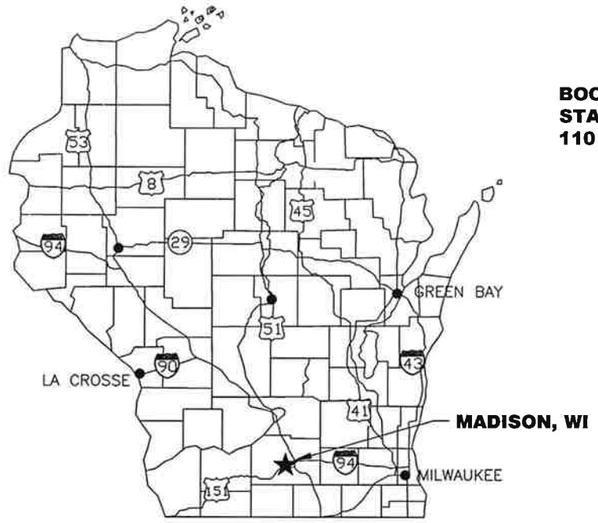
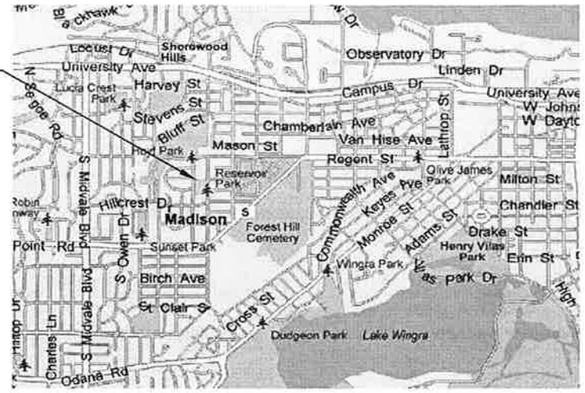
BOOSTER PUMPING STATION 106
RECONSTRUCTION
FOR THE
MADISON WATER UTILITY
MADISON, WISCONSIN



PROJECT LOCATION MAP
NO SCALE

BOOSTER PUMPING STATION 106
110 GLENWAY ST.



WELL LOCATION MAP
NO SCALE

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26	H5.1	HVAC SCHEDULES AND DETAILS
	ELECTRICAL	
27	E1.1	ELECTRICAL FLOOR PLAN
28	E5.1	ELECTRICAL DETAILS AND FIXTURE SCHEDULE
29	E6.1	ELECTRICAL MCC SCHEDULE, MCC ELEVATION, ONE-LINE DIAGRAM, AND SCADA RISER DIAGRAM

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

CONTRACT 7101

WISCONSIN
KEITH R. BEHREND
E-42073
MADISON
WI
PROFESSIONAL ENGINEER
Keith R. Behrend
5/10/2013

WISCONSIN
ANDY L. MULLENDORE
E-32542
MADISON
WI
PROFESSIONAL ENGINEER
5/10/2013

Madison Water Utility

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SHEET 1 G0.1

File: S:\MAD\1000--1099\1020\071\Acad\Drawings\G0.1.dwg Time: May 10, 2013 - 4:12pm

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
BFPFP	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	FLOWMETER
FT	FLAME TRAP
GBT	GRAVITY BELT THICKENER
GC	GRIT CLASSIFIER
GFM	GAS FLOWMETER
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
SSC	SCREENINGS SCREW CONVEYOR
STCP	STRUVITE CHEMICAL PUMP
STG	STOP GATE
STR	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
GR	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
DCBP	DOUBLE CHECK BACKFLOW PREVENTER
DF	DRINKING FOUNTAIN
DFU	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
WSHP	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
MSB	MAIN SWITCHBOARD
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
ø	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
TEL	TELEPHONE
TSZW	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

Madison Water Utility
Quality and Reliability since 1892

NO.	REVISIONS	DATE:
1	ISSUED FOR BID	05/10/13

ABBREVIATIONS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
1020.071

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET
2
G0.2

DRAFTING SYMBOLS

DETAIL NOTATION

A / 99-ASM5.01 — DETAIL LETTER; DRAWING THAT DETAIL IS SHOWN ON

SECTION NOTATION

1 / 99-ASM3.01 — SECTION NUMBER; DRAWING THAT SECTION IS SHOWN ON

SECTION 1 / 99-ASM3.01 SCALE — SECTION NUMBER; DRAWING THAT SECTION IS SHOWN ON

ELEVATION NOTATION

A / 99-ASM2.01 — ELEVATION LETTER; DRAWING THAT ELEVATION IS SHOWN ON

EQUIPMENT IDENTIFICATION

Type / Group — TYPE OF EQUIPMENT; EQUIPMENT GROUP

NAME 9999 — ROOM IDENTIFICATION

101A — DOOR IDENTIFICATION

999 — WINDOW IDENTIFICATION

1 — KEY/SPECIFIC NOTE CALL-OUT

X — PARTITION TYPE REFERENCE

A — CENTER LINE OF BEAM-COLUMN FRAME SYSTEM

M11 — POINTS OF VIEW BEING CONSIDERED MATCH LINE

3 — REVISION

+EL 1000.00 — FINISH ELEVATION

EL 1000.00 — SPOT ELEVATION

EXISTING OBJECTS ARE SCREENED

EXISTING OBJECTS TO BE ABANDONED

EXISTING OBJECTS TO BE DEMOLISHED

HIDDEN OBJECT

FUTURE OBJECT

OBJECT SUPPLIED BY OWNER

ARCHITECTURAL SYMBOLS

EARTH

SAND, PLASTER, STUCCO

CONCRETE

BRICK

CONCRETE BLOCK

ACOUSTIC BLOCK

ASHLAR STONE VENEER

METAL

METAL LATH

WOOD-FINISH

WOOD-FRAMING

PLYWOOD

ACOUSTICAL TILE

GYPSUM BOARD

BATT INSULATION

RIGID INSULATION

GRATING

CHECKERED PLATE

HANDRAIL

TOPOGRAPHICAL SYMBOLS

AREA OF THE SITE

CORPORATE LIMITS

PROPERTY LINE AND/OR RIGHT OF WAY

RIGHT OF WAY MARKER

CONSTRUCTION EASEMENT ON SEWER AND WATER PLANS

PERMANENT EASEMENT ON SEWER AND WATER PLANS

SECTION LINE

CENTER LINE

4 — BENCH MARK

2 — SOIL BORING

PROPERTY STAKE

PRIVATE WELL

EXISTING UTILITY POLE

NEW UTILITY POLE

BURIED TELEPHONE CABLE PEDESTAL

SIGN

LIGHT POLE

DECIDUOUS TREE

CONIFEROUS TREE

DECIDUOUS SHRUBS

CONIFEROUS SHRUBS

INTERMITTENT STREAM

STREAM OR RIVER

WETLAND AREA

RAILROAD - LARGE SCALE

BRIDGE

EXISTING CULVERT

SILT FENCE

FENCE

GUARD RAIL

CURB, GUTTER AND INLET

REJECT CURB

960 — CONTOUR LINES

EXISTING DEPRESSION

TOP OF CUT OR BERM

UNDERGROUND UTILITY SYMBOLS

6" W — NEW WATER MAIN AND VALVE MANHOLE

6" W — WATER MAIN AND VALVE IN ROAD BOX

6" W — EXISTING WATER MAIN AND FIRE HYDRANT

6" W — NEW WATER MAIN AND FIRE HYDRANT WITH AUXILIARY VALVE

6" S — EXISTING SANITARY SEWER AND MANHOLE

6" S — NEW SANITARY SEWER AND MANHOLE

6" ST — EXISTING STORM SEWER AND MANHOLE (I-INLET)

6" ST — NEW STORM SEWER AND MANHOLE (I-INLET)

6" F — FORCE MAIN

F — VALVE MANHOLE ON FORCE MAIN

S — WYE BRANCH

S / R — RISER

S / MR — MODIFIED RISER

T — TELEPHONE OR TV CABLE AND MANHOLE

2" G — GAS MAIN

E — UNDERGROUND ELECTRIC CABLE

W S F — EXISTING WATER MAIN, SEWER MANHOLE, AND FORCE MAIN IN PROFILE

W S F — NEW WATER MAIN, SEWER, MANHOLE AND FORCE MAIN IN PROFILE

CULVERT IN PROFILE

NEW GRADE LINE

SLOPE INTERCEPT

ORIGINAL GROUND IN PROFILE

ROCK IN PROFILE

SURVEY OR REFERENCE LINE

165° — POINT OF INTERSECTION

POINT ON REFERENCE LINE

N S — BUILDING IN PROFILE

DIRECTION OF TRAFFIC

CAUTION — NOTATION FOR COMBUSTIBLE FLUIDS

PIPING SYMBOLS

FLANGE JOINT

GROOVED JOINT

MECHANICAL JOINT

PUSH - ON JOINT

RUBBER EXPANSION JOINT

SOLVENT WELD OR THREADED JOINT

PIPE COUPLING WITH TENSION TIES

SMALL DIAMETER PIPE

WALL PIPE

WALL SLEEVE

FABRICATED WALL SLEEVE

SHUT OFF VALVE

FLOOR STAND IN PLAN

STOP PLATE - EMBEDDED

SLIDE GATE - EMBEDDED

SLIDE GATE - SURFACE MOUNTED

SLUICE GATE

P/VR — PRESSURE/VACUUM RELIEF

LIQUID RING COMPRESSOR

OP — ORIFICE PLATE

M — MANOMETER

FD — FLOOR DRAIN

RD — ROOF DRAIN

HD — HUB DRAIN

HOSE BIBB

WATER HAMMER ARRESTER

8 — WATER SUPPLY/DRAINAGE FIXTURE UNITS

THERMOMETER

TRAP PRIMER

YARD HYDRANT

PIPING DESIGNATIONS

A — AIR

CA — COMPRESSED AIR

CW — COLD WATER

CWR — COLD WATER RETURN

CWS — COLD WATER SUPPLY

DEW — DISINFECTED EFFLUENT WATER

G — NATURAL GAS PIPING

HW — HOT WATER

HHWR — HEATING HOT WATER RETURN

HHWS — HEATING HOT WATER SUPPLY

LPC — LOW PRESSURE CONDENSATE

LPS — LOW PRESSURE STEAM

NPW — NONPOTABLE WATER

RL — REFRIGERANT LIQUID

RS — REFRIGERANT SUCTION

SPD — SUMP PUMP DISCHARGE

SW — SOFT WATER

VENT PIPE

WASTE BELOW GRADE

WASTE ABOVE GRADE

STORM BELOW GRADE

STORM ABOVE GRADE

VALVE SYMBOLS

AIR PRESSURE RELIEF VALVE

BALANCING VALVE

BALL VALVE

BALL CHECK VALVE

BUTTERFLY VALVE

CHECK VALVE

GAS SHUTOFF PLUG VALVE

GATE VALVE

GLOBE VALVE

LP — LOW PRESSURE CHECK VALVE

PRESSURE REDUCING VALVE

PVR — PRESSURE RELIEF VALVE

TELESCOPIC VALVE

3-WAY VALVE

TRIPLE DUTY VALVE

PIPING SYMBOLS

ELBOW DOWN

ELBOW UP

M — METER

STRAINER

TEE DOWN

TEE UP

UNION

GAS PRESSURE REGULATOR

PI — PRESSURE INDICATOR

PT — PRESSURE TRANSMITTER

TE — TEMPERATURE ELEMENT

TI — TEMPERATURE INDICATOR

TT — TEMPERATURE TRANSMITTER

MANUAL AIR VENT

CONCENTRIC REDUCER

ECCENTRIC REDUCER

FLEXIBLE CONNECTOR

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Quality and Reliability since 1882

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STANDARD SYMBOLS - 1

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

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SHEET 3 G0.3

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ELECTRICAL SYMBOLS

LIGHTING

- 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

SWITCHES

- $ SINGLE POLE
- $_2 TWO POLE
- $_3 THREE WAY
- $_4 FOUR WAY
- $_K KEYED
- $_D DIMMER
- $_M MANUAL MOTOR SWITCH (3 PHASE)
- $_WP WEATHER PROOF
- $_P SWITCH WITH PILOT LIGHT
- LC LIGHTING CONTROL STATION
- R3 LOCKOUT STOP SWITCH
- DP DOOR POSITION SWITCH
- PC PHOTOCELL

EQUIPMENT AND WIRING

- GROUND ROD 10'–5/8" DIA. COPPER CLAD
- TRANSFORMER
- DISCONNECT, F=FUSED, B=CIRCUIT BREAKER, BLANK=NON–FUSED
- MOTOR STARTER MAGNETIC
- CIRCUIT BREAKER COMBINATION STARTER
- JUNCTION BOX
- T LINE VOLTAGE THERMOSTAT
- T LINE VOLTAGE THERMOSTAT W/REMOTE BULB
- P–01–01 480V LOAD, REFER TO MCC SCHEDULE FOR EQUIPMENT NUMBER
- VFD VARIABLE FREQUENCY DRIVE

POWER SYMBOLS

- E UNDERGROUND ELECTRIC
- OH OVERHEAD ELECTRIC
- CIRCUIT NUMBER (TYPICAL)
- 2(X) 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
- EWC 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)
- M METER (ONE–LINE DIAGRAM)
- PANELBOARD

FIRE ALARM AND DETECTION SYMBOLS

- FACP FIRE ALARM CONTROL PANEL
- FAAP FIRE ANNUNCIATOR CONTROL PANEL
- STROBE; WALL MOUNT – ADA RATED; STROBE CANDELA RATING 80" AFF
- H HORN STROBE; WALL MOUNT – ADA RATED; STROBE CANDELA RATING 80" AFF
- S SPEAKER STROBE; WALL MOUNT – ADA RATED; STROBE CANDELA RATING 80" AFF
- FA H HORN; WALL MOUNT – ADA RATED
- FA S SPEAKER; WALL MOUNT – ADA RATED
- F STROBE; CEILING MOUNT – ADA RATED; STROBE CANDELA RATING
- H HORN STROBE; CEILING MOUNT – ADA RATED; STROBE CANDELA RATING
- S SPEAKER STROBE; CEILING MOUNT – ADA RATED; STROBE CANDELA RATING
- ARA AREA OF RESCUE ASSISTANCE
- EMERGENCY TELEPHONE SYSTEM
- H HEAT DETECTOR; CEILING MOUNT
- Z SMOKE DETECTOR; CEILING MOUNT
- Z R ELEVATOR RECALL SMOKE DETECTOR
- NOX NITROUS OXIDE SENSOR
- CO CARBON MONOXIDE SENSOR
- DSD SWITCH INDICATION; DUCT SMOKE DETECTOR; DUCT SIZE
- RTS REMOTE TEST SWITCH; SWITCH INDICATION
- FIRE ALARM PULL STATION
- SFS SPRINKLER FLOW SWITCH
- TM SPRINKLER VALVE TAMPER SWITCH
- B FIRE ALARM BELL

INSTRUMENTATION EQUIPMENT

- AE ANALYSIS ELEMENT
- AIT* 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
- CS 1,2 CONTROL SWITCH DEVICE TYPE (SEE MCC SCHEDULE)
- DE DENSITY ELEMENT
- DIT DENSITY INDICATING TRANSMITTER
- FE FLOW ELEMENT
- FIT* FLOW INDICATING TRANSMITTER, *: M=MAGNETIC, TM= THERMAL MASS DP=DIFFERENTIAL PRESSURE, U=ULTRASONIC
- FS* FLOW SWITCH *: P=PADDLE, T=THERMAL, C=CAPACITANCE, A=AIR FLOW
- HS* HAND SWITCH *: SS=SAFETY SWITCH
- IE OR EE POWER ELEMENT (CURRENT XFMR, POTENTIAL XFMR)
- IS CURRENT SWITCH
- JIT POWER INDICATING TRANSMITTER
- KS TIME SWITCH
- LE LEVEL ELEMENT
- LIT* LEVEL INDICATING TRANSMITTER, *: S=SUBMERSIBLE, U=ULTRASONIC, R=RING TYPE
- LS* LEVEL SWITCH, *: C=CONDUCTANCE, F=BALL FLOAT, V=VIBRATING FORK, B=BUILDING FLOODING
- PDIT DIFFERENTIAL PRESSURE INDICATING TRANSMITTER
- PE PRESSURE ELEMENT
- PIT PRESSURE INDICATING TRANSMITTER
- PS PRESSURE SWITCH
- SS SPEED SWITCH
- TC TEMPERATURE CONTROLLER
- TE* TEMPERATURE ELEMENT, *: R=RTD, T=THERMOCOUPLE
- TIT TEMPERATURE INDICATING TRANSMITTER
- TK TEMPERATURE CONTROL STATION
- TS TEMPERATURE SWITCH
- TT TEMPERATURE TRANSMITTER
- VE VIBRATION ELEMENT
- VIT VIBRATION INDICATING TRANSMITTER
- WE WEIGHT ELEMENT
- WS TORQUE SWITCH
- WT WEIGHT TRANSMITTER (SCALE)
- YS PRESENCE/ABSENCE DETECTOR
- ZS* POSITION SWITCH, *: D=DOOR, L=LIMIT, P=PROXIMITY
- SOLENOID VALVE
- FIX FIXED SECURITY CAMERA
- PTZ PAN, TILT, ZOOM SECURITY CAMERA

TECHNOLOGY SYMBOLS

- (*) DATA JACK; * = # OF JACKS
- (*) POTS ANALOG PHONE JACK; * = # OF JACKS
- (*P *D) POTS ANALOG PHONE AND DATA JACKS; * = # OF JACKS
- VOIP 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 H PA SYSTEM HORN SPEAKER; 10'–0" AFF
- PA S PA SYSTEM SPEAKER
- A SPEAKER; CEILING MOUNT A=SPEAKER TYPE
- K KEY PAD
- GBD GLASS BREAK DETECTOR
- MS MOTION SENSOR
- P PUSH BUTTON
- ES ELECTRIC STRIKE
- ML MAGNETIC LOCK
- I INTERCOM STATION
- OS ## OCCUPANCY SENSOR; SEE SPECIFICATION FOR SENSOR TYPE
- YE CARD READER
- RVC 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

- M AUTOMATIC DAMPER
- BDD BACKDRAFT DAMPER
- MANUAL VOLUME DAMPER
- FD 1–1/2 HR. FIRE DAMPER

FIELD MOUNTED CONTROLS

- T THERMOSTAT
- H ROOM HUMIDISTAT
- P PRESSURE SENSOR
- S ROOM SENSOR
- S DUCT SMOKE DETECTOR
- PRESSURE GAUGE

ACTUATORS

- M MOTOR (ELECTRIC)
- P PNEUMATIC
- S SOLENOID

EQUIPMENT SYMBOLS

- ACU ACCUMULATOR
- AIR FLOW DIRECTION
- BASE MOUNTED PUMP
- BLOWER
- CEILING DIFFUSER WITH FLEXIBLE DUCT
- CENTRIFUGAL PUMP
- CONNECT TO EXISTING
- DT DRIP TRAP
- DUCT BOOST COIL
- Type Group EQUIPMENT TAG
- FA FLAME ARRESTER
- FC FLAME CELL
- FT FLAME TRAP ASSEMBLY
- G 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

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Quality and Reliability since 1882

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STANDARD SYMBOLS - 2

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110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071
PROJECT MGR. ANDY MULLENDORE

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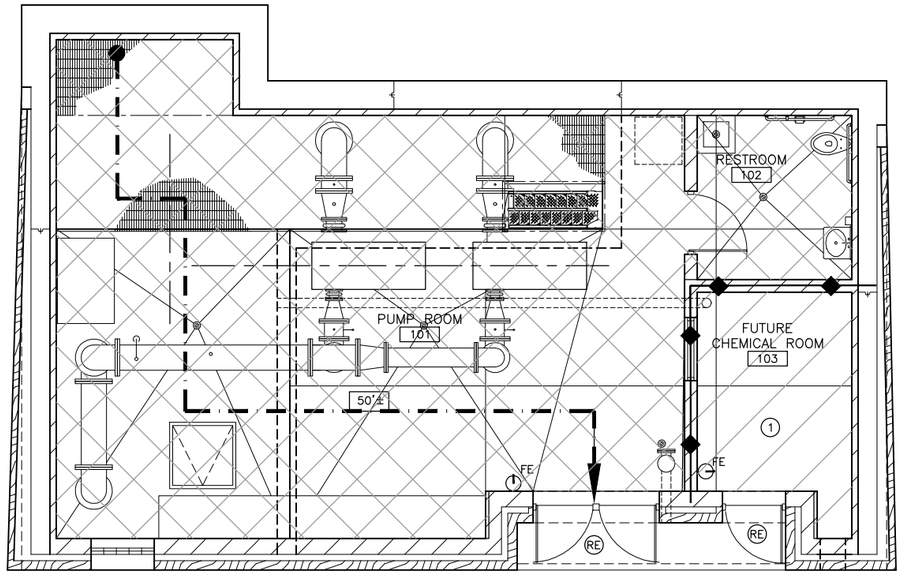

LIFE SAFETY AND EXITING PLAN

0 1' 2' 4' 8'

KEY NOTES:

(1) 1-HOUR RATED WALL AND CEILING CONSTRUCTION.

LIFE SAFETY LEGEND

- 1 HOUR FIRE-RATED WALL
- 2 HOUR FIRE-RATED WALL
- 100' — TRAVEL DISTANCE (FEET)
- EXIT
- BARRIER FREE ACCESS ROUTE
- EXIT DISCHARGE
- (RE) — REQUIRED EXIT
- FUTURE H-3 OCCUPANCY
- F-1 OCCUPANCY

BUILDING CODE INFORMATION

BUILDING CODE	WISCONSIN COMMERCIAL BUILDING CODE (2009 IBC WITH WISCONSIN EXCEPTION)		
SCOPE OF WORK:	NEW MASONRY AND REINFORCED CONCRETE BUILDING		
OCCUPANCY TYPE	SEPARATED USE		
USE GROUPS	F-1 FACTORY INDUSTRIAL (WATER TREATMENT)		
	H-3 HAZARDOUS (CHEMICAL STORAGE, FUTURE)		

HAZARDOUS MATERIALS

CHEMICAL	CHEMICAL CLASSIFICATION	MAX. CONTROL AREA QUANTITY	ACTUAL QUANTITY[a]
CHLORINE GAS	OXIDIZING GAS, TOXIC	300 LB	600 LB

NOTES:
a. ACTUAL QUANTITY IS FOR COMBINED STORAGE AND CLOSED SYSTEMS USE.
b. CONTROL AREA QUANTITY PER TABLE 307.1(1) FOOTNOTE i.

CONSTRUCTION TYPE	TYPE 5B

OCCUPANCY SEPARATION	FIRE RATING
F-1: H-3	1 HOUR

GENERAL BUILDING INFORMATION

	ALLOWABLE		ACTUAL
NO. OF STORIES	1 STORY		1 STORY[1]
HEIGHT	40 FEET		12'-0"
AREA PER FLOOR LEVEL			
F-1	8,500 SF	F-1	1,070 SF
H-3	5,000 SF	H-3	154 SF
TOTAL ALLOWABLE AREA PER FLOOR LEVEL	8,500 SF	TOTAL ACTUAL AREA	1,224 SF
RATIO OF ACTUAL TO ALLOWABLE:	0.30		

FIRE SUPPRESSION SYSTEM
AUTOMATIC SPRINKLER SYSTEM - ORDINARY HAZARD
PORTABLE FIRE EXTINGUISHERS, RATED CLASS A, B, C; 10-POUND CAPACITY.

ALLOWABLE TRAVEL DISTANCES	EXIT ACCESS	COMMON PATH
F-1	250 FEET	100 FEET
H-3	150 FEET	25 FEET

EXITS	
REQUIRED (EACH AREA)	PROVIDED (EACH AREA)
1	1

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Quality and Reliability since 1882

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LIFE SAFETY PLAN AND CODE SUMMARY

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
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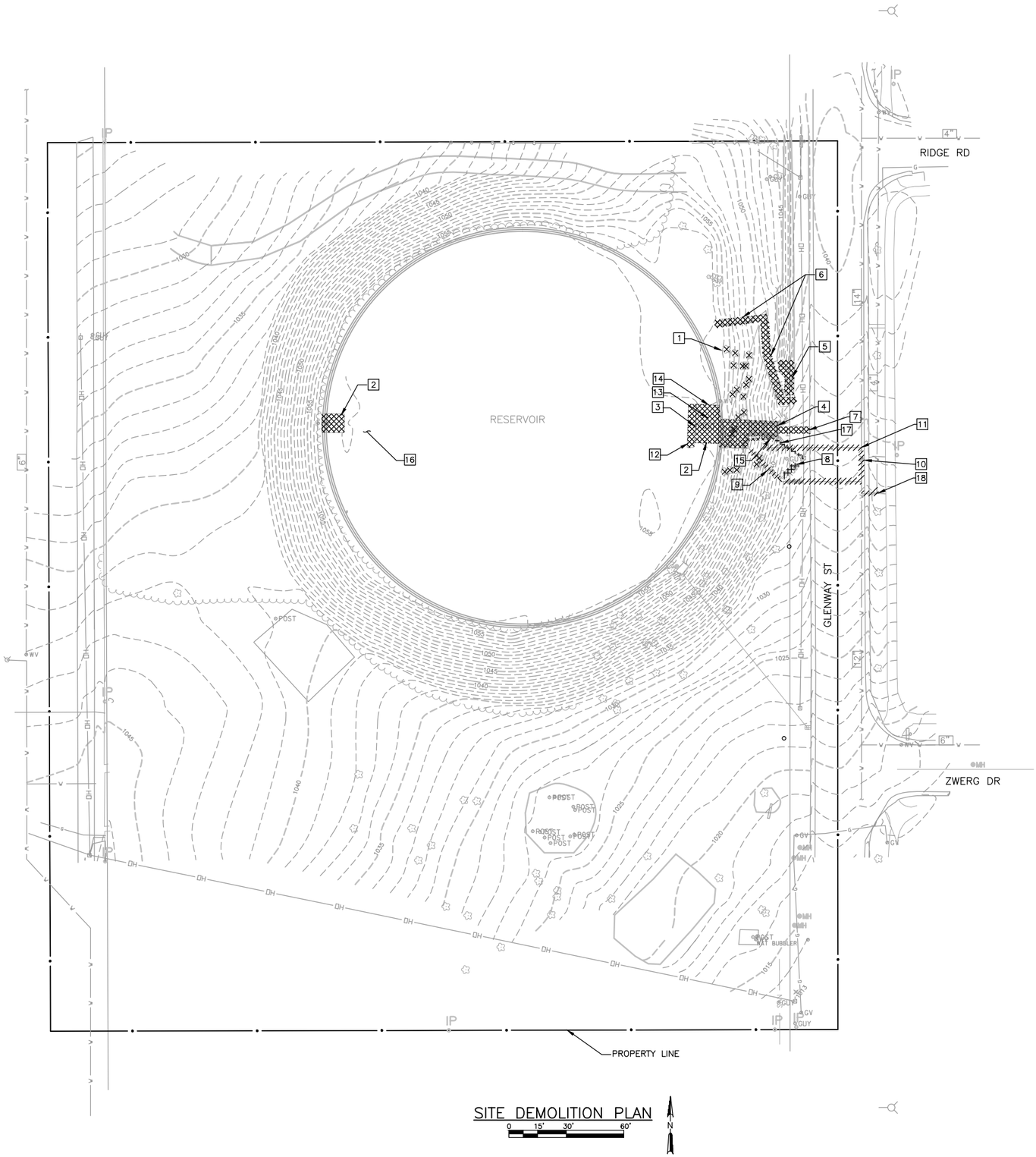

SITE DEMOLITION PLAN

0 15' 30' 60'

N

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DEMOLITION GENERAL NOTES:

1. REFER TO SPECIFICATION SECTION 01010 FOR ADDITIONAL DEMOLITION AND CONSTRUCTION SEQUENCE INFORMATION.
2. EXISTING INFORMATION SHOWN ON DRAWINGS WAS OBTAINED FROM FIELD MEASUREMENTS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACCURACY OF EXISTING INFORMATION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
3. EXISTING UTILITY LOCATIONS AS SHOWN ARE APPROXIMATE AND NOT ALL UTILITY MAINS/SERVICES MAY BE SHOWN ON THE DRAWINGS. CONTRACTOR SHALL FIELD DETERMINE THE EXACT LOCATIONS OF THE EXISTING UTILITY MAINS/SERVICES.
4. PROTECT ALL EXISTING TREES UNLESS OTHERWISE NOTED.
5. DISPOSE OF ALL MATERIALS AND EQUIPMENT REMOVED EXCEPT THOSE SPECIFIED TO BE SALVAGED AND DELIVERED TO OWNER. REFER TO SPECIFICATION SECTION 02050.
6. SALVAGE THE FOLLOWING ITEMS AND DELIVER TO OWNER: EMERGENCY SIREN, SCADA ANTENNA, AND SCADA CONTROL PANEL.
7. REFER TO SHEET D1.2 FOR INTERIOR ITEMS TO BE REMOVED FROM BOOSTER STATION.
8. ALL CONDUIT AND WIRE ASSOCIATED WITH ITEMS BEING REMOVED SHALL BE REMOVED BACK TO THE SOURCE.
9. REFER TO SHEET C1.2 FOR WATER MAIN IMPROVEMENTS UNDER GLENWAY STREET.

DEMOLITION KEY NOTES:

1 REMOVE TREE (TYP.).

2 REMOVE EXISTING RESERVOIR ACCESS STRUCTURE DOWN TO TOP OF RESERVOIR SLAB.

3 REMOVE EXISTING POLE AND SALVAGE EXISTING SCADA ANTENNA AND CONTROL PANEL AND TURN OVER TO OWNER.

4 REMOVE EXISTING BOOSTER STATION.

5 REMOVE EXISTING RETAINING WALL AS NEEDED TO CONSTRUCT BOOSTER STATION. SALVAGE STONE BLOCKS.

6 REMOVE EXISTING STAIRWAY AND RAILING.

7 REMOVE EXISTING CONCRETE SIDEWALK.

8 REMOVE EXISTING HYDRANT AND HYDRANT LEAD.

9 ABANDON EXISTING 10" WATER MAIN.

10 ABANDON EXISTING VALVES AND 14" AND 12" WATER MAIN.

11 ABANDON EXISTING 12" WATER MAIN.

12 REMOVE EXISTING CONCRETE SIDEWALK.

13 REMOVE EXISTING POLE ON TOP OF RESERVOIR ACCESS STRUCTURE AND SALVAGE EXISTING EMERGENCY SIREN.

14 REMOVE ADJACENT MASONRY STRUCTURE.

15 REMOVE LIGHT POLE AND ALL OVERHEAD WIRE TO AND FROM POLE.

16 REMOVE EXISTING VALVE BOXES WITH ANCHOR BOLTS ABOVE RESERVOIR ROOF (TYP. OF 4). PROTECT EXISTING VALVE BOX CAST INTO ROOF. REMOVE EXISTING ISOLATION VALVES AND STEMS INSIDE OF RESERVOIR (TYP. OF 2 EACH SIDE OF RESERVOIR). PROTECT EXISTING FLANGED CONNECTING PIPE WITHIN RESERVOIR DIVIDER WALL.

17 REMOVE EXISTING ELECTRICAL SERVICE. COORDINATE REMOVAL WITH MG&E.

18 ABANDON EXISTING 4" WATER MAIN. CUT OFF AND CAP EXISTING 4" WATER MAIN ADJACENT TO EXISTING 12" WATER MAIN.

Madison Water Utility
Quality and Reliability since 1892

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EXISTING SITE DEMOLITION PLAN

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

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SHEET
6
D1.1

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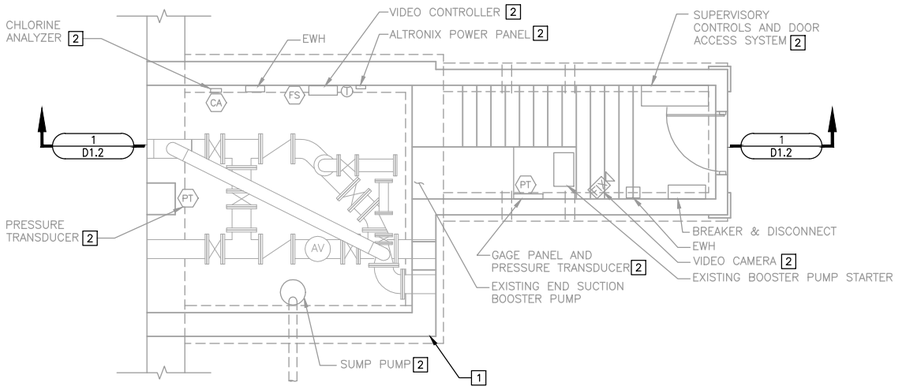
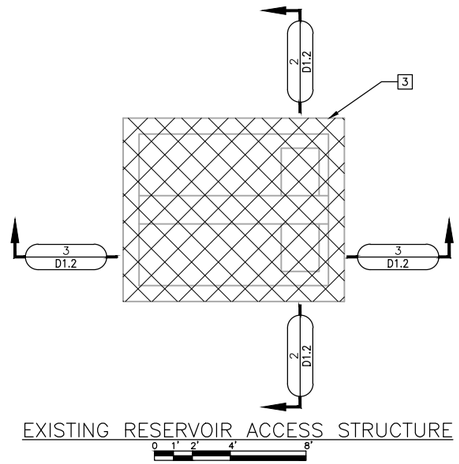


DEMOLITION PLAN



EXISTING RESERVOIR ACCESS STRUCTURE

DEMOLITION GENERAL NOTES:

1. REFER TO SPECIFICATION SECTION 01010 FOR ADDITIONAL DEMOLITION AND CONSTRUCTION SEQUENCE INFORMATION.
2. EXISTING INFORMATION SHOWN ON DRAWINGS WAS OBTAINED FROM FIELD MEASUREMENTS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACCURACY OF EXISTING INFORMATION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
3. DISPOSE OF ALL MATERIALS AND EQUIPMENT REMOVED EXCEPT THOSE SPECIFIED TO BE SALVAGED AND DELIVERED TO OWNER. REFER TO SPECIFICATION SECTION 02050.
4. SALVAGE THE FOLLOWING ITEMS AND DELIVER TO OWNER: CHLORINE ANALYZER, ALL PRESSURE TRANSDUCERS, DOOR CONTROLLER, GAGE PANEL, DEHUMIDIFIER, SUMP PUMP, TELEPHONE, SUPERVISORY CONTROL PANEL, VIDEO CONTROLLER, POWER PANEL, AND VIDEO CAMERA. REMOVE ALL ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.

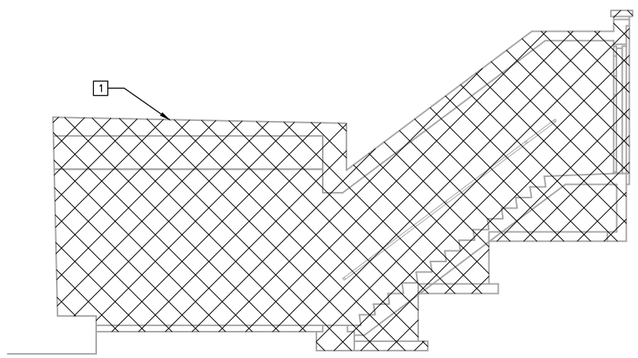
DEMOLITION KEY NOTES:

1 REMOVE ENTIRE EXISTING BOOSTER STATION. SAWCUT JOINTS PRIOR TO ANY DEMOLITION WORK ON THE EXISTING BOOSTER STATION.

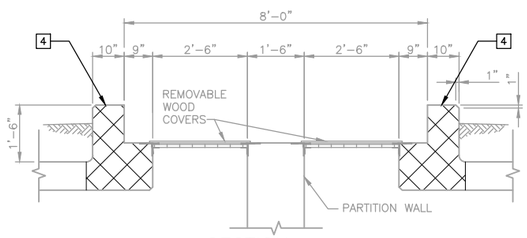
2 SALVAGE AND TURN OVER TO OWNER. REMOVE ALL ASSOCIATED CONDUIT AND WIRE BACK TO SOURCE.

3 REMOVE EXISTING RESERVOIR ACCESS STRUCTURE (TYP. OF 2). EXISTING MASONRY BUILDING ABOVE (NOT SHOWN) ALSO TO BE REMOVED.

4 REMOVE CURBING ON EXISTING RESERVOIR ROOF AS NECESSARY FOR INSTALLATION OF NEW RESERVOIR ACCESS STRUCTURE.



SECTION 1 D1.2



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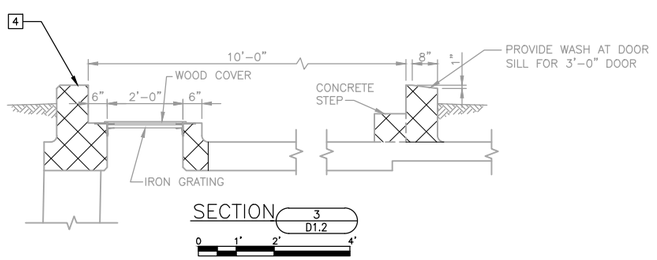

SECTION 3 D1.2

Madison Water Utility
Quality and Reliability since 1882

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EXISTING VALVE CHAMBER
DEMOLITION PLAN AND SECTIONS
BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

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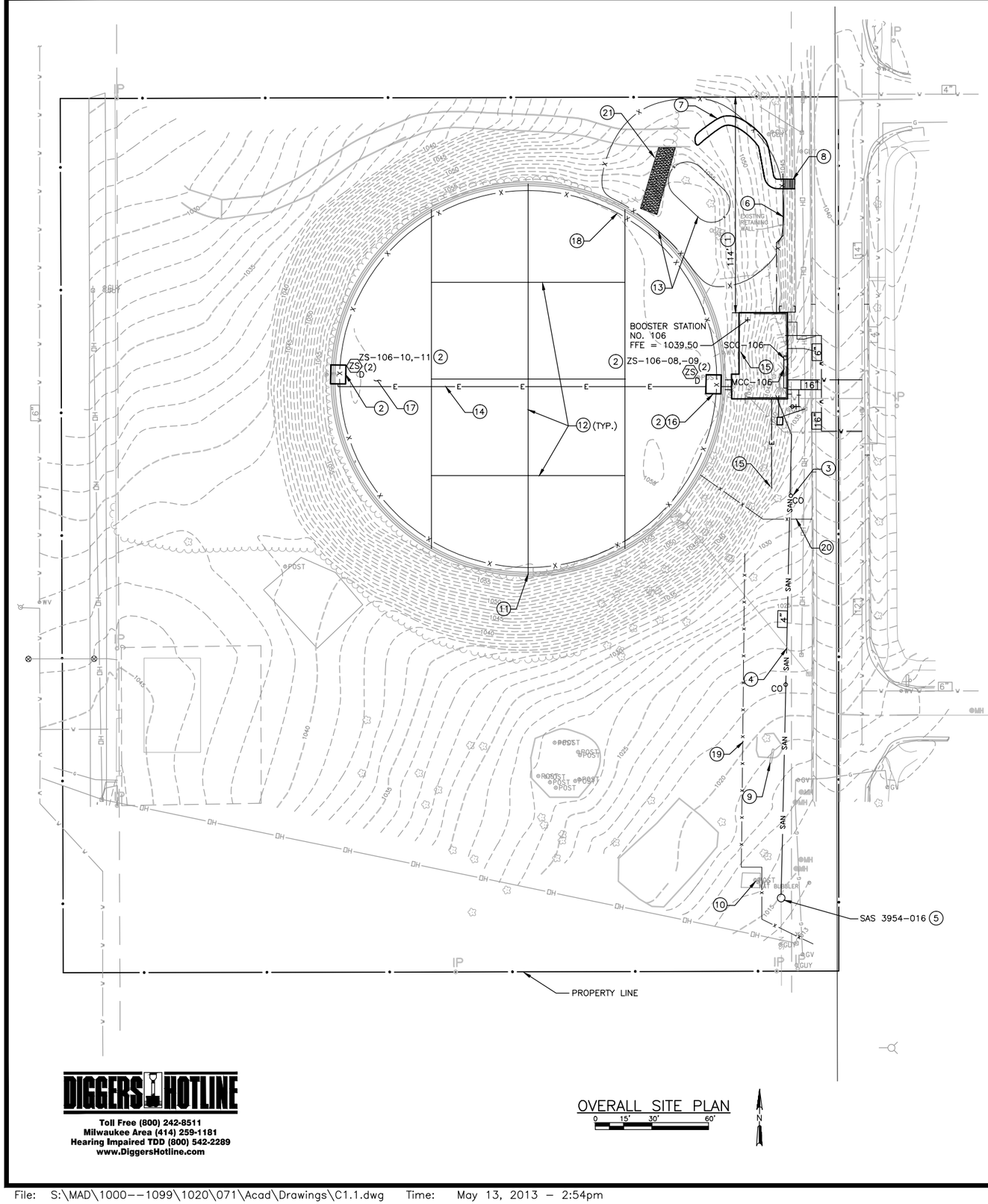

OVERALL SITE PLAN
0 15' 30' 60'
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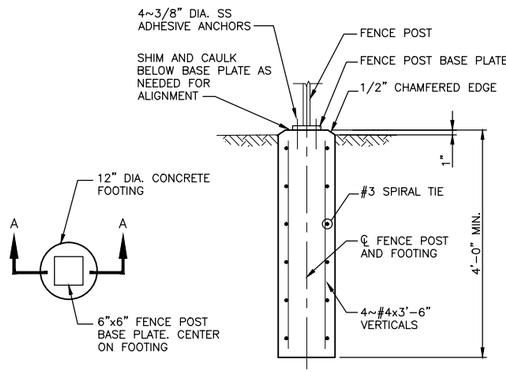

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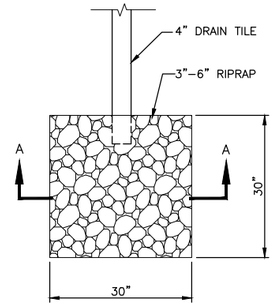

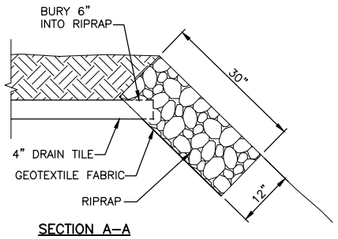

B C1.1 DRAIN TILE OUTFALL
NO SCALE

GENERAL NOTES:

1. PROTECT ALL EXISTING TREES.
2. LOCATIONS AND ELEVATIONS OF EXISTING PIPING AND OTHER SITE FEATURES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY DEPTHS AND LOCATIONS OF EXISTING PIPING PRIOR TO INSTALLING NEW PIPING THAT CONNECTS TO EXISTIING.
3. PROVIDE MINIMUM 6'-6" COVER OVER ALL NEW YARD PIPING.
4. CONTRACTOR SHALL CONTACT APPROPRIATE AGENCIES FOR UTILITY LOCATIONS.
5. UNLESS OTHERWISE NOTED OR SPECIFIED, ALL YARD PIPING SHALL BE DUCTILE IRON.
6. REFER TO SECTION 16990 FOR WIRING ASSOCIATED WITH THE SCADA SYSTEM.
7. PROVIDE CONCRETE SURFACE REPAIRS TO THE INTERIOR SURFACES OF THE EXISTING BELOW-GRADE RESERVOIR IN ACCORDANCE WITH THE SPECIFICATIONS.
8. PROVIDE FOUR 20-FOOT LENGTHS OF TEMPORARY FENCE TO PROTECT EXISTING VEGETATION PRIOR TO CONSTRUCTION. FINAL LOCATIONS TO BE DETERMINED IN FIELD. COORDINATE LOCATIONS WITH OWNER.
9. CONTACT CITY FORESTRY WHEN EXCAVATING NEAR EXISTING TREES.

KEY NOTES:

(1) NORTH SOUTH LOCATION APPROXIMATE. BUILDING WILL BE LOCATED BASED UPON ACTUAL CENTERLINE OF PIPES LEAVING THE EXISTING RESERVOIR.

(2) NEW RESERVOIR ACCESS STRUCTURE (F / ASM5.1). DIVISION 16 CONTRACTOR SHALL PROVIDE A LIMIT SWITCH AT EACH ACCESS HATCH (INTERIOR SIDE) (E / ASM5.1)

(3) 4" SDR 35 PVC SANITARY PIPE. ADJUST BUILDING SANITARY ELEVATION AND SLOPE TO MAINTAIN MINIMUM 6 FEET OF COVER AS NECESSARY.

(4) FIELD VERIFY EXISTING OVERFLOW PIPE ELEVATION. ADJUST NEW BUILDING SANITARY ELEVATION AS NECESSARY TO ALLOW 6" SEPARATION BETWEEN PIPES.

(5) FIELD VERIFY EXISTING SANITARY SEWER ELEVATION AND ADJUST BUILDING SEWER ELEVATION AS NECESSARY. PROVIDE NEW 4-FT DIAMETER SANITARY MANHOLE.

(6) ORNAMENTAL ALUMINUM FENCE. PROVIDE 6'-0" MAX. POST SPACING AND CONCRETE FOOTINGS PER (A / C1.1). CONTRACTOR TO FIELD DETERMINE POST LOCATIONS TO AVOID HITTING EXISTING RETAINING WALL BLOCKS.

(7) RELOCATED PATH CONSTRUCTED WITH SHREDDED WOOD.

(8) CONSTRUCT NEW STAIRS LEADING UP TO RELOCATED PATH USING EXISTING STONES FROM PORTIONS OF RETAINING WALL THAT ARE TO BE REMOVED FOR NEW CONSTRUCTION. REMOVE RETAINING WALL AS NECESSARY TO CONSTRUCT STAIRS. PROVIDE 7" RISER HEIGHT AND 12" TREAD DEPTH. STONE STAIRS SHALL BE CONSTRUCTED ON 2'-0" OF CRUSHED STONE. PROVIDE ORNAMENTAL ALUMINUM FENCE PER KEY NOTE 6 ALONG BOTH SIDES OF STAIRS.

(9) PROTECT EXISTING PARK SIGN.

(10) PROTECT EXISTING WATER FOUNTAIN.

(11) PROVIDE 30"x30"x12" PAD OF 3"-6" RIPRAP WHERE DRAIN TILE DAYLIGHTS (TYP. OF 3 LOCATIONS ON SOUTH SIDE OF RESERVOIR) (B / C1.1).

(12) PROVIDE DRAIN TILE AT LOCATIONS SHOWN TO DRAIN SOIL OVER RESERVOIR ROOF (D / C5.1).

(13) PROVIDE TEMPORARY FENCES TO MINIMIZE CONSTRUCTION TRAFFIC AROUND TREES. FENCE SHALL BE INSTALLED PRIOR TO ANY WORK COMMENCING AND SHALL BE REMOVED ONCE WORK IS COMPLETE. SEE SECTION 01010 OF THE SPECIFICATIONS.

(14) CONDUIT SHALL BE 1" RMC, BURIED 6" MIN. BELOW GRADE. COORDINATE CONDUIT INSTALLATION WITH DRAIN TILE.

(15) CONDUIT SHALL BE ROUTED FROM FIBER ENCLOSURE LOCATION IN THE BOOSTER STATION PUMP ROOM TO FUTURE FIBER TERMINATION POINT. COORDINATE LOCATION WITH CITY OF MADISON IT DEPARTMENT. CAP CONDUIT AND PROVIDE POST MARKING STUB ENDPOINT. REFER TO SHEET E1.1 FOR ADDITIONAL INFORMATION.

(16) PROVIDE (TOTAL OF 2) STAINLESS STEEL LADDERS AT RESERVOIR ACCESS STRUCTURE (ONE EACH SIDE) (G / ASM5.3).

(17) PROVIDE VALVE ACCESS OVER EXISTING PENETRATIONS IN RESERVOIR ROOF (C / C5.1) (TYP. OF 4). PROVIDE GATE VALVE AT EACH END OF EXISTING 12" CONNECTION PIPE INSIDE RESERVOIR (TYP. OF 2 EACH SIDE OF RESERVOIR).

(18) PROVIDE FENCE AROUND RESERVOIR PERIMETER. SEE SECTION 01010 OF THE SPECIFICATIONS FOR LOAD AND ACCESS LIMITATIONS TO RESERVOIR ROOF.

KEY NOTES (CONTINUED):

(19) PROVIDE TEMPORARY FENCE DURING CONSTRUCTION OF PROPOSED SANITARY SEWER WORK. REMOVE AFTER RESTORATION IS COMPLETED.

(20) PROVIDE TEMPORARY FENCE AFTER SANITARY SEWER INSTALLATION.

(21) CONTRACTOR MAY CLEAR THIS AREA TO ACCESS RESERVOIR ROOF. SEE SPECIFICATIONS REGARDING TREE PROTECTION.

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Quality and Reliability since 1892

NO.	REVISIONS	DATE:
1	ISSUED FOR BID	05/10/13

OVERALL SITE PLAN

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
1020.071

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET
8
C1.1

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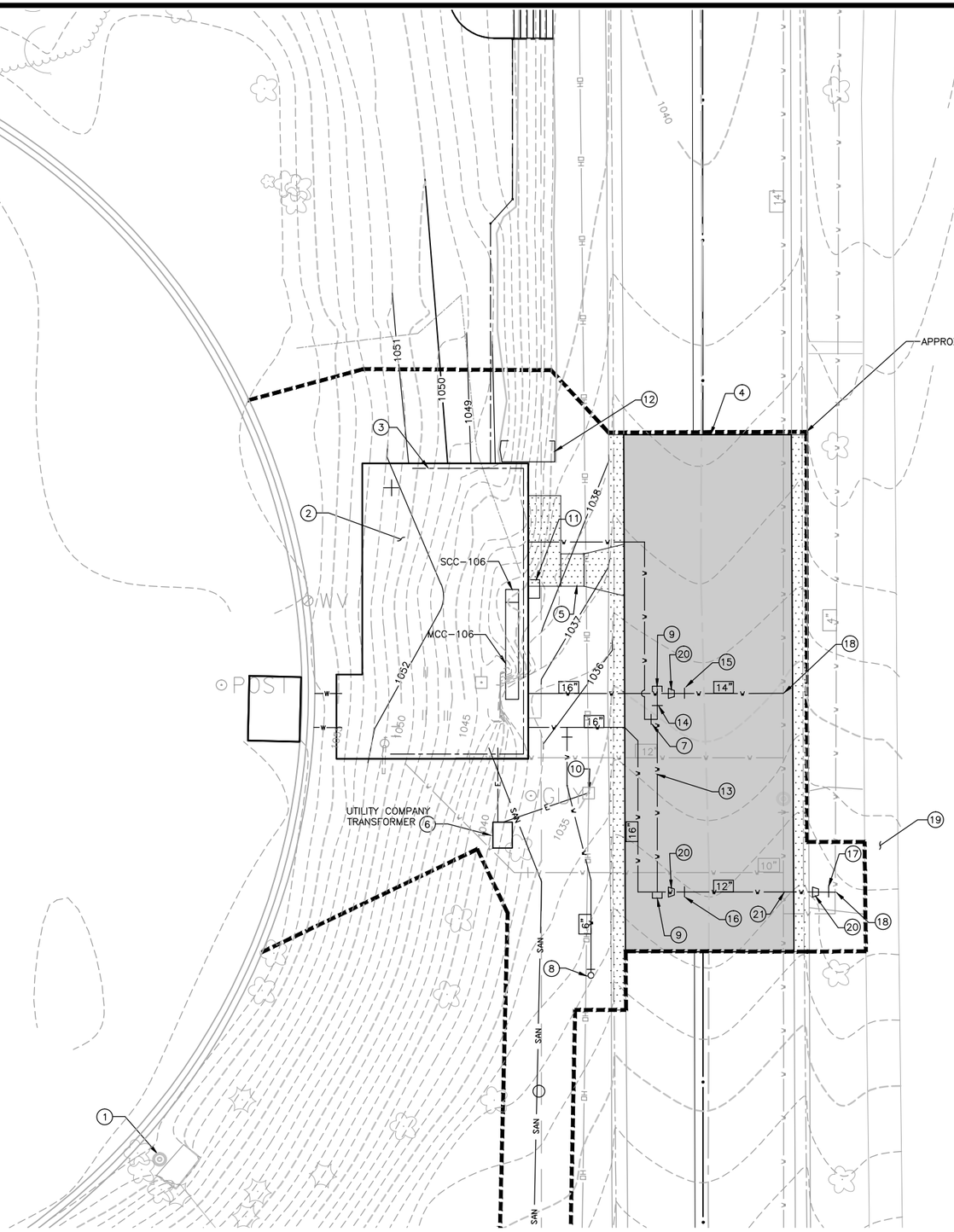


DETAILED SITE PLAN
0 5' 10' 20'
N

KEY NOTES:

1. INSTALL BACKUP RESERVOIR OVERFLOW (A / C1.2).
2. BUILDING ROOF TO BE COVERED WITH SOIL. SEE SECTION VIEW FOR MORE DETAIL.
3. ORNAMENTAL ALUMINUM FENCE AT ROOF EDGES. SEE ROOF PLAN FOR DETAILS.
4. REPLACE CURB AND GUTTER AND ASPHALT PAVEMENT AS INDICATED NEAR COMPLETION OF PROJECT. PROVIDE NEAT SAW CUT LINES. MATERIAL THICKNESS SHALL MATCH EXISTING THICKNESS.
5. SLOPE SIDEWALK AWAY FROM BUILDING. PROVIDE CURB RAMP WITH TRUNCATED DOME PANEL.
6. UTILITY COMPANY TRANSFORMER. EQUIPMENT PAD PROVIDED BY DIVISION 16 CONTRACTOR. COORDINATE PAD REQUIREMENTS AND SIZING WITH MG&E.
7. 6" GATE VALVE WITH VALVE BOX.
8. FIRE HYDRANT WITH 6" AUXILIARY VALVE LOCATED NEAR 16"x6" TEE.
9. 16"x16" CROSS WITH PLUG.
10. PROTECT EXISTING POWER POLE.
11. TELEPHONE DEMARC. DIVISION 16 CONTRACTOR SHALL STUB 1" CONDUIT BELOW GRADE 2'-0" OUT FROM BUILDING FOR PHONE SERVICE.
12. REUSE SALVAGED STONE BLOCKS TO BRING RETAINING WALL BACK TO GRADE.
13. NORTH-SOUTH 16" WATER MAIN SHALL BE INSTALLED 8' WEST OF GLENWAY STREET CENTERLINIE.
14. 16" BUTTERFLY VALVE WITH VALVE BOX.
15. 14" BUTTERFLY VALVE WITH VALVE BOX.
16. 12" BUTTERFLY VALVE WITH VALVE BOX.
17. 4" GATE VALVE WITH VALVE BOX.
18. CUT IN ELBOW FITTING.
19. PROTECT EXISTING SIDEWALK DURING WATER MAIN INSTALLATION.
20. REDUCER.
21. CUT IN TEE FITTING.

GENERAL NOTES:

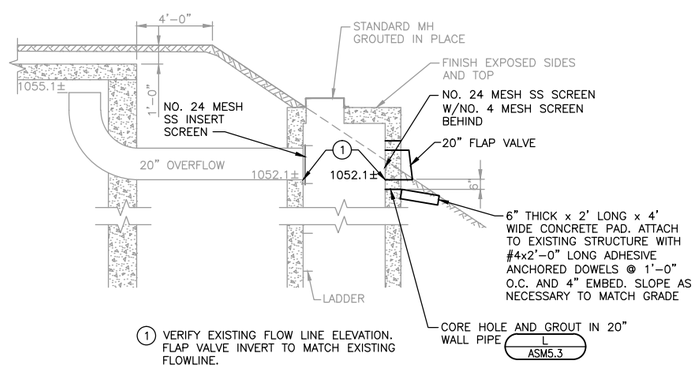
1. PROTECT ALL EXISTING TREES.
2. LOCATIONS AND ELEVATIONS OF EXISTING PIPING, ELECTRICAL SERVICE, AND OTHER SITE FEATURES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY DEPTHS AND LOCATIONS OF EXISTING PIPING PRIOR TO INSTALLING NEW PIPING THAT CONNECTS TO EXISTIING.
3. PROVIDE MINIMUM 6'-6" COVER OVER ALL NEW YARD PIPING.
4. CONTRACTOR SHALL CONTACT APPROPRIATE AGENCIES FOR UTILITY LOCATIONS.
5. UNLESS OTHERWISE NOTED OR SPECIFIED, ALL YARD PIPING SHALL BE DUCTILE IRON.

LEGEND:

NEW ASPHALT PAVEMENT

NEW SIDEWALK/CONCRETE PAVEMENT

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com



A / C1.2 BACKUP RESERVOIR OVERFLOW
NOT TO SCALE

Madison Water Utility
Quality and Reliability since 1882

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DETAILED SITE PLAN

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

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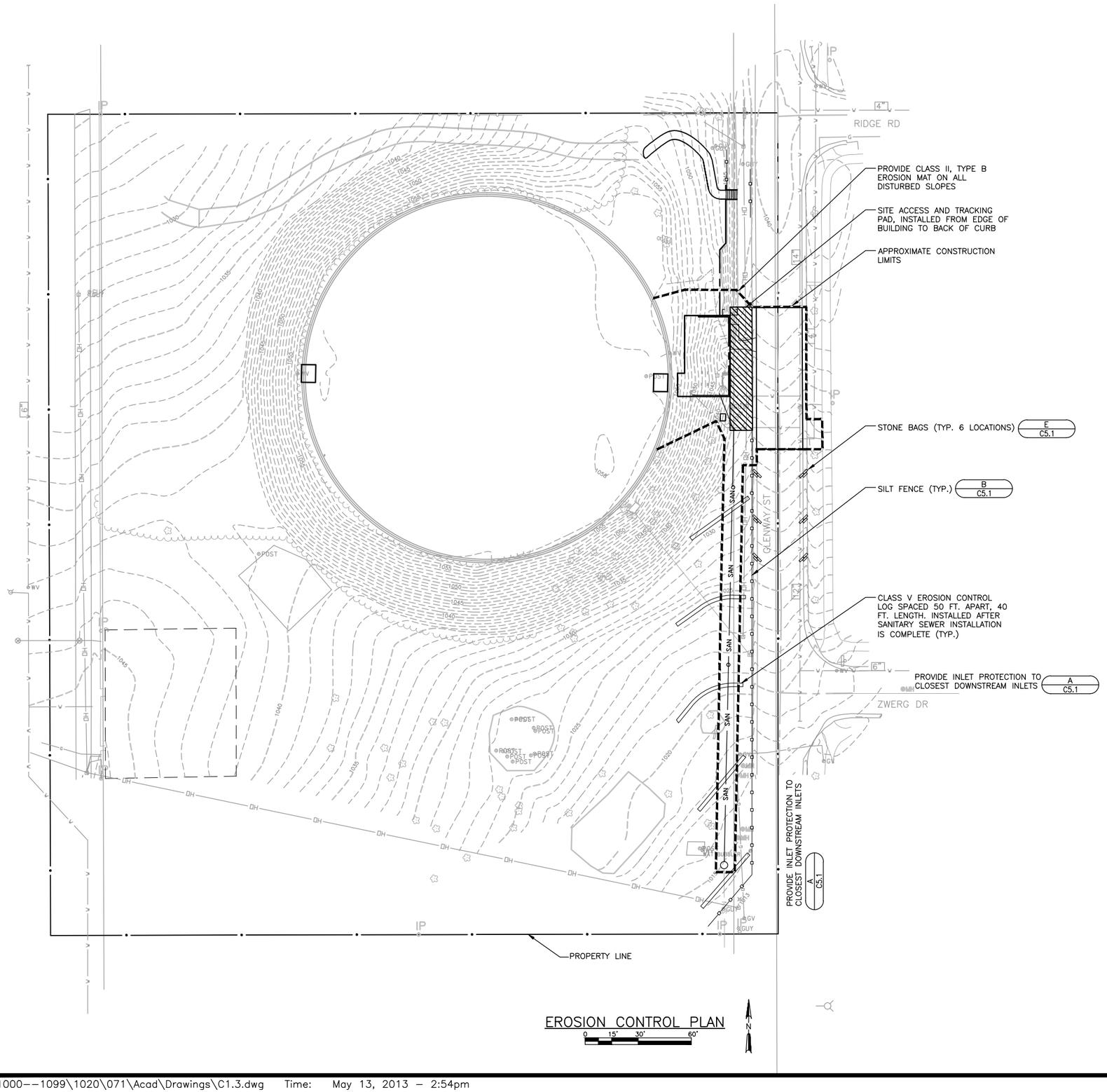

EROSION CONTROL PLAN

0 15' 30' 60'

N

EROSION CONTROL NOTES:

1. ANY SOIL STOCKPILED THAT REMAINS FOR MORE THAN 7 DAYS SHALL BE COVERED OR TREATED WITH STABILIZATION PRACTICES SUCH AS TEMPORARY OR PERMANENT SEEDING AND MULCHING.
2. A MINIMUM OF 4 INCHES OF TOPSOIL MUST BE APPLIED TO ALL AREAS TO BE SEEDED OR SODDED.
3. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
4. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH DAY. FLUSHING SHALL NOT BE ALLOWED.
5. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR THE APPLICATION OF STABILIZATION MEASURES MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
6. FOR ANY DISTURBED AREA THAT REMAINS INACTIVE FOR GREATER THAN 7 WORKING DAYS, OR WHERE GRADING WORK EXTENDS BEYOND THE PERMANENT SEEDING DEADLINES, THE SITE MUST BE TREATED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING AND/OR MULCHING.
7. ALL TEMPORARY EROSION CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED WITH 70% VEGETATION.
8. WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH OR A TRACKING AGENT MAY NEED TO BE UTILIZED TO PROTECT NEARBY RESIDENCES/WATER RESOURCES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL THE EROSION CONTROL MEASURES IN CONFORMANCE WITH THE WDNR CONSERVATION PRACTICE STANDARDS, LATEST EDITION.
10. THE CONTRACTOR SHALL INSTALL STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITE AS SPECIFIED.
11. FINE SEDIMENT ACCUMULATIONS SHALL BE CLEANED FROM STREETS, PRIVATE DRIVES, OR PARKING AREAS BY MANUAL OR MECHANICAL SWEEPING ON DAILY BASIS AND BEFORE ALL IMMINENT RAINS.
12. EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF RAINFALL OF 0.5 INCH OR MORE.
13. SEDIMENT SHALL BE PROPERLY DISPOSED OF ONCE DEPOSITS REACH 1/2 THE HEIGHT OF THE SILT FENCE.

GENERAL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO LAND DISTURBANCE UNLESS OTHERWISE NOTED.
2. THE EROSION CONTROL MEASURES INDICATED ON THIS DRAWING ARE THE MINIMUM REQUIREMENTS, ADDITIONAL MEASURES MAY BE REQUIRED BY GOVERNING AGENCY.
3. PROTECT EXISTING TREES UNLESS OTHERWISE NOTED.
4. DISTURBED AREAS SHALL BE RESTORED BY SEEDING AS SPECIFIED AND AS SHOWN ON LANDSCAPING PLAN.

LEGEND:

STONE TRACKING PAD

DIGGERS HOTLINE

Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
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EROSION CONTROL PLAN

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
1020.071

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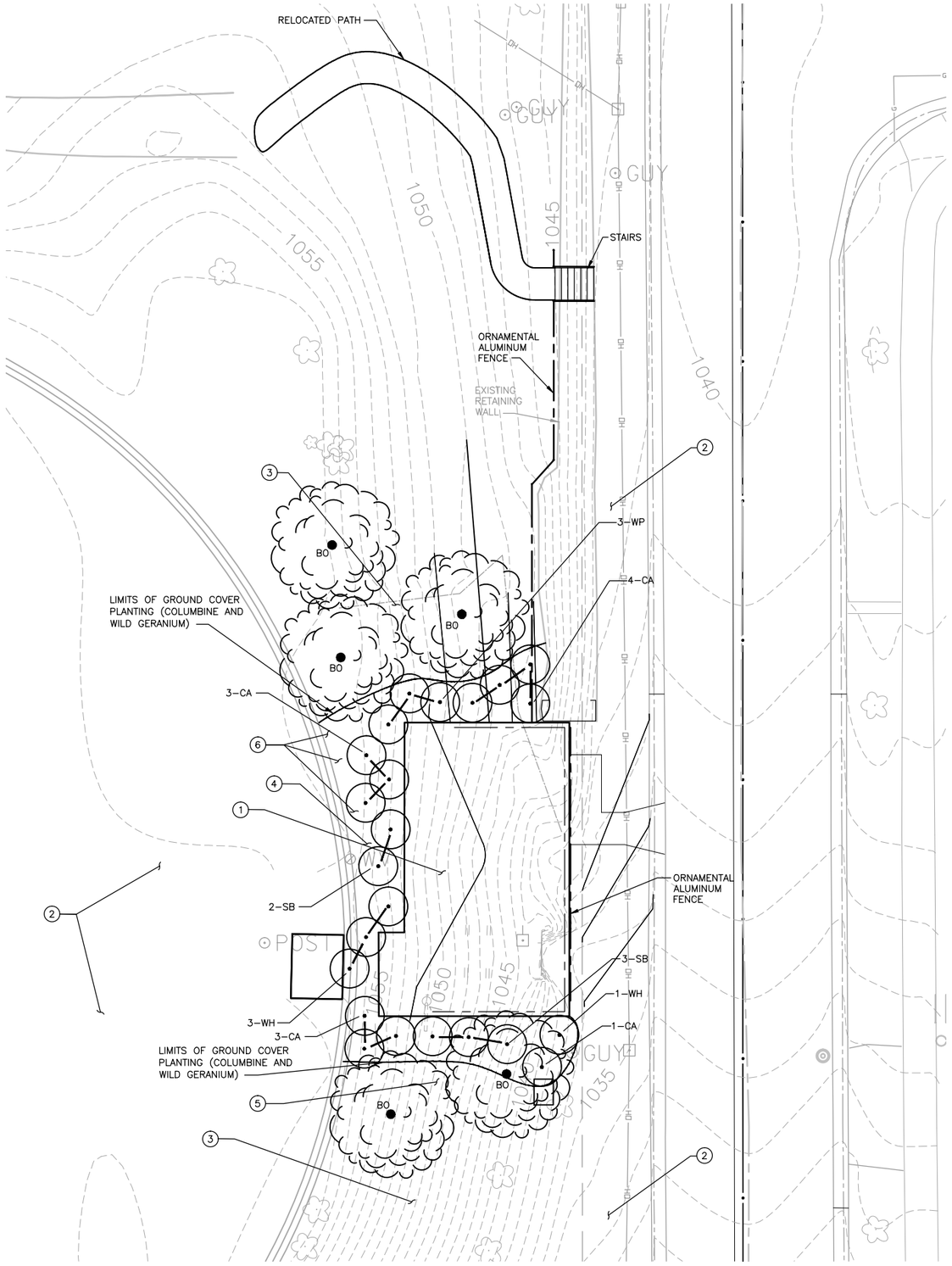

PLANT DATA CHART

PLANT CODE	COMMON NAME	SCIENTIFIC NAME	AVG. MATURE HEIGHT	SIZE WHEN PLANTED	ROOT ZONE MODE	MINIMUM SIZE					FERT. PACK. REQ'D	MULCH RING DIA.
						MIN. BALL OR POT		FORM	MIN. HOLE SIZE			
						MIN. CONT. SIZE	MIN. CONT. DEPTH		MIN. HOLE DIA.	MIN. HOLE DEPTH		
BO	Bur Oak	Quercus macrocarpa	75'	2"Cal.	B&B	24"	16"	Tree	40"	16"	2	48"
AL	Allegheny Serviceberry	Amelanchier laevis	15-25'	1.5"Cal.	B&B	20"	15"	Multi-Stem	32"	16"	3	36"
CA	Hazelnut	Corylus americana	8-10'	3' HT	B&B	16"	12"	Shrub	28"	16"	2	30"
CW	Common Witchhazel	Hamamaelis virginiana	10-15'	3'HT	B&B	12"	9"	Shrub	28"	9"	1	36"
WP	Wild Plum	Prunus americana	20'	1.5"Cal.	B&B	20"	15"	Tree	32"	16"	3	36"

WOODLAND EDGE PRAIRIE PLANT PLUGS (Select 8-Forbs and 3-Grasses from the list below)	
Forbs	
Common Name	**Scientific Name**
Anise hyssop	Agastache foeniculum
Tall Thimbleweed	Anemone virginiana
Columbine	Aquilegia canadensis
False Boneset	Brickellia eupatorioides
Midland Shooting Star	Dodecatheon meadia
Purple Coneflower	Echinacea purpurea
Woody Betony	Pedicularis canadensis
Jacobs Ladder	Polemonium reptans
Solomon's Seal	Polygonatum commutatum
Black-eyed Susan	Rudbeckia hirta
Solomon's Plume	Smilacina racemosa
Golden Alexanders	Zizia aurea
Grasses	
Common Name	**Scientific Name**
Prairie Brome	Bromus kalmii
Side Oats Grama Grass	Bouteloua curtipendula
Bottlebrush Grass	Hystrix patula Bottlebrush
Little Bluestem	Schizachyrium scoparium

KEY NOTES:

1. TOP OF BOOSTER STATION 106 SHALL BE SEEDED WITH NO MOW TURF MIX.
2. DISTURBED AREAS ON TOP OF RESERVOIR, ALONG TERRACE, AND OVER NEW SANITARY PIPE SHALL BE RESTORED AND SEEDED WITH SUN TERRACE MIX.
3. DISTURBED AREAS ON RESERVOIR SLOPES AND ADJACENT TO BUILDING SHALL BE RESTORED AND SEEDED WITH NO MOW TURF MIX WITH ANNUAL RYE. IN ADDITION TO THE SEED MIX, PROVIDE WOODLAND EDGE PRAIRIE PLANT PLUGS AT 30–INCHES ON CENTER.
4. THIS AREA SHALL BE RESTORED WITH EROSION MAT AND GROUND COVER PLANTINGS. PROVIDE GROUND COVER PLANT PLUGS AT 24–INCHES ON CENTER.
5. PROVIDE 24 PLANT PLUGS OF WILD GINGER AND 24 2–YEAR OLD WOOD FERNS TO BE PLANTED ALONG SOUTH SIDE OF BOOSTER STATION INTERMIXED WITH THE WOODLAND EDGE PLANTS DESCRIBED IN KEY NOTE 4 ABOVE.
6. PROVIDE 24 2–YEAR OLD OSTRICH FERNS PLANTED ON 24–INCH CENTERS IN THIS AREA ABOVE THE BOOSTER STATION.

LANDSCAPING PLAN

0 5' 10' 20'

N

Madison Water Utility
Quality and Reliability since 1882

NO.	REVISIONS	DATE:
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LANDSCAPING PLAN

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

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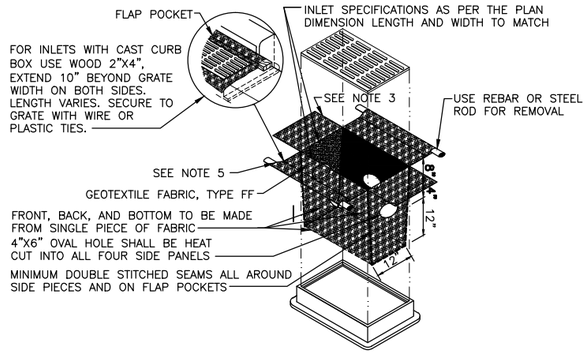
SHEET 11 C1.4



A C5.1 INLET PROTECTION – TYPE D
NO SCALE (CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

NOTES:

1. INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

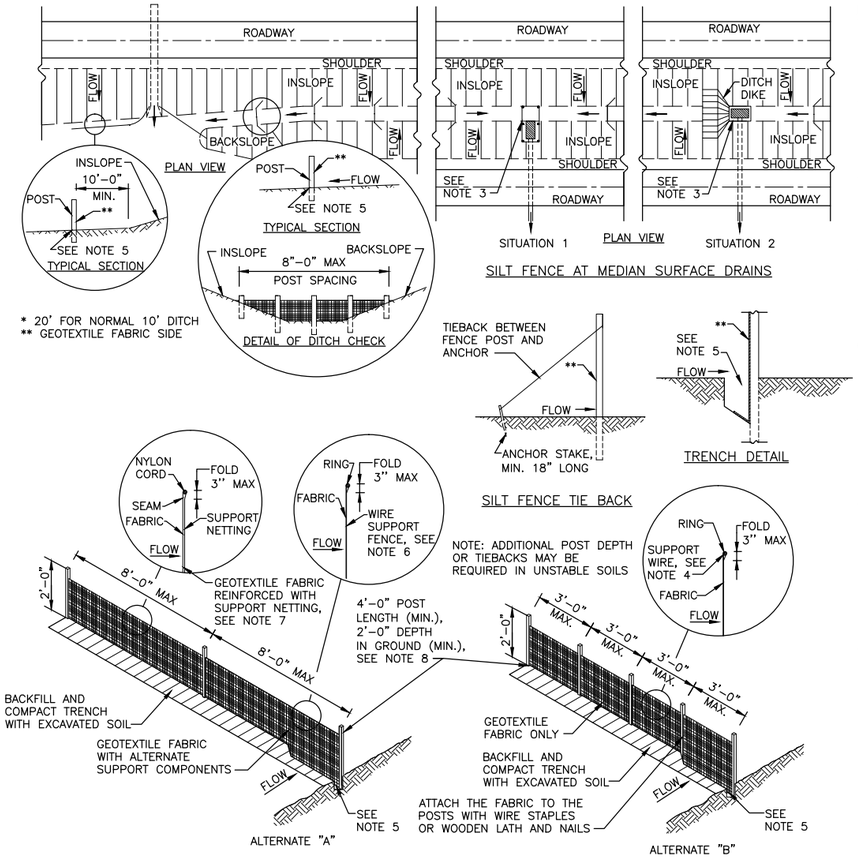
2. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENTS EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

3. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET, ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

4. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

5. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

6. FOR TYPE D, DO NOT INSTALL INLET PROTECTION TYPE D INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY, THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES, TO ACHIEVE THE 3" CLEARANCE.



SILT FENCE AT MEDIAN SURFACE DRAINS

TRENCH DETAIL

SILT FENCE TIE BACK

NOTE: ADDITIONAL POST DEPTH OR TIEBACKS MAY BE REQUIRED IN UNSTABLE SOILS

4'-0" POST LENGTH (MIN.), 2'-0" DEPTH IN GROUND (MIN.), SEE NOTE 8

B C5.1 SILT FENCE
NO SCALE

NOTES:
1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

2. WHEN POSSIBLE THE SILT FENCE SHALL BE CONSTRUCTED IN AN ARC OR HORSESHOE SHAPE, WITH THE ENDS POINTING UPSLOPE TO MAXIMIZE BOTH STRENGTH AND EFFECTIVENESS.

3. CROSS BRACE WITH 2"x4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

4. MINIMUM 14 GAGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C–C.

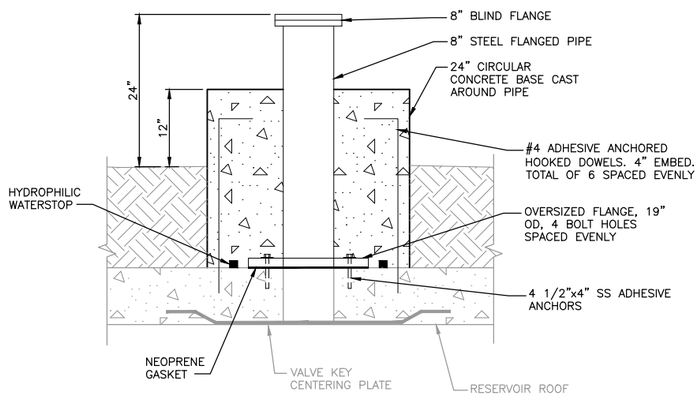
5. EXCAVATE TRENCH A MINIMUM OF 4" WIDE AND 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC, FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.

6. WIRE SUPPORT FENCE SHALL BE 14 GAGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C TO C.

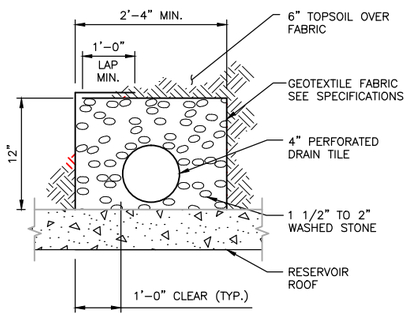
7. GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 1/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.

8. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.2 LBS/LINEAR FOOT WITHOUT ANCHORS, OR ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIAMETER, OR 2 1/2"x3 1/2", EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1 1/8"x1 1/8" OAK OR HICKORY.

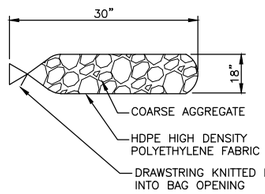
9. ALTERNATES "A" AND "B" ARE EQUAL AND EITHER MAY BE USED.



C C5.1 VALVE ACCESS
NO SCALE



D C5.1 DRAIN TILE
NO SCALE



COARSE AGGREGATE INFORMATION	
SIEVE SIZE	SIZE NO. AASHTO NO. 67 (1)
2 INCH (50 mm)	--
1 1/2 INCH (37.5 mm)	--
1 INCH (25.0 mm)	100
3/4 INCH (19.0 mm)	90–100
3/8 INCH (9.5 mm)	20–55
NO. 4 (4.75 mm)	0–10
NO. 8 (2.36 mm)	0–5

NOTES:

18" x 30" ROCK FILLED BAG SHALL BE COMPRISED OF THE FOLLOWING:

HDPE HIGH DENSITY POLYETHYLENE.
HDPE HIGH DENSITY POLYETHYLENE DRAWSTRING KNITTED DIRECTLY INTO BAG OPENING.
80% FABRIC CLOSURE WITH APPARENT OPENING SIZE NO LARGER THAN 1/8"x1/8".
ROLLED SEAM USING A MINIMUM OF 480 DENIER POLYESTER SEWING YARN FOR STRENGTH AND DURABILITY.

USE WELL GRADED COARSE AGGREGATE CONFORMING TO GRADATION REQUIREMENTS.
FILL BAG SO IT IS FULL ENOUGH TO PROPERLY TIE THE BAG SHUT.

E C5.1 STONE BAG
NO SCALE

Madison Water Utility
Quality and Reliability since 1882

NO.	REVISIONS	DATE:
1	ISSUED FOR BID DETAIL E/C5.1	05/10/13

SITE DETAILS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
1020.071

PROJECT MGR.
ANDY MULLENDORE

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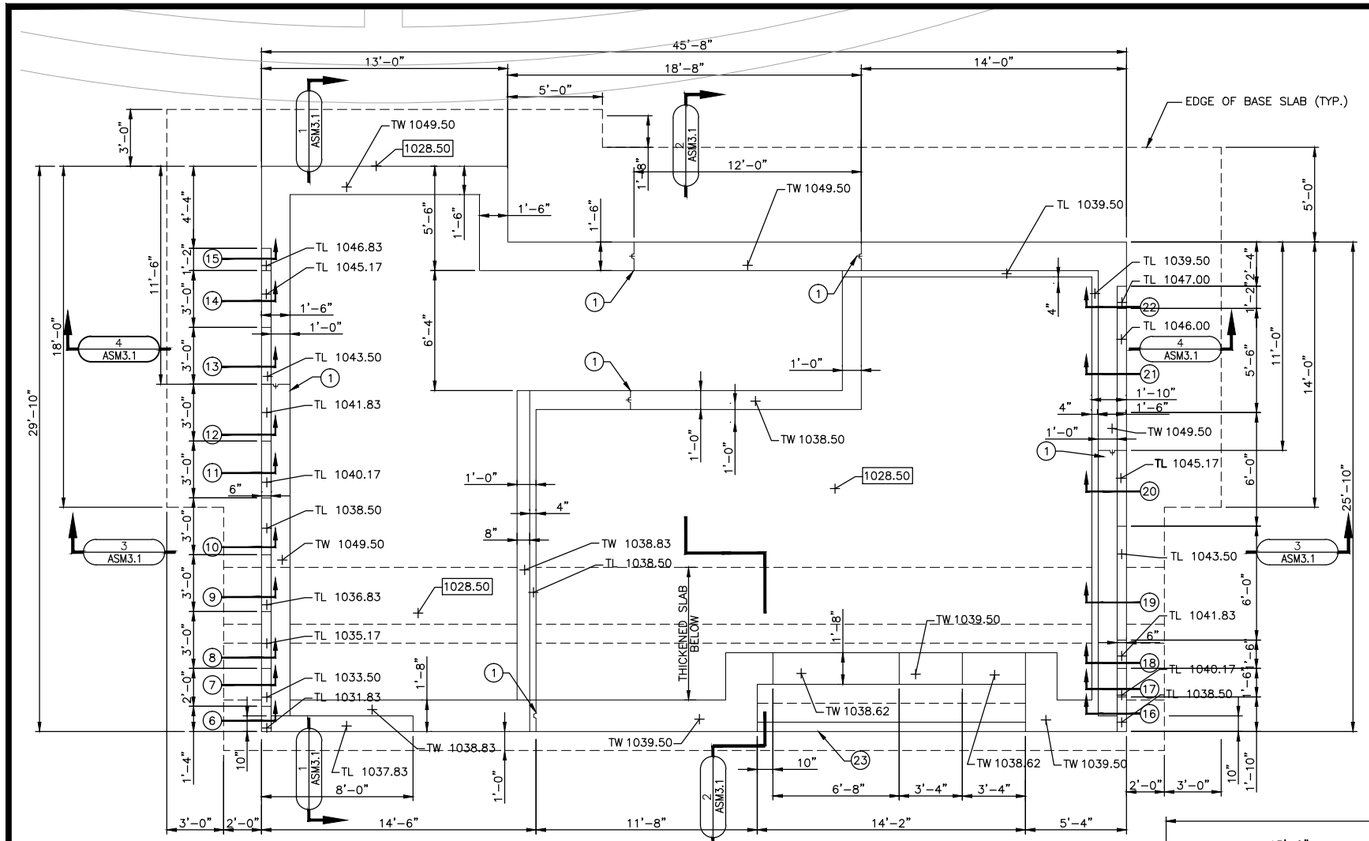
SHEET
12
C5.1

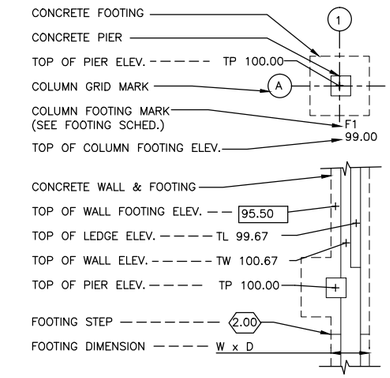


FOUNDATION PLAN

0 1' 2' 4' 8'

GENERAL NOTES:

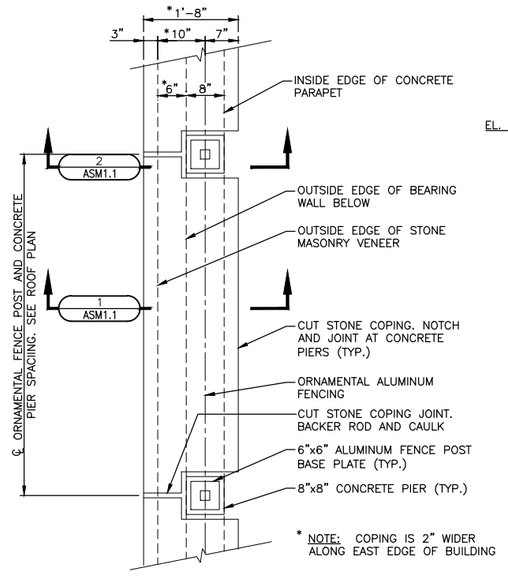
1. FOR FOUNDATION LEGEND, SEE A / ASM1.1.
2. FOR BACKFILL REQUIREMENTS, SEE SPECIFICATION SECTION 02222 AND A / ASM1.2.
3. SEE FLOOR PLAN FOR EMBEDDED HOIST HOOK AND MONORAIL ANCHORAGES REQUIRED IN THE ROOF SLAB.
4. RODENT SHIELDS AT ENDS OF 4" PDP SHALL BE A PVC GRATE COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. ATTACH TO END OF PIPE WITH A PIPE COUPLING AND SS SCREWS.



A / ASM1.1 FOUNDATION LEGEND
NO SCALE

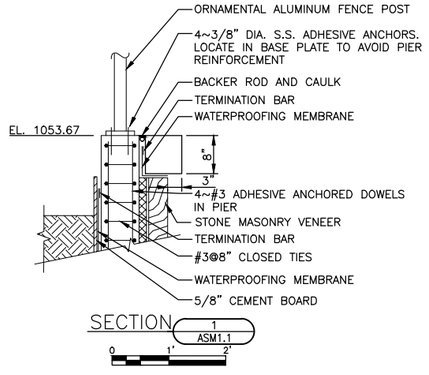
KEY NOTES:

1. VERTICAL CONSTRUCTION JOINT IN WALL E / ASM5.2.
2. HORIZONTAL CONSTRUCTION JOINT W/ PVC WATERSTOP IN ROOF SLAB E / ASM5.2.
3. CUT STONE COPING. SLOPE TOP OF COPING 1/2" AWAY FROM EXTERIOR OF BUILDING. SEE BUILDING SECTIONS FOR DETAILS.
4. SEE ENLARGED PLAN THIS SHEET B / ASM1.1
5. 4" PDP. PLACE DIRECTLY ON TOP OF 2" BOARD INSULATION. SLOPE AWAY FROM STRUCTURE TO SUITABLE DRAINAGE. DAYLIGHT END OF PIPE AND ATTACH RODENT SHIELD.
6. 1 / ASM3.2 (MASONRY LEDGE DETAIL).
7. 2 / ASM3.2 (MASONRY LEDGE DETAIL).
8. 3 / ASM3.2 (MASONRY LEDGE DETAIL).
9. 4 / ASM3.2 (MASONRY LEDGE DETAIL).
10. 5 / ASM3.2 (MASONRY LEDGE DETAIL).
11. 6 / ASM3.2 (MASONRY LEDGE DETAIL).
12. 7 / ASM3.2 (MASONRY LEDGE DETAIL).
13. 8 / ASM3.2 (MASONRY LEDGE DETAIL).
14. 9 / ASM3.2 (MASONRY LEDGE DETAIL).
15. 10 / ASM3.2 (MASONRY LEDGE DETAIL).
16. 11 / ASM3.2 (MASONRY LEDGE DETAIL).
17. 12 / ASM3.2 (MASONRY LEDGE DETAIL).
18. 13 / ASM3.2 (MASONRY LEDGE DETAIL).
19. 14 / ASM3.2 (MASONRY LEDGE DETAIL).
20. 15 / ASM3.2 (MASONRY LEDGE DETAIL).
21. 16 / ASM3.2 (MASONRY LEDGE DETAIL).
22. 17 / ASM3.2 (MASONRY LEDGE DETAI
23. CONCRETE STOOP K / ASM5.2.

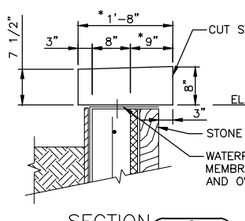


* NOTE: COPING IS 2" WIDER ALONG EAST EDGE OF BUILDING

B / ASM1.1 ENLARGED PLAN
0 1' 2'

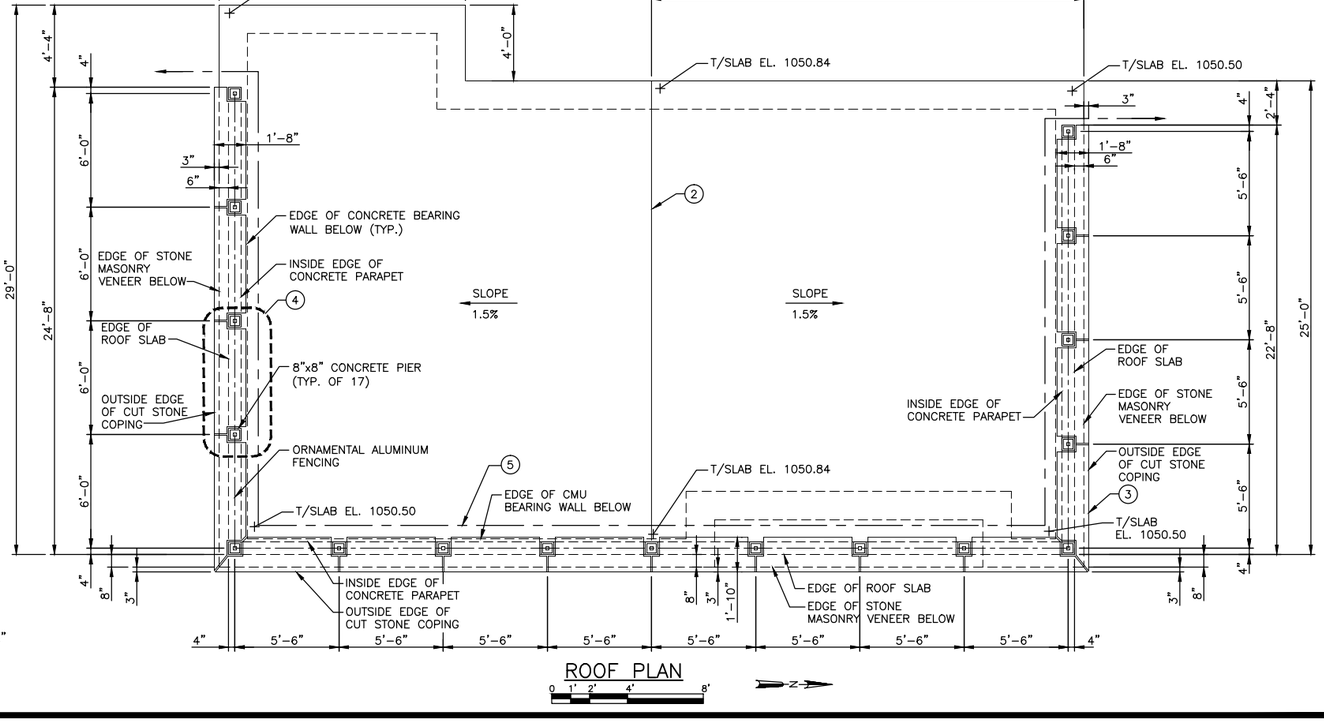


SECTION 1 / ASM1.1
0 1' 2'



SECTION 2 / ASM1.1
0 1' 2'

* NOTE: COPING IS 2" WIDER ALONG EAST EDGE OF BUILDING



ROOF PLAN
0 1' 2' 4' 8'

Madison Water Utility
Quality and Reliability since 1882

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1	ISSUED FOR BID	05/10/13

FOUNDATION PLAN AND ROOF PLAN
BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071
PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET 13 ASM1.1

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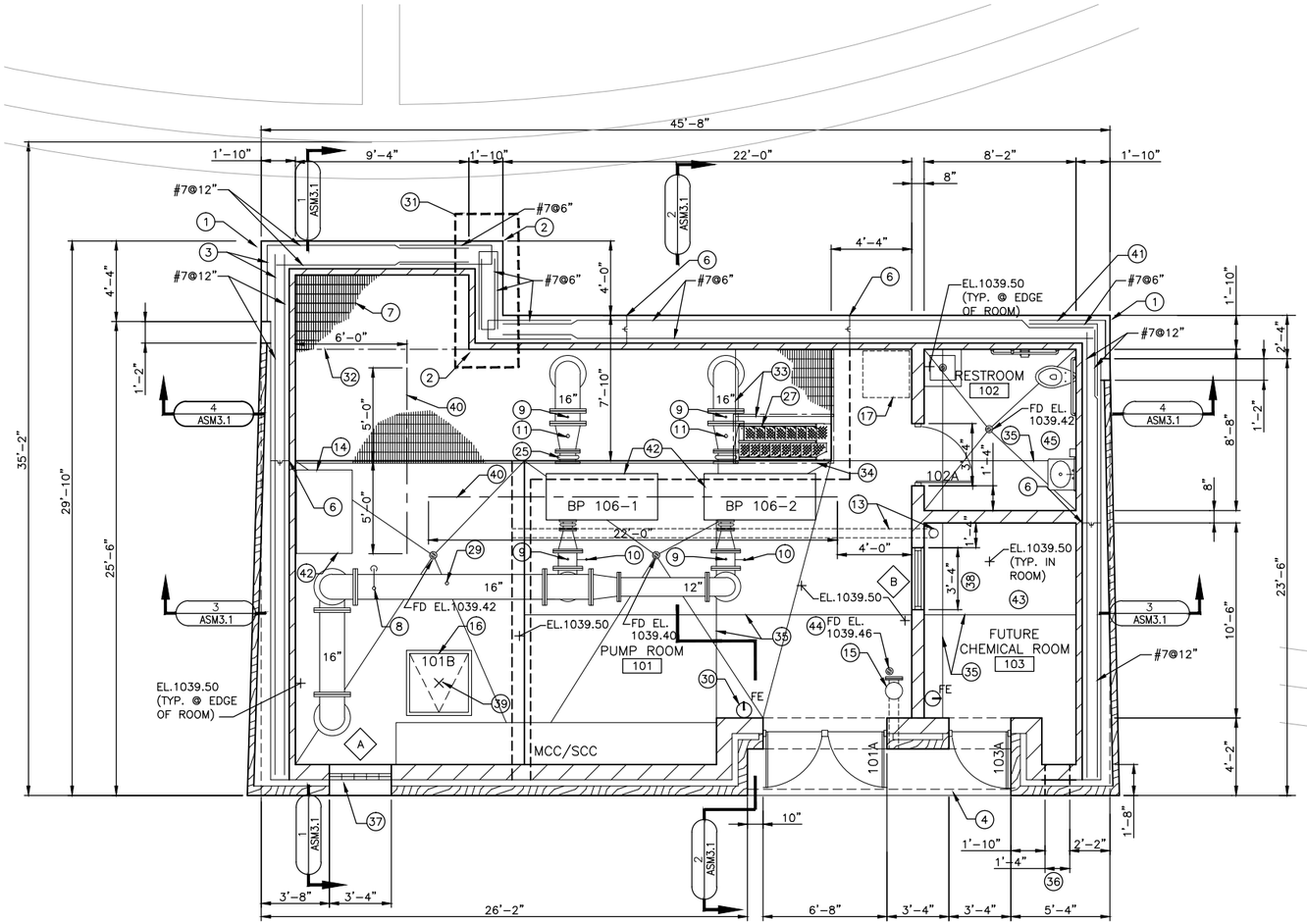
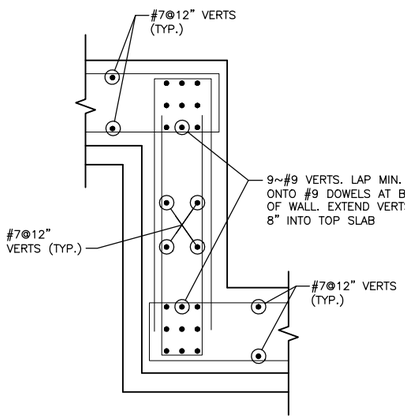


FLOOR PLAN

0 1' 2' 4' 8'

M ASM5.2



A ASM1.2 ENLARGED WALL PLAN

0 1' 2'

KEY NOTES (CONTINUED):

(39) CHAIN HOIST HOOK IN ROOF SLAB ABOVE. CENTER OVER FLOOR DOOR OPENING. 1-TON CAPACITY (J ASM5.3).

(40) 2-TON S10x25.4 MONORAIL. PROVIDE SUPPORTS 10'-0" O.C. MAX. AND 1'-0" FROM ENDS PER (K ASM5.3). PROVIDE BOLTED 3"x3"x1/4" ANGLE TROLLEY STOPS AT ENDS OF BEAM. PAINT PER SPECIFICATIONS. CENTER 22'-0" MONORAIL OVER BOOSTER PUMP LIFTING HOOKS.

(41) #7@6" BAR LOCATION BELOW EL. 1047.00

(42) CONCRETE EQUIPMENT PAD (J ASM5.2).

(43) ROOM SHALL HAVE 1-HOUR FIRE RATING.

(44) LOCALLY SLOPE FLOOR SLAB (±2'-0" EACH DIRECTION) TO FLOOR DRAIN.

(45) FOR ENLARGED RESTROOM PLAN, SEE (A ASM6.1).

KEY NOTES:

(1) PROVIDE FOUNDATION WALL CORNER REINFORCEMENT PER (G ASM5.2).

(2) PROVIDE FOUNDATION WALL CORNER REINFORCEMENT PER (F ASM5.2).

(3) PROVIDE 3'-8" NON-CONTACT LAP SPLICE IN WALL REINFORCEMENT AT MASONRY LEDGE LOCATIONS.

(4) CONCRETE STOOP (K ASM5.2).

(5) PROVIDE FROST WALL FOUNDATION REINFORCEMENT PER (2 ASM3.1). ADHESIVE ANCHOR HORIZONTAL FROST WALL FOUNDATION REINFORCING INTO LOWER LEVEL BASEMENT WALL.

(6) CONSTRUCTION JOINT (E ASM5.2).

(7) ALUMINUM GRATING (D ASM5.3).

(8) 2" TAP FOR BALL VALVE AND AIR RELEASE VALVE.

(9) 1" TAP FOR PRESSURE GAUGE.

(10) 1/2" TAP FOR SMOOTH END SAMPLE TAP. CENTER SAMPLE TAP OVER HUB DRAIN.

(11) 2" TAP FOR VACUUM PRIMING SYSTEM.

(12) 1" TAP FOR PRESSURE TRANSDUCER AND CHLORINE ANALYZER.

(13) 6" SCHEDULE 80 PVC 90° LONG RADIUS ELBOW. 6" SCHEDULE 80 PVC ROUTED UNDER PUMP ROOM FLOOR SLAB FOR FUTURE CHLORINE CARRIER TUBING. PROVIDE PLUGS ON EACH END. ROUTE UNDERNEATH ALL WASTE PIPING.

(14) VACUUM PRIMING SYSTEM. ROUTE DISCHARGE TO CLOSEST HUB DRAIN (G P5.1).

(15) 6" LINE FOR WATER SERVICE AND FUTURE FIRE PROTECTION.

(16) FLOOR DOOR.

(17) FUTURE WATER HEATER.

(18) 16" MAGNETIC METER.

(19) 16" ALTITUDE VALVE.

(20) 16" SWING CHECK VALVE.

(21) 16" PIPE COUPLINGS WITH TIE RODS.

(22) 16" BUTTERFLY VALVE (TYP.).

(23) 16" RESTRAINED FLANGE ADAPTER (TYP.).

(24) 12" RESTRAINED FLANGE ADAPTER (TYP.).

(25) FLEXIBLE RUBBER COUPLING (TYP.).

(26) CUSTOM-FABRICATED STEEL SPOOL AND REDUCER FITTING. BOTH ENDS SHALL BE FLANGED.

(27) ALTERNATING-TREAD STAIRS.

(28) 18" MJ x FL WALL PIPE (TYP.).

(29) 1 1/2" TAP FOR FAN COIL UNIT WATER SUPPLY AND RETURN.

(30) FIRE EXTINGUISHER IN BRACKET (TYP.).

(31) SEE ENLARGED PLAN THIS SHEET (A ASM1.2).

(32) ALUMINUM GRATING SUPPORT AACS 8x5.79. PROVIDE 3/8" END PLATES AND ANCHOR TO WALLS WITH 2~5/8" DIA. S.S. EXPANSION ANCHORS EACH END.

(33) ALUMINUM GRATING SUPPORT AACS 4x2.33. PROVIDE 3/8" END PLATES AND ANCHOR TO WALLS WITH 2~5/8" DIA. S.S. EXPANSION ANCHORS EACH END.

(34) ALUMINUM RAILING (B ASM5.3) AND SWING GATE (E ASM5.3) AROUND STAIR OPENING.

(35) SLAB SAWN JOINT (B ASM5.2).

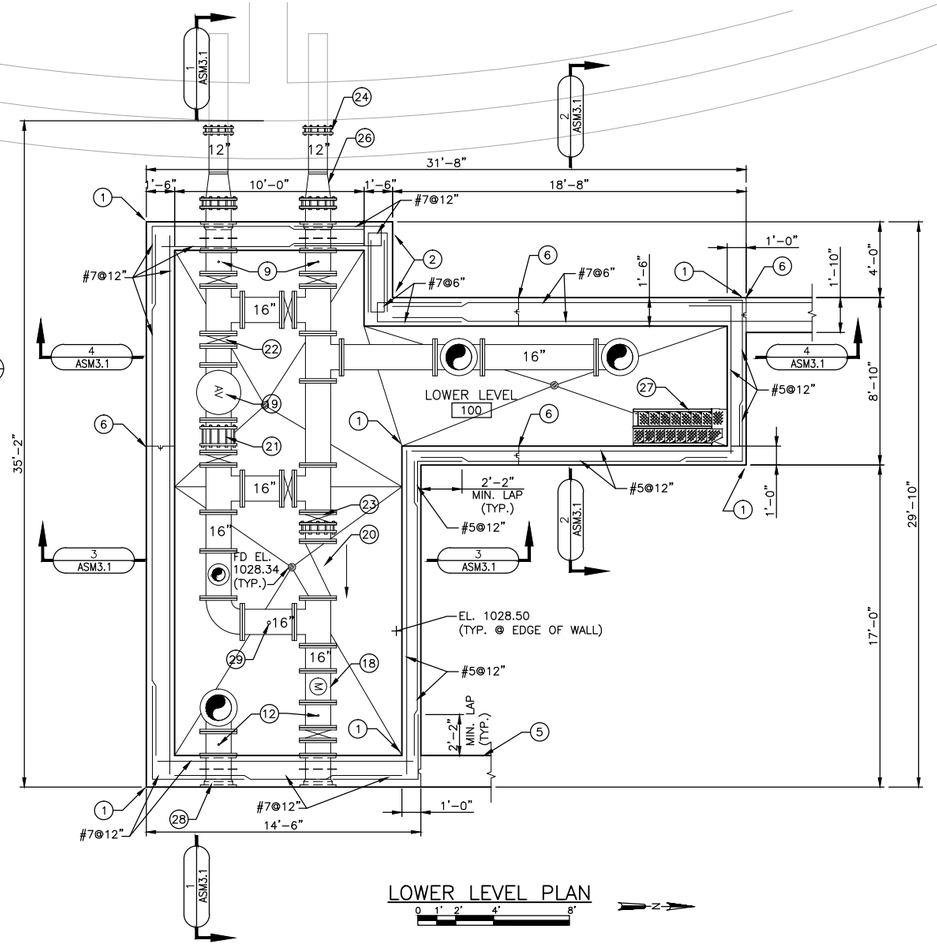
(36) HVAC WALL PENETRATION. PROVIDE W-1 LINTEL (M ASM5.2)

(37) EXTERIOR GLASS BLOCK WINDOW.

(38) INTERIOR FIRE-RATED WINDOW.

GENERAL NOTES:

1. PROVIDE MINIMUM 3'-8" LAPS FOR #7 HORIZONTAL BARS AND MINIMUM 2'-11" LAPS FOR #7 VERTICAL BARS UNLESS SHOWN OR NOTED OTHERWISE.
2. PROVIDE ADDITIONAL REINFORCING AT WALL AND BASE SLAB PIPE PENETRATIONS PER (D ASM5.2).
3. FOR BACKFILL REQUIREMENTS, SEE SPECIFICATION SECTION 02222 AND (A ASM5.2).
4. SEE ARCHITECTURAL AND STRUCTURAL SCHEDULES ON SHEET ASM6.1.
5. PROVIDE #4@24" VERTICAL MASONRY REINFORCING CENTERED IN EXTERIOR WALL CMU BLOCK. PROVIDE BARS AT WALL CORNERS AND OPENING EDGES.
6. LAP MASONRY WALL REINFORCING 2'-0" MIN. GROUT CORES AT REINFORCING SOLID. PROVIDE #4 x 2'-0" LONG ADHESIVE ANCHORED DOWELS AT SAME SPACING AS WALL REINFORCING AND EMBED 4" INTO FOUNDATION WALL. EXTEND WALL REINFORCING 8" INTO CIP ROOF SLAB ABOVE TOP OF WALL.
7. PROVIDE LINTELS AT ALL DOOR, WINDOW AND HVAC OPENINGS IN CMU WALLS AS NOTED ON THE DRAWINGS AND SHOWN IN THE SCHEDULES.
8. ELEVATED FLOOR AND ROOF SLAB MUST BE IN-PLACE PRIOR TO BACKFILLING ALONG WEST AND SOUTH WALLS.



LOWER LEVEL PLAN

0 1' 2' 4' 8'

Madison Water Utility
Quality and Reliability since 1882

NO.	REVISIONS	DATE:
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FLOOR PLANS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

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SHEET 14 ASM1.2

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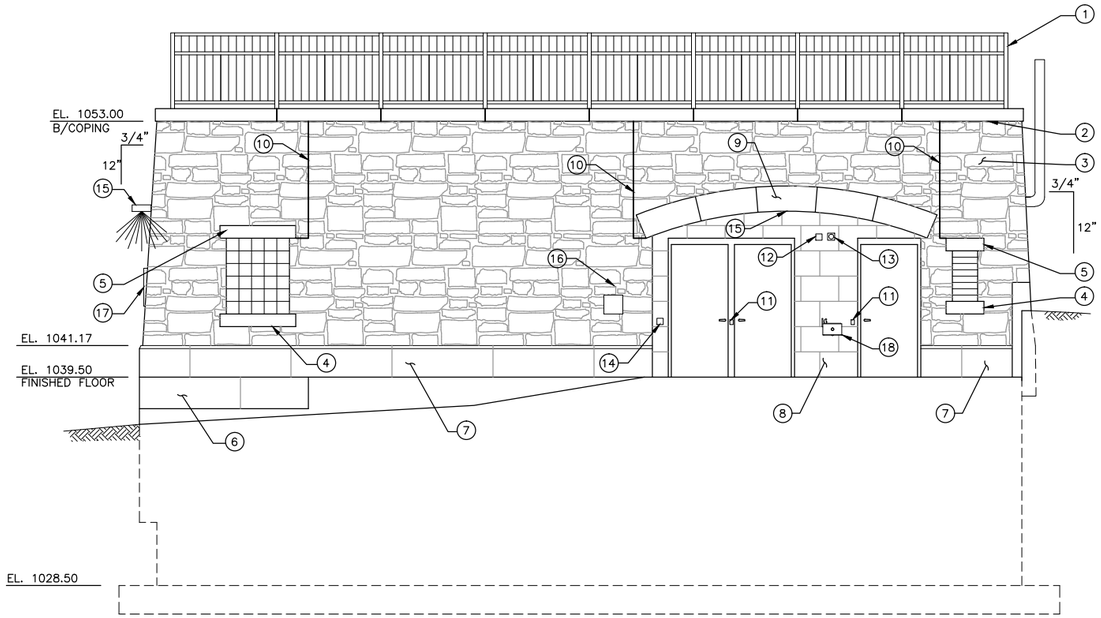
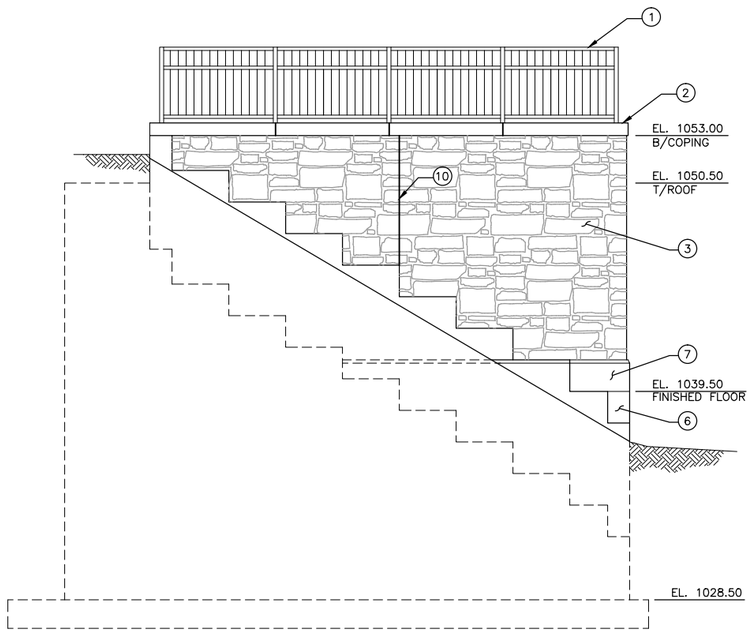


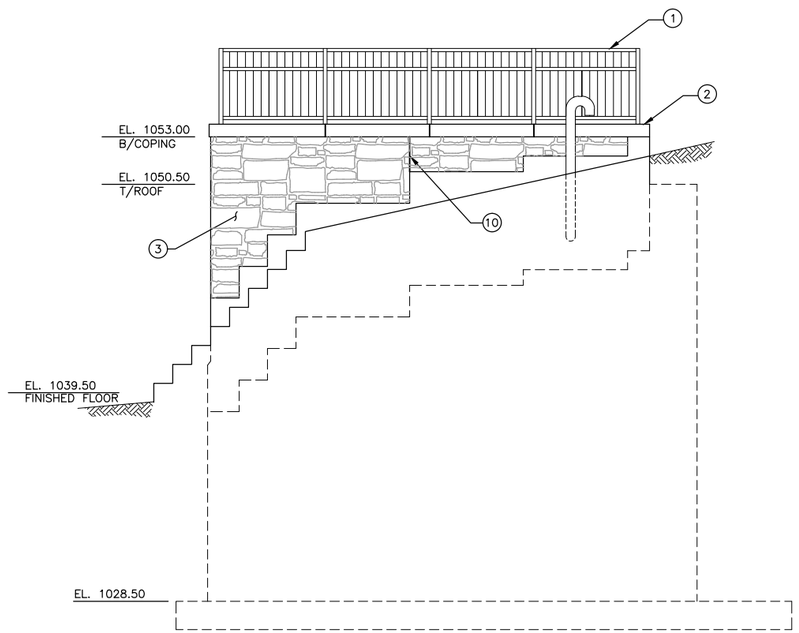
EAST ELEVATION

0 1' 2' 4' 8'



SOUTH ELEVATION

0 1' 2' 4' 8'



NORTH ELEVATION

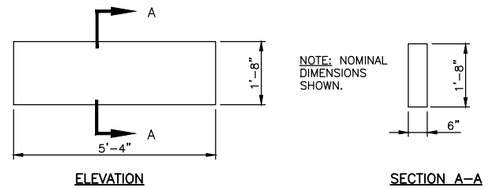
0 1' 2' 4' 8'

GENERAL NOTES:

1. APPLY ANTI-GRAFFITI COATING TO ALL EXTERIOR SURFACES OF STONE VENEER AND CUT STONE.

KEY NOTES:

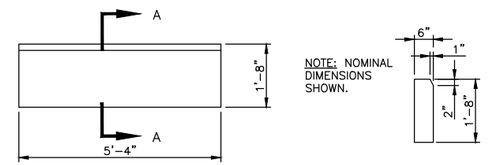
1. ORNAMENTAL ALUMINUM FENCING.
2. CUT STONE COPING PER B/ASM1.1 AND 2/ASM1.1.
3. STONE VENEER.
4. CUT STONE SILL PER A/ASM5.3.
5. CUT STONE HEADER PER A/ASM5.3.
6. CUT STONE SILL TYPE 1 A/ASM2.1.
7. CUT STONE SILL TYPE 2 B/ASM2.1.
8. CUT STONE VENEER C/ASM2.1.
9. CUT STONE HEADER PER C/ASM5.1.
10. MASONRY CONTROL JOINT H/ASM5.3.
11. CARD READER.
12. FIRE ALARM SYSTEM HORN/STROBE.
13. FIRE ALARM SYSTEM ALARM BELL.
14. FIRE DEPARTMENT KNOX BOX.
15. LIGHT FIXTURE.
16. TELEPHONE DEMARC.
17. GENERATOR JUNCTION BOX.
18. DRINKING FOUNTAIN.



ELEVATION SECTION A-A

A/ASM2.1 CUT STONE TYPE 1

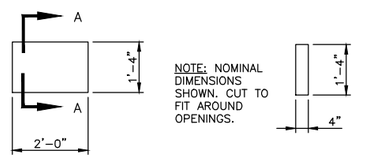
0 1' 2' 4'



ELEVATION SECTION A-A

B/ASM2.1 CUT STONE TYPE 2

0 1' 2' 4'



ELEVATION SECTION A-A

C/ASM2.1 CUT STONE VENEER

0 1' 2' 4'

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BUILDING ELEVATIONS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

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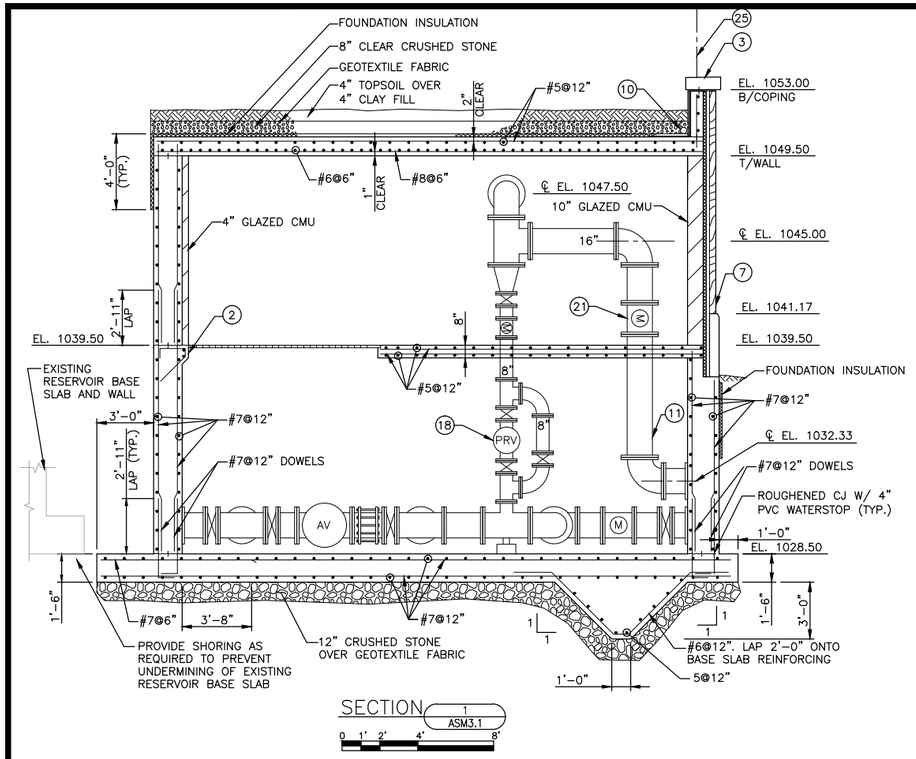
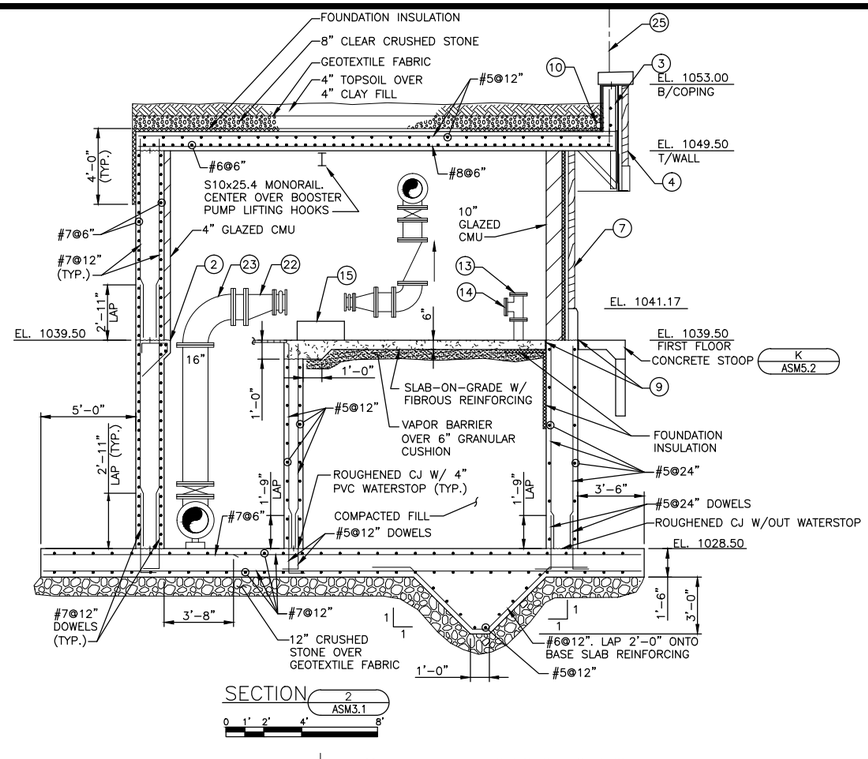
SHEET 15 ASM2.1



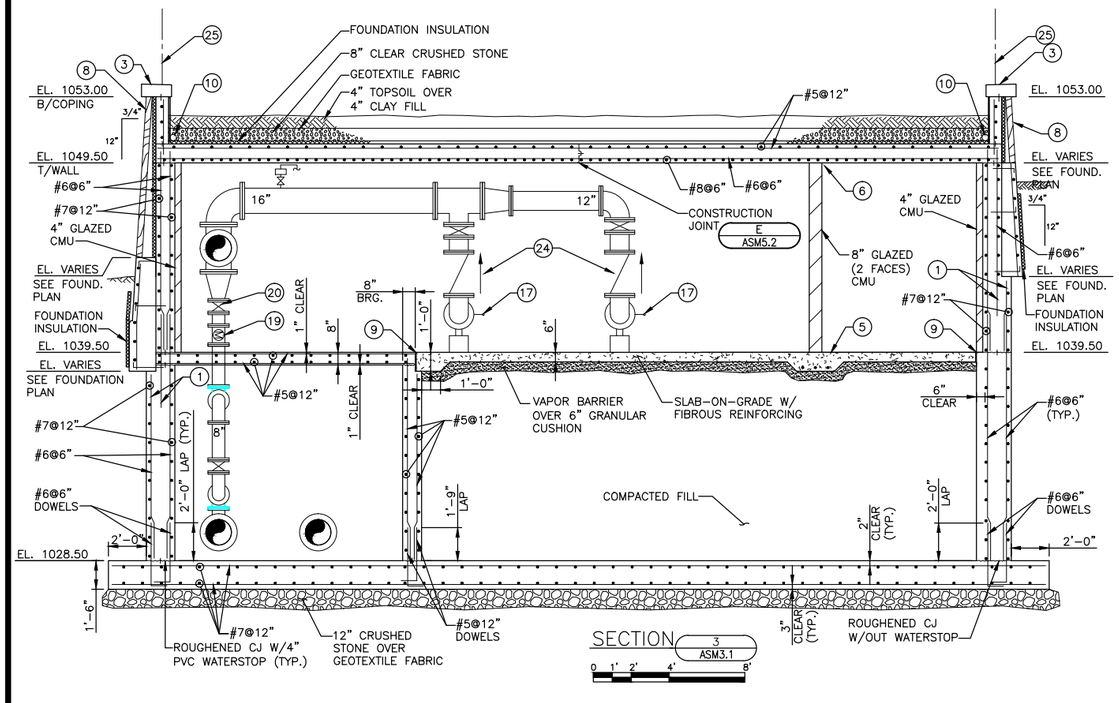


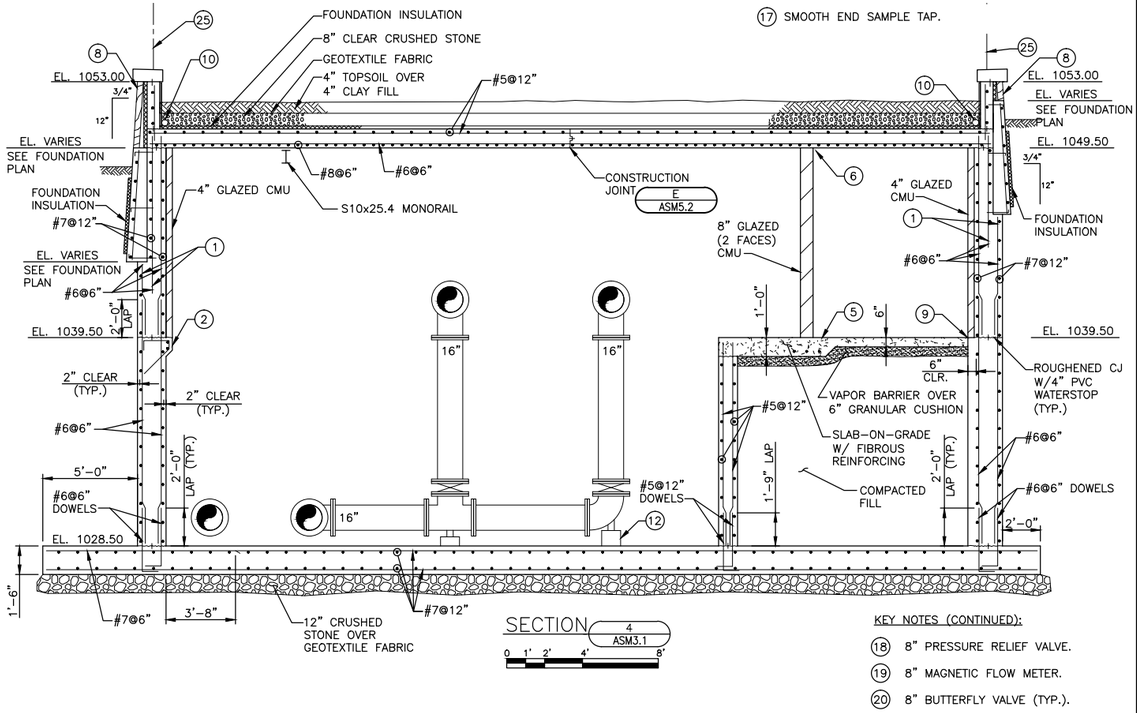
GENERAL NOTES:

1. APPLY BELOW-GRADE WATERPROOFING MEMBRANE SYSTEM TO THE EXTERIOR SIDE OF ALL BELOW-GRADE WALLS, TO THE TOP SURFACE OF THE ROOF SLAB, AND TO THE INSIDE AND TOP SURFACE OF THE CONCRETE PARAPETS, AS SPECIFIED.
2. ELEVATED FLOOR AND ROOF SLAB SHALL BE IN-PLACE PRIOR TO BACKFILLING ALONG SOUTH AND WEST WALLS.

KEY NOTES:

1. PROVIDE 2'-0" NON-CONTACT LAP SPLICE IN #6 VERTICAL REINFORCING AT BRICK LEDGE LOCATIONS. PROVIDE 2'-11" NON-CONTACT LAP SPLICE IN #7 HORIZONTAL REINFORCING AT BRICK LEDGE LOCATIONS.
2. CMU CORBEL (B / ASM5.1).
3. CONCRETE PARAPET (A / ASM5.1).
4. OVERHANG (C / ASM5.1).
5. THICKENED SLAB AT INTERIOR CMU WALLS (L / ASM5.2).
6. PROVIDE BRACING AT TOP OF CMU WALL PER (L / ASM5.2).
7. FOR CMU EXTERIOR WALL CONSTRUCTION, SEE (A / ASM5.1).
8. FOR CIP CONCRETE WALL WITH ROUGH STONE VENEER CONSTRUCTION, SEE (A / ASM3.2).
9. 1/2" EXPANSION MATERIAL. HOLD DOWN 1/2" AND CAULK.
10. 4" PERFORATED DRAINAGE PIPE.
11. 1" TAP WITH PLUG FOR FUTURE CHLORINE.
12. BASE ELBOW WITH CONCRETE PIPE BASE (TYP.).
13. 6"x6"x6" TEE WITH BLIND FLANGES.
14. 2" TAP FOR WATER SERVICE.
15. CONCRETE PUMP BASE. PUMP DISCHARGE CENTERLINE TO BE SET AT EL. 1041.50. PUMP BASE HEIGHT AND PUMP SUCTION CENTERLINE TO BE FINALIZED AFTER PUMP SELECTION.
16. 2" BALL VALVE AND AIR RELEASE VALVE. ROUTE DISCHARGE TO 24" ABOVE HUB DRAIN WITH #24 SS MESH SCREENED END.
17. SMOOTH END SAMPLE TAP.





KEY NOTES (CONTINUED):

18. 8" PRESSURE RELIEF VALVE.
19. 8" MAGNETIC FLOW METER.
20. 8" BUTTERFLY VALVE (TYP.).
21. 16" MAGNETIC FLOW METER.
22. 16"x10" ECCENTRIC REDUCER.
23. 16" 90° LONG RADIUS ELBOW.
24. 12" DUAL DISC CHECK VALVE.
25. ORNAMENTAL ALUMINUM FENCE.

Madison Water Utility
Quality and Reliability since 1882

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BUILDING SECTIONS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

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SHEET 16 ASM3.1

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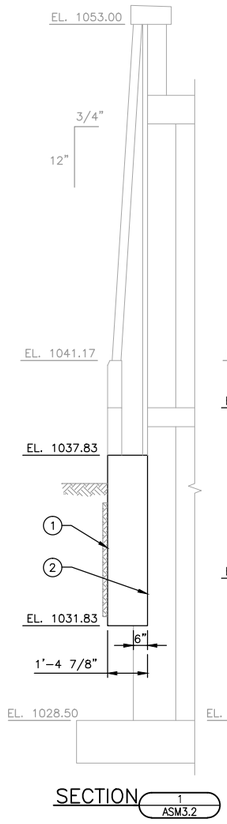
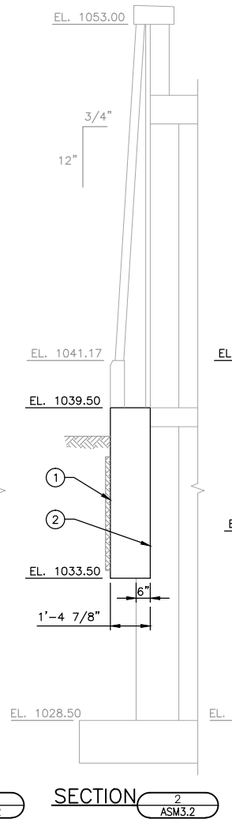
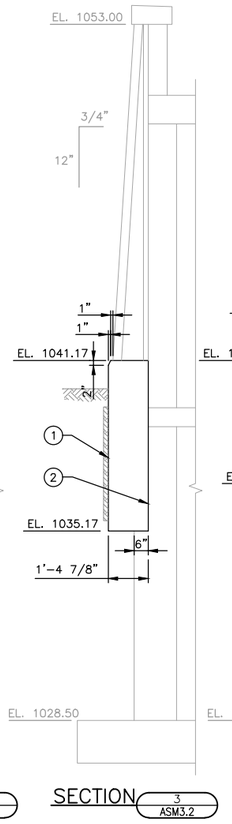


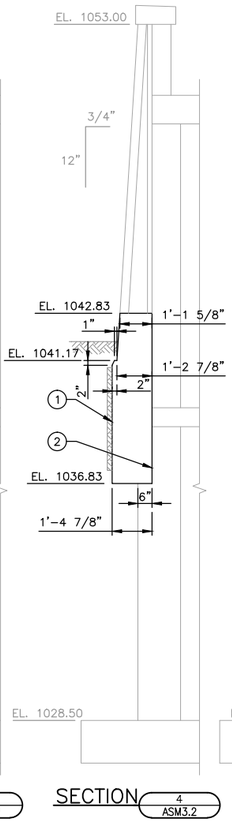
SECTION 1 ASM3.2



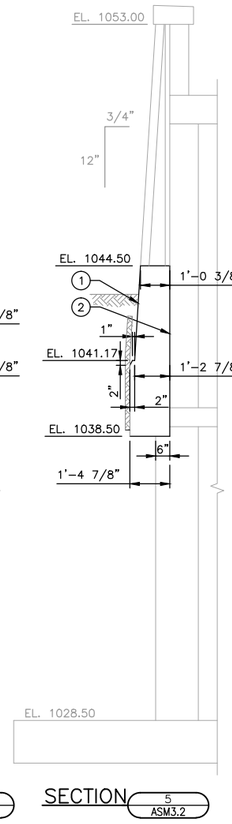
SECTION 2 ASM3.2



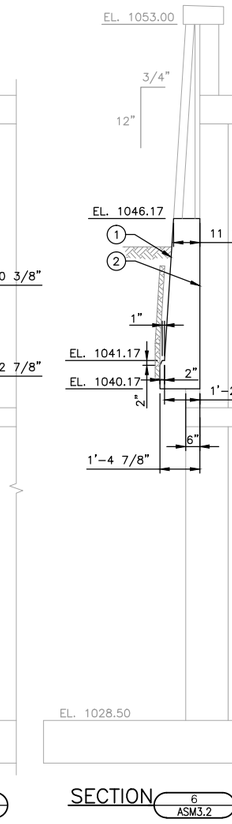
SECTION 3 ASM3.2



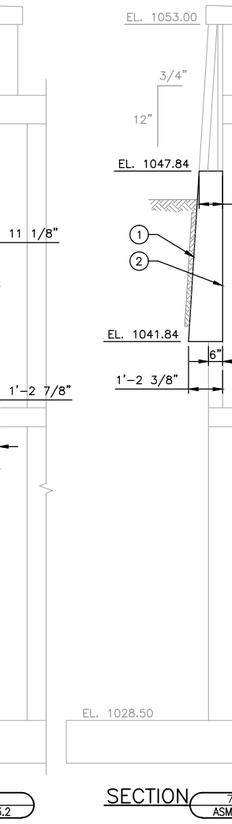
SECTION 4 ASM3.2



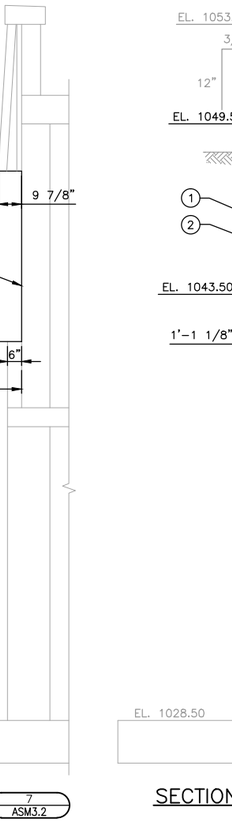
SECTION 5 ASM3.2



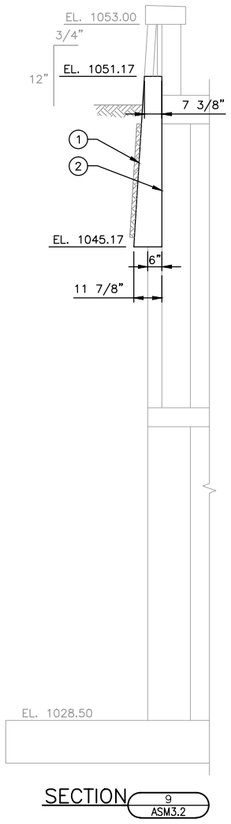
SECTION 6 ASM3.2



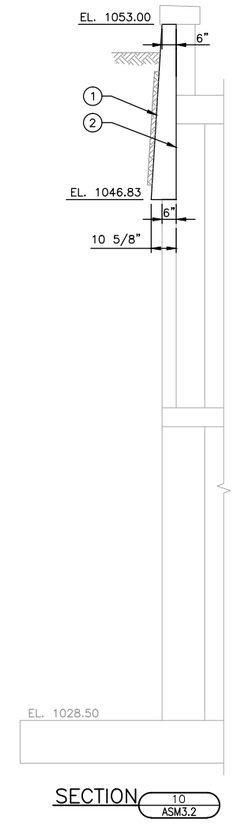
SECTION 7 ASM3.2



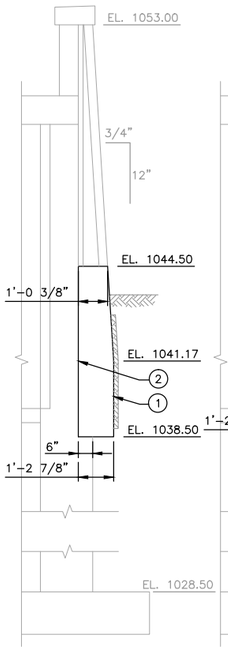
SECTION 8 ASM3.2



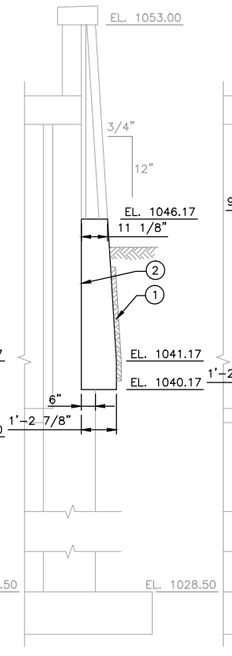
SECTION 9 ASM3.2



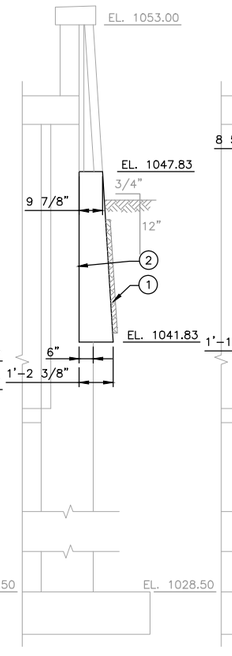
SECTION 10 ASM3.2



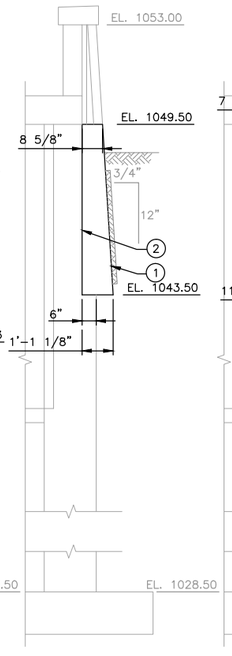
SECTION 11 ASM3.2



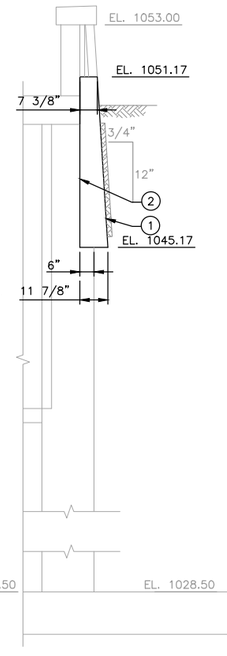
SECTION 12 ASM3.2



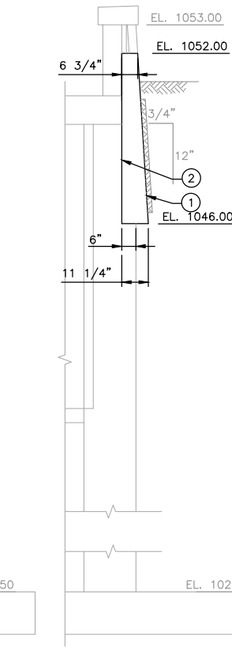
SECTION 13 ASM3.2



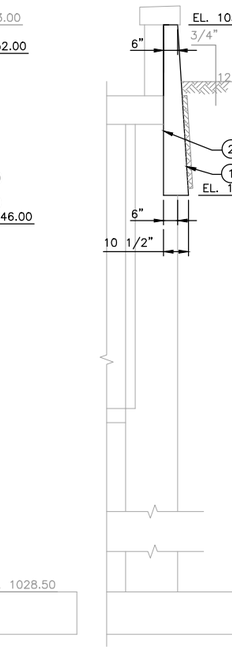
SECTION 14 ASM3.2



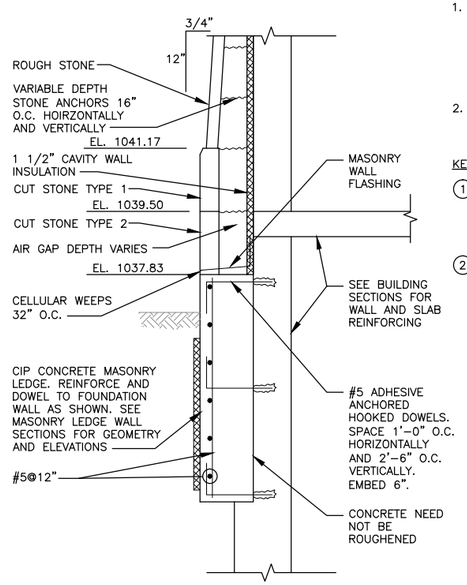
SECTION 15 ASM3.2



SECTION 16 ASM3.2



SECTION 17 ASM3.2



A ASM3.2 TYPICAL CONCRETE WALL SECTION

0 1' 2' 4'

GENERAL NOTES:

1. WALL CONSTRUCTION OTHER THAN MASONRY LEDGES SCREENED IN SECTIONS 1–17 FOR CLARITY. SEE BUILDING SECTIONS FOR WALL CONSTRUCTION OTHER THAN MASONRY LEDGES.
2. SEE SHEET ASM2.1 FOR STONE TYPES.

KEY NOTES:

1. CIP CONCRETE MASONRY LEDGE. REINFORCE AND DOWEL TO FOUNDATION WALL PER A ASM3.2.
2. FOUNDATION WALL CONCRETE COMMON WITH CIP CONCRETE MASONRY LEDGE NEED NOT BE ROUGHENED.

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MASONRY LEDGE SECTIONS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

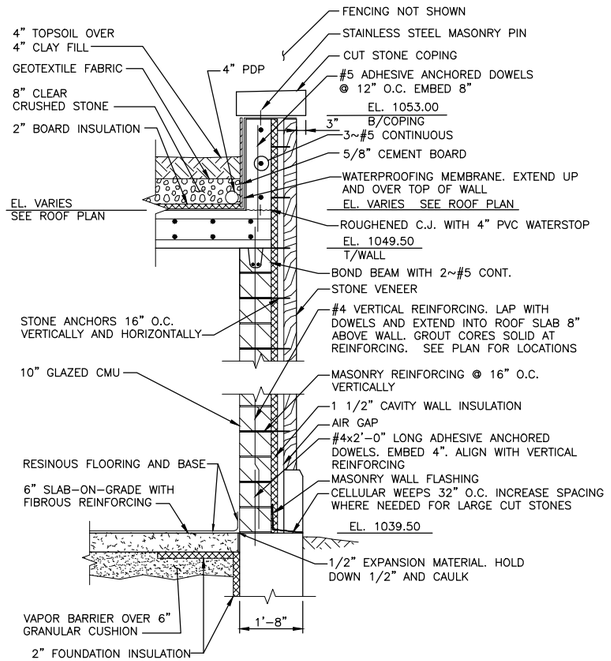
JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

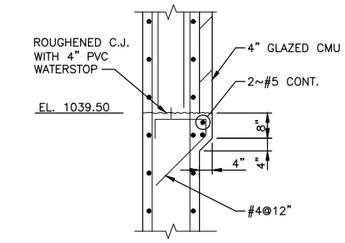
SHEET 17 ASM3.2

File: S:\MAD\1000--1099\1020\071\Acad\Drawings\ASM3.2.dwg Time: May 13, 2013 – 2:55pm



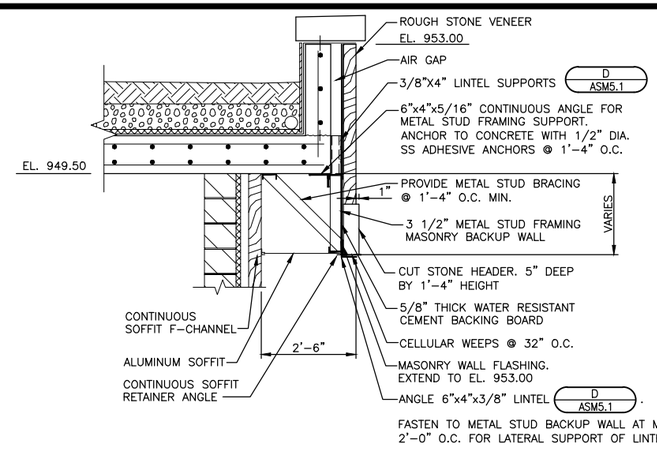
A ASM5.1 TYPICAL MASONRY WALL SECTION

0 1' 2' 4'



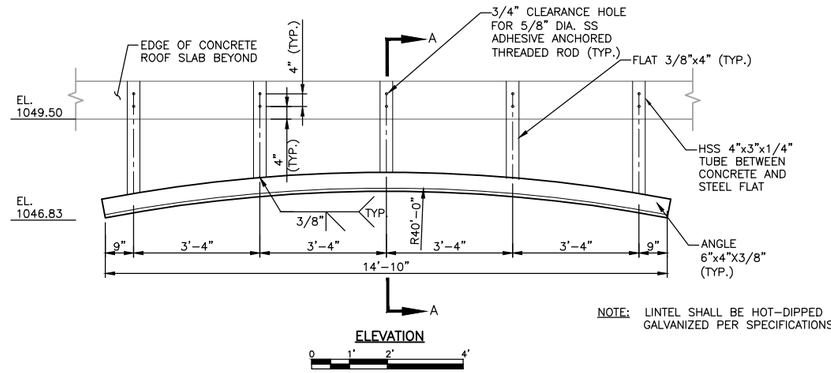
B ASM5.1 4" CMU CORBEL DETAIL

0 1' 2' 4'

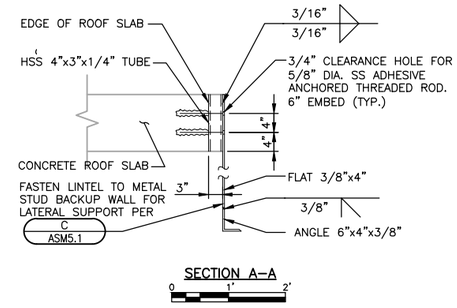


C ASM5.1 TYPICAL OVERHANG DETAIL

0 1' 2' 4'



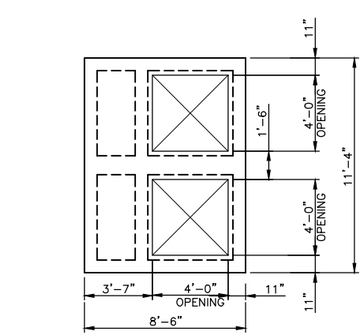
NOTE: LINTEL SHALL BE HOT-DIPPED GALVANIZED PER SPECIFICATIONS



SECTION A-A

0 1' 2'

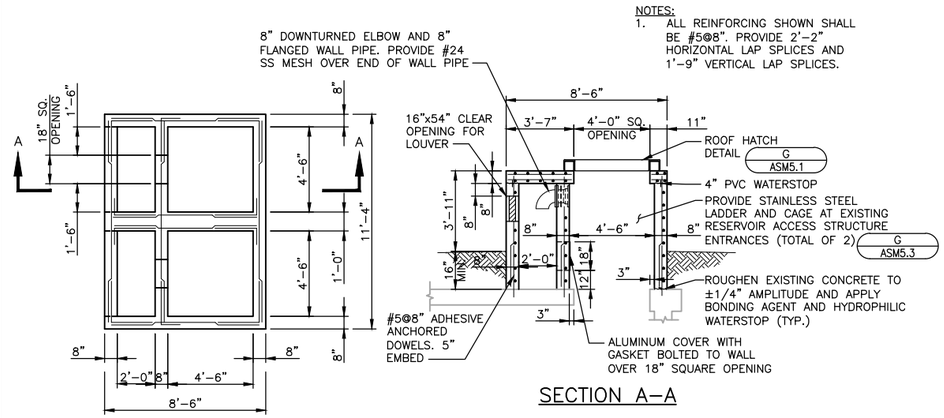
D ASM5.1 LINTEL DETAILS



E ASM5.1 RESERVOIR ACCESS STRUCTURE ROOF SLAB

0 1' 2' 4' 8'

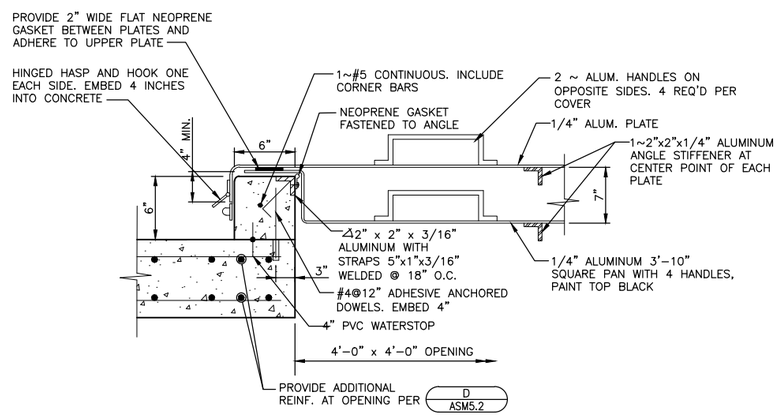
NOTES:
1. ALL REINFORCING SHOWN SHALL BE #5@8". PROVIDE 2'-2" HORIZONTAL LAP SPLICES AND 1'-9" VERTICAL LAP SPLICES.



SECTION A-A

F ASM5.1 RESERVOIR ACCESS STRUCTURE

0 1' 2' 4' 8'



G ASM5.1 ROOF HATCH DETAIL
NO SCALE

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WALL SECTION AND DETAILS
BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

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PROJECT MGR. ANDY MULLENDORE

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SHEET 18
ASM5.1

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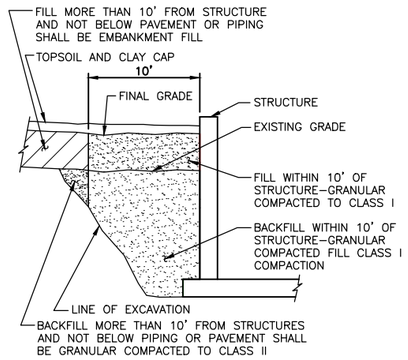
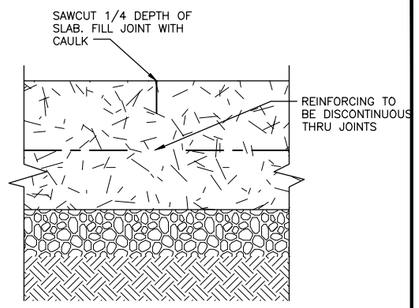
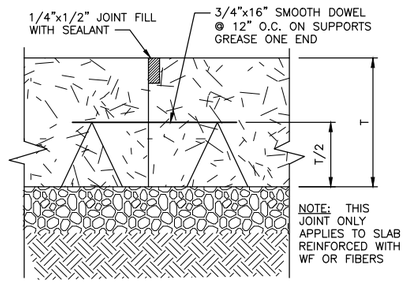


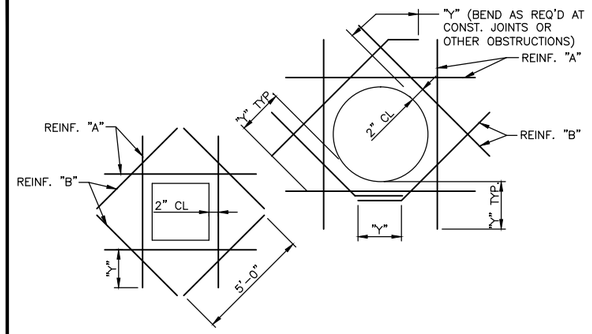
A ASM5.2 FILL & BACKFILL REQUIREMENTS
NO SCALE



B ASM5.2 TYPICAL SLAB SAWN JOINT
NO SCALE



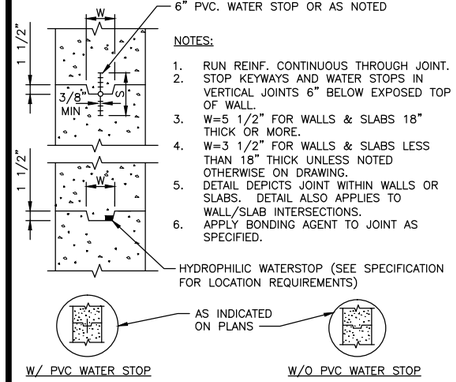
C ASM5.2 SLAB ON GRADE JOINT
NO SCALE



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 ℄ 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.

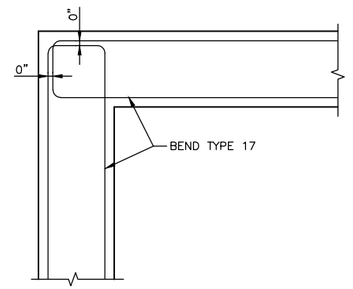
D ASM5.2 REINFORCEMENT AT CONCRETE OPENINGS
NO SCALE



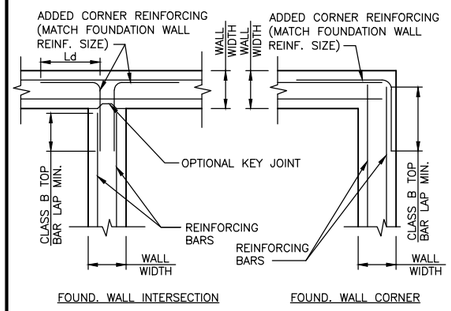
NOTES:

1. RUN REINF. CONTINUOUS THROUGH JOINT. STOP KEYWAYS AND WATER STOPS IN VERTICAL JOINTS 6" BELOW EXPOSED TOP OF WALL.
2. W=5 1/2" FOR WALLS & SLABS 18" THICK OR MORE.
3. W=3 1/2" FOR WALLS & SLABS LESS THAN 18" THICK UNLESS NOTED OTHERWISE ON DRAWING.
4. DETAIL DEPICTS JOINT WITHIN WALLS OR SLABS. DETAIL ALSO APPLIES TO WALL/SLAB INTERSECTIONS.
5. APPLY BONDING AGENT TO JOINT AS SPECIFIED.

E ASM5.2 CONSTRUCTION JOINT
NO SCALE

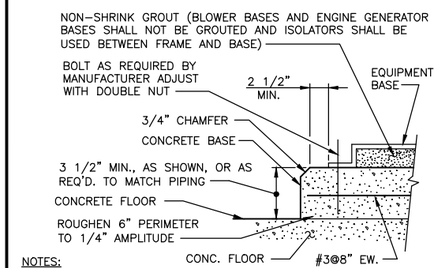


F ASM5.2 TANK CORNER REINFORCING
NO SCALE



G ASM5.2 FOUNDATION WALL CORNER REINFORCEMENT
NO SCALE

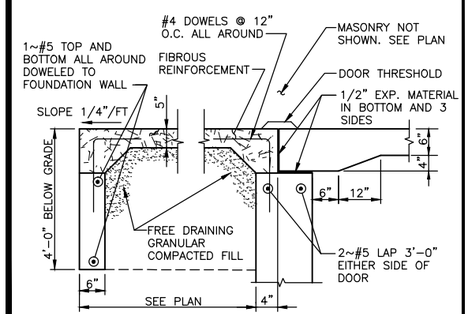
H ASM5.2 REINFORCING TERMINATION
NO SCALE



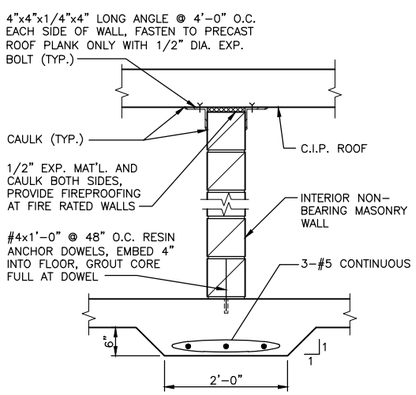
NOTES:

1. CONCRETE PAD BY CONTRACTOR SUPPLYING EQUIPMENT.
2. ANCHOR CONCRETE BASE TO FLOOR WITH 1/2" EXPANSION BOLTS @ 18" O.C., MINIMUM 4 PER PAD. IF CONCRETE PAD IS LESS THAN 10" HIGH, ANCHOR EQUIPMENT PAD DIRECTLY TO CONCRETE FLOOR.
3. APPLY BONDING AGENT TO FLOOR PRIOR TO PLACING CONCRETE PAD.

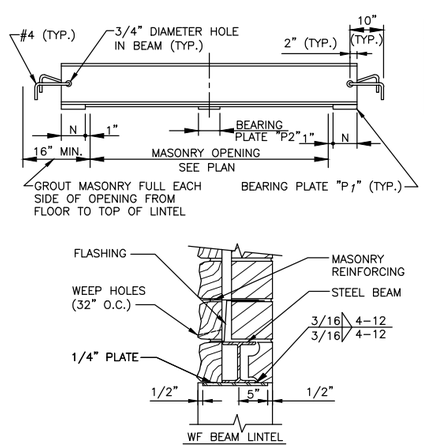
J ASM5.2 CONCRETE EQUIPMENT PAD
NO SCALE



K ASM5.2 CONCRETE STOOP
NO SCALE

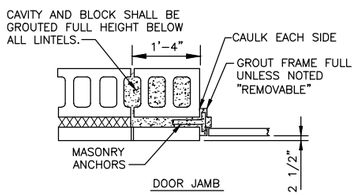


L ASM5.2 INTERIOR NON–BEARING WALL
NO SCALE



WF BEAM LINTELS				
TYPE	SIZE	N	BEARING PLATE "P_1"	"P_2"
W–1	W8x18	8"	8 "x 6" x 3/8"	----
W–2	W12x30	10"	14" x 8" x 3/8"	----

MISCELLANEOUS LINTELS		
TYPE B–1 8" OR 12" BLOCK TO 5'–0" CLR SPAN	LINTEL BLOCK	2~#5 CONTINUOUS



NOTES:

1. LINTELS ARE REQUIRED OVER ALL MASONRY OPENINGS.
2. LINTELS SHALL HAVE A MINIMUM BEARING LENGTH OF 8".
3. GROUT MASONRY FULL 16" EACH SIDE OF OPENINGS UNDER ALL LINTELS FROM FLOOR TO LINTEL BEARING.
4. LINTEL ASSEMBLIES IN EXTERIOR WALLS SHALL BE HOT–DIPPED GALVANIZED.

M ASM5.2 LINTEL DETAILS
NO SCALE

Madison Water Utility
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DETAILS - 1

BOOSTER PUMPING STATION 106 RECONSTRUCTION
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SHEET 19
ASM5.2

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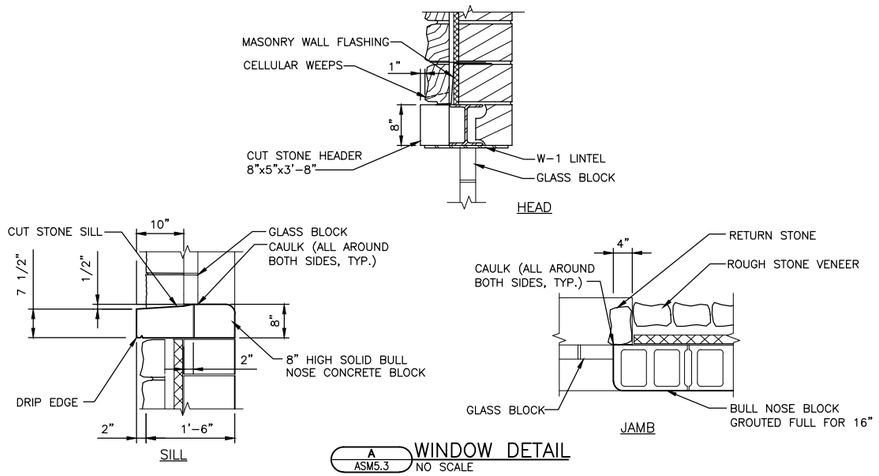
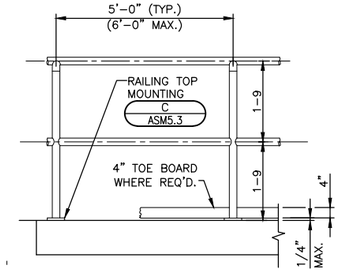


A ASM5.3 WINDOW DETAIL
NO SCALE

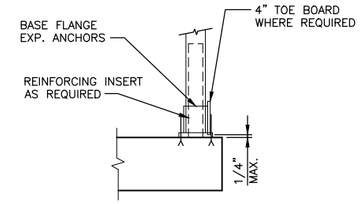


NOTES:

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 2009 WISCONSIN COMMERCIAL BUILDING CODE.

B ASM5.3 ALUMINUM RAILING
NO SCALE



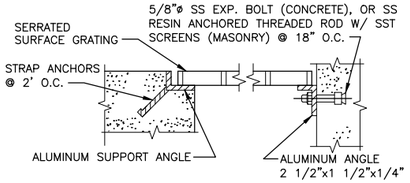
C ASM5.3 RAILING TOP MOUNTING
NO SCALE

NOTES:
1. PROVIDE 4"x3"x3/8" ALUMINUM SUPPORT ANGLE ACROSS OPENINGS. BOLT ENDS OF ANGLE TO SIDES OF OPENINGS WITH S.S. EXP. BOLTS. LOCATE ANCHOR BOLTS MIN. 4" FROM EDGES OF OPENING.

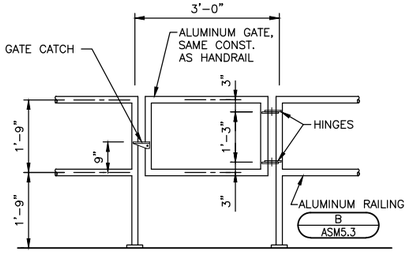
2. CUT GRATING SUPPORT ANGLES TO PROVIDE CLEARANCE FOR STOP PLATE GROOVES.

3. APPLY BITUMINOUS PAINT COATING TO ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

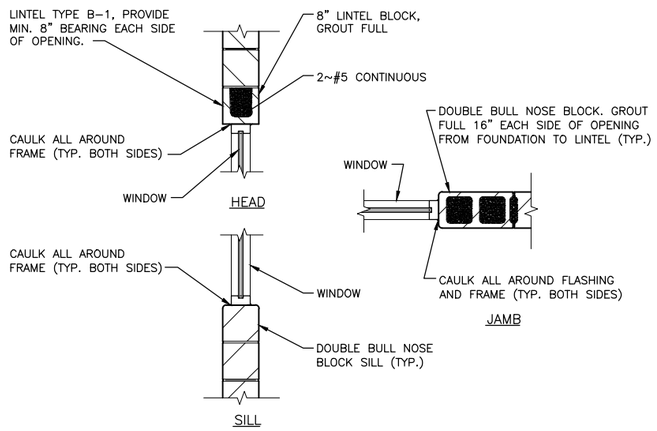
SIZE	SUPPORT ANGLE	MAX. SPAN
1"x3/16"	1 1/4"x1 3/4"x1/4"	2'-6"
1 3/4"x3/16"	2"x2"x1/4"	5'-0"
2"x3/16"	2"x2"x1/4"	6'-0"



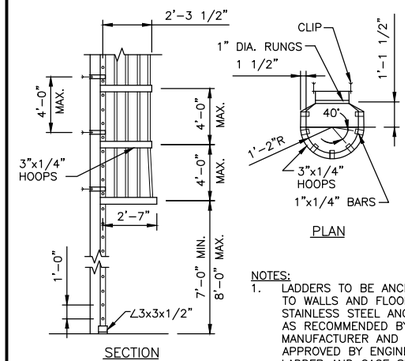
D ASM5.3 ALUMINUM GRATING
NO SCALE



E ASM5.3 SWING GATE
NO SCALE

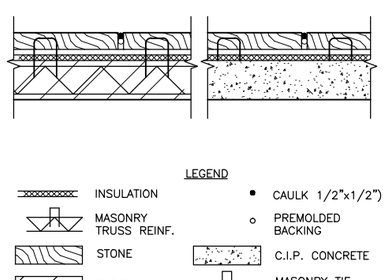


F ASM5.3 WINDOW DETAIL
NO SCALE

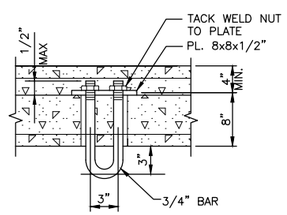


NOTES:
1. LADDERS TO BE ANCHORED TO WALLS AND FLOOR WITH STAINLESS STEEL ANCHORS AS RECOMMENDED BY MANUFACTURER AND APPROVED BY ENGINEER. LADDER AND CAGE SHALL MEET OSHA REQUIREMENTS.
2. ALL MATERIAL SHALL BE STAINLESS STEEL.

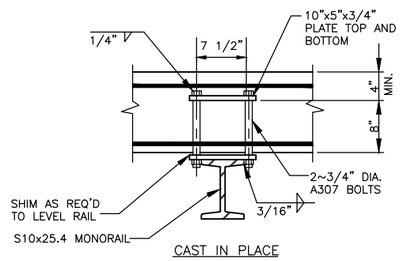
G ASM5.3 STAINLESS STEEL LADDER & CAGE
NO SCALE



H ASM5.3 MASONRY CONTROL JOINT
NO SCALE

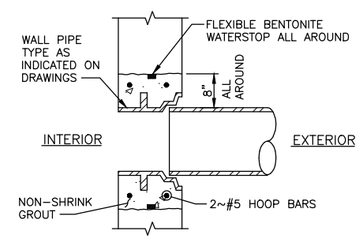


J ASM5.3 CHAIN HOIST HOOK
NO SCALE



CAST IN PLACE

K ASM5.3 MONORAIL MOUNTING
NO SCALE



NOTES:

1. FOR 4-INCH AND LARGER PIPE THROUGH WATER TIGHT CONCRETE MEMBERS ONLY.

2. REMOVE CONCRETE FROM EXISTING REINFORCING. BEND EXISTING REINF. AROUND NEW WALL PIPE IF POSSIBLE. IF BARS MUST BE CUT, CUT ONLY AT CENTER AND BEND.

L ASM5.3 EXISTING WALL PIPE PENETRATION
NO SCALE

Madison Water Utility
Quality and Reliability since 1882

NO.	REVISIONS	DATE:
1	ISSUED FOR BID	05/10/13

DETAILS - 2

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
1020.071

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET
20
ASM5.3

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ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR	BASE	N. WALL	E. WALL	S. WALL	W. WALL	CEILING TYPE	CEILING HGT.	NOTES
100	LOWER LEVEL	F1	--	W1	W1	W1	W1	C1	10'-4"	1
101	PUMP ROOM	F2	B1	W2	W2	W2	W2	C1	10'-0"	2
102	RESTROOM	F2	B1	W2	W2	W2	W2	C1	10'-0"	
103	FUTURE CHEMICAL ROOM	F2	B1	W2	W2	W2	W2	C1	10'-0"	

LEGEND:

FLOOR CODE	FLOOR DESCRIPTION	BASE CODE	BASE DESCRIPTION	WALL CODE	WALL DESCRIPTION	CEILING CODE	CEILING DESCRIPTION
F1	SEALED CONCRETE	B1	8" RESINOUS FLOORING	W1	PAINTED CONCRETE	C1	PAINTED CONCRETE
F2	RESINOUS FLOORING			W2	GLAZED CMU		

NOTES:

1. PROVIDE SEALED CONCRETE FINISH TO SIDES AND TOP OF CONCRETE EQUIPMENT PADS.
2. PROVIDE RESINOUS FLOORING FINISH TO SIDES OF CONCRETE EQUIPMENT PADS. PROVIDE PAINTED FINISH TO TOPS OF PADS.

DOOR SCHEDULE

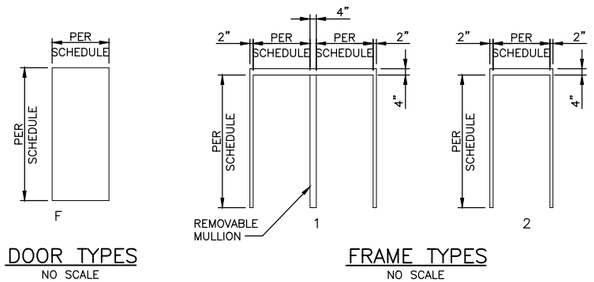
DOOR NUMBER	DOOR SIZE	DOOR MATERIAL	DOOR TYPE ACTIVE	DOOR TYPE INACTIVE	SWING ACTIVE	SWING INACTIVE	FRAME TYPE	FRAME MATERIAL	LABEL	HARDWARE GROUP ACTIVE	HARDWARE GROUP INACTIVE	LINTEL TYPE	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	NOTES
101A	(2) 3'-0" X 7'-0"	FRP	F	F	LHR	RHR	1	AL	-	1	3	W-2	-	-	-	1,2
101B	3'-6"X3'-6"	AL	FD	-	-	-	-	AL	-	-	-	-	-	-	-	
102A	3'-0" X 7'-0"	FRP	F	-	RH	-	2	AL	-	4	-	B-1	-	-	-	1,2,3
103A	3'-0" X 7'-0"	FRP	F	-	RHR	-	2	AL	-	2	-	W-1	-	-	-	1,2

LEGEND:

MATERIAL			TYPE			SWING		
FRP	=	FIBERGLASS	F	=	FLUSH (NO GLASS)	LH	=	LEFT HAND
AL	=	ALUMINUM	FD	=	FLOOR DOOR	RH	=	RIGHT HAND
						LHR	=	LEFT HAND REVERSE
						RHR	=	RIGHT HAND REVERSE

NOTES:

1. SEE SPECIFICATIONS FOR HARDWARE GROUPS.
2. SEE DETAIL M/ASM5.2 FOR LINTEL TYPES AND DETAILS.
3. UNDERCUT DOOR 3/4" FOR HVAC REQUIREMENTS.



DOOR TYPES
NO SCALE

FRAME TYPES
NO SCALE

WINDOW SCHEDULE

WINDOW DESIGNATION	SIZE (W x H)	SILL ELEVATION	FRAME MATERIAL	GLAZING TYPE	TYPE	SILL / JAMB / HEAD DETAILS	LINTEL TYPE	NOTES
A	3'-4" X 4'-0"	1042.83	-	GLASS BLOCK	FIXED	A/ASM5.3	W-1	4
B	3'-4" X 4'-0"	1042.83	STL	GLASS	FIXED	F/ASM5.3	B-1	1, 2, 3, 4

LEGEND:

FRP = FIBERGLASS STL = STEEL AL = ALUMINUM

NOTES:

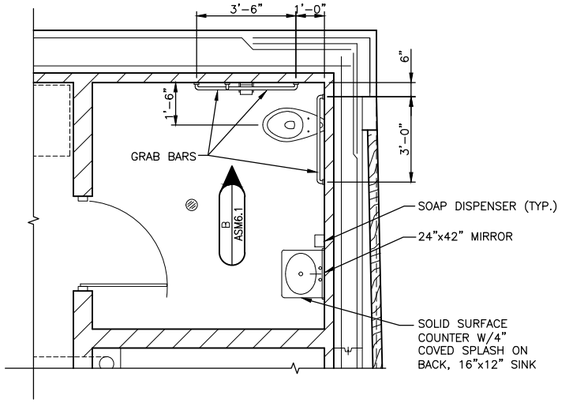
1. 3/4 HOUR FIRE RATING
2. PROVIDE BULLNOSE BLOCK PER SPECIFICATIONS
3. 1/4" WIRE GLASS REQ'D FOR FIRE-RATED WINDOWS
4. SEE DETAIL M/ASM5.2 FOR LINTEL TYPES AND DETAILS

ALLOWABLE STRESSES AND LOADS

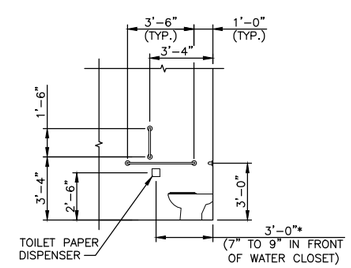
MATERIAL	MATERIAL STRESS, DESIGNATION, OR ALLOWABLE LOAD
CIP CONCRETE	f_c' = 4000 psi
CONCRETE BLOCK	f_m' = 1500 psi
REINFORCING STEEL (GRADE 60)	F_y = 60 ksi
STRUCTURAL STEEL	F_y = 36 ksi or 50 ksi
STRUCTURAL ALUMINUM (6061-T6)	F_y = 35 ksi
WELDING ELECTRODES	E70XX
ANCHOR BOLTS	ASTM F1554 GRADE 36
CONNECTION BOLTS	ASTM A325

GENERAL ARCHITECTURAL/STRUCTURAL NOTES:

1. STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE DESIGN CRITERIA, MATERIAL STRESSES, AND ALLOWABLE LOADS INDICATED IN THE TABLES ON THIS SHEET.
2. PROVIDE CRUSHED STONE MAT AND GEOTEXTILE UNDER BASE SLAB AT LOCATIONS WHERE NOTED IN SPECIFICATION SECTION 02222.
3. FILL AND BACKFILL SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS AND DETAIL A/ASM5.2.
4. PROVIDE CLEAR COVER FOR REINFORCING STEEL AS SPECIFIED, UNLESS NOTED OTHERWISE.
5. UNLESS SHOWN OR NOTED OTHERWISE, WALL AND SLAB REINFORCING BAR LAPS SHALL BE AS SPECIFIED.
6. PROVIDE ADDITIONAL REINFORCING AT OPENINGS IN REINFORCED CONCRETE WALLS AND SLABS PER DETAIL D/ASM5.2.
7. HORIZONTAL REINFORCING BARS IN CONCRETE WALLS SHALL BE PLACED OUTSIDE VERTICAL BARS UNLESS SHOWN OTHERWISE.
8. BASE SLABS AND FOOTINGS HAVE BEEN DESIGNED BASED ON AN ALLOWABLE NET SOIL BEARING PRESSURE AS SHOWN IN THE STRUCTURAL DESIGN CRITERIA ON THIS SHEET.
9. PROVIDE LINTELS ABOVE ALL OPENINGS IN MASONRY WALLS PER STRUCTURE DRAWINGS AND PER DETAIL M/ASM5.2.
10. CONFORM TO DOOR SCHEDULE ON THIS SHEET.
11. CONFORM TO ROOM FINISH SCHEDULE ON THIS SHEET.
12. UNLESS SHOWN OR NOTED OTHERWISE, PROVIDE CONCRETE EQUIPMENT PADS UNDER ALL FLOOR MOUNTED EQUIPMENT PER DETAIL J/ASM5.2.
13. PLAN VIEWS SHOW NOMINAL RATHER THAN ACTUAL DIMENSIONS OF CONCRETE BLOCK WALLS.
14. CONFORM TO WINDOW SCHEDULE ON THIS SHEET.



A/ASM6.1 ENLARGED RESTROOM PLAN
0 1' 2' 4'



B/ASM6.1 TYP. SIDE ELEVATION
0 1' 2' 4' 8'

STRUCTURAL DESIGN CRITERIA

DESIGN CODES	BUILDING CODE		IBC 2009
	CONCRETE DESIGN CODE		ACI 318-08
	MASONRY DESIGN CODE		ACI 530-08
	OCCUPANCY CATEGORY		IV
FLOOR LIVE LOAD	UNIFORMLY DISTRIBUTED (PSF)		100
	CONCENTRATED (LBS)		EQUIPMENT OPERATING WEIGHTS VARY
	IMPACT		FROM EQUIP. MFR.
	REDUCTION		PER IBC CODE
ROOF LIVE LOAD	UNIFORMLY DISTRIBUTED (PSF)		100
ROOF SOIL LOAD	AVG. DEPTH OF OVERBURDEN (INCHES)		18
	UNIFORMLY DISTRIBUTED (PSF)		180
ROOF SNOW LOAD	GROUND SNOW LOAD (P_g) (PSF)		30
	SNOW IMPORTANCE FACTOR		1.2
WIND LOAD	BASIC 3-SECOND GUST WIND SPEED (MPH)		90
	WIND IMPORTANCE FACTOR (I_w)		1.15
	WIND EXPOSURE		B
	INTERNAL PRESSURE COEFFICIENT (GC_{pi})		0.18
	COMPONENTS AND CLADDING DESIGN WIND PRESSURE (PSF)		PER IBC CODE
EARTHQUAKE DESIGN DATA	SEISMIC IMPORTANCE FACTOR (I_E)		1.5
	SITE CLASS		D
	SPECTRAL RESPONSE COEFFICIENTS	S_{DS}	0.112
		S_{D1}	0.070
	SEISMIC DESIGN CATEGORY		C
	BASIC SEISMIC FORCE RESISTING SYSTEM		ORDINARY REINFORCED CONCRETE SHEAR WALLS
	RESPONSE MODIFICATION COEFFICIENT (R)		4
	DESIGN BASE SHEAR		0.042W
	ANALYSIS PROCEDURE		EQUIVALENT LATERAL FORCE ANALYSIS
OTHER LOADS	LATERAL EARTH PRESSURE (PCF EQUIV. FLUID)	DRY - RESTRAINED TOP	55
GEOTECHNICAL	NET ALLOWABLE SOIL BEARING PRESSURE (PSF)		4000
	PLANNED SUBGRADE		1' BELOW BOT. OF BASE SLAB OR FOOTING

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ARCHITECTURAL AND STRUCTURAL SCHEDULES

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071
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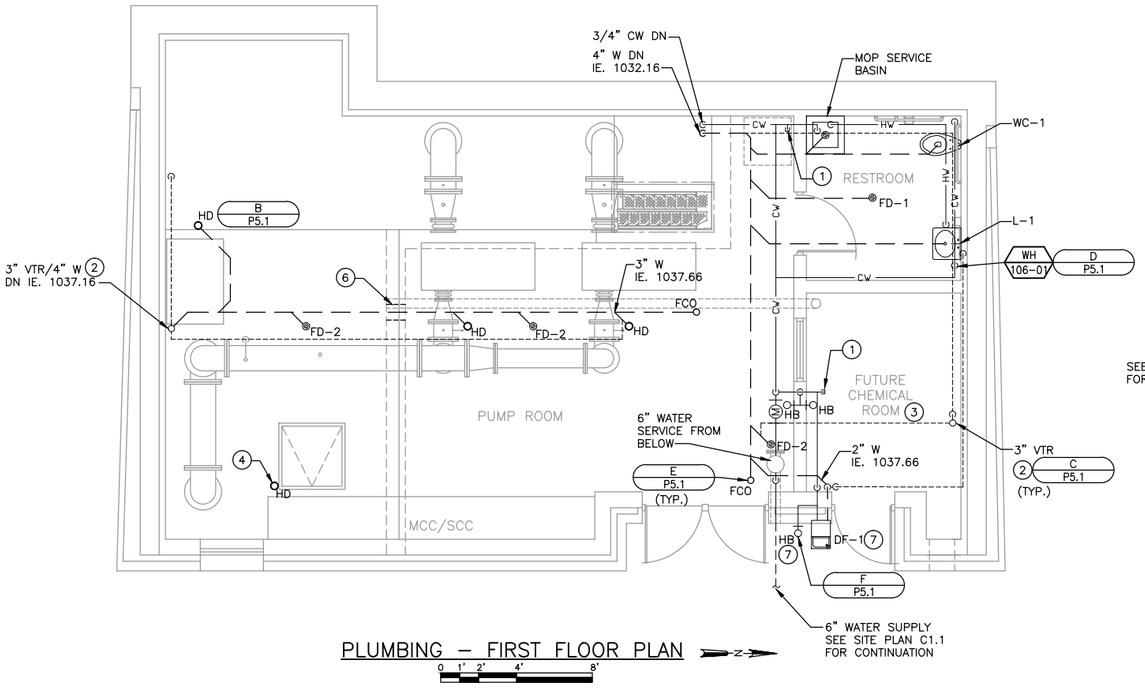
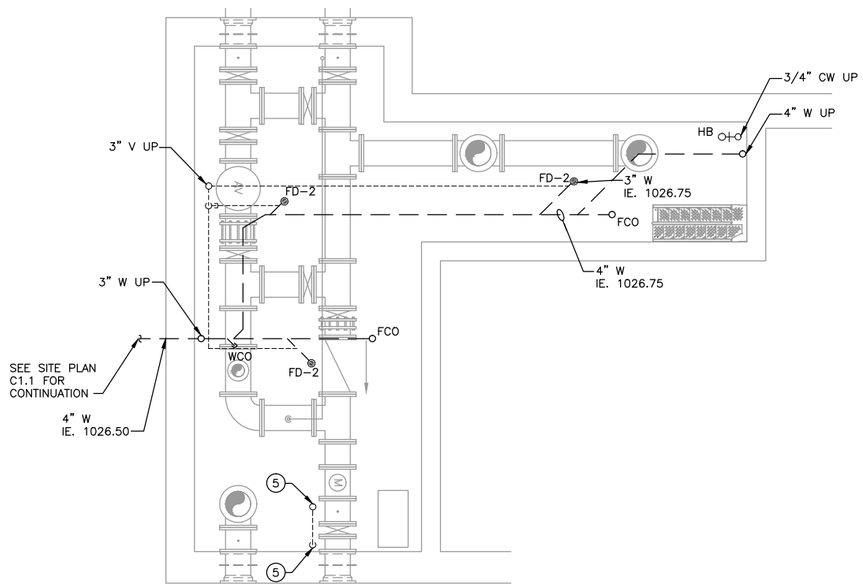
STRAND ASSOCIATES®

SHEET 21
ASM6.1



PLUMBING – FIRST FLOOR PLAN

0 1' 2' 4' 8'



PLUMBING – LOWER LEVEL PLAN

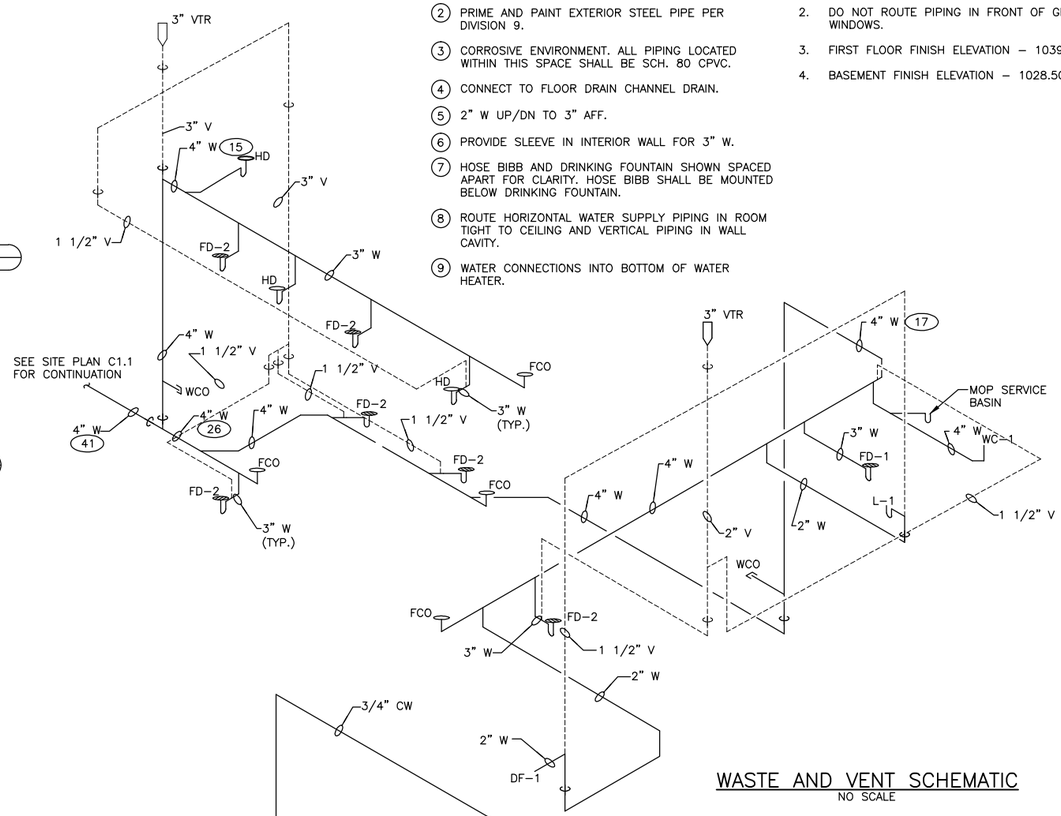
0 1' 2' 4' 8'

KEY NOTES:

1. CAP FOR FUTURE.
2. PRIME AND PAINT EXTERIOR STEEL PIPE PER DIVISION 9.
3. CORROSIVE ENVIRONMENT. ALL PIPING LOCATED WITHIN THIS SPACE SHALL BE SCH. 80 CPVC.
4. CONNECT TO FLOOR DRAIN CHANNEL DRAIN.
5. 2" W UP/DN TO 3" AFF.
6. PROVIDE SLEEVE IN INTERIOR WALL FOR 3" W.
7. HOSE BIBB AND DRINKING FOUNTAIN SHOWN SPACED APART FOR CLARITY. HOSE BIBB SHALL BE MOUNTED BELOW DRINKING FOUNTAIN.
8. ROUTE HORIZONTAL WATER SUPPLY PIPING IN ROOM TIGHT TO CEILING AND VERTICAL PIPING IN WALL CAVITY.
9. WATER CONNECTIONS INTO BOTTOM OF WATER HEATER.

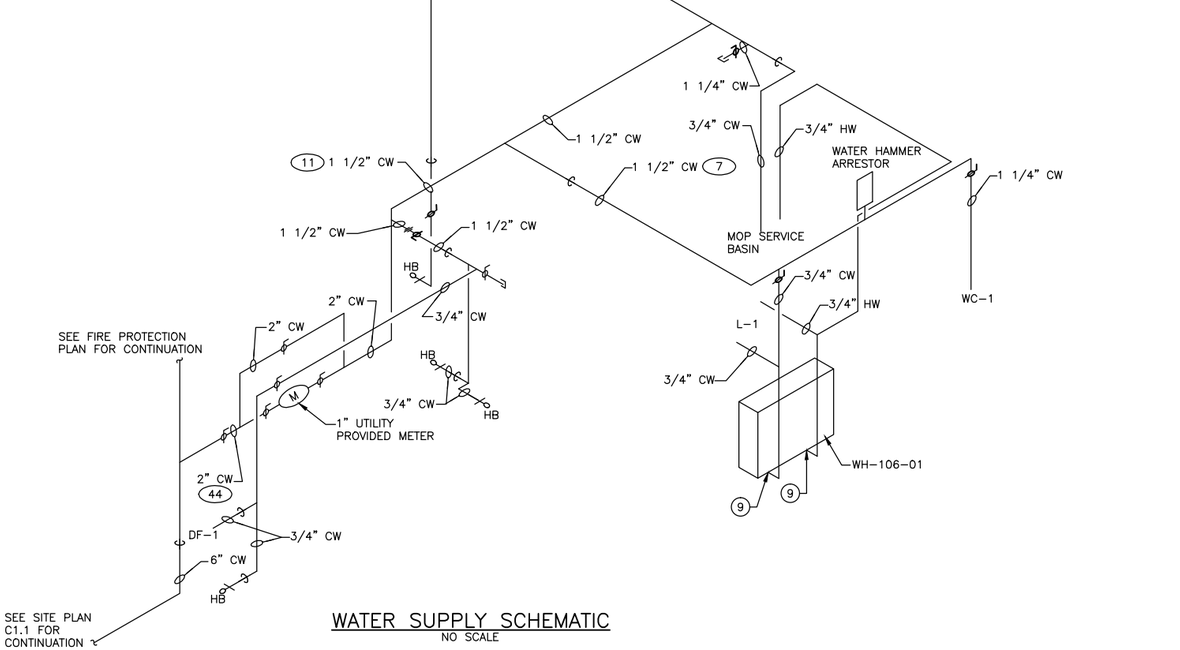
GENERAL NOTES:

1. COORDINATE PIPE ROUTING WITH OTHER TRADES.
2. DO NOT ROUTE PIPING IN FRONT OF GLASS BLOCK WINDOWS.
3. FIRST FLOOR FINISH ELEVATION – 1039.50.
4. BASEMENT FINISH ELEVATION – 1028.50.



WASTE AND VENT SCHEMATIC

NO SCALE



WATER SUPPLY SCHEMATIC

NO SCALE

Madison Water Utility

Quality and Reliability since 1882

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PLUMBING FLOOR PLANS AND SCHEMATICS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
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SHEET
22
P1.1

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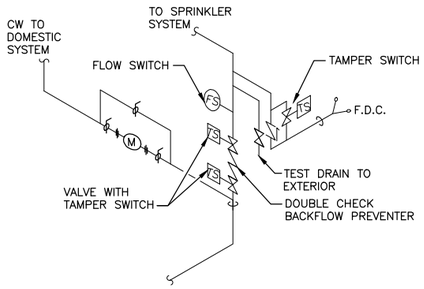
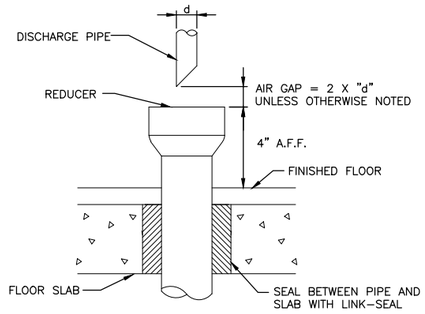
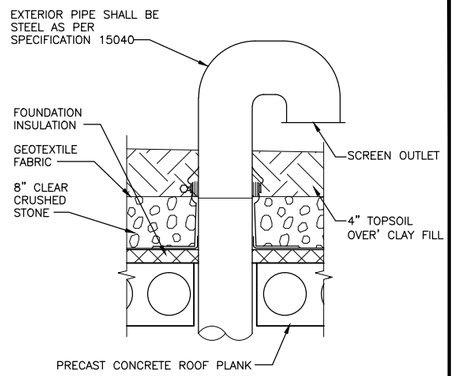


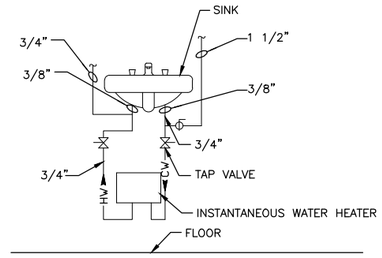
A P5.1 SPRINKLER RISER
NO SCALE



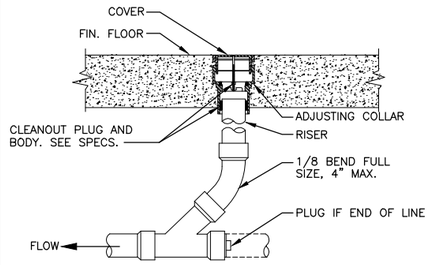
B P5.1 HUB DRAIN
NO SCALE



C P5.1 COLD PIPE ROOF PENETRATION
NO SCALE



TYPICAL INSTANTANEOUS WATER HEATER CONNECTION
D P5.1 NO SCALE



E P5.1 FLOOR CLEANOUT
NO SCALE

* WALL CONSTRUCTION MAY VARY

F P5.1 EXTERIOR HOSE BIBB
NO SCALE

NOTE: VERIFY ALL PIPE SIZES WITH SYSTEM SUPPLIER

G P5.1 VAC PRIMING SYSTEM SCHEMATIC

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PLUMBING DETAILS

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JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET 23 P5.1

GENERAL NOTES:

1. COORDINATE PIPE ROUTING WITH OTHER TRADES.

KEY NOTES:

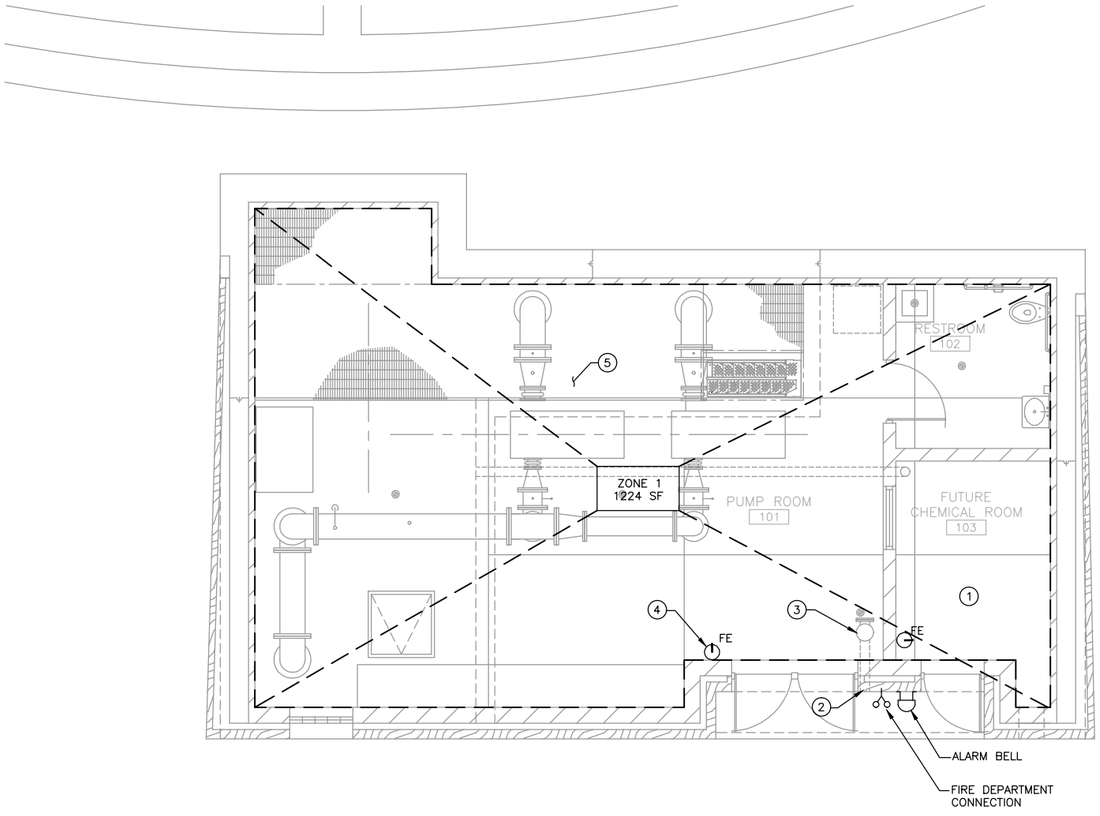
(1) CORROSIVE NEMA 4X ENVIRONMENT. SIDEWALL SPRINKLERS MAY BE USED IN THIS AREA.

(2) 6" WATER MAIN. SEE SITE PLAN FOR CONTINUATION.

(3) SPRINKLER RISER (A / P5.1).

(4) COORDINATE LOCATION WITH OTHER TRADES.

(5) PROVIDE SPRINKLER HEADS BELOW GRATING AND ELEVATED SLAB.



FIRE PROTECTION PLAN

0 1' 2' 4' 8'

Madison Water Utility
Quality and Reliability since 1882

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FIRE PROTECTION PLAN

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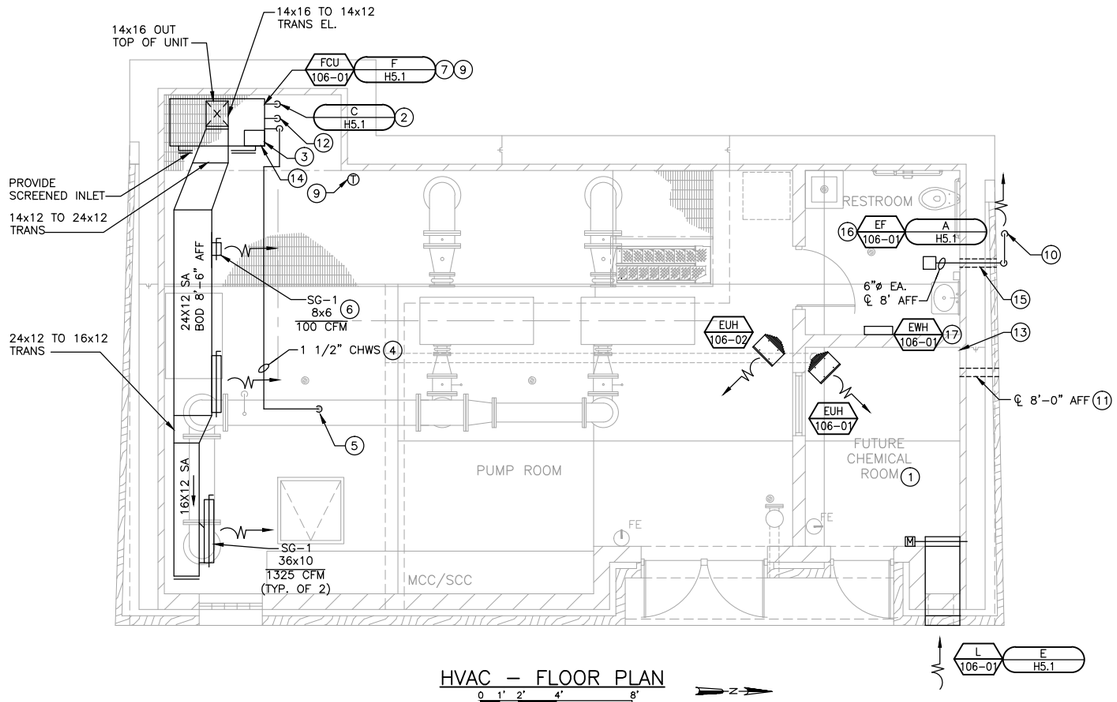
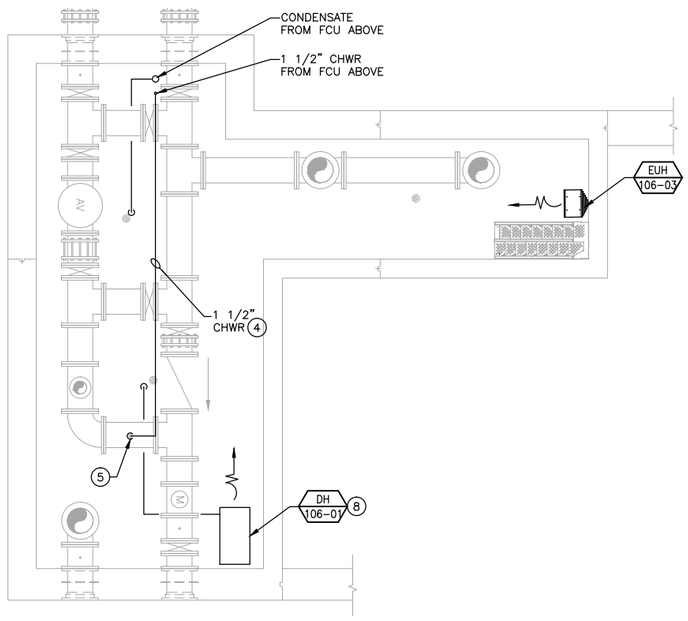
24
F1.1



HVAC – FLOOR PLAN

0 1' 2' 4' 8'



HVAC – LOWER LEVEL PLAN

0 1' 2' 4' 8'

GENERAL NOTES:

1. COORDINATE LOCATIONS OF PIPING AND DUCTWORK SO AS NOT TO BE ABOVE ELECTRICAL PANELS OR EQUIPMENT.

KEY NOTES:

(1) EQUIPMENT AND ACCESSORIES IN THIS ROOM SHALL BE SUITABLE FOR NEMA 4X (CORROSIVE) ENVIRONMENTS. DUCTWORK SHALL BE PVC OR FRP.

(2) CONDENSATE TO FLOOR DRAIN BELOW.

(3) PROVIDE ACCESS PANELS THIS SIDE OF UNIT.

(4) ROUTE PIPING TIGHT TO CEILING.

(5) PROVIDE UNIONS IN PIPING TO PERMIT REMOVAL OF VERTICAL PIPE SECTION.

(6) ROTATE SUPPLY GRILLE 30° DOWN FROM HORIZONTAL.

(7) MOUNT UNIT ON 3" BASE RAILS WITH VIBRATION ISOLATORS PROVIDED BY MANUFACTURER.

(8) ROUTE CONDENSATE FROM DH-106-01 TO FLOOR DRAIN.

(9) PROVIDE 4~#18 FROM THERMOSTAT TO FCU, 1~#18 FROM THERMOSTAT TO CONTROL VALVE, AND 1~#18 FROM FCU TO CONTROL VALVE. CONDUIT SHALL BE PROVIDED BY DIVISION 16.

(10) TERMINATE 6" DUCTILE IRON PIPE 3' ABOVE GRADE WITH DOWNTURNED ELBOW. PROVIDE STAINLESS STEEL INSECT SCREEN WITH BAR FRAME ON OUTLET.

(11) INSTALL 6" FLxFL DUCTILE IRON WALL PIPE IN WALL TO ACCEPT FUTURE 6" EA DUCT. PROVIDE BLIND FLANGE AND GASKET ON INTERIOR AND EXTERIOR.

(12) 1 1/2" CHWR DN TO LOWER LEVEL.

(13) LOCATION OF FUTURE EXHAUST FAN IN CHLORINE ROOM.

(14) CONTROL ENCLOSURE SHALL BE MOUNTED ON TOP OF UNIT.

(15) INSTALL 6" FLxFL DUCTILE IRON WALL PIPE.

(16) DUCTWORK ASSOCIATED WITH EXHAUST FAN SHALL BE DUCTILE IRON FROM EXTERIOR WALL TO OUTSIDE.

(17) PROVIDE WALL BRACKET FOR SURFACE MOUNTING WALL HEATER.

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HVAC FLOOR PLANS

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SHEET
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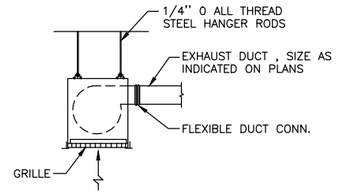
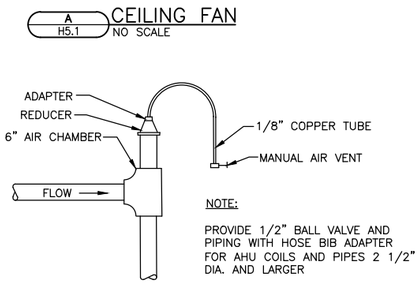
H1.1



A H5.1 CEILING FAN
NO SCALE

FAN COIL SCHEDULE

UNIT NO. FCU–	LOCATION	SERVICE	ENVIRO–TEC MODEL NO.	FAN SECTION				COOLING COIL SECTION							ELECTRICAL				OPERATING WEIGHT (LBS.)	REMARKS
				SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	SUPPLY FAN EXT. STATIC PRESS. (IN. OF W.C.)	SUPPLY FAN MOTOR SIZE (HP)	TOTAL CAPACITY (BTU)	SENSIBLE CAPACITY (BTU)	EAT DB/WB (°F)	LAT DB/WB (°F)	EWT (°F)	LWT (°F)	FLOWRATE (GPM)	WPD (FT.)	VOLTAGE	PHASE	FLA	STARTER/ DISCONNECT PROVIDED BY		
106–01	PUMP ROOM	PUMP ROOM	V–30	2750	0	0.5	1 1/2	69,590	60,900	80/67	60/59.2	55	65	13.9	6.81	460	3	2.5	MFR	474	



B H5.1 MANUAL AIR VENT
NO SCALE

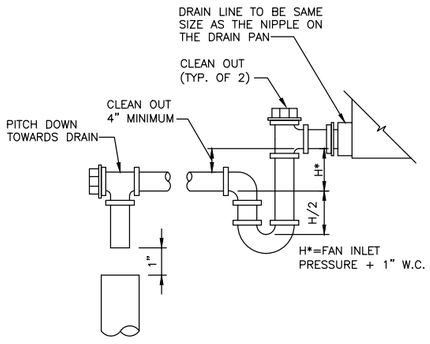
FAN SCHEDULE

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 VOLTAGE	ELECTRICAL PHASE	ELECTRICAL STARTER BY	ELECTRICAL DISCONNECT BY	OPERATING WEIGHT (LBS.)	REMARKS
106–01	RESTROOM	RESTROOM	SP–B90	75	0.25	FRAC.	CABINET	ODP	DIRECT	2.3	115	1	DIV 16	DIV 16	10	

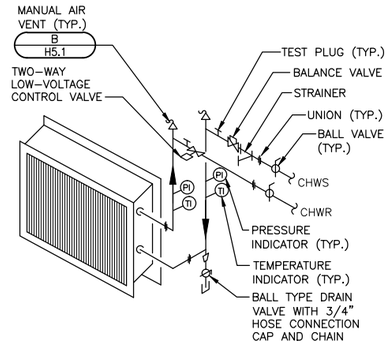
(1) FAN AND ACCESSORIES SHALL BE SUITABLE FOR CORROSIVE (NEMA 4X) ENVIRONMENTS.

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 TYPE	SCREEN LOCATION	TOP ELEVATION	REMARKS
106–01	FUTURE CHEMICAL ROOM	FUTURE EXHAUST FAN	ESD–635	1000	16	32	6	0.001	88	1.7	BIRD	INTERIOR	1046.16	



C H5.1 CONDENSATE DRAIN
NO SCALE



D H5.1 FCU WATER COIL PIPING
NO SCALE

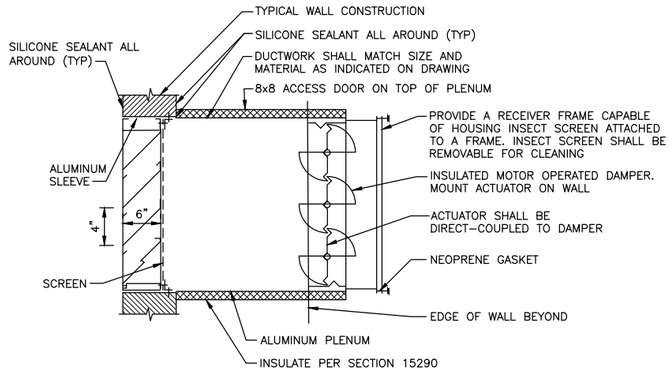
DEHUMIDIFIER SCHEDULE

UNIT NO. DH–	SERVICE	HI–E DRY MODEL NO.	CAPACITY (LBS/DAY)	AIRFLOW (CFM)	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FLA	REMARKS
106–01	PUMP ROOM	195	143	540	120	1	12	

ELECTRIC HEATER SCHEDULE

UNIT NO.	LOCATION	Q–MARK MODEL NO.	CAPACITY (WATTS)	AIR FLOW (CFM)	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FLA	ELECTRICAL DISCONNECT BY	REMARKS
EWH–106–01	RESTROOM	CWH–015	1500	100	115	1	12.5	MANUFACTURER	
EUH–106–01	FUTURE CHEMICAL ROOM	JUW–05	5000	405	208	1	24	MANUFACTURER	(1)
EUH–106–02	PUMP ROOM	MUH–05	5000	405	208	1	24	DIV. 16	
EUH–106–03	LOWER LEVEL PUMP ROOM	MUH–05	5000	405	208	1	24	DIV. 16	

(1) HEATER AND ACCESSORIES SHALL BE SUITABLE FOR NEMA 4X (CORROSIVE) ENVIRONMENTS.



E H5.1 WALL LOUVER DUCTWORK AND DAMPER
NO SCALE

DESIGN CONDITIONS

APPLICABLE BUILDING CODE: WISCONSIN SPS 364		SUMMER EXTERIOR: 87°F DB / 75°F WB WINTER EXTERIOR: –15°F DB		
OCCUPANCY TYPE	VENTILATION	SUMMER INTERIOR (DB/WB)	WINTER INTERIOR (DB)	REMARKS
FUTURE CHEMICAL ROOM	1 CFM/SF CONTINUOUS	AMBIENT	60	
PUMP ROOM	---	80/67	60	
RESTROOM	75 CFM/FIXTURE	AMBIENT	60	

Madison Water Utility
Quality and Reliability since 1882

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HVAC SCHEDULES AND DETAILS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET 26 H5.1

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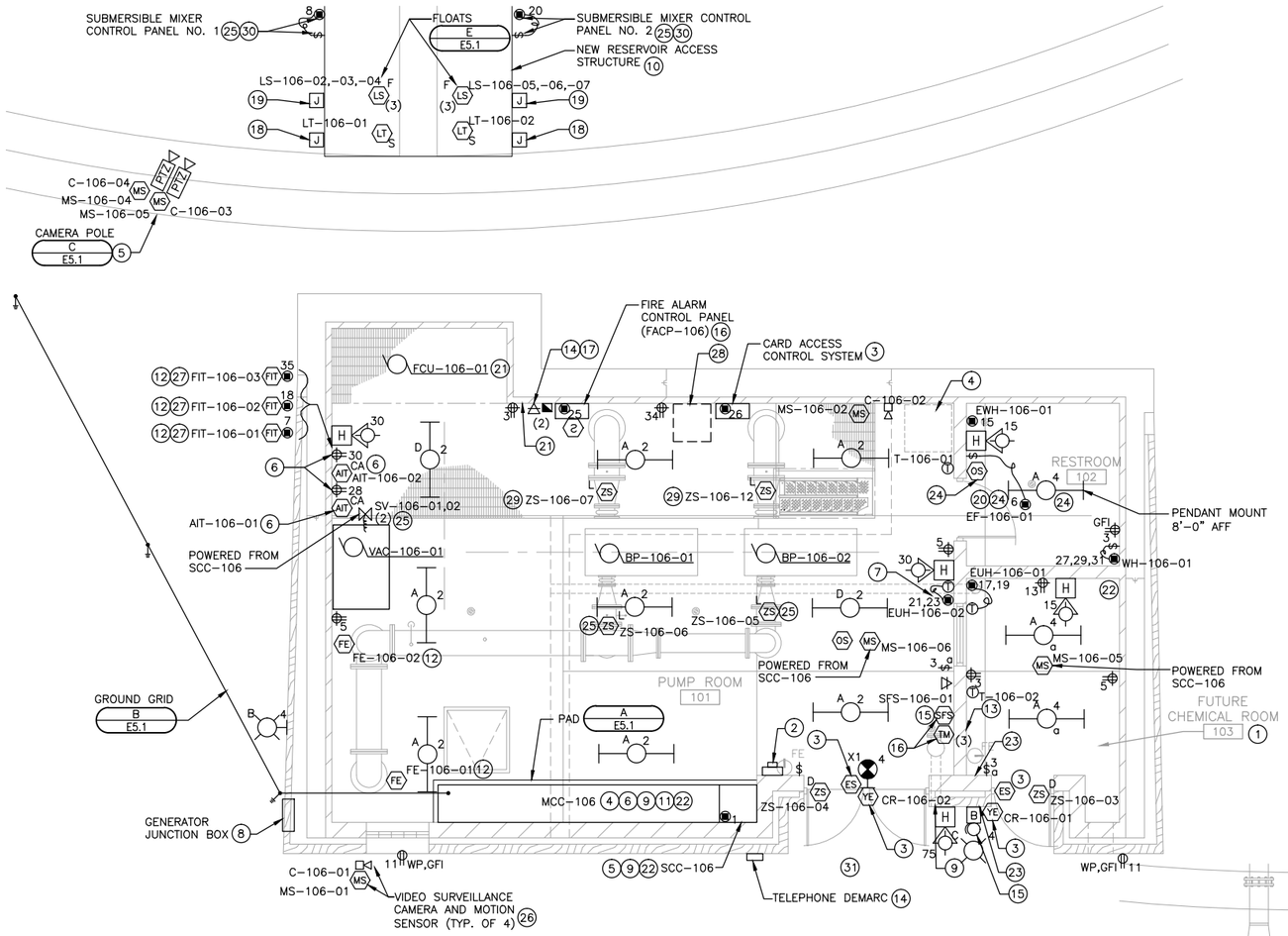


ELECTRICAL – FLOOR PLAN

0 1' 2' 4' 8'

LIGHTING PANEL LP-106

Service: 120/208V, 3p, 4W — Enclosure: NEMA 1G — Mounting: MCC
Main Breaker: 225A MLO — Main Bus: Copper
Location: MCC-106 in Pump Room — SCIC: 10 kAIC

Room Number/Description	Amps	Poles	Ckt. #	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	Ckt. #	Poles	Amps	Room Number/Description
SCC-106 - Pump Room	20	1	1	1000			1000			2	1	20	Lighting - Pump Room, Exterior
Receptacles - Pump and Future Chemical Rooms, Restroom	20	1	3		540			315		4	1	20	Lighting - Restroom, Future Chemical Room
Receptacles - Pump and Future Chemical Room	20	1	5			540			300	6	1	20	EF-106-01 - Restroom
FIT-106-01 - Pump Room	20	1	7	500			500			8	1	15+	Submersible Mixer Control Panel No. 1
DH-106-01 Receptacle - Lower Level	20	1	9		1500			360		10	1	20	Lighting - Lower Level
Receptacles - Exterior	20	1	11			360			0	12	1	20	Spare
Future Chemical Pump Receptacle - Future Chemical Room	20	1	13	180			0			14	1	20	Spare
EWH-106-01 - Restroom	20	1	15		1500			0		16	1	20	Spare
EUH-106-01 - Future Chemical Room	30	2	17			2500			500	18	1	20	FIT-106-02 - Pump Room
			19	2500			500			20	1	15+	Submersible Mixer Control Panel No. 2
EUH-106-02 - Pump Room	30	2	21		2500			2500		22	2	30	EUH-106-03 - Lower Level
			23			2500			2500	24			
Fire Alarm Control Panel (FACP) - Pump Room	20*	1	25	1000			500			26	1	20	Card Access Control System - Pump Room
WH-106-01 - Restroom	50	3	27		6000			1000		28	1	20	AIT-106-01 Receptacle - Pump Room
			29			6000			1000	30	1	20	AIT-106-02 Receptacle - Pump Room
			31	6000			0			32	1	20	Spare
Spare	20	1	33		0			180		34	1	20	Fiber Enclosure Receptacle - Pump Room
FIT-106-03 - Pump Room	20	1	35			500			0	36	1	20	Spare
Spare	20	1	37	0			0			38	1	20	Spare
Spare	20	1	39		0			0		40	1	20	Spare
Spare	20	1	41			0			0	42	1	20	Spare
Total Load per Phase per Side (VA)				11180	12040	12400	2500	4355	4300				

Total Load Phase A (VA)	13680	VA
Total Load Phase B (VA)	16395	VA
Total Load Phase C (VA)	16700	VA
Total Connected Load (VA)	46775	VA

*Breaker shall be red.
+Breaker shall be GFI.

Total Connected Load (A)	130	A
Total Connected Load + 25%	162	A
Spare 25%	41	A
Feeder Load	203	A

GENERAL NOTES:

1. REFER TO SPECIFICATION SECTION 16990 FOR WIRING ASSOCIATED WITH THE SCADA SYSTEM.
2. PROVIDE LABELING TAGS FOR ALL SPARE CONDUITS INDICATING ORIGIN.
3. COORDINATE EXTERIOR RECESSED OUTLET BOXES AND OTHER ELECTRICAL DEVICES WITH STONE VENEER MANUFACTURER.

KEY NOTES:

(1) ALL ELECTRICAL WORK AND EQUIPMENT IN THIS AREA SHALL BE RATED NEMA 4X.

(2) COORDINATE LOCATION OF METER AND METER SOCKET WITH UTILITY COMPANY.

(3) PROVIDE A FLUSH MOUNTED 4x4 JUNCTION BOX ON BUILDING EXTERIOR FOR CARD READER. CARD READERS PROVIDED BY INNOVATIVE SYSTEMS. REFER TO SECTION 16940 FOR ADDITIONAL INFORMATION. PROVIDE 3/4" CONDUIT FROM JUNCTION BOX TO CARD ACCESS CONTROL SYSTEM ENCLOSURE. PROVIDE 3/4" CONDUIT FROM JUNCTION BOX TO DOOR FRAME FOR ELECTRIC STRIKE.

(4) SPACE DEDICATED FOR FUTURE WATER HEATER. PROVIDE 3/4" CONDUIT FROM MCC-106 TO DEDICATED SPACE AND CAP CONDUIT 6" ABOVE FINISHED FLOOR.

(5) MOUNT SECURITY CAMERAS AND MOTION SENSORS ON 10-FOOT POLE, HAPCO MODEL SSA10B4-4-BA, OR EQUAL. PROVIDE DAMPENER IN POLE AND STAINLESS STEEL MOUNTING HARDWARE AS REQUIRED. CAMERA CABLES SHALL EXIT SIDE OF POLE. PROVIDE SPARE 1" CONDUIT INTO BOTTOM OF POLE FROM SCC-106 FOR FUTURE ANTENNA CABLE. PROVIDE PULLING TAP AND TRACER WIRE.

(6) CHLORINE ANALYZER RECEPTACLES SHALL BE HALF-HOT AND HALF-INTERLOCKED WITH THE BOOSTER PUMP RUN SIGNALS. WIRING TO HALF OF HALF-HOT RECEPTACLE SHALL BE POWERED THROUGH CONTACTORS IN THE ASSOCIATED BOOSTER PUMP VFD ENCLOSURE AND IN SCC-106. PROVIDE NAME PLATE INDICATING CONTROL FROM MULTIPLE LOCATIONS.

(7) PROVIDE 3/4" CONDUIT FROM SCC-106, 3/4" CONDUIT FROM LP-106, AND RECESSED OUTLET BOXES (2) FOR FUTURE CHLORINE LEAK DETECTOR.

(8) GENERATOR JUNCTION BOX SHALL BE NEMA 4X, STAINLESS STEEL WITH HINGED COVER, SIZED AS REQUIRED FOR PORTABLE GENERATOR HARDWIRE CONNECTION TO ATS. JUNCTION BOX SHALL BE MOUNTED AT HEIGHT OF CONDUIT WALL PENETRATION.

(9) PROVIDE 2~3/4" CONDUITS FROM MCC-106 AND 3/4" CONDUIT FROM SCC-106 TO RECESSED OUTLET BOXES (3) WITH COVER PLATES FOR FUTURE CHLORINE LEAK DETECTION CONTROL STATION, HORN, AND STROBE. INSTALL CONTROL STATION OUTLET BOX 4'-0" ABOVE FINISHED GRADE AND HORN AND STROBE OUTLET BOXES 7'-0" ABOVE FINISHED GRADE.

(10) MOUNT ELECTRICAL EQUIPMENT IN THIS AREA TO SIDE OF NEW RESERVOIR ACCESS STRUCTURE UNLESS NOTED OTHERWISE. SEE SHEET C1.1.

(11) SERVICE ENTRANCE CONDUITS SHALL BE INSTALLED BELOW FLOOR SLAB.

KEY NOTES (CONTINUED):

(12) PROVIDE 2~3/4" CONDUITS FROM TRANSMITTER TO FLOW ELEMENT. INSTALL MANUFACTURER FURNISHED SIGNAL AND EXCITATION CABLES, ONE PER CONDUIT.

(13) PROVIDE 2~1" CONDUITS FROM MCC-106 AND 1" CONDUIT FROM SCC-106 TO FUTURE CHEMICAL ROOM FOR FUTURE EQUIPMENT. CAP CONDUITS 6" ABOVE FINISHED FLOOR.

(14) PROVIDE CAT 5e CABLE IN 3/4" CONDUIT FROM TELEPHONE DEMARC TO EACH TELEPHONE JACK.

(15) PROVIDE 2~#12 IN 3/4" CONDUIT FROM THE SPRINKLER SYSTEM FLOW SWITCH (FS-106-01) TO THE SPRINKLER ALARM BELL. FLOW SWITCH AND ALARM BELL SHALL BE PROVIDED BY DIVISION 15 CONTRACTOR.

(16) FIRE ALARM FLOW (1) AND TAMPER SWITCHES (3) SHALL BE WIRED TO THE FIRE ALARM CONTROL PANEL. PROVIDE REQUIRED ADDRESSABLE CONTROL MODULES AND SUPERVISORY RELAYS TO MONITOR EACH DEVICE. PROVIDE WIRE AND CONDUIT AS REQUIRED TO MONITOR SIGNALS AT THE FACP.

(17) PROVIDE TWO DEDICATED PHONE LINES FOR FIRE ALARM CONTROL PANEL.

(18) PROVIDE TERMINAL BLOCKS IN A NEMA 4X STAINLESS STEEL JUNCTION BOX FOR TERMINATION OF RESERVOIR LEVEL TRANSDUCER CABLES.

(19) PROVIDE TERMINAL BLOCKS IN A NEMA 4X STAINLESS STEEL JUNCTION BOX FOR TERMINATION OF RESERVOIR FLOAT SWITCH CABLES.

(20) EXHAUST FAN HAS SPEED CONTROLLER FURNISHED AS SPECIFIED IN DIVISION 15 FOR CONTROL OF FAN SPEED. DIVISION 16 CONTRACTOR SHALL INSTALL AND WIRE SPEED SWITCH AT FAN.

(21) PROVIDE SINGLE GANG OUTLET BOX FOR DIVISION 15 PROVIDED THERMOSTAT. PROVIDE 3/4" CONDUITS FROM OUTLET BOX TO FCU-106-01, FROM FCU-106-01 TO CONTROL VALVE, AND FROM CONTROL VALVE TO OUTLET BOX FOR CONTROL WIRING BY DIVISION 15.

(22) PROVIDE 3/4" CONDUIT FROM MCC-106 AND 2~1" CONDUITS FROM SCC-106 TO FUTURE CHEMICAL ROOM FOR FUTURE EXHAUST FAN AND CAP CONDUITS 6" ABOVE FINISHED FLOOR.

(23) PROVIDE 3/4" CONDUIT FROM SCC-106 TO FUTURE CHEMICAL ROOM EXHAUST FAN CONTROL STATION LOCATION AND CAP CONDUIT 6" ABOVE FINISHED FLOOR.

(24) PROVIDE DOUBLE POLE WALL-MOUNT OCCUPANCY SENSOR FOR CONTROL OF RESTROOM LIGHT FIXTURE AND EXHAUST FAN.

(25) EQUIPMENT FURNISHED BY DIVISION 11/15 AND INSTALLED AND WIRED BY DIVISION 16.

(26) PROVIDE VIDEO SURVEILLANCE CAMERA AND MOTION SENSOR AS SPECIFIED IN SECTION 16940. COORDINATE NETWORK SET-UP AND LICENSING WITH CITY OF MADISON IT DEPARTMENT. PROVIDE 2~#14 IN 3/4" CONDUIT FROM SCC-106 TO MOTION SENSOR. PROVIDE 2~#20 IN 3/4" CONDUIT FROM MOTION SENSOR TO CAMERA.

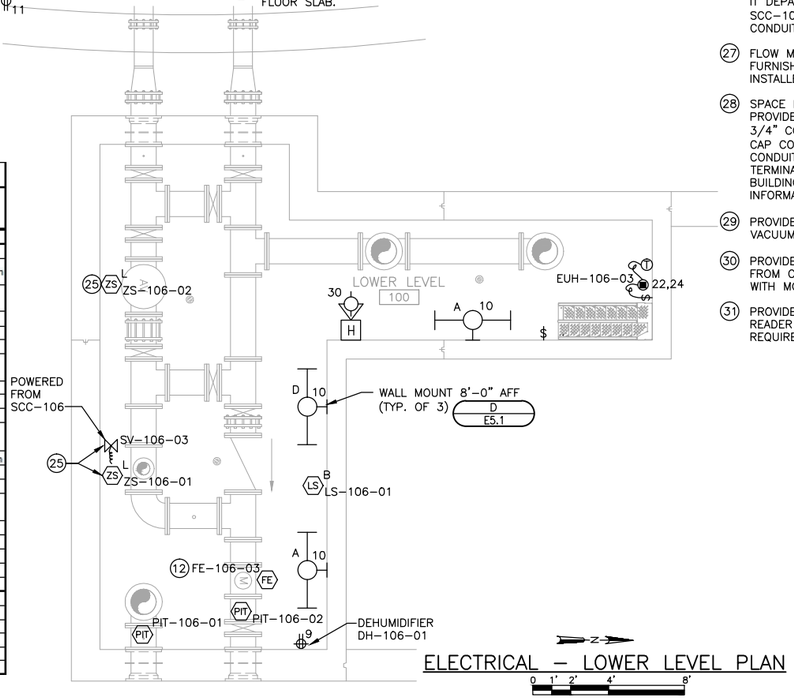
(27) FLOW METERS AND ALL ASSOCIATED CABLES WILL BE FURNISHED BY MADISON WATER UTILITY AND SHALL BE INSTALLED AND WIRED BY CONTRACTOR.

(28) SPACE DEDICATED FOR FUTURE FIBER ENCLOSURE TO BE PROVIDED BY CITY OF MADISON IT DEPARTMENT. PROVIDE 3/4" CONDUIT FROM SCC-106 TO ENCLOSURE LOCATION. CAP CONDUIT 5'-0" ABOVE FINISHED FLOOR. PROVIDE 3" CONDUIT FROM ENCLOSURE LOCATION TO FUTURE FIBER TERMINATION POINT APPROXIMATELY 50 FEET SOUTH OF BUILDING. REFER TO SHEET C1.1 FOR ADDITIONAL INFORMATION.

(29) PROVIDE 2~#14 IN 3/4" CONDUIT FROM LIMIT SWITCH TO VACUUM PRIMING SYSTEM CONTROL PANEL.

(30) PROVIDE 3~#12 AND #12 GROUND IN 3/4" CONDUIT FROM CONTROL PANEL TO RESERVOIR WALL AND SPLICE WITH MOTOR CABLE.

(31) PROVIDE FIRE DEPARTMENT KNOX BOX ABOVE CARD READER JUNCTION BOX. COORDINATE KNOX BOX REQUIREMENTS WITH MADISON FIRE DEPARTMENT.



ELECTRICAL – LOWER LEVEL PLAN

0 1' 2' 4' 8'

Madison Water Utility
Quality and Reliability since 1882

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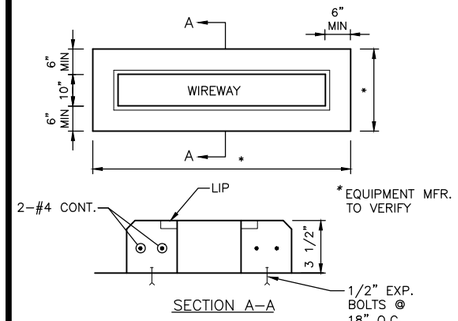
ELECTRICAL FLOOR PLANS

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071
PROJECT MGR. ANDY MULLENDORE

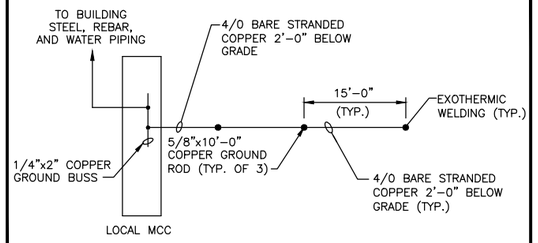
STRAND ASSOCIATES®

SHEET 27 E1.1

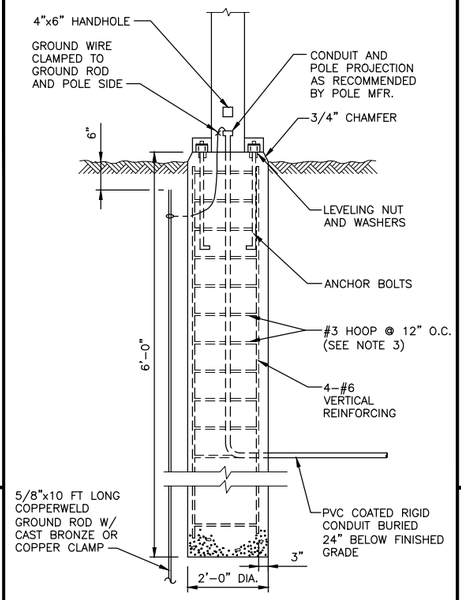


NOTE: PROVIDE FLUSH METAL COVER FOR EXPOSED WIREWAY

A E5.1 SCC/MCC PAD
NO SCALE



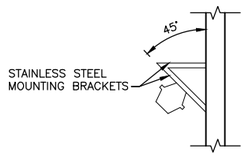
B E5.1 GROUND GRID
NO SCALE



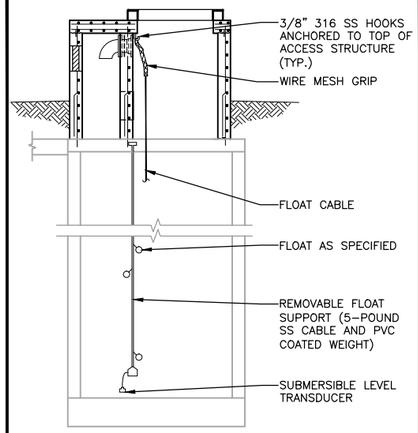
NOTES:

1. TOP OF BASE TO BE 4" ABOVE GRADE. TOP 12" TO BE FORMED.
2. POLE SHALL BE MOUNTED 4'–0" BACK FROM EDGE OF RESERVOIR.
3. PROVIDE 3–#3 TIES @3" O.C. AT TOP OF POLE BASE.

C E5.1 CAMERA POLE BASE
NO SCALE



D E5.1 FIXTURE MOUNTING DETAIL
NO SCALE



E E5.1 FLOATS MOUNTING DETAIL
NO SCALE

FIXTURE SCHEDULE

Fixture Type	Manufacturer(s)	Model Number	Lamp Type	Mounting	Remarks
A	Metalux	VT3-332DR-UNV-ER81-U	3~32W T8	Surface/Bracket	
B	Ligman Lighting	U31611-120V-RAL 9011	10W LED	Wall	
C	Beta	SFT-227-5S-RM-03-D-UL-BK-350-40K	36W LED	Soffit	
D	Metalux	VT3-332DR-UNV-ER82-U	3~32W T8	Surface	Provide one emergency ballast, Bodine B30. Two lamps shall be controlled by emergency ballast and generate minimum3000 lumens.
X1	Sure-Lites	APX7R	LED	Wall	

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ELECTRICAL DETAILS AND FIXTURE SCHEDULE

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO.
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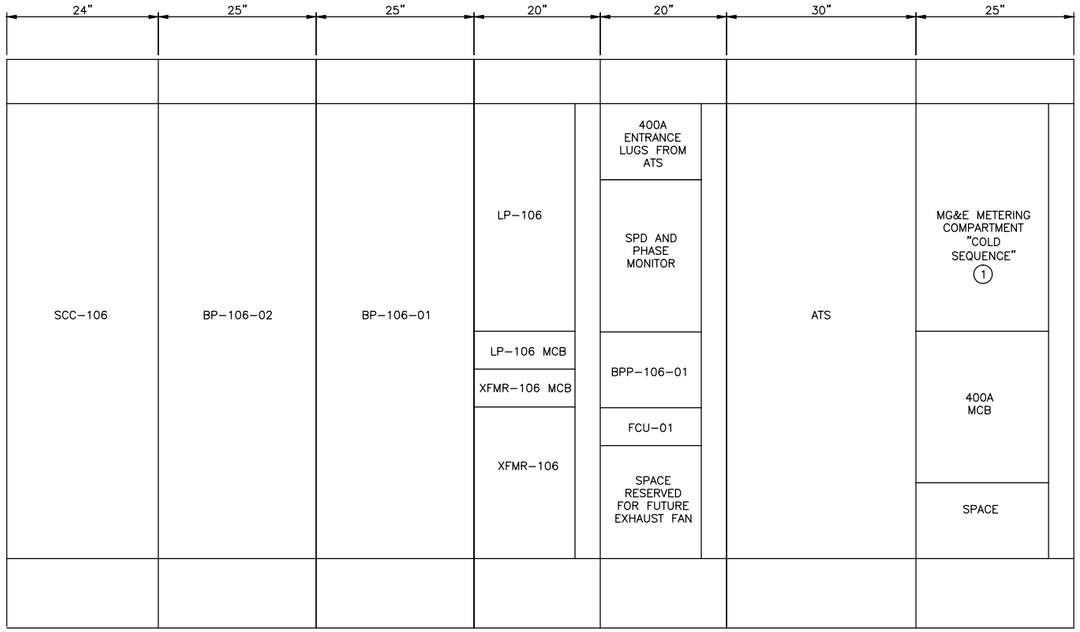
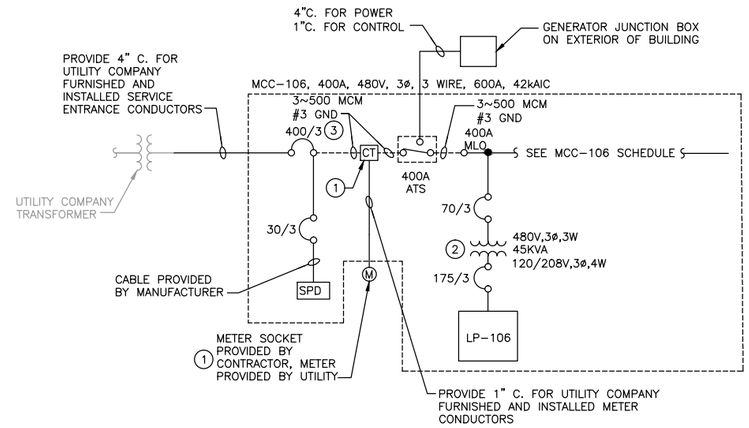
MOTOR AND MOTOR CONTROL CENTER SCHEDULE MCC–106

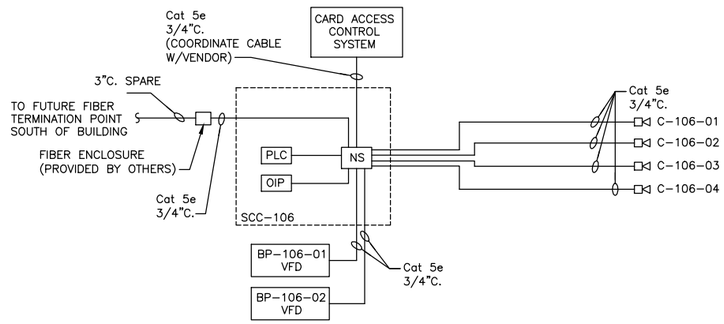
EQUIPMENT AND NAMEPLATE TITLES			EQUIPMENT LOCATION	PANEL MCC	MOTOR INFORMATION				MOTOR STARTER INFORMATION					CONTROL & INTERLOCKS	CONDUIT AND WIRE** 1ST ROW=CONTROL* 2ND ROW=POWER	REMARKS***
EQUIPMENT NUMBER	FIRST LINE SECOND LINE WHEN EQUIPMENT NUMBER IS INDICATED	SECOND LINE THIRD LINE WHEN EQUIPMENT NUMBER IS INDICATED			HP/ KW	VOLTS	F.L.I. IN AMPS	RPM	SIZE	TYPE	BREAKER BKR. TYPE	BREAKER I IN AMPS	CONTROL DEVICE (SEE INFO)	DESCRIPTION		
FCU–106–01	PUMP RM FAN	COIL UNIT	PUMP ROOM	MCC–106	1 1/2	480	3	–	–	–	A	15	–	–	3~#12 3/4"C.	
BP–106–01	BOOSTER	PUMP NO. 1	PUMP ROOM	MCC–106	100	480	124	1800	4	ND VFD	M	175	H–O–A,R,R,R,G,ETM,4	MOTOR T–STATS, CHLORINE ANALYZER OUTLET ZS–106–06, ZS–106–07 (VIA RELAY IN SCC) SCC (BACKUP FLOATS CONTROL)	4~#14, 2~#12, 3/4"C. 2~#14, 3/4"C. (TO SCC) 3~2/0, 2"C.	SEE NOTE A R=VFD FAULT, R=MOTOR OVERTEMP, R=FLOW FAIL
BP–106–02	BOOSTER	PUMP NO. 2	PUMP ROOM	MCC–106	100	480	124	1800	4	ND VFD	M	175	H–O–A,R,R,R,G,ETM,4	MOTOR T–STATS, CHLORINE ANALYZER OUTLET ZS–106–05, ZS–106–12 (VIA RELAY IN SCC) SCC (BACKUP FLOATS CONTROL)	4~#14, 2~#12, 3/4"C. 2~#14, 3/4"C. (TO SCC) 3~2/0, 2" C.	SEE NOTE A R=VFD FAULT, R=MOTOR OVERTEMP, R=FLOW FAIL
BPP–106–01	VACUUM PRIMING	SYSTEM	PUMP ROOM	MCC–106	–	480	–	–	–	–	A	20	–	–	3~#12 3/4" C.	



MCC–106 ELEVATION
NO SCALE



MCC–106 ONE–LINE DIAGRAM
NO SCALE



SCADA RISER DIAGRAM
NO SCALE

KEY NOTES:

(1) MG&E CURRENT TRANSFORMER (CT) METERING COMPARTMENT SHALL MEET ALL UTILITY REQUIREMENTS. CONTRACTOR SHALL SUBMIT METERING COMPARTMENT SHOP DRAWINGS TO MG&E FOR REVIEW AND APPROVAL. CONTRACTOR SHALL COORDINATE INSTALLATION OF CT COMPONENTS WITH MG&E. PROVIDE PROVISIONS FOR PADLOCKING COMPARTMENT.

(2) TRANSFORMER SHALL BE GROUNDED AS SEPARATELY DERIVED SYSTEM.

(3) MCB SHALL BE GFI, SERVICE ENTRANCE RATED, AND 100% RATED.

CONTROL DEVICES (OIL TIGHT, HEAVY DUTY)		
PUSHBUTTONS		INDICATING LIGHTS (PUSH TO TEST)
1 START	7 FAST	R RED (FAIL)
2 STOP	8 SLOW	G GREEN (RUN)
3 LOCK OUT STOP	9 JOG FWD.	A AMBER
4 RESET	0 JOG REV.	B BLUE
5 FORWARD	Z SPECIAL	W WHITE
6 REVERSE	M MAINT. CONT.	C CLEAR

SELECTOR SWITCHES AND AUXILIARY DEVICES			
H–O–R	HAND–OFF–REMOTE	F–R	FORW.–REV.
H–L–O–A	HIGH–LOW–OFF–AUTO	O–O	ON–OFF
H–O–A–L	HAND–OFF–AUTO–LOCAL	R3	LOCKOUT STOP AT MOTOR
H–O–A	HAND–OFF–AUTO	L–R	LOCAL REMOTE
F–O–R	FOR.–OFF–REV.		
ETM	ELAPSED TIME METER		

BREAKER TYPE, CODE
A AMB. COMP.
M MAG. ONLY

MOTOR STARTER INFORMATION	
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
TS2WR	TWO SPEED TWO WINDING REVERSING
TS2W	TWO SPEED TWO WINDING
RVSS	REDUCED VOLTAGE SOLID STATE
VFD	VARIABLE FREQUENCY DRIVE
ND	NORMAL DUTY
HD	HEAVY DUTY

* IF APPLICABLE
** PROVIDE GROUND WIRE FOR EACH PIECE OF EQUIPMENT SIZED PER THE NEC
*** SEE SPECIFICATIONS SECTION 16940–CONTROLS AND INSTRUMENTATION, PART 3 FOR NOTES REFERENCED

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Quality and Reliability since 1882

REVISIONS

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ELECTRICAL MCC SCHEDULE, MCC ELEVATION, ONE-LINE DIAGRAM, AND SCADA RISER DIAGRAM

BOOSTER PUMPING STATION 106 RECONSTRUCTION
110 GLENWAY STREET
MADISON WATER UTILITY
MADISON, WISCONSIN

JOB NO. 1020.071
PROJECT MGR. ANDY MULLENDORE

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