

# THURBER LIFT STATION REPLACEMENT

## FOR THE

# CITY OF MADISON

# MADISON, WI

## AUGUST, 2021

PUBLIC IMPROVEMENT PROJECT  
APPROVED

NOVEMBER 17, 2020

BY THE COMMON COUNCIL  
OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN  
APPROVED BY:

*Greg Fries*

8/19/21

City Engineer

Date

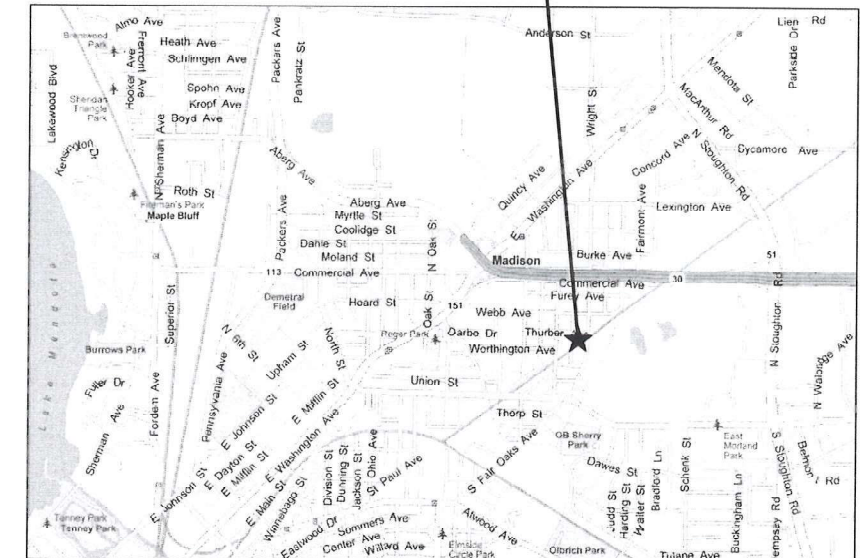


AREA MAP  
NO SCALE



SHEET NO.	DRAWING NO.	TITLE
<b>GENERAL</b>		
1	G0.1	GENERAL - TITLE SHEET, PROJECT LOCATION, LIST OF DRAWINGS
2	G0.2	GENERAL - STANDARD SYMBOLS
3	G0.3	GENERAL - ABBREVIATIONS
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<b>PUMPING STATION</b>		
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**THURBER AVENUE  
PUMPING STATION  
3325 THURBER AVENUE  
MADISON, WI 53714**

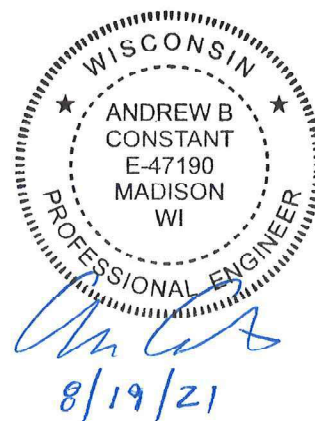


PROJECT LOCATION MAP  
NO SCALE



910 West Wingra Drive  
Madison, WI 53715  
608-251-4843  
608-251-8655 fax  
www.strand.com

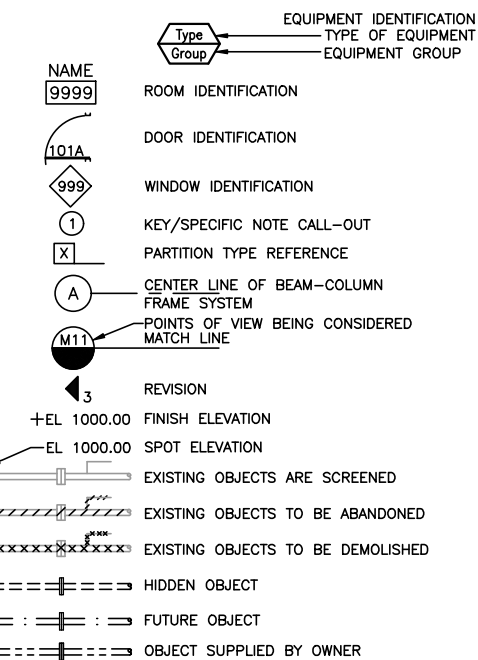
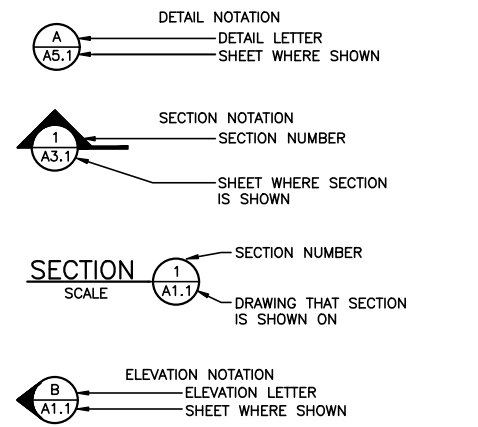
**PROJECT 11672**  
**CONTRACT # 9063**



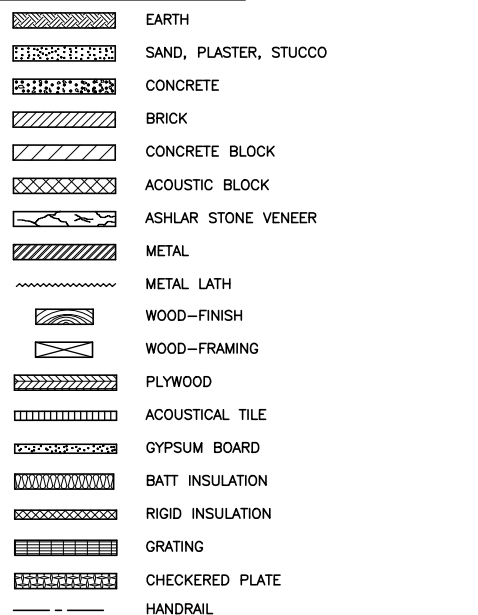
ISSUED FOR BID, 08/19/2021

SHEET  
1  
G0.1

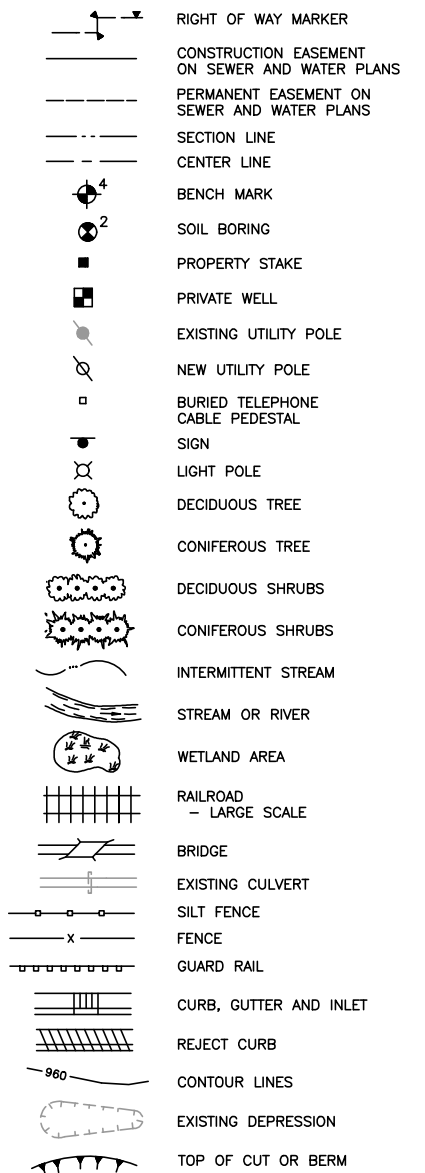
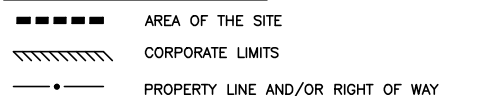
**DRAFTING SYMBOLS**



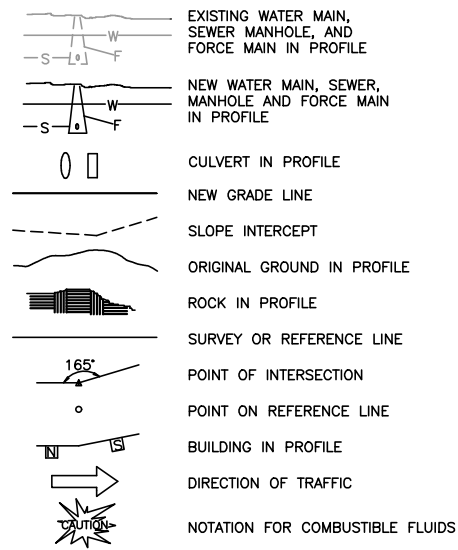
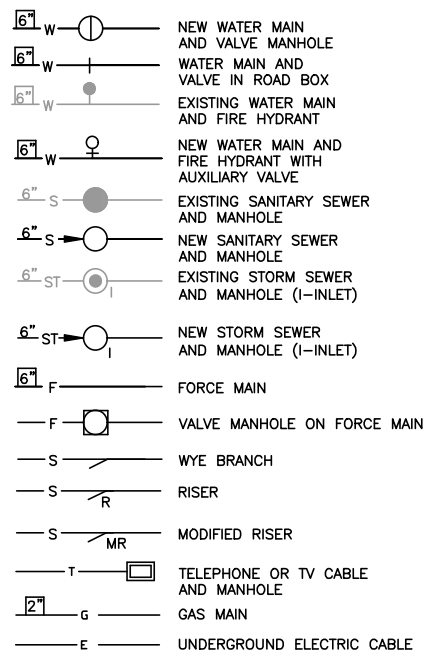
**ARCHITECTURAL SYMBOLS**



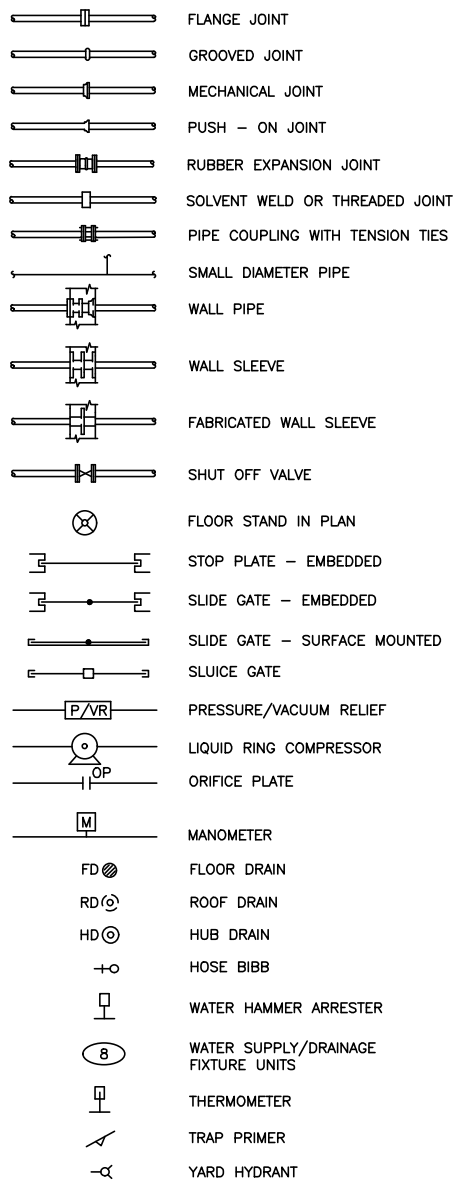
**TOPOGRAPHICAL SYMBOLS**



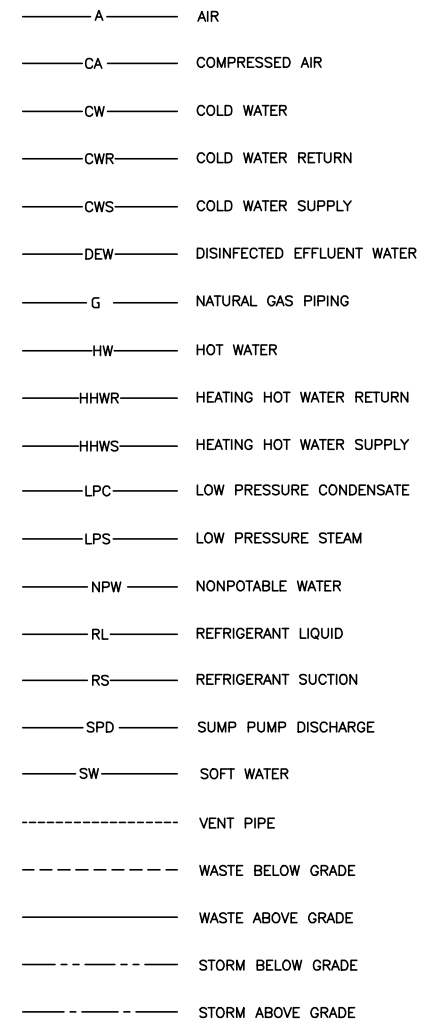
**UNDERGROUND UTILITY SYMBOLS**



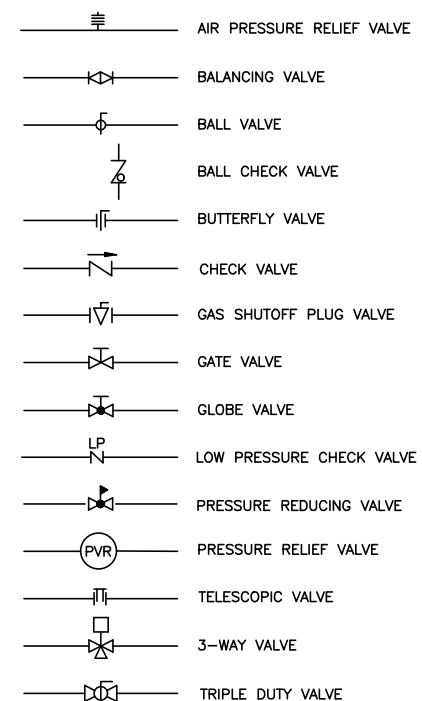
**PIPING SYMBOLS**



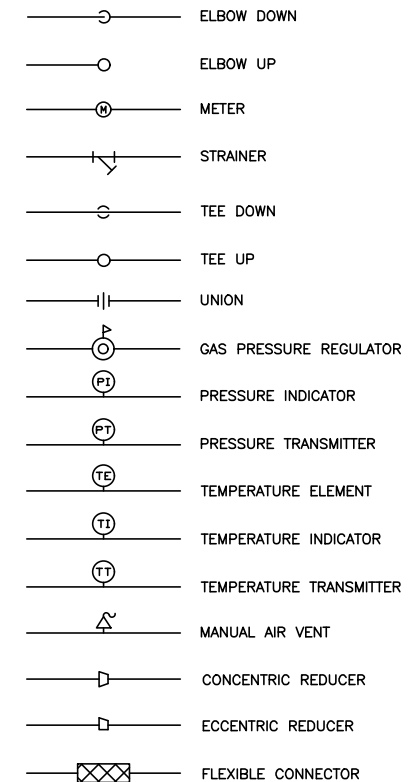
**PIPING DESIGNATIONS**



**VALVE SYMBOLS**



**PIPING SYMBOLS**



DATE:	08/19/2021								
NO.	1								
ISSUED FOR	RD								
REVISIONS									

**GENERAL STANDARD SYMBOLS**  
 THURBER LIFT STATION REPLACEMENT  
 CITY OF MADISON  
 MADISON, WISCONSIN

JOB NO.  
 1020.102  
 PROJECT MGR.  
 ANDREW B. CONSTANT



SHEET  
 2  
 G0.2

**GENERAL EQUIPMENT ABBREVIATIONS**

AC AIR COMPRESSOR  
 ACU ACCUMULATOR  
 ADT AUTOMATIC DRIP TRAP  
 AFT AUTOMATIC FILTER  
 AOV AIR OPERATED VALVE  
 AM ANOXIC MIXER  
 AST AUTOMATIC STRAINER  
 BSLP BLENDED SLUDGE PUMP  
 B BLOWER  
 BC BRIDGE CRANE  
 BFP BELT FILTER PRESS  
 BFFFP BFP FEED PUMP  
 BFV BUTTERFLY VALVE  
 BLP BIOSOLIDS LOADING PUMP  
 BLR BOILER  
 BP BOOSTER PUMP  
 BSLMP BLENDED SLUDGE MIXING PUMP  
 BSLP BLENDED SLUDGE PUMP  
 BSTM BIOSOLIDS STORAGE MIXER  
 BTP BIOSOLIDS TRANSFER PUMP  
 CENT CENTRIFUGE  
 CNTP CENTRATE PUMP  
 CENTP CENTRIFUGE FEED PUMP  
 CP CHEMICAL PUMP  
 COMP COMPRESSOR  
 CON CONVEYOR  
 DBC DEWATERED BIOSOLIDS CONVEYOR  
 DCP DECANT PUMP  
 DEWP DISINFECTED EFFLUENT PUMP  
 DP DRAINAGE PUMP  
 DRLP DIGESTER RECIRCULATION PUMP  
 DSLMP DIGESTER MIXING PUMP  
 DSLTP DIGESTED SLUDGE TRANSFER PUMP  
 DT DRIP TRAP  
 DOW DOWNWARD OPENING WEIR GATE  
 EFC EXCESS FLOW CLARIFIER  
 EFP EXCESS FLOW PUMP  
 EFSP EXCESS FLOW SOLIDS PUMP  
 EP EFFLUENT PUMP  
 FC FINAL CLARIFIER  
 FCD FINAL CLARIFIER DRIVE  
 FEP FINAL EFFLUENT PUMP  
 FILT FILTER  
 FM FLOW METER  
 FT FLAME TRAP  
 GBT GRAVITY BELT THICKENER  
 GC GRIT CLASSIFIER  
 GFM GAS FLOW METER  
 GCS GAS COMPRESSOR SKID  
 GP GRIT PUMP  
 GRN GRINDER  
 GT GRIT TRAP  
 GUH GAS UNIT HEATER  
 GW GRIT WASHER  
 H HOIST  
 HBT HYDROPNEUMATIC BOOSTER TANK  
 HTX HEAT EXCHANGER  
 IP INFLUENT PUMP  
 MA MOTORIZED ACTUATOR  
 MBV MOTORIZED BALL VALVE  
 MFS MECHANICAL FINE SCREEN  
 MIX MIXER  
 MOV MOTOR OPERATED VALVE  
 MP MIXING PUMP  
 MPE MISCELLANEOUS PROCESS EQUIPMENT  
 MST MANUAL STRAINER  
 MT MICROTURBINE  
 NRP NITRATE RECYCLE PUMP  
 OCD OVERHEAD COILING DOOR  
 OCE ODOR CONTROL EQUIPMENT  
 ODE OXIDATION DITCH EQUIPMENT  
 PC PROGRESSING CAVITY PUMP  
 PCD PRIMARY CLARIFIER DRIVE  
 PCFD PRIMARY CLARIFIER FLOCCULATOR DRIVE  
 PF POLYMER FEEDER  
 PFP POLYMER FEED PUMP  
 PLWP PLANT WATER PUMP  
 PRCP PHOSPHORUS REMOVAL CHEMICAL PUMP  
 PRCT PHOSPHORUS REMOVAL CHEMICAL TANK  
 PREP PRIMARY EFFLUENT PUMP  
 PRFP PROCESS RETURN FLOW PUMP  
 PRSP PRIMARY SLUDGE PUMP  
 PTP POLYMER TRANSFER PUMP  
 RAD REFRIGERATED AIR DRYER  
 RASP RETURN ACTIVATED SLUDGE PUMP  
 RDT ROTARY DRUM THICKENER  
 RDTP ROTARY DRUM THICKENER FEED PUMP  
 RM RAPID MIXER  
 SA SAMPLER  
 SBFP SODIUM BISULFITE FEED PUMP  
 SBST SODIUM BISULFITE STORAGE TANK  
 SCMP SCUM PUMP  
 SCW SCREENINGS WASHER  
 SEJ SEWAGE EJECTOR  
 SG SLIDE GATE

SHFP SODIUM HYPOCHLORITE FEED PUMP  
 SHST SODIUM HYPOCHLORITE STORAGE TANK  
 SLG SLUICE GATE  
 SP SUMP PUMP  
 SRT SILOXANE REMOVAL TANK  
 SSO SCREENINGS SCREW CONVEYOR  
 STCP STRUVITE CHEMICAL PUMP  
 STG STOP GATE  
 STV STRAINER  
 SV SOLENOID VALVE  
 SWP SCREENINGS WASHER/PRESS  
 TV TELESCOPING VALVE  
 TWASP TWAS PUMP  
 UV ULTRAVIOLET DISINFECTION  
 WASP WAS PUMP

**FLUID ABBREVIATIONS**

A AIR  
 BSL BLENDED SLUDGE  
 CA COMPRESSED AIR  
 CNT CENTRATE  
 CDG COMPRESSED DIGESTER GAS  
 CLS CHLORINE SOLUTION  
 CNT CENTRATE  
 CW COLD WATER  
 CWR CHILLED WATER RETURN  
 CWS CHILLED WATER SUPPLY  
 D DRAIN  
 DEW DISINFECTED EFFLUENT WATER  
 DG DIGESTER GAS  
 DIV DIVERSION  
 DRL DIGESTER RECIRCULATION  
 DS DIGESTER SUPERNATANT  
 DSL DIGESTED SLUDGE  
 DSL MD DIGESTER SLUDGE MIXER DISCHARGE  
 DSL MS DIGESTER SLUDGE MIXER SUCTION  
 EF EXCESS FLOW  
 EFS EXCESS FLOW SOLIDS  
 FE FINAL EFFLUENT  
 F FORCE MAIN  
 G NATURAL GAS  
 GRIT GRIT  
 GTS GRAVITY THICKENER SUPERNATANT  
 HOCL HYPOCHLORITE  
 HW HOT WATER  
 HWR HOT WATER RETURN  
 HWS HOT WATER SUPPLY  
 ML MIXED LIQUOR  
 NAOH SODIUM HYDROXIDE  
 NPW NONPOTABLE WATER  
 OF OVERFLOW  
 OC ODOR CONTROL  
 PDP PERFORATED DRAIN PIPE  
 PE PLANT EFFLUENT  
 PEC POLYELECTROLYTE CHEMICAL  
 PI PLANT INFLUENT  
 PRC PHOSPHORUS REMOVAL CHEMICAL  
 PRE PRIMARY EFFLUENT  
 PRF PROCESS RETURN FLOW  
 PRI PRIMARY INFLUENT  
 PRS PRIMARY SLUDGE  
 PSS PLANT SANITARY SEWER  
 PW POTABLE WATER  
 PWR PROCESS WATER RETURN  
 PWS PROCESS WATER SUPPLY  
 RAS RETURN ACTIVATED SLUDGE  
 RW RAW WASTEWATER  
 SAM SAMPLE  
 SAN SANITARY SEWER  
 SB SODIUM BISULFITE  
 SCM SCUM  
 SCMD SCUM DECANT  
 SE SECONDARY EFFLUENT  
 SH SODIUM HYPOCHLORITE  
 SL SLUDGE  
 SPD SUMP PUMP DISCHARGE  
 ST STORM SEWER  
 STC STRUVITE CHEMICAL  
 SW SERVICE WATER  
 SWS SEAL WATER SUPPLY  
 TSL THICKENED SLUDGE  
 TWAS THICKENED WASTE ACTIVATED SLUDGE  
 V VENT  
 W POTABLE WATER  
 WAS WASTE ACTIVATED SLUDGE  
 WML WASTE MIXED LIQUOR

**PLUMBING ABBREVIATIONS**

AEW APRON END WALL  
 BF BLIND FLANGE  
 CA COMPRESSED AIR  
 CB CATCH BASIN  
 CD CONDENSATE DRAIN  
 CI CAST IRON  
 CO CLEAN OUT  
 COND CONDENSATE  
 CPVC CHLORINATED POLYVINYL CHLORIDE  
 CW COLD WATER  
 D DRAIN  
 DDBP DOUBLE CHECK BACKFLOW PREVENTER  
 DF DRINKING FOUNTAIN  
 DFW DRAINAGE FIXTURE UNIT  
 DI DUCTILE IRON  
 ESEW EMERGENCY SHOWER EYEWASH  
 EW EYEWASH  
 EWC ELECTRIC WATER COOLER  
 FCO FLOOR CLEAN OUT  
 FD FLOOR DRAIN  
 FOR FUEL OIL RETURN  
 FOS FUEL OIL SUPPLY  
 HB HOSE BIBB  
 HD HUB DRAIN  
 HDPE HIGH DENSITY POLYETHYLENE  
 HHWR HEATING HOT WATER RETURN  
 HHWS HEATING HOT WATER SUPPLY  
 HR HOSE REEL  
 HWL HIGH WATER LEVEL  
 HW HOT WATER  
 HWR HOT WATER RETURN  
 IE INVERT ELEVATION  
 IWP INDIRECT WASTE PIPE  
 L LAVATORY  
 MB MOP BASIN  
 MH MANHOLE  
 MV MUD VALVE  
 PHW PROCESS HOT WATER  
 P PUMP  
 POC POINT OF CONNECTION  
 PRV PRESSURE REDUCING VALVE  
 PV PLUG VALVE  
 PVC POLYVINYL CHLORIDE  
 PVR PRESSURE VACUUM RELIEF ASSEMBLY  
 QC QUICK CONNECT  
 RCP REINFORCED CONCRETE PIPE  
 RD ROOF DRAIN  
 RZBP REDUCED ZONE BACKFLOW PREVENTER  
 S SINK  
 SD SHOWER DRAIN  
 SEJ SEWAGE EJECTOR  
 SHR SHOWER  
 SP SUMP PUMP  
 SS STAINLESS STEEL  
 SV SOLENOID VALVE  
 SVS SERVICE SINK  
 T TANK  
 TD TRENCH DRAIN  
 U URINAL  
 V VENT  
 VB VACUUM BREAKER  
 VCP VITRIFIED CLAY PIPE  
 VTR VENT THRU ROOF  
 WCO WALL CLEANOUT  
 WC WATER CLOSET  
 WH WATER HEATER  
 WS WATER SOFTENER  
 WSFU WATER SERVICE FIXTURE UNIT

**GENERAL/HVAC ABBREVIATIONS**

ACH AIR CHANGES PER HOUR  
 AFF ABOVE FINISHED FLOOR  
 ALT ALTERNATE  
 AP ACCESS PANEL  
 BTU BRITISH THERMAL UNIT  
 BTUH BRITISH THERMAL UNIT PER HOUR  
 CFM CUBIC FEET PER MINUTE  
 CLG CEILING  
 COND CONDENSATE  
 DAT DISCHARGE AIR TEMPERATURE  
 DB DRY BULB TEMPERATURE  
 DDC DIRECT DIGITAL CONTROL  
 DG DOOR GRILLE  
 DX DIRECT EXPANSION  
 EA EXHAUST AIR  
 EAT ENTERING AIR TEMPERATURE  
 EL ELEVATION  
 ESP EXTERNAL STATIC PRESSURE  
 EWT ENTERING WATER TEMPERATURE  
 FC FAIL CLOSED  
 FLA FULL LOAD AMPS  
 FO FAIL OPEN  
 FPI FINS PER INCH  
 FPM FEET PER MINUTE  
 FT FEET  
 GA GAUGE  
 GPM GALLONS PER MINUTE  
 LAT LEAVING AIR TEMPERATURE  
 LWT LEAVING WATER TEMPERATURE  
 MBH THOUSANDS OF BTU PER HOUR  
 MC MECHANICAL CONTRACTOR  
 NA NOT APPLICABLE  
 NC NORMALLY CLOSED  
 NO NORMALLY OPEN  
 NPT NATIONAL PIPE THREAD  
 NTS NOT TO SCALE  
 OA OUTSIDE AIR  
 OC ON CENTER  
 OV OUTLET VELOCITY  
 PD PRESSURE DROP  
 PSI POUNDS PER SQUARE INCH  
 PSIG POUNDS PER SQUARE INCH GAUGE  
 RA RETURN AIR  
 RPM REVOLUTIONS PER MINUTE  
 SA SUPPLY AIR  
 SP STATIC PRESSURE

**HVAC EQUIPMENT ABBREVIATIONS**

ACCU AIR COOLED CONDENSING UNIT  
 AFR ARCHITECTURAL FINE TUBE RADIATION  
 AHU AIR HANDLING UNIT  
 AS AIR SEPARATOR  
 BLR BOILER  
 BB BASEBOARD  
 C CONVECTOR  
 CD CEILING DIFFUSER  
 CHILL CHILLER  
 CT COOLING TOWER  
 CUH CABINET UNIT HEATER  
 CWP CHILLED WATER PUMP  
 DC DRY COOLER  
 DH DEHUMIDIFIER  
 DL DRUM LOUVER  
 EBB ELECTRIC BASEBOARD  
 EDH ELECTRIC DUCT HEATER  
 EF EXHAUST FAN  
 EG EXHAUST GRILLE  
 EJ EXPANSION JOINT  
 EL EXPANSION LOOP  
 ER EXHAUST REGISTER  
 ERC ELECTRIC REHEAT COIL  
 ERU ENERGY RECOVERY UNIT  
 EUH ELECTRIC UNIT HEATER  
 EWH ELECTRIC WALL HEATER  
 FCU FAN COIL UNIT  
 FD FIRE DAMPER  
 FR FINNED TUBE RADIATION  
 FUR FURNACE  
 GDF GAS DUCT FURNACE  
 GRV GRAVITY ROOF VENTILATOR  
 GUH GAS UNIT HEATER  
 HC HEATING COIL  
 HP HEAT PUMP  
 HRP HEAT RECOVERY PUMP  
 HU HUMIDIFIER  
 HWH HOT WATER UNIT HEATER  
 HWP HOT WATER PUMP  
 HTX HEAT EXCHANGER

ICF INDUSTRIAL CEILING FAN  
 IR INFRARED HEATER  
 L LOUVER  
 MAU MAKE-UP AIR UNIT  
 P PUMP  
 PWP PROCESS WATER PUMP  
 RF RETURN FAN  
 RG RETURN GRILLE  
 RR REGISTER  
 RTU ROOFTOP UNIT  
 SD SUCTION DIFFUSER  
 SF SUPPLY FAN  
 SG SUPPLY GRILLE  
 SR SUPPLY REGISTER  
 ST STEAM TRAP  
 SUH STEAM UNIT HEATER  
 TCP TEMPERATURE CONTROL PANEL  
 TG TRANSFER GRILLE  
 UH UNIT HEATER  
 UV UNIT VENTILATOR  
 VAV VARIABLE AIR VOLUME BOX  
 VD VOLUME DAMPER  
 VFD VARIABLE FREQUENCY DRIVE  
 WSHW WATER SOURCE HEAT PUMP  
 XT EXPANSION TANK

**ELECTRICAL ABBREVIATIONS**

A AMPERE  
 AF AMPERE FRAME  
 AFF ABOVE FINISHED FLOOR  
 AFG ABOVE FINISHED GRADE  
 AHJ AUTHORITY HAVING JURISDICTION  
 AHU AIR HANDLING UNIT  
 AIC AMPERE INTERRUPTING CAPACITY  
 AL ALUMINUM  
 AT AMPERE TRIP  
 ATS AUTOMATIC TRANSFER SWITCH  
 AV AUDIO VISUAL  
 AWG AMERICAN WIRE GAUGE  
 BLDG BUILDING  
 C CONDUIT  
 CAT CATALOG  
 CATV CABLE TELEVISION  
 CB CIRCUIT BREAKER  
 CCTV CLOSED CIRCUIT TELEVISION  
 CKT CIRCUIT  
 CL CENTERLINE  
 CLG CEILING  
 COL COLUMN  
 CT CURRENT TRANSFORMER  
 CTE CONNECT TO EXISTING  
 CU COPPER  
 CUH CABINET UNIT HEATER  
 D DEDICATED  
 DC DIRECT CURRENT  
 DISC DISCONNECT  
 DWG DRAWING  
 E EMERGENCY  
 EC ELECTRICAL CONTRACTOR  
 EDH ELECTRIC DUCT HEATER  
 EF EXHAUST FAN  
 EMT ELECTRICAL METALLIC TUBING  
 EOL END OF LINE DEVICE  
 EWC ELECTRIC WATER COOLER  
 EX EXISTING  
 FAAP FIRE ALARM ANNUNCIATOR PANEL  
 FACP FIRE ALARM CONTROL PANEL  
 FCU FAN COIL UNIT  
 FLA FULL LOAD AMPERES  
 FPCP FIRE PUMP CONTROL PANEL  
 FR FIRE RETARDANT  
 FT FEET  
 FDA FOOD AND DRUG ADMINISTRATION  
 FVNR FULL VOLTAGE NON-REVERSING  
 FVR FULL VOLTAGE REVERSING  
 G GROUND  
 GC GENERAL CONTRACTOR  
 GFI GROUND FAULT INTERRUPTER  
 GFP GROUND FAULT PROTECTION (EQUIPMENT)  
 GFCI GROUND FAULT CKT INTERRUPTER  
 GRS GALVANIZED RIGID STEEL  
 HACR HEATING AND AIR CONDITIONING RATED  
 HP HORSEPOWER  
 HV HIGH VOLTAGE  
 HVAC HEATING, VENTILATING, & AIR CONDITIONING  
 HZ HERTZ

IG ISOLATED GROUND  
 IMC INTERMEDIATE METAL CONDUIT  
 JB JUNCTION BOX  
 KCMIL ONE THOUSAND CIRCULAR MILS  
 KO KNOCKOUT  
 KVA KILOVOLT AMPERES  
 KVAR KILOVOLT AMPERES REACTIVE  
 KW KILOWATT  
 LP LIGHTING PANEL  
 LTG LIGHTING  
 LV LOW VOLTAGE  
 MATV MASTER ANTENNA TELEVISION  
 MC METAL CLAD  
 MCC MOTOR CONTROL CENTER  
 MCB MAIN CIRCUIT BREAKER  
 MCCB MOLDED CASE CIRCUIT BREAKER  
 MCM THOUSAND CIRCULAR MILS  
 MCP MOTOR CIRCUIT PROTECTOR  
 MDP MAIN DISTRIBUTION PANELBOARD  
 MISC MISCELLANEOUS  
 MLO MAIN LUGS ONLY  
 MO MOTOR OPERATED  
 MTD MOUNTED  
 MTG MOUNTING  
 MTS MANUAL TRANSFER SWITCH  
 MV MEDIUM VOLTAGE  
 MW MICROWAVE OR MEGAWATT  
 N NEUTRAL  
 NA NOT APPLICABLE  
 NC NORMALLY CLOSED  
 NAC NOTIFICATION APPLIANCE CIRCUIT PANEL  
 NEC NATIONAL ELECTRIC CODE  
 NIC NOT IN CONTRACT  
 NL NIGHT LIGHT  
 NM NONMETALLIC  
 NO NORMALLY OPEN  
 NSF NATIONAL SANITARY FOUNDATION  
 NTS NOT TO SCALE  
 OCB OIL CIRCUIT BREAKER  
 OL OVERLOAD  
 OT OVERTEMP  
 PR PAIR  
 P POLE  
 PB PULL BOX  
 PC PULL CORD  
 PH PH SENSOR  
 PHASE PHASE  
 PNL PANELBOARD  
 PRI PRIMARY  
 PT POTENTIAL TRANSFORMER  
 PTZ PAN, TILT, ZOOM CAMERA  
 PVC POLYVINYL CHLORIDE  
 PWR POWER  
 RSC RIGID GALVANIZED STEEL CONDUIT  
 RTS REMOTE TEST SWITCH  
 RVNR REDUCED VOLTAGE NON-REVERSING  
 RVSS REDUCED VOLTAGE SOLID STATE  
 SC SHORT CIRCUIT  
 SCADA SUPERVISORY CONTROL AND DATA  
 SCC SUPERVISORY CONTROL CENTER  
 SE SERVICE ENTRANCE  
 SEC SECONDARY  
 SH SHIELDED  
 SS STAINLESS STEEL  
 STP SHIELDED TWISTED PAIR  
 SV SOLENOID VALVE  
 SW SWITCH  
 SWBD SWITCHBOARD  
 TEL TELEPHONE  
 TS2W TWO SPEED TWO WINDING  
 TYP TYPICAL  
 UG UNDERGROUND  
 UH UNIT HEATER  
 UPS UNINTERRUPTIBLE POWER SUPPLY  
 UTP UNSHIELDED TWISTED PAIR  
 V VOLTS  
 VFD VARIABLE FREQUENCY DRIVE  
 W WIRE OR WATT  
 WD HIGH PRESSURE WASH DOWN  
 WL WET LOCATION  
 WP WEATHERPROOF  
 XFMR TRANSFORMER  
 XP EXPLOSION PROOF  
 Y WYE

DATE:	08/19/2021								
NO.	1								

REVISIONS									
ISSUED FOR	RD								

**JOB NO.**  
1020.102  
**PROJECT MGR.**  
ANDREW B. CONSTANT



**SHEET**  
3  
G0.3

**GENERAL ABBREVIATIONS**  
 THURBER LIFT STATION REPLACEMENT  
 CITY OF MADISON  
 MADISON, WISCONSIN

**ELECTRICAL SYMBOLS**

	<b>LIGHTING</b> FIXTURE SYMBOL (TYPICAL) A-INDICATES FIXTURE TYPE 2-INDICATES CIRCUIT NUMBER b-INDICATES SWITCHING SOLID CIRCLE INDICATES ALWAYS ON
	INCANDESCENT, LED, HID, SURFACE OR PENDANT
	INCANDESCENT, LED, HID, WALL
	1X4 FLUORESCENT, SURFACE OR PENDANT
	1X8 FLUORESCENT, SURFACE OR PENDANT
	FLUORESCENT, WALL
	1X4 FLUORESCENT, RECESSED
	2X2 FLUORESCENT, RECESSED
	2X4 FLUORESCENT, RECESSED
	CAN, FLUORESCENT, LED, OR HID
	EXIT, SURFACE, PENDANT OR RECESSED
	EXIT, WALL
	EMERGENCY LIGHTING
<b>SWITCHES</b>	
	SINGLE POLE
	TWO POLE
	THREE WAY
	FOUR WAY
	KEYED
	DIMMER
	MANUAL MOTOR SWITCH (3 PHASE)
	WEATHER PROOF
	SWITCH WITH PILOT LIGHT
	LIGHTING CONTROL STATION
	LOCKOUT STOP SWITCH
	DOOR POSITION SWITCH
	PHOTOCELL
<b>EQUIPMENT AND WIRING</b>	
	GROUND CONNECTION (ONE-LINE DIAGRAM)
	TRANSFORMER
	DISCONNECT, F=FUSED, B=CIRCUIT BREAKER, BLANK=NON-FUSED
	MOTOR STARTER MAGNETIC
	CIRCUIT BREAKER COMBINATION STARTER
	JUNCTION BOX
	LINE VOLTAGE THERMOSTAT
	LINE VOLTAGE THERMOSTAT W/REMOTE BULB
	480V LOAD, REFER TO MCC SCHEDULE FOR EQUIPMENT NUMBER
	VARIABLE FREQUENCY DRIVE
<b>SITE SYMBOLS</b>	
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	CABLE TELEVISION SERVICE
	TELEPHONE SERVICE
	FIBER OPTIC CABLE
	UTILITY POLE

**POWER SYMBOLS**

	CIRCUIT NUMBER (TYPICAL) OTHERWISE SHOWN PANEL DESIGNATION (TYP)
	DUPLEX, 125 VOLT, WP INDICATES WEATHERPROOF
	DUPLEX, 125 VOLT, ABOVE FURNITURE
	DOUBLE DUPLEX, 125 VOLT, ABOVE FURNITURE
	DOUBLE DUPLEX, 125 VOLT
	SINGLE CONVENIENCE, 125 VOLT FOR ELECTRIC WATER COOLER
	EXPLOSION-PROOF, ABOVE FURNITURE
	EXPLOSION-PROOF
	FIXED EQUIPMENT CONNECTION
	POWER OUTLET, VOLTAGE & AMPERAGE AS INDICATED
	AUTOMATIC TRANSFER SWITCH (ONE-LINE DIAGRAM)
	CIRCUIT BREAKER (ONE-LINE DIAGRAM)
	METER (ONE-LINE DIAGRAM)
	PANELBOARD

**FIRE ALARM AND DETECTION SYMBOLS**

	FIRE ALARM CONTROL PANEL
	FIRE ANNUCIATOR CONTROL PANEL
	STROBE; WALL MOUNT - ADA RATED STROBE CANDELA RATING 80" AFF
	HORN STROBE; WALL MOUNT - ADA RATED STROBE CANDELA RATING 80" AFF
	SPEAKER STROBE; WALL MOUNT - ADA RATED STROBE CANDELA RATING 80" AFF
	HORN; WALL MOUNT - ADA RATED
	SPEAKER; WALL MOUNT - ADA RATED
	STROBE; CEILING MOUNT - ADA RATED STROBE CANDELA RATING
	HORN STROBE; CEILING MOUNT - ADA RATED STROBE CANDELA RATING
	SPEAKER STROBE; CEILING MOUNT - ADA RATED STROBE CANDELA RATING
	AREA OF RESCUE ASSISTANCE
	EMERGENCY TELEPHONE SYSTEM
	HEAT DETECTOR; CEILING MOUNT
	SMOKE DETECTOR; CEILING MOUNT
	ELEVATOR RECALL SMOKE DETECTOR
	NITROUS OXIDE SENSOR
	CARBON MONOXIDE SENSOR
	SWITCH INDICATION
	DUCT SMOKE DETECTOR
	DUCT SIZE
	REMOTE TEST SWITCH
	SWITCH INDICATION
	FIRE ALARM PULL STATION
	SPRINKLER FLOW SWITCH
	SPRINKLER VALVE TAMPER SWITCH
	FIRE ALARM BELL

**INSTRUMENTATION EQUIPMENT**

	ANALYSIS ELEMENT
	ANALYSIS INDICATING TRANSMITTER, *: DO=DISSOLVED OXYGEN, PH=PH, TRB=TURBIDITY, TSS=TOTAL SUSPENDED SOLIDS, GD=GAS DETECTOR, CA=CHLORINE ANALYZER, OP=OXYGEN PURITY, LEL=LOWER EXPLOSIVE LIMIT, PR=PROXIMITY, MST=MOISTURE
	CONTROL SWITCH DEVICE TYPE (SEE MCC SCHEDULE)
	DENSITY ELEMENT
	DENSITY INDICATING TRANSMITTER
	FLOW ELEMENT
	FLOW INDICATING TRANSMITTER, *: M=MAGNETIC, TM=THERMAL MASS, DP=DIFFERENTIAL PRESSURE, U=ULTRASONIC
	FLOW SWITCH *: P=PADDLE, T=THERMAL, C=CAPACITANCE, A=AIR FLOW
	HAND SWITCH *: SS=SAFETY SWITCH
	POWER ELEMENT (CURRENT XFMR, POTENTIAL XFMR)
	CURRENT SWITCH
	POWER INDICATING TRANSMITTER
	TIME SWITCH
	LEVEL ELEMENT
	LEVEL INDICATING TRANSMITTER, *: S=SUBMERSIBLE, U=ULTRASONIC, R=RADAR, TL=TANK LEVEL/RING PRESSURE TYPE, F=FLANGE MOUNTED
	LEVEL SWITCH, *: C=CONDUCTANCE, F=BALL FLOAT, V=VIBRATING FORK, B=BUILDING FLOODING
	LEVEL TRANSDUCER S=SUBMERSIBLE
	DIFFERENTIAL PRESSURE INDICATING TRANSMITTER
	PRESSURE ELEMENT
	PRESSURE INDICATING TRANSMITTER
	PRESSURE SWITCH
	SPEED SWITCH
	TEMPERATURE CONTROLLER
	TEMPERATURE ELEMENT, *: R=RTD, T=THERMOCOUPLE
	TEMPERATURE INDICATING TRANSMITTER
	TEMPERATURE CONTROL STATION
	TEMPERATURE SWITCH
	TEMPERATURE TRANSMITTER
	VIBRATION ELEMENT
	VIBRATION INDICATING TRANSMITTER
	WEIGHT ELEMENT
	TORQUE SWITCH
	WEIGHT TRANSMITTER (SCALE)
	PRESENCE/ABSENCE DETECTOR
	POSITION SWITCH, *: D=DOOR, L=LIMIT, P=PROXIMITY
	SOLENOID VALVE
	FIXED SECURITY CAMERA
	PAN, TILT, ZOOM SECURITY CAMERA
	GAS DETECTION SYSTEM HORN; WALL MOUNT
	GAS DETECTION SYSTEM STROBE; WALL MOUNT

**TECHNOLOGY SYMBOLS**

	DATA JACK
	PHONE JACK
	POTS ANALOG PHONE AND DATA JACKS * = # OF JACKS
	WALL MOUNT VOIP PHONE JACK 54" AFF
	WALL MOUNT POTS ANALOG PHONE JACK 54" AFF
	SCADA NETWORK JACK
	DATA RACK
	COAX CABLE
	POWER POLE
	PA SYSTEM HORN SPEAKER; 10'-0" AFF
	PA SYSTEM SPEAKER
	SPEAKER; CEILING MOUNT A=SPEAKER TYPE
	KEY PAD
	GLASS BREAK DETECTOR
	MOTION SENSOR
	PUSH BUTTON
	ELECTRIC STRIKE
	MAGNETIC LOCK
	INTERCOM STATION
	OCCUPANCY SENSOR
	SEE SPECIFICATION FOR SENSOR TYPE CARD READER
	REMOTE VOLUME CONTROL

**DUCTWORK SYMBOLS**

	SUPPLY DUCT (UP OR SECTION)
	SUPPLY OR OUTSIDE AIR DUCT (DOWN/OR AWAY)
	EXHAUST DUCT (UP OR SECTION)
	EXHAUST OR RETURN DUCT (DOWN/OR AWAY)
	ROUND DUCTWORK UP
	ROUND DUCTWORK DOWN
	FLEXIBLE CANVAS CONNECTION
	TURNING VANES

**DAMPER SYMBOLS**

	AUTOMATIC DAMPER
	BACKDRAFT DAMPER
	MANUAL VOLUME DAMPER
	1-1/2 HR. FIRE DAMPER

**FIELD MOUNTED CONTROLS**

	THERMOSTAT
	ROOM HUMIDISTAT
	PRESSURE SENSOR
	ROOM SENSOR
	DUCT SMOKE DETECTOR
	PRESSURE GAUGE

**ACTUATORS**

	MOTOR (ELECTRIC)
	PNEUMATIC
	SOLENOID

**EQUIPMENT SYMBOLS**

	ACCUMULATOR
	AIR FLOW DIRECTION
	BASE MOUNTED PUMP
	BLOWER
	CEILING DIFFUSER WITH FLEXIBLE DUCT
	CENTRIFUGAL PUMP
	CONNECT TO EXISTING
	DRIP TRAP
	DUCT BOOST COIL
	EQUIPMENT TAG
	FLAME ARRESTER
	FLAME CELL
	FLAME TRAP ASSEMBLY
	GRINDER
	INLINE PUMP
	POSITIVE DISPLACEMENT PUMP
	ROOF EXHAUST FAN
	UNIT HEATER
	VARIABLE AIR VOLUME (VAV) BOX WITH ELECTRIC REHEAT COIL
	VARIABLE AIR VOLUME (VAV) BOX WITH HEATING HOT WATER REHEAT COIL
	FLOATING MIXER
	SCREW CONVEYOR

DATE:	08/19/2021
NO.	1
ISSUED FOR	RD
REVISIONS	

**GENERAL ELECTRICAL SYMBOLS**  
THURBER LIFT STATION REPLACEMENT  
CITY OF MADISON  
MADISON, WISCONSIN

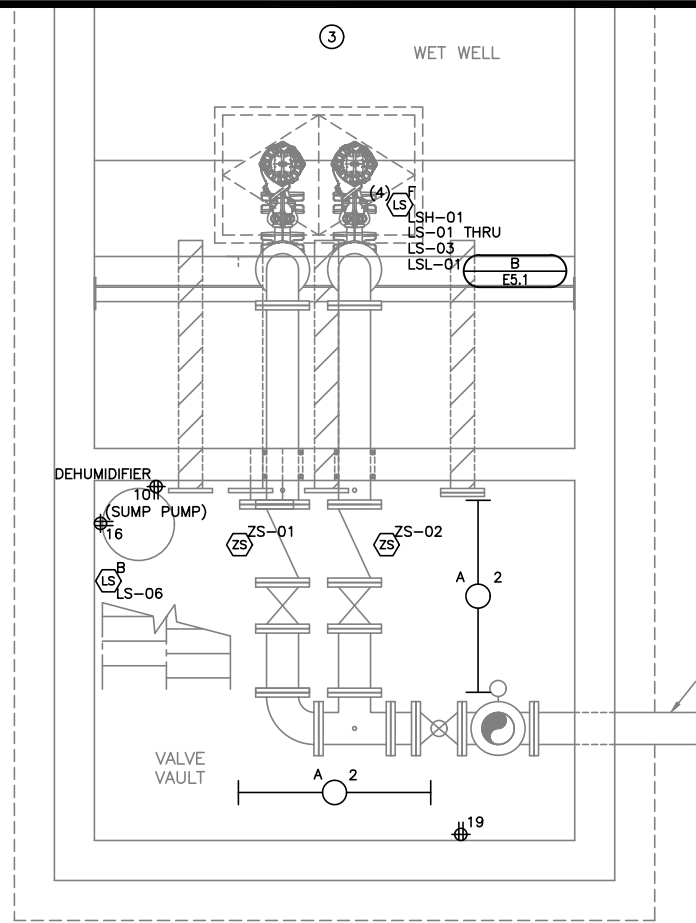
JOB NO.  
1020.102  
PROJECT MGR.  
ANDREW B. CONSTANT



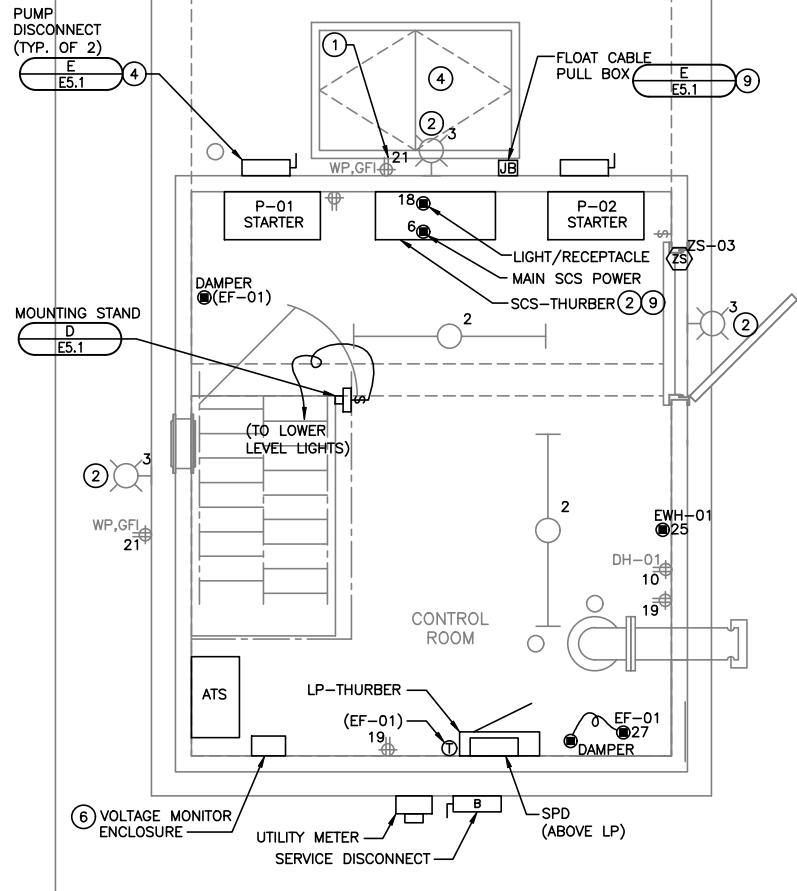
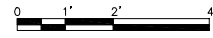
SHEET  
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G0.4



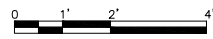




LOWER LEVEL ELECTRICAL PLAN



UPPER LEVEL ELECTRICAL PLAN



GENERAL NOTES:

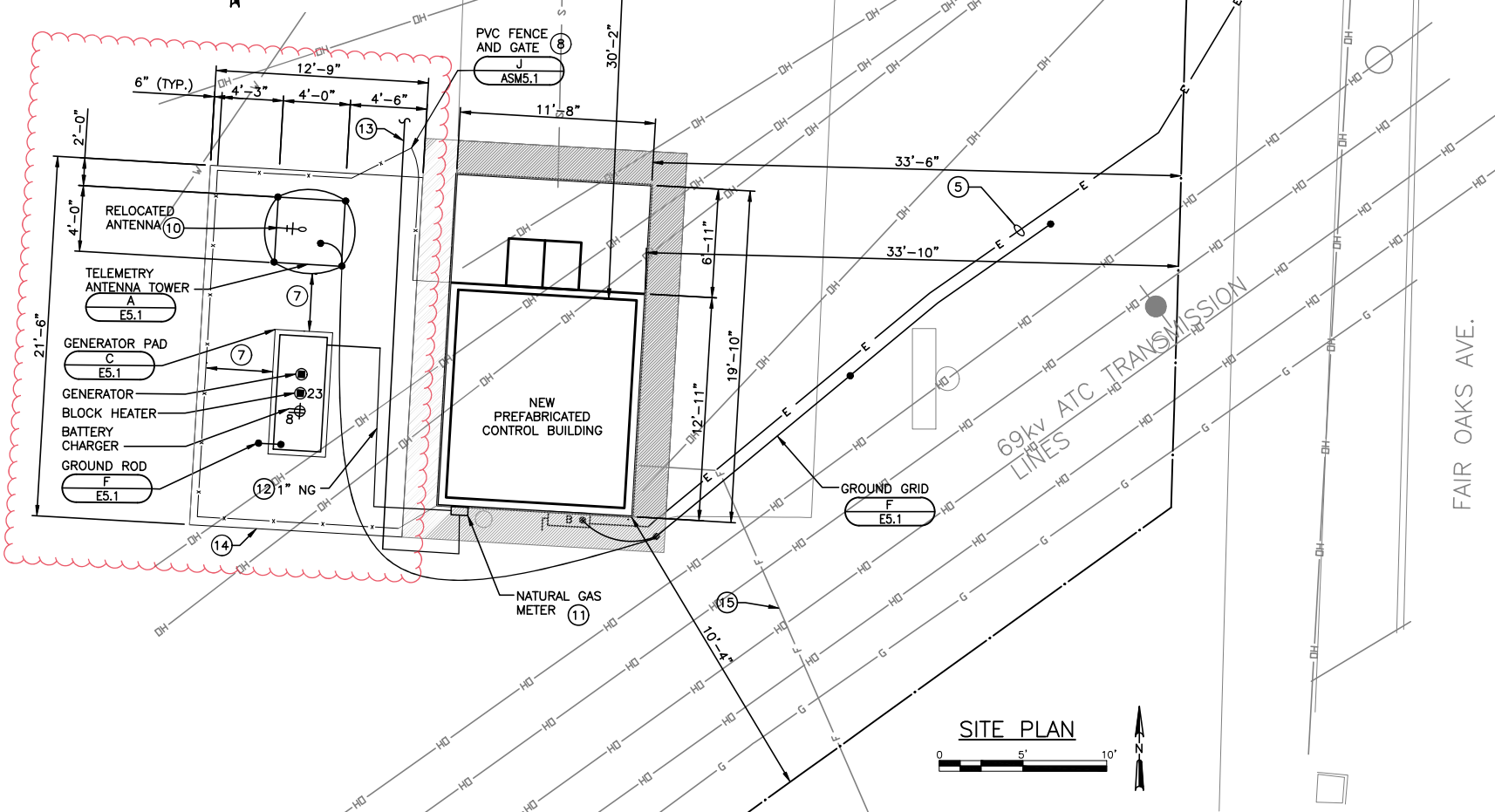
- REFER TO SPECIFICATION SECTION 26 09 90 FOR WIRING ASSOCIATED WITH THE SCADA SYSTEM.
- AVOID EXPOSED CONDUIT RUNS IN THE UPPER LEVEL. WHERE POSSIBLE, ROUTE CONDUITS BETWEEN UPPER LEVEL EQUIPMENT BELOW THE UPPER LEVEL FLOOR SLAB.

KEY NOTES:

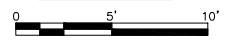
- RECEPTACLE SHALL BE MOUNTED OUTSIDE OF CLASS I, DIVISION 2 ENVELOPE.
- EXTERIOR LIGHT FIXTURE POWERED THROUGH SCS.
- ALL ELECTRICAL WORK AND EQUIPMENT IN THIS AREA SHALL BE RATED FOR A CLASS I, DIVISION 1, GROUPS C AND D LOCATION.
- ALL ELECTRICAL WORK AND EQUIPMENT LOCATED WITHIN 3 FEET FROM THE WET WELL HATCH OR WITHIN 3 FEET FROM THE WET WELL PUMP CABLE CONDUIT FITTINGS, AND UP TO 18 INCHES ABOVE GRADE SHALL BE RATED FOR A CLASS I, DIVISION 2, GROUPS C AND D LOCATION.
- COORDINATE NEW 100A 120/208V, 3-PHASE, 4-WIRE ELECTRICAL SERVICE INSTALLATION WITH THE UTILITY COMPANY.
- FURNISHED AS SPECIFIED IN SECTION 26 09 00, PART 3. LOCATE ENCLOSURE TO AVOID INTERFERING WITH THE NEC-REQUIRED WORKING SPACE FOR THE ATS.
- PROVIDE MIN. 4'-0" (TYP.) CLEARANCE BETWEEN PVC FENCE/ANTENNA BASE AND GENERATOR/GENERATOR BASE.
- PROVIDE 4'-0" MIN. WIDE SINGLE LEAF GATE. COORDINATE OPENING WIDTH WITH GENERATOR MANUFACTURER AND PROVIDE WIDER SINGLE LEAF GATE AS REQUIRED TO ALLOW ADEQUATE WIDTH FOR GENERATOR REMOVAL.

KEY NOTES CONT.:

- PROVIDE NEMA 4X JUNCTION BOX FOR ENTRY OF OPTICAL FLOAT CABLES. ROUTED TO OPTICAL RECEIVERS IN THE SCS.
- GROUND ANTENNA PER THE MANUFACTURER'S RECOMMENDATIONS.
- LOCATE UTILITY PROVIDED NATURAL GAS METER NEXT TO BUILDING. COORDINATE ROUTING OF UTILITY PIPING TO METER WITH EXISTING SITE LAYOUT. PROVIDE REGULATOR DOWNSTREAM OF METER AND REGULATE DOWN TO MANUFACTURE PROVIDED OPERATING PRESSURE. PROVIDE SHUTOFF VALVE UPSTREAM OF REGULATOR.
- PIPING FROM METER TO GENERATOR SHALL BE ROUTED BELOW GRADE. PROVIDE ALL NECESSARY RISERS AND TRANSITIONS REQUIRED TO TRANSITION BETWEEN ABOVE GRADE AND BELOW GRADE PIPING. COORDINATE PIPE ROUTING TO AVOID IMPEDING MAINTENANCE ACCESS TO THE GENERATOR.
- COORDINATE NEW NATURAL GAS SERVICE WITH THE UTILITY COMPANY.
- CONCRETE SIDEWALK 5-INCH AND BASE COURSE PER CITY OF MADISON SPECIFICATIONS. CONCRETE AREA SHALL INCLUDE THE FENCE POSTS AND AREA INSIDE THE FENCE. MODIFY SIZE AS REQUIRED TO INCORPORATE 4'-0" CLEARANCES REQUIRED BY GENERATOR.
- CURED IN PLACE LINE 8" DIA. CAST IRON FORCE MAIN (SEE SPECIFICATIONS).



SITE PLAN



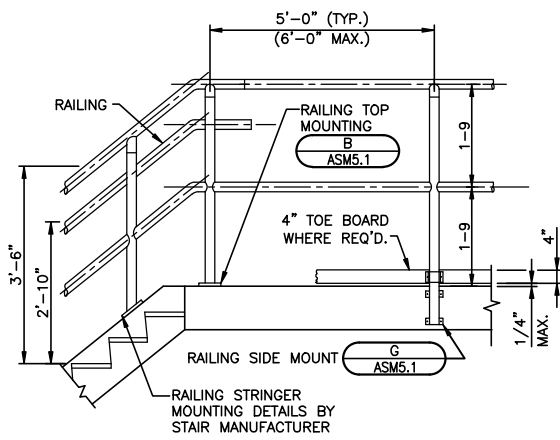
NO.	REVISIONS	DATE
1	ISSUED FOR BID	09/27/2021
2	GENERATOR, ANTENNA, NATURAL GAS, AND FENCE REVISION	11/6/2023

**PUMPING STATION ELECTRICAL PLANS AND SITE PLAN**  
 THURBER LIFT STATION REPLACEMENT  
 CITY OF MADISON  
 MADISON, WISCONSIN

JOB NO. 1020.102  
 PROJECT MGR. ANDREW B. CONSTANT



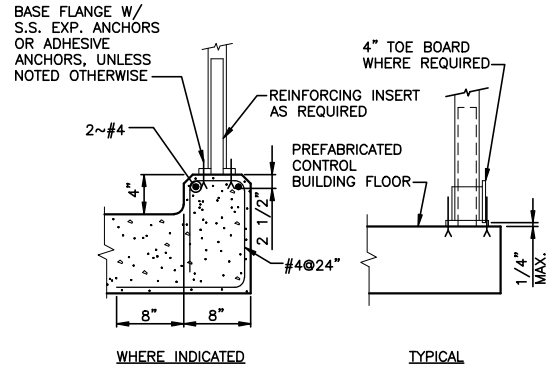
SHEET 7 E1.1



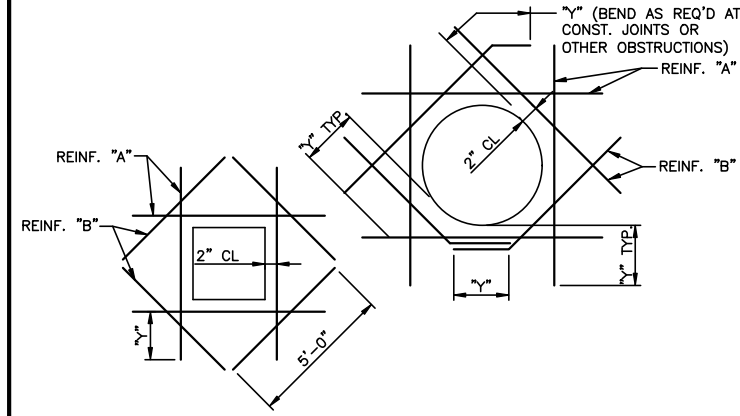
**NOTES:**

1. ALL RAILS & POSTS SHALL BE ALUMINUM. ALL ACCESSORIES SHALL BE ALUMINUM OR STAINLESS STEEL.
2. ALL RAIL SYSTEMS SHALL MEET OSHA PERFORMANCE STANDARDS FOR PUBLIC AND INDUSTRIAL APPLICATIONS AND WISCONSIN COMMERCIAL BUILDING CODE.
3. EXTEND HANDRAILS HORIZONTALLY A MIN. 1'-0" BEYOND TOP RISER. HANDRAILS SHALL CONTINUE TO SLOPE FOR THE DEPTH OF ONE TREAD BEYOND THE BOTTOM RISER.

**A ALUMINUM RAILING**  
ASM5.1 NO SCALE



**B RAILING TOP MOUNTING**  
ASM5.1 NO SCALE



**C REINFORCEMENT AT CONCRETE OPENINGS**  
ASM5.1 NO SCALE

**NOTES:**

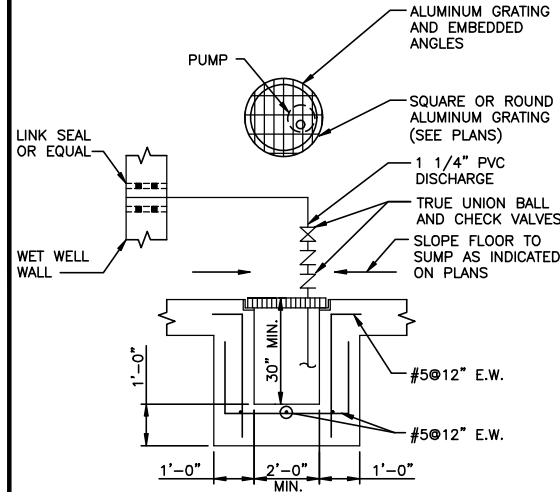
1. MOVE REINF. MAX. OF 2" TO CLEAR OPENING, CUT REMAINING BAR THROUGH OPENING. WHERE REINF. MUST BE CUT, ADD REINF. "A" AT LEAST EQUAL IN AREA TO THAT WHICH WAS CUT AND EXTEND BEYOND OPENING DISTANCE "Y".
2. DIAGONAL BARS "B" TO BE PLACED:  
A. AT C. OF WALL WHERE ONE LAYER OF REINF. IS PROVIDED.  
B. AT EACH FACE OF WALL WHERE TWO LAYERS OF REINF. ARE PROVIDED.  
C. AT TOP & BOTTOM OF ALL SLABS.
3. UNLESS OTHERWISE NOTED, SIZE OF REINF. "B" SHALL BE THE SIZE OF THE LARGEST REINF. BAR CUT.
4. Y = CLASS B LAP
5. THIS DETAIL IS TO BE USED WHEN NO OTHER DETAIL IS SPECIFIED.
6. MINIMUM REINF. "A" & "B" AROUND ANY AND ALL OPENINGS SHALL BE #4.

CONTRACTOR SHALL PROVIDE SIGN NEAR ENTRANCE TO WETWELL AND DRYWELL. SIGN SHALL BE MOUNTED TO MASONRY WALLS WITH 4~3/16" DIA. STAINLESS STEEL SCREW ANCHORS OR TO RAILING WITH STAINLESS STEEL HARDWARE.

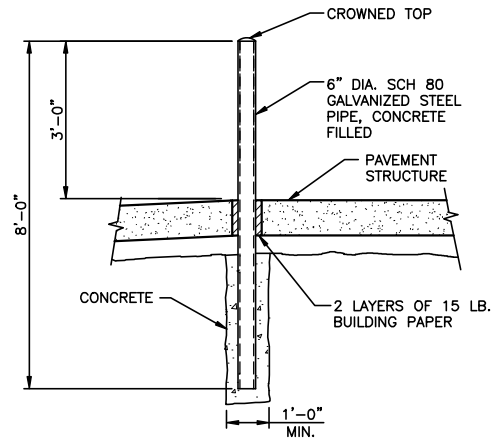


**D DANGER SIGN**  
ASM5.1 NO SCALE

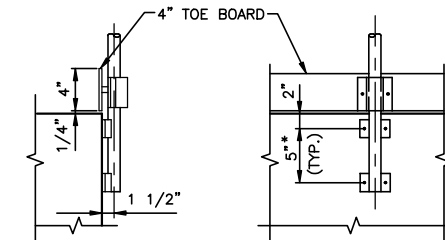
ROUTE DISCHARGE FROM SUMP PUMP UP TO ELEV. -6.0. CORE NEW OPENING INTO WET WELL, EXTEND DISCHARGE THROUGH OPENING, AND SEAL OPENING AROUND PIPE WITH LINK SEAL OR EQUAL ON BOTH DRY WELL AND WET WELL SIDES.



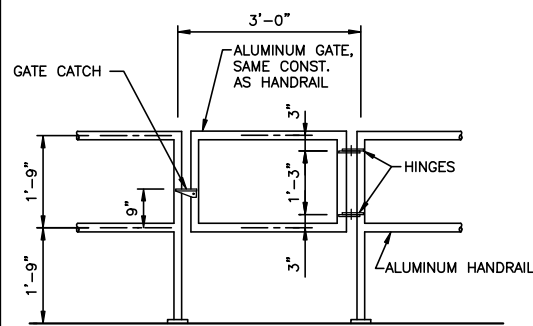
**E SIMPLEX SUMP**  
ASM5.1 NO SCALE



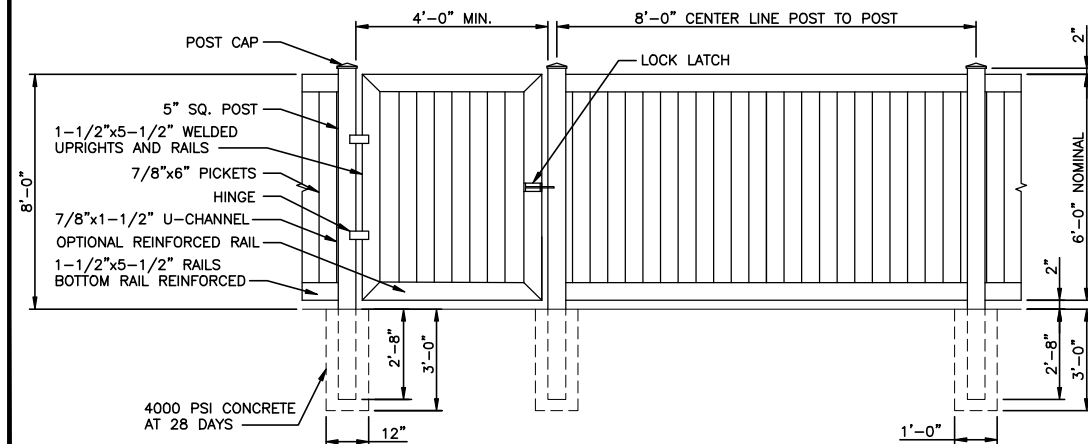
**F GUARD POST**  
ASM5.1 NO SCALE



**G RAILING SIDE MOUNTING**  
ASM5.1 NO SCALE



**H SELF-CLOSING SWING GATE**  
ASM5.1 NO SCALE



**J PVC FENCE AND SWING GATE**  
ASM5.1 NO SCALE

NO.	ISSUED FOR	REVISIONS	DATE:
1			08/19/2021

**ARCHITECTURAL/STRUCTURAL/MECHANICAL DETAILS**  
 THURBER LIFT STATION REPLACEMENT  
 CITY OF MADISON  
 MADISON, WISCONSIN

**JOB NO.**  
 1020.102  
**PROJECT MGR.**  
 ANDREW B. CONSTANT



**SHEET**  
 8  
 ASM5.1



FAN SCHEDULE																
UNIT NO. EF--	LOCATION	SERVICE	GREENHECK MODEL NO.	AIRFLOW (CFM)	EXT. S.P. (IN. W.C.)	MOTOR SIZE (HP)	FAN TYPE	MOTOR TYPE	DRIVE	SOUND POWER (SONES)	ELECTRICAL				OPERATING WEIGHT (LBS.)	REMARKS
											VOLTAGE	PHASE	STARTER BY	DISCONNECT BY		
01	UPPER CHAMBER	STATION	SQ-99-VG	850	0.5	3/4	INLINE	ECM	DIRECT	15.2	115	1	DIV 16	DIV 16	58	

WALL LOUVER SCHEDULE														
UNIT NO. L--	LOCATION	SERVICE	GREENHECK MODEL NO.	AIRFLOW (CFM)	WIDTH (IN)	HEIGHT (IN)	BLADE DEPTH (IN)	MAX. APD (IN WG)	MAX. FACE VEL. (FPM)	FREE AREA (SQ. FT.)	SCREEN		TOP ELEVATION	REMARKS
											TYPE	LOCATION		
01	UPPER CHAMBER	STATION	ESD-435	850	18	30	4	0.04	496	1.71	INSECT	INTERIOR	3'-6" AFF	

GRAVITY ROOF VENTILATOR SCHEDULE												
UNIT NO. GRV--	LOCATION	SERVICE	GREENHECK MODEL NO.	THROAT WIDTH (IN.)	THROAT LENGTH (IN.)	AIRFLOW (CFM)	STATIC PRESSURE (IN. W.C.)	THROAT VELOCITY (FPM)	THROAT AREA (SQ. FT)	OVERALL HEIGHT (IN.)	REMARKS	
												01

ELECTRIC HEATER SCHEDULE								
UNIT NO. EWH--	LOCATION	Q-MARK MODEL NO.	CAPACITY (WATTS)	CAPACITY (BTU)	ELECTRICAL			REMARKS
					VOLTAGE	PHASE	DISCONNECT BY	
01	UPPER CHAMBER	CWH3150F	1500	5115	115	1	MANUFACTURER	

DEHUMIDIFIER SCHEDULE								
UNIT NO. DH--	SERVICE	HI-E DRY MODEL NO.	CAPACITY (LBS/DAY)	AIRFLOW (CFM)	ELECTRICAL			REMARKS
					VOLTAGE	PHASE	FLA	
1	UPPER CHAMBER	100	106	255	120	1	6.6	

DESIGN CONDITIONS				
APPLICABLE BUILDING CODE:		SUMMER EXTERIOR: 86°F DB / 75°F WB		
2009 INTERNATIONAL BUILDING CODE		WINTER EXTERIOR: -15°F DB		
OCCUPANCY TYPE	VENTILATION	SUMMER INTERIOR (DB/WB)	WINTER INTERIOR (DB)	REMARKS
DRY WELL	30 ACH INTERMITTENT	AMBIENT	60	

DATE:	08/19/2021								
REVISIONS									
NO.	1								

**HVAC  
SCHEDULES**

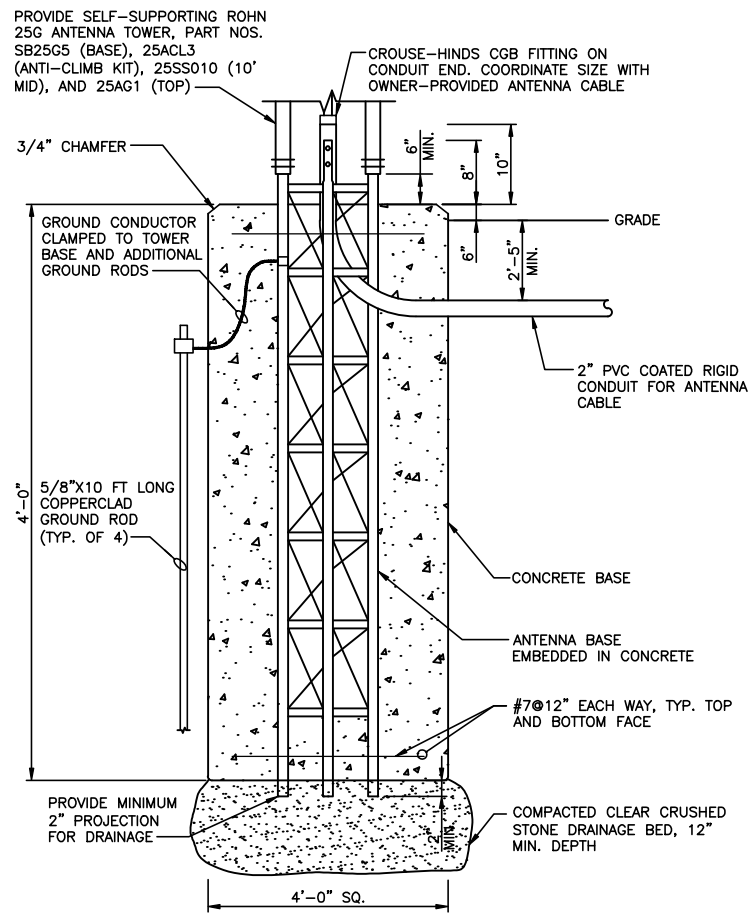
THURBER LIFT STATION REPLACEMENT  
CITY OF MADISON  
MADISON, WISCONSIN

**JOB NO.**  
1020.102

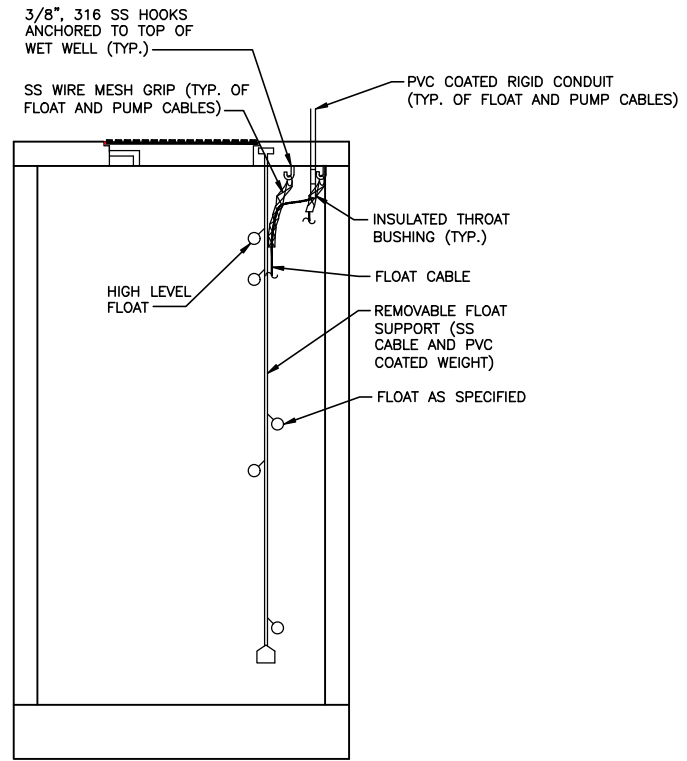
**PROJECT MGR.**  
ANDREW B. CONSTANT



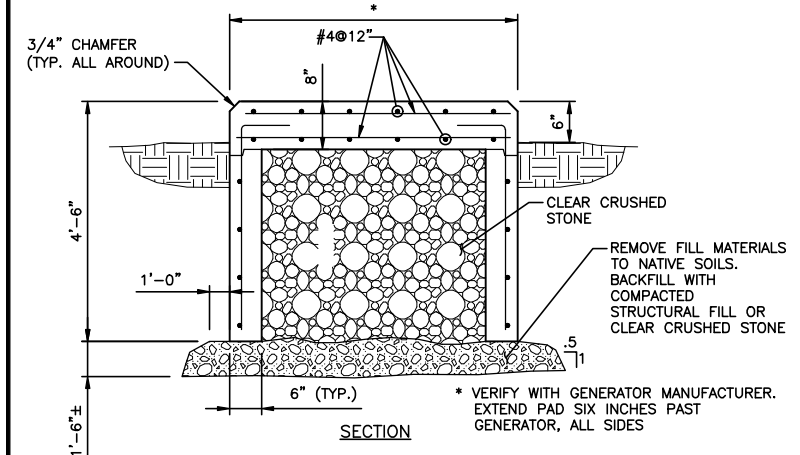
**SHEET**  
9  
H6.1



**A** TELEMETRY ANTENNA TOWER  
E5.1 NO SCALE

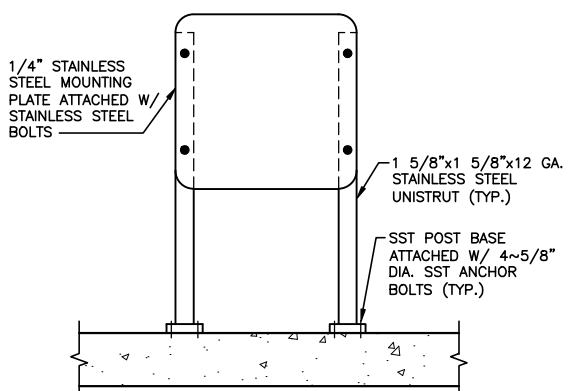


**B** FLOATS MOUNTING DETAIL  
E5.1 NO SCALE

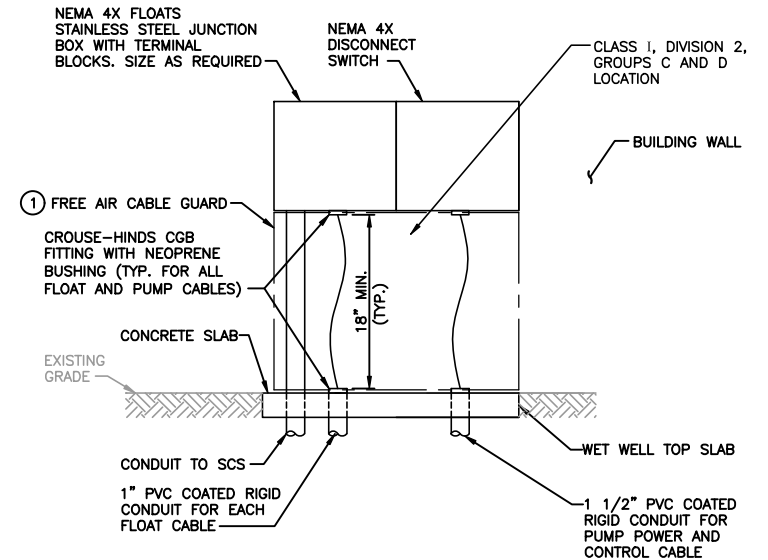


**C** GENERATOR PAD  
E5.1 NO SCALE

CONCRETE SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI, MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, AND A MAXIMUM OF 5.5 GALLONS OF TOTAL WATER PER SACK. THE SLUMP OF THE CONCRETE SHALL BE WITHIN THE RANGE OF 2 TO 3 1/2 INCHES. AN AIR-ENTRAINING ADMIXTURE CONFORMING TO ASTM C260, EQUAL TO "DAREX," SHALL BE USED IN ALL CONCRETE TO OBTAIN 4% TO 7% AIR CONTENT. A WATER REDUCER MEETING ASTM C494 TYPE A REQUIREMENTS SHALL BE INCLUDED IN THE MIX. MIXES SHALL BE DESIGNED TO ACCORDANCE WITH ACI 211.1.



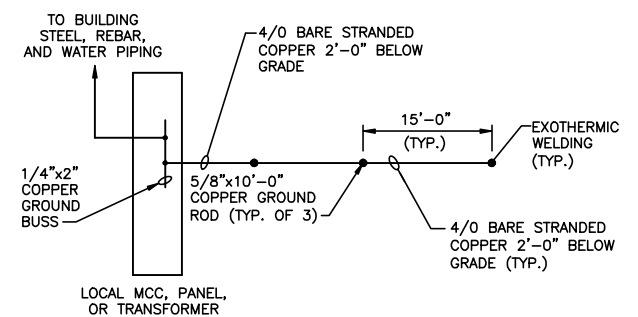
**D** CONTROL STATION MOUNTING  
E5.1 NO SCALE



**KEY NOTES:**

1 PROVIDE STAINLESS STEEL ANGLE FRAME (3/8" x 1 1/2") WITH EXPANDED STAINLESS STEEL MESH ALONG FRONT AND SIDES OF DISCONNECT SWITCHES AND JUNCTION BOXES. COMPLETELY COVER INSIDE OF EXPANDED STAINLESS STEEL MESH WITH STAINLESS STEEL FINE SCREEN AND PROVIDE UV-RESISTANT GASKET ON FRAME WHERE ATTACHED TO WALL TO PREVENT INGRESS OF NEST-BUILDING INSECTS (E.G., BEES). FRAME SHALL BE ANCHORED TO BUILDING WALL WITH STAINLESS STEEL EXPANSION ANCHORS. FRONT OF FRAME SHALL INCLUDE HINGED DOOR WITH PADLOCK HASP (ALL STAINLESS STEEL). SEE PHOTO FOR EXAMPLE. ALL ELECTRICAL WORK AND EQUIPMENT WITHIN AIR GAP SHALL BE RATED FOR A CLASS 1, DIVISION 2, GROUPS C AND D LOCATION.

**E** DISCONNECT BOX MOUNTING DETAIL  
E5.1 NO SCALE



**F** GROUND GRID  
E5.1 NO SCALE

NO.	ISSUED FOR	REVISIONS	DATE:
1			08/19/2021

**ELECTRICAL DETAILS**  
THURBER LIFT STATION REPLACEMENT  
CITY OF MADISON  
MADISON, WISCONSIN

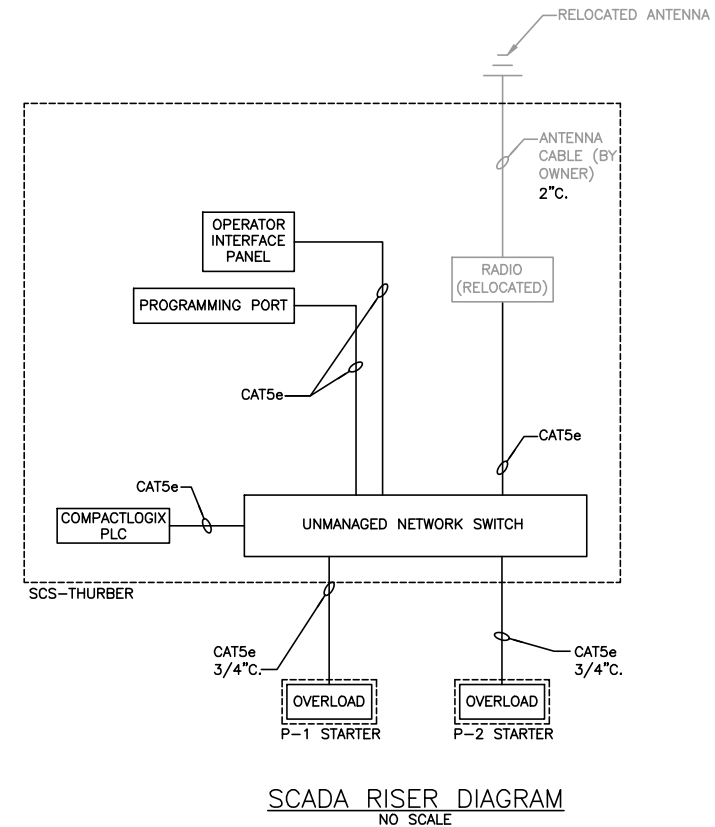
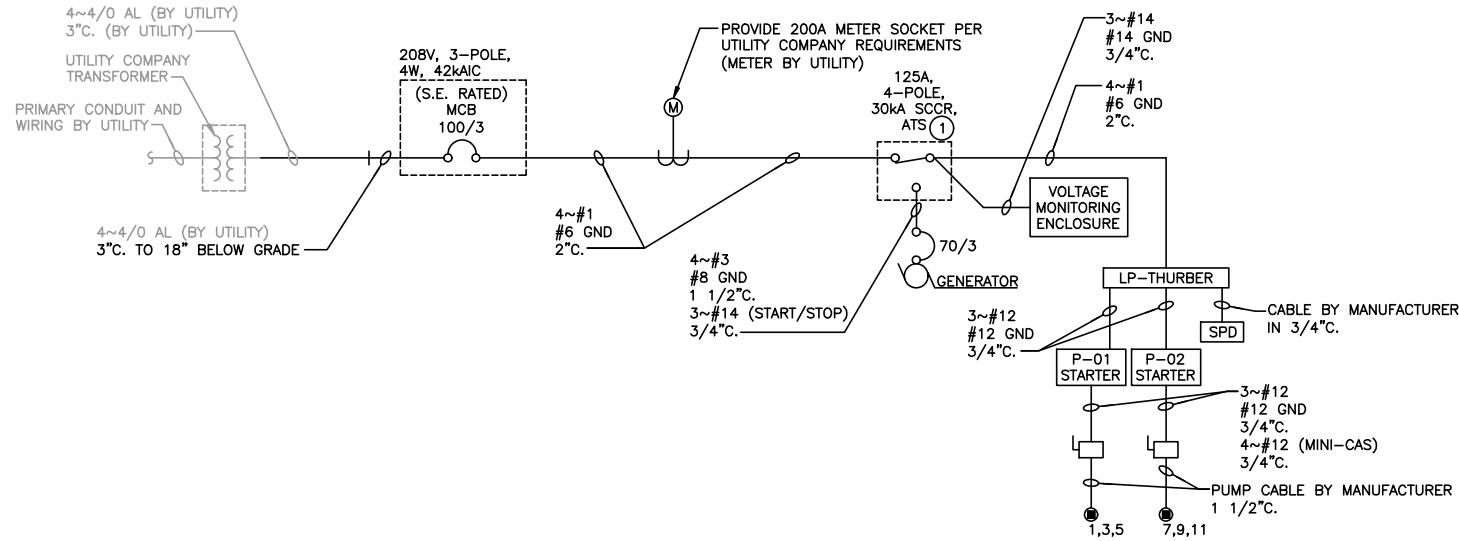
**JOB NO.**  
1020.102  
**PROJECT MGR.**  
ANDREW B. CONSTANT



**SHEET**  
10  
E5.1

KEY NOTES:

- 1 PROVIDE FUSE BLOCKS IN ATS FOR WIRING TO VOLTAGE MONITORING ENCLOSURE.



LIGHTING PANEL LP-THURBER														
Service: 120/208V, 3-Phase, 4 wire				Enclosure: NEMA 1				Mounting: Surface						
Main Breaker: 100A MCB								Main Bus: Copper						
Location: Pump Station Upper Level								SCIC: 10 kAIC						
Room Number/Description	Amps	Poles	Cct. #	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	Cct. #	Poles	Amps	Room Number/Description	
Pump P-1	20	3	1	445			152			2	1	20	Interior Lighting	
			3		445		126			4	1	20	Exterior Lighting	
			5			445		300			6	1	20	SCS Main Power
Pump P-2	20	3	7	445			500			8	1	20	Generator Battery Charger	
			9		445		759			10	1	20	Dehumidifier	
			11			445		528		528	12	1	20	Spare
SPD	30	3	13	0			528			14	1	20	Spare	
			15		0		1176			16	1	20	Sump Pump	
			17			0		250			18	1	20	SCS Light/Receptacle
Interior Receptacles	20	1	19	540			100			20	1	20	Spare	
Exterior Receptacles	20	1	21		360		0			22	1	20	Spare	
Generator Coolant Heater	20	1	23			1500		0		24	1	20	Spare	
Electric Wall Heater	20	1	25	1438			0			26	1	-	Space	
Exhaust Fan	20	1	27		1587		0	0		28	1	-	Space	
Space	-	1	29			0		0	0	30	1	-	Space	
Space	-	1	31	0			0			32	1	-	Space	
Space	-	1	33		0		0	0		34	1	-	Space	
Space	-	1	36			0		0		36	1	-	Space	
Space	-	1	37	0			0			38	1	-	Space	
Space	-	1	38		0			0		40	1	-	Space	
Space	-	1	41					0		42	1	-	Space	
Total Load per Phase per Side (VA)				2868	2857	2390	1280	2061	1078					
Total Load Phase A (VA)	4148	VA												
Total Load Phase B (VA)	4888	VA												
Total Load Phase C (VA)	3488	VA												
Total Connected Load (VA)	12514	VA												
												Total Connected Load (A)	35	A
												Total Connected Load + 25%	43	A
												Spare 25%	11	A
												Feeder Load	54	A

FIXTURE SCHEDULE					
Fixture Type	Manufacturer(s)	Model Number	Lamp Type	Mounting	Remarks
A	Metalux	4V12-LD4-4-DR-UNV-L840-CD1-WL-SSL	38W LED	Ceiling	

NO.	ISSUED FOR	REVISIONS	DATE:
1			08/19/2021

**ELECTRICAL SCHEDULES AND DIAGRAMS**  
**THURBER LIFT STATION REPLACEMENT**  
**CITY OF MADISON**  
**MADISON, WISCONSIN**

**JOB NO.**  
 1020.102  
**PROJECT MGR.**  
 ANDREW B. CONSTANT



**SHEET**  
**11**  
**E6.1**