTEM. AS-BUILT DRAWINGS SHALL ALSO BE SUBMITTED AS AN ELECTRONIC AUTOCAD 2007 FILE FORMAT. AS-BUILT DRAWING SHALL INCLUDE THE FOLLOWING INFORMATION: FOR SEWERS, HORIZONTAL AND VERTICAL INFORMATION ON ALL MANHOLES, CATCH BASINS AND SERVICE STUB OUTS INCLUDING GRADES. FOR WATER LINES, BOTH POTABLE AND IRRIGATION, ALL HORIZONTAL AND VERTICAL INFORMATION SHALL BE REQUIRED ON ALL SERVICE LINES LATER THAN 1940'S. MATERIALS SHALL ALSO IDENTIFY MATERIAL TYPE AS WELL AS THE OUTSIDE DIAMETER OF ALL WATER LINES CONNECTED INTO. FOR ALL UTILITIES, HORIZONTAL AND VERTICAL INFORMATION IS REQUIRED AT ALL CROSSINGS OF OTHER UTILITIES.
 - SUBMITTAL OF COPIES OF ALL INSPECTION REPORTS INCLUDING THE INSPECTOR'S DAILY DIARIES.

GENERAL CONSTRUCTION AND WATER NOTES:

- ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH VA DESIGN STANDARDS, MATERIALS SPECIFICATIONS, AND DRAWINGS. ALL MAIN INSTALLATIONS/SYSTEM MODIFICATIONS WILL BE APPROVED AND INSPECTED BY VA COTR OR ENGINEER OF RECORD. CONTRACTORS SHALL MAINTAIN A COPY OF THE CURRENT VA SPECIFICATIONS ON-SITE AT ALL TIMES DURING CONSTRUCTION. SEE THE CHART BELOW FOR A QUICK REFERENCE TO THE FREQUENTLY USED MATERIAL SPECIFICATIONS.
- FOR ALL PIPE INSTALLATIONS, THE DEPTH OF COVER OVER THE PIPE, MEASURED FROM GRADE TO THE TOP OF THE PIPE, SHALL BE A MINIMUM OF 3 FEET AND SHALL BE KNOWN AS THE COVER OVER THE PIPE. IF DIFFICULTIES ARISE WHEN CROSSING INTERFERENCE, AND WHERE SPECIFICALLY APPROVED BY THE COTR, A DEPTH OF COVER WILL BE PERMITTED. THE COVER OVER THE PIPE SHALL BE A MINIMUM OF 3 FEET AND A MAXIMUM OF 10 FEET.
- ANY CHANGES IN ALIGNMENT AND GRADE SHALL BE AUTHORIZED BY VA AND SHALL BE ACCOMPLISHED BY THE INSTALLATION OF ADDITIONAL FITTINGS. THE DEFLECTION OF JOINTS IS PERMITTED ONLY WHEN INSTALLING PIPE ON HORIZONTAL OR VERTICAL CURVES.
- THE CONTRACTOR SHALL ADJUST ALL VALVE BOXES AND FIRE HYDRANTS TO THE FINAL FINISHED GRADE.
- NEWLY INSTALLED WATER MAINS AND FIRE LINES SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH VA ENGINEERING SPECIFICATIONS.
- SERVICES AND METERS:

- METER SETTING, VALVES, AND SERVICE LINES FROM THE CITY MAIN TO THE BACKFLOW PREVENTER ASSEMBLY. IF PRESENT, OR TO 5 FEET AFTER THE METER VAULT, MUST MEET ALL APPLICABLE ENGINEERING STANDARDS IN EFFECT AT THE TIME OF ACTIVATION. IF NECESSARY TO COMPLY WITH CURRENT STANDARDS, MODIFICATIONS MAY BE REQUIRED FROM THE DETAILS ON THESE PLANS.
- TAP RELOCATION (FROM WHAT IS SHOWN ON THESE PLANS) MAY BE NECESSARY TO AVOID PAVED AREAS OR OTHER OBSTRUCTIONS THAT ARE NOT SHOWN ON THE PLANS. DEVIATIONS FROM THESE PLANS AND STANDARDS MUST BE APPROVED PRIOR TO CONSTRUCTION.
- METER PITS AND VAULTS SHALL HAVE APPROPRIATE LIDS BASED ON THE LOCATION AND THE APPLICATION.

HEALTH NOTES/WATER QUALITY:

- THE COLORADO DEPARTMENT OF PUBLIC HEALTH & ENVIRONMENT (CDPHE) REGULATES ASBESTOS ACTIVITIES THROUGH THE AIR POLLUTION CONTROL DIVISION (APCD) AND THE SOLID WASTE AND MATERIALS MANAGEMENT DIVISION (SWMMD) WHEN SOIL CONTAMINATION IS INVOLVED. VA WILL REQUIRE CONTRACTORS AND DEVELOPERS TO FOLLOW THE PROCEDURES BELOW WHEN CEMENT ASBESTOS PIPE IS ENCOUNTERED:
 - THE PIPE MUST BE REMOVED FROM THE EXCAVATION FOR PROPER DISPOSAL.
 - THE CONTRACTOR/DEVELOPER WILL MANAGE THE PIPE IN ACCORDANCE WITH THE FOLLOWING REGULATIONS:
 - COLORADO AIR REGULATIONS NO 8 - CONTROL OF HAZARDOUS AIR POLLUTANTS
 - OSHA 29 CFR 1910.1001 - GENERAL INDUSTRY STANDARDS - ASBESTOS
 - OSHA 29 CFR 1926.1101 - CONSTRUCTION STANDARDS - ASBESTOS
 - IF LARGE AMOUNTS OF CEMENT ASBESTOS PIPE ARE ANTICIPATED TO BE REMOVED, THE MATERIAL MUST BE MANAGED BY AN APPROPRIATE ASBESTOS ABATEMENT CONTRACTOR (160 SQUARE FEET OR 280 LINEAR FEET WILL REQUIRE A PERMIT).

NOTE:

CEMENT ASBESTOS PIPE IS CONSIDERED A NON-FRIABLE ASBESTOS MATERIAL, DEFINED AS CONTAINING MORE THAN 1% ASBESTOS BY WEIGHT, AND CANNOT BE CRUMBLED, FULVERIZED, OR REDUCED TO POWDER BY HAND PRESSURE. THEREFORE, A RELEASE OF ASBESTOS FIBERS IS NOT LIKELY DURING NORMAL USE AND HANDLING OF THIS MATERIAL.

CHLORINATION:

- MAIN EXTENSIONS AND PRIVATE PIPE EXTENSIONS SHALL BE CHLORINATED IN ACCORDANCE WITH AWWA C651 AND THE LOCAL HEALTH AUTHORITY HAVING JURISDICTION PRIOR TO ACCEPTANCE.
- THE CHLORINATING AGENT AND THE METHOD OF APPLICATION SHALL BE APPROVED BY THE VA. THE CHLORINATION OF THE FINISHED PIPELINE SHALL BE DONE PRIOR TO THE HYDROSTATIC TESTING. BEFORE FILLING THE PIPE WITH WATER, THE PIPE SHALL BE CLEANED AND SHALL BE FREE OF DEBRIS TO THE SATISFACTION OF THE VA. THE VA WILL NOT PROVIDE LABOR OR MATERIAL FOR DISINFECTION TO THE APPROVED APPLICANT'S INSTALLATION OF MAINS UNDER PRIVATE CONTRACT.
- CHLORINE TABLETS MAY BE USED FOR DISINFECTION IN 2-INCH AND SMALLER PIPES. SIXTEEN INCH AND LARGER PIPES REQUIRE CHLORINE SLURRY TO BE FED INTO THE WATER THAT IS USED TO FILL THE PIPE. CHLORINE TABLETS SHALL BE ATTACHED TO THE INSIDE TOP OF THE PIPE WITH AN APPROVED ADHESIVE, CERTIFIED TO NSF STANDARDS 61, PRIOR TO THE PIPE INSTALLATION IN THE TRENCH. AN APPROVED ADHESIVE IS DOW CORNING 748 MULTI-PURPOSE SEALANT.

SAMPLES OF WATER WILL BE COLLECTED FOR BACTERIOLOGICAL EXAMINATION AND RESIDUAL CHLORINE CONTENT TESTING BEFORE THE PIPE IS PUT INTO SERVICE. TESTING OF RESIDUAL CHLORINE AND SAMPLING WILL BE DONE BY THE LOCAL HEALTH AUTHORITY OR THEIR DESIGNATED REPRESENTATIVE.

MISCELLANEOUS NOTES:

- TRENCH BACKFILL AND COMPACTION SHALL BE PER VA TYPE 1 OR VA TYPE 2 TRENCHES
- MATERIAL AND COMPACTION REQUIREMENTS FOR PIPE BEDDING/SHADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE APPLICABLE UTILITY PIPE.
- PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF VA 32-05-23.
- ASPHALTIC TACK MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF VA 32-12-16.
- ASPHALTIC CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF VA 32-12-16.
- CONCRETE LOAD TRANSFER DOWELS SHALL BE PLACED WHENEVER NEW CURB, GUTTER, SIDEWALK, DRIVEWAYS OR FLATWORK CONCRETE ARE CONSTRUCTED ADJOINING EXISTING, CURB, GUTTER, SIDEWALK OR DRIVEWAYS, ETC. THE DOWELS SHALL BE 1/2 IN. DIAMETER X 18 IN. LONG DOWELS (#4 REBAR) WITH A MINIMUM OF 2 DOWELS IN ALL JOINTS PLUS 1 DOWEL FOR EACH ADDITIONAL 4 FEET OF CONCRETE WIDTH OR PORTION THEREOF. DOWELS SHALL ALSO BE INSTALLED BY DRILLING THE EXISTING CONCRETE AND EPOXYING THE DOWEL WHEREVER REQUIRED. USE AN APPROVED HIGH VISCOSITY EPOXY. #3 MAY BE USED FOR CONCRETE THINNER PEDESTRIAN TRAFFIC AREAS ONLY.
- IF THE CONCRETE PORTION REMAINING NEXT TO A LONGITUDINAL OR TRANSVERSE JOINT IS LESS THAN 4 FEET AT ITS NARROWEST WIDTH; REMOVE AND REPLACE THE EXISTING CONCRETE TO THE NEXT JOINT.
- ALL REPLACEMENT CONCRETE SHALL PROVIDE POSITIVE DRAINAGE. ANY AREAS WHERE THIS IS NOT POSSIBLE MUST BE APPROVED BY THE COTR PRIOR TO POURING CONCRETE CONSTRUCTION SURVEYING AND "AS-BUILT" DRAWINGS.
- BY CONTRACT WITH ITS SURVEYOR, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING, CALCULATING, LAYOUT AND STAKING NECESSARY FOR CONSTRUCTION OF ALL ELEMENTS OF THE PROJECT. ALL CONSTRUCTION SURVEYING AND PREPARATION OF AS-BUILT DRAWINGS SHALL BE IN ACCORDANCE WITH VA STANDARDS.
- AS THE WORK PROGRESSES AND THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR AND/OR ITS SURVEYOR SHALL PREPARE AND MAINTAIN A CURRENT SET OF AS-BUILT CONSTRUCTION DRAWINGS SHOWING ALL CHANGES AND DEVIATIONS FROM THE DRAWINGS THAT WERE MADE IN THE CONSTRUCTED IMPROVEMENTS. THIS SHALL INCLUDE ALL CHANGES IN HORIZONTAL LOCATION AND VERTICAL ELEVATION OF ALL CONSTRUCTED IMPROVEMENTS, BOTH UNDERGROUND AND ON THE SURFACE. THE AS-BUILT DRAWINGS SHALL BE AVAILABLE TO THE COTR AT THE JOB SITE DURING WORKING HOURS.
- MATERIALS CONTAMINATED WITH RADIOACTIVE MILL TAILINGS. IN THE 1940'S, 50'S AND 60'S RADIOACTIVE URANIUM MILL TAILINGS WERE USED IN THE GRAND JUNCTION AREA AS BEDDING AND BACKFILL MATERIAL FOR CONSTRUCTION OF PIPELINES, BUILDING FOUNDATIONS, PARKING LOTS, SIDEWALKS AND ROADWAYS. WHEN RADIOACTIVE MILL TAILINGS ARE FOUND IN, UNDER OR ADJACENT TO PIPE, ASPHALT PAVEMENT, CONCRETE OR OTHER MATERIALS DESIGNATED FOR REMOVAL, THE CONTRACTOR SHALL CONTACT THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT (CDPHE), RADIATION AND HAZARDOUS WASTE DIVISION (PHONE NO. (970) 248-7164) FOR MATERIAL CHARACTERIZATION. IF THE RADIOACTIVE LEVEL OF THE CONTAMINATED MATERIAL EXCEEDS THE THRESHOLD LEVEL, AS DETERMINED BY THE CDPHE REPRESENTATIVE, THE MATERIAL SHALL BE EITHER DECONTAMINATED IN ACCORDANCE WITH CDPHE REQUIREMENTS, OR TRANSPORTED TO THE DESIGNATED RADIOACTIVE MATERIALS CONTAINMENT FACILITY LOCATED AT THE CITY SHOPS, 333 WEST AVENUE FOR DISPOSAL PRIOR TO LOADING. ALL CONCRETE, PIPE AND OTHER MATERIALS CONTAMINATED WITH MILL TAILINGS SHALL BE BROKEN INTO PIECES, WHICH ARE NO GREATER THAN SIX FEET IN ANY DIMENSION. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO SEPARATE UNCONTAMINATED MATERIALS FROM THOSE THAT HAVE BEEN CONTAMINATED WITH MILL TAILINGS.
- PRIOR TO TRANSPORTING RADIOACTIVE MILL TAILINGS OR OTHER MATERIALS CONTAMINATED WITH MILL TAILINGS, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE CITY CONSTRUCTION INSPECTOR OR CALL THE CITY CONSTRUCTION ENGINEERING OFFICE AT (970) 244-1453 TO MAKE ARRANGEMENTS FOR OPENING AND CLOSING THE RADIOACTIVE MATERIALS CONTAINMENT FACILITY.
- TRUCKS USED TO HAUL URANIUM MILL TAILINGS AND OTHER RADIOACTIVE MATERIALS SHALL BE PREPARED TO PREVENT SPILLAGE. TAILGATE DAPERS SHALL BE USED ON TRUCK TAILGATES THAT ARE NOT LEAK PROOF. TAILGATE DAPERS SHALL BE 6-MIL OR THICKER POLYETHYLENE AND SHALL COVER THE ENTIRE TAILGATE AND 4 FEET BACK ON THE SIDES AND BOTTOM OF THE BED. EACH LOAD SHALL BE COVERED WITH A BEDCOVER MADE OF CANVAS, OR OTHER APPROVED MATERIAL, AND SHALL BE SECURELY TIED DOWN. AFTER

- DUMPING THE MATERIAL AT THE DESIGNATED CONTAINMENT SITE. THE BED OF EACH TRUCK SHALL BE SWEEPED OR WASHED OUT TO REMOVE ALL REMAINING RADIOACTIVE MATERIAL.
- EACH TRUCK DRIVER HAULING RADIOACTIVE MILL TAILINGS OR MATERIALS CONTAMINATED WITH MILL TAILINGS SHALL HAVE IN HIS POSSESSION A DOCUMENT LISTING THE NAME AND ADDRESS OF THE TRANSPORTER, A DESCRIPTION OF THE RADIOACTIVE MATERIALS BEING TRANSPORTED, THE ADDRESS OR LOCATION WHERE THE RADIOACTIVE MATERIALS CAME FROM AND THE ADDRESS OF THE DESTINATION (CITY SHOPS, 333 WEST AVENUE).
 - CONCRETE FOR CONSTRUCTION OF CURBS, GUTTERS, SIDEWALKS, CURB RAMPS, DRIVEWAY APPROACHES, CORNER FILLETS, DRAINAGE PANS, MEDIAN COVER AND TRAILS SHALL BE COT CLASS B MODIFIED AS FOLLOWS AND SHALL BE DESIGNATED AS CLASS GV-8 (CLASS B MODIFIED FOR THE GRAND VALLEY).
 - MINIMUM FIELD COMPRESSIVE STRENGTH ----- 4500 P.S.I. AT 28 DAYS
 - AIR CONTENT ----- 6% ± 1.5%
 - MAXIMUM WATER/CEMENT RATIO ----- 0.45
 - MAXIMUM SLUMP AT DELIVERY SHALL BE 4". IN THE EVENT THAT THE CONCRETE SLUMP FROM THE FIRST TRUCK OF THE DAY EXCEEDS 5" THE LOAD WILL BE REJECTED. SUBSEQUENT BATCHES SHALL BE ADJUSTED SO THAT THE SLUMP AT DELIVERY DOES NOT EXCEED 4".

CONCRETE AND MORTAR:

- CAST IN PLACE CONCRETE USED IN CONSTRUCTION OF CONCRETE ENCASEMENT, THRUST BLOCKS, AND OTHER STRUCTURES, SHALL MEET THE REQUIREMENTS OF COT CLASS B (4500 PSI COMPRESSIVE STRENGTH AT 28 DAYS) UNLESS OTHERWISE SPECIFIED OR APPROVED. ALL CONCRETE SHALL BE MADE WITH TYPE V OR TYPE II MODIFIED PORTLAND CEMENT HAVING LESS THAN FIVE (5) PERCENT TRICALCIUM ALUMINATE. CEMENT MORTAR USED IN CONSTRUCTION OF MANHOLES, INLETS, VAULTS, ETC., SHALL BE A NON-SHRINK GROUT CONFORMING TO ASTM C-109 AND ASTM C-919 GROUT USED FOR SETTING/ADJUSTING CAST IRON MANHOLE RINGS SHALL BE QUIKRETE RAPID ROAD REPAIR (NO. 1242) OR AN APPROVED AN EQUAL. ALL -CRETE 5 MINUTE SET (FROSTROC INC, GEORGETOWN KY) OR AN APPROVED EQUAL SHALL BE USED FOR MANHOLE INVERT WORK.
- PRECAST VAULTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASHTO M259M OR M273M FOR BOXES WITH LESS THAN TWO FEET OF COVER SUBJECTED TO HIGHWAY LOADING. PRECAST CONCRETE STRUCTURES (VAULTS) SHALL BE PLACED ON PREPARED GRANULAR BEDDING, UNIFORMLY SUPPORTED, IN CORRECT ALIGNMENT AND AT PROPER GRADE. PIPE CONNECTIONS TO CONCRETE STRUCTURES SHALL RESULT IN A SMOOTHLY FINISHED, WATERTIGHT CONNECTION. IF THE PIPE IS PVC OR POLYETHYLENE WITH A SMOOTH EXTERIOR, A WATER-STOP SHALL BE INSTALLED ON THE END OF THE PIPE AND THE PIPE GROUTED INTO THE STRUCTURE OR A FLEXIBLE BOOT CONNECTOR SHALL BE INSTALLED WITH STAINLESS STEEL STRAPS.
- CAST IRON FRAMES SHALL BE ADJUSTED TO GRADE WITH WEDGES OR SHIMS TO ASSURE ACCURATE PLACEMENT. THE FRAME OR GRADE RING SHALL BE SET IN A FULL MORTAR BED IN ITS FINAL POSITION. ALL INLET BOXES, VAULTS AND IRRIGATION STRUCTURES SHALL BE CLEANED OF ANY ACCUMULATION OF SILT, DEBRIS, OR OTHER FOREIGN MATTER AND SHALL BE FREE FROM SUCH ACCUMULATIONS AT THE TIME OF FINAL INSPECTION.

BEDDING AND SHAPING TRENCH BOTTOM:

UNLESS OTHERWISE DIRECTED OR SPECIFIED IN THE SPECIAL PROVISIONS, ALL TRENCHES SHALL BE EXCAVATED TO AT LEAST SIX (6) INCHES BELOW THE PIPE GRADE AND BACKFILLED TO GRADE WITH APPROVED GRANULAR BEDDING MATERIAL. THE BEDDING MATERIAL SHALL BE HAND SHAPED AND GRADED UNTIL THE TRENCH BOTTOM IS UNIFORM AND FREE FROM ROCKS, BUMPS, AND DEPRESSIONS. A COUPLING OR BELL HOLE SHALL BE DUG AT EACH PIPE JOINT WITH SUFFICIENT LENGTH, WIDTH AND DEPTH TO PERMIT ASSEMBLY OF THE JOINT AND PROVIDE A MINIMUM CLEARANCE OF TWO (2) INCHES BETWEEN THE COUPLING AND THE TRENCH BOTTOM. AFTER THE PIPE IS JOINED, PIPE-BEDDING MATERIAL SHALL BE PLACED AND TAMPED UNDER EACH PIPE JOINT UNTIL ALL VOIDS ARE FILLED. CARE SHALL BE TAKEN NOT TO DISPLACE THE PIPE FROM ITS LINE AND GRADE.

SUBMITTALS:

THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF ALL SUBMITTAL DATA FOR REVIEW AND/OR APPROVAL. SUBMITTALS SHALL INCLUDE AT A MINIMUM: (1) THE MANUFACTURER'S NAME, (2) TYPE OF MATERIAL, (3) ASTM, ANSI, AWWA OR OTHER QUALITY STANDARDS AND (4) PRESSURE CLASS. IF THE MATERIALS DO NOT MEET THE QUALITY STANDARDS SPECIFIED, THE SUBMITTALS WILL BE REJECTED AND OTHER MATERIALS SUBMITTED AS SPECIFIED. THE CONTRACTOR MUST OBTAIN APPROVAL OF ALL PIPE MATERIALS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT TWO (2) COPIES OF A CERTIFICATE OF INSPECTION FROM THE PIPE MANUFACTURER THAT THE PIPE SUPPLIED HAS BEEN INSPECTED AT THE PLANT AND MEETS THE REQUIREMENTS OF THESE SPECIFICATIONS. (3) PIPE DELIVERY, STORAGE AND HANDLING: UNITS SHALL BE DELIVERED, HANDLED AND MAINTAINED IN A MANNER TO AVOID DAMAGE TO THE PIPE. THE PIPE SHALL BE STORED IN AN OPEN AREA ON HIGH, LAND NOT SUBJECT TO FLOODING, MUD OR OTHER MEANS OF CONTAMINATION. DURING SHIPMENT, PIPING SHALL BE TARPED ON FRONT OF TRAILER TO PREVENT CONTAMINATION BY DIESEL FUMES FROM TRUCK. PIPING SHIPPED UNCOVERED WILL NOT BE ACCEPTED.

MISC. NOTES:

- EXISTING PVC PIPE IS CERTAIN-TEED IPS 6" 200 PSI ASTM 2241 PIPE AND WILL REQUIRE SPECIAL GASKETS AT ALL JOINTS WITH THE C-900 PIPE.

Revisions	Date

CONSULTANTS:	



ARCHITECT/ENGINEERS:

CRG & ASSOCIATES

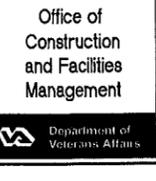
ENGINEERING SERVICES

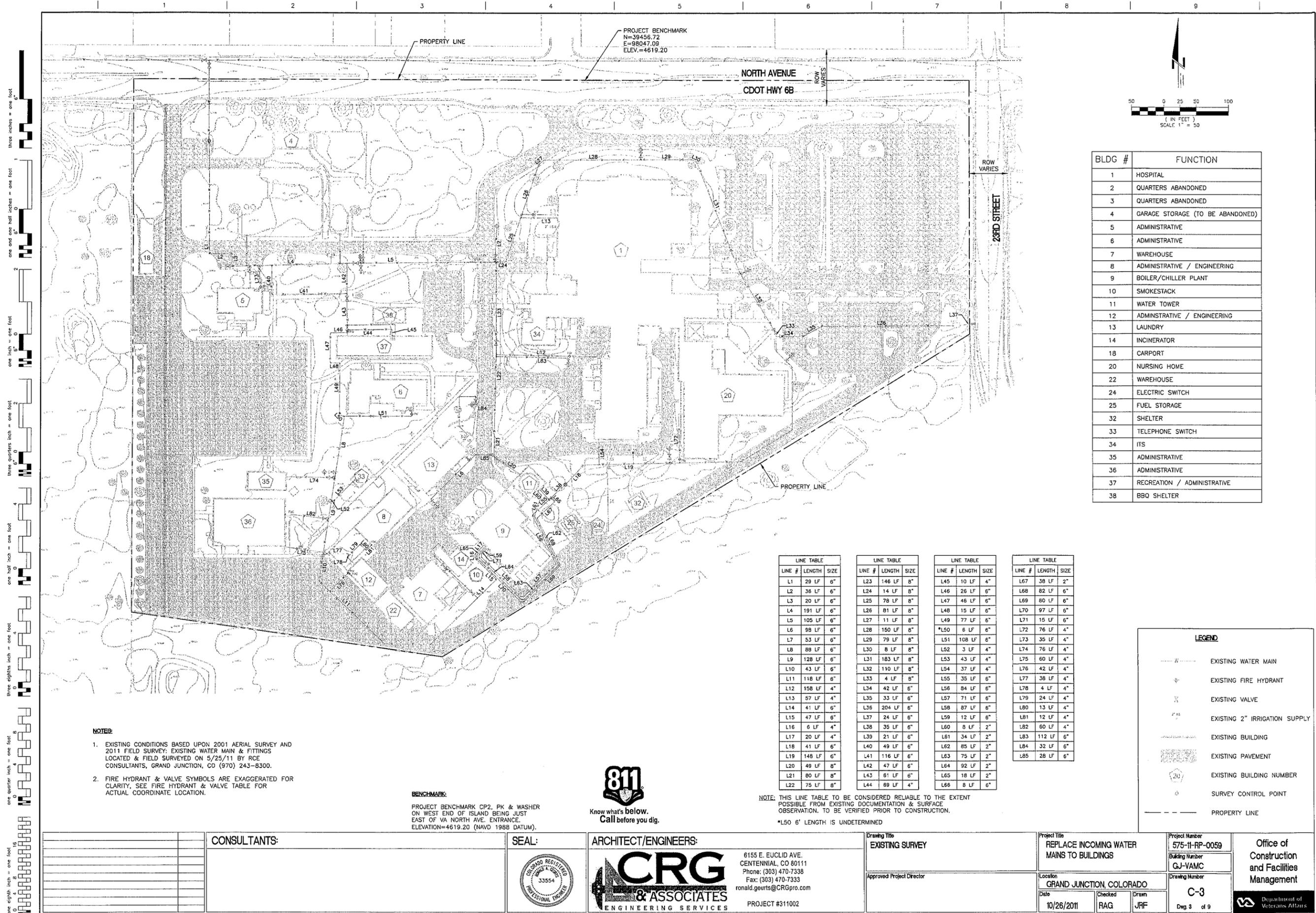
6155 E. EUCLID AVE.
CENTENNIAL, CO 80111
Phone: (303) 470-7338
Fax: (303) 470-7333
ronald.geurts@CRGpro.com

PROJECT #311002

Drawing Title	NOTES SHEET
Project Title	REPLACE INCOMING WATER MAINS TO BUILDINGS
Project Number	575-11-RP-0059
Building Number	GJ-YAMC
Location	GRAND JUNCTION, COLORADO
Date	10/26/2011
Checked	RAG
Drawn	JRF

Office of Construction and Facilities Management
Department of Veterans Affairs





BLDG #	FUNCTION
1	HOSPITAL
2	QUARTERS ABANDONED
3	QUARTERS ABANDONED
4	GARAGE STORAGE (TO BE ABANDONED)
5	ADMINISTRATIVE
6	ADMINISTRATIVE
7	WAREHOUSE
8	ADMINISTRATIVE / ENGINEERING
9	BOILER/CHILLER PLANT
10	SMOKESTACK
11	WATER TOWER
12	ADMINISTRATIVE / ENGINEERING
13	LAUNDRY
14	INCINERATOR
18	CARPORIT
20	NURSING HOME
22	WAREHOUSE
24	ELECTRIC SWITCH
25	FUEL STORAGE
32	SHELTER
33	TELEPHONE SWITCH
34	ITS
35	ADMINISTRATIVE
36	ADMINISTRATIVE
37	RECREATION / ADMINISTRATIVE
38	BQO SHELTER

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

- NOTES:**
- EXISTING CONDITIONS BASED UPON 2001 AERIAL SURVEY AND 2011 FIELD SURVEY; EXISTING WATER MAIN & FITTINGS LOCATED & FIELD SURVEYED ON 5/25/11 BY RCE CONSULTANTS, GRAND JUNCTION, CO (970) 243-8300.
 - FIRE HYDRANT & VALVE SYMBOLS ARE EXAGGERATED FOR CLARITY, SEE FIRE HYDRANT & VALVE TABLE FOR ACTUAL COORDINATE LOCATION.

BENCHMARK:
 PROJECT BENCHMARK CP2, PK & WASHER ON WEST END OF ISLAND BEING JUST EAST OF VA NORTH AVE. ENTRANCE. ELEVATION=4619.20 (NAVD 1988 DATUM).



LINE #	LENGTH	SIZE
L1	29 LF	6"
L2	36 LF	6"
L3	20 LF	6"
L4	191 LF	6"
L5	105 LF	6"
L6	98 LF	6"
L7	53 LF	6"
L8	88 LF	6"
L9	128 LF	6"
L10	43 LF	6"
L11	118 LF	6"
L12	158 LF	4"
L13	57 LF	4"
L14	41 LF	6"
L15	47 LF	6"
L16	6 LF	4"
L17	20 LF	4"
L18	41 LF	6"
L19	148 LF	6"
L20	49 LF	8"
L21	80 LF	8"
L22	75 LF	8"

LINE #	LENGTH	SIZE
L23	146 LF	8"
L24	14 LF	8"
L25	78 LF	8"
L26	81 LF	8"
L27	11 LF	8"
L28	150 LF	8"
L29	79 LF	8"
L30	8 LF	8"
L31	183 LF	8"
L32	110 LF	8"
L33	4 LF	8"
L34	42 LF	6"
L35	33 LF	6"
L36	204 LF	6"
L37	24 LF	6"
L38	35 LF	6"
L39	21 LF	6"
L40	49 LF	6"
L41	116 LF	6"
L42	47 LF	6"
L43	61 LF	6"
L44	69 LF	4"

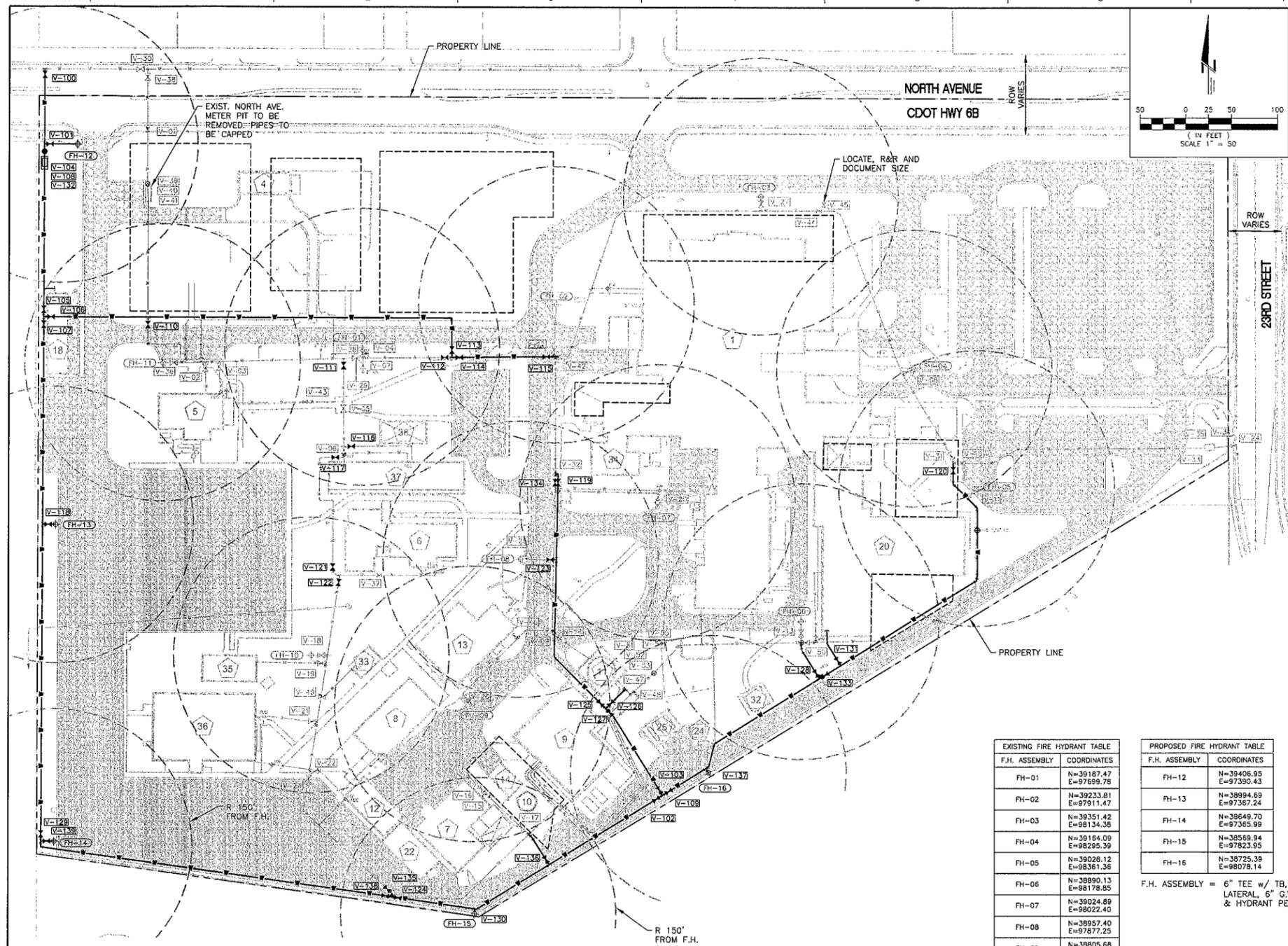
LINE #	LENGTH	SIZE
L45	10 LF	4"
L46	26 LF	6"
L47	46 LF	6"
L48	15 LF	6"
L49	77 LF	6"
*L50	8 LF	6"
L51	108 LF	6"
L52	3 LF	4"
L53	43 LF	4"
L54	37 LF	4"
L55	35 LF	6"
L56	84 LF	6"
L57	71 LF	6"
L58	87 LF	6"
L59	12 LF	6"
L60	8 LF	2"
L61	34 LF	2"
L62	85 LF	2"
L63	75 LF	2"
L64	92 LF	2"
L65	18 LF	2"
L66	8 LF	6"

LINE #	LENGTH	SIZE
L67	38 LF	2"
L68	82 LF	6"
L69	80 LF	6"
L70	97 LF	6"
L71	15 LF	6"
L72	76 LF	4"
L73	35 LF	4"
L74	76 LF	4"
L75	60 LF	4"
L76	42 LF	4"
L77	38 LF	4"
L78	4 LF	4"
L79	24 LF	4"
L80	13 LF	4"
L81	12 LF	4"
L82	60 LF	4"
L83	112 LF	6"
L84	32 LF	6"
L85	28 LF	6"

NOTE: THIS LINE TABLE TO BE CONSIDERED RELIABLE TO THE EXTENT POSSIBLE FROM EXISTING DOCUMENTATION & SURFACE OBSERVATION. TO BE VERIFIED PRIOR TO CONSTRUCTION.
 *L50 6" LENGTH IS UNDETERMINED

LEGEND	
	EXISTING WATER MAIN
	EXISTING FIRE HYDRANT
	EXISTING VALVE
	EXISTING 2" IRRIGATION SUPPLY
	EXISTING BUILDING
	EXISTING PAVEMENT
	EXISTING BUILDING NUMBER
	SURVEY CONTROL POINT
	PROPERTY LINE

CONSULTANTS: 	SEAL: 	ARCHITECT/ENGINEERS: 6155 E. EUCLID AVE. CENTENNIAL, CO 80111 Phone: (303) 470-7338 Fax: (303) 470-7333 ronald.geurts@CRGpro.com PROJECT #311002	Drawing Title EXISTING SURVEY	Project Title REPLACE INCOMING WATER MAINS TO BUILDINGS	Project Number 575-11-RP-0059	Office of Construction and Facilities Management
			Approved Project Director 	Location GRAND JUNCTION, COLORADO	Building Number GJ-VAMC	
			Date 10/26/2011	Checked RAG	Drawn JRF	Dwg 3 of 9



three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

LEGEND	
EXISTING	PROPOSED

- NOTES:**
- ALL EXISTING WATER MAIN TO BE CONSIDERED 6" PVC UNLESS OTHERWISE NOTED (U.O.N.).
 - ALL NEW WATER MAIN TO BE CONSIDERED 8" PVC U.O.N.
 - ALL EXISTING VALVES TO BE REMOVED & REPLACED PER SPEC. U.O.N.
 - FIRE HYDRANT & VALVE SYMBOLS ARE EXAGGERATED FOR CLARITY. SEE FIRE HYDRANT & VALVE TABLE FOR ACTUAL COORDINATE LOCATION.
 - IF TRAFFIC FLANGE ELEVATION IS CALLED OUT AS 0.00' THE FLANGE SHALL BE SET 3" ABOVE EXISTING GRADE & SHALL NOT BE MORE THAN 3" ABOVE FINAL GRADE ± 2".

BENCHMARK:
 PROJECT BENCHMARK CP2, PK & WASHER ON WEST END OF ISLAND BEING JUST EAST OF VA NORTH AVE. ENTRANCE. ELEVATION=4619.20 (NAVD 1988 DATUM).



UTILITY LOCATIONS:
 THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, VA, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION OR REQUEST TO EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RECONFIGURE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

EXISTING FIRE HYDRANT TABLE	
F.H. ASSEMBLY	COORDINATES
FH-01	N=39187.47 E=97699.78
FH-02	N=39233.81 E=97911.47
FH-03	N=39351.42 E=98134.36
FH-04	N=39164.09 E=98295.39
FH-05	N=39028.12 E=98361.36
FH-06	N=38990.13 E=98178.85
FH-07	N=39024.89 E=98022.40
FH-08	N=38957.40 E=97877.25
FH-09	N=38805.68 E=97815.33
FH-10	N=38853.07 E=97645.54
FH-11	N=39170.36 E=97483.08

PROPOSED FIRE HYDRANT TABLE	
F.H. ASSEMBLY	COORDINATES
FH-12	N=39406.95 E=97390.43
FH-13	N=38994.69 E=97367.24
FH-14	N=38649.70 E=97365.99
FH-15	N=38569.94 E=97823.95
FH-16	N=38725.39 E=98078.14

F.H. ASSEMBLY = 6" TEE w/ TB, 6" LATERAL, 6" G.V. & BOX & HYDRANT PER SPEC.

EXISTING VALVE COORDINATE TABLE					
VALVE #	STATUS	BUILDING	COORDINATES	ACTION	SIZE
V-01	N.O.	-	N=39422.87 E=97665.68	A	-
V-02	N.O.	5	N=39169.31 E=97528.82	R&R	2"
V-03	N.C.	5	N=39166.85 E=97543.72	R&R	4"
V-04	N.O.	2	N=39176.80 E=97704.41	R&C	2"
V-05	N.O.	-	N=39120.94 E=97679.52	R&R	6"
V-06	N.O.	37	N=39072.44 E=97680.18	R&R	6"
V-07	N.C.	37	N=39173.98 E=97700.74	R&R	2"
V-08	N.O.	-	N=39161.73 E=98289.95	R&R	6"
V-09	N.O.	13	N=38979.89 E=97905.78	R&R	6"
V-10	N.O.	-	N=39062.55 E=98346.77	R&R	6"
V-11	N.O.	-	N=39026.13 E=98359.94	R&R	6"
V-12	N.O.	-	N=39179.62 E=97680.66	R&R	6"
V-13	N.O.	-	N=38877.66 E=98178.94	R&R	6"
V-14	N.O.	-	N=38873.17 E=97913.21	R&R	8"
V-15	N.O.	-	N=38702.11 E=97834.58	R&R	2"
V-16	-	-	N=38704.67 E=97833.57	R&R	2"
V-17	N.O.	-	N=38666.12 E=97874.33	R&R	UNK
V-18	N.O.	-	N=38653.07 E=97858.28	R&R	6"
V-19	N.O.	-	N=38844.37 E=97659.92	-	2"
V-20	N.O.	-	N=39025.24 E=98022.41	R&R	6"
V-21	N.O.	36	N=38780.70 E=97646.67	-	2"
V-22	N.O.	8	N=38726.20 E=97647.27	R&R	4"
V-23	N.O.	12	N=38718.30 E=97642.47	R&R	6"
V-24	N.O.	-	N=38681.83 E=98651.52	R&R	6"
V-25	N.O.	-	N=38958.90 E=97879.49	R&R	4"
V-26	N.O.	-	N=38808.30 E=97812.86	R&R	6"
V-27	N.O.	-	N=39347.59 E=98134.49	R&R	6"
V-28	N.O.	-	N=39178.23 E=97700.24	R&R	6"
V-29	N.O.	-	N=39175.83 E=97692.85	R&R	6"
V-30	N.O.	-	N=38488.14 E=97457.80	R	-
V-31	N.O.	-	N=38063.76 E=98344.25	R&R	8"
V-32	N.O.	-	N=39060.62 E=97911.21	R	8"
V-33*	N.O.	-	N=39078.69 E=98623.55	R&R	6"
V-34*	N.O.	-	N=39079.25 E=98627.55	R&R	2"
V-35*	N.O.	-	N=38980.37 E=98622.27	R&R	6"
V-36	N.O.	-	N=39170.37 E=97494.97	R&R	-
V-37	N.O.	-	N=38939.76 E=97718.85	R&R	4"
V-38	N.O.	-	N=39479.81 E=97465.68	R	-
V-39*	N.O.	-	N=39356.76 E=97457.11	R	6"
V-40*	N.O.	-	N=39254.91 E=97488.54	R	2"
V-41*	N.O.	-	N=39352.76 E=97457.26	R	6"
V-42	N.O.	-	N=39177.98 E=97913.54	R&R	8"
V-43	N.C.	VA	N=39128.08 E=97638.23	R&R	6"
V-44	N.O.	VA	N=39335.98 E=98197.49	R&R	8"
V-45	N.C.	VA	N=39242.71 E=98022.83	R&R	UNK
V-46	N.O.	VA	N=38874.28 E=97866.94	R&R	4"
V-47	N.O.	VA	N=38812.20 E=97894.97	R&R	6"
V-48	N.O.	VA	N=38810.73 E=97999.48	R&R	6"
V-49	N.O.	-	N=38807.84 E=97657.40	R&R	4"
V-50	N.O.	-	N=38867.74 E=97374.15	R&R	6"
V-51**	N.O.	11	N=38656.88 E=97978.26	R&R	6"
V-52**	N.O.	11	N=38850.01 E=97978.26	R&R	6"
V-53**	N.O.	11	N=38848.39 E=97982.34	R&R	6"
V-54**	N.O.	11	N=38852.44 E=97979.29	R&R	6"
V-55**	N.O.	11	N=38853.68 E=97980.25	R&R	2"

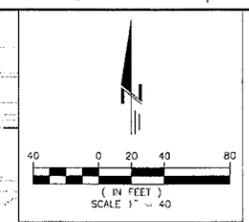
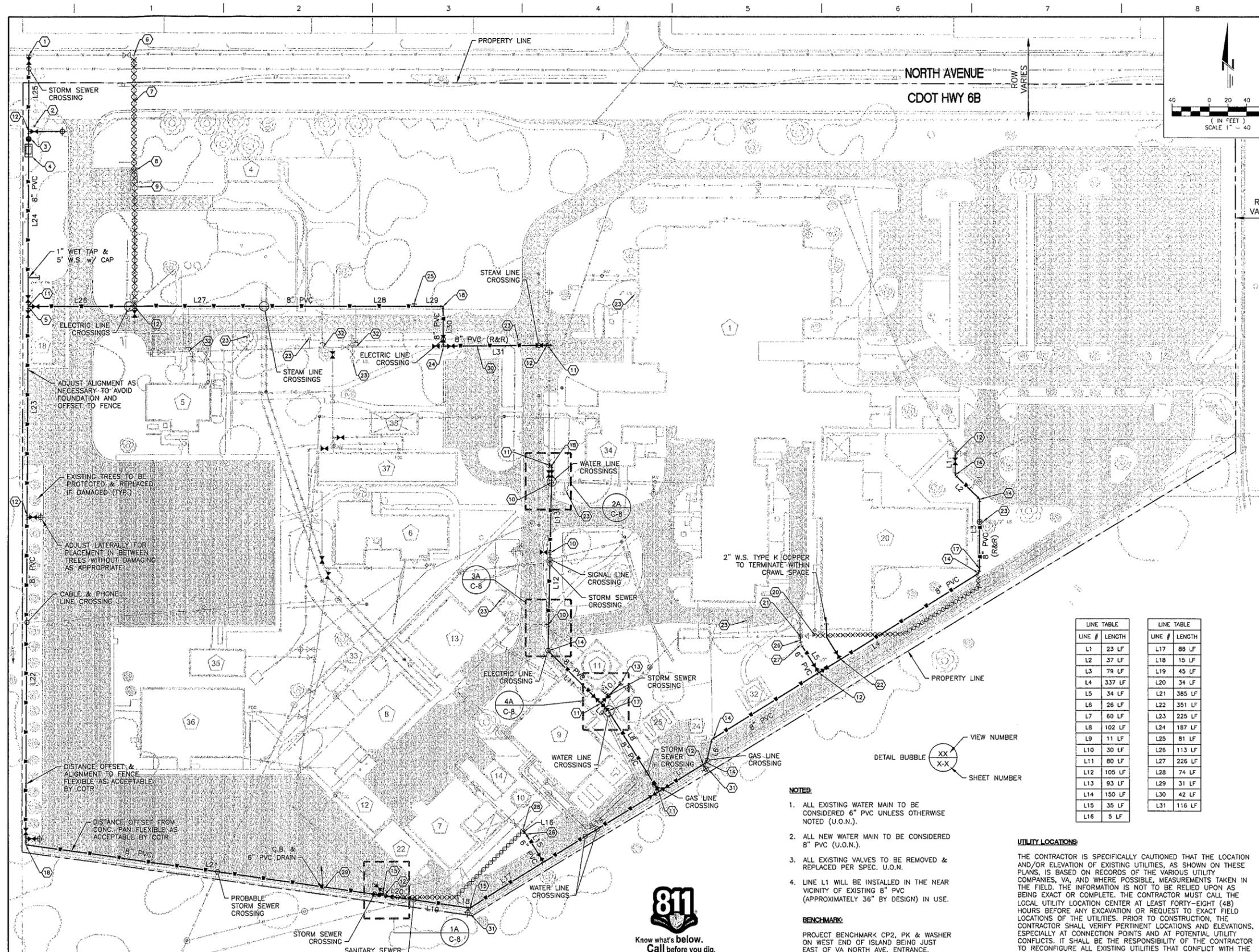
PROPOSED VALVE COORDINATE TABLE		
VALVE #	COORDINATES	SIZE
V-100*	N=39478.19 E=97354.55	8"
V-101	N=39406.97 E=97360.38	6"
V-102	N=38696.48 E=98021.32	8"
V-103	N=38706.41 E=98024.37	8"
V-104*	N=39390.05 E=97354.27	8"
V-105	N=39227.47 E=97353.85	8"
V-108	N=39219.47 E=97361.62	8"
V-107	N=39211.47 E=97353.80	8"
V-108	N=39387.12 E=97355.10	2"
V-109	N=38704.92 E=98034.91	8"
V-110	N=39211.38 E=97466.51	6"
V-111	N=39167.70 E=97679.52	6"
V-112	N=39176.78 E=97790.04	6"
V-113	N=39184.85 E=97797.96	8"
V-114	N=39178.03 E=97806.04	8"
V-115	N=39177.85 E=97905.23	8"
V-116	N=39079.53 E=97688.09	6"
V-117	N=39067.70 E=97670.93	6"
V-118	N=38994.75 E=97359.14	6"
V-119	N=39040.81 E=97913.81	8"
V-120	N=39054.64 E=98344.18	8"
V-121	N=38948.61 E=97658.64	6"
V-122	N=38931.85 E=97674.88	6"
V-123	N=38956.85 E=97905.23	6"
V-124	N=38588.36 E=97735.60	8"
V-125	N=38799.54 E=97955.36	8"
V-126	N=38801.05 E=97919.97	8"
V-127	N=38790.76 E=97970.94	8"
V-128	N=38630.42 E=98197.66	6"
V-129	N=38649.77 E=97354.22	6"
V-130	N=38573.10 E=97824.40	6"
V-131	N=38845.20 E=98220.39	2"
V-132	N=39387.15 E=97358.18	6"
V-133	N=38823.89 E=98201.53	8"
V-134	N=39040.20 E=97901.17	8"
V-135	N=38584.41 E=97731.47	6"
V-136	N=38629.45 E=97901.99	6"
V-137	N=38727.86 E=98076.51	6"
V-138	N=38589.07 E=97730.65	8"
V-139	N=38661.22 E=97363.73	8"

* V-33, V-34, V-35, V-39, V-40, AND V-41 ARE INSTALLED IN METER PIT

** V-51 THRU V-55 APPURTENANCES ARE LOCATED WITHIN THE METER PIT. SEE DETAIL C-7. ALL SHALL BE REPLACED WITH EQUAL OR BETTER IN THIS CONTRACT.

N.O. = NORMALLY OPEN
 N.C. = NORMALLY CLOSED
 R = REMOVE
 R&R = REMOVE AND REPLACE
 VA = VA VALVE LOCATIONS NOT VERIFIED BY SURVEY
 A = ABANDONED CLOSED
 R&C = REMOVE AND CAP

CONSULTANTS: 		SEAL: 		ARCHITECT/ENGINEERS: 6155 E. EUCLID AVE. CENTENNIAL, CO 80111 Phone: (303) 470-7338 Fax: (303) 470-7333 ronald.geurts@CRGpro.com PROJECT #311002		Drawing Title: FIRE HYDRANTS AND VALVES Approved Project Director:		Project Title: REPLACE INCOMING WATER MAINS TO BUILDINGS Location: GRAND JUNCTION, COLORADO Date: 10/26/2011 Checked: RAG Drawn: JRF		Project Number: 575-11-RP-0059 Building Number: GJ-VAMC Drawing Number: C-4 Dwg 4 of 9		Office of Construction and Facilities Management 	
-------------------------	--	------------------	--	---	--	--	--	--	--	---	--	---	--



- 1 EXCAVATE & COORDINATE FOR CITY TO INSTALL 8" WET TAP & VALVE, STREET CUT & PATCH PER CDOT. SEE DETAIL ON SHEET C-8
- 2 EXISTING TREE TO BE REMOVED. STUMP AND ROOTS TO BE REMOVED WITHIN 12" OF SURFACE
- 3 RELOCATED 48" MH & SPIRAX/SARCO METER SYSTEM
- 4 PROVIDE NEW VAULT & METER PIT PER CITY DETAIL W-08 W/ HEATED "HOT BOX" & RP BACKFLOW VALVE IN COMPLIANCE WITH VA STD DETAIL AND CITY SPECIFICATIONS. THE BACKFLOW PREVENTER WILL BE INSPECTED AND TESTED BY A CERTIFIED TESTER. SEE DETAIL OF EXISTING. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
- 5 INSTALL UNDER FOUNDATION W/ COMPACTION PER SPEC. EXCEPT AT 98% MODIFIED PROCTOR
- 6 EXCAVATE & REMOVE TEE & AC PIPE TO WESTERLY VALVE. REMOVE VALVE. REPLACE WITH 8" PVC C900. ABANDON 6" LATERAL IN PLACE W/ CAP
- 7 GRAND JUNCTION PIPE #8891 PVC TO BE ABANDONED IN PLACE
- 8 REMOVE & RELOCATE SPIRAX/SARCO METER SYSTEM TO NEW LOCATION. 48" MH & METERS INSTALLED JULY 2011. PROVIDE DOCUMENTATION OF RE-COMMISSIONING & RENEW WARRANTY BY ORIGINAL MANUFACTURER (SANDER CORPORATION) OR EQUAL. SEE VA PROJECTS VA-776-10-RA-0084 AND 19-VA701-C0081 DB METER PROJECTS (SUMMER 2011)
- 9 6"x16" VAULT & METER PIT WITH HOT BOX TO BE REMOVED ONCE NEW LINE & METER IS OPERATIONAL
- 10 DISCONNECT AT EXISTING TEE & INSTALL BLIND FLANGE. PROVIDE NEW 8"x8"x6" TEE W/ TB AND CONNECT EXIST HYDRANT LINE TO NEW 8" LINE
- 11 8"x8"x6" TEE W/ TB
- 12 8"x8"x6" TEE W/ TB
- 13 6"x6"x8" TEE W/ TB
- 14 8" 45° BEND W/ TB
- 15 6" 45° BEND W/ TB
- 16 8" 22.5° BEND W/ TB
- 17 8" 11.25° BEND W/ TB
- 18 8" 90° BEND W/ TB
- 19 6" 90° BEND W/ TB
- 20 90° 6"x4" REDUCING BEND W/ TB
- 21 6"x6"x6"x6" CROSS
- 22 2" WET TAP W/ W.S. TO BUILDING 20
- 23 REMOVE & REPLACE EXISTING IRRIGATION BACKFLOW PREVENTION WITH FEBCO B25VA. REUSE EXISTING CAGE SYSTEM.
- 24 8"x8"x8" TEE W/ TB
- 25 8"x8"x6" TEE & BLIND FLANGE
- 26 6" 11.25° BEND W/ TB
- 27 6" 22.5° BEND W/ TB
- 28 6"x6"x2" TEE W/TB. 2" SERVICE TO BE FIELD VERIFIED
- 29 EXCAVATE (EXPOSE) MH AND DRAINPIPE PRIOR TO INSTALLING L20. PRESENT SITUATION AND RECOMMENDATION TO COTR FOR DECISION. INSTALL AS DIRECTED
- 30 L31 ALIGNMENT FLEXIBLE. CONTRACTOR TO CONSIDER OFFSET OPTIONS TO MAINTAIN SERVICE DURING CONSTRUCTION. NOTE: OLD ABANDONED "1955" LINE IS LOCATED IN GOOD BEDDING ROCK 24" SOUTH OF EXISTING
- 31 POTENTIALLY TIGHT FIT BETWEEN BACK OF CURB & FENCE LINE. FIELD ADJUST VALVE & HYDRANT AS APPROPRIATE AS APPROVAL TO COTR
- 32 EXCAVATE & REMOVE SERVICE LINE AT MAIN SEAL SERVICE TAP WITH APPROPRIATE CAP/PLUG/FLANGE

LINE TABLE		LINE TABLE	
LINE #	LENGTH	LINE #	LENGTH
L1	23 LF	L17	88 LF
L2	37 LF	L18	15 LF
L3	79 LF	L19	45 LF
L4	337 LF	L20	34 LF
L5	34 LF	L21	385 LF
L6	26 LF	L22	351 LF
L7	60 LF	L23	226 LF
L8	102 LF	L24	187 LF
L9	11 LF	L25	81 LF
L10	30 LF	L26	113 LF
L11	80 LF	L27	228 LF
L12	105 LF	L28	74 LF
L13	93 LF	L29	31 LF
L14	150 LF	L30	42 LF
L15	35 LF	L31	116 LF
L16	5 LF		

- NOTES:**
1. ALL EXISTING WATER MAIN TO BE CONSIDERED 6" PVC UNLESS OTHERWISE NOTED (U.O.N.).
 2. ALL NEW WATER MAIN TO BE CONSIDERED 8" PVC (U.O.N.).
 3. ALL EXISTING VALVES TO BE REMOVED & REPLACED PER SPEC. U.O.N.
 4. LINE L1 WILL BE INSTALLED IN THE NEAR VICINITY OF EXISTING 8" PVC (APPROXIMATELY 36" BY DESIGN) IN USE.
- BENCHMARK:**
PROJECT BENCHMARK OP2, PK & WASHER ON WEST END OF ISLAND BEND JUST EAST OF VA NORTH AVE. ENTRANCE. ELEVATION=4619.20 (NAVD 1988 DATUM).

UTILITY LOCATIONS:
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, VA AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST FORTY-EIGHT (48) HOURS BEFORE ANY EXCAVATION OR REQUEST TO EXACT FIELD LOCATIONS OF THE UTILITIES. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RECONFIGURE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

EXISTING	LEGEND	PROPOSED
---	FENCE	---
---	PHONE & CABLE	---
---	ELECTRIC LINE	---
---	GAS LINE	---
---	SANITARY SEWER	---
---	SIGNAL ?	---
---	STEAM LINE	---
---	STORM SEWER	---
---	WATER	---
---	AIR RELEASE VALVE	---
---	2" IRRIGATION SUPPLY	---
---	END CAP	---
---	GATE VALVE	---
---	FIRE HYDRANT ASSEMBLY	---
---	FIRE DEPARTMENT CONNECTION	---
---	POST INDICATOR VALVE	---
---	LIGHT	---
---	STORM SEWER MANHOLE	---
---	SANITARY SEWER MANHOLE	---
---	WATER METER	---
---	TO BE ABANDONED IN PLACE	---
---	BUILDING NUMBER	---
---	REMOVE AND REPLACE	---
---	TIE BACK / THRUST BLOCK	---



VA FORM 08-6231



<p>CONSULTANTS:</p>	<p>SEAL:</p>	<p>ARCHITECT/ENGINEERS:</p> <p>CRG & ASSOCIATES ENGINEERING SERVICES</p> <p>6155 E. EUCLID AVE. CENTENNIAL, CO 80111 Phone: (303) 470-7338 Fax: (303) 470-7333 ronald.geurts@CRGpro.com</p> <p>PROJECT #311002</p>	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"> <p>Drawing Title: WATER AND UTILITY PLAN</p> <p>Approved Project Director:</p> </td> <td style="width: 50%;"> <p>Project Title: REPLACE INCOMING WATER MAINS TO BUILDINGS</p> <p>Location: GRAND JUNCTION, COLORADO</p> <p>Date: 10/26/2011 Checked: RAG Drawn: JRF</p> </td> </tr> <tr> <td> <p>Project Number: 575-11-RP-0059</p> <p>Building Number: GJ-VAMC</p> <p>Drawing Number: C-5</p> <p>Dwg 5 of 9</p> </td> <td style="text-align: center;"> <p>Office of Construction and Facilities Management</p> <p>Department of Veterans Affairs</p> </td> </tr> </table>	<p>Drawing Title: WATER AND UTILITY PLAN</p> <p>Approved Project Director:</p>	<p>Project Title: REPLACE INCOMING WATER MAINS TO BUILDINGS</p> <p>Location: GRAND JUNCTION, COLORADO</p> <p>Date: 10/26/2011 Checked: RAG Drawn: JRF</p>	<p>Project Number: 575-11-RP-0059</p> <p>Building Number: GJ-VAMC</p> <p>Drawing Number: C-5</p> <p>Dwg 5 of 9</p>	<p>Office of Construction and Facilities Management</p> <p>Department of Veterans Affairs</p>
<p>Drawing Title: WATER AND UTILITY PLAN</p> <p>Approved Project Director:</p>	<p>Project Title: REPLACE INCOMING WATER MAINS TO BUILDINGS</p> <p>Location: GRAND JUNCTION, COLORADO</p> <p>Date: 10/26/2011 Checked: RAG Drawn: JRF</p>						
<p>Project Number: 575-11-RP-0059</p> <p>Building Number: GJ-VAMC</p> <p>Drawing Number: C-5</p> <p>Dwg 5 of 9</p>	<p>Office of Construction and Facilities Management</p> <p>Department of Veterans Affairs</p>						

