

GENERAL:

1. REFER TO THE WESTERN VIRGINIA REGIONAL DESIGN AND CONSTRUCTION STANDARDS, LATEST EDITION FOR ADDITIONAL REQUIREMENTS NOT HEREIN INDICATED OR SPECIFIED. CONTRACTOR RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS THAT MAY BE APPLICABLE TO THE WORK.

DEMOLITION:

1. COMPLY WITH APPLICABLE CODES AND REGULATIONS FOR DEMOLITION OPERATIONS AND SAFETY OF ADJACENT STRUCTURES AND THE PUBLIC.
- a. OBTAIN REQUIRED PERMITS.
- b. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
- c. USE PHYSICAL BARRIERS TO PREVENT ACCESS TO AREAS THAT COULD BE HAZARDOUS TO WORKERS OR THE PUBLIC.
- d. CONDUCT OPERATIONS TO MINIMIZE EFFECTS ON AND INTERFERENCE WITH ADJACENT STRUCTURES AND OCCUPANTS.
- e. DO NOT CLOSE OR OBSTRUCT ROADWAYS OR SIDEWALKS WITHOUT PERMIT.
2. DO NOT BEGIN REMOVAL UNTIL RECEIPT OF NOTIFICATION TO PROCEED FROM OWNER'S REPRESENTATIVE.
3. MINIMIZE PRODUCTION OF DUST DUE TO DEMOLITION OPERATIONS; DO NOT USE WATER IF THAT WILL RESULT IN ICE, FLOODING, SEDIMENTATION OF PUBLIC WATERWAYS OR STORM SEWERS, OR OTHER POLLUTION.
4. COORDINATE WORK WITH UTILITY COMPANIES; NOTIFY BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS; OBTAIN REQUIRED PERMITS.
5. PROTECT EXISTING UTILITIES TO REMAIN FROM DAMAGE.
6. DO NOT DISRUPT PUBLIC UTILITIES WITHOUT PERMIT FROM AUTHORITY HAVING JURISDICTION.
7. REMOVE DEBRIS, JUNK, AND TRASH FROM SITE.
8. LEAVE SITE IN CLEAN CONDITION, READY FOR SUBSEQUENT WORK.
9. CLEAN UP SPILLAGE AND WIND-BLOWN DEBRIS FROM PUBLIC AND PRIVATE LANDS.

CONCRETE & GROUT:

1. CONCRETE STRENGTH: FOR EXTERIOR EQUIPMENT PADS AND ALL CONCRETE NOT OTHERWISE SPECIFIED:
- $f'_c = 4000$  PSI
- w/c = 0.45
- AIR ENTRAINMENT: 5 PERCENT, PLUS OR MINUS 1.5 PERCENT
2. REINFORCING BARS: ASTM A615, GRADE 60, DEFORMED,  $f_y = 60$  KSI.
3. REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 315-04. DEVELOPMENT AND SPLICE LENGTHS ARE IN TENSION UNLESS OTHERWISE INDICATED. TENSION LAP SPLICES SHALL BE AS TABULATED IN THE SPLICE LENGTH TABLE, (THIS SHEET), UNLESS OTHERWISE INDICATED.

TABLE BASED ON ACI 318 LAP CLASS B

BAR SIZE	TENSION LAP SPLICE (IN)	
	TOP BARS	OTHER BARS
#3	24	18
#4	32	25
#5	40	31
#6	48	37
#7	70	54
#8	80	62
#9	90	70
#10	102	78
#11	113	87

4. UNLESS OTHERWISE SHOWN, BARS AT WALL AND CONTINUOUS FOOTING CORNERS AND INTERSECTIONS SHALL BE DETAILED AS SHOWN ON FIGURE 15 OF ACI 315-04.
5. PROVIDE CONCRETE COVER FOR REINFORCING AS SPECIFIED IN TABLE 3.3.2.3 OF ACI 301-05, UNLESS OTHERWISE INDICATED. SECURELY PLACE REINFORCEMENT TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
6. PROVIDE DOWELS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS OTHERWISE INDICATED.
7. CHAMFER EDGES OF PERMANENTLY EXPOSED CONCRETE SURFACES 3/4-INCH, UNO.
8. NON-SHRINK GROUT: ASTM C1107, PREMIXED COMPOUND WITH NON-METALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING AGENTS. MINIMUM 28-DAY COMPRESSIVE STRENGTH: 5,000 PSI.
9. SUBMITTALS: SUBMIT SHOP DRAWINGS AS SPECIFIED IN ACI 301 FOR REINFORCEMENT. SUBMIT MIX DESIGN AS SPECIFIED IN ACI 301; INCLUDE TEST RESULTS AND NECESSARY SUBSTANTIATING DATA USED TO ESTABLISH MIX DESIGN. SUBMIT PRODUCT DATA FOR NON-SHRINK GROUT.

PIPE & FITTINGS:

1. ALL PIPE, FITTINGS, AND VALVES SHALL BE RATED FOR A MINIMUM WORKING PRESSURE OF 150 PSI.
2. REFER TO WESTERN VIRGINIA WATER AUTHORITY (WVWA) STANDARD SPECIFICATIONS, CS-1 GENERAL WATER AND SEWER SPECIFICATIONS, FOR PROJECT REQUIREMENTS NOT SPECIFIED ELSEWHERE.
3. FORCEMAIN PIPING, INSTALLATION, AND TESTING SHALL CONFORM TO WVWA STANDARD SPECIFICATIONS, CS-3 SANITARY SEWER COLLECTION PIPING.
4. DUCTILE IRON PIPE FITTINGS, THRUST RESTRAINT, AND INSTALLATION SHALL CONFORM TO WVWA STANDARD SPECIFICATIONS, CS-2 WATER DISTRIBUTION PIPING.
5. THRUST BLOCKS SHALL BE PROVIDED IN ADDITION TO RESTRAINED JOINTS AND FITTINGS. REFER TO WVWA STANDARD DETAIL W-18 ON SHEET CS502 FOR DETAILS.
6. REFER TO WVWA STANDARD DETAIL W-21 ON SHEET CS502 FOR TAPPING SLEEVE AND VALVE DETAILS.
7. REFER TO WVWA STANDARD DETAIL G-12 ON SHEET CS502 FOR BEDDING AND TRENCHING DETAILS.
8. INSERTION VALVE SHALL BE ADVANCED VALVE TECHNOLOGIES (AVT) E22 INSERTION VALVE, NO SUBSTITUTIONS. INSERTION VALVE SHALL HAVE RESILIENT SEAT AND VALVE SHALL MEET AWWA C-509 STANDARDS FOR MATERIALS OF CONSTRUCTION.
9. ALL BURIED VALVES SHALL BE PROVIDED WITH 2-INCH STANDARD OPERATING NUT AND VALVE VAULT, SEE DETAIL W-9, SHEET CS502.

PRECAST METER VAULT:

1. MATERIALS AND FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C913 AND ASTM C1619, DESIGNED TO WITHSTAND HS20 LOADING IN ACCORDANCE WITH ASTM C890.
2. JOINTS SHALL BE WATERTIGHT CONFORMING TO ASTM C443.
3. ACCESS HATCH: HALLIDAY PRODUCTS SERIES H1R, OR EQUAL. HATCH SHALL BE RATED FOR H20 LOADING AND SHALL BE PROVIDED WITH TYPE 316 SST HOLD OPEN ARM WITH RELEASE HANDLE, TYPE 316 SST HINGES AND TAMPER PROOF FASTENERS, 1/4" THICK DIAMOND PATTERN ALUMINUM COVER PLATE, AND STAINLESS STEEL OR ALUMINUM LOCKING BAR USED IN CONJUNCTION WITH OWNER-SUPPLIED PADLOCK. HATCH SIZE AS INDICATED.
4. SUBMITTALS:
- a. SHOP DRAWINGS: INDICATE PRECAST CONCRETE STRUCTURE LOCATION, DIMENSIONS, CONFIGURATION, THICKNESS, PENETRATIONS, AND OTHER PERTINENT DETAILS.
- b. PRODUCT DATA: PROVIDE ACCESS HATCH, COMPONENT CONSTRUCTION FEATURES, CONFIGURATION, AND DIMENSIONS.

MAGNETIC FLOW METER:

- GENERAL
1. TAG NO : FE/FIT-1400
2. SERVICE : RAW WASTEWATER
3. P&ID NO. : I002
4. LOCATION : FLOW METER MANHOLE

CONNECTIONS

5. LINE SIZE : 4-INCH
6. LINE MATERIAL : AS SPECIFIED
7. CONN. TYPE : FLANGED
8. CONN. MATERIALS : CARBON STEEL OR DUCTILE IRON

PROCESS CONDITIONS

9. FLUID : RAW WASTEWATER
10. MAXIMUM FLOW : 600 GPM
11. MAX. FLOW VELOCITY : 15.3 FPS
12. MINIMUM FLOW : 150 GPM
13. MIN. FLOW VELOCITY : 3.8 FPS
14. OPERATING TEMP. : 40 TO 75 DEG. F.
15. OPERATING PRESSURE: 125-150 PSI

METER

16. METER SIZE : 4-INCH
17. TUBE MATERIAL : 304 STAINLESS STEEL
18. HOUSING : WELDED STEEL
19. LINER MATERIAL : INJECTION MOLDED HARD RUBBER
20. ELECTRODE TYPE : FLUSH MOUNT
21. ELECTRODE MATERIAL : 316 STAINLESS STEEL
22. TERMINAL BOX : DIE CAST ALUMINUM
23. ENCLOSURE CLASS : NEMA 4X. SEE NOTES BELOW.
24. POWER SUPPLY : 120 VAC, 60 HZ
25. GROUNDING TYPE : STRAP AND RING

TRANSMITTER

26. TYPE : INTELLIGENT, MICROPROCESSOR BASED
27. MOUNTING : REMOTE IN CONTROL PANEL
28. TRANSMITTER RANGE : 0-800 GPM, FIELD CONFIGURABLE
29. ENCLOSURE CLASS : NEMA 4
30. POWER SUPPLY : 120 VAC, 60 HZ
31. ANALOG OUTPUT : 4-20 mA DC
32. SYSTEM ACCURACY : +/- 0.5% OF FLOW RATE AT VELOCITIES ABOVE 3 FPS
33. SYS. REPEATABILITY : +/- 0.1% OF FULL SCALE
34. EMPTY PIPE DETECT. : REQUIRED
35. LOCAL DISPLAY : MULTI-LINE LIQUID CRYSTAL FOR MEASURED VARIABLE, DIAGNOSTICS, PLUS BAR GRAPH AND KEYPAD
36. LOCAL TOTALIZER : REQUIRED, 6-DIGIT NON-RESET
37. CABLE LENGTH : APPROX. 50-FT, PROVIDED BY METER MANUFACTURER

MISCELLANEOUS

38. MANUFACTURER(S) : FOXBORO, E+H, KROHN, OR SIEMENS
39. MODEL NO. : 8000 SERIES, PROMAG W, ENVIROMAG, OR MAG 5100

NOTES

- a. PROVIDE GROUNDING RING FROM METER MANUFACTURER. FABRICATED GROUNDING RINGS FROM A THIRD PARTY SHALL NOT BE ACCEPTED.
- b. PROVIDE METER MANUFACTURER'S CABLE BETWEEN THE METER AND TRANSMITTER.
- c. WET CALIBRATE ALL METERS (AT 3 POINTS OVER THE SPECIFIED FLOW RANGE) BY GRAVIMETRIC OR VOLUMETRIC METHODS THAT ARE TRACEABLE TO NIST (NATIONAL INSTITUTE STANDARD TESTING).
- d. PROVIDE CERTIFICATE OF WET CALIBRATION TO THE OWNER'S REPRESENTATIVE PRIOR TO METER INSTALLATION.
- e. PROVIDE METER INSTALLATION FOR IP68 APPLICATION (SUBMERGENCE). PROVIDE IP68 CONDUIT AND FITTINGS.
- f. PROVIDE 316 STAINLESS STEEL MOUNTING HARDWARE INCLUDING ALL NUTS AND BOLTS CONNECTING THE METER TO THE PROCESS PIPE.
- g. PROVIDE ALL POWER AND SIGNAL CABLE IN RIGID CONDUIT OR LIQUID-TIGHT CONDUIT. SEE ELECTRICAL SPECIFICATIONS FOR PRODUCT SPECIFICATIONS.
- h. PROVIDE GROUNDING FROM GROUND RINGS TO METER AND METER TO GROUND, USING GREEN SIZE 10 AWG (6mm) GROUND WIRE. INSTALL GROUND AS DIRECTED BY THE METER MANUFACTURER OR TO NEAREST METALLIC PIPE.
- i. REMOTE COMMUNICATION MUST NOT INTERFERE WITH THE ANALOG OUTPUT SIGNAL. USE FREQUENCY SHIFT KEYING (FSK) TECHNIQUE FOR COMMUNICATION.
- j. SUBMITTALS: SUBMIT MANUFACTURER'S CATALOG DATA FOR FLOW TUBE, CABLE, AND TRANSMITTER. SUBMIT CERTIFICATES AS SPECIFIED HEREINBEFORE.

SUBMERSIBLE WATER-LEVEL SENSOR/TRANSMITTER

GENERAL

1. TAG NO : LE/LIT-1302
2. SERVICE : RAW WASTEWATER
3. P&ID NO. : I002
4. LOCATION : EXISTING PUMP STATION WETWELL

SENSOR

5. TYPE : HYDROSTATIC HEAD-PRESSURE TRANSDUCER
6. WETTED PARTS : 316 STAINLESS STEEL
7. DIAPHRAGM : 316 STAINLESS STEEL
8. SUPPLY VOLTAGE : 24 VDC
9. ANALOG COMS : 4-20 mA DC/10-30 VDC
10. DIGITAL COMS : PROFIBUS PA/BUS POWERED 9-24 VDC
11. CABLE : PROVIDED BY SENSOR MANUFACTURER
12. CABLE CONNECTION : WATERTIGHT
13. CABLE TYPE : POLYURETHANE
14. CABLE LENGTH : AS REQUIRED FOR INSTALLATION
15. PRESSURE RANGE : BASED ON TANK OR VESSEL DIMENSIONS W/ 200% OVER RANGE PROTECTION
16. OPER. TEMPERATURE : -20 TO 190 DEG. F.
17. ZERO POINT SHIFT : 90% OF MEASURING RANGE

TRANSMITTER

18. TYPE : INDICATING
19. DISPLAY : LCD
20. HOUSING : CAST ALUMINUM
21. CALIBRATION : FIELD
22. ENCLOSURE : IP68 NEMA 4X MINIMUM AND AS REQUIRED FOR ELECTRICAL AREA CLASSIFICATION

MISCELLANEOUS

23. MANUFACTURER(S) : ENDRESS HAUSER (E+H), AMERICAN SENSOR TECHNOLOGIES (AST), OR APPROVED EQUAL

NOTES

- a. PROVIDE ALL NECESSARY CORROSION RESISTANT MOUNTING HARDWARE.
- b. PROVIDE DETAILED INSTRUCTIONS FOR PROPER INSTALLATION OF SENSOR, TRANSMITTER AND MOUNTING HARDWARE.
- c. PROVIDE BARRIER FOR INTRINSICALLY SAFE APPLICATIONS.
- d. PROVIDE LIGHTNING AND SURGE PROTECTION.
- e. PROVIDE DETAILED INSTALLATION WIRING DIAGRAMS SPECIFIC TO THE INSTALLATION APPLICATION.
- f. PROVIDE LARGE DIAMETER (3-INCH MINIMUM) WEIGHTED BASE CAGE ASSEMBLY.
- g. SUBMITTALS: SUBMIT MANUFACTURER'S CATALOG DATA FOR TRANSDUCER, CABLE, MOUNTING HARDWARE, AND TRANSMITTER.

BASIC ELECTRICAL REQUIREMENTS:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, INDUSTRY AND UTILITY STANDARDS, STATE LAWS, GOVERNMENTAL RULES AND REGULATIONS AND OTHER CRITERIA WHICH APPLY TO WORK OF THIS TYPE. ALL MATERIALS SHALL BE NEW AND CURRENT MODEL FOR WHICH REPLACEMENT PARTS ARE READILY AVAILABLE. SHALL COMPLY WITH NEC 2011.
2. WORK INCLUDED: ALL WORK IN THE CONTRACT DOCUMENTS AND ALL ASSOCIATED MATERIALS AND EXECUTION NECESSARY FOR A COMPLETE OPERATING SYSTEM.
3. PERMITS AND INSPECTIONS: OBTAIN AND PAY FOR ALL NECESSARY ELECTRICAL PERMITS AND INSPECTIONS. FURNISH TO THE ENGINEER, ONE COPY OF A CERTIFICATE OF FINAL INSPECTION FROM THE GOVERNMENTAL INSPECTION AUTHORITY HAVING JURISDICTION.
4. CONNECTIONS TO EQUIPMENT: PROVIDE ELECTRICAL CONNECTIONS TO ALL CONTRACTOR-FURNISHED AND OWNER-FURNISHED EQUIPMENT, FULLY COMPATIBLE WITH THE EQUIPMENT AND IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. EQUIPMENT SUPPORTS: SUPPORT EQUIPMENT SECURELY IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
6. SYSTEM TESTING: MAKE FINAL ADJUSTMENTS TO ELECTRICAL SYSTEM AND ALL OPERATIONAL TESTS UNDER DIRECT SUPERVISION OF MANUFACTURER'S REPRESENTATIVE.

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NETA STD ATS.
2. WIRING REQUIREMENTS:
- a. USE ONLY BUILDING WIRE WITH TYPE THWN INSULATION IN RACEWAY.
- b. USE SOLID CONDUCTOR FOR FEEDERS AND BRANCH CIRCUITS 10 AWG AND SMALLER.
- c. USE STRANDED CONDUCTORS FOR CONTROL CIRCUITS.
- d. CONDUCTOR SIZES ARE BASED ON COPPER

CONDUIT:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ANSI C80.1, NEMA TC 2, NEMA TC 3 AND NEMA FB1.
2. SUBMITTALS: PROVIDE PRODUCT DATA FOR RIGID NON-METALLIC CONDUIT, SCHEDULE 40, AND RIGID STEEL CONDUIT.
3. CONDUIT REQUIREMENTS:
- a. MINIMUM SIZE CONDUIT 1" UNLESS OTHERWISE SPECIFIED.
- b. USE RIGID STEEL CONDUIT ABOVE GRADE.
- c. USE RIGID NON-METALLIC CONDUIT BELOW GRADE AND IN BURIED STRUCTURES, TRANSITION TO RIGID STEEL CONDUIT ABOVE GRADE.
4. INSTALLATION:
- a. INSTALL CONDUIT SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.

BOXES:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NECA 1 AND NEMA FB1
2. CAST OUTLET BOXES: NEMA FB 1, TYPE FD, CAST FERRALLOY. PROVIDE GASKETED COVER BY BOX MANUFACTURER. PROVIDE THREADED HUBS.
- a. SUBMITTALS: PROVIDE MANUFACTURER'S PRODUCT DATA FOR CAST OUTLET BOXES.

LOW VOLTAGE TRANSFORMERS:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NEMA ST 20 AND NETA STD ATS.
2. SUBMITTALS: PROVIDE OUTLINE AND SUPPORT POINT DIMENSIONS OF ENCLOSURES AND ACCESSORIES, UNIT WEIGHT, VOLTAGE, KVA, AND IMPEDANCE RATINGS AND CHARACTERISTICS, TAP CONFIGURATIONS, INSULATION SYSTEM TYPE, AND RATED TEMPERATURE RISE. PROVIDE INDICATE LOSS DATA, EFFICIENCY AT 25, 50, 75, AND 100 PERCENT RATED LOAD, AND SOUND LEVEL.
3. TRANSFORMER REQUIREMENTS:
- a. NEMA ST 20, FACTORY ASSEMBLED, AIR COOLED DRY TYPE
- b. TRANSFORMER, RATINGS AS INDICATED.
- c. CASE TEMPERATURE: DO NOT EXCEED 35 DEGREES C RISE ABOVE AMBIENT AT WARMEST POINT AT FULL LOAD.
- d. PROVIDE WINDING TAPS PER NEMA ST 20.
- e. GROUND CORE AND COIL ASSEMBLY TO ENCLOSURE BY MEANS OF A VISIBLE FLEXIBLE COPPER GROUNDING STRAP.
- f. MOUNT AS INDICATED ON DRAWINGS.
- g. COIL CONDUCTORS: CONTINUOUS WINDINGS WITH TERMINATIONS BRAZED OR WELDED.
- h. TRANSFORMER ENCLOSURE: NEMA ST 20, PROVIDE NEMA 1 ENCLOSURES IN INTERIOR LOCATIONS AND NEMA 4X ENCLOSURES IN EXTERIOR LOCATIONS.
- i. ISOLATE CORE AND COIL FROM ENCLOSURE USING VIBRATION-ABSORBING MOUNTS.
- j. NAMEPLATE: INCLUDE TRANSFORMER CONNECTION DATA AND OVERLOAD CAPACITY BASED ON RATED ALLOWABLE TEMPERATURE RISE.
4. INSTALLATION:
- a. SET TRANSFORMER PLUMB AND LEVEL.
- b. USE FLEXIBLE LIQUID-TIGHT CONDUIT FOR CONNECTIONS TO TRANSFORMER CASE. MAKE CONDUIT CONNECTIONS TO SIDE PANEL OF ENCLOSURE.
- c. MOUNT FLOOR-MOUNTED TRANSFORMERS ON VIBRATION ISOLATING PADS SUITABLE FOR ISOLATING THE TRANSFORMER NOISE FROM THE BUILDING STRUCTURE. PROVIDE GROUNDING PER NEC 2008.

PANELBOARDS, 600 VOLTS AND BELOW:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NECA 1, NEMA STD ATS AND NEMA PB 1.
2. SUBMITTALS: PROVIDE OUTLINE AND SUPPORT POINT DIMENSIONS, VOLTAGE, MAIN BUS AMPACITY, INTEGRATED SHORT CIRCUIT AMPERE RATING, CIRCUIT BREAKER ARRANGEMENT AND SIZES, INCLUDE SPARE PARTS LISTING; SOURCE AND CURRENT PRICES OF REPLACEMENT PARTS AND SUPPLIES.
3. PANELBOARD REQUIREMENTS:
- a. DESCRIPTION: NEMA PB 1, BOLT-IN CIRCUIT BREAKER TYPE.
- b. PANELBOARD BUS: COPPER, RATINGS AS INDICATED. PROVIDE COPPER GROUND BUS IN EACH PANELBOARD.
- c. MINIMUM INTEGRATED SHORT CIRCUIT RATING: AS INDICATED ON DRAWINGS.
- d. MOLDED CASE CIRCUIT BREAKERS: WITH INTEGRAL THERMAL AND INSTANTANEOUS MAGNETIC TRIP IN EACH POLE, UL LISTED.
- e. ENCLOSURE: NEMA PB 1, PROVIDE NEMA 1 ENCLOSURES IN INTERIOR LOCATIONS AND NEMA 3R IN EXTERIOR LOCATIONS.
- f. CABINET FRONT: SURFACE TYPE, FASTENED WITH HINGED DOOR AND FLUSH LOCK, FINISH IN MANUFACTURE'S STANDARD GRAY ENAMEL.
4. INSTALLATION:
- a. INSTALL PANELBOARDS IN ACCORDANCE WITH NEMA PB 1.1, NECA 1 AND NEC.
- b. INSTALL PANELBOARDS PLUMB.
- c. PROVIDE FILLER PLATES FOR UNUSED SPACES IN PANELBOARDS.
- d. PROVIDE TYPED CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT. PANELBOARD. REVISE DIRECTORY TO REFLECT CIRCUITING CHANGES REQUIRED TO BALANCE PHASE LOADS.
- e. PROVIDE ENGRAVED PLASTIC NAMEPLATES.
- f. GROUND AND BOND PANELBOARD ENCLOSURE ACCORDING TO NEC 2008.

WIRING DEVICES:

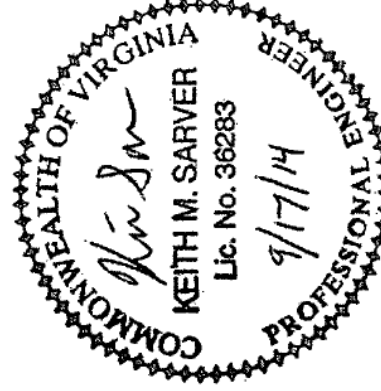
1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NECA 1 AND NEMA WD 6.
2. SUBMITTALS: PROVIDE MANUFACTURER'S CATALOG INFORMATION SHOWING DIMENSIONS, COLORS, AND CONFIGURATIONS.
3. WIRING DEVICE REQUIREMENTS:
- a. WALL SWITCHES: PROVIDE HEAVY DUTY, AC ONLY HEAVY-USE SNAP SWITCH, COMPLYING WITH NEMA WD 6. SHALL BE 277 VOLT, 20 AMP RATED.
- b. GFI RECEPTACLES: PROVIDE HEAVY DUTY, COMPLYING WITH NEMA WD 6. SHALL BE 20 AMP RATED DUPLEX CONVENIENCE RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER TO MEET REGULATORY REQUIREMENTS.
- c. WALL PLATES: PROVIDE WEATHERPROOF GASKETED CAST COVER PLATES WITH GASKETED DEVICE COVER.
4. INSTALLATION:
- a. INSTALL DEVICES SECURELY, IN A NEAT AND WORKMANLIKE MANNER, AS SPECIFIED IN NECA 1.
- b. INSTALL DEVICES PLUMB AND LEVEL.
- c. INSTALL WALL SWITCHES WITH OFF POSITION DOWN.

ENCLOSED SWITCHES:

1. CODES AND MATERIALS: ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH NEMA FU 1, NEMA KS 1, AND NETA STD ATS.
2. SUBMITTALS: PROVIDE SWITCH RATINGS AND ENCLOSURE DIMENSIONS.
3. ENCLOSED SWITCH REQUIREMENTS:
- a. FUSIBLE SWITCH ASSEMBLIES: NEMA KS 1, TYPE HD ENCLOSED LOAD INTERRUPTER KNIFE SWITCH. PROVIDE EXTERNALLY OPERATED HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE SHALL BE LOCKABLE IN OFF POSITION. FUSE CLIPS SHALL BE DESIGNED TO ACCOMMODATE NEMA FU 1, CLASS R FUSES.
- b. NON-FUSIBLE ASSEMBLIES: NEMA KS 1, TYPE HD ENCLOSED LOAD INTERRUPT KNIFE SWITCH. PROVIDE EXTERNALLY OPERATED HANDLE INTERLOCKED TO PREVENT OPENING FRONT COVER WITH SWITCH IN ON POSITION. HANDLE SHALL BE LOCKABLE IN OFF POSITION.
- c. ENCLOSURES: NEMA KS 1, PROVIDE NEMA 1 ENCLOSURES IN INTERIOR LOCATIONS AND NEMA 4X ENCLOSURES IN EXTERIOR LOCATIONS.
4. INSTALLATION:
- a. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- b. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES.
- c. APPLY ADHESIVE TAG ON INSIDE DOOR OF EACH FUSED SWITCH INDICATING NEMA FUSE CLASS AND SIZE INSTALLED.

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AECOM



RENOVATION OF CLEARBROOK LIFT STATION

SPECIFICATIONS

PROJECT NO:	60153682.0001
CAD DWG FILE:	G_N_0003
DESIGNED BY:	IPC
DRAWN BY:	IPC
DEPT CHECK:	WCH
PROJ CHECK:	DMH
DATE:	SEPT. 17, 2014
SCALE:	N/A

G003