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- ALL LAMACOIDS TO BE IN ACCORDANCE WITH SECTION 3 OF STANDARDS
- CONTRACTOR TO SUPPLY AND INSTALL PANEL INSULATION.
- CONTRACTOR TO SUPPLY AND INSTALL THE DUAL BAND PUCK ANTENNA AND THE BULLET MOUNTING BRACKET. REGION WILL PROVIDE AND INSTALL THE MICROHARD BULLET AND POWER CABLE.

THESE DRAWINGS ARE TEMPLATE DRAWINGS

- REMOVE THIS NOTE AS PART OF THE DESIGN PROCESS.
- MODIFY THIS DRAWING AS DIRECTED IN THE SCADA STANDARDS.
- ADD ADDITIONAL DETAILS AS REQUIRED TO MEET THE PROJECT SPECIAL REQUIREMENTS.
- WHEN THE CONSULTANT DEVIATES FROM THIS TEMPLATE THEY ARE REQUIRED TO NOTIFY HALTON REGION THROUGH THE USE OF THE STANDARDS DEVIATION MEMO.
- FUSED TERMINAL BLOCKS AND CIRCUIT BREAKERS TO BE SIZED APPROPRIATELY.
- SHOW ADDITIONAL RIG RACKS (UP TO A MAXIMUM OF 2) ONLY IF NECESSARY BASED ON DESIGN REQUIREMENTS.
- THE CONSULTANT IS TO SPECIFY SIGNAL ISOLATORS WHERE REQUIRED. FOLLOW MANUFACTURERS' SPECIFICATIONS FOR GROUNDING OF SHIELDS.
- PANEL SIZING IS TO COMPLY WITH SECTION 3 OF THE SCADA STANDARDS.

| No | Date | By | REVISIONS | MANU | CAD |
|--------|--------|-------|-----------|------------|-----|
| Design | --- | Ch'kd | --- | Date | |
| Drawn | --- | Ch'kd | --- | | |
| Scale | N.T.S. | | | References | |

Field Notes

Stamp

Regional

ACCEPTED FOR CONSTRUCTION OF REGIONAL INFRASTRUCTURE

REVIEWED FOR COMPLIANCE WITH REGIONAL STANDARDS ONLY.

Director, Water & Wastewater Treatment

Manager, Plant Capital & Engineering

TITLE REGIONAL MUNICIPALITY OF HALTON CONSULTANT PROJECT TITLE

OUTDOOR PUMPING STATION PLC CONTROL PANEL INNER LAYOUT

| | |
|--------------------|---------------------|
| Consultant File No | Regional Drawing No |
| --- | --- |
| CONTRACT No | Drawing No 1800 |
| --- | SHEET XX OF XX |

CONSULTANT TO UPDATE
BILL OF MATERIALS ITEM
AND QUANTITY AS
REQUIRED DESIGN

| BILL OF MATERIALS | | | | | |
|-------------------|-----------------|-----------------|---|---|----------|
| ITEM | PART NUMBER | SUPPLIER | LABEL | DESCRIPTION | QUANTITY |
| 1 | 1756-PA75 | ALLEN BRADLEY | | CONTROLLOGIX POWER SUPPLY | 1 |
| 2 | 1756-L82E | ALLEN BRADLEY | | CONTROLLOGIX CPU | 1 |
| 3 | 1756-IA16I | ALLEN BRADLEY | | CONTROLLOGIX 16-POINT AC DIGITAL INPUT CARD | 5 |
| 4 | 1756-OA16I | ALLEN BRADLEY | | CONTROLLOGIX 16-POINT AC DIGITAL OUTPUT CARD | 1 |
| 5 | 1756-IF8IH | ALLEN BRADLEY | | CONTROLLOGIX HART 8-POINT ANALOG INPUT CARD | 2 |
| 6 | 1756-OF8IH | ALLEN BRADLEY | | CONTROLLOGIX HART 8-POINT ANALOG OUTPUT CARD | 1 |
| 7 | 1756-N2 | ALLEN BRADLEY | | CONTROLLOGIX SLOT FILLER | 3 |
| 8 | 1756-A13 | ALLEN BRADLEY | | CONTROLLOGIX 13-SLOT CHASSIS | 1 |
| 9 | 9926251015 | WEIDMULLER | CBRL-15A | SURGE PROTECTOR CIRCUIT BREAKER 1P 15A | 1 |
| 10 | 9102003500 | WEIDMULLER | CBRL1-15A,CBRL118-15A,CBRUPS-15A, CBRUPS2-15A, CBR300-15A | CIRCUIT BREAKER 1P 15A | 5 |
| 11 | 9101803500 | WEIDMULLER | CBRREC2-5A,CBRL117-5A,CBR121-5A, CBR123-5A, CBR302-5A, CBR304-5A | CIRCUIT BREAKER 1P 5A | 8 |
| 12 | 9101703500 | WEIDMULLER | CBRP81-3A,CBR100-3A,CBR115-3A, CBR119-3A | CIRCUIT BREAKER 1P 3A | 18 |
| 13 | 9101203500 | WEIDMULLER | CBRSW1-1A,CBR116-1A,CBR120-1A | CIRCUIT BREAKER 1P 1A | 3 |
| 14 | 9911050000 | WEIDMULLER | CBR404-0.5A, CBR405-0.5A | CIRCUIT BREAKER 1P 0.5A DC - BACKUP CONTROL SPARES | 2 |
| 15 | 1162960000 | WEIDMULLER | IO:2/0/A - IO:2/15/A, IO:3/0/A - IO:3/15/A, IO:4/0/A - IO:4/15/A, IO:5/0/A - IO:5/15/A, IO:6/0/A - IO:6/15/A | TERMINAL BLOCK, FUSED, 120VAC W/ TRIP INDICATION | 80 |
| 16 | 1142990000 | WEIDMULLER | | END PLATE FOR ABOVE | 80 |
| 17 | 1020100000 | WEIDMULLER | IO:2/0/B - IO:2/15/B, IO:3/0/B - IO:3/15/B, IO:4/0/B - IO:4/15/B, IO:5/0/B - IO:5/15/B, IO:6/0/B - IO:6/15/B, N1,N2,0VDC | TERMINAL BLOCK, FEED THROUGH, FOR DIO, NEUTRAL AND 0VDC TERMINALS | 142 |
| 18 | 1179600000 | WEIDMULLER | | END PLATE FOR ABOVE | AS REQ. |
| 19 | 687460000 | WEIDMULLER | IO:9.0+ - IO:9.7+, IO:10.0+ - IO:10.7+, IO:9.0- - IO:9.7-, IO:10.0- - IO:10.7-, IO:12.0+ - IO:12.7+, IO:12.0- - IO:12.7- | TERMINAL BLOCK, 2-TIER, KNIFE DISCONNECT | 24 |
| 20 | 687560000 | WEIDMULLER | | END PLATE FOR ABOVE | 24 |
| 21 | 1020090000 | WEIDMULLER | SHLD | TERMINAL BLOCK, FEED THROUGH, GREEN | 26 |
| 22 | 1010100000 | WEIDMULLER | GND | TERMINAL BLOCK, GROUND | 13 |
| 23 | 1061200000 | WEIDMULLER | | END BRACKET FOR W SERIES TERMINALS | 17 |
| 24 | 1123040000 | WEIDMULLER | CR-00:8/0-CR-00:8/15 | INTERPOSING RELAY, 120VAC COIL, 1 C/O CONTACT | 32 |
| 25 | 700-HF32A14 | ALLEN BRADLEY | PF1, CR22, CR23, BCL, BPF1 | CONTROL RELAY, 120VAC COIL, 2 C/O CONTACTS | 5 |
| 26 | 700-HN116 | ALLEN BRADLEY | | RELAY BASE FOR ABOVE | 5 |
| 27 | 1133520000 | WEIDMULLER | UPS#1R/1, UPS#1R/2, UPS#2R/1, UPS#2R/2 | CONTROL RELAY, 24VAC COIL, 2 C/O CONTACTS | 4 |
| 28 | 7760056225 | WEIDMULLER | | RELAY BASE FOR ABOVE | 4 |
| 29 | 8647680000 | WEIDMULLER | TD22 | TIMING RELAY, MULTIFUNCTION | 1 |
| 30 | KFAS-SR2.Ex2.W | PEPPERL & FUCHS | ISR-1 | INTRINSICALLY SAFE BARRIER, DUAL CHANNEL | 1 |
| 31 | 2859563 | PHOENIX | | LINE SURGE SUPPRESSOR | 1 |
| 32 | PW9130L1000T-XL | EATON | UPS#1 | POWERWARE 1000VA | 1 |
| 33 | 1014018 | EATON | UPS#1 | RELAY CARD FOR ABOVE | 1 |
| 34 | 2938581 | PHOENIX | | 24VDC POWER SUPPLY | 3 |
| 35 | 2938963 | PHOENIX | | 24VDC POWER SUPPLY REDUNDANCY MODULE FOR ABOVE | 1 |
| 36 | FLKDS | HAMMOND | | PANEL DOOR LIGHT SWITCH | 1 |
| 37 | | | | | |
| 38 | IGS262 | HUBBELL | | DUPLEX RECEPTACLE (NETWORK), ISOLATED GROUND - ORANGE | 1 |
| 39 | P-R62-F3R0 | GRACE | | PROGRAMMER PORT | 1 |
| 40 | IGS261 | HUBBELL | | SINGLE RECEPTACLE, UPS FEED, IVORY | 1 |
| 41 | SP1801569 | HAMMOND | | 72"X72"X40" NEMA 4 DUAL ACCESS FLOOR MOUNT ENCLOSURE W/ INNER SWING DOORS & 12" FEET, C/W INSULATION PINS & CAPS ON TOP, SIDES AND DOORS, OUTER ENCLOSURE AND FEET ARE STAINLESS STEEL | 1 |
| 42 | | HAMMOND | | 60"Hx68"W BACK PLATES FOR ABOVE - TWO PIECES BACK TO BACK | INCL. |

| BILL OF MATERIALS | | | | | |
|-------------------|--------------------|------------------------|---|--|----------|
| ITEM | PART NUMBER | SUPPLIER | LABEL | DESCRIPTION | QUANTITY |
| 43 | RASU240515BK1 | HAMMOND | | NETWORK EQUIPMENT SHELF | 1 |
| 44 | PKT1212 | HAMMOND | | DRAWING HOLDER | 1 |
| 45 | SP18011894 | HAMMOND | | LAPTOP SHELF 22" | 1 |
| 46 | | | | SERVICE ACCESS SWITCH (FREE ISSUED) | 1 |
| 47 | | | | CISCO INTEGRATED SERVICES ROUTER (FREE ISSUED) | 1 |
| 48 | 800T-QTH2R | ALLEN BRADLEY | PL1 | ILLEGAL ENTRY PILOT LIGHT, RED, PUSH TO TEST | 1 |
| 49 | 800T-QTH2R | ALLEN BRADLEY | PL2 | SECURITY SYSTEM ARMED PILOT LIGHT, RED, PUSH TO TEST | 1 |
| 50 | 8396K107 | EATON | | WET WELL LEVEL TRANSMITTER LOCAL DISCONNECT SWITCH | 2 |
| 51 | 2864419 | PHOENIX | | SIGNAL ISOLATOR | 2 |
| 52 | 9101903500 | WEIDMULLER | CBRUPS-10A,CBRUPS2-10A, CBRREC1-10A | CIRCUIT BREAKER 1P 10A | 3 |
| 53 | PW9130L1000T-XL | EATON | UPS#2 | POWERWARE 1000VA | 1 |
| 54 | 1014018 | EATON | UPS#2 | RELAY CARD FOR ABOVE | 1 |
| 55 | RN221N-D3 | E&H | | INTRINSICALLY SAFE BARRIER FOR BACKUP CONTROL PRESSURE SENSOR | 1 |
| 56 | 800T-QTH2A | ALLEN BRADLEY | | PILOT LIGHT, PUSH TO TEST, AMBER FOR PUMPS ON BACKUP INDICATION | 1 |
| 57 | 800T-A2D2 | ALLEN BRADLEY | | PUSHBUTTON, 1NC | 1 |
| 58 | | | | | |
| 59 | 9101803500 | WEIDMULLER | CBR200-5A, CBR400-5A | CIRCUIT BREAKER 1P 5A DC | 2 |
| 60 | 9101703500 | WEIDMULLER | CBR201-3A, CBR204-3A, CBR401-3A, CBR403-3A | CIRCUIT BREAKER 1P 3A DC | 6 |
| 61 | 9101203500 | WEIDMULLER | CBR205-1A, CBR206-1A, CBR207-1A, CBR208-1A, CBR209-1A, CBR210-1A, CBR211-1A, CBR212-1A, CBR301-1A | CIRCUIT BREAKER 1P 1A DC | 8 |
| 62 | 2924600000 | WEIDMULLER | | GROUP MARKER | 9 |
| 63 | PK15GTA | SQUARE-D | | AC GROUND BAR | 1 |
| 64 | NSCH-1M | WEIDMULLER | | ISOLATED DC GROUND BAR | 1 |
| 65 | VSC15/10 | SCEPTER | | DISCONNECT SWITCH COVER | 2 |
| 66 | RCI 960-MA | RUTHERFORD | | SECURITY KEYSWITCH | 1 |
| 67 | 700-HF34A1-4 | ALLEN BRADLEY | CR10, CR11, CR12, CR13 | 4PDT CONTROL RELAY, 120VAC COIL | 4 |
| 68 | 700-HN139 | ALLEN BRADLEY | | 4PDT RELAY BASE FOR ABOVE | 4 |
| 69 | 7ML5033-2FA00-2A | SIEMENS | | MILLTRONICS MULTIRANGER 200 HMI CONTROLLER | 2 |
| 70 | | BELL SUPPLIED | | BIX BLOCK AND LIGHTING ARRESTOR | 1 |
| 71 | | | | | |
| 72 | SKTD542 | HAMMOND | | TWIN THERMOSTAT, 2N.C. CONTACTS, FOR TEMP. MONITORING, DIN-RAIL MNT. | 1 |
| 73 | | PANDUIT | | SLOTTED WIRE WAY, VARIOUS WIDTHS, 4" (100MM) DEEP | AS REQ. |
| 74 | | | | MISC. COMPONENTS-DIN RAIL, GROUNDING, WIRE LABELS | AS REQ. |
| 75 | C016652-09F004 | COMMSCOPE | | PATCH CABELS | AS REQ. |
| 76 | JBX3510IW-A | PANDUIT | | SINGLE GANG TWO-PIECE SNAP TOGETHER BOX | 1 |
| 77 | 760072074 | COMMSCOPE | | 1-PORT STAINLESS STEEL FACEPLATE FOR OUTLET BOX | 1 |
| 78 | 108168469 | COMMSCOPE | | SINGLE GANG RECTANGULAR FACEPLATE | 1 |
| 79 | 700206691 | COMMSCOPE | | CAT6 JACK MODULE (YELLOW) | 2 |
| 80 | 107296642 | COMMSCOPE | | RJ45 JACK MODULE SNAP-IN ICON (WHITE) | 2 |
| 81 | 2864150 | PHOENIX | | NON-POWERED LOOP SIGNAL ISOLATOR | 2 |
| 82 | BULLET-LTE | MICROHARD SYSTEMS INC. | | 4G/LTE ETHERNET/SERIAL/USB GATEWAY (FREE ISSUED) (NOTE 7) | 1 |
| 83 | MHS050030 | MICROHARD SYSTEMS INC. | | BULLET MOUNTING BRACKET (NOTE 7) | 1 |
| 84 | MHS035470 | MICROHARD SYSTEMS INC. | | LTE (MAIN/DIVERSITY) DUAL BAND PUCK ANTENNA (NOTE 7) | 1 |
| 85 | APR-3615AP-E01-007 | ARISTA | | THIN CLIENT | 1 |

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TITLE REGIONAL MUNICIPALITY OF HALTON
CONSULTANT PROJECT TITLE

OUTDOOR PUMPING STATION PLC
CONTROL PANEL BOM

Consultant File NO

Regional Drawing NO

CONTRACT NO

Drawing NO 1800A
SHEET XX OF XX

DO NOT REMOVE: HALTON REGION SCADA STANDARDS JANUARY 2022

1800-1800A_Outdoor_Site_Control_Panel.dwg