CONDUCTORS AND CABLES PER SPECIFICATION BELOW

1.1 REFERENCES

A. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION STANDARDS:
1. NEMA WC 57 – STANDARD FOR CONTROL, THERMOCOUPLE EXTENSION AND INSTRUMENTATION CABLE.
2. NEMA WC 70 – NON–SHIELDED POWER CABLES RATED 2000V OR LESS.

B. NATIONAL ELECTRIC CODE (NEC), MOST RECENT EDITION APPROVED BY AUTHORITY HAVING JURISDICTION.

C. UNDERWRITERS LABORATORIES (UL), INC. STANDARDS:
1. UL 1277 – ELECTRICAL POWER AND CONTROL TRAY CABLES WITH OPTIONAL OPTICAL–FIBER MEMBERS.

D. TELECOMMUNICATIONS INDUSTRY ASSOCIATION/ELECTRONICS INDUSTRY ASSOCIATION STANDARDS:
1. TIA/EIA–568–B.2–1: TRANSMISSION PERFORMANCE SPECIFICATIONS FOR 4–PAIR 100 OHM CATEGORY 6 CABLING.

E. IEEE STANDARDS:
1. IEEE 400.2–2013–IEEE GUIDE FOR FIELD TESTING OF SHIELDED POWER CABLE SYSTEMS USING VERY LOW FREQUENCY (VLF) (LESS THAN 1 HZ)
2. IEEE 802 – STANDARD FOR LOCAL AND METROPOLITAN NETWORKS.

1.2 SUBMITTALS

A. PROVIDE SUBMITTALS FOR CONDUCTORS AND CABLES FROM THE ORIGINAL MANUFACTURER, NO EXCEPTIONS. CONDUCTORS AND CABLES LABELED WITH OTHER THAN THE ORIGINAL MANUFACTURER NAME IS PROHIBITED.

1.3 DELIVERY, STORAGE AND HANDLING

A. CONDUCTORS:
1. NEW AND MANUFACTURED WITHIN 12 MONTHS OF DATE OF DELIVERY TO SITE.
2. CONTINUOUSLY STORE WITHIN ENVIRONMENT RECOMMENDED BY ORIGINAL MANUFACTURE, PROTECTED FROM EXPOSURE TO SUNLIGHT, HEAT AND WEATHER.
3. DELIVER CONDUCTORS TO SITE ON THEIR ORIGINAL REELS OR IN THEIR UNBROKEN PACKAGES.
4. CLEARLY AND PLAINLY MARK AND TAG CONDUCTOR PACKAGES OR REELS WITH UL LABEL, AWG SIZE, VOLTAGE RATING, INSULATION TYPE, TYPE OF STRANDING, MANUFACTURER'S NAME, TRADE NAME AND DATE OF MANUFACTURE.

PART 2 –PRODUCTS

2.1 REMOTE CONTROL AND SIGNAL CABLE PRODUCTS

A. REMOTE SIGNAL CIRCUITS:
1. 600–VOLT INSULATION
2. RATED 90 DEGREES C DRY AND 75 DEGREES C WET
3. INDIVIDUALLY SHIELDED TWISTED PAIRS WITH STRANDED AND COATED DRAIN WIRE
4. COVERED WITH OVERALL ALUMINUM/POLYESTER SHIELD AND PVC JACKET.
5. CONDUCTORS: SOFT ANNEALED #18 AWG STRANDED COPPER, OR AS SHOWN ON DRAWINGS.
6. PROVIDE SHIELDING WITH 100 PERCENT COVERAGE AND AT LEAST 25 PERCENT SHIELD OVERLAP.

B. REMOTE CONTROL CIRCUITS:
1. MULTI–CONDUCTOR CABLE WITH 600–VOLT PVC INSULATED COPPER CONDUCTORS WITHIN AN OVERALL THERMOPLASTIC JACKET CONTINUOUSLY MARKED "TYPE TC–ER." DIFFERENTIATE INDIVIDUAL CONDUCTORS BY COLOR AND TRACER IN MULTI–CONDUCTOR ASSEMBLIES.
2. CONDUCTORS: #14 AWG MINIMUM, STRANDED COPPER, OR AS SHOWN ON THE DRAWINGS.
3. CONTROL CABLE TO INCLUDE A GREEN INSULATED GROUNDING CONDUCTOR.
4. CABLE ASSEMBLY: 75 DEGREES C CONTINUOUS RATED, WITH INDIVIDUAL CONDUCTORS IN THE QUANTITY SPECIFIED ON THE DRAWINGS OR AS REQUIRED FOR THE INSTALLATION WITH TWO CONDUCTORS OR 20 PERCENT SPARES, WHICHEVER IS GREATER..

C. COMPONENT MANUFACTURER'S SPECIAL CABLE: PROVIDE SPECIALIZED CABLE FOR THE INTERCONNECTION OF MANUFACTURED ASSEMBLIES OR COMPONENT SYSTEMS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. MORE STRINGENT REQUIREMENTS WILL APPLY AS NECESSITATED BY THE NEC, SIGNAL INTEGRITY AND MECHANICAL PROTECTION.

2.2 POWER CONDUCTOR AND CABLE PRODUCTS

A. GENERAL POWER CONDUCTOR REQUIREMENTS:
1. INDIVIDUAL POWER CONDUCTORS:
a. STRANDED COPPER
b. INSULATION RATED 600–VOLT, TYPES THWN, THW, XHHW–2, OR THWN–2.
2. COLOR–CODE ENTIRE LENGTH OF CONDUCTORS SMALLER THAN #6 AWG BY ITS INSULATION. IDENTIFY CONDUCTORS #6 AWG AND LARGER WITH MULTIPLE RINGS OR LAPPING OF COLORED TAPE AT EACH BOX, TERMINAL OR PIECE OF EQUIPMENT AT 1 FOOT INCREMENTS.
3. PROVIDE COLOR CODING AS FOLLOWS:
a. NEUTRAL: WHITE OR GRAY
b. GROUNDING CONDUCTOR: GREEN.
c. ISOLATED GROUND CONDUCTOR: GREEN WITH ORANGE TRACER.
d. UNGROUNDED CONDUCTORS:
1) 208Y/120V 3_PHASE: BLACK, RED, BLUE WITH WHITE NEUTRAL.
2) 120/240V 1_PHASE: BLACK, RED WITH WHITE NEUTRAL.

B. MANUFACTURERS:
1. OKONITE, OKOSEAL–N.
2. BELDEN.
3. GENERAL CABLE.
4. SOUTHWIRE.
5. CERROWIRE.
6. OWNER APPROVED EQUAL.

C. PROVIDE 600V POWER CONDUCTORS AND CABLES FROM THE SAME MANUFACTURER.

2.3 WIRE MANAGEMENT PRODUCTS

A. CABLE TIES, CABLE TIE MOUNTS AND ANCHOR BASE: SPIRAL WIRE WRAP FOR HINGED DOOR APPLICATIONS.

2.4 WIRE CONNECTIONS

A. PROVIDE CONNECTORS FOR SPLICES AND TERMINAL CONNECTIONS OF COPPER CONDUCTORS:
1. PROVIDE CONNECTOR TO FIT THE CONNECTED CONDUCTOR TO WHICH CONNECTED.
2. PROVIDE ASSEMBLY WITH JOINT CONTACT SURFACES NOT LESS THAN 50 PERCENT.
3. WHEN APPROVED BY THE OWNER, WIRING INSTALLATIONS FOR BRANCH CIRCUITS SMALLER THAN #8 AWG MAY BE JOINED USING SPRING STEEL INSULATED WIRE NUT TYPE SIZED FOR THE CONDUCTORS. ABOVE GROUND ONLY.
4. SPLIT–BOLT CONNECTORS ARE NOT ALLOWED.
5. TERMINATE STRANDED CONDUCTORS BY MECHANICAL PRESSURE PLATE AT TERMINALS OR BY A FERULE CRIMP CONNECTOR IF A PRESSURE PLATE IS NOT USED.

C. COMPRESSION CONNECTORS FOR #8 AWG AND LARGER:
1. LONG BARREL COPPER LUGS FOR TERMINAL CONNECTIONS WITH COPPER PLATED STEEL BOLTS. 1–HOLE OR 2–HOLE MATCHED FOR THE APPLICATION OR EQUIPMENT.
2. PROVIDE HYDRAULIC CRIMPING TOOL, WITH PROPER DIE RATED FOR LUG BEING COMPRESSED, TO MAKE TIGHT AND NEAT COMPRESSION CONNECTIONS.
3. MANUFACTURERS OF CONNECTORS AND CRIMPING TOOLS:
b. BURNDY.
c. THOMAS AND BETTS.
d. OWNER APPROVED EQUAL.

2.5 ELECTRICAL TAPE

A. GENERAL 600V WIRING:
1. PLASTIC 0.007 INCHES THICK AND RESISTANT TO ABRASION, ALKALIES, ACIDS, CORROSION, MOISTURE, AND LOW AND HIGH TEMPERATURES. COLOR COORDINATE IN ACCORDANCE WITH THE DRAWINGS AND SPECS.
2. APPROVED PRODUCTS:
a. SCOTCH SUPER 33+ VINYL ELECTRICAL TAPE.
b. DEVISER 2307, 2207 (COLOR).
c. OWNER APPROVAL EQUAL.

PART 3 –EXECUTION

3.1 INSTALLATION

A. GENERAL WIRING METHODS:
1. USE WIRE NO SMALLER THAN #12 AWG FOR POWER AND LIGHTING CIRCUITS AND NOT SMALLER THAN #14 AWG FOR CONTROL WIRING.
2. USE #10 AWG CONDUCTOR FOR 20–AMPERE, 120–VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 75 FEET, AND FOR 20–AMPERE, 277–VOLT BRANCH CIRCUIT HOME RUNS LONGER THAN 200 FEET.
3. NETWORK CABLE MAXIMUM INSTALLED LENGTH: 100 METERS.
4. PLACE EQUAL NUMBER OF CONDUCTORS FOR EACH PHASE OF CIRCUIT IN SAME RACEWAY OR CABLE WHEN WORKING WITH PARALLEL CONDUCTORS.
5. SPLICES ARE NOT PERMITTED WITHOUT PRIOR APPROVAL OF OWNER.
6. NEATLY TRAIN AND TIE WIRING INSIDE BOXES, EQUIPMENT AND PANELBOARDS. USE CABLE TIES AS NEEDED.
7. PROVIDE EQUAL CONDUCTOR LENGTHS FOR PARALLEL CIRCUITS.
8. GROUP COMMON CONDUCTOR TYPES TOGETHER WHERE INSTALLED IN CABLE TRAYS.
9. DO NOT CHANGE, GROUP OR COMBINE CIRCUITS OTHER THAN INDICATED ON THE DRAWINGS.
10. DO NOT USE TAPE TO BUNDLE WIRES FOR PULLING INTO CONDUITS, OR FOR TRAINING WIRES IN PANELS, GUTTERS, OR WIREWAYS.
11. NEATLY TRAIN AND TIE ALL WIRING AND CABLES IN CABLE TRAYS.
12. WHEN SIZING CONDUIT, USE TYPE THW INSULATION.
13. FOR RTD CONDUCTORS, MAINTAIN MANUFACTURES RECOMMENDED SPACING FROM SOURCES OF EMF AND RF INTERFERENCE AND POWER CONDUCTORS.
14. IDENTIFY ALL WIRING IN ACCORDANCE WITH SECTION 26 05 53.
15. CONDUCTOR PHASING:
a. CONNECT CABLES TO MAINTAIN PHASE RELATIONSHIP THROUGHOUT SYSTEM.
b. MATCH EACH PHASE WITH BUS ARRANGEMENTS IN EQUIPMENT TO WHICH THE CABLES ARE CONNECTED. PHASE A CABLE TO PHASE A BUS, ETC.

B. WIRING INSTALLATION IN RACEWAYS:
1. PULL CONDUCTORS INTO A RACEWAY AT THE SAME TIME. USE UL LISTED WIRE–PULLING LUBRICANT FOR PULLING ALL WIRES.
2. INSTALL WIRE IN RACEWAY AFTER INTERIOR OF BUILDING HAS BEEN PHYSICALLY PROTECTED FROM THE WEATHER AND MECHANICAL WORK LIKELY TO INJURE CONDUCTORS HAS BEEN COMPLETED.
3. THOROUGHLY CLEAN ALL INTERIOR AND EXTERIOR AREAS OF EQUIPMENT AND BOXES, CABLES AND CONDUCTORS OF PULLING COMPOUND WHEN USED.
4. COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.

C. WIRING CONNECTIONS AND TERMINATIONS, LESS THAN 1000V:
1. MAKE NO SPLICES UNLESS APPROVED BY THE OWNER.
2. TAPED INSULATION FOR CONNECTIONS IS PROHIBITED.
3. THOROUGHLY CLEAN WIRES BEFORE INSTALLING LUGS AND CONNECTORS.
4. MAKE SPLICES, TAPS, AND TERMINATIONS TO CARRY FULL AMPACITY OF CONDUCTORS WITHOUT PERCEPTIBLE TEMPERATURE RISE.
5. USE SOLDERLESS PRESSURE CONNECTORS WITH COLD SHRINK SPLICE KIT BY 3M SERIES 8420 OR OWNER APPROVED EQUAL FOR COPPER WIRE SPLICES AND TAPS UP TO 1KV, #10 AWG AND LARGER.
6. DIRECT BURIAL SPLICES ARE NOT ACCEPTABLE.
7. CONTROL AND INSTRUMENTATION WIRING CONNECTIONS: USE TERMINAL BLOCKS AND BE DIN RAIL MOUNTED INCLUDING ALL ACCESSORIES, END CAPS, BARRIERS, LABELS, AND BE OF THE MECHANICAL PRESSURE TYPE.

3.2 FIELD QUALITY CONTROL

A. LOW–VOLTAGE INSULATION RESISTANCE TESTING:
1. PERFORM INSULATION RESISTANCE TEST USING A DIRECT READING MEGGER HAVING A MINIMUM VOLTAGE CAPABILITY OF 1,000 VOLTS DC ON ALL CIRCUIT CONDUCTORS.
2. FOR POWER CIRCUIT CONDUCTORS, PERFORM INSULATION–RESISTANCE TEST ON EACH CONDUCTOR WITH RESPECT TO GROUND AND ADJACENT CONDUCTORS. TEST DURATION: ONE MINUTE.
3. REPLACE ALL CONDUCTORS WITH READINGS LESS THAN 100 MEGAOHMS.
4. TEST EACH INDIVIDUAL LENGTH OF CIRCUIT PRIOR TO MAKING CONNECTIONS. TEST EACH PHASE CABLE SEPARATELY.
5. TESTING TO BE COMPLETE, INCLUDING TESTING ON REPLACED CABLE, AND ACCEPTED PRIOR TO BEING PLACED IN SERVICE.

B. INSPECT WIRE AND CABLE FOR PHYSICAL DAMAGE AND PROPER CONNECTIONS.

C. TORQUE TEST CONDUCTOR CONNECTIONS AND TERMINATIONS TO MANUFACTURERS RECOMMENDED VALUES IN ACCORDANCE WITH NEC REQUIREMENTS, IN PRESENCE OF OWNER.

D. PERFORM CONTINUITY TEST ON POWER AND EQUIPMENT BRANCH CIRCUIT CONDUCTORS. VERIFY PROPER PHASING CONNECTIONS. TEST CONDUCTOR FOR SHORTS TO GROUND AND RESISTANCES THAT ARE BELOW MANUFACTURER'S PUBLISHED VALUES.

E. WIRE AND CABLE INSTALLATION SCHEDULE:
1. EXPOSED INTERIOR LOCATIONS:
a. CONDUCTORS IN RIGID GALVANIZED RACEWAYS.
b. CABLE IN GALVANIZED RACEWAYS AND IN CABLE TRAY.
2. WET OR DAMP INTERIOR LOCATIONS: CABLE/CONDUCTORS IN PVC COATED RIGID STEEL RACEWAYS.
3. EXTERIOR LOCATIONS: CABLE/CONDUCTORS IN RIGID GALVANIZED RACEWAYS.
4. UNDERGROUND LOCATIONS: REFER TO CONDUITS, CABLE TRAYS, BOXES, MANHOLES, AND PULLBOXES

AUTOMATIC CONTROL VALVES PER SPECIFICATION BELOW

1.1 SUMMARY

A. PROVIDE VALVES IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS:
1. VALVES AND COMPONENT PARTS: EQUAL OR EXCEED SPECIFIED REQUIREMENTS.
2. MANUFACTURE: NORMALLY ENGAGED IN MANUFACTURE OF SUCH VALVES.
3. VALVES FURNISHED FOR WORK: NEW AND CURRENTLY UNDER MANUFACTURE.
4. VALVES DISCONTINUED BY MANUFACTURER AS OF BID OPENING DATE: NOT ACCEPTABLE.
5. FACTORY SET OPENING/CLOSING PRESSURES AS SHOWN ON DRAWINGS.
6. PROVIDE WITH GAGE CONNECTION POINTS AT INLET, OUTLET AND DOME FOR TROUBLESHOOTING PURPOSES.
7. COATINGS IN ACCORDANCE WITH.

B. VALVES: DESIGNED FOR WATER WORKING PRESSURE OF 150 PSI, UNLESS OTHERWISE SHOWN ON DRAWINGS OR SPECIFIED.

1.2 SECTION INCLUDES

A. PRESSURE REDUCING VALVE.

1.3 REFERENCES

A. ASTM STANDARDS:
1. ASTM A48 – STANDARD SPECIFICATION FOR GRAY IRON CASTINGS.
2. ASTM A240 – STANDARD SPECIFICATION FOR HEAT–RESISTING CHROMIUM AND CHROMIUM–NICKEL STAINLESS STEEL PLATE, SHEET, AND STRIP FOR PRESSURE VESSELS.
3. ASTM A536 _ SPECIFICATION FOR DUCTILE IRON CASTINGS.
4. ASTM B62 _ SPECIFICATION FOR COMPOSITION BRONZE OR OUNCE METAL CASTINGS.

B. AMERICAN WATER WORKS ASSOCIATION STANDARDS:
1. AWWA C550 _ PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS.

1.4 SUBMITTALS

A. SHOP DRAWINGS

B. COMPLETE CAVITATION STUDY FOR EACH VALVE APPLICATION, TO INCLUDE FOLLOWING:
1. FLOW RATE.
2. INLET AND OUTLET PRESSURES.
3. PERCENTAGE OPEN.
4. SEAT VELOCITY.
5. PIPELINE VELOCITY.
6. VALVE LIFT.

1.5 QUALITY ASSURANCE

A. SUPPLY TO ENGINEER RECORDS OF TESTS PERFORMED ON VALVES OR COMPONENT PARTS THEREOF THAT ARE REQUIRED BY AWWA VALVE STANDARD SPECIFIED IN THESE SPECIFICATIONS IF REQUESTED BY ENGINEER WITHIN 1 YEAR PERIOD AFTER ACCEPTANCE OF WORK.

B. PROVIDE TO ENGINEER, WHEN REQUESTED BY ENGINEER, AFFIDAVIT OF COMPLIANCE WITH SPECIFIED AWWA VALVE STANDARD OR SECTION 1.4 OF AWWA C550 FOR EACH LOT OF VALVE SIZE FURNISHED FOR WORK.

C. INSTALL AND TEST VALVES FURNISHED IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.

D. TEST EACH VALVE BODY UNDER TEST PRESSURE EQUAL TO TWICE ITS DESIGN WATER–WORKING PRESSURE, UNLESS OTHERWISE SPECIFIED.

E. PROVIDE INTERIOR BRONZE PARTS OF VALVES, EXCEPT VALVE STEMS, IN ACCORDANCE WITH ASTM B62, UNLESS OTHERWISE SPECIFIED.

1.6 WARRANTY

A. PROVIDE MINIMUM 3 YEAR MANUFACTURER WARRANTY.

PART 2 –PRODUCTS

2.1 PRESSURE REDUCING VALVE

A. HYDRAULICALLY OPERATED.

B. PILOT–CONTROLLED:
1. DIRECT ACTING.
2. ADJUSTABLE.
3. SPRING LOADED.
4. NORMALLY OPEN.

C. FLANGED DIAPHRAGM VALVE DESIGNED TO PERMIT FLOW WHEN CONTROLLED PRESSURE IS LESS THAN SPRING SETTING.

D. DIAPHRAGM TYPE GLOBE VALVE.

E. SINGLE REMOVABLE STAINLESS STEEL ONE–PIECE SEAT: CAPABLE OF BEING COMPLETELY SERVICED AND REPAIRED WHILE INSTALLED.

F. CLASS 150: PRESSURE RATING 250 PSI.

G. COMPONENTS:
1. BODY AND COVER:
a. MANUFACTURED OF DUCTILE IRON IN ACCORDANCE OF ASTM A536.
b. LABEL: RAISED LETTERS ON THE CASE FOR MANUFACTURER VALVE SIZE, MODEL NUMBER, AND ARROWS INDICATING THE DIRECTION OF FLOW.
2. INTERNAL METALLIC PARTS: ASTM A240 TYPE 303 STAINLESS STEEL.
3. CONTROL TUBE AND FITTINGS: ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
4. PILOT VALVE DISC RETAINER ASSEMBLY: ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
5. CASING BOLTS AND NUTS: CADMIUM–PLATED STEEL OR ASTM A240 TYPE 304 OR 316 STAINLESS STEEL.
6. AVAILABLE SPRING RANGES: 0 TO 600 PSI.
7. VALVE POSITION INDICATOR, WITH BRASS INDICATOR ROD AND HOUSING.

H. PROVIDE PILOT SYSTEM WITH FOLLOWING:
1. ALL PILOT SYSTEM TUBING TO BE STAINLESS STEEL.
2. Y? BODY STRAINER WITH STAINLESS STEEL SCREEN.
3. BALL VALVE AT VALVE INLET, COVER AND OUTLET.
4. FIXED ORIFICE RESTRICTION FITTING.
5. OPENING SPEED CONTROL ON ALL CONTROL VALVES.
6. CLOSING SPEED CONTROL ON ALL CONTROL VALVES 3 INCH AND SMALLER.

I. COATING: FUSION BONDED EPOXY, NOMINAL DFT 12 MILS, IN ACCORDANCE WITH SECTION 09 96 00.

J. MANUFACTURED BY:
1. CLA–VAL COMPANY.
2. OWNER APPROVED EQUAL.

2.2 FLOW METERING SYSTEM

A. PROVIDE MICROPROCESSOR–BASED, PIEZO–RESISTIVE SENSOR IN ACCORDANCE WITH THE DRAWINGS. PROVIDE FLOW MEASUREMENTS PROGRAMMED TO MEET INSTALLATION REQUIREMENTS:
1. LOOP POWERED,10 TO 28 VDC (24 VDC NOMINAL).
2. TWO–WIRE, 4–20 MA DC PROPORTIONAL OUTPUT SIGNAL.
3. FACTORY SETTINGS MUST BE FIELD ADJUSTABLE WITHOUT REMOVAL OF THE METER OR VALVE. COMPUTER PROGRAMMABLE FOR CONTROL VALVE TYPE AND SIZE.

B. SENSOR:
1. PIEZO–RESISTIVE, ONE COMPONENT, NO MOVING PARTS.
2. INSERTION DEPTH PROVIDED BY MANUFACTURER, BASED ON CONTROL VALVE SIZE.

C. VELOCITY MEASUREMENT:
1. METHOD: VORTEX SHEDDING.
2. MINIMUM RANGE: 1 FOOT PER SECOND.
3. MAXIMUM RANGE: 20 FEET PER SECOND.
4. ACCURACY: LINEARITY AND REPEATABILITY PLUS/MINUS 2 PERCENT OF READING OF FULL SCALE.

D. MATERIALS:
1. SENSOR: PLASTIC WITH TEFLON COATED STAINLESS STEEL MEASUREMENT CYLINDER.
2. STEM: STAINLESS STEEL.
3. COMPRESSION FITTING: 304 STAINLESS STEEL.
4. O–RINGS: BUNA N.

E. MOUNTING OPTIONS:
1. INSTALL DIRECTLY INTO THE INLET TAPPING PORT OF THE CONTROL VALVE.

F. MANUFACTURER:
1. CLA–VAL MODEL X144.

PART 3 –EXECUTION

3.1 INSTALLATION

A. INSTALL VALVES AS SHOWN ON DRAWINGS AND IN ACCORDANCE WITH MANUFACTURERS' AND OWNER'S REQUIREMENTS.

VERIFY SCALE
1/2 0 1/2 1
BAR REPRESENTS ONE AND ONE–HALF INCHES ON ORIGINAL

SCALE AS SHOWN

NOTES 2

DRAWN BY: CHRISTOPHER G. BLANK 11/02/07
CHECKED BY: 11/02/07
RECOMMENDED BY: DATE
ACCEPTED BY: DATE

Call before you Dig
Avoid cutting underground utility lines. It's costly.
Call 811 or 1–800–227–2600
Avoid overhead power line contact. It's costly.
Call before you OVERHEAD 1–702–227–2929
CLARK COUNTY TRAFFIC OPERATIONS 1–702–455–7544

CLV DWG # _____

REVISIONS:

CONTRACT NUMBER
C
DRAWING NUMBER E X
SHEET X OF –