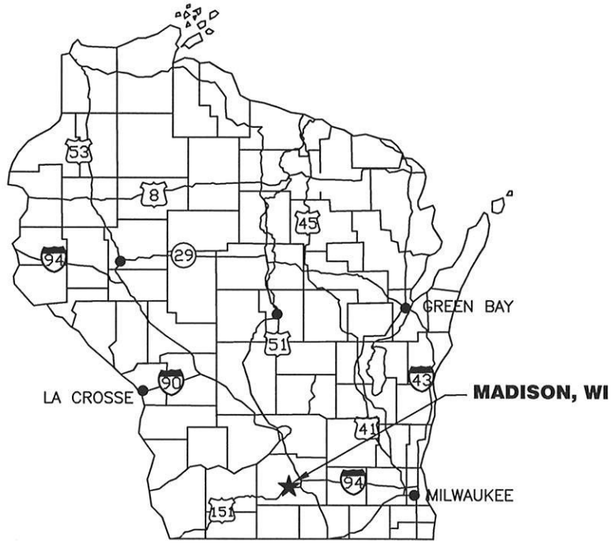
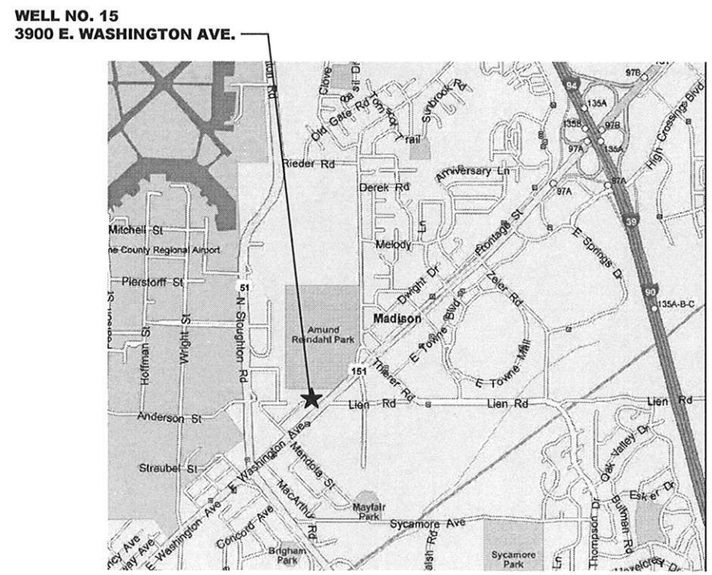
WELL 15 VOC AIR STRIPPER

FOR THE

MADISON WATER UTILITY
DANE COUNTY, WISCONSIN
AUGUST, 2012



PROJECT LOCATION MAP
NO SCALE



WELL LOCATION MAP
NO SCALE

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

WISCONSIN
ANDY L. MULLENDORE
E-32542
MADISON
WI
PROFESSIONAL ENGINEER
8/8/2012

WISCONSIN
SCOTT G. HERKERT
E-30886
MADISON
WI
PROFESSIONAL ENGINEER
8/8/2012

CONTRACT NO. 6941

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DESIGN CRITERIA

Plant Design Flow Rate		2200 gpm
		3.2 mgd
Treatment Equipment		
Air Strippers		
Status		New
Function		VOC Removal
Design Conditions		
Parameters		TCE, PCE
Maximum Raw Water Concentration		20 ppb
Maximum Finished Water Concentration		< 1.0 ppb
Manufacturer		QED Environmental Systems
Type of System		Low Profile Tray Air Stripper
Number of Units		2
Dimensions		
Length		11'-10"
Width		10'-2"
Height		9'-11"
Weight		25000 pounds each
Unit Capacity		1100 gpm Each
Air Flow Requirements		5200 cfm Each
Number of Blowers		2
Preliminary Blower Horsepower		60 Hp
Noise Constraint		45dB at Property Line
Blower Accessories		Silencer and filter on Intake
Chlorination		
Status-Injector, Scales, Tubing, Cylinders, Inductor		Existing
Function		Disinfection
Type		Gas
Dose		1.00 ppm
Chemical Use		26.4 ppd
Supply		150 pd Cylinders
Control		Constant Rate, Manual Control
Safety Shutoff		New
Fluoridation		
Status - Scale, Pump, Tubing, Tank, Scales		Existing
Function		Dental
Type		Hydrofluorosilicic Acid
Strength		23%
Target Dose		0.7 ppm
Target Rate		.44 gph
Control		Manual
Sand Separator		
Status		New
Function		Remove Sand Prior to Well Pump
Manufacturer and Model		Lakos PPS-1640-K
Type		Down-hole
Number of Units		1
Capacity		1640 -2560 gpm
Dimensions		
Length		15' - 5"
Diameter		16"
Weight		703 pds
Required Submergence		30 ft
Friction Loss		15 ft
Pumping Equipment		
Well Pump		
Function		Pump water from well through the air strippers
Manufacturer		Goulds
Model		14 RJHC
Current Stages		2 Stage
Propose Stages		3 Stage
Maximum Speed		1770 rpm
Existing Motor		125 HP
Proposed Motor		150 HP
Design Flow		2200 gpm
Design Head		193 ft
Other Design Considerations		Provide VFD on Pump Motor
Setting Depth		190 ft
Booster Pump		
Manufacturer		Layne

LIST OF DRAWINGS

DATE:

REVISIONS

NO.

DRAWING LIST AND DESIGN SUMMARY

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

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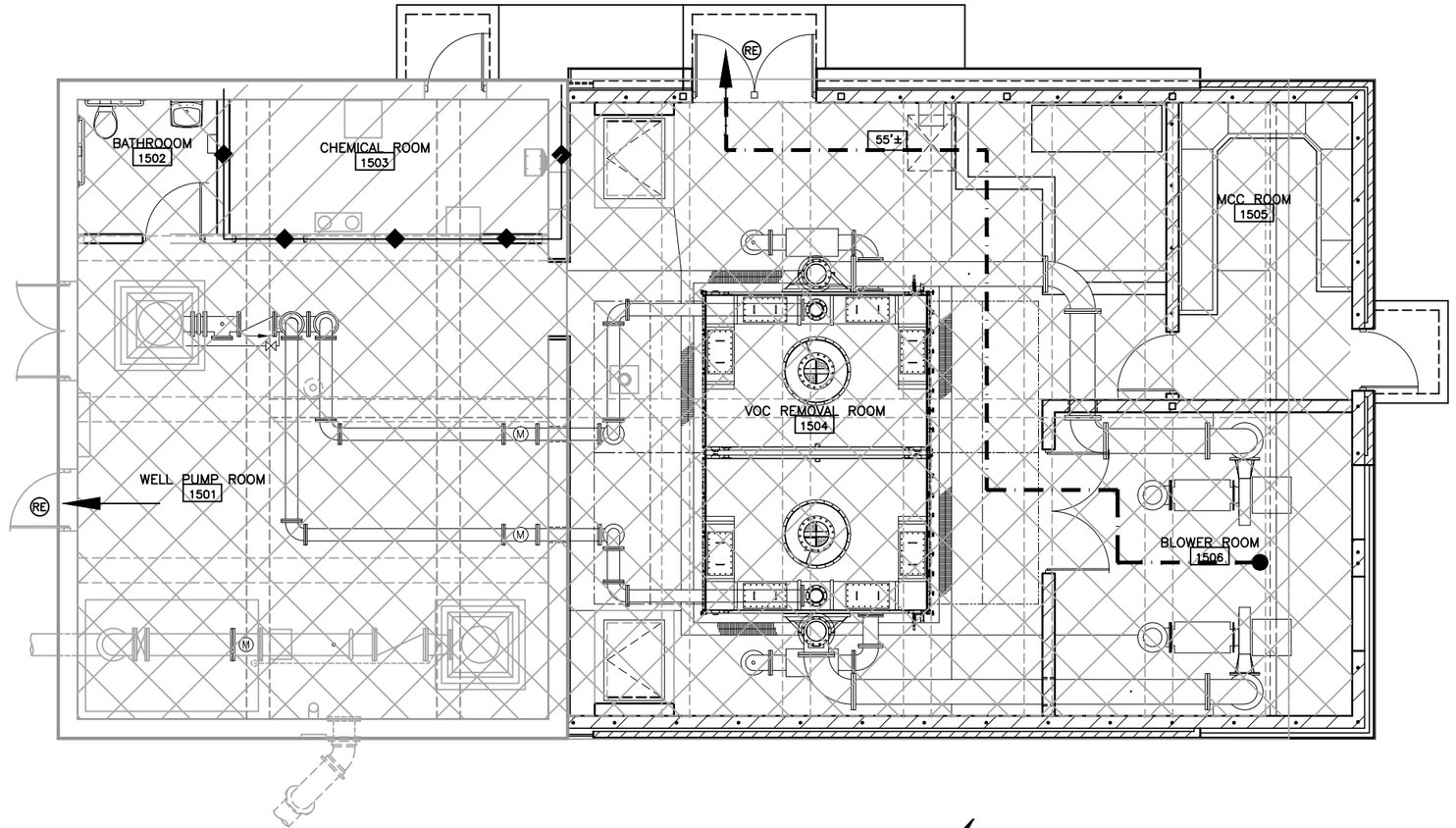

LIFE SAFETY AND EXITING PLAN

0 1' 2' 4' 8'

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
- 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 BUILDING TO BE BUILT ADJACENT/CONNECTED TO THE EXISTING FACILITY
OCCUPANCY TYPE	SEPARATED USE
USE GROUPS	F-1 FACTORY INDUSTRIAL (WATER TREATMENT) H-3 HAZARDOUS (CHEMICAL STORAGE)

HAZARDOUS MATERIALS

CHEMICAL	CHEMICAL CLASSIFICATION	MAX. CONTROL AREA QUANTITY	ACTUAL QUANTITY[a]
CHLORINE GAS	OXIDIZING GAS, TOXIC	150 LB	600 LB
HYDROFLUOROSILICIC ACID	TOXIC CORROSIVE	500 LB	1000 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[b]
HEIGHT	40 FEET		18'-0"
AREA PER FLOOR LEVEL			
F-1	8,500 SF	F-1	2,389 SF
H-3	5,000 SF	H-3	125 SF
TOTAL ALLOWABLE AREA PER FLOOR LEVEL	8,500 SF	TOTAL ACTUAL AREA	2,514 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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LIFE SAFETY PLAN AND CODE SUMMARY

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MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

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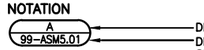
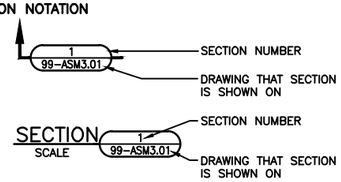
DRAFTING SYMBOLS

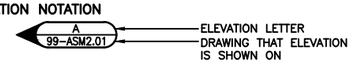
DETAIL NOTATION



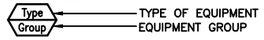
SECTION NOTATION

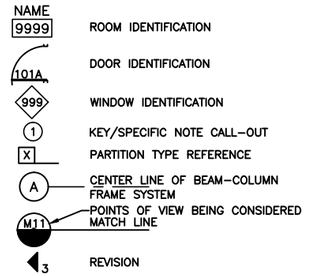


ELEVATION NOTATION

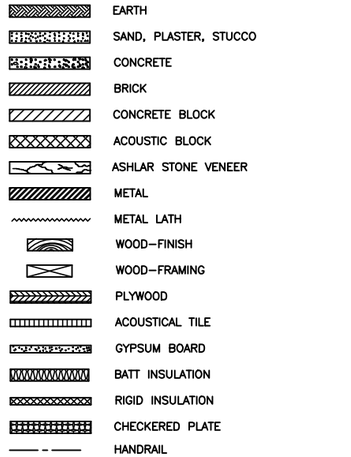


EQUIPMENT IDENTIFICATION

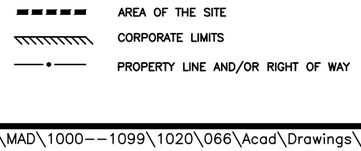


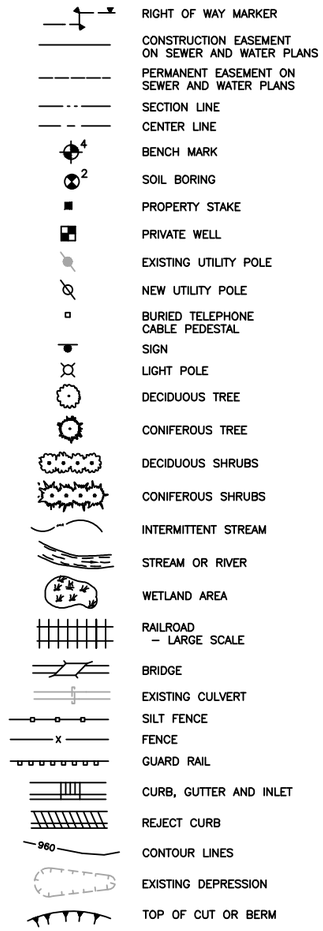


ARCHITECTURAL SYMBOLS

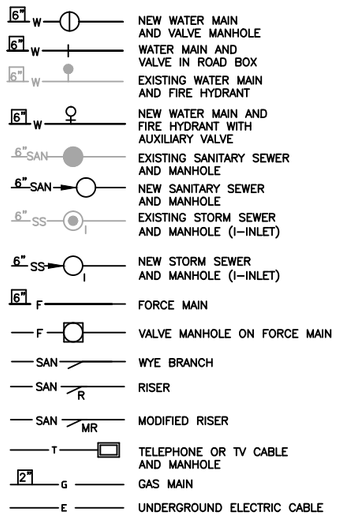


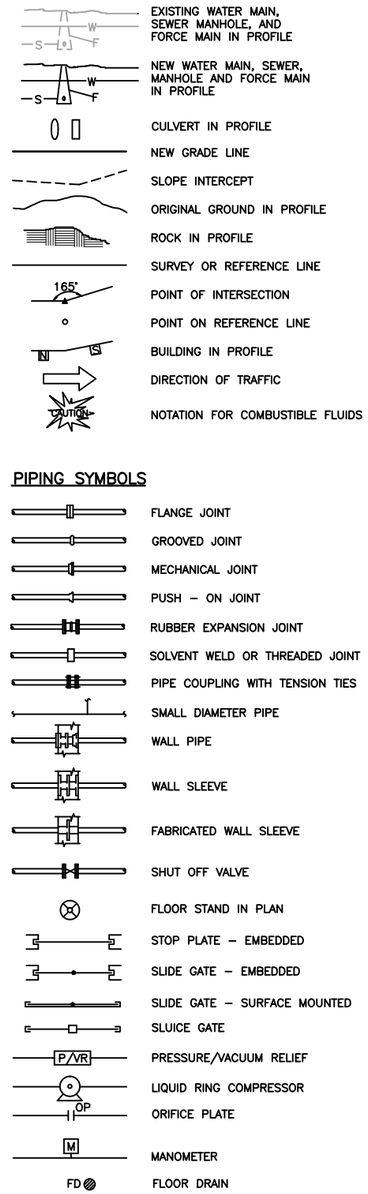
TOPOGRAPHICAL SYMBOLS



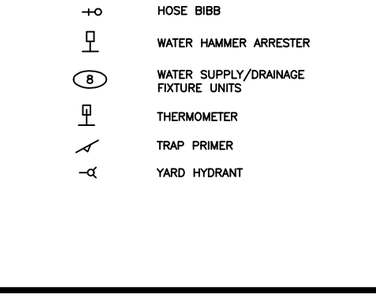


UNDERGROUND UTILITY SYMBOLS

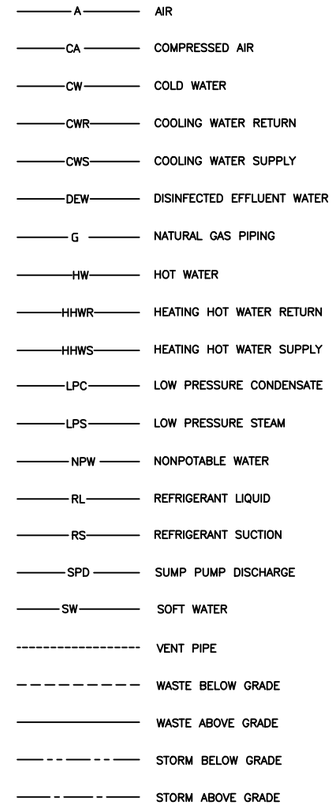




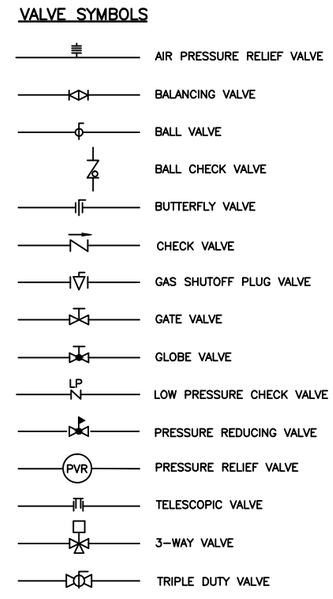
PIPING SYMBOLS



PIPING DESIGNATIONS



VALVE SYMBOLS



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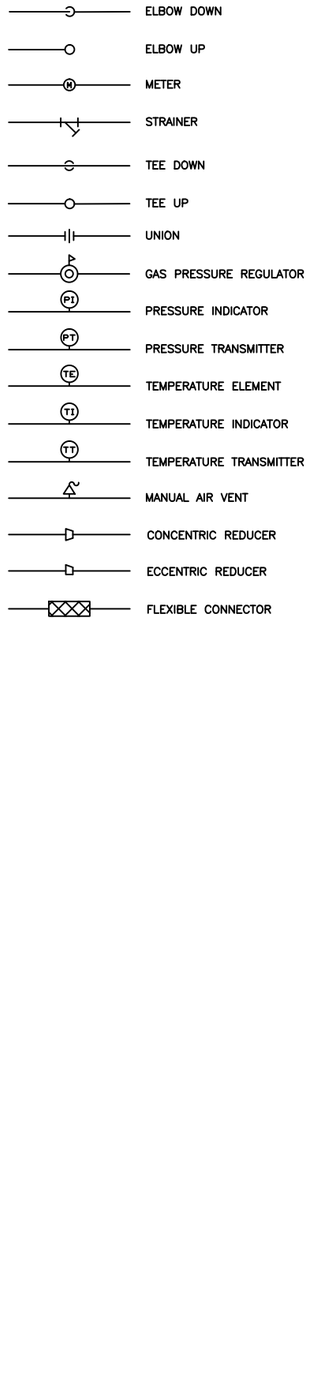

DATE:

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STANDARD SYMBOLS - 1

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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, HID, SURFACE OR PENDANT
- INCANDESCENT, 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 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
- VS VACUUM SWITCH
- 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 FAN, TILT, ZOOM SECURITY CAMERA

TECHNOLOGY SYMBOLS

- DATA JACK
- PHONE JACK
- VOICE AND DATA JACKS
- VOIP WALL MOUNT VOIP 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

DATE:
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STANDARD SYMBOLS - 2

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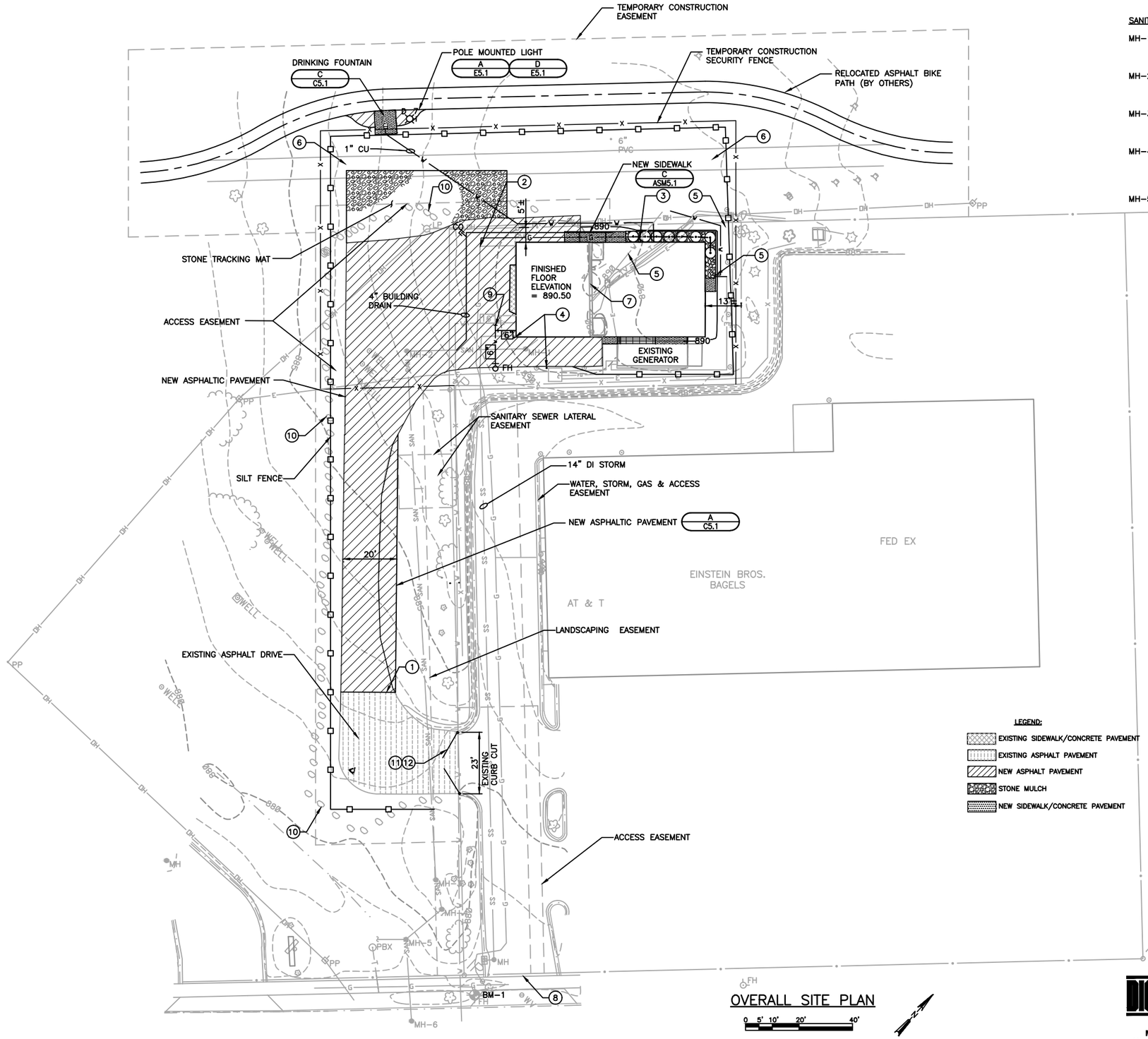

OVERALL SITE PLAN

0 5' 10' 20' 40'

LEGEND:

- EXISTING SIDEWALK/CONCRETE PAVEMENT
- EXISTING ASPHALT PAVEMENT
- NEW ASPHALT PAVEMENT
- STONE MULCH
- NEW SIDEWALK/CONCRETE PAVEMENT

SANITARY MANHOLE NOTES:

MH-1
RIM 890.27
INVERT N 882.87 4" PVC
INVERT SW 882.82 6" PVC

MH-2
RIM 887.2
INVERT NE 878.80 6" PVC
INVERT SE 878.80 8" PVC

MH-3
RIM 881.65
INVERT NW 872.65 8" PVC
INVERT SE 872.62 8" PVC

MH-4
RIM 881.35
INVERT NW 872.27 8" PVC
INVERT S 872.07 8" PVC
INVERT N 872.07 8" CLAY

MH-5
RIM 878.22
INVERT N 868.47 8" PVC
INVERT SE 866.72 8" PVC
INVERT SW 866.67 8" PVC

GENERAL NOTES:

1. BM-1: TOP NUT OF HYDRANT – ELEVATION 880.10.
2. SEE SHEET C1.3 FOR EASEMENT PLANS.

KEY NOTES:

(1) SAWCUT EXISTING PAVEMENT AND REMOVE. SEE A C5.1 FOR NEW ASPHALT PAVEMENT AND SUBGRADE SECTION.

(2) RELOCATED NATURAL GAS SERVICE PROVIDED BY UTILITY COMPANY.

(3) NEW NATURAL GAS METER PROVIDED BY UTILITY COMPANY.

(4) GUARD POST A ASM5.1.

(5) REMOVE METER STAND, GALVANIZED PIPE AND 1-INCH POLYETHYLENE PIPE. REINSTALL METER STAND AND PIPE AND RECONNECT POLYETHYLENE TUBING AT LIMITS OF EXCAVATION.

(6) REMOVE EXISTING BIKE PATH WITHIN SITE LIMITS.

(7) MAINTAIN EXISTING ROOF DRAIN DOWNSPOUT UNTIL DOWNSPOUT IS RELOCATED.

(8) ALL CONSTRUCTION TRAFFIC SHALL USE THIS ENTRANCE. NO CONSTRUCTION TRAFFIC IN REMAINDER OF PARKING LOT. DO NOT USE LEIN ROAD ENTRANCE.

(9) CUT-IN 6-INCH FIRE PROTECTION LINE WITH TWO 6-INCH ISOLATION VALVES.

(10) REMOVE ALL LANDSCAPE BOULDERS AND RESTORE LANDSCAPING.

(11) ATTACH KNOX BOX MODEL 3263 TO GATE WITH 3/8" (MIN.) U-BOLTS. VERIFY MODEL WITH MADISON FIRE DEPARTMENT.

(12) PROVIDE VEHICLE BARRIER DOUBLE SWING GATE AS SPECIFIED.

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 AND A NOTICE OF TERMINATION HAS BEEN APPROVED BY THE DNR.
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. 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.
11. EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF RAINFALL OF 0.5 INCH OR MORE.
12. SEDIMENT SHALL BE PROPERLY DISPOSED OF ONCE DEPOSITS REACH 1/2 THE HEIGHT OF THE SILT FENCE.

DATE:
REVISIONS
NO.

OVERALL SITE PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET C1.1

DRINKING FOUNTAIN
C
C5.1

TEMPORARY CONSTRUCTION SECURITY FENCE

RELOCATED ASPHALT BIKE PATH (BY OTHERS)

NEW ASPHALT PAVEMENT

6" PVC

REMOVE ALL EXISTING LANDSCAPE BOULDERS. RESTORE LANDSCAPING

LANDSCAPE EDGING

STONE MULCH OVER WEED BARRIER (TYPICAL)

8-CB

FINISHED FLOOR ELEVATION = 890.50

NEW BUILDING FLOOR EL. 890.50

14'-0" (2)

1'-0"

6"

EXISTING GENERATOR

EXISTING WEATHERED SPLIT RAIL FENCE

NEW ASPHALTIC PAVEMENT

SITE PLAN

0 5' 10' 20'

N

LEGEND:

- EXISTING SIDEWALK/CONCRETE PAVEMENT
- EXISTING ASPHALT PAVEMENT
- NEW ASPHALT PAVEMENT
- STONE MULCH
- NEW SIDEWALK/CONCRETE PAVEMENT

KEY NOTES:

1. REMOVE EXISTING METAL STEPS TO GENERATOR. BRACKETS WELDED TO FRAME TO REMAIN.
2. PROVIDE NEW ALUMINUM GRATED PLATFORM BETWEEN THE EXISTING GENERATOR AND NEW BUILDING PER E / C5.1.
3. PROVIDE NEW CONCRETE SIDEWALK BETWEEN GENERATOR BASE AND NEW BUILDING. SIDEWALK TO CONTINUE UNDER NEW PLATFORM. SLOPE TO DRAIN. SEE C / ASM5.1.
4. PROVIDE ONE ALUMINUM GRATING STAIR TREAD. MOUNT TO BUILDING AND GENERATOR FRAME W/ ALUMINUM SUPPORT ANGLES.
5. REMOVE EXISTING CONCRETE STOOP/WALK.

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		MIN. HOLE SIZE			
						MIN. CONT. SIZE	MIN. CONT. DEPTH	MIN. HOLE DIA.	MIN. HOLE DEPTH		
SMALL DECIDUOUS SHRUBS											
CB	Dwarf European Cranberrybush Viburnum	Viburnum opulus 'Nanum'	24"	20" HT	POT	12"	9"	28"	9"	1	Bed

DATE:
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NO.

SITE PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

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C1.2

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GENERAL NOTES:

1. ONLY MAJOR FEEDER ROUTES ARE SHOWN ON THIS DRAWING. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROVIDING ALL HANDHOLES, CONDUIT AND WIRE, AND CABLE FOR ALL OTHER FEEDERS, BRANCH CIRCUITS, INSTRUMENTATION, COMMUNICATION, AND CONTROL CIRCUITS NOT SPECIFICALLY SHOWN.
2. EXISTING UNDERGROUND ELECTRIC, TELEPHONE, CABLE TV, AND UTILITY TRANSFORMER WILL BE RELOCATED AS PART OF A SEPARATE CONTRACT.

KEY NOTES:

1. REMOVE ABANDONED CONDUIT AND WIRE.
2. REMOVE EXISTING EXTERIOR FIBER CONDUIT BACK TO 2' FROM EXTERIOR OF BUILDING. PROVIDE HANDHOLE FOR CONNECTION TO EXISTING AND NEW CONDUIT. FIBER SHALL BE PULLED BACK TO HANDHOLE TO ALLOW FOR INSTALLATION OF NEW CONDUIT. FIBER AND CONDUIT TO BE REROUTED THROUGH NEW WALL AND TERMINATE IN FIBER ENCLOSURE OF EXISTING BUILDING. REFER TO E1.1.
3. CAMERA SHALL BE RELOCATED TO NEW POLE AND MOUNTED AT 8'-0" AFG. PROVIDE SUPPORTS, CONDUIT, AND UNDERGROUND RATED CAT 5e CABLE. CONDUIT SHOULD BE SEPARATE FROM LIGHTING CONDUITS.
4. MOUNT TO NEW POLE AT 10'-0" AFF AND ORIENTED TOWARDS WELLHOUSE.
5. STUB CONDUIT OUT 36" FROM WALL. COORDINATE WITH UTILITY COMPANY.
6. CONDUIT AND CABLE INSTALLED AS PART OF A SEPARATE CONTRACT.

A E5.1

CS-15-04 (3)

MCC-15

SCC-15

GROUND GRID B E5.1

2~4"C. (5)

2" C.

HANDHOLE (2)

UTILITY COMPANY TRANSFORMER

EXISTING UTILITY GENERATOR

890

ELECTRICAL SITE PLAN

0 5' 10' 20'

N

NO.	REVISIONS	DATE:

ELECTRICAL SITE PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET
CE1.3

N 46° 21' 18" E, 315.00

N 43° 38' 25" W, 70.00

N 43° 38' 25" W
10.00

S 43° 38' 25" E
10.00

N 46° 21' 18" E, 110.00

(S 45° 59' 49" W)
N 46° 21' 18" E, 135.00

S 46° 21' 18" W, 70.00

S 46° 21' 18" W
60.00

N 43° 38' 25" E, 70.00

EASEMENT "C"
ON CSM 3386
VACATED BY DOC.2684749

ENCROACHMENT AGREEMENT
FOR MONITORING WELLS
DOC.3090206,3815194,3279304

PERPETUAL SANITARY SEWER
LATERAL EASE.
V.30160 P.72
DOC.2684746

N 43° 38' 25" W, 238.95

S 43° 38' 25" E, 228.95
(N 44° 00' 11" W)

SANITARY SEWER EASEMENT
DOC.1246120
V.121 P.327
VACATED BY DOC.2684747
V.30160 P.74

LOT 2
CSM 3386
VOL.13 P.188
DOC. 1652407

T — N
29 28
32 33
R — E
FOUND ALUMINUM CAP

PERPETUAL LANDSCAPE EASE.
DOC.2684748

SANITARY SEWER EASE.
DOC.1240696
V.105 P.104

N 89° 58' 20" E, 1816.89

EASEMENT FOR
WATER, STORM SEWER,
GAS, AND ACCESS PURPOSES
DOC.124119
V.121 P.325

INGRESS/EGRESS EASEMENT
DOC.2684745
V.30160 P.71

INGRESS/EGRESS
DOC.2685954
V.30203 P.39-52

S 46° 21' 18" W
50.00

SANITARY SEWER EASEMENT
DOC.1240699
V.105 P.107

N 43° 38' 25" W
50.00

BM-1

N 0° 01' 40" W
26.68

ENCROACHMENT AGREEMENT
FOR CENTURYTEL ACQUISITION, LLC.
DOC.4550369

T — N
28
33
R — E
FOUND BRASS CAP

EAST WASHINGTON AVENUE (USH 151)

1 PRIVATE DRIVEWAY
PER ACCESS CONTROL PROJECT 017-2(3)
V.2425 P.41 DOC.1690067

LEGEND

( ) RECORDED AS

PERMANENT ACCESS EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

BEARINGS ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE
SYSTEM, DANE COUNTY

N

0 40 80

DATE:

REVISIONS

NO.

PERMANENT AND TEMPORARY EASEMENTS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET
C1.4

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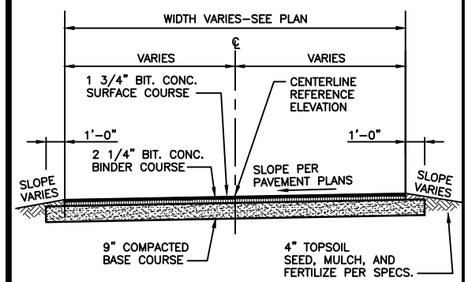
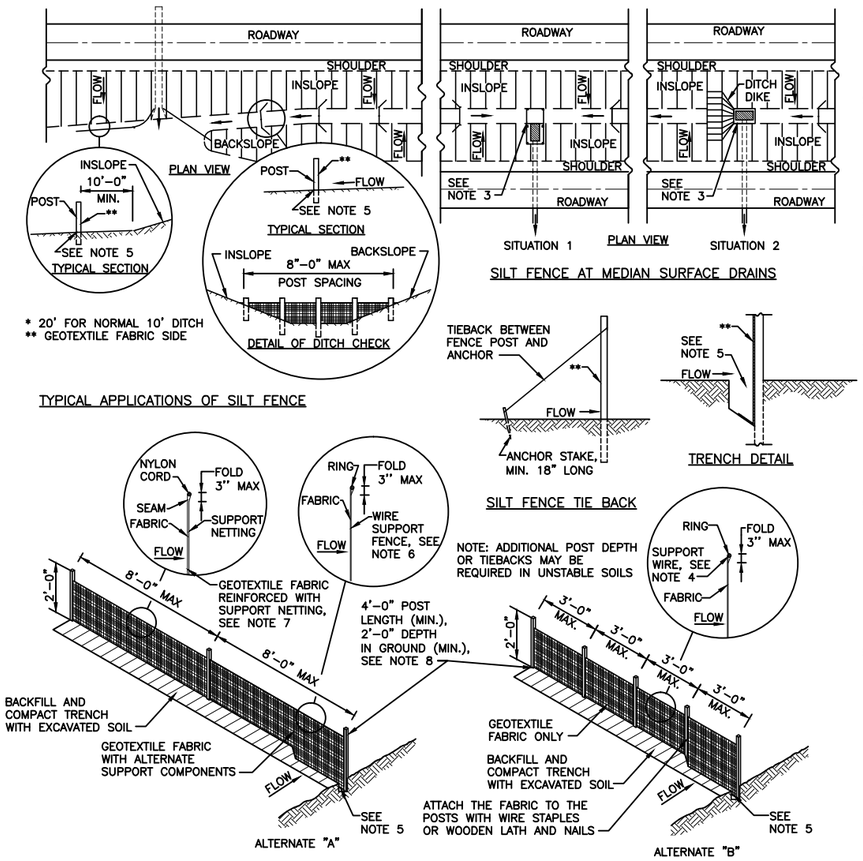
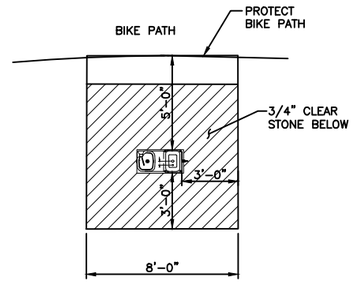


A C5.1 NEW PAVEMENT SECTION
NO SCALE

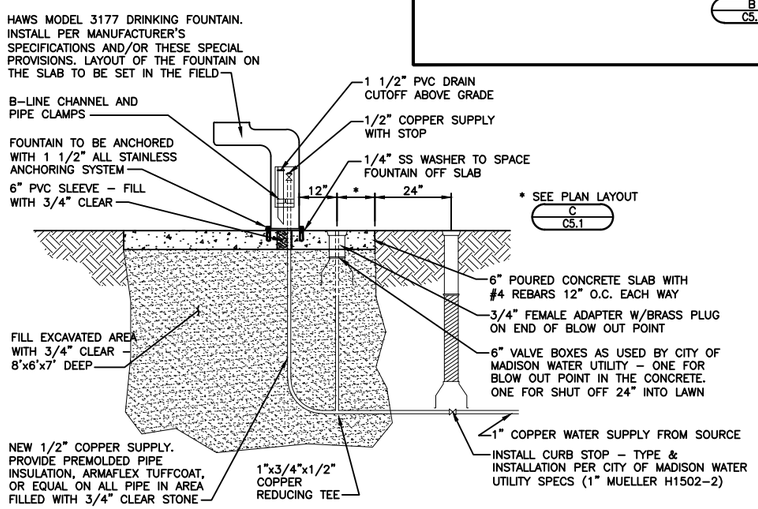


B C5.1 SILT FENCE
NO SCALE

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.



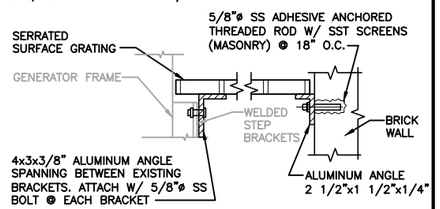
C C5.1 DRINKING FOUNTAIN LAYOUT
NO SCALE



D C5.1 DRINKING FOUNTAIN LAYOUT
NO SCALE

NOTES:
1. 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"



E C5.1 ALUMINUM GRATING
NO SCALE

DATE:
REVISIONS
NO.

SITE DETAILS
WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066
PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET C5.1

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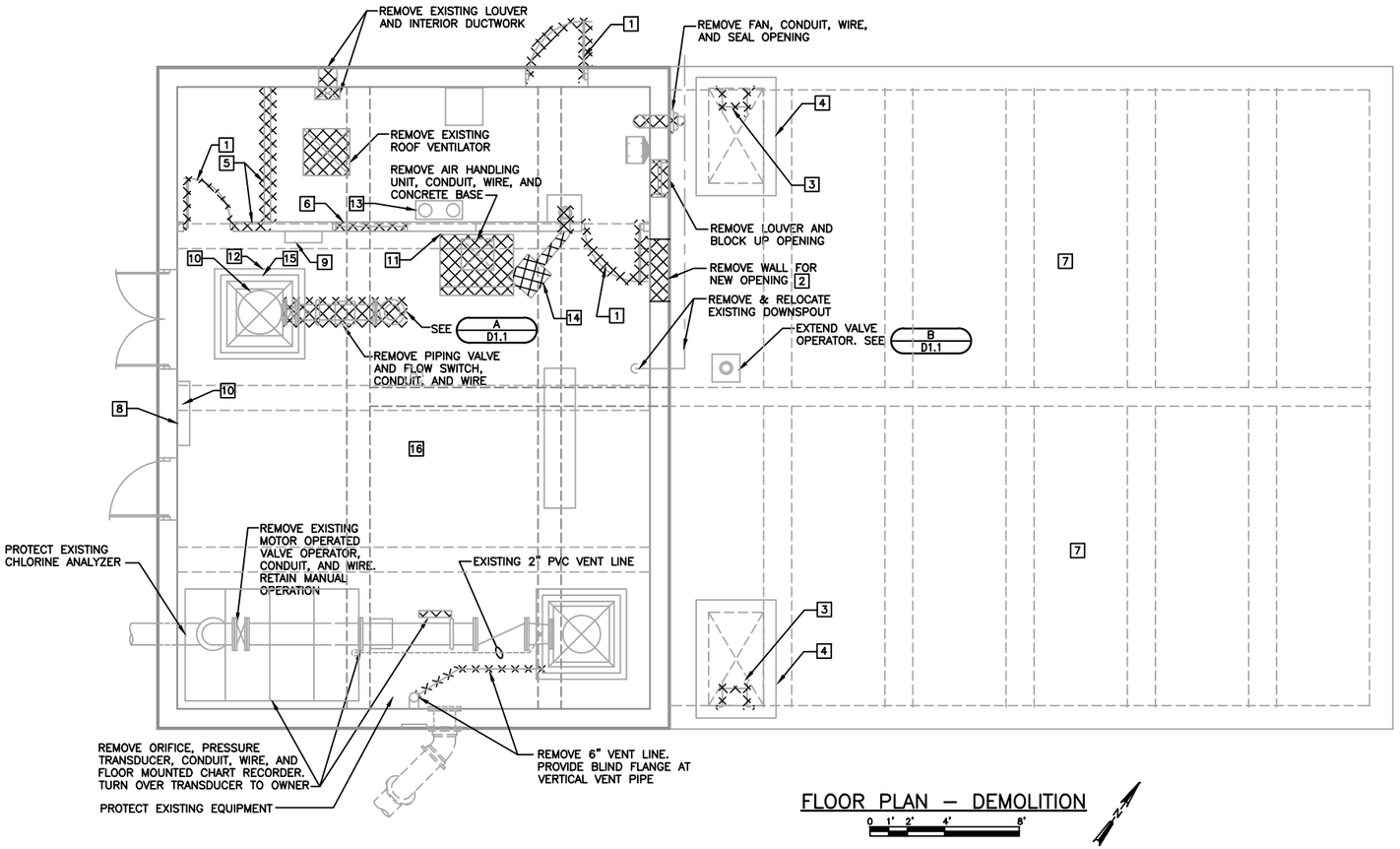
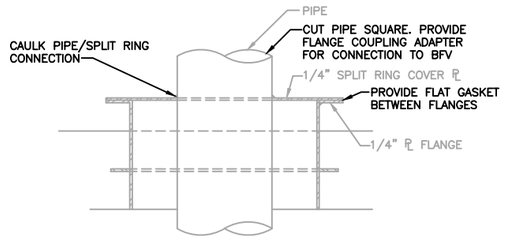


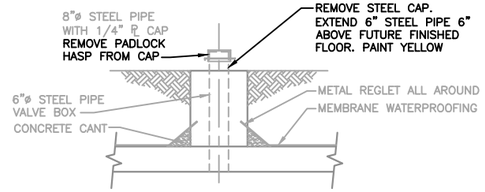
FLOOR PLAN – DEMOLITION

0 1' 2' 4' 8'



A D1.1 FLOOR SLEEVE

0 3" 6" 1'



B D1.1 VALVE BOX

0 1' 2' 4'

GENERAL NOTES:

1. REMOVE ALL INSULATION FROM EXISTING DUCTILE IRON PIPE IN WELLHOUSE. PREP, PRIME AND PAINT PIPING IN ACCORDANCE WITH DIV. 9.
2. NOT ALL PIPING AND EQUIPMENT SHOWN.
3. ALL HOLES AND OPENINGS FROM PIPING, EQUIPMENT, PIPE HANGERS, ETC., BEING REMOVED SHALL BE PATCHED AND SPOT PAINTED TO MATCH EXISTING.
4. SEAL AND CAP ALL EXISTING CONDUIT AND PENETRATIONS THAT ARE NOT BEING REUSED. ALL CONDUIT PENETRATIONS BETWEEN INTERIOR SPACES SHALL BE CONSIDERED FIRE RATED PENETRATIONS AND SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.
5. EXISTING INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM ORIGINAL PLANS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF EXISTING EQUIPMENT AS REQUIRED FOR DEMOLITION AND NEW CONSTRUCTION.
6. CONFIRM ITEMS TO BE DEMOLISHED WITH OWNER PRIOR TO THE START OF WORK.
7. SEE PLUMBING DRAWING FOR ADDITIONAL DEMOLITION.
8. WHERE NEW PROCESS EQUIPMENT INTERFERES WITH EXISTING PIPING, RELOCATE AS REQUIRED TO PERMIT INSTALLATION OF NEW EQUIPMENT.
9. EXISTING INFORMATION SHOWN ON DRAWING WAS OBTAINED FROM EXISTING DRAWINGS AND FIELD MEASUREMENTS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACCURACY OF EXISTING INFORMATION AS REQUIRED FOR BIDDING AND NEW CONSTRUCTION.
10. SEE SPECIFICATIONS FOR GENERAL DEMOLITION REQUIREMENTS.
11. PLANS DO NOT NECESSARILY INDICATE ALL ITEMS REQUIRING DEMOLITION, REMOVAL, OR PATCHING. WHERE NOT SHOWN, ALL DEMOLITION, REMOVAL, CUTTING, PATCHING AND OTHER WORK NECESSARY TO ACCOMMODATE NEW CONSTRUCTION SHOWN SHALL BE PROVIDED AS PART OF THE CONTRACT.
12. REFER TO PLUMBING, HVAC, AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION AND MODIFICATIONS TO EXISTING MECHANICAL AND ELECTRICAL SYSTEMS NOT LISTED HERE. ALL EXISTING MECHANICAL AND ELECTRICAL FIXTURES ARE NOT SHOWN IN PLAN VIEWS.
13. AT ALL LOCATIONS REQUIRING REMOVAL OF EXISTING WALLS, DOORS, AND FRAMES, FIXTURES, EQUIPMENT, DUCTWORK, PIPING, ETC. EXISTING FLOOR AND WALL SURFACES SHALL BE PATCHED OR FILLED AS REQUIRED AND AS APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF FINISHED FLOORING AND WALL COVERING. AT EXISTING MASONRY SURFACES THAT ARE DISTURBED BY REMOVAL, AFFECTED MASONRY OR TILE UNITS SHALL BE REMOVED AND REPLACED WITH MATCHING UNITS NOTED TO BE REMOVED FROM OTHER PORTIONS OF THE BUILDING.
14. AT ALL LOCATIONS REQUIRING PARTIAL HEIGHT DEMOLITION OF EXISTING MASONRY WALLS, SHORE OPENING AS REQUIRED PRIOR TO REMOVAL AND PROVIDE NEW LINTEL OVER OPENING AS NOTED. IF LINTEL IS NOT NOTED, PROVIDE LINTEL PER STANDARD LINTEL DETAIL OR PER DETAIL PROVIDED BY ENGINEER.
15. ALL HOLES AND OPENINGS FROM PIPING, EQUIPMENT, PIPE HANGERS, WALL, EQUIPMENT PADS, ETC. BEING REMOVED SHALL BE PATCHED TO MATCH EXISTING SURFACES.
16. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, MATERIALS, CONDUIT, AND WIRING ASSOCIATED WITH THE ITEMS BEING REMOVED BACK TO POINT OF ORIGIN, AS WELL AS ALL EXISTING ELECTRICAL DEVICES, MATERIALS, AND EQUIPMENT NOT BEING REUSED. EMBEDDED CONDUIT MAY REMAIN BUT MUST BE CAPPED OR PLUGGED.
17. ALL EXISTING EQUIPMENT CONCRETE PADS OR BASES THAT ARE NOT BEING REUSED SHALL BE REMOVED TO A MINIMUM 1–INCH BELOW FLOOR SURFACE AND PATCHED WITH FLOOR TOPPING OR COVERED WITH NEW EQUIPMENT BASE.

DEMOLITION NOTES:

1. REMOVE EXISTING DOOR AND FRAME SYSTEM.
2. SALVAGE EXISTING BRICK FOR PATCHING OPENINGS IN EXISTING WALLS.
3. REMOVE EXISTING LADDER.
4. REMOVE EXISTING ALUMINUM HATCH.
5. REMOVE EXISTING CONCRETE BLOCK WALL.
6. REMOVE EXISTING WINDOW.
7. REMOVE EXISTING WATERPROOFING MEMBRANE ON BELOW–GRADE RESERVOIR TOP SLAB.
8. REMOVE EXISTING GAGE PANEL AND TRANSDUCERS AND TURN OVER TO OWNER. CAP LINES AT FLOOR.
9. REMOVE EXISTING AIR COMPRESSOR AND ALL AIR TUBING. TURN OVER COMPRESSOR AND VALVES TO OWNER. CAP LINES AT FLOOR LEVEL.
10. CAP EXISTING BUBBLER SYSTEM AIR LINES AT FLOOR.
11. REMOVE EXISTING RETURN LINES FROM AIR HANDLING UNIT. CAP AT FLOOR.
12. CUT OFF AIR HANDLING UNIT DRAIN LINE BELOW FLOOR. REPAIR CONCRETE.
13. SALVAGE EXISTING CHLORINATION SYSTEM FOR RE–INSTALLATION BY CONTRACTOR.
14. REMOVE EXISTING GAS UNIT HEATER, CONDUIT, AND WIRE.
15. REMOVE EXISTING PRELUBRICATION SOLENOID AND BYPASS.
16. REMOVE EXISTING ROOFING SYSTEM INCLUDING MEMBRANE, INSULATION, NAILERS AND ACCESSORIES.

NO. | REVISIONS | DATE:

FLOOR PLAN - DEMOLITION, SECTIONS AND DETAILS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

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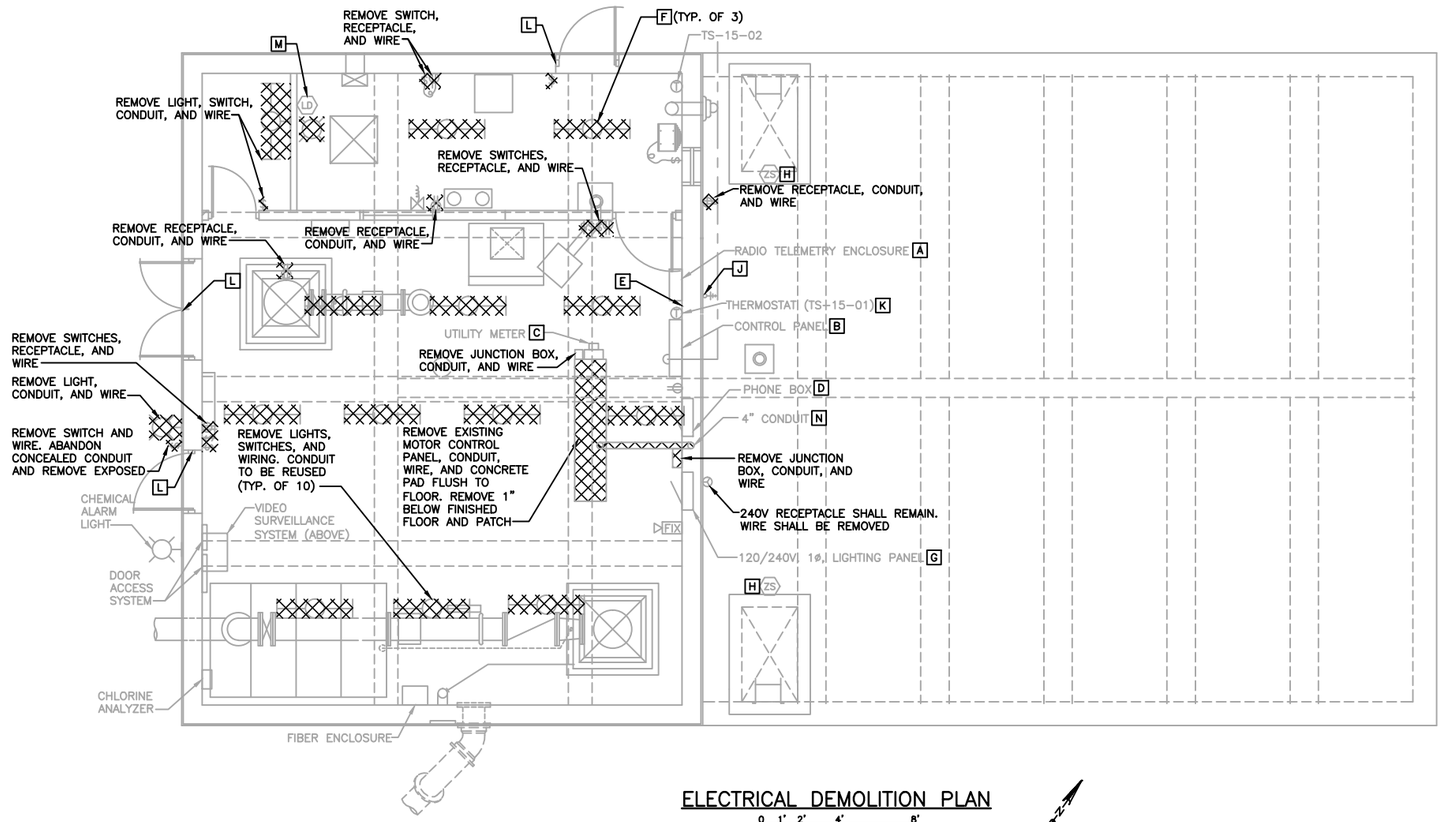

ELECTRICAL DEMOLITION PLAN

0 1' 2' 4' 8'

GENERAL NOTES:

1. REFER TO SECTION 01010 FOR CONSTRUCTION SEQUENCE.
2. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND MATERIALS ASSOCIATED WITH THE ITEMS BEING REMOVED AND SHOWN ON THIS DRAWING, AS WELL AS ALL ELECTRICAL DEVICES, MATERIALS, AND EQUIPMENT NOT BEING REUSED.
3. SEAL AND CAP ALL EXISTING CONDUIT AND PENETRATIONS THAT ARE NOT BEING REUSED. ALL CONDUIT PENETRATIONS BETWEEN INTERIOR SPACES SHALL BE CONSIDERED FIRE RATED PENETRATIONS AND SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.
4. EXISTING INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM ORIGINAL PLANS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATIONS OF EXISTING EQUIPMENT AS REQUIRED FOR DEMOLITION AND NEW CONSTRUCTION.
5. CONFIRM ITEMS TO BE DEMOLISHED WITH OWNER PRIOR TO THE START OF WORK.
6. PAINT AND PATCH ALL AREAS AFFECTED BY DEMOLITION WORK.

DEMOLITION NOTES:

- A REMOVE EXISTING TELEMETRY ENCLOSURE, JUNCTION BOX, CONDUIT, AND WIRE. RADIO WILL BE REUSED AND LOCATED IN SCC-15.
- B REMOVE CONTROL PANEL, CONDUIT, AND WIRE. TURN OVER PLC, I/O CARDS, POWER SUPPLIES, NETWORK SWITCH, AND UPS TO OWNER.
- C REMOVE UTILITY METER, CONDUIT, AND WIRE. COORDINATE REMOVAL WITH UTILITY COMPANY.
- D PHONE BOX TO BE ABANDONED. REMOVE WIRING.
- E EXISTING CHLORINE LEAK MONITOR AND ALARM LIGHT SHALL BE RELOCATED AS SHOWN ON E1.1. CONDUIT AND WIRE SHALL BE REMOVED.
- F REMOVE LIGHTING, WIRE, AND SWITCHES. CONDUIT TO BE ABANDONED. REMOVE EXPOSED CONDUIT.
- G INTERIOR PORTION OF PANELBOARD SHALL BE REMOVED. ENCLOSURE SHALL BE USED AS A JUNCTION BOX TO EXTEND EXISTING CIRCUITS FROM ENCLOSURE TO LP-15. PROVIDE TERMINAL STRIP WITHIN ENCLOSURE AND LABEL ALL NEW AND EXISTING WIRING.
- H REMOVE HATCH LIMIT SWITCH, CONDUIT, AND WIRE. PATCH OPENING.
- J REMOVE CABLING, SUPPORTS, AND CONDUIT. ANTENNA AND MAST SHALL BE REUSED AND INSTALLED AS SHOWN ON E1.1. PATCH OPENING.
- K THERMOSTAT TO BE RELOCATED TO AREA SHOWN ON E1.1. PROVIDE CONDUIT AND WIRE AS REQUIRED.
- L REMOVE DOOR SWITCHES, CONDUIT, AND WIRE.
- M LEAK DETECTOR TO BE RELOCATED AS SHOWN ON E1.1.
- N REMOVE 4" CONDUIT. CONDUCTORS TO BE REMOVED BY OWNER.

NO.	REVISIONS	DATE:

ELECTRICAL DEMOLITION PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET DE1.2

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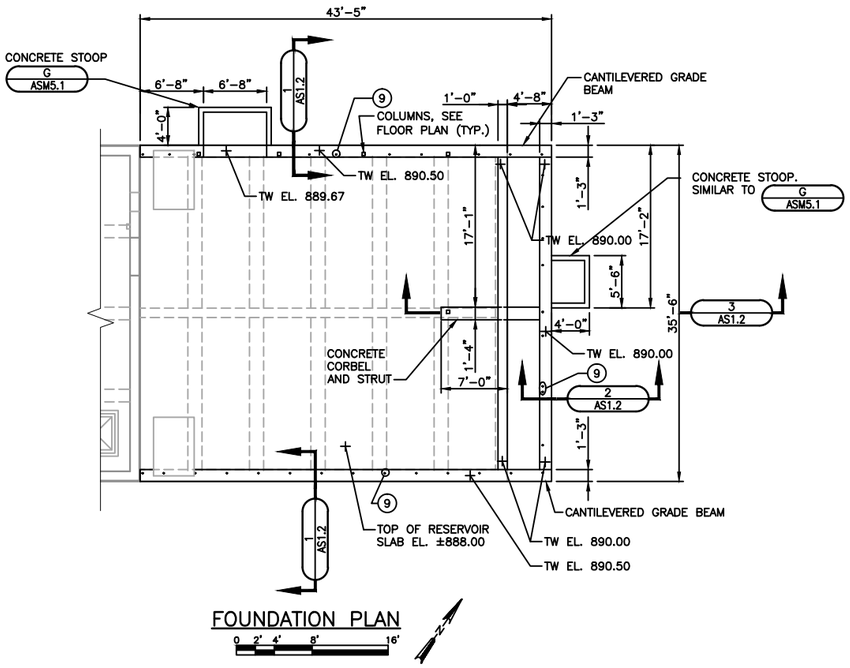
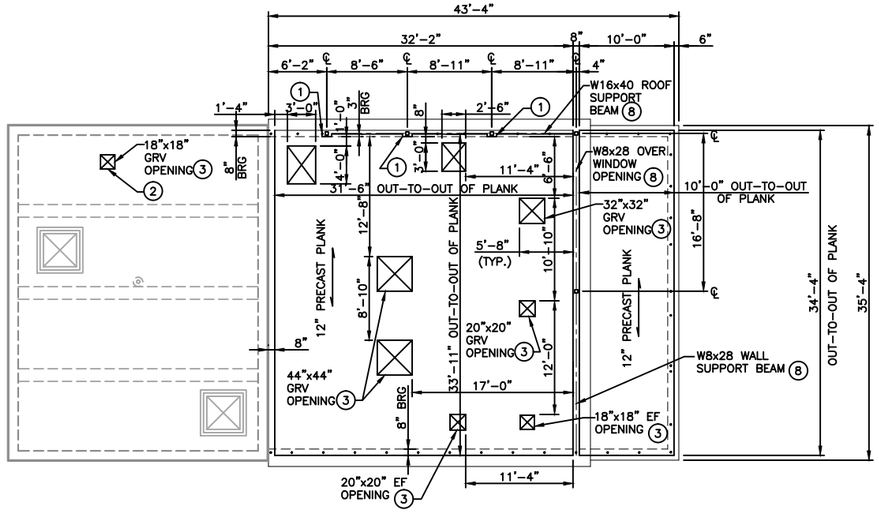


FOUNDATION PLAN

0 2' 4' 8' 16'



ROOF FRAMING PLAN

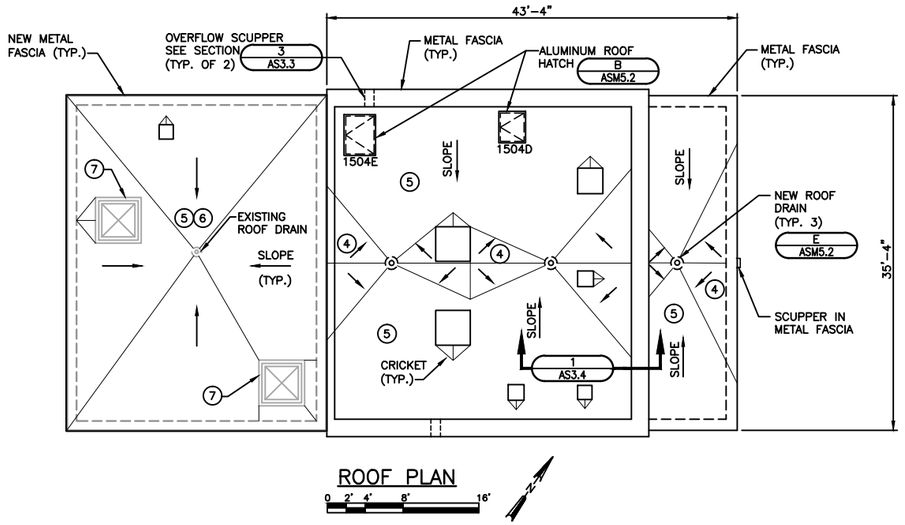
0 2' 4' 8' 16'

GENERAL NOTES:

1. SEE HVAC AND PLUMBING DRAWINGS FOR ADDITIONAL PENETRATIONS THROUGH ROOF NOT SHOWN.
2. PRECAST PLANK TO BE DESIGNED FOR 24 PSF SNOW LOAD AND 15 PSF SUPERIMPOSED DEAD LOAD. SEE SNOW DRIFT LOADS AS SHOWN ON THIS SHEET.

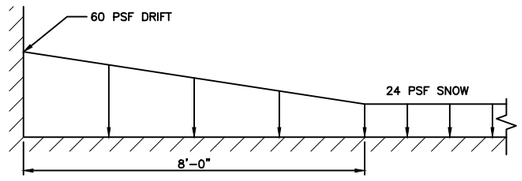
KEY NOTES:

1. BOXOUT PRECAST PLANK AROUND COLUMNS.
2. SAWCUT NEW HVAC OPENING.
3. CONTRACTOR TO VERIFY HVAC OPENING SIZE AND LOCATION.
4. PROVIDE SLOPED INSULATION CRICKETS WITH MINIMUM 1/8" PER FOOT SLOPE ALONG DIAGONAL (TYP.)
5. NEW ROOF SYSTEM CONSISTS OF FULLY ADHERED EPDM ROOFING OVER TAPERED INSULATION MINIMUM 2" THICK AT ROOF DRAINS. SLOPE TO ROOF DRAINS AT 1/4" PER FOOT MINIMUM.
6. REMOVE ENTIRE EXISTING ROOFING SYSTEM INCLUDING BUT NOT LIMITED TO INSULATION, NAILERS, FLASHING AND MEMBRANE.
7. FLASH NEW ROOFING INTO EXISTING ROOF HATCHES TO REMAIN.
8. SEE FLOOR PLAN, SECTIONS AND FRAMING ELEVATIONS (D & E ASM6.1) FOR ADDITIONAL DETAILS.
9. MASONRY WALL DOWELS, SEE PLAN AND WALL SECTIONS.

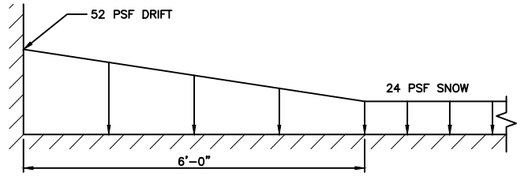


ROOF PLAN

0 2' 4' 8' 16'



DRIFT LOAD @ LOWER ROOF
NO SCALE



DRIFT LOAD @ PARAPET
NO SCALE

STRUCTURAL DESIGN CRITERIA			
DESIGN CODES	BUILDING CODE (WISCONSIN COMMERCIAL BUILDING CODE)		IBC 2009
	CONCRETE DESIGN CODE		ACI 318-05
	MASONRY DESIGN CODE		ACI 530-05
	OCCUPANCY CATEGORY		IV
ROOF LIVE LOAD	MINIMUM ROOF LIVE LOAD (PSF)		20
	ROOF DRAIN OVERFLOW LOAD - 4" DEPTH		20
ROOF SNOW LOAD	GROUND SNOW LOAD (P_g) (PSF)		30
	FLAT ROOF SNOW LOAD (P_f)		24
	SLOPED ROOF SNOW LOAD		24
	SNOW EXPOSURE FACTOR (C_e)		0.9
	SNOW LOAD IMPORTANCE FACTOR (I_s)		1.2
	THERMAL FACTOR (C_t) -		1.0
	DRIFT LOADS		PER IBC CODE
WIND LOAD	BASIC 3-SECOND GUST WIND SPEED (MPH)		90
	WIND IMPORTANCE FACTOR (I_w)		1.15
	WIND EXPOSURE		B
	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}	0.113
		S_{D1}	0.071
	SEISMIC DESIGN CATEGORY		B
	BASIC SEISMIC FORCE RESISTING SYSTEM (ALL CONCRETE BLOCK BUILDINGS)		ORDINARY REINF. MASONRY SHEAR WALLS
	RESPONSE MODIFICATION COEFFICIENT (R)		5
	DESIGN BASE SHEAR		0.034 W
	ANALYSIS PROCEDURE		SIMPLIFIED
OTHER LOADS	LATERAL EARTH PRESSURE (PCF EQUIV. FLUID)	DRY - UNRESTRAINED TOP	40
		DRY - RESTRAINED TOP	55
		BELOW WATER TABLE	95
	LATERAL FLUID PRESSURE (PCF)		62.4
	BUOYANCY (PCF X DEPTH BELOW GROUNDWATER LEVEL)		62.4
GEOTECHNICAL	NET ALLOWABLE SOIL BEARING PRESSURE	(EXISTING FOUNDATIONS)	7,000 PSF
	PLANNED SUBGRADE		EXISTING

DATE:
REVISIONS
NO.

FOUNDATION PLAN, ROOF PLAN AND STRUCTURAL DESIGN CRITERIA

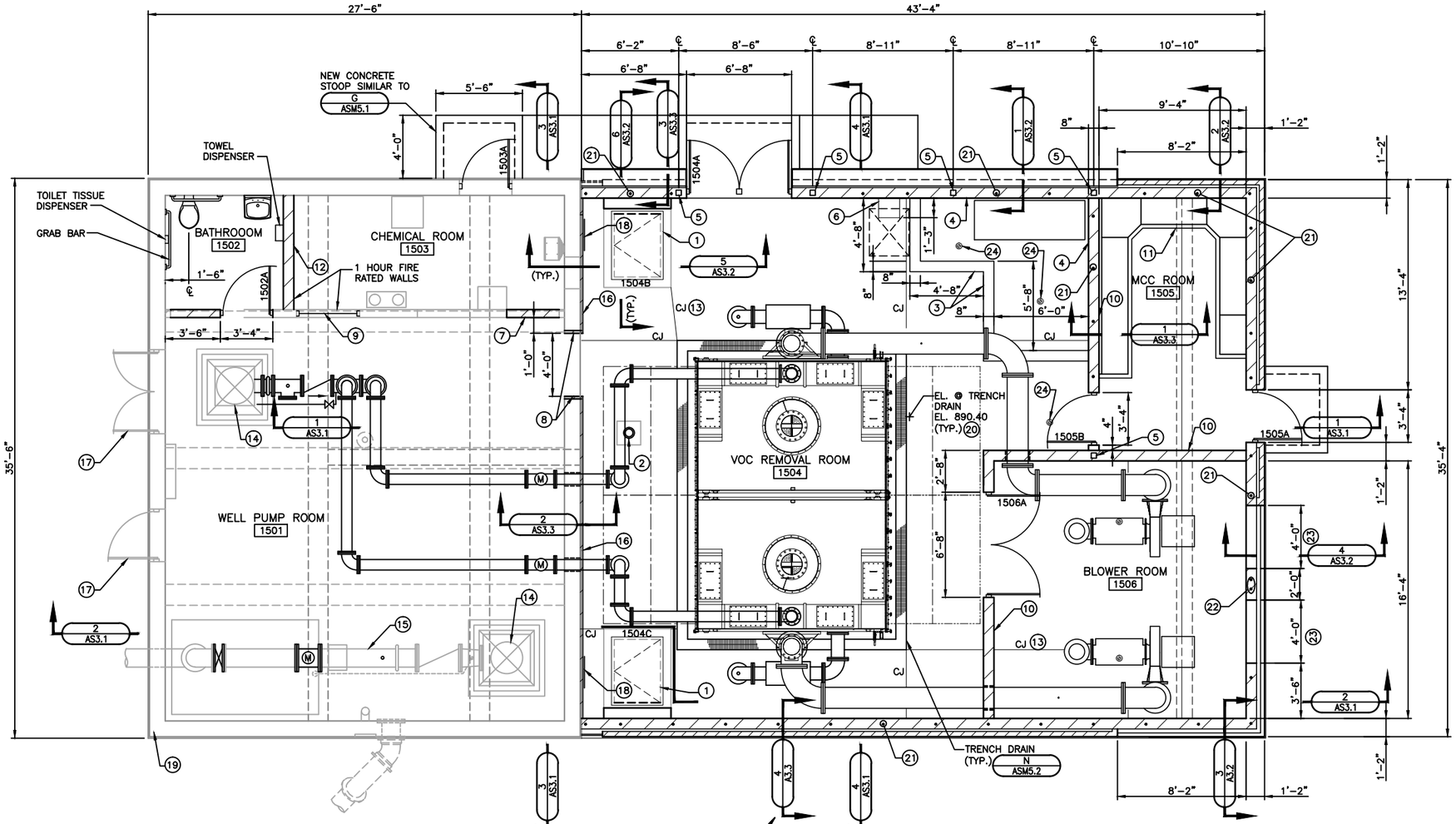
WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

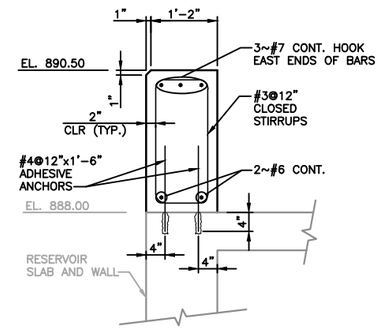
STRAND ASSOCIATES®

SHEET
AS1.1

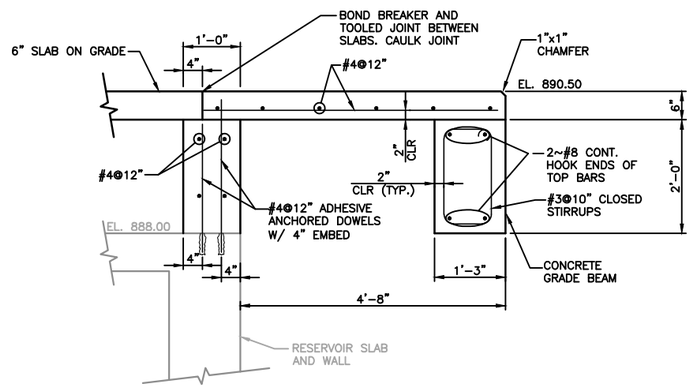


KEY NOTES:

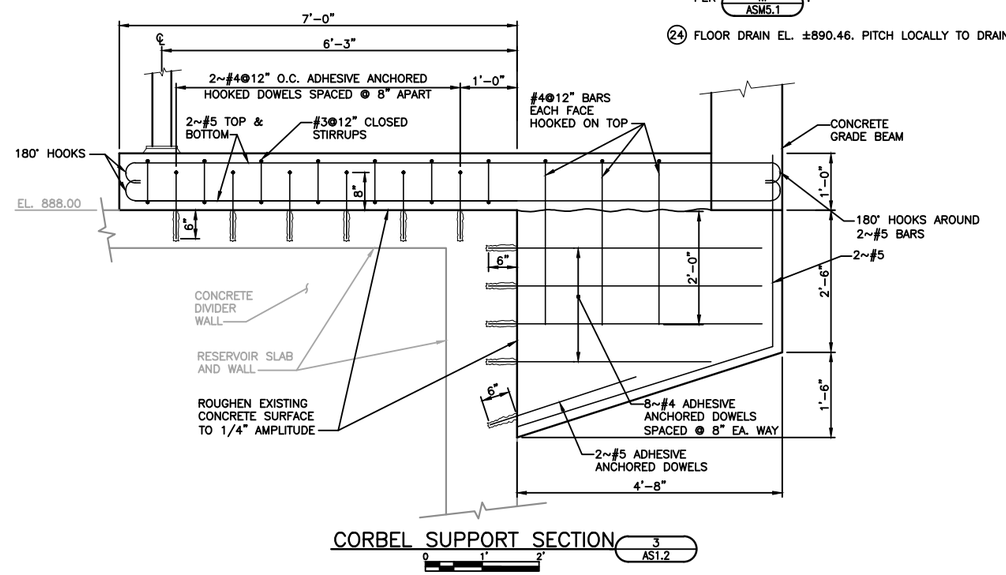
1. PROVIDE NEW ROOF HATCH. SEE DETAIL 5 ASM3.2 / 6 ASM3.2.
2. EXTEND VALVE ACTUATOR B D1.1.
3. 8" HIGH CONCRETE CONTAINMENT CURB. PROVIDE #4@16" O.C. VERTICAL DOWELS (EMBED 4") AND 1~#4 HORIZ. CONT.
4. 8"x7 5/8" CONCRETE CONTAINMENT CURB UNDER CONCRETE BLOCK FOR AREA OF CONTAINMENT. SEE SECTIONS.
5. HSS 4x4x3/8" STEEL COLUMNS IN BLOCK WALLS FULL HEIGHT OF WALL AND PARAPET. SEE FRAMING PLANS AND SECTIONS FOR ADDITIONAL DETAILS. GROUT CORES OF BLOCK FULL AROUND COLUMNS.
6. NEW ALUMINUM LADDER TO ROOF HATCH ABOVE PER N ASM5.1.
7. FILL EXISTING DOOR OPENING WITH CONCRETE BLOCK TO MATCH EXISTING. WALL SHALL HAVE 1 HOUR RATING AND HAVE FIRESTOPPING AT WALL/CEILING JOINT.
8. WRAP NEW 2" GLAZED BLOCK VENEER INTO DOOR JAMBS. PROVIDE LINTEL TYPE A-2 OVER OPENING.
9. PROVIDE NEW 1 HOUR FIRE RATED WINDOW IN EXISTING OPENING. OPENING IS 4'-0"x4'-0", FIELD VERIFY. PROVIDE FIRE RATED STEEL WINDOW WITH FIRE RATED GLASS.
10. NEW 8" GLAZED (BOTH SIDES) CONCRETE BLOCK WALL FULL HEIGHT TO CEILING.
11. PROVIDE MCC/SCC CONCRETE BASE C E5.1.
12. NEW 8" CONCRETE BLOCK WALL FULL HEIGHT TO CEILING. WALL SHALL HAVE 1 HOUR RATING AND HAVE FIRESTOPPING AT WALL/CEILING JOINT.
13. PROVIDE CONTROL JOINT (CJ) INSLAB ON GRADE WHERE SHOWN PER D E5.1.
14. PREPARE AND OVERCOAT MOTORS.
15. PREPARE AND PAINT EXISTING PIPING.
16. NEW 2" GLAZED BLOCK VENEER ON EXISTING WALL.
17. PREPARE AND PAINT OUTSIDE FACES OF DOORS AND FRAMES.
18. PROVIDE CAUTION SIGN PER C ASM5.2.
19. REPLACE BROKEN EXISTING BRICK IN THE LOWER CORNER OF BUILDING.
20. FLOOR SLAB @ WALLS EL. 890.50, SLOPE ENTIRE FLOOR TO TRENCH DRAIN.
21. SEE WALL SECTIONS FOR MASONRY VERTICAL REINFORCEMENT.
22. 2~#5 VERT. MASONRY REINFORCING BARS FULL HEIGHT OF WALL W/DOWELS.
23. 4'-0"W x 3'-4"HIGH OPENING IN WALL, TOP OF OPENING AT 9'-4" AFF. PROVIDE TYPE B-1 LINTEL PER M ASM5.1.
24. FLOOR DRAIN EL. ±890.46. PITCH LOCALLY TO DRAIN.



FOUNDATION WALL SECTION 1 AS1.2
0 1' 2'



GRADE BEAM/WALL SECTION 2 AS1.2
0 1' 2'



CORBEL SUPPORT SECTION 3 AS1.2
0 1' 2'

NO.	REVISIONS	DATE:

OVERALL FLOOR PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

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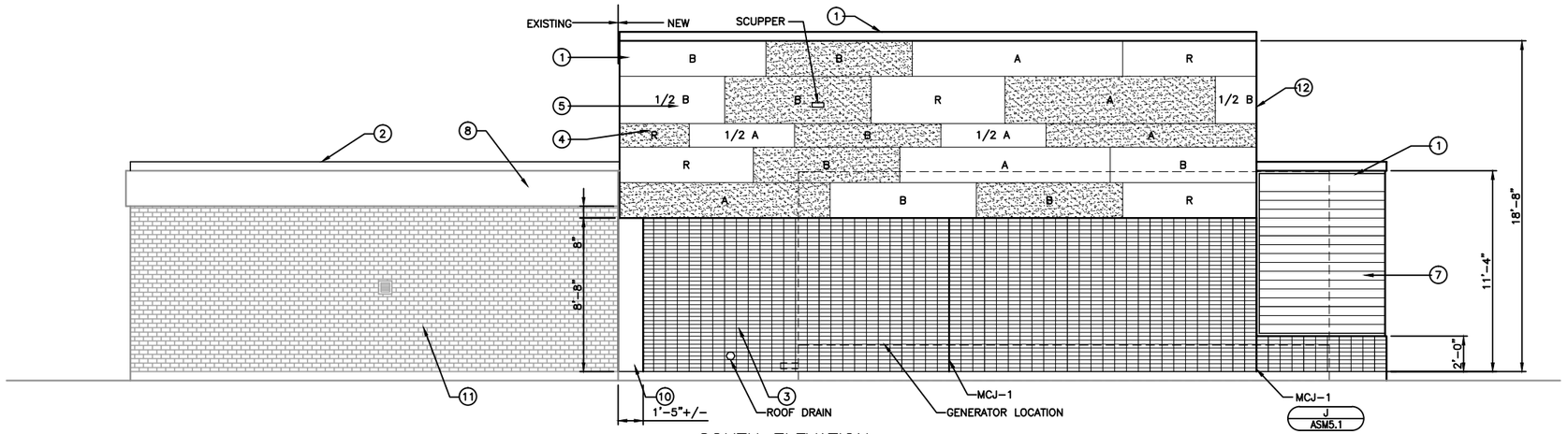
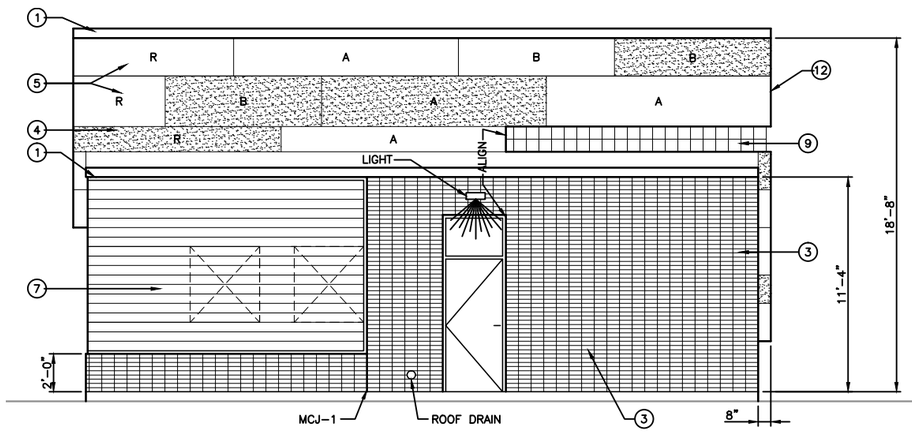


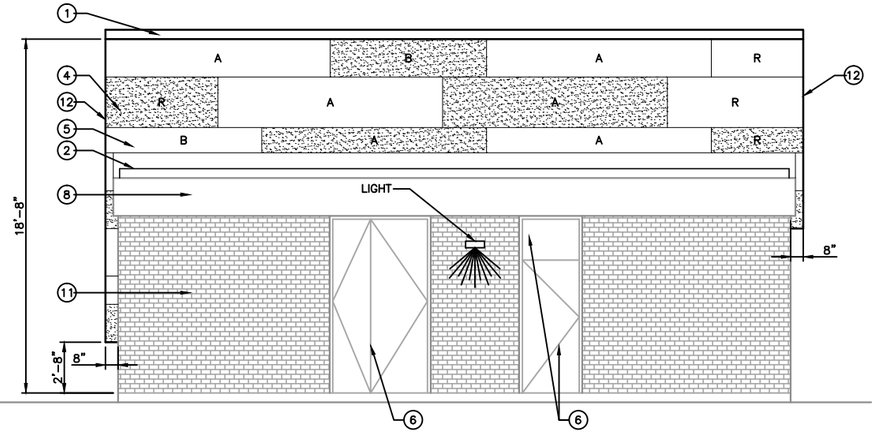
SOUTH ELEVATION

0 1' 2' 4' 8'



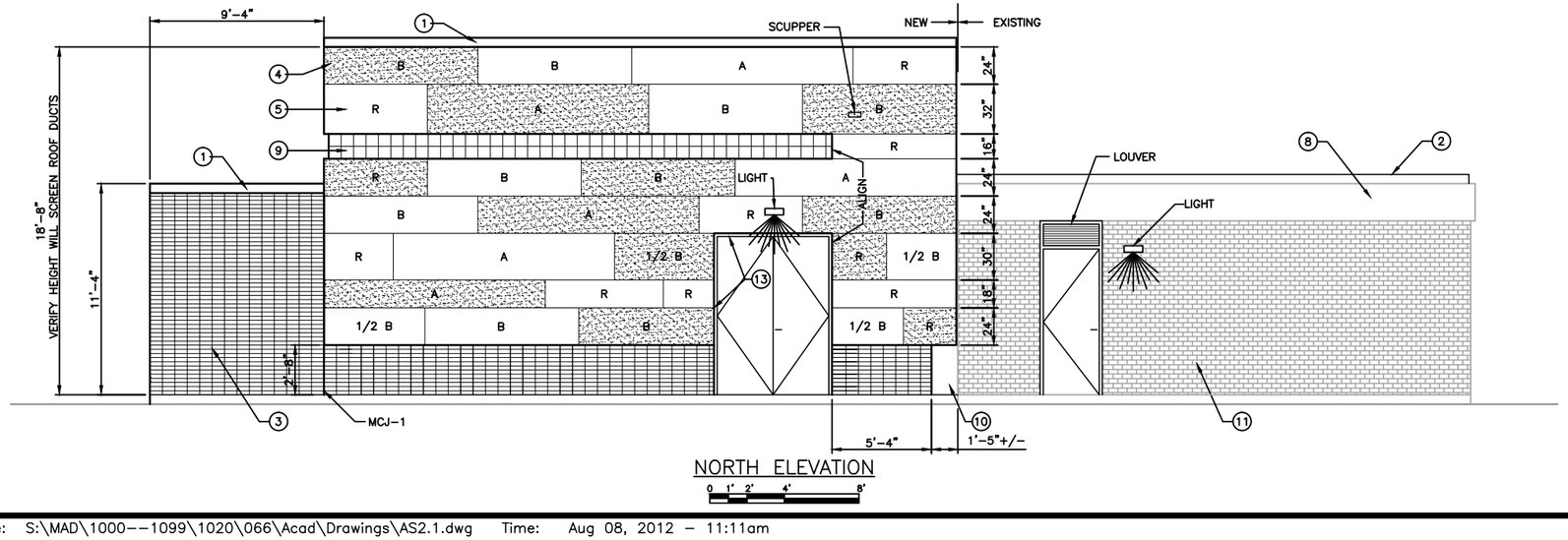
EAST ELEVATION

0 1' 2' 4' 8'



WEST ELEVATION

0 1' 2' 4' 8'



NORTH ELEVATION

0 1' 2' 4' 8'

GENERAL NOTES:

1. ALL NEW AND EXISTING EXTERIOR MASONRY SURFACES SHALL BE COATED WITH ANTI-GRAFFITTI COATING AS SPECIFIED.

KEY NOTES:

1. NEW METAL FASCIA
2. NEW METAL FASCIA ON EXISTING ROOF
3. NEW STACKED BOND BRICK
4. GLASS FIBER REINFORCED CONCRETE PANELS:
   MFR: FIBER C
   COLOR: ANTHRACITE
   FINISH: FERRO LIGHT
5. GLASS FIBER REINFORCED CONCRETE PANELS:
   MFR: FIBER C
   COLOR: ANTHRACITE
   FINISH: MATT
6. PREPARE AND PAINT EXISTING FIBERGLASS DOORS.
7. METAL LOUVER:
   - CONCEALED MULLIONS
   - MITERED CORNER
   - SET ±1" BACK FROM FACE OF BRICK
8. PREPARE AND PAINT EXISTING CAST IN PLACE CONCRETE.
9. 8"x8"x4" GLASS BLOCK:
   - SET 3" BACK FROM FACE OF CONCRETE PANEL
   - 90 DEGREE CORNER TO BE CONTINUOUS GLASS,
10. COMPOSITE METAL PANEL:
    - SET 1" BACK FROM FACE OF BRICK
    - PROVIDE CLIPS BACK TO BACKUP BLOCK WALL.
11. EXISTING BRICK TO REMAIN
12. PROVIDE MITERED CORNER DETAIL ON CONCRETE PANELS.
13. CONCRETE PANELS TO RETURN TO DOOR AT JAMBS AND HEAD

PANEL SIZES (LENGTH ONLY):
FIELD VERIFY FINAL LENGTHS

"A" - 11'-10 3/8" TO ℄ OF JOINT.

"B" - 8'-3 1/16" TO ℄ OF JOINT.

"R" - REMAINDER OF LENGTH.

1/2 "A OR B" - TWO PANELS SPLIT SO THEY ADD UP TO ONE FULL PANEL LENGTH (NOT NECESSARILY EXACTLY 1/2).

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BUILDING ELEVATIONS

WELL 15 VOC AIR STRIPPER
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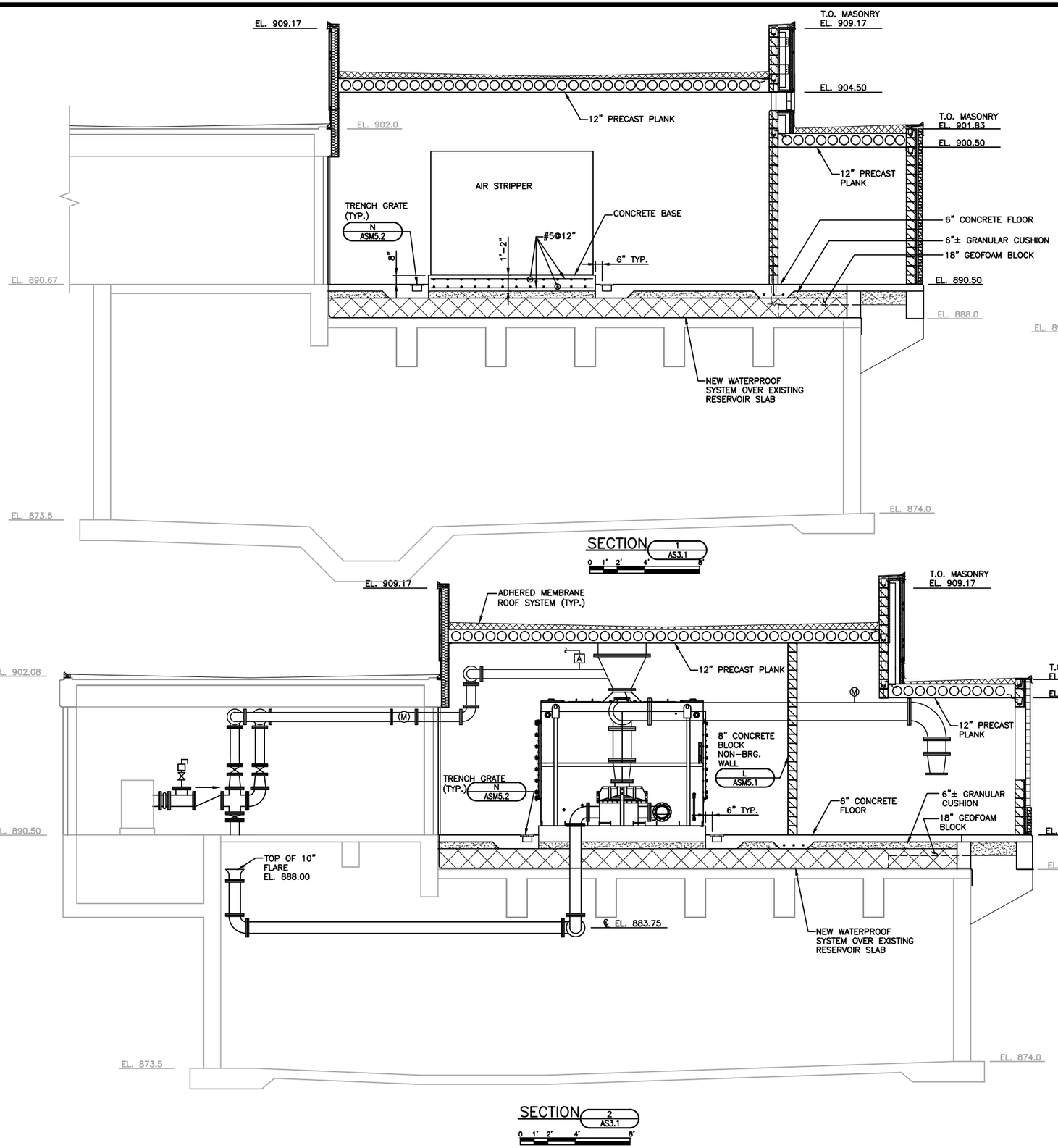

DATE:

REVISIONS

NO.

BUILDING SECTIONS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

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SHEET
AS3.1

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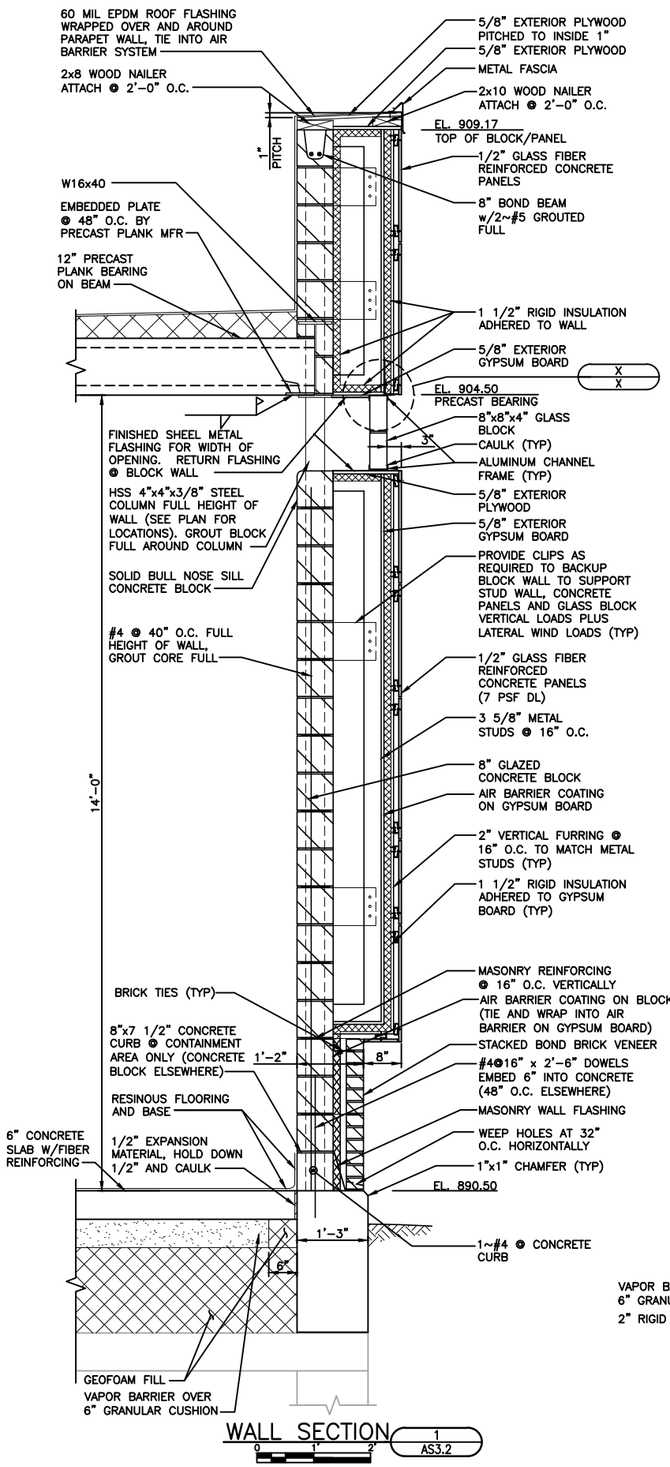
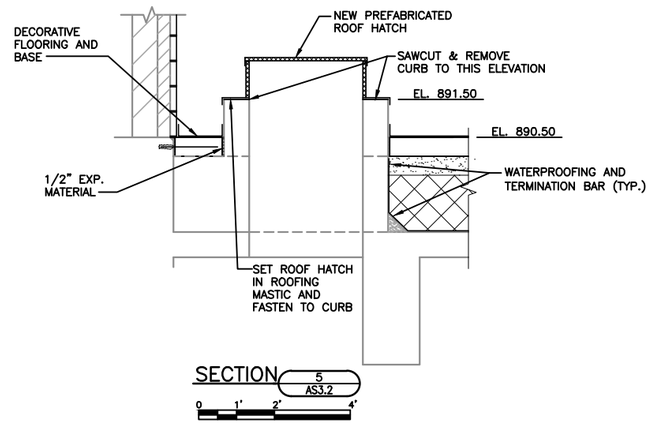


WALL SECTION 1 / AS3.2



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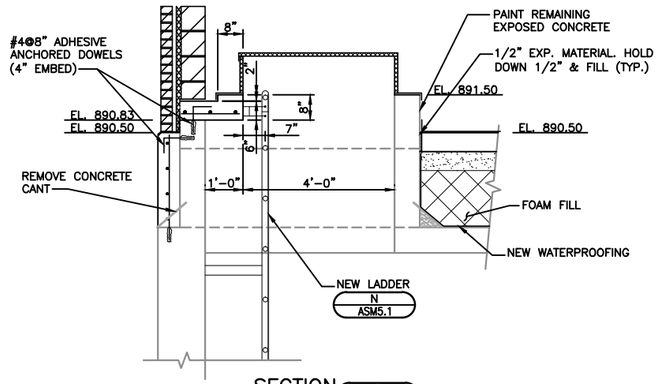

SECTION 6 / AS3.2

WALL SECTION 2 / AS3.2

WALL SECTION 3 / AS3.2

WALL SECTION 4 / AS3.2

REVISIONS

NO.	DATE:

WALL SECTIONS - 1

WELL 15 VOC AIR STRIPPER
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SHEET AS3.2

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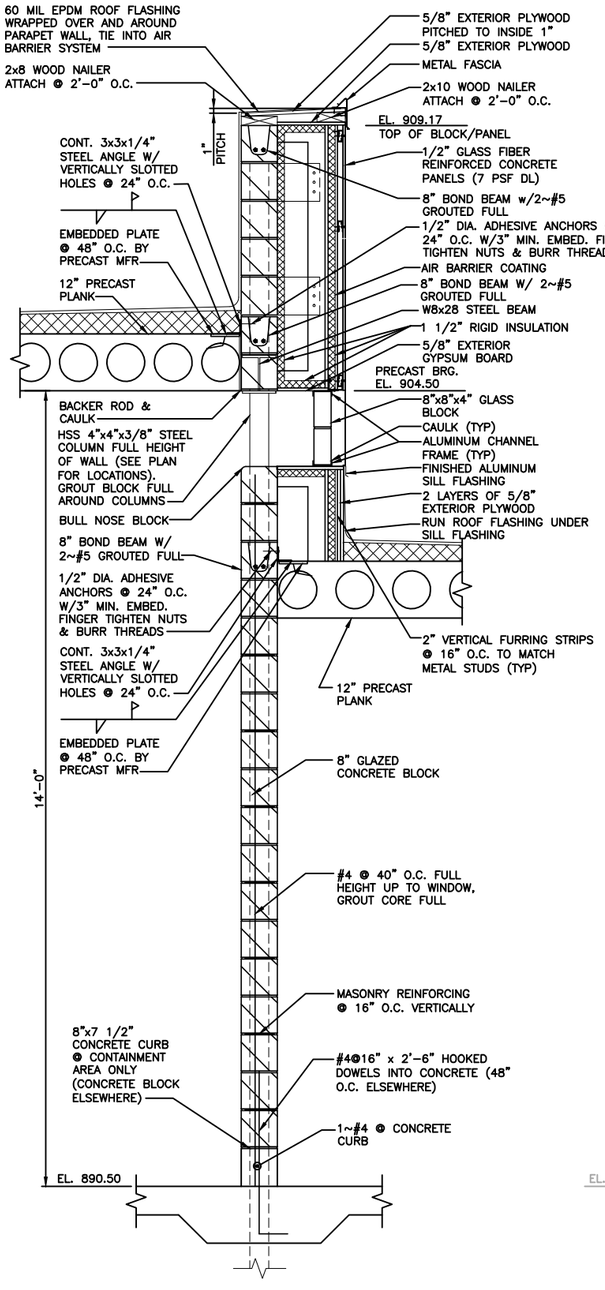
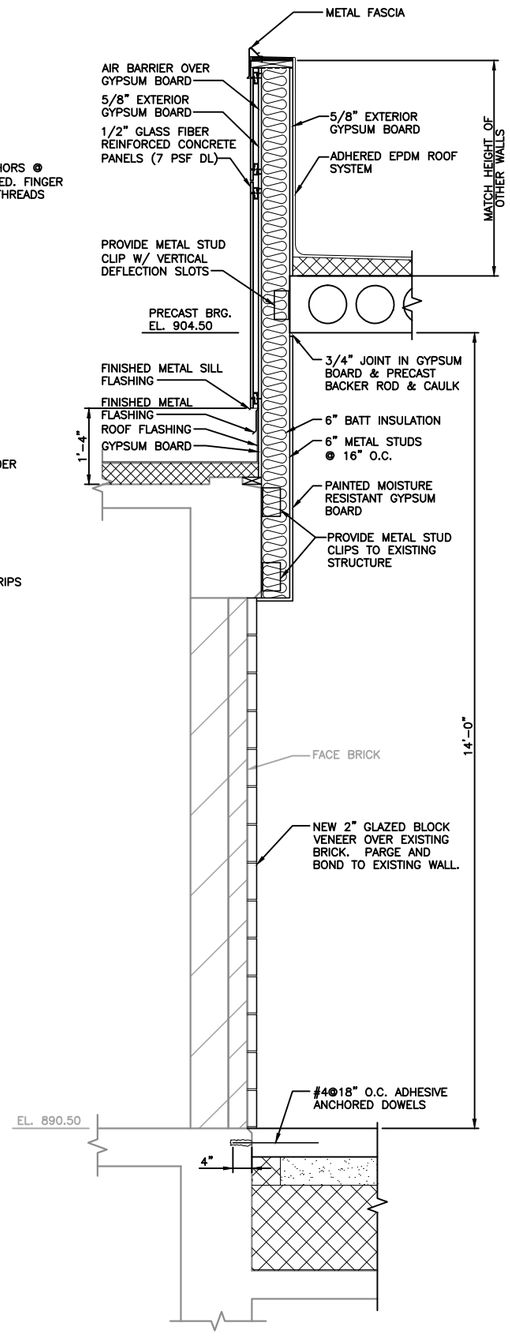


WALL SECTION 1 AS3.3



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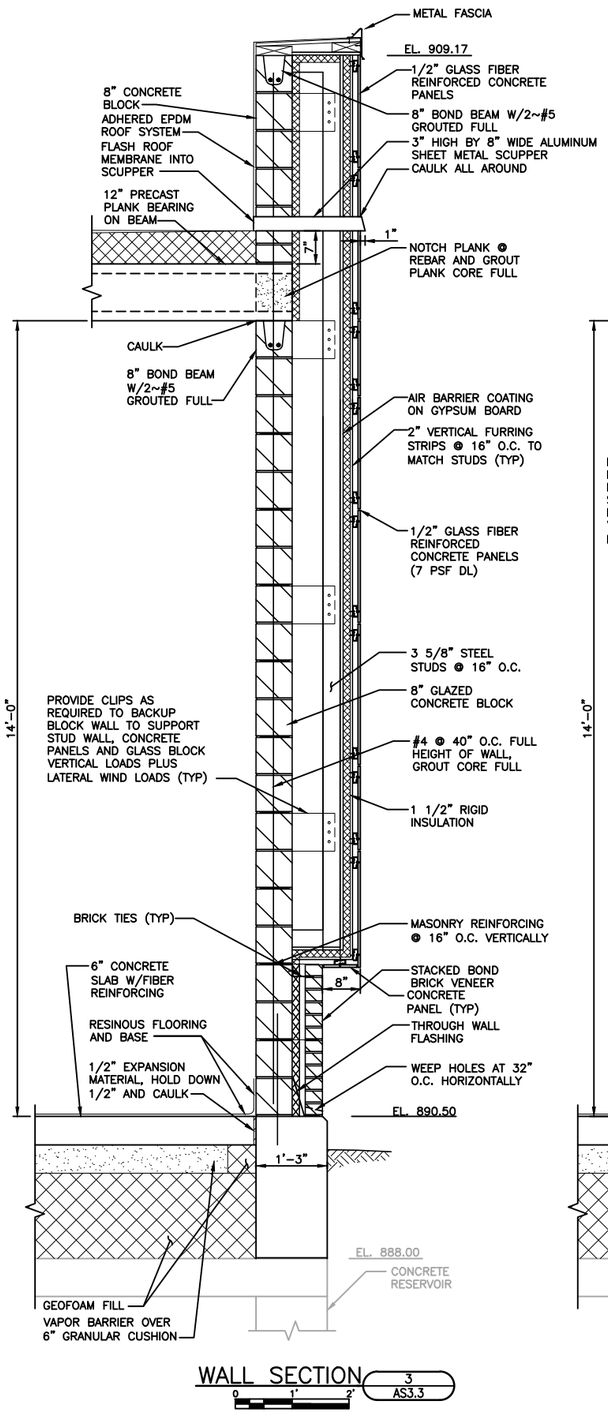
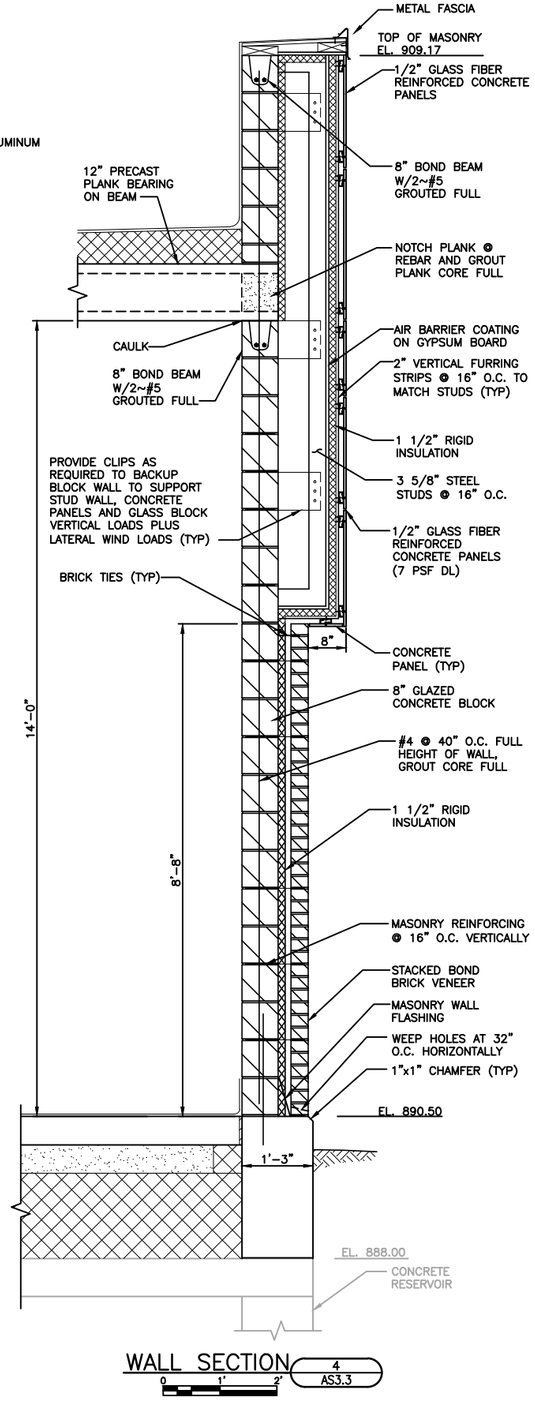


WALL SECTION 3 AS3.3



WALL SECTION 4 AS3.3

DATE:
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WALL SECTIONS - 2

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
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DANE COUNTY, WISCONSIN

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AS3.3

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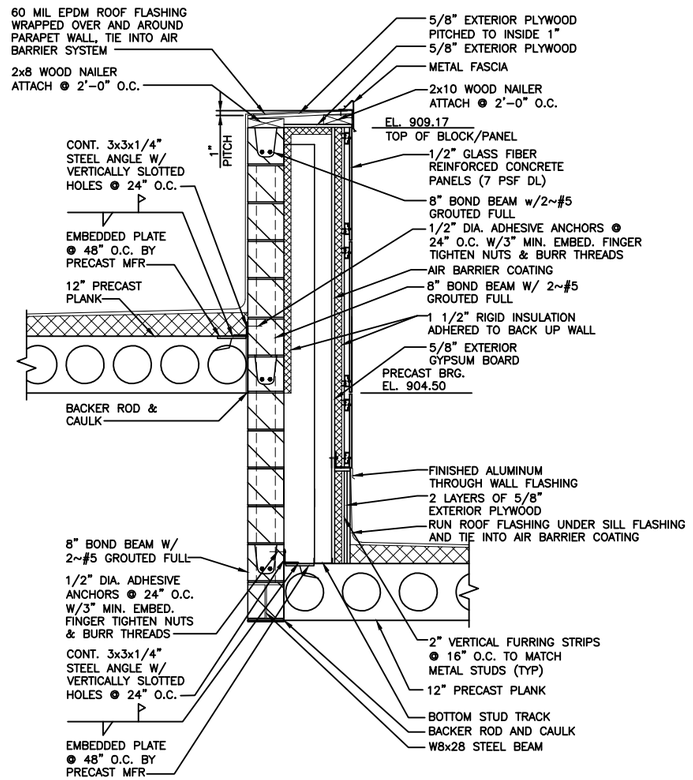

WALL SECTION 1 AS3.4

0 1" 2"

NO.	REVISIONS	DATE:

WALL SECTIONS - 3

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
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SHEET AS3.4

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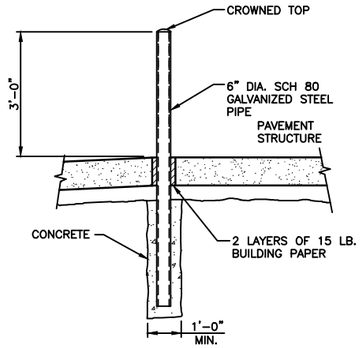
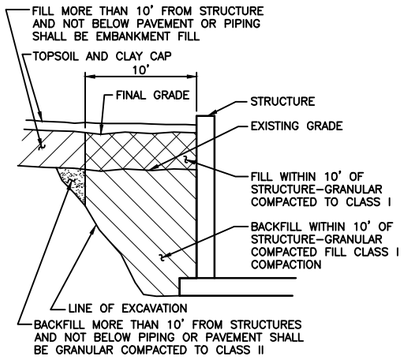
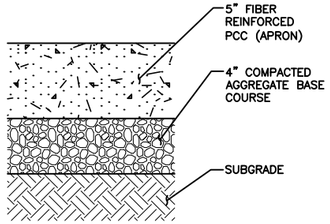


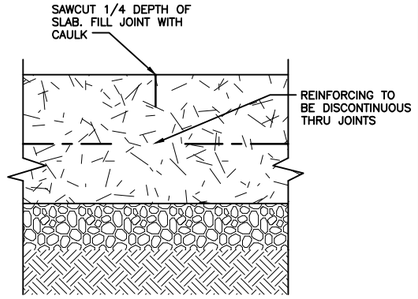
A ASM5.1 GUARD POST NO SCALE



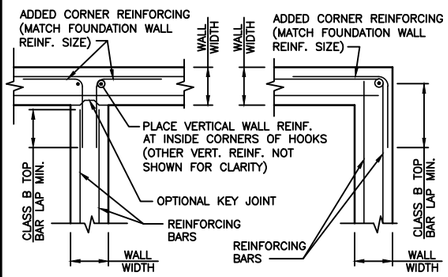
B ASM5.1 FILL & BACKFILL REQUIREMENTS NO SCALE



C ASM5.1 CONCRETE SIDEWALK NO SCALE



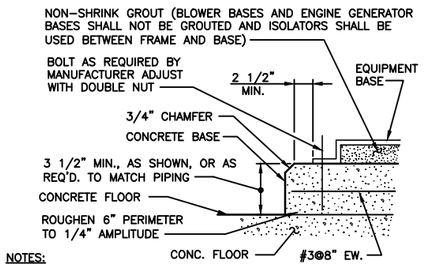
D ASM5.1 TYPICAL SLAB SAWN JOINT NO SCALE



NOTES:

1. CONTRACTOR MAY EXTEND HORIZ. WALL REINF. WITH STD 90° HOOK IN LIEU OF ADDED CORNER REINF.
2. NO VERT. WALL CONSTRUCTION JOINT WITHIN 5'-0" OF WALL CORNER.

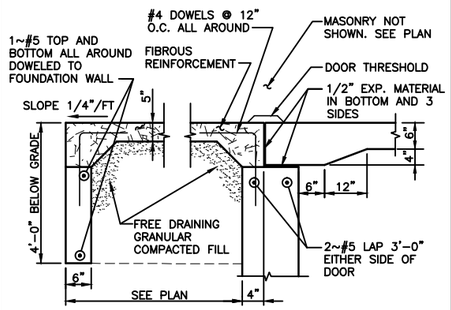
E ASM5.1 FOUNDATION/BASEMENT WALL CORNER REINFORCING NO SCALE



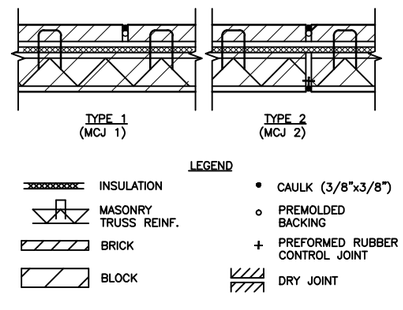
NOTES:

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.

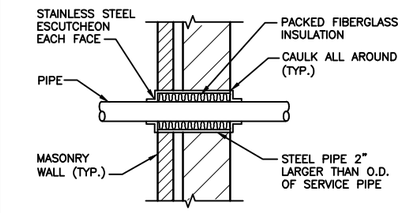
F ASM5.1 CONCRETE EQUIPMENT PAD NO SCALE



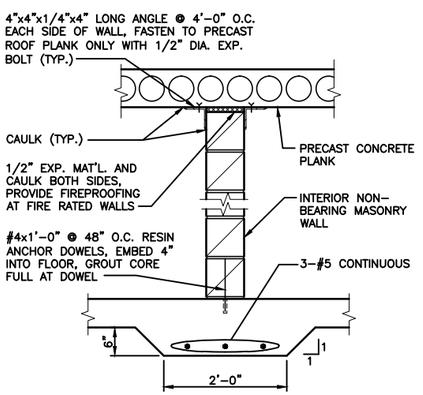
G ASM5.1 CONCRETE STOOP NO SCALE



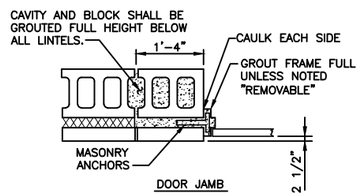
J ASM5.1 MASONRY CONTROL JOINT NO SCALE



K ASM5.1 MASONRY SLEEVE NO SCALE



L ASM5.1 INTERIOR NON-BEARING WALL NO SCALE

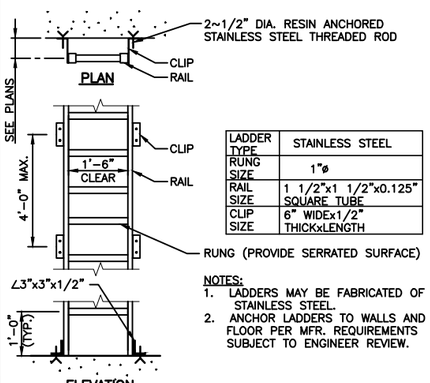


TYPE	MISCELLANEOUS LINTELS
TYPE B-1 8" BLOCK	LINTEL BLOCK 2~#5 CONTINUOUS
TYPE A-2 14" CAVITY WALL TO 4'-0" CLR SPAN	∠3 1/2"x2 1/2"x5/16" 3/16 4-12 3/16 4-12 ∠5"x3"x5/16" 3/16 4-12 3/16 4-12 1/4" PL

NOTES:

1. LINTELS ARE REQUIRED OVER ALL MASONRY OPENINGS.
2. LINTELS SHALL HAVE A MINIMUM BEARING OF 8".
3. GROUT MASONRY FULL 16" EACH SIDE OF OPENINGS UNDER ALL LINTELS TO FLOOR.

M ASM5.1 LINTEL DETAILS NO SCALE



LADDER TYPE	STAINLESS STEEL
RUNG SIZE	1"ø
RAIL SIZE	1 1/2"x1 1/2"x0.125" SQUARE TUBE
CLIP SIZE	6" WIDEx1/2" THICKxLENGTH

NOTES:

1. LADDERS MAY BE FABRICATED OF STAINLESS STEEL.
2. ANCHOR LADDERS TO WALLS AND FLOOR PER MFR. REQUIREMENTS SUBJECT TO ENGINEER REVIEW.

N ASM5.1 LADDER NO SCALE

REVISIONS

NO. | DATE:

DETAILS - 1

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

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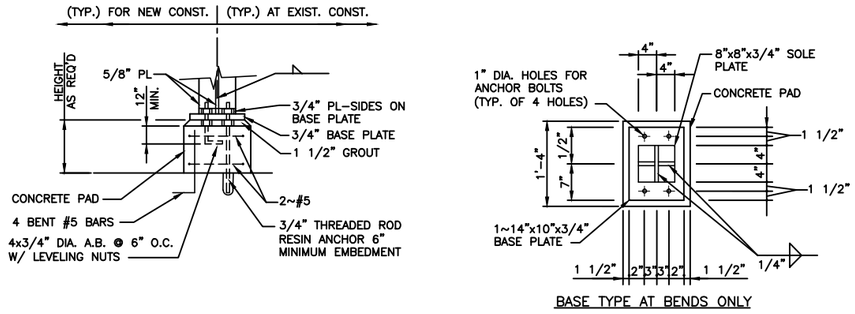
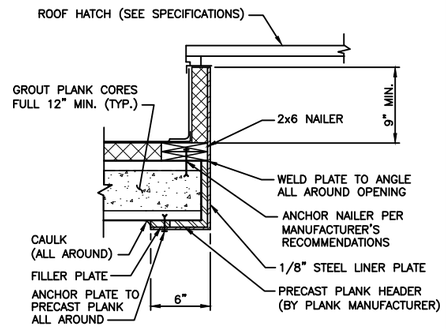
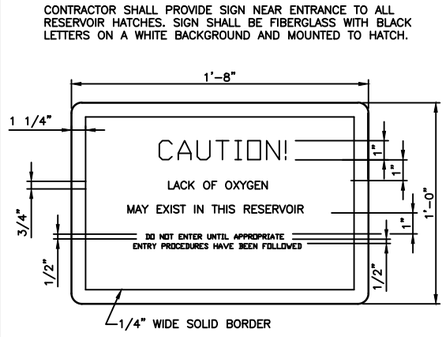
SHEET ASM5.1



A ASM5.2 PIPE SUPPORT
NO SCALE



B ASM5.2 ROOF HATCH
NO SCALE



C ASM5.2 CAUTION SIGN
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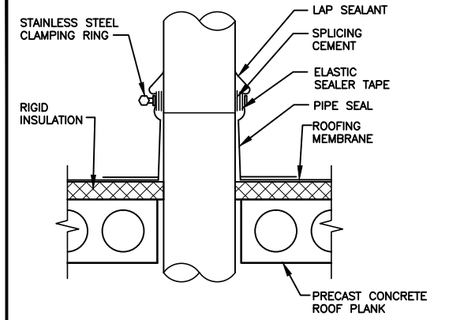
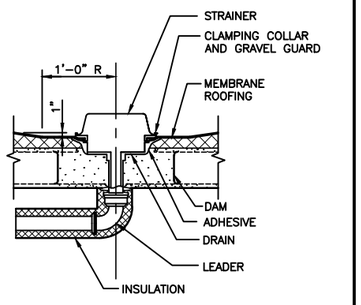
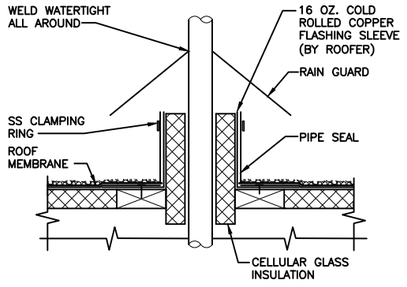


D ASM5.2 COLD PIPE ROOF PENETRATION
NO SCALE



E ASM5.2 ROOF DRAIN
NO SCALE



F ASM5.2 HOT PIPE ROOF PENETRATION
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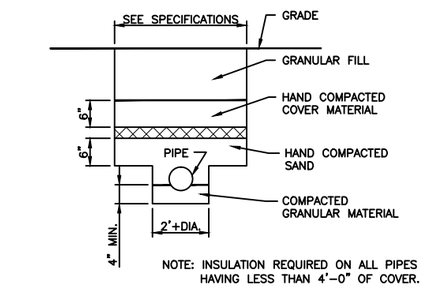
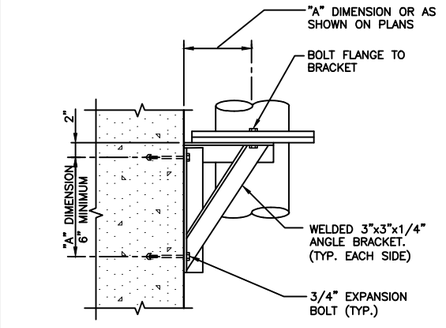
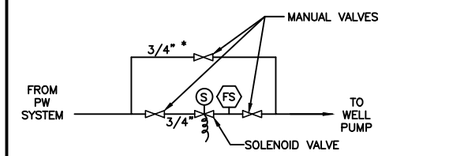


G ASM5.2 UNDERGROUND PIPE INSULATION
NO SCALE



H ASM5.2 WALL MOUNT PIPE SUPPORT
NO SCALE



J ASM5.2 PRELUBRICATION PIPING SCHEMATIC
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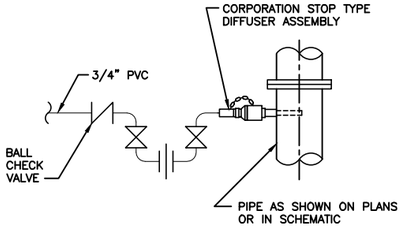

K ASM5.2 CORPORATION STOP
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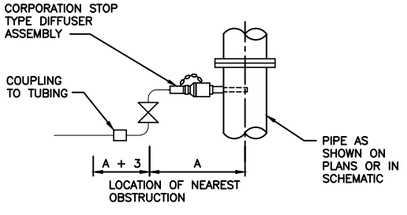

L ASM5.2 CORPORATION STOP
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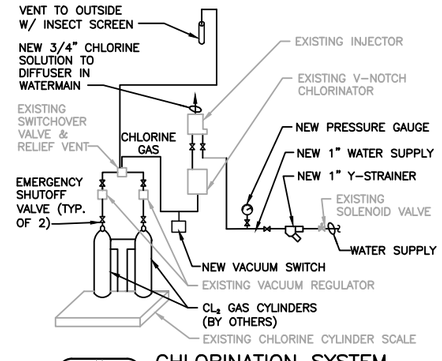

M ASM5.2 CHLORINATION SYSTEM
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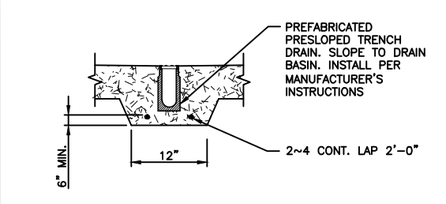
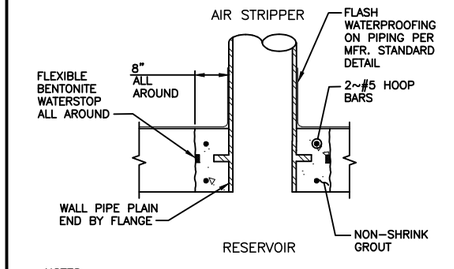


N ASM5.2 TRENCH DETAIL
NO SCALE



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.

P ASM5.2 EXISTING WALL PIPE PENETRATION
NO SCALE

DATE:
REVISIONS
NO.

DETAILS - 2

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

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SHEET
ASM5.2

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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	NOTES
1502A	3'-0" X 7'-0"	FRP	F	-	RH	-	2	AL	-	6	-	B-1	
1503A	3'-0" X 7'-10"	FRP	F	-	LHR	-	1	AL	-	3	-		4
1504A	(2) 3'-0" X 8'-6"	FRP	F	F	RHR	LHR	4	AL	-	2	4	B-1	
1504B	3'-0" X 4'-0"	AL	RH	-	SL	-	-	AL	-	-	-		
1504C	3'-0" X 4'-0"	AL	RH	-	SL	-	-	AL	-	-	-		
1504D	2'-6" X 3'-0"	AL	RH	-	SL	-	-	AL	-	-	-		
1504E	3'-0" X 4'-0"	AL	RH	-	SL			AL	-	-	-		
1505A	3'-0" X 7'-0"	FRP	F	-	LHR	-	3	AL	-	1	-	A-2	
1505B	3'-0" X 7'-0"	FRP	HG	-	RHR	-	2	AL	-	5	-	B-1	3
1506A	(2) 3'-2" X 7'-0"	FRP	F	F	LH	RH	2	AL	-	5	4	B-1	

LEGEND:

MATERIAL			TYPE			SWING		
STL	=	STEEL	F	=	FLUSH (NO GLASS)	LH	=	LEFT HAND
AL	=	ALUMINUM	HG	=	HALF GLASS	RH	=	RIGHT HAND
FRP	=	FIBERGLASS	NG	=	NARROW GLASS	LHR	=	LEFT HAND REVERSE
			RH	=	ROOF HATCH	RHR	=	RIGHT HAND REVERSE
EX	=	EXISTING	FD	=	FLOOR DOOR	DR	=	DOUBLE REVERSE
			OHS	=	OVERHEAD SECTIONAL	SL	=	SINGLE LEAF
			OHC	=	OVERHEAD COILING	DL	=	DOUBLE LEAF

NOTES:

1. SEE SPECIFICATIONS FOR HARDWARE GROUPS.
2. SEE DETAIL MASM5.1 FOR LINTEL TYPES AND DETAILS.
3. PROVIDE WEATHER STRIPPING AND THRESHOLD ON THIS DOOR.
4. PROVIDE 1/4" x 11" x WIDTH OF DOOR LINTEL PLATE OVER DOOR FRAME. PROVIDE 1 1/2 x 1 1/2 x 1/8" CLIP ANGLE EACH SIDE AND ANCHOR TO EXISTING MASONRY JAMBS.

ROOM FINISH SCHEDULE

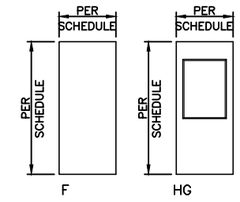
ROOM NO.	ROOM NAME	FLOOR	BASE	N. WALL	E. WALL	S. WALL	W. WALL	CEILING TYPE	CEILING HGT.	NOTES
1501	WELL PUMP ROOM	F1	B1	W2	W2	W2	W2	C2	10'-11"	1
1502	BATHROOM	F1	B1	W2	W1	W1/W2	W2	C2	10'-11"	1
1503	CHEMICAL ROOM	F1	B1	W2	W2	W2	W1	C2	10'-11"	1,2
1504	VOC REMOVAL ROOM	F1	B1	W1	W1	W1	W1/W3	C1	14'-0"	
1505	MCC ROOM	F1	B1	W1	W1	W1	W1	C1	10'-0"	
1506	BLOWER ROOM	F1	B1	W1	W1	W1	W1	C1	10'-0"/14'-0"	

LEGEND:

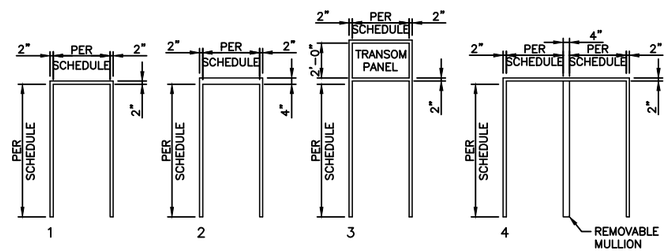
FLOOR		BASE		WALL		CEILING	
CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION	CODE	DESCRIPTION
F1	DECORATIVE COATING	B1	8" DECORATIVE COATING	W1	GLAZED CONCRETE BLOCK	C1	PAINT PRECAST CONCRETE PLANK
				W2	PAINT EXISTING PAINTED BLOCK	C2	PAINT EXISTING PAINTED PLANK
				W3	PAINTED GYPSUM BOARD		

NOTES:

1. REMOVE EXISTING FLOOR COATING AS SPECIFIED.
2. PROVIDE CHEMICAL RESISTANT COATING ON WALLS.



DOOR TYPES
NO SCALE



FRAME TYPES
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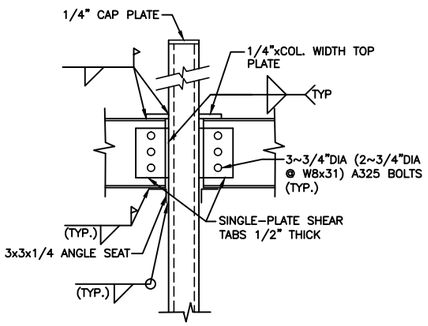
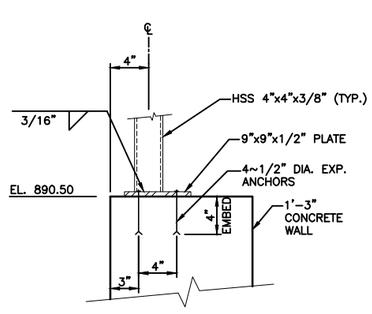
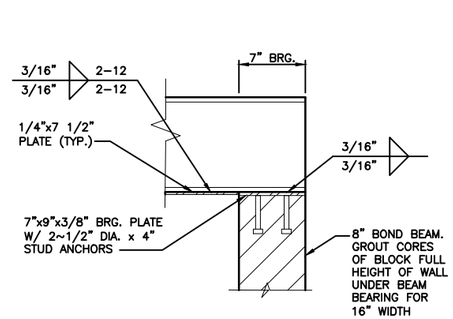


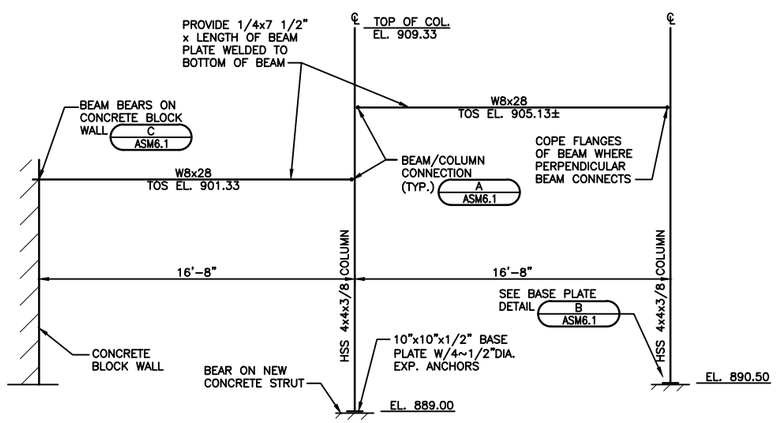
A ASM6.1 BEAM–COLUMN CONNECTION
NO SCALE



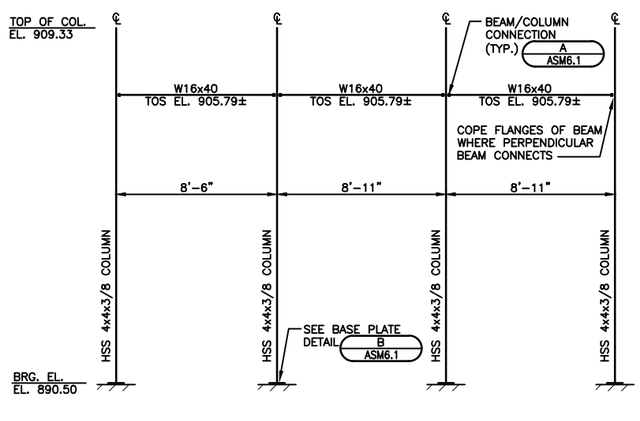
B ASM6.1 COLUMN BEARING
0 3" 6" 1'



C ASM6.1 BEAM BEARING
0 3" 6" 1'



D ASM6.1 FRAME ELEVATION – EAST WALL (LOOKING WEST)
0 1' 2' 4' 8'



E ASM6.1 FRAME ELEVATION – NORTH WALL (LOOKING NORTH)
0 1' 2' 4' 8'

DOOR AND FINISH SCHEDULES AND DETAILS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

DATE:
REVISIONS
NO.

JOB NO. 1020.066
PROJECT MGR. ANDY MULLENDORE

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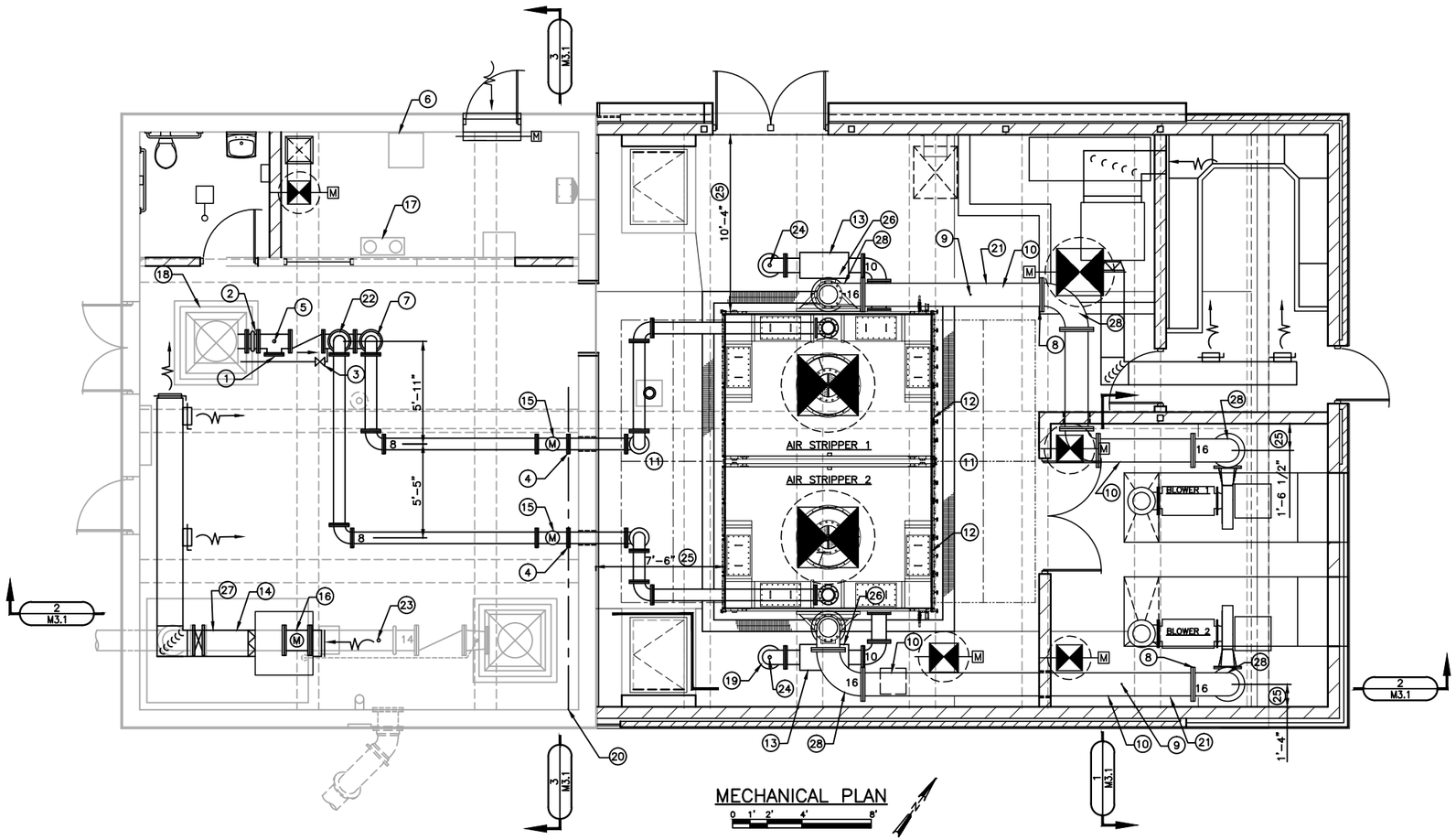
SHEET ASM6.1



MECHANICAL PLAN

0 1' 2' 4' 8'

KEY NOTES:

1. 10x10 TEE WITH BLIND FLANGE.
2. PIPE COUPLING WITH TIE RODS.
3. NEW SMOOTH NOSE SAMPLE TAP AND PRESSURE GAUGE. PROVIDE ISOLATION VALVE AT TAP. LOCATE DISCHARGE OVER EXISTING HUB DRAIN.
4. FLANGED COUPLING ADAPTER.
5. 2" TAP WITH DEEP WELL SERVICE AIR RELEASE VALVE. ROUTE AIR RELEASE OVER HUB DRAIN. TERMINATE 24" ABOVE FLOOR DRAIN.
6. EXISTING FLUORIDE PUMP AND SCALE TO REMAIN IN EXISTING LOCATION.
7. 10-INCH BASE ELBOW BELOW.
8. INSERTION PANEL FLOW CONDITIONER.
9. 3/4" TAP FOR INSERTION AIR FLOW METER. VERIFY TAP DIAMETER WITH METER PROVIDED.
10. INSULATE ALL AIR PIPING IN THIS ROOM.
11. MAINTAIN 6'-0" CLEARANCE ON EAST AND WEST ENDS OF AIR STRIPPERS FOR TRAY REMOVAL.
12. AIR STRIPPER.
13. GRAVITY DRAIN HOUSING. PROVIDE 6" EQUIPMENT PAD BELOW.
14. REMOVE ALL PIPE INSULATION ON BOOSTER DISCHARGE PIPING AND VALVES. PREP, PRIME AND COAT ALL EXISTING ABOVE FLOOR PIPING PER DIV. 9.
15. 8" MAGNETIC FLOW METER.
16. 14" MAGNETIC FLOW METER. VERIFY SIZE.
17. RELOCATE EXISTING CHLORINATION EQUIPMENT. SEE M / ASM5.2.
18. WELL PUMP PRELUBRICATION. SEE J / ASM5.2.
19. RESERVOIR ROOF PENETRATION. SEE D / ASM5.2. COORDINATE WITH EQUIPMENT PROVIDED.
20. REROUTE ROOF DRAIN TO DISCHARGE THROUGH SOUTH WALL. PROVIDE SPLASH PAD AT DISCHARGE.
21. MAINTAIN 4 FEET MINIMUM STRAIGHT UNOBSTRUCTED PIPE BETWEEN AIR FLOW METER AND FLOW CONDITIONER.
22. PROVIDE TAPS IN CROSS FOR CHLORINE AND FLUORIDE ADDITION.
23. 2-INCH TAP FOR FAN COIL UNIT WATER SUPPLY.
24. 1-INCH TAP FOR FAN COIL UNIT WATER RETURN.
25. COORDINATE LOCATIONS WITH EQUIPMENT PROVIDED.
26. PROVIDE 3/4-INCH TAP IN SIDE OF GRAVITY DRAIN HOUSING. PROVIDE SAMPLE TAP. ROUTE SAMPLE TAP DISCHARGE OVER TRENCH DRAIN.
27. SAMPLE TAP WITH PRESSURE GAGE.
28. LONG RADIUS ELBOWS.

DATE:
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MECHANICAL PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

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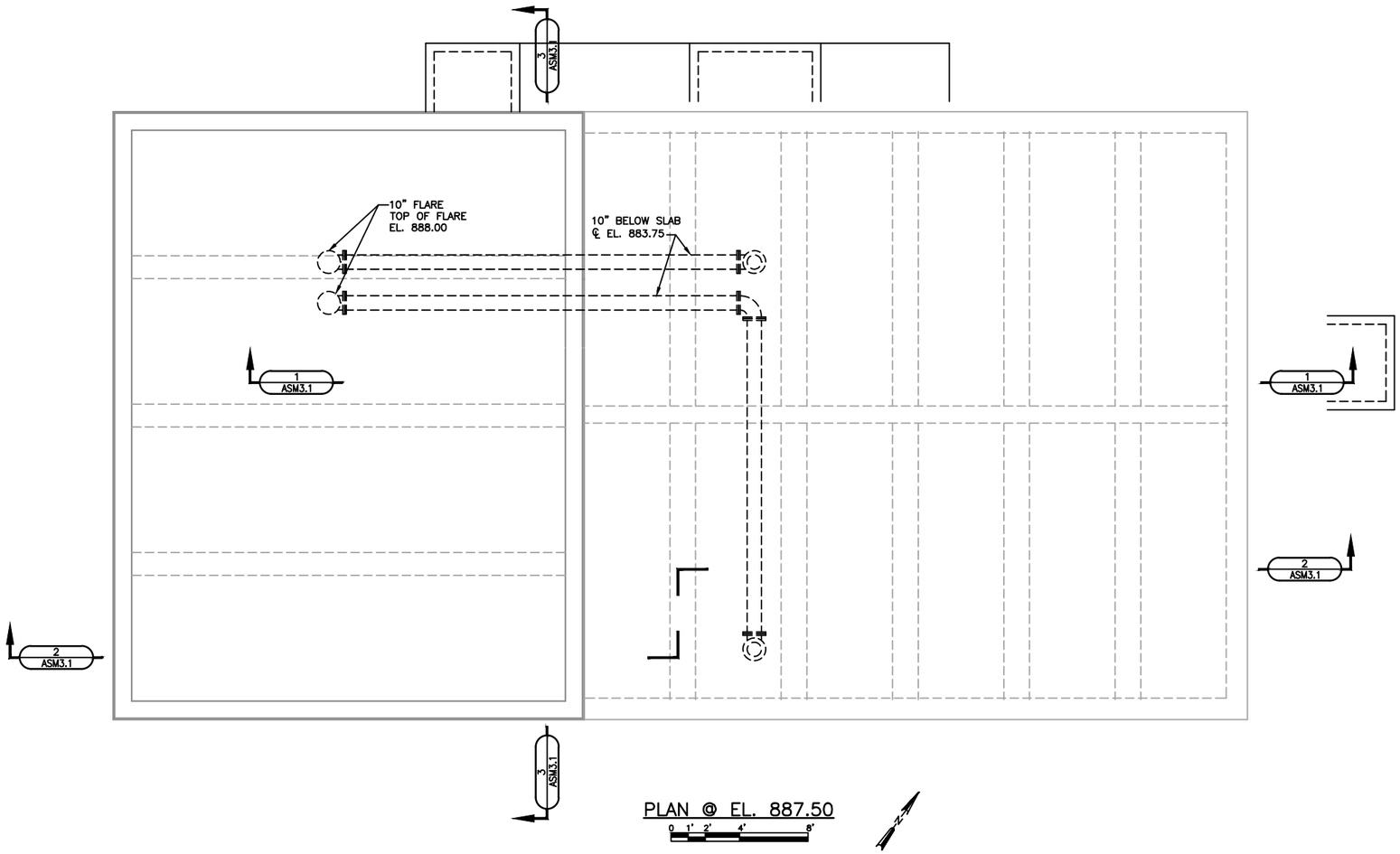
SHEET M1.1



PLAN @ EL. 887.50

0 1' 2' 4' 8'

NO. | REVISIONS | DATE:

MECHANICAL PLAN AT EL. 887.50

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

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SHEET M1.2

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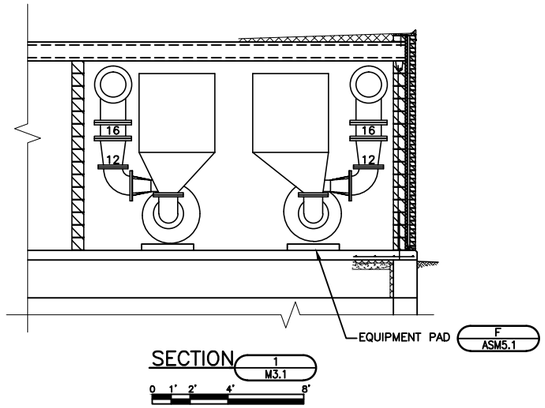
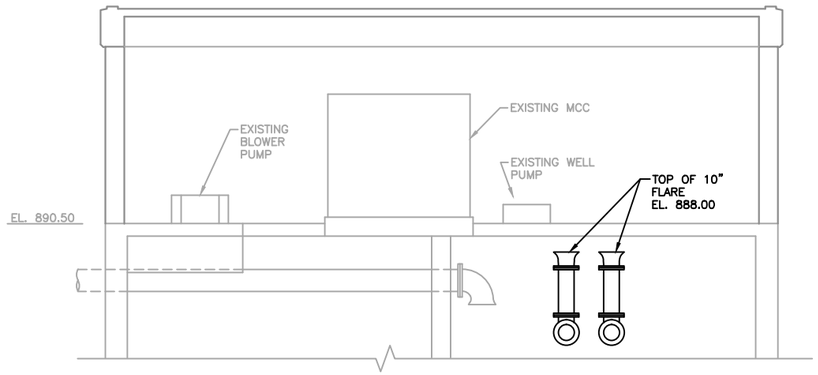


SECTION 1 M3.1

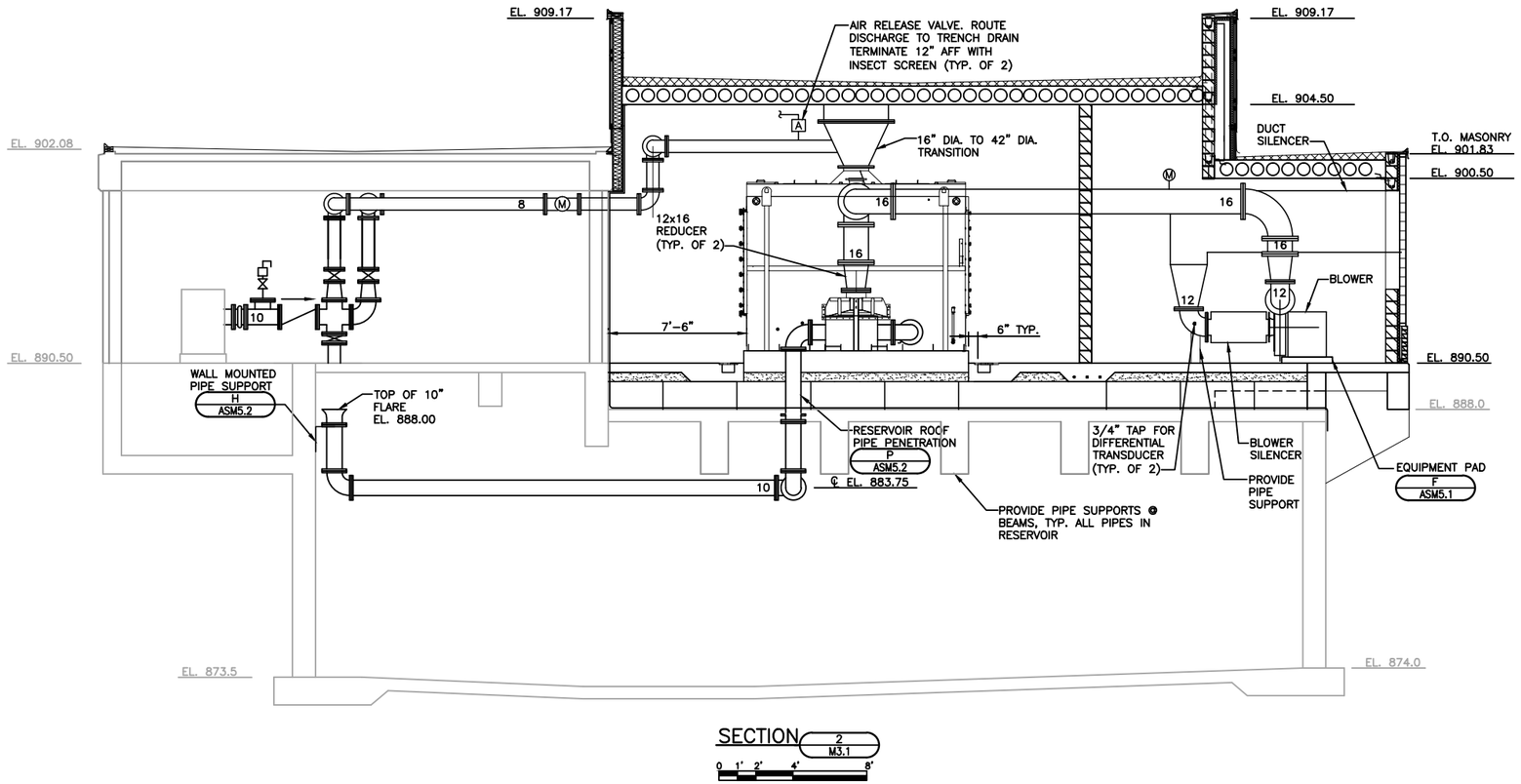
0 1' 2' 4' 8'



SECTION 3 M3.1

0 1' 2' 4' 8'

NOTE: ABOVE FLOOR LEVEL PIPING NOT SHOWN IN THIS SECTION



SECTION 2 M3.1

0 1' 2' 4' 8'

DATE:

REVISIONS

NO.

MECHANICAL SECTIONS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

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1020.066

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SHEET
M3.1

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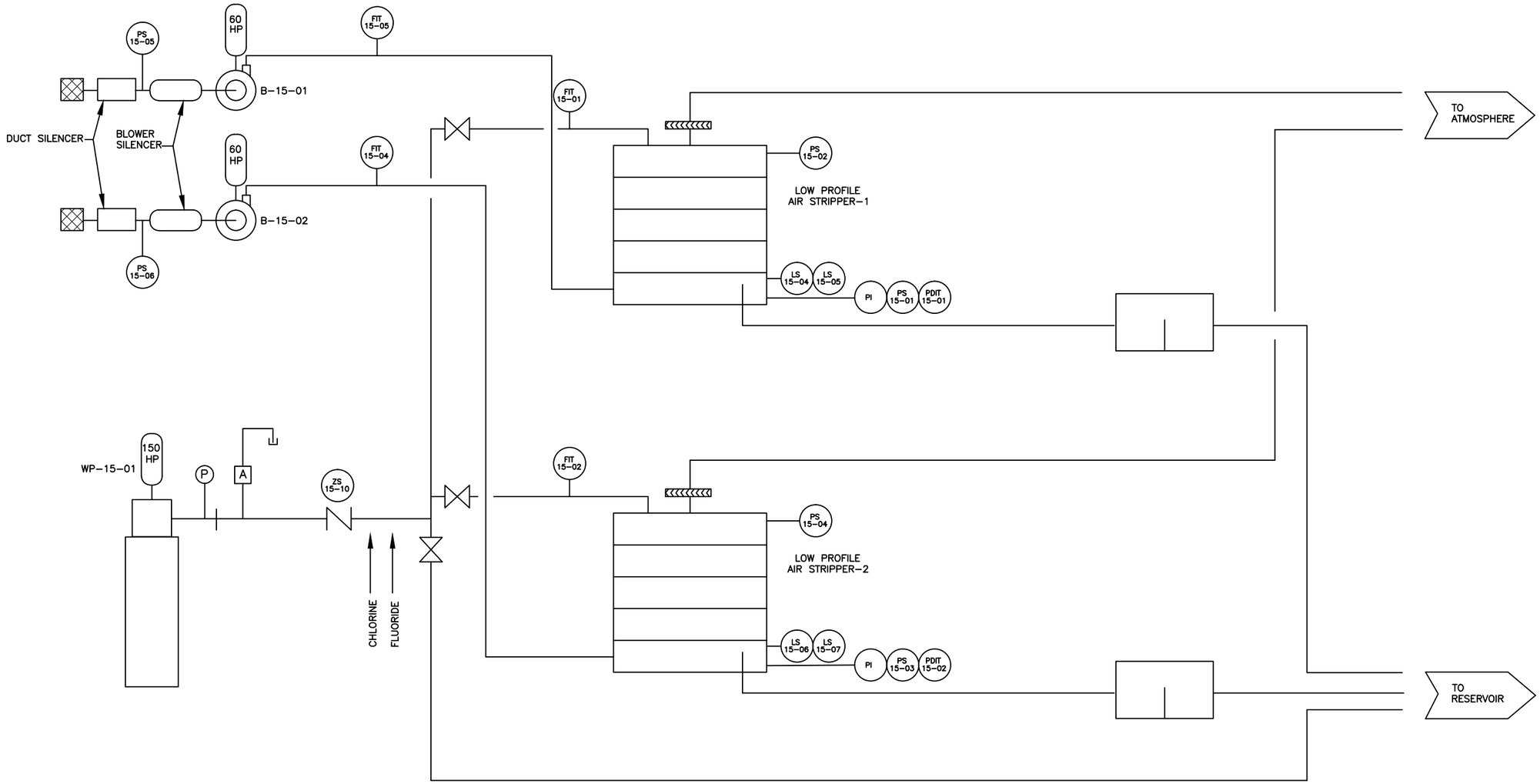

PROCESS FLOW DIAGRAM

LEGEND

- INTAKE FILTER
- BLOWER SILENCER
- GRAVITY DRAIN BOX
- DEMISTER

DATE:

REVISIONS

NO.

PROCESS FLOW DIAGRAM

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
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SHEET
M7.1

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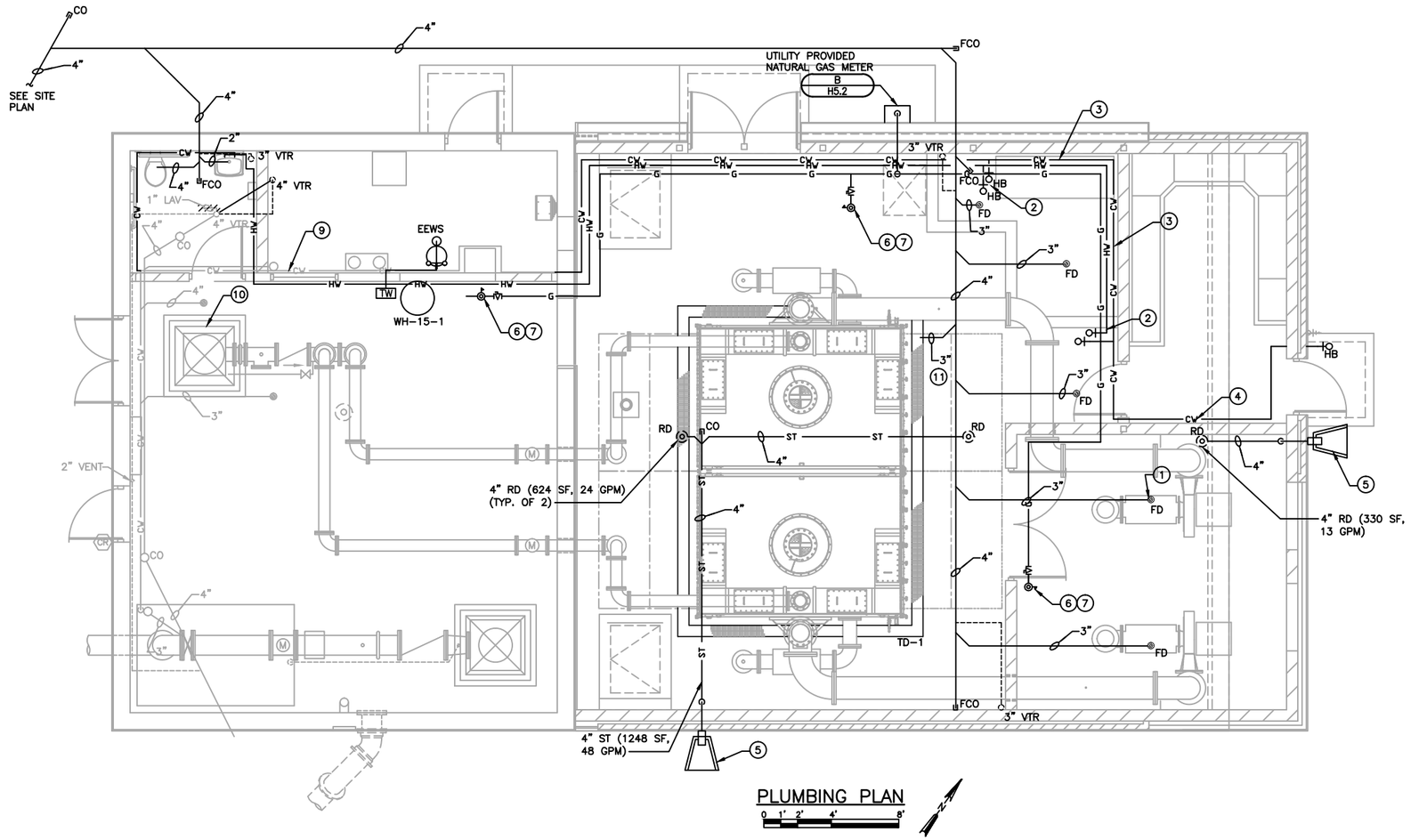

PLUMBING PLAN

GENERAL NOTES:

1. ROUTE NATURAL GAS PIPING TIGHT TO WALL ABOVE DOORS AND OPENINGS.
2. STORM PIPING SHALL BE PITCHED AT A MINIMUM OF 1/8-INCH PER FOOT.

KEY NOTES:

(1) COORDINATE LOCATION OF FLOOR DRAIN WITH BLOWER MANUFACTURER. LOCATE TO RECEIVE DRAINAGE FROM TAP IN BLOWER IMPELLER.

(2) MIXING UNIT HOSE STATIONS.

(3) DO NOT ROUTE WATER PIPING OR GAS PIPING IN FRONT OF GLASS BLOCK.

(4) DO NOT ROUTE WATER PIPING ABOVE MOTOR CONTROL CENTER.

(5) ROUTE 4" STORM PIPING DOWN TO 1'-0" AFF AND DISCHARGE TO OUTSIDE. PROVIDE DOWNSPOUT NOZZLE AND SPLASH PAD PER SPECIFICATIONS.

(6) ROUTE REGULATOR VENT THROUGH ROOF AND TERMINATE WITH GOOSENECK AND STAINLESS STEEL SCREEN VENT PIPE SHALL BE TYPE K COPPER WITH ROOF SUPPORT.

(7) REGULATE GAS PRESSURE DOWN TO MANUFACTURER RECOMMENDED OPERATING PRESSURE FOR EQUIPMENT BEING SERVED.

(8) PLUG VALVE SHALL HAVE ACCESS PANEL.

(9) REMOVE ALL COPPER WATER LINES IN EXISTING CHEMICAL ROOM AND REPLACE WITH SCHEDULE 80 CPVC.

(10) WELL PUMP PRELUBE (J / ASM5.2).

(11) TRENCH INVERT AT OUTLET 889.5±.

NO.	REVISIONS	DATE:

PLUMBING PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET P1.1

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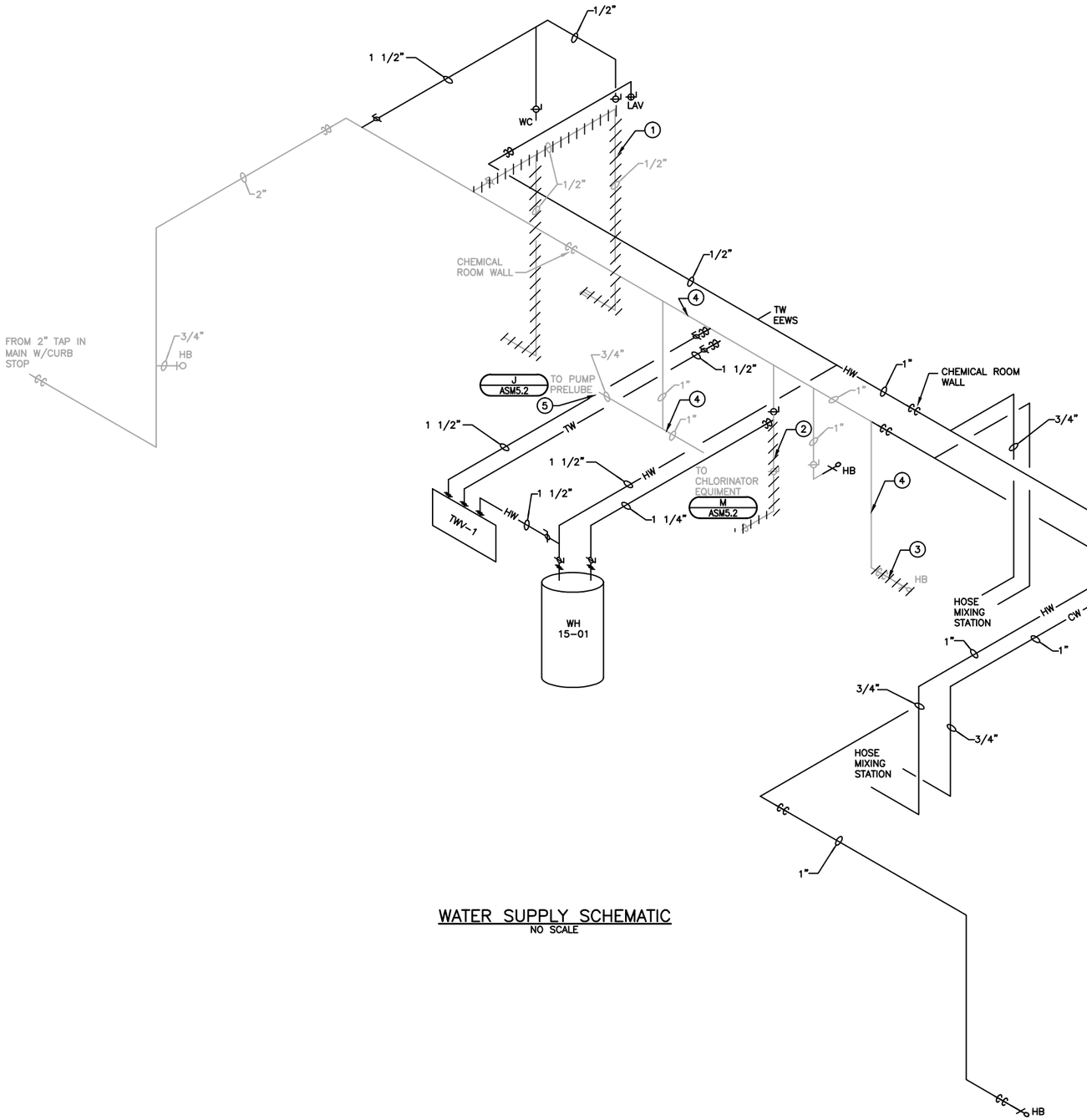
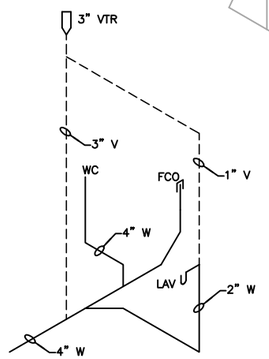


WATER SUPPLY SCHEMATIC
NO SCALE

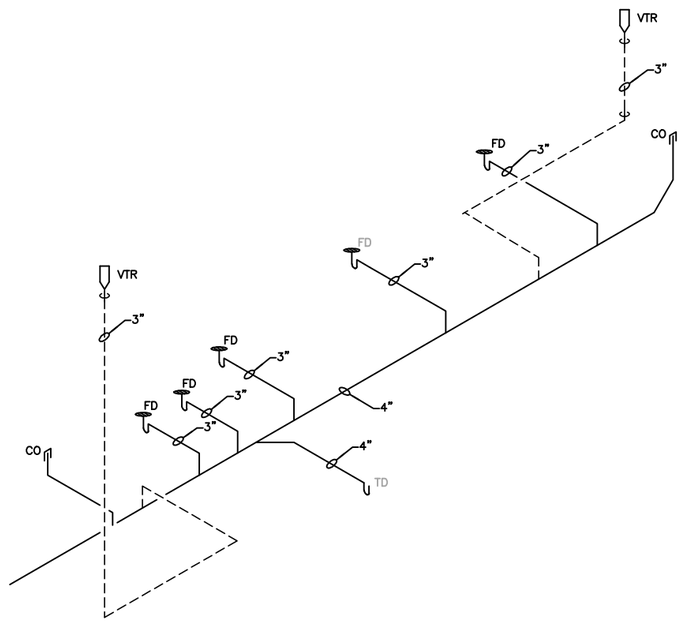


RESTROOM
WASTE & VENT SCHEMATIC
NO SCALE

KEY NOTES:

1. REMOVE EXISTING 1/2" TO LAV AND CAPPED CONNECTION.
2. REMOVE CONNECTION TO AIR HANDLING UNIT. EXTEND TO NEW WATER HEATER.
3. REPLACE EXISTING EXTERIOR HOSE BIB WITH INTERIOR HOSE BIB.
4. REPLACE ALL EXISTING COPPER PLUMBING WITH SCHEDULE 80 PVC IN CHEMICAL ROOM.
5. TRANSITION TO EXISTING COPPER AT FLOOR LEVEL.
6. DEMO EXISTING LAV. AND VENT.

EXISTING BUILDING
WASTE & VENT SCHEMATIC
NO SCALE



BUILDING WASTE & VENT SCHEMATIC
NO SCALE

DATE:
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WASTE, VENT AND WATER SUPPLY SCHEMATICS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
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GENERAL NOTES:

1. COORDINATE PIPE ROUTING WITH OTHER TRADES.

KEY NOTES:

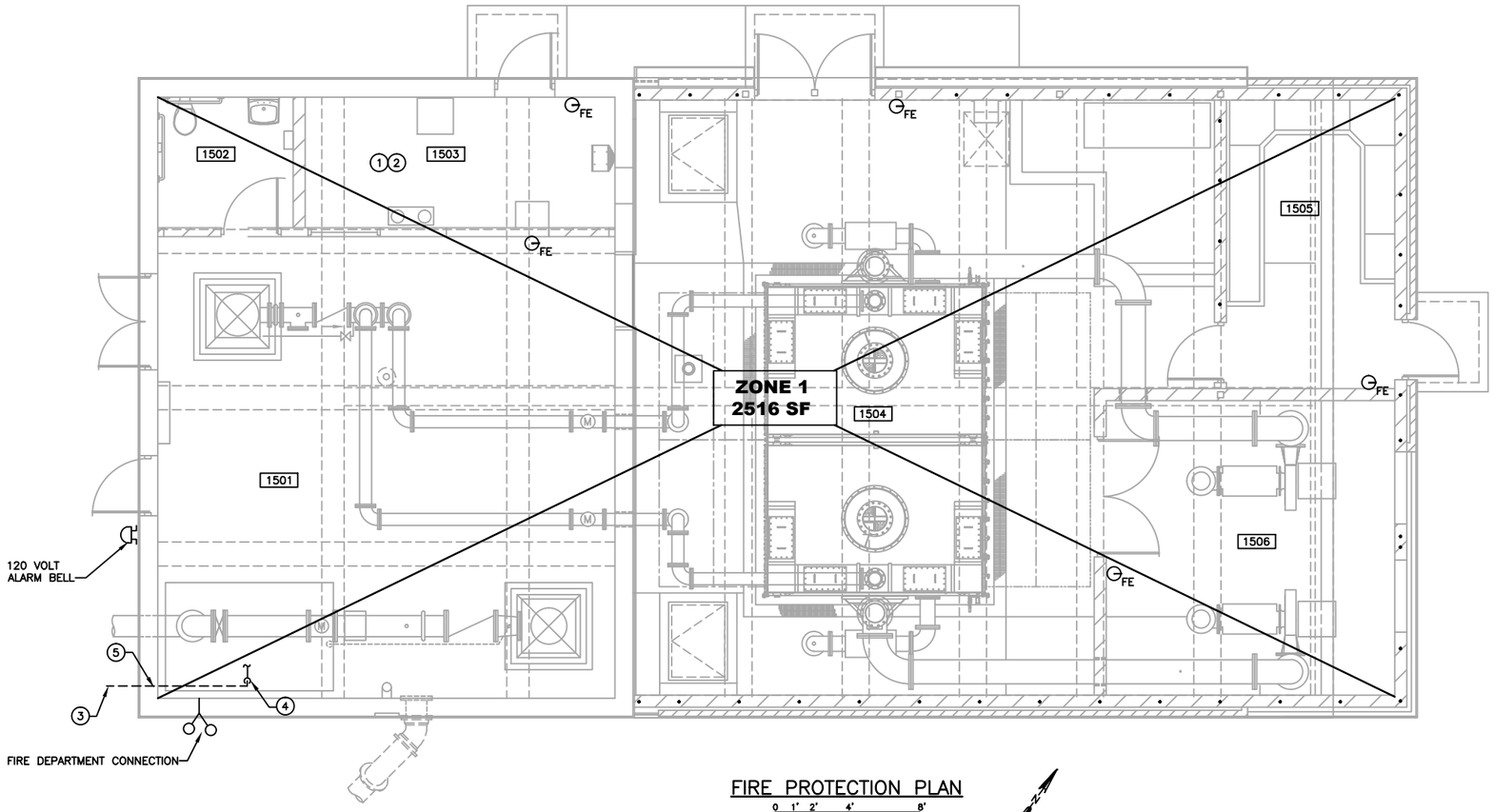
(1) CORROSIVE NEMA 4X ENVIRONMENT.

(2) NOT USED.

(3) 6" WATER MAIN. SEE SITE PLAN FOR CONTINUATION. PROVIDE INSULATION AT WALL PENETRATIONS.

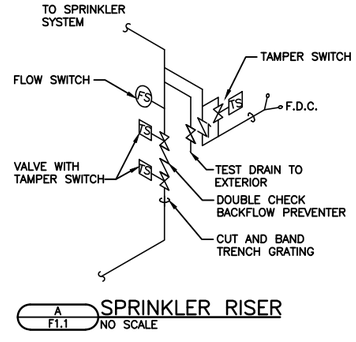
(4) SPRINKLER RISER.

(5) CORE HOLE THROUGH EXISTING FOUNDATION WALL. PROVIDE DOUBLE LINK SEALS AND PATCH CONCRETE WALL ON THE EXTERIOR.



FIRE PROTECTION PLAN

0 1' 2' 4' 8'



A / F1.1 SPRINKLER RISER
NO SCALE

NO.	REVISIONS	DATE:

FIRE PROTECTION PLAN AND DETAILS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
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DANE COUNTY, WISCONSIN

JOB NO. 1020.066

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SHEET FP1.1

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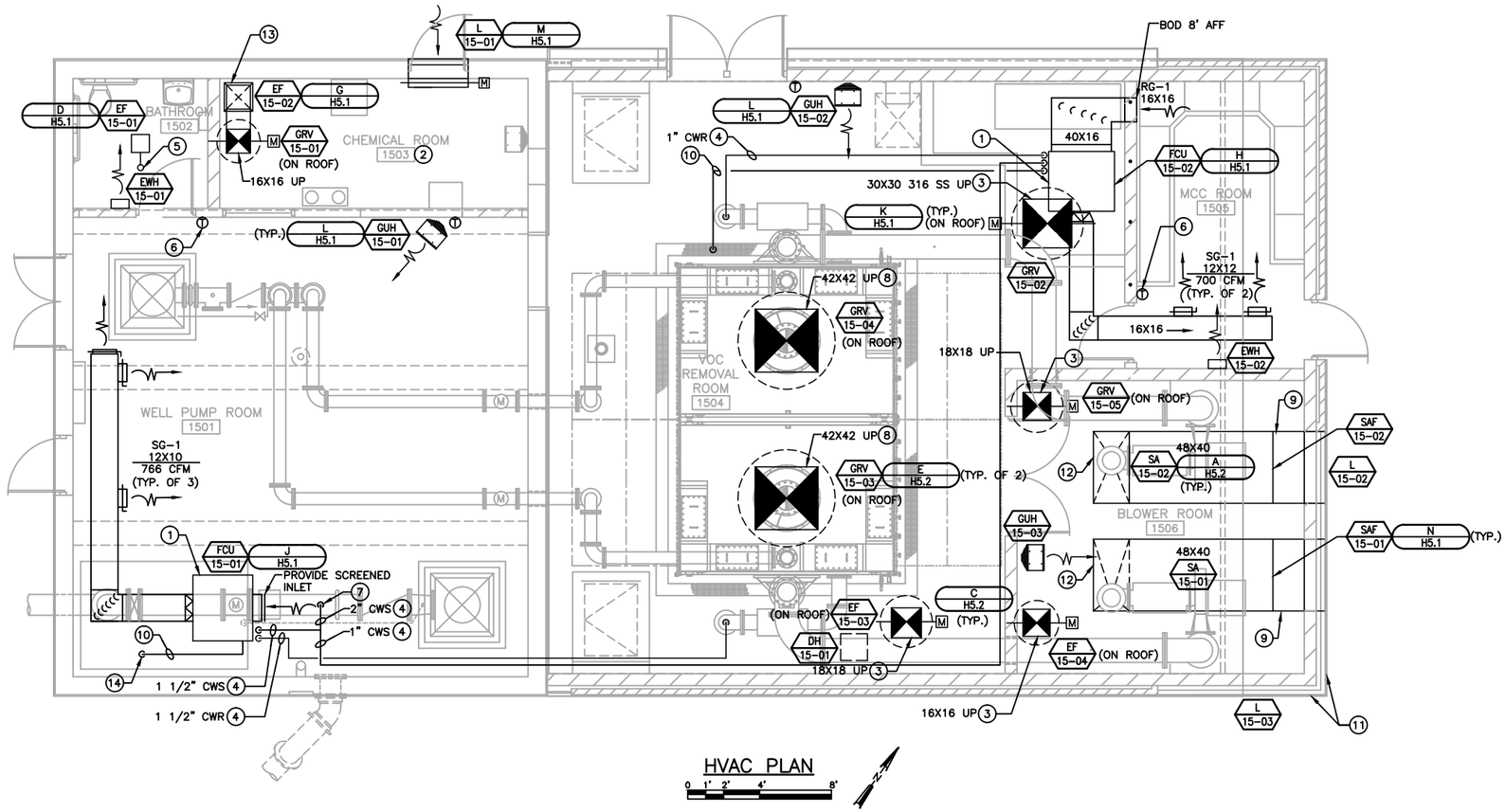

GENERAL NOTES:

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

KEY NOTES:

(1) PROVIDE ACCESS PANELS THIS SIDE.

(2) EQUIPMENT AND ACCESSORIES SHALL BE SUITABLE FOR CORROSIVE (NEMA 4X) ENVIRONMENTS. DUCTWORK SHALL BE FRP OR PVC.

(3) DUCTWORK SHALL TERMINATE 12-INCHES BELOW CEILING PROVIDE SCREENED INLET.

(4) ROUTE PIPING TIGHT TO CEILING.

(5) ROUTE EXHAUST UP THROUGH ROOF TERMINATE WITH CAP GREENHECK MODEL RFC-7 OR EQUAL.

(6) PROVIDE LOW VOLTAGE WIRING BETWEEN THERMOSTAT, FCU AND CONTROL VALVE.

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

(8) PROVIDE 16"ø TO 42X42 INCREASER FOR AIR STRIPPER

(9) PROVIDE ACCESS DOOR TO SIDE ACCESS FILTER ON THIS SIDE.

(10) ROUTE CONDENSATE TO TRENCH.

(11) PROVIDE BLANK BACKING BEHIND LOUVER WHERE NO OPENING IN WALL. BLANK PANEL SHALL BE COATED TO MATCH LOUVER.

(12) TRANSITION FROM 24X48 TO 12"ø TO EQUIPMENT CONNECTION.

(13) TRANSITION FROM 19X19 TO 16X16 IN VERTICAL.

(14) COORDINATE LOCATION OF CONDENSATE PIPE TO TRENCH DRAIN WITH EXISTING FIRE PROTECTION PIPE.

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HVAC PLAN

WELL 15 VOC AIR STRIPPER
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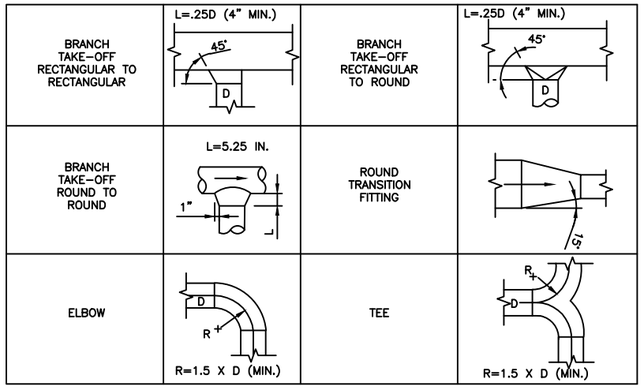
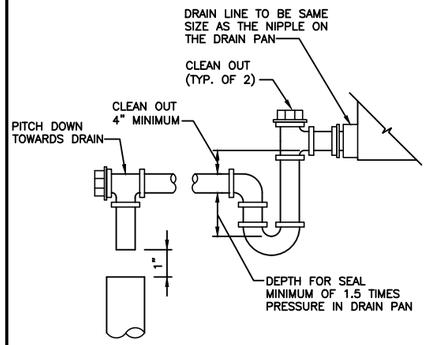
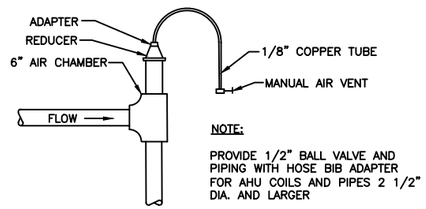
H1.1



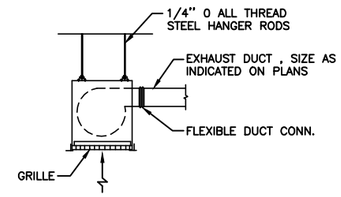
A H5.1 TYPICAL DUCT TAKE-OFF DETAIL
NO SCALE



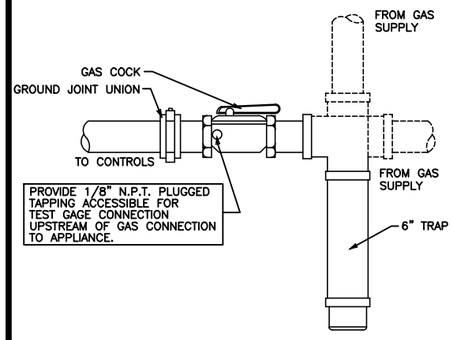
B H5.1 CONDENSATE DRAIN
NO SCALE



C H5.1 MANUAL AIR VENT
NO SCALE



D H5.1 CEILING FAN
NO SCALE



E H5.1 NATURAL GAS CONNECTION
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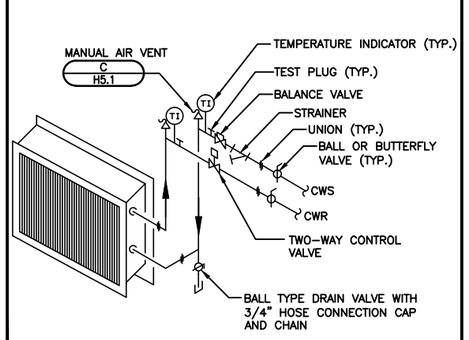
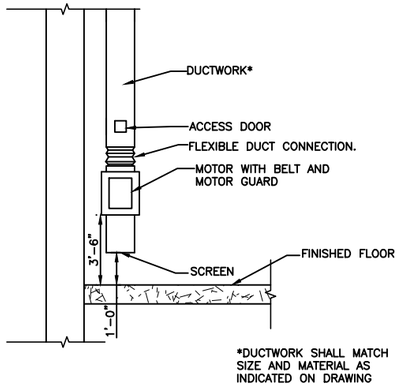
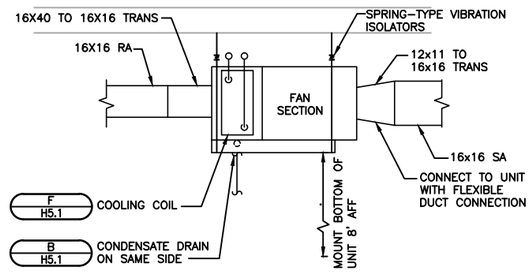


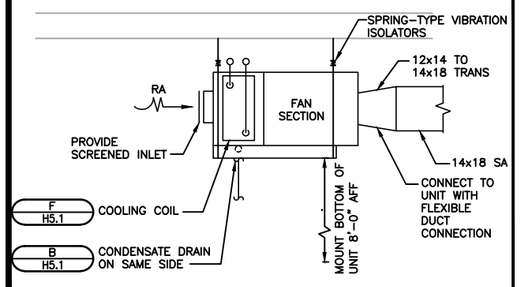
COOLING COIL PIPING
(TWO-WAY CONTROL VALVE)
F H5.1 NO SCALE



G H5.1 EXHAUST FAN
NO SCALE



H H5.1 FAN COIL UNIT DETAIL
NO SCALE



J H5.1 FAN COIL UNIT DETAIL
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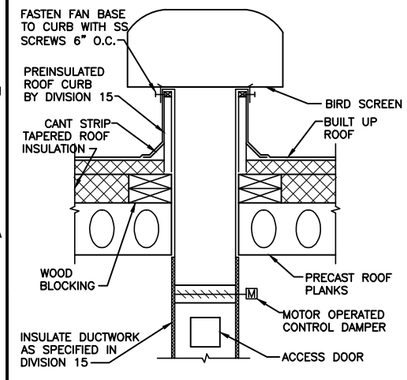
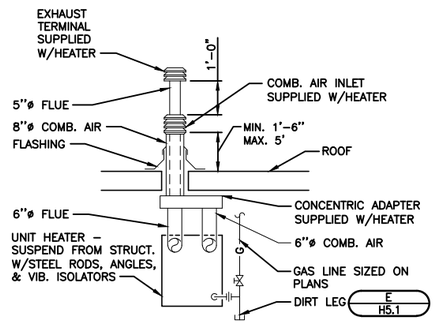


K H5.1 GRAVITY ROOF VENTILATOR
NO SCALE



L H5.1 GAS UNIT HEATER
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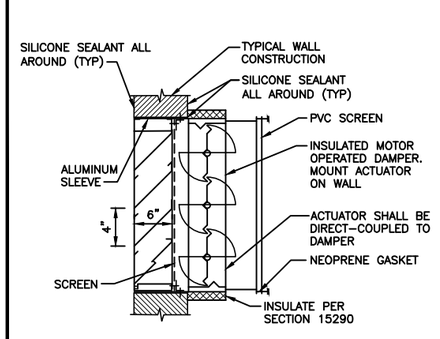
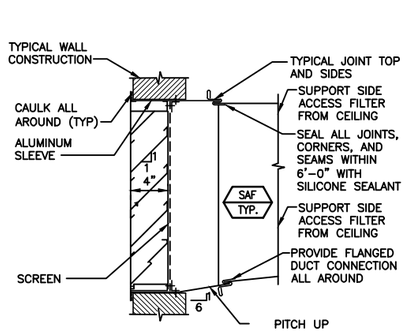


M H5.1 WALL LOUVER AND DAMPER
NO SCALE



N H5.1 LOUVER
NO SCALE

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HVAC DETAILS - 1

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
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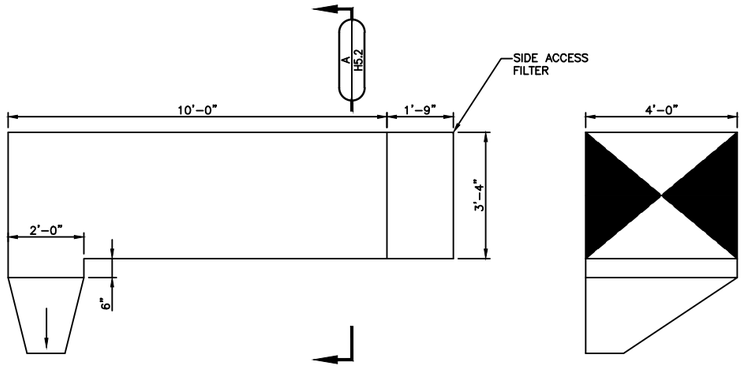
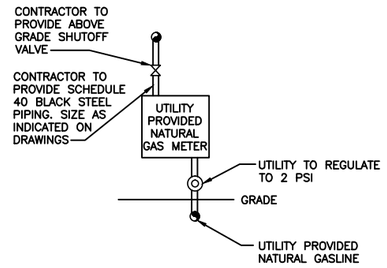
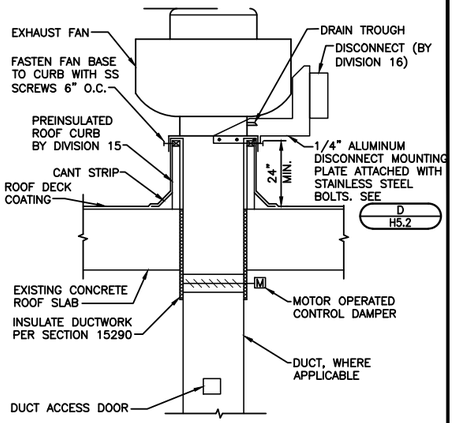


PLAN SECTION A

A H5.2 SOUND ATTENUATOR
NO SCALE

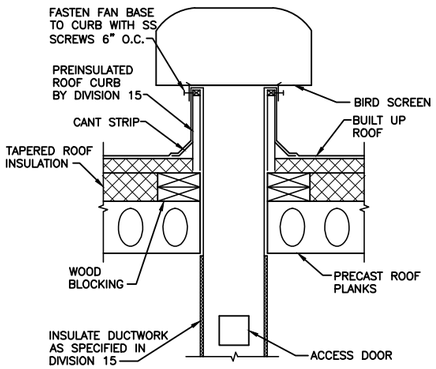


B H5.2 GAS METER ELEVATION
NO SCALE



C H5.2 UPBLAST EXHAUST FAN
NO SCALE

D H5.2 DISCONNECT MOUNTING PLATE
NO SCALE



AIR STRIPPER
GRAVITY ROOF VENTILATOR
E H5.2 NO SCALE

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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)	CAPACITY (BTUH)	EAT DB/WB (°F)	LAT DB/WB (°F)	EWT (°F)	LWT (°F)	FLOWRATE (GPM)	WPD (FT.)	VOLTAGE	PHASE	FLA	STARTER/ DISCONNECT PROVIDED BY		
15–01	WELL PUMP ROOM	PUMP ROOM	H20	2300	0	0.5	1–1/2	62,800	80/67	59.4/58.5	55	60.1	24.7	7.69	460	3	2.5	MFR	352	
15–02	VOC REMOVAL ROOM	ELECTRICAL ROOM	H16	1400	0	0.5	3/4	37,460	80/67	59.5/58.7	55	60	15	3.95	460	3	1.5	MFR	298	(1)

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

DESIGN CONDITIONS

APPLICABLE BUILDING CODE: 2006 INTERNATIONAL BUILDING CODE		SUMMER EXTERIOR: 87°F DB / 75°F WB WINTER EXTERIOR: –15°F DB		
OCCUPANCY TYPE	VENTILATION	SUMMER INTERIOR (DB/WB)	WINTER INTERIOR (DB)	REMARKS
CHEMICAL ROOM	60 ACH/INTERMITTENT	AMBIENT	60	
AIRSTRIPPER ROOM	12 ACH/INTERMITTENT	104	55	
BLOWER ROOM	EQUIPMENT COOLING	104	60	
PUMP ROOM	EQUIPMENT COOLING	80	60	
ELECTRICAL ROOM	EQUIPMENT COOLING	80	60	
RESTROOM	75 CFM/FIXTURE	AMBIENT	60	

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
15–01	RESTROOM	RESTROOM	SP–B110	100	0.25	FRAC.	CABINET	ODP	DIRECT	2.0	115	1	DIV 16	DIV 16	10	
15–02	CHEM ROOM	CHEM ROOM	BSQ–120	1250	0.5	1/3	INLINE	TEFC	BELT	10.7	115	1	DIV 16	DIV 16	89	(1)
15–03	VOC REMOVAL ROOM	VOC REMOVAL ROOM	CUBE–180	2675	0.5	1/2	UPBLAST	TEFC	BELT	11.5	460	3	DIV 16	DIV 16	103	
15–04	BLOWER ROOM	BLOWER ROOM	CUBE–141	1325	0.5	1/4	UPBLAST	TEFC	BELT	9.1	115	1	DIV 16	DIV 16	67	

(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
15–01	CHEM ROOM	CHEM ROOM	ESD–635	1245	40	24	6	0.023	390	3.19	INSECT	INTERIOR	10' AFF	
15–02	BLOWER ROOM	EAST WALL	ESK–402	–	175	112	–	–	–	–	–	–	11'–4" AFF	(1)(2)(3)
15–03	BLOWER ROOM	SOUTH WALL	ESK–402	–	111	112	–	–	–	–	–	–	11'–4" AFF	(1)(2)(3)

(1) PARTIAL OR ENTIRE WALL LOUVER USED AS ARCHITECTURAL PIECE. REFER TO STRUCTURAL DRAWING FOR WALL OPENING SIZE AND LOCATION. WHERE WALL OPENING PROVIDE INSECT SCREEN ON INTERIOR OF LOUVER.
(2) CORNERS WHERE LOUVERS ARE JOINED SHALL BE MITERED AT 45°.
(3) SECTIONS SHALL HAVE TYPICAL HIDDEN MULLION FOR NON–DRAINAGE SECTIONS.

ELECTRIC HEATER SCHEDULE

UNIT NO.	LOCATION	Q–MARK MODEL NO.	CAPACITY (WATTS)	CAPACITY (BTU)	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FLA	DISCONNECT BY	REMARKS
EWH–15–01	RESTROOM	CWH–3150	1500	5120	120	1	12.5	MANUFACTURER	
EWH–15–02	ELECTRICAL	CWH–3150	1500	5120	120	1	12.5	MANUFACTURER	

GAS FIRED UNIT HEATER SCHEDULE

UNIT NO. GUH–	LOCATION	MODINE MODEL NO.	UNIT TYPE	FAN SECTION SUPPLY AIR (CFM)	FAN SECTION FAN (HP)	NATURAL GAS HEATING SECTION MAX. PRESSURE (IN. W.C.)	NATURAL GAS HEATING SECTION MIN. PRESSURE (IN. W.C.)	NATURAL GAS HEATING SECTION INPUT (MBH)	NATURAL GAS HEATING SECTION OUTPUT (MBH)	VENTING TYPE	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FLA	ELECTRICAL DISCONNECT BY	REMARKS
15–01	PUMP ROOM	HDS–30	SEP COMB	523	1/15	7	6	30	24	TYPE B	115	1	3.7	DIV. 16	
15–02	AIRSTRIPPER ROOM	HDS–30	SEP COMB	725	1/15	7	6	45	36	TYPE B	115	1	3.7	DIV. 16	
15–03	BLOWER ROOM	HDS–30	SEP COMB	523	1/15	7	6	30	24	TYPE B	115	1	3.7	DIV. 16	

DEHUMIDIFIER SCHEDULE

UNIT NO. DH–	SERVICE	HI–E DRY MODEL NO.	CAPACITY (LBS/DAY)	AIRFLOW (CFM)	ELECTRICAL VOLTAGE	ELECTRICAL PHASE	ELECTRICAL FLA	ELECTRICAL MCA	ELECTRICAL BREAKER SIZE	REMARKS
15–01	AIRSTRIPPER ROOM	195	143	540	120	1	12			

SILENCER SCHEDULE

UNIT NO.	QUANTITY	VIBRO–ACOUSTICS MODEL	WIDTH (IN)	HEIGHT (IN)	LENGTH (IN)	FLOW (CFM)	VELOCITY (FT/MIN)	SILENCER P.D. (IN WG)	P.D. INCL. SYSTEM EFFECTS (IN WG)	DYNAMIC INSERTION LOSS 63	125	250	500	1000	2000	4000	8000	REMARKS
SA–1	1	RED–MV–F4	48	40	120	5200	640	0.17	0.3	12	28	38	43	55	46	36	31	(1)(2)(3)(4)(5)
SA–2	1	RED–MV–F4	48	40	120	5200	640	0.17	0.3	12	28	38	43	55	46	36	31	(1)(2)(3)(4)(5)

(1) RED = RECTANGULAR ELBOW DISSIPATIVE.
(2) HTL CASING.
(3) GALVANIZED CONSTRUCTION.
(4) ELBOW SILENCER.
(5) PROVIDE, FOR APPROVAL, ACOUSTICAL CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT DUCTBORNE FAN SOUND LEVEL, INCLUDING AIRBORNE AND BREAKOUT NOISE, IN THE OCCUPIED SPACES MEET NC35–40.

GRAVITY ROOF VENTILATOR SCHEDULE

UNIT NO. GRV–	LOCATION	SERVICE	GREENHECK MODEL NO.	THROAT WIDTH (IN.)	THROAT LENGTH (IN.)	AIRFLOW (CFM)	STATIC PRESSURE (IN. W.C.)	THROAT VELOCITY (FPM)	THROAT AREA (SQ. FT)	OVERALL HEIGHT (IN.)	REMARKS
15–01	CHEM ROOM	CHEM ROOM	GRSR	16	16	1245	0.082	859	1.45	11	
15–02	VOC REMOVAL ROOM	VOC REMOVAL ROOM	GRSI	30	30	2662	0.07	529	5.03	18.75	
15–03	VOC REMOVAL ROOM	SOUTH VOC AIRSTRIPPER	GRSR	42	42	5200	0.024	420	12.75	23	
15–04	VOC REMOVAL ROOM	NORTH VOC AIRSTRIPPER	GRSR	42	42	5200	0.024	420	12.75	23	
15–05	BLOWER ROOM	BLOWER ROOM	GRSI	18	18	1325	0.086	723	1.83	11.5	

SIDE ACCESS FILTER SCHEDULE

UNIT NO. SAF–	LOCATION	SERVICE	FARR FILTER MODEL NO.	FARR HOUSING MODEL NO.	AIRFLOW (CFM)	WIDTH (IN)	HEIGHT (IN)	DEPTH (IN)	MERV RATING	EN 779 RATING	INITIAL AIR ΔP (IN W.C.)	FINAL AIR ΔP (IN W.C.)	REMARKS
15–01	BLOWER ROOM	SOUTH BLOWER	400013–001	3P GLIDE/PACK	6,000	48	39.5	21	7	G4	0.08	0.23	(1)(2)
15–02	BLOWER ROOF	NORTH BLOWER	400013–001	3P GLIDE/PACK	6,000	48	39.5	21	7	G4	0.08	0.23	(1)(2)

(1) SIDE ACCESS FILTER HOUSING SHALL HAVE ACCESS DOOR FACING AS NOTED ON DRAWING.
(2) SCHEDULED FILTER TO BE USED AS MAIN FILTER IN HOUSING.

AIR REGISTER AND GRILLE SCHEDULE

UNIT NO.	CARNES MODEL NO.	FINISH	TYPE	MATERIAL	FACE SIZE	NECK SIZE	OBD DAMPER	MOUNTING LAY–IN	MOUNTING SURFACE	MOUNTING SIDEWALL	REMARKS
RG–1	RSLA	WHITE	RETURN GRILLE	STEEL	VARIES	VARIES	NO			*	
SG–1	RSDB	WHITE	SUPPLY GRILLE	STEEL	VARIES	VARIES	NO			*	

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HVAC SCHEDULES

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO.
1020.066

PROJECT MGR.
ANDY MULLENDORE

STRAND ASSOCIATES®

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H6.1

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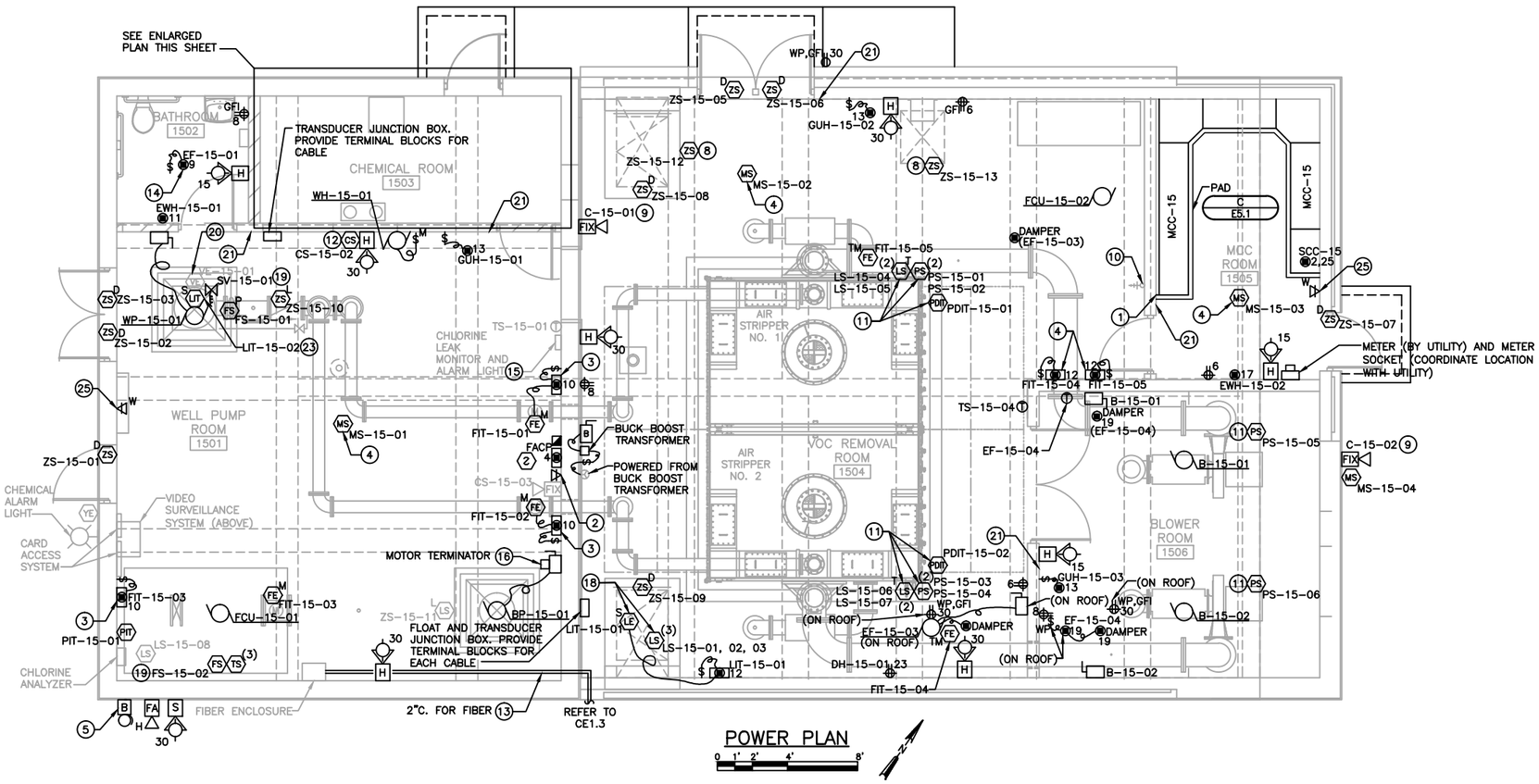

GENERAL NOTES:

1. REFER TO SPECIFICATION SECTION 16990 FOR WIRING ASSOCIATED WITH THE SCADA SYSTEM.
2. ALL EXTERIOR MOUNTED DEVICES SHALL BE INSTALLED IN RECESSED BOXES.
3. REFER TO SHEET G0.3 FOR FIRE RATED WALLS.
4. DAMPERS NOT SHOWN WITH A CIRCUIT NUMBER SHALL BE POWERED FROM THE CONTROL PANEL AT THE UNIT OR FROM A CONTROL POWER TRANSFORMER IN THE ASSOCIATED STARTER BUCKET.
5. ALL CONDUIT PENETRATIONS BETWEEN INTERIOR SPACES SHALL BE CONSIDERED FIRE RATED PENETRATIONS AND SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.

KEY NOTES:

1. PROVIDE FILLER PLATE ON TOP AND SIDE OF MCC. PAINT TO MATCH MCC.
2. PROVIDE TWO DEDICATED PHONE LINES FOR FIRE ALARM CONTROL PANEL. PHONE LINES SHALL TERMINATE IN PHONE DEMARC. COORDINATE DEMARC LOCATION WITH OWNER. PROVIDE CONDUIT AND WIRE AS REQUIRED.
3. PROVIDE 2~3/4" CONDUIT FROM FLOW TUBE TO TRANSMITTER AND INSTALL MANUFACTURER FURNISHED CABLES.
4. PROVIDE 3/4" CONDUIT FROM FLOW TUBE TO TRANSMITTER FOR MANUFACTURER PROVIDED CABLE.
5. NOT USED.
6. ALL ELECTRICAL WORK AND EQUIPMENT IN THIS ROOM SHALL BE RATED NEMA 4X.
7. CHLORINE LEAK DETECTION CONTROL STATION CS-15-01 SHALL BE RED MUSHROOM HEAD MAINTAINED TYPE WITH GLASS BREAK DEVICE, PERMANENTLY LABELED "VENTILATION SHUTDOWN" AND MONITORED AS DESCRIBED IN SPECIFICATION SECTION 16940.
8. MOUNT TO NEW ROOF HATCHES.
9. CAMERA SHALL BE ORIENTED TO COVER ENTRANCE DOOR. PROVIDE CAT5e CABLE IN 3/4" CONDUIT TO VIDEO SURVEILLANCE CONTROL PANEL. CAMERAS AND MOTION SENSOR SHALL BE PROVIDED BY REPLOGIX, INC. REFER TO SPECIFICATION SECTION 16940, PART 2 FOR ADDITIONAL INFORMATION. PROVIDE MOUNTING HARDWARE AS REQUIRED.
10. PROVIDE 2" CONDUIT AND ANTENNA CABLE TO 20' ABOVE GRADE FOR ANTENNA AND MAST. MOUNT TO PARAPHET WALL PROVIDE DRIP LOOP AND SUPPORTS AS REQUIRED. PROVIDE WEATHERHEAD FOR CABLE INSTALLATION. REFER TO DETAIL E E5.1 FOR MOUNTING.
11. PROVIDED BY DIVISION 11 AND WIRED BY DIVISION 16. PROVIDE 3/4"C FOR MANUFACTURER FURNISHED CABLE TO EACH GAS SHUTOFF VALVE. ELECTRICAL INSTALLATION SHALL BE SUCH THAT THE ACTUATOR CAN BE REMOVED WITHOUT REMOVAL OF CONDUIT AND FITTINGS.
12. CS-15-02 SHALL BE WIRED TO EMERGENCY SHUTOFF PANEL IN ORDER TO MANUALLY SHUTDOWN CHLORINE SYSTEM. PROVIDE 2~#14 IN 3/4" CONDUIT FROM CS-15-02 TO PANEL.
13. FIBER SHALL RETERMINATE IN FIBER ENCLOSURE AFTER NEW CONDUIT IS INSTALLED. PROVIDE 2" CONDUIT BACK TO FIBER ENCLOSURE.
14. FAN SHALL BE CONTROLLED FROM OCCUPANCY SENSOR SHOWN ON E1.2.
15. PROVIDE CONDUIT AND WIRE AS REQUIRED TO RELOCATE CHLORINE LEAK MONITOR AND ALARM LIGHT. PROVIDE NEW DISCRETE ALARM RELAY CARD IN PLACE OF COMMON ALARM RELAY CARD. MONITOR IS SCOTT SAFETY 7200 PLUS. COORDINATE PROGRAMMING OF RELAYS WITH OWNER.
16. PROVIDE 3/4" CONDUIT FROM MOTOR TO MOTOR TERMINATOR FOR MANUFACTURER PROVIDED CABLE.
17. PROVIDE 2~#4 IN 3/4" CONDUIT FROM STROBE AND HORN TO SCC-15. STROBE AND HORN SHALL BE AS SPECIFIED IN SPECIFICATION SECTION 16940.
18. FLOAT SWITCHES AND SUBMERSIBLE LEVEL TRANSDUCER SHALL BE MOUNTED NEXT TO HATCH ACCESS OPENING TO ALLOW FOR MAINTENANCE WITHOUT HAVING TO ENTER RESERVOIR. PROVIDE STAINLESS STEEL KELLUM GRIPS AND STAINLESS STEEL J-HOOKS FOR CABLE MOUNTING.
19. PROVIDED BY DIVISION 15 AND WIRED BY DIVISION 16.
20. EXISTING VIBRATION SENSOR SHALL BE REMOUNTED TO NEW MOTOR. PROVIDE MOUNTING BRACKET, CONDUIT, AND WIRE AS REQUIRED.
21. PROVIDE OUTLET BOX FOR THERMOSTAT AND 3/4" CONDUIT FROM BOX TO GUH-15-01, 02, 03, FCU-15-01, AND FCU-15-02.
22. RELOCATED CHLORINE LEAK DETECTOR. PROVIDE CONDUIT AND WIRE AS REQUIRED.
23. TRANSDUCER TO BE INSTALLED IN CARRIER PIPE BY DIVISION 11.
24. RECEPTACLES SHALL BE HALF INTERLOCKED AND HALF HOT AS DESCRIBED IN SPECIFICATIONS.
25. TERMINATE IN PHONE DEMARC. COORDINATE DEMARC LOCATION WITH OWNER. PROVIDE CONDUIT AND WIRE AS REQUIRED.
26. FAN SHALL BE WIRED TO SCC-15 VIA CIRCUIT BREAKER IN LP-15.
27. PROVIDE A RED MUSHROOM-TYPE MAINTAINED PUSHBUTTON LABELED "CHEMICAL ROOM EMERGENCY".
28. PROVIDE POWER RELAY IN NEMA 4X ENCLOSURE WIRED TO LEAK DETECTOR ALARM RELAY CONTACT. POWER RELAY CONTACTS SHALL CONNECT TO EMERGENCY SHUTOFF PANEL, LEAK DETECTOR AND SCC-15.

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ELECTRICAL POWER PLAN

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066
PROJECT MGR. ANDY MULLENDORE

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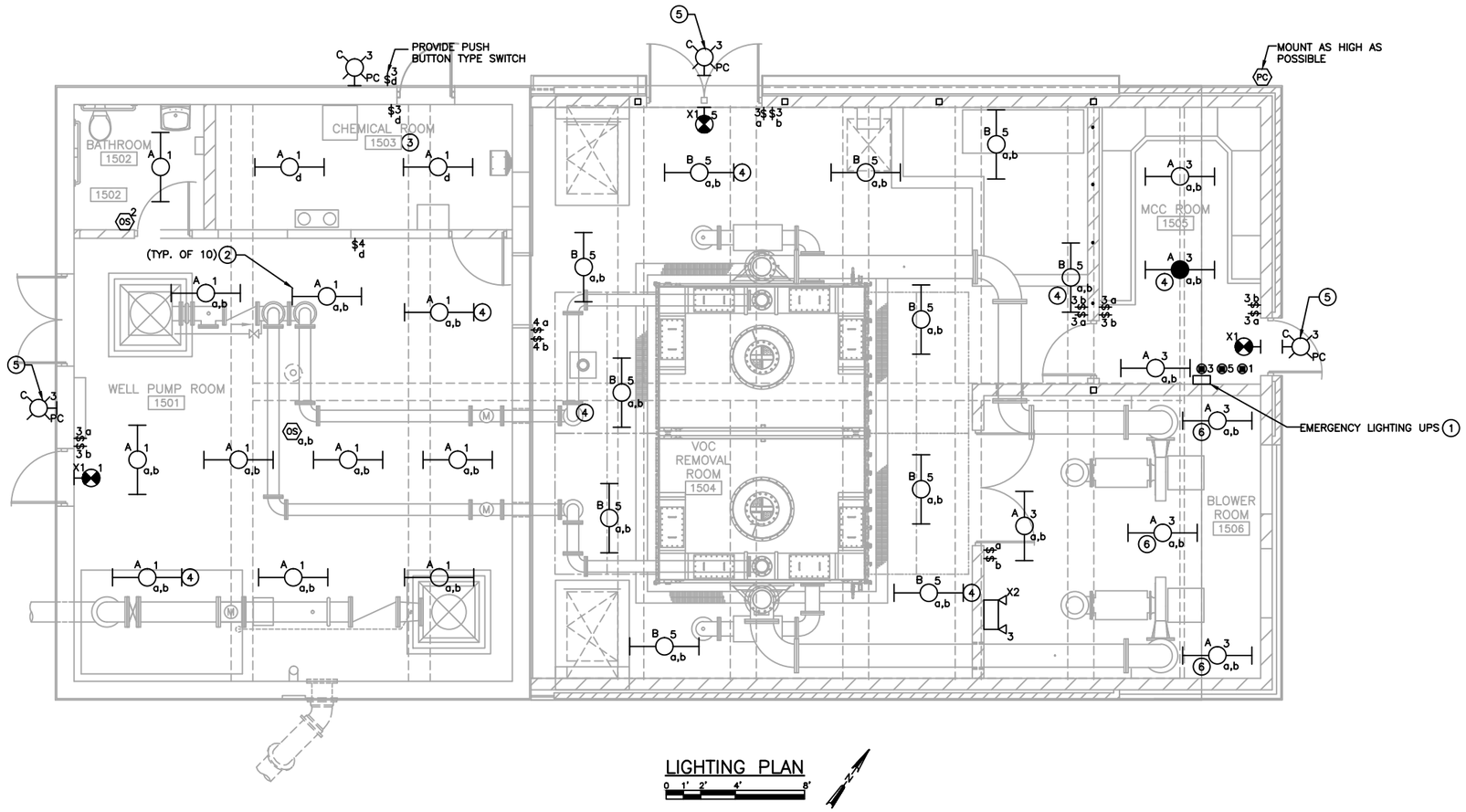
SHEET E1.1



LIGHTING PLAN

0 1' 2' 4' 8'

GENERAL NOTES:

1. ALL EXTERIOR MOUNTED DEVICES SHALL BE INSTALLED IN RECESSED BOXES.
2. ALL CONDUIT PENETRATIONS BETWEEN INTERIOR SPACES SHALL BE CONSIDERED FIRE RATED PENETRATIONS AND SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.

KEY NOTES:

(1) EMERGENCY LIGHTING UPS'S SHALL BE SURFACE MOUNTED ON THE WALL STACKED ABOVE EACH OTHER. ASSOCIATED FIXTURES SHALL BE WIRED IN SERIES THROUGH THE UPS FROM THE LOAD SIDE OF THE CONTROL DEVICE. PROVIDE SEPARATE REFERENCE VOLTAGE CIRCUIT TO POWER THE UPS FROM THE LINE SIDE OF THE CONTROL DEVICE.

(2) MOUNT LIGHTS IN SAME LOCATION AS EXISTING. REUSE EXISTING CONDUIT.

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

(4) CENTER LAMP SHALL BE POWERED THROUGH THE EMERGENCY LIGHTING UPS IN ELECTRICAL ROOM 1505.

(5) FIXTURE SHALL BE WIRED THROUGH UPS IN MCC ROOM.

(6) PENDANT MOUNT FIXTURES AT 8'-0" AFF.

NO.	REVISIONS	DATE:

ELECTRICAL LIGHTING PLAN

WELL 15 VOC AIR STRIPPER
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DANE COUNTY, WISCONSIN

JOB NO.
1020.066

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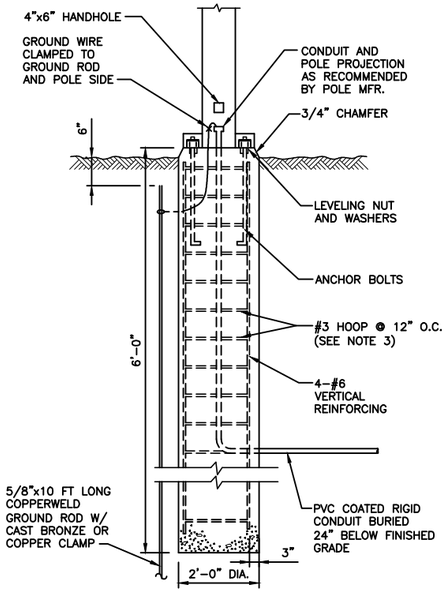
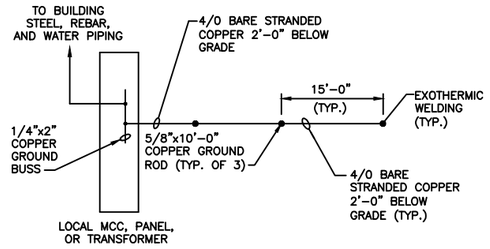
SHEET
E1.2



NOTES:

1. TOP OF BASE TO BE 4" ABOVE TOP OF FUTURE CURB, TOP 12" TO BE FORMED.
2. POLE SHALL BE MOUNTED 4'-0" BACK FROM EDGE OF PAVEMENT.
3. PROVIDE 3-#3 TIES @3" O.C. AT TOP OF POLE BASE.

A / E5.1 LIGHT POLE BASE
NO SCALE



B / E5.1 GROUND GRID
NO SCALE

LIGHTING PANEL LP-15

Service: 120/208, 3Ø, 4W — Enclosure: NEMA 1G — Mounting: MCC
Main Breaker: 225A MLO — Main Bus: Copper
Location: 1503 — SCIC: 10 kAIC

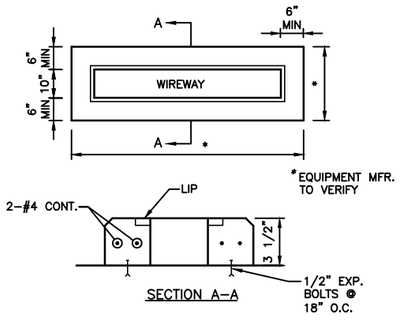
Room Number/Description	Amps	Poles	Cct. #	Phase A	Phase B	Phase C	Phase A	Phase B	Phase C	Cct. #	Poles	Amps	Room Number/Description
Lighting	20	1	1	1248			1000			2	1	20	SCC-15
Lighting	20	1	3		722			1000		4	1	20	FACP (1)
Lighting	20	1	5			1056			540	6	1	20	Receptacles Rooms 1504, 1505
Drinking Fountain Light	20	1	7	375			540			8	1	20	Receptacles Rooms 1504, 1506, 1502
EF-15-01	20	1	9		500			1500		10	1	20	FIT-15-01, 15-02, 15-03 Transmitter
EWH-15-01	20	1	11			1500			1000	12	1	20	FIT-15-04, 15-05, LIT-15-01
GUH-15-01, GUH-15-02, GUH-15-03	20	1	13	1500			1000			14	1	20	Emergency Shutoff Panel
EF-15-02 and Damper	20	1	15		864			0		16	1	20	Existing Loads*
EWH-15-02	20	1	17			1500			0	18	1	20	Existing Loads*
EF-15-04 and Damper	20	1	19	700			0			20	1	20	Existing Loads*
Vacuum Sensor	20	1	21		1000			0		22	1	20	Existing Loads*
DH-15-01	20	1	23			1400			0	24	1	20	Existing Loads*
SCC-15	20	1	25	1000			500			26	1	20	Chem Feed Receptacle Room 1503
	20	1	27		0			180		28	1	20	Receptacle Room 1503
	20	1	29			0			540	30	1	20	Exterior Receptacles
	20	1	31	0			180			32	1	20	Solenoid Receptacle
	20	1	33		0			0		34	1	20	
	20	1	35			0			0	36	1	20	
	20	1	37	0			0			38	1	20	
	20	1	39		0			0		40	1	20	
	20	1	41			0			0	42	1	20	
Total Load per Phase per Side (VA)				4823	3086	5456	3220	2680	2080				

Total Load Phase A (VA)	8043	VA	*Existing loads that will remian shall be extended from removed lighting panel.	Total Connected Load (A)	59	A
Total Load Phase B (VA)	5766	VA		Total Connected Load + 25%	74	A
Total Load Phase C (VA)	7536	VA		Spare 25%	19	A
Total Connected Load (VA)	21345	VA		Feeder Load	93	A

(1) CIRCUIT BREAKER SHALL BE RED.

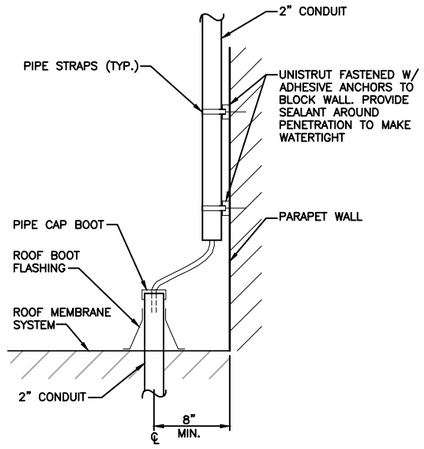
FIXTURE SCHEDULE

Fixture Type	Manufacturer(s)	Model Number	Lamp Type	Mounting	Remarks
A	Metalux	VT3-332DR-UNV-ER81-WL-U	3~32W T8	Ceiling	
B	Metalux	VT4-432DR-M-DR-UNV-ER82-WL-U-PC	4~32W T8	Ceiling	
C	Ligman	U31611-LED-120V-02	LED	Wall	Provide 4000K color temperature.
D	Lumark	LDRV-SL4-CO1-E-PL-120-BZ-MA1182-XX	LED	Pole	Initial lumens shall be 1,842. Provide Hapco pole, model RAS12B4-3-01. Color to match fixture.
E	Lumark	MPMM-K-HF-250-120V-PC-MM/VS MH	250W	Mount on Pole	Provide chevrons and faces as required.
X1	Pathways	N4XWLEX1R	LED	Wall	Provide self diagnostics.
X2	Surelites	CC7NCDS	12W Inc.	Wall	Provide chevrons and faces as required.

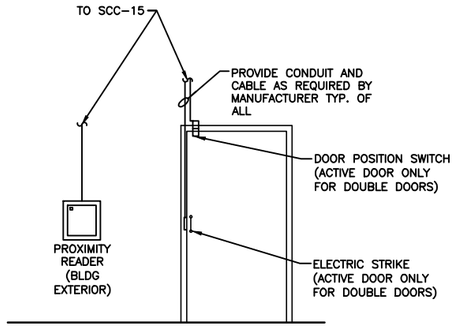


NOTE: PROVIDE FLUSH METAL COVER FOR EXPOSED WIREWAY

C / E5.1 SCC/MCC PAD
NO SCALE



E / E5.1 ANTENNAE DETAIL
0 3" 6" 1'



NOTES:

1. CONTRACTOR SHALL USE MANUFACTURER'S RECOMMENDED CONDUCTORS AND QUANTITES TO EACH DEVICE.

D / E5.1 CARD READER AND ELECTRIC STRIKE
NO SCALE

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ELECTRICAL SCHEDULES AND DETAILS

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066
PROJECT MGR. ANDY MULLENDORE

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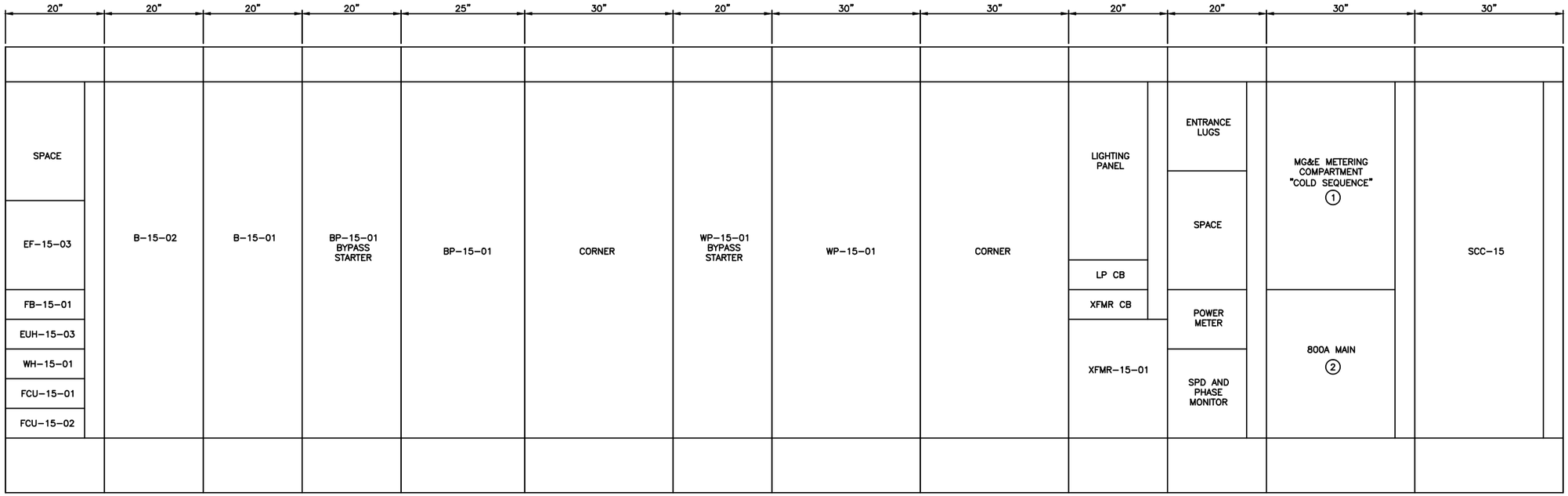
MOTOR AND MOTOR CONTROL CENTER SCHEDULE MCC-15

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	FURN. BY	WIRED BY		
WP-15-01	WELL PUMP		WELL PUMP ROOM 1501	MCC-15	150	460	180	1800	–	ND VFD	M	250	VFD-BYPASS H-O-A,R,R,R,R,A,G,ETM,4	FS-15-01, SV-15-01,02, LS-15-04,06 ZS-15-10, VE-15-01, PS-15-02, 04, LS-15-01, 02, 03 MOTOR T-STAT, CHEMICAL PUMP, DISC.	DIV. 11/16	DIV. 16	10~#14, 3/4"C. 20~#14, 1"C. 3~4/0, 2"C.	SEE NOTE A R=VFD FAULT, R=MOTOR OVERTEMP, R=FLOW FAIL, R=PRELUBE FLOW FAIL, A=VIBRATION WARNING
WP-15-01	WELL PUMP	BYPASS STARTER	WELL PUMP ROOM 1501	MCC-15	150	460	180	1800	5	RVSS	M	250	H-O-A,R,G,ETM,4		DIV. 11/16	DIV. 16	3~4/0 2"C.	SEE NOTE D R=FAULT
BP-15-01	EXISTING BOOSTER PUMP		WELL PUMP ROOM 1501	MCC-15	150	460	180		–	VFD ND	M	250	VFD-AUTO-BYPASS H-O-A (KEYED), R,R,R,G,ETM,4	ZS-15-11 MOTOR T-STAT, DISCONNECT, LS-15-01, 02, 03	DIV. 11/16	DIV. 16	12~#14, 3/4"C. 3~3/0 2"C.	SEE NOTE B R=VFD FAULT, R=MOTOR OVERTEMP, R=FLOW FAIL
BP-15-01	EXISTING BOOSTER PUMP	BYPASS STARTER	WELL PUMP ROOM 1501	MCC-15	150	460	180		5	RVSS	M	250	H-O-A (KEYED),R,G,ETM,4		DIV. 11/16	DIV. 16	3~3/0 2"C.	SEE NOTE E R=FAULT
B-15-01	BLOWER	NO. 1	BLOWER ROOM 1506	MCC-15	60	460	77	3600	–	VFD ND	M	125	H-L-A-O,R,R,G,ETM,4	WP-15-01, LS-15-04, PS-15-02 MOTOR T-STAT, DISCONNECT	DIV. 11/16	DIV. 16	10~#14, 3/4"C. 3~#3 1 1/4"C.	SEE NOTE C R=VFD FAULT, R=MOTOR OVERTEMP
B-15-02	BLOWER	NO. 2	BLOWER ROOM 1506	MCC-15	60	460	77	3600	–	VFD ND	M	125	H-L-A-O,R,R,G,ETM,4	WP-15-01, LS-15-06, PS-15-04 MOTOR T-STAT, DISCONNECT	DIV. 11/16	DIV. 16	10~#14, 3/4"C. 3~#3 1 1/4"C.	SEE NOTE C R=VFD FAULT, R=MOTOR OVERTEMP
FCU-15-01	WELL PUMP ROOM	FAN COIL UNIT	WELL PUMP ROOM 1501	MCC-15	–	480	2.5	–	–	–	A	15			DIV. 15	DIV. 16	2~#14 3~#12 3/4"C.	PROVIDE SHUNT TRIP BREAKER. WHEN LS-15-01 IS ACTIVATED FCU-15-01 POWER SHALL BE REMOVED
FCU-15-02	MCC ROOM	FAN COIL UNIT	MCC ROOM 1505	MCC-15	–	480	1.6	–	–	–	A	15			DIV. 15	DIV. 16	2~#14 3~#12 3/4"C.	PROVIDE SHUNT TRIP BREAKER. WHEN LS-15-01 IS ACTIVATED FCU-15-02 POWER SHALL BE REMOVED
WH-15-01	WATER HEATER		WELL PUMP ROOM 1501	MCC-15	–	480	10.3	–	–	–	A	15			DIV. 15	DIV. 16	3~#12 3/4"C.	
EF-15-03	VOC REMOVAL ROOM	EXHAUST FAN	VOC REMOVAL ROOM 1504	MCC-15	1/2	480	1.1	–	1	FVNR	M	10	H-O-A,R,G,ETM	DAMPERS, DISCONNECT LS-15-04	DIV. 15/16	DIV. 16	8~#14 3~#12 3/4"C.	SEE NOTE F
FB-15-01	240V RECEPT.	TRANSFORMER	VOC REMOVAL ROOM 1504	MCC-15	–	480	–	–	–	–	A	10	–	–	DIV. 16	DIV. 16	2~#12 3/4"C.	
EUH-15-03	CHEMICAL ROOM	UNIT HEATER	CHEMICAL ROOM 1503	MCC-15	7.5KW	460	9.1	–	–	–	A	20	–	–	DIV. –	DIV. 16	3~#12 3/4"C.	



MCC-15 ELEVATION
NO SCALE

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

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		
H-L-A-O	HAND-LOCAL-AUTO-OFF		

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

KEY NOTES:

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

(2) PROVIDE 1" CONDUIT IN MCC FROM 800A MCB TO MG&E METERING COMPARTMENT.

* 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

DATE:
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ELECTRICAL MCC ELEVATION AND SCHEDULE

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

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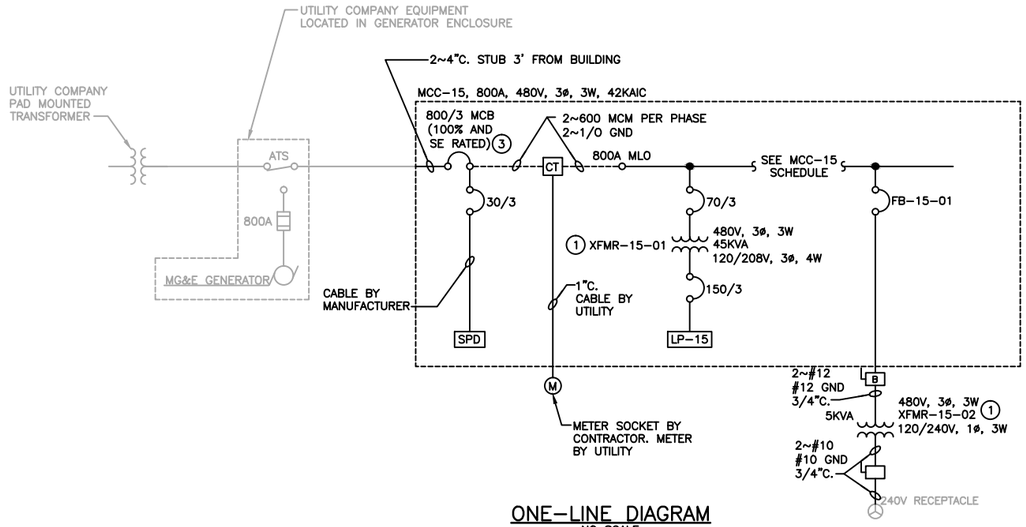
STRAND ASSOCIATES®

SHEET E6.1

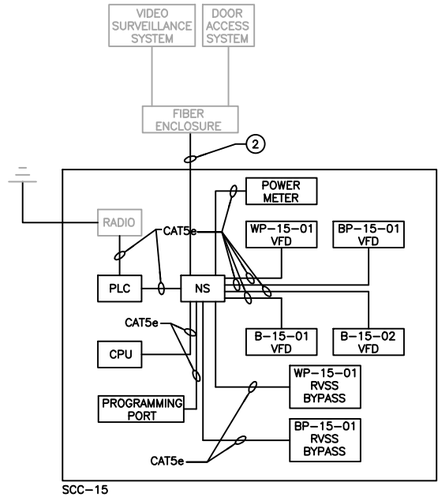
File: S:\MAD\1000--1099\1020\066\Acad\Drawings\E6.1.dwg Time: Aug 08, 2012 - 11:13am



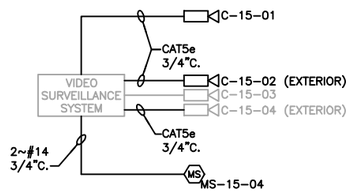
ONE-LINE DIAGRAM
NO SCALE

KEY NOTES:

1. TRANSFORMER SHALL BE GROUNDED AS A SEPARATELY DERIVED SYSTEM.
2. PROVIDE SINGLE MODE FIBER. PROVIDE LC CONNECTORS ON EACH CABLE END TO MATCH EXISTING CISCO GIGABIT SWITCH IN FIBER ENCLOSURE. COORDINATE FIBER TYPE WITH OWNER.
3. PROVIDE LSIG RATED BREAKER.



SCADA RISER
NO SCALE



VIDEO SURVEILLANCE RISER
NO SCALE

NO.	REVISIONS	DATE:

ELECTRICAL ONE-LINE DIAGRAM AND SCADA RISER

WELL 15 VOC AIR STRIPPER
3900 E. WASHINGTON AVENUE
MADISON WATER UTILITY
DANE COUNTY, WISCONSIN

JOB NO. 1020.066

PROJECT MGR. ANDY MULLENDORE

STRAND ASSOCIATES®

SHEET E6.2