

NORTH MECHANICAL SITE PLAN
1/32" = 1'-0"

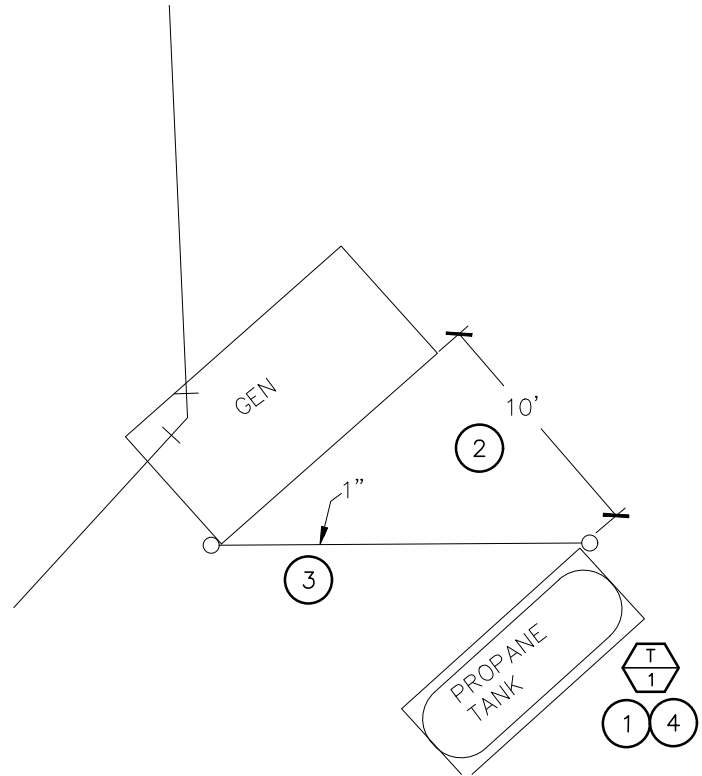
MISCELLANEOUS NOTES

15.0

A. COORDINATE INSTALLATION WITH ALL OTHER TRADES.

SPECIFIC NOTES

1. INSTALL PROPANE TANK ON CONCRETE PAD PROVIDED BY G.C.
2. MAINTAIN A MINIMUM CLEARANCE OF 10 FEET TO BUILDING AND GENERATOR.
3. EXTEND A BURIED LIQUID PROPANE LINE FROM PROPANE TANK TO GENERATOR. PROVIDE ISOLATION VALVE. SIZE AND INSTALL PIPING, AND CONNECT TO GENERATOR AS PER MANUFACTURER'S RECOMMENDATIONS.
4. INSTALLING CONTRACTOR TO PROVIDE INITIAL FILL OF TANK WITH PROPANE.



NORTH ENLARGED PLAN
1/8" = 1'-0"



WPE #: BS19043

WPE WEST PLAINS ENGINEERING, INC.
4609 SOUTH TECHLINK CIRCLE ■ SIOUX FALLS, SD 57106
PHONE: (605) 362-3753 ■ FAX: (605) 362-3759
www.westplainsengineering.com
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PROJECT / SHEET TITLE:
LEWIS & CLARK REGIONAL WATER SYSTEM - UNION CO. RESERVOIR

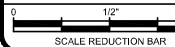
MECHANICAL SITE PLAN

BERESFORD, SOUTH DAKOTA

DESCRIPTION

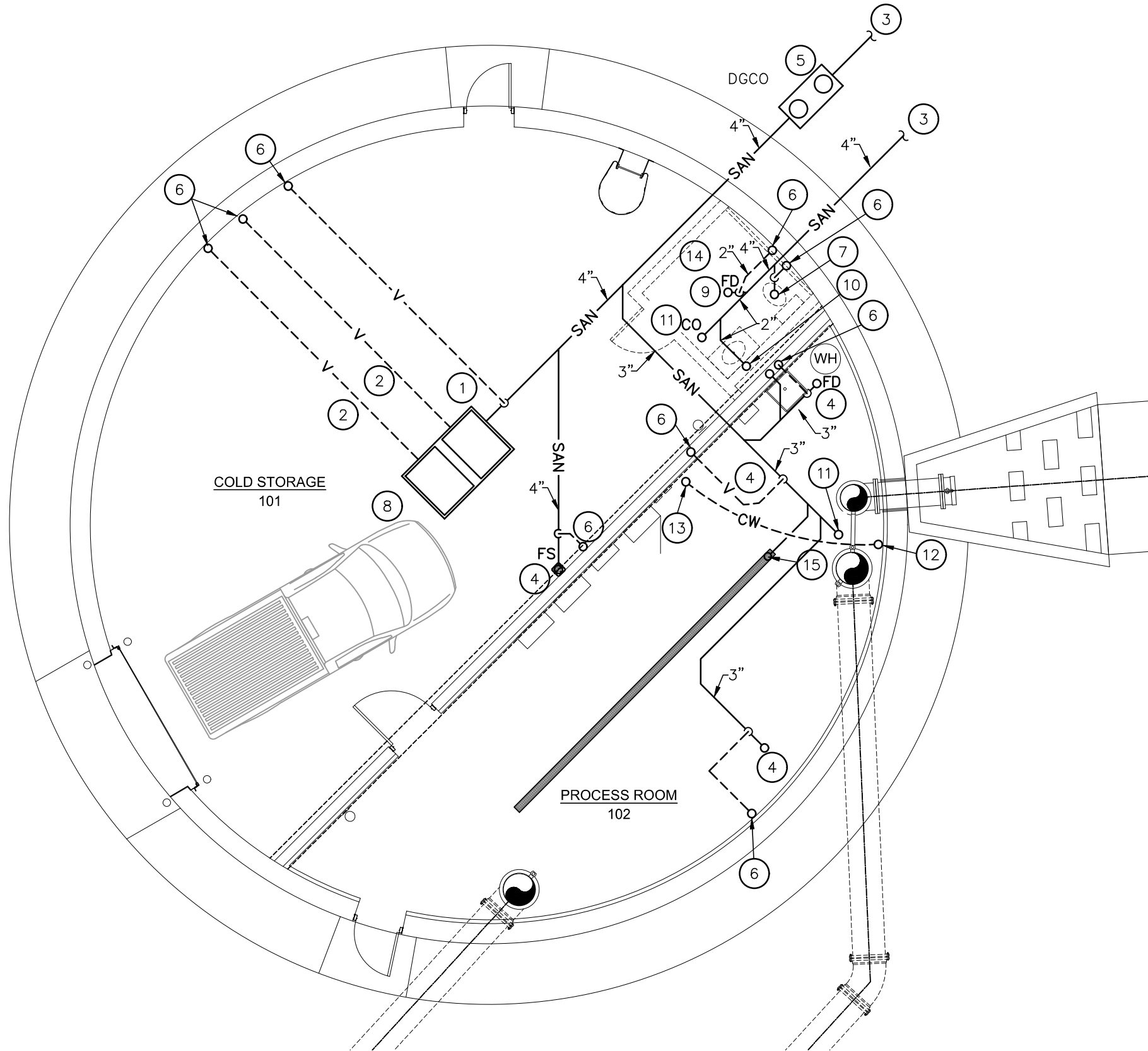
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15.0



- MISCELLANEOUS NOTES1-15.1
- A. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
- SPECIFIC NOTES
1. 4" WASTE TO SAND/OIL INTERCEPTOR. PIPING TO EXIT AT 4'-0" BELOW FINISH FLOOR. VERIFY DEPTH WITH THE GENERAL CONTRACTOR.

2. 2" VENT TO SAND/OIL INTERCEPTOR. VERIFY LOCATION WITH GENERAL CONTRACTOR.

3. EXTEND SERVICE 5 FEET FROM BUILDING. COORDINATE LOCATION AND INVERT WITH SITE CONTRACTOR.

4. 3" WASTE UP TO FLOOR DRAIN/ FLOOR SINK.

5. PROVIDE DOUBLE GRADE CLEANOUT AT THIS LOCATION. COORDINATE INVERT ELEVATION BELOW FINISH FLOOR WITH THE SITE UTILITY CONTRACTOR. CLEANOUTS SHALL BE CAPPED FLUSH WITH FINISH GRADE. SEE CLEANOUT DETAIL.

6. 2" VENT UP.

7. 4" WASTE UP TO ABOVE FLOOR AND CAP FOR FUTURE CONNECTION.

8. SAN/OIL INTERCEPTOR BY OTHERS. COORDINATE LOCATION AND SIZE WITH GENERAL CONTRACTOR.

9. 3" WASTE UP TO ABOVE FLOOR AND CAP FOR FUTURE CONNECTION.

10. 2" WASTE UP TO ABOVE FLOOR AND CAP FOR FUTURE CONNECTION.

11. LINE SIZED WASTE UP TO CLEANOUT.

12. 1" CW DN FROM HIGH SERVICE LINE TO BELOW FLOOR. PIPING TO BE SEAMLESS COPPER AND NO FITTINGS ARE ALLOWED UNDERFLOOR.

13. 1" CW UP TO METER AND BACKFLOW ASSEMBLY.

14. ALL FIXTURES IN THE BATHROOM ARE FOR REFERENCE ONLY.


15. 3" WASTE UP TO TRAPPED DRAIN FROM TRENCH DRAIN. TRENCH DRAIN TO BE JAY R SMITH 9812 OR EQUAL.

NORTH


1/8" = 1'-0"

UNDERFLOOR PLUMBING PLAN

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PROJECT / SHEET TITLE:
LEWIS & CLARK REGIONAL WATER SYSTEM - UNION CO. RESERVOIR

UNDERFLOOR PLUMBING PLAN

BERESFORD, SOUTH DAKOTA

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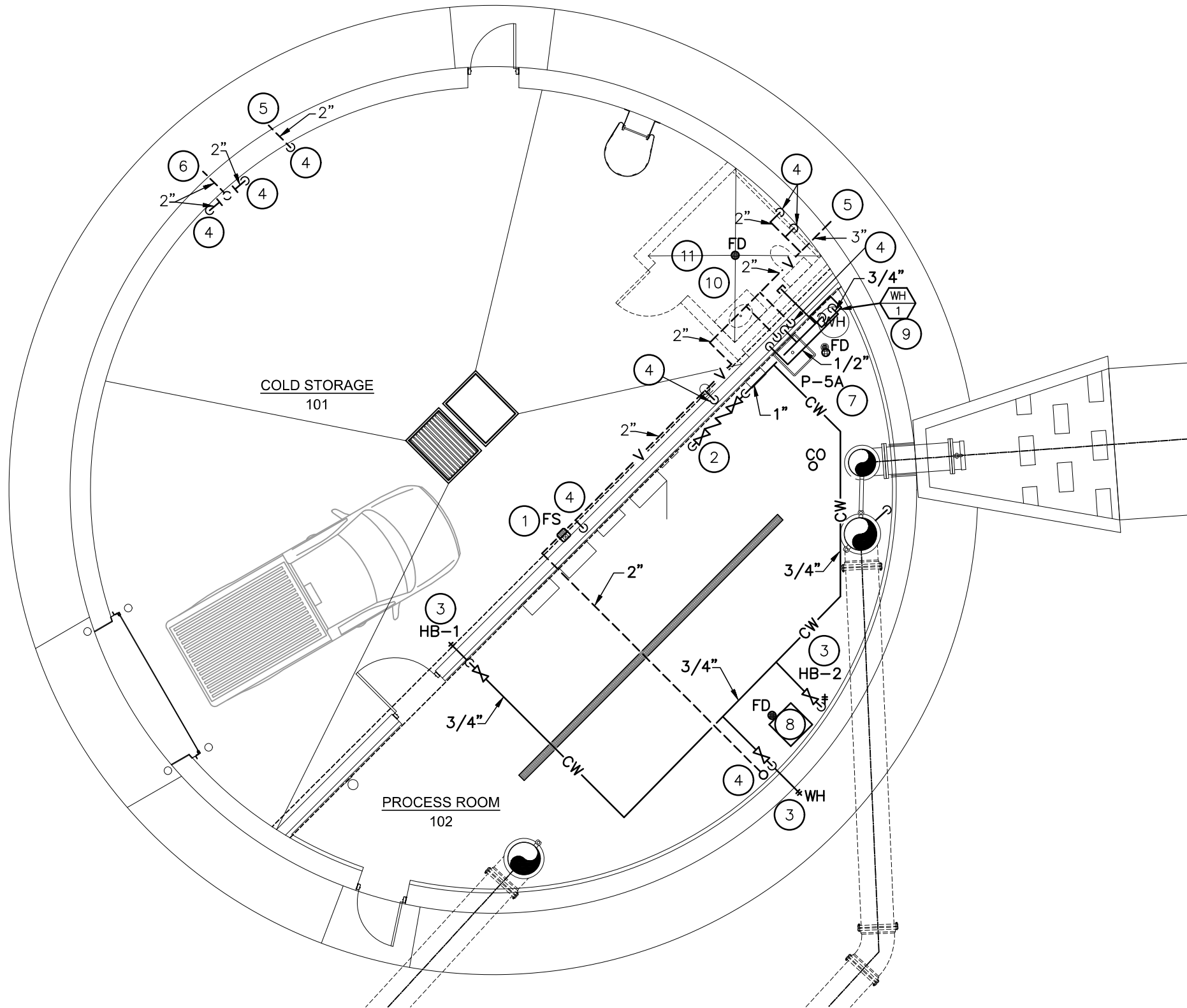
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PLUMBING PLAN

1/8" = 1'-0"

MISCELLANEOUS NOTES

15.2

- A. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
- B. ALL CLEANOUT COVERS, FLOOR DRAIN AND TRENCH DRAIN GRATES AND PIPE HANGERS INSTALLED INSIDE THE BUILDING TO BE STAINLESS STEEL.
- C. ALL ABOVE FLOOR PIPING TO BE INSTALLED AS HIGH AS POSSIBLE.

SPECIFIC NOTES

- COORDINATE LOCATION OF THE FLOOR SINK THAT SERVES THE DOWNSPOUT WITH THE GENERAL CONTRACTOR.
- INSTALL METER, BACKFLOW PREVENTION, AND ISOLATION VALVES ON HOUSE WATER SERVICE. SEE METER DETAIL.
- 3/4" CW DN TO HOSE BIB. INTERIOR WALL HYDRANT AND HOSE BIB AT 48" AFF. EXTERIOR WALL HYDRANT 18" AFG. INSTALL ISOLATION VALVE IN SUPPLY PIPING.
- 2" VENT DOWN.
- VENT OUT SIDE OF TOWER AT LEAST 15' AFF. COORDINATE EXACT LOCATION WITH THE GENERAL CONTRACTOR. TERMINATE VENT PER PLUMBING CODE.
- VENT PIPING FROM INTERCEPTOR SHALL COMBINE ABOVE THE FLOOR AND NO OTHER VENT PIPING SHALL CONNECT TO IT. VENT PIPING TO TERMINATE AT LEAST 15' AFF.
- 1/2" HW, 1/2 CW, 1-1/2" VENT AND 2" WASTE TO UTILITY SINK.
- EXTEND DEHUMIDIFIER DRAIN TO FLOOR DRAIN.
- 3/4" HW AND 3/4 CW DN TO WATER HEATER MOUNTED ON WALL.
- 3/4" CW TAP FOR FUTURE BATHROOM.
- ALL FIXTURES IN THE BATHROOM ARE FOR REFERENCE ONLY.



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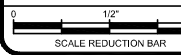
PLUMBING PLAN

BERESFORD, SOUTH DAKOTA

DESCRIPTION

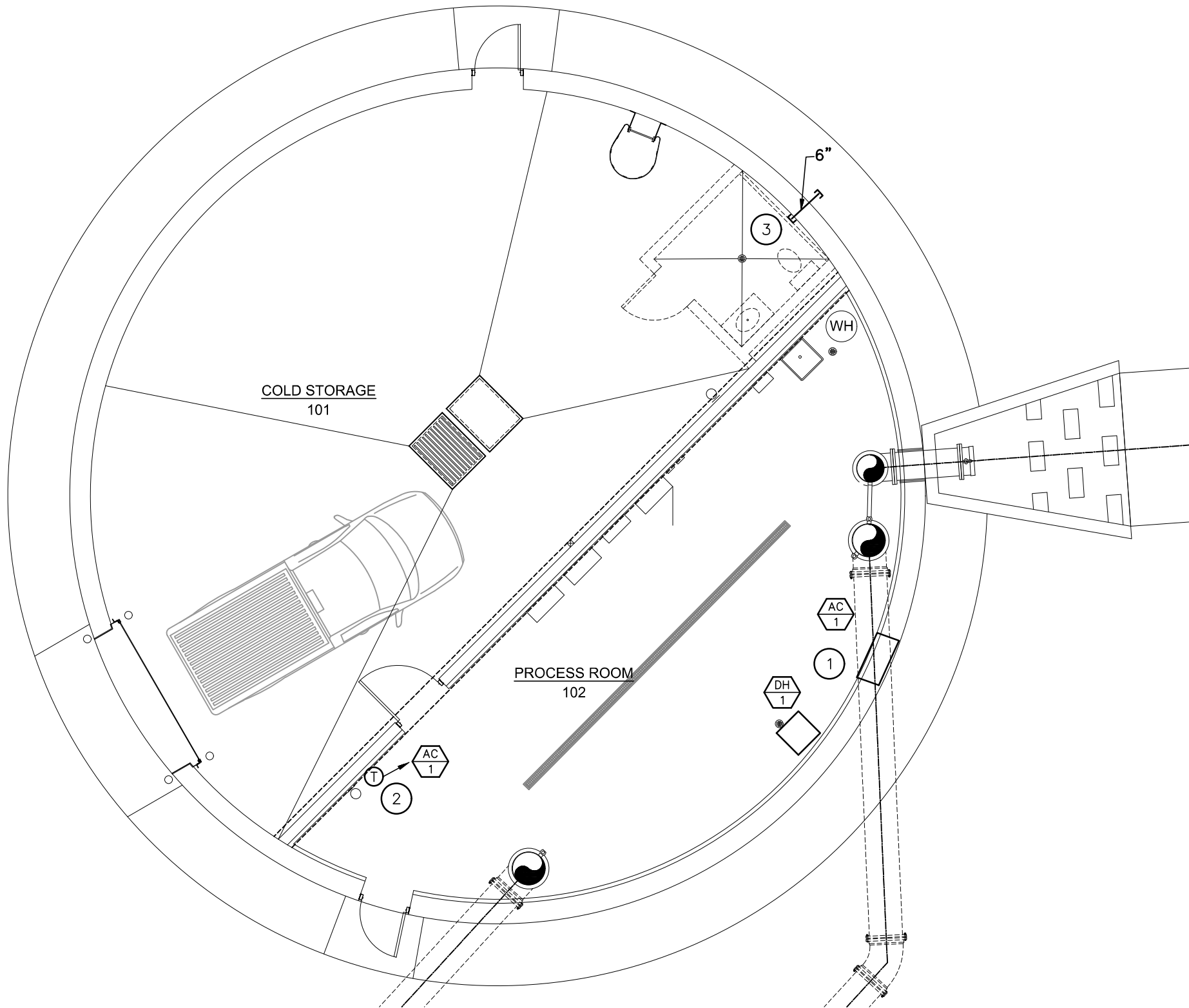
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SHEET No.:

15.2



VENTILATION PLAN

1/8" = 1'-0"

- BS19043
- MECHANICAL NOTES
- MISCELLANEOUS NOTES
- 15.3
- A. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
- SPECIFIC NOTES
1. INSTALL PACKAGED AIR CONDITIONER PER MANUFACTURERS RECOMMENDATIONS. TRANSITION FROM UNIT TO DUCTWORK.

2. PROVIDE AND INSTALL REMOTE WALL MOUNTED THERMOSTAT. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION.

3. PROVIDE A 6" DUCT THROUGH THE WALL AND CAPPED BOTH SIDES. SEAL DUCT WEATHERTIGHT. COORDINATE EXACT LOCATION WITH THE GENERAL CONTRACTOR.



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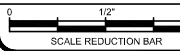
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VENTILATION PLAN

BERESFORD, SOUTH DAKOTA

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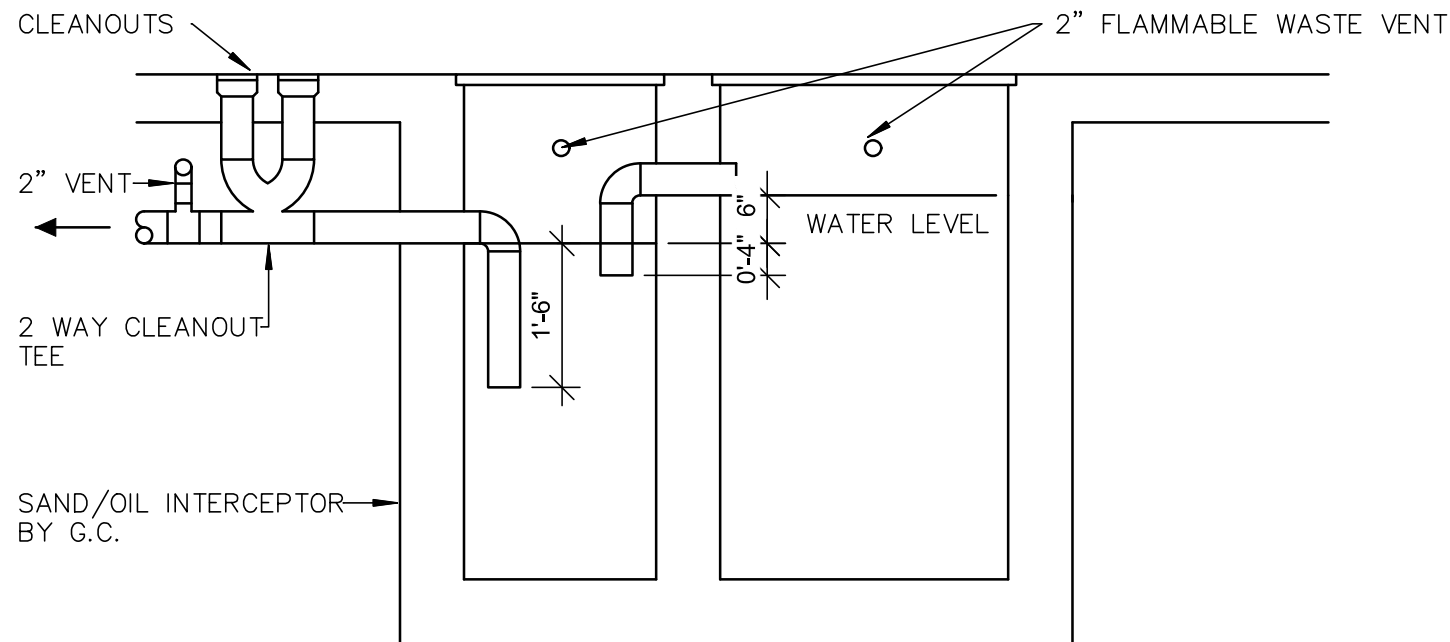
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15.3

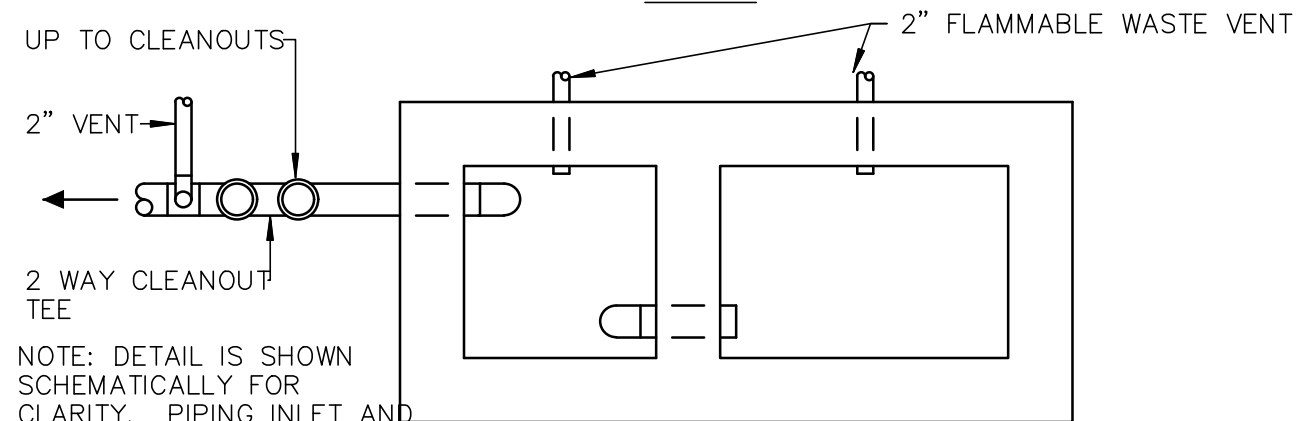
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SECTION

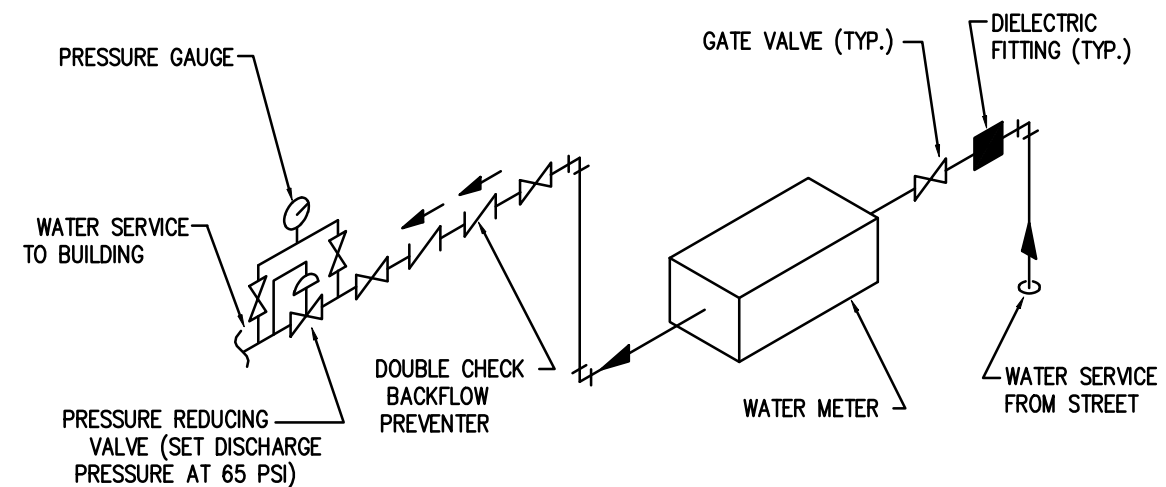


PLAN VIEW

NOTE: DETAIL IS SHOWN SCHEMATICALLY FOR CLARITY. PIPING INLET AND OUTLETS MAY DIFFER FROM THAT SHOWN.

COMBINATION SAND AND OIL INTERCEPTOR DETAIL

NO SCALE



WATER METER PIPING DETAIL

NO SCALE



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MECHANICAL DETAILS

BERESFORD, SOUTH DAKOTA

DESCRIPTION

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0 1/2" 1"

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15.4

PLUMBING FIXTURE SCHEDULE							
FIXTURE NO	MANUFACTURER'S DESIGNATION	FIXTURE TYPE	WASTE	VENT	SUPPLY		NOTES
					CW	HW	
P-5A	FIAT L-1	SERVICE SINK	2"	1-1/2"	1/2"	1/2"	1
WH	WOODFORD 67	WALL HYDRANT	-	-	3/4"	-	2
HB-1	WOODFORD 25	FREEZE PROOF HOSE BIBB	-	-	3/4"	-	3
HB-2	WOODFORD 40HT-LH	HOSE BIBB	-	-	3/4"	-	4

NOTES: 1. PROVIDE WITH CHICA GO 895-317CP FAUCET, WALL HANGER, STRAINER, PLUG
2. FREEZE RESISTANT, SELF DRAINING, INTEGRAL BACKFLOW PREVENTOR, REMOVABLE KEY
3. INTEGRAL MOUNTING FLANGE, FREEZEPROOF, INTEGRAL VACUUM BREAKER
4. INTEGRAL MOUNTING FLANGE, LEVER HANDLE , INTEGRAL VACUUM BREAKER

PACKAGE AIR CONDITIONING UNIT SCHEDULE																
UNIT NO	MANUFACTURER'S DESIGNATION	CFM	HP	ELEC.			ESP	DX COOLING			HEATING			SCCR	FILTER	REMARKS
				V/PH	MCA	MOP		MBH	EAT	AMB	KW	V/PH	MBH			
AC-1	BARD W36A2-A	1100	1/5	240/1	84	90	.3	36.4	80/67	95	15	240/1	51195	10K	2" PLEATED	1-6

NOTES: 1. ELECTRIC HEATER IS 15KW AND DOES NOT NEED TO BE DERATED FOR LISTED MANUFACTURER. IF HEATER NEEDS TO BE DERATED FOR ALTERNATE MANUFACTURER, CAPACITY LISTED MUST BE MET AFTER BEING DERATED.
2. REFRIGERANT R-410A.
3. WITH WALL SLEEVE.
4. WITH REMOTE THERMOSTAT.
5. SINGLE POINT POWER.
6. PROVIDE WITH SUPPLY AND RETURN GRILLE.

PROPANE TANK SCHEDULE					
UNIT NO	SERVICE	SIZE			REMARKS
		GALLONS	LENGTH	DIAMETER	
		TOTAL			
T-1	PROPANE	500	120"	38"	1,2

NOTES: 1. ASME RATED
2. PIPED FOR LIQUID DELIVERY

DEHUMIDIFIER SCHEDULE							
UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	CFM	AMPS	VOLTAGE	TEMP RANGE	CAPACITY PINTS / DAY
DH-1	THERMA-STOR HI-E-DRY 100	PROCESS ROOM	255	6.6	120	35-110 DEG. F	94 (60°F/80% RH)

WATER HEATER SCHEDULE										
UNIT NO	MANUFACTURER'S DESIGNATION	LOCATION	SERVES	STORAGE CAPACITY	FUEL	INPUT	RECOVERY RATE	TEMP. RISE	ELECTRICAL	
									V/PH	MCA
WH-1	CHRONOMITE SR-30	PROCESS	DWH	-	ELECT	7200W	1	49	240/1	38

NOTES:



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MECHANICAL SCHEDULES	DESCRIPTION
BERESFORD, SOUTH DAKOTA	

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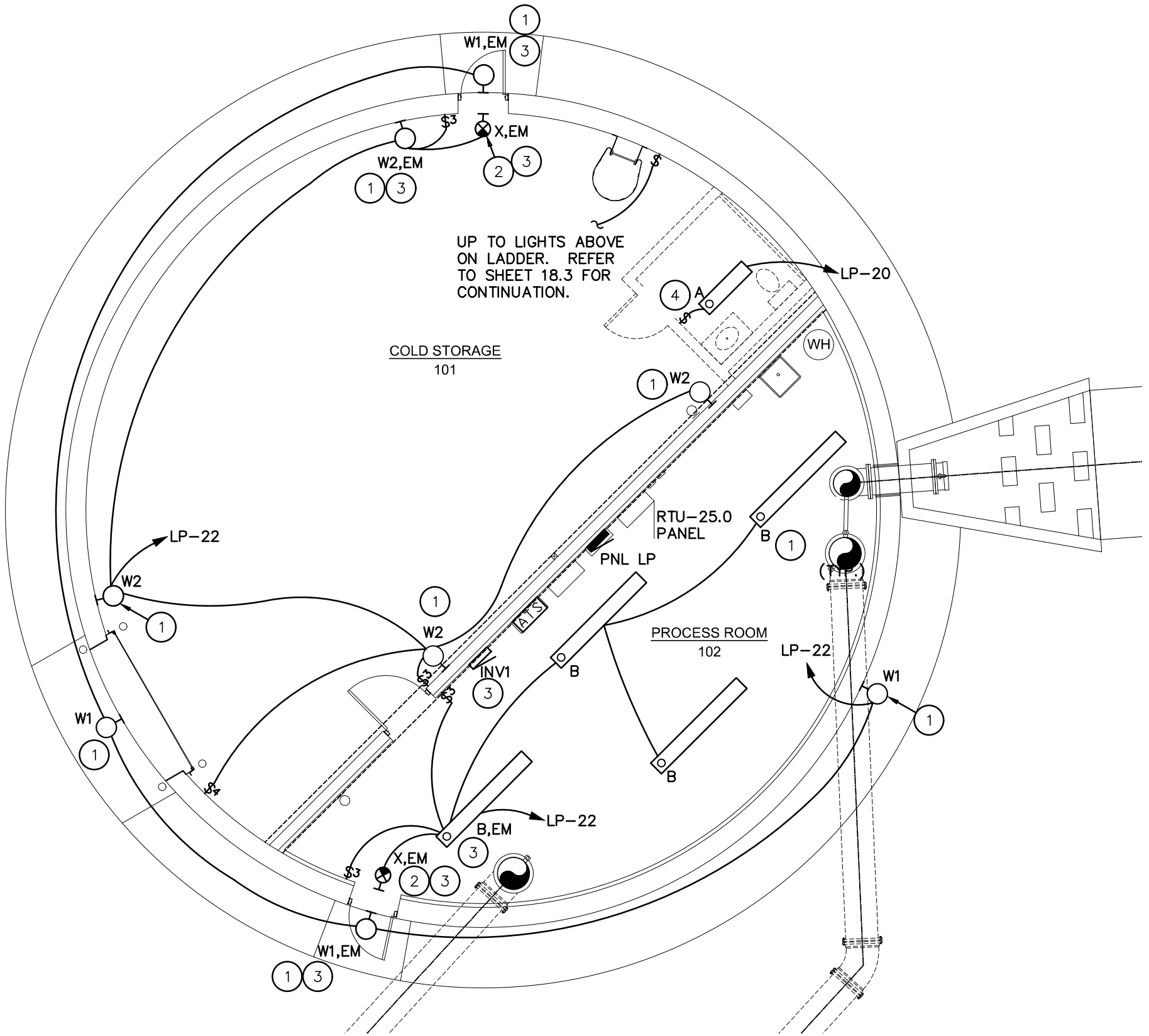
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15.5


$$1'' = 30'$$

18.0



NORTH LIGHTING PLAN
1/8" = 1'-0"

- MISCELLANEOUS NOTES 18.2
- A. COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
- B. REFER TO SERIES 19 PLAN SHEETS FOR ADDITIONAL INFORMATION AND REQUIREMENT FOR INSTRUMENTATION CONDUITS AND WIRING.

- SPECIFIC NOTES
1. MOUNT LIGHT FIXTURE ON WALL AT 10'-0" ABOVE FINISHED FLOOR (TYPICAL).
2. MOUNT EXIT SIGN ON WALL SUCH THAT BOTTOM OF FIXTURE IS 2" ABOVE DOOR FRAME (TYPICAL).
3. LIGHTING FIXTURES LABELED WITH "EM" ON SHEET 18.2 AND ALL W3 FIXTURES ON SHEET 18.3 SHALL BE CIRCUITED THROUGH EMERGENCY LIGHTING INVERTER "INV1". INV1 SHALL BE AN IOTA SERIES IIS-550-HE OR EQUAL, 550 WATT OUTPUT (120V, .9 LEADING TO .9 LAGGING POWER FACTOR). INVERTER SHALL BYPASS SWITCHING TO BRING FIXTURES TO FULL BRIGHTNESS DURING LOSS OF NORMAL POWER. PROVIDE ADDITIONAL NECESSARY EMERGENCY RELAYS AS REQUIRED TO SEPARATE SWITCHING REQUIREMENTS. EMERGENCY RELAY SHALL BE A WATTSTOPPER SERIES ELCU OR EQUAL.
4. FUTURE RESTROOM: ELECTRICAL WORK IN ROOM IS FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR TO PROVIDE ONLY BREAKERS IN PANEL LP.



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LIGHTING PLAN

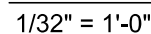
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SCALE REDUCTION BAR
0 1/2" 1"

SHEET No. :
18.2















































































9. PROVIDE MOUNTING BRACKET WELDED TO WATER TOWER FOR INSTALLATION OF FIXTURE.



18.3

ELECTRICAL ABBREVIATIONS			
A STANDARD LIST. NOT ALL WORDS APPEAR IN THESE DRAWINGS.			
SEE SPECIFICATION SECTION "EQUIPMENT WIRING" FOR ADDITIONAL INFORMATION AND REQUIREMENTS.			
A or AMP	AMPERE	LA	LIGHTNING ARRESTOR
A/C	AIR CONDITIONING	LT	LIGHT
A/E or AE	ARCHITECT & ENGINEER	LTG	LIGHTING
ac	ABOVE COUNTER	LTS	LIGHTS
AC	ALTERNATING CURRENT		
ADA	AMERICANS WITH DISABILITIES ACT	MC	MECHANICAL CONTRACTOR
AFF	ABOVE FINISH FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISH GRADE	MCC	MOTOR CONTROL CENTER
AFI or AFCI	ARC FAULT CIRCUIT INTERRUPTER	MCM	THOUSAND CIRCULAR MILS
AHJ	AUTHORITY HAVING JURISDICTION	MDP	MAIN DISTRIBUTION PANEL
AHU	AIR HANDLING UNIT	MECH	MECHANICAL
AIC	AMPERES INTERRUPTING CURRENT	MFS	MAIN FUSIBLE SWITCH
AL	ALUMINUM	MH	METAL HALIDE
ANN	ANNUNCIATOR	MLO	MAIN LUG ONLY
AS	AUTOMATIC SENSORS	MSB	MAIN SWITCHBOARD
AWG	AMERICAN WIRE GAUGE	MTD	MOUNTED
		MTS	MOTOR THERMAL SWITCH
bc	BELOW COUNTER	MV	MERCURY VAPOR
BC	BELOW COUNTER	MW	MICROWAVE
BH	BASKETBALL HOOP OPER		
BL	BLEACHER ELECTRIC OPERATOR	NA or N/A	NOT APPLICABLE
BRD or BD	BOARD	NC	NORMALLY CLOSED
BUH	BLAST UNIT HEATER	NEC	NATIONAL ELECTRICAL CODE
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
C or COND	CONDUIT	NEU, NEUT or N	NEUTRAL
C/B or CB	CIRCUIT BREAKER	NF	NON-FUSED
CAT	CATEGORY	NL	NIGHT LIGHT
CCT or CKT	CIRCUIT	NO	NORMALLY OPEN
CM	CARBON MONOXIDE SENSOR		
CO	CARBON MONOXIDE	OFF, OF, or OFC	OFFICE
COMB	COMBINATION	OH	OVERHEAD
CONF	CONFERENCE	OHD	OVERHEAD DOOR
CP	CEILING PROJECTOR		
CTC	CABLE TERMINATION CABINET	P	POLE
Cu or CU	COPPER	PA	PUBLIC ADDRESS
CUH	CABINET UNIT HEATER	PB	PUSH BUTTON
		PH	PHASE
DC	DIRECT CURRENT	PLBG	PLUMBING
DC	DISTRIBUTION CABINET	PNL	PANEL
DP	DISTRIBUTION PANEL	PR or pr	PAIR
DISC	DISCONNECT	PRV	POWER ROOF VENTILATOR
DISP	DISPOSAL	PS	PULL SWITCH
DL	DOCK LEVELER	PS	PROJECTION SCREEN
DN or DWN	DOWN	PTZ	PAN TILT ZOOM
DR	DOOR	PVC	POLYVNYL CHLORIDE
DW	DISHWASHER	PWR	POWER
DWG	DRAWING		
		RCP	REFLECTED CEILING PLAN
EC	ELECTRICAL CONTRACTOR	REC or PRECEPT	RECEPTACLE
EC	ELECTRICAL CABINET	REF or REFRIG	REFRIGERATOR
EF	EXHAUST FAN	RH	RADIANT HEAT
EH	ELECTRICAL HEAT	RH	RANGE HOOD
ELEC	ELECTRIC OR ELECTRICAL	RLY	RELAY
EHD	ELECTRIC HAND DRYER	RM	ROOM
EM or EMERG	EMERGENCY	RMS	ROOT MEAN SQUARE
EMT	ELECTRICAL METALLIC TUBING		
ENT	ELECTRICAL NON-METALLIC TUBING	SCC	SHORT CIRCUIT CURRENT
EUH	ELECTRIC UNIT HEATER	SD	SMOKE DETECTOR
EWC	ELECTRIC WATER COOLER	SFR	SAFETY RECEPTACLE
EX	EXISTING	SFTY	SAFETY
EXP	EXPLOSION PROOF	SHLD	SHIELD OR SHIELDED
		SIG	SIGNAL
F or FUS	FUSE OR FUSIBLE	SMR	SURFACE MOUNT RACEWAY
FA	FIRE ALARM	SN	SOLID NEUTRAL
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SP	SUMP PUMP
FACP	FIRE ALARM CONTROL PANEL	SPECS	SPECIFICATIONS
FBO	FURNISHED BY OTHERS	SPKR	SPEAKER
FL, FLU or FLUOR	FLUORESCENT	SPR	SPLIT WIRE RECEPTACLE
FLA	FULL LOAD AMPERES	SW	SWITCH
FVNR	FULL VOLTAGE, NON-REVERSING	SWBD	SWITCH BOARD
FVR	FULL VOLTAGE, REVERSING		
		TC	TEMPERATURE CONTROL
GC	GENERAL CONTRACTOR	TC	TELEPHONE CABINET
GD	GARBAGE DISPOSAL	TCC	TEMPERATURE CONTROL CONTRACTOR
GEN	GENERATOR	TEL	TELEPHONE
GFI or GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TL	TWIST LOCK
GRC	GALVANIZED RIGID CONDUIT	TR, TRANS or TRFMR	TRANSFORMER
GRD or GRND	GROUND	TTB	TELEPHONE TERMINATION BOARD
		TV	TELEVISION
H & AC	HEATING & AIR CONDITIONING	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
H & V	HEATING & VENTILATING	TYP	TYPICAL
HA	HANDICAP ACCESS DOOR		
HD	HAND DRYER	UG	UNDERGROUND
HID	HIGH INTENSITY DISCHARGE	UH	UNIT HEATER
HP	HORSE POWER	UV	UNIT VENTILATOR
HPS	HIGH PRESSURE SODIUM		
HTG	HEATING	V	VOLT
HTR	HEATER	VFD	VARIABLE FREQUENCY DRIVE
HVAC	HEATING, VENTILATION & AIR CONDITIONING		
		W	WATT
HZ	HERTZ (CYCLES/SEC)	W/	WITH
		W/O	WITHOUT
IC	INTERRUPTING CURRENT	WP	WEATHERPROOF
IGR	ISOLATED GROUND RECEPTACLE	WTR or H2O	WATER
IMC	INTERMEDIATE METAL CONDUIT	WS	WINDOW SHADE
INC	INCANDESCENT		
ISO	ISOLATED OR ISOLATION	XFMR	TRANSFORMER
J, JB or J-BOX	JUNCTION BOX	Y	WYE CONNECTION
KCMIL	THOUSAND CIRCULAR MILS	φ	PHASE
KV	KILOVOLT		
KVA	KILOVOLT - AMPERE	Δ	DELTA
KVAR	KILOVOLT - AMPERE REACTIVE		
KW	KILOWATT		
KWH	KILOWATT - HOUR		

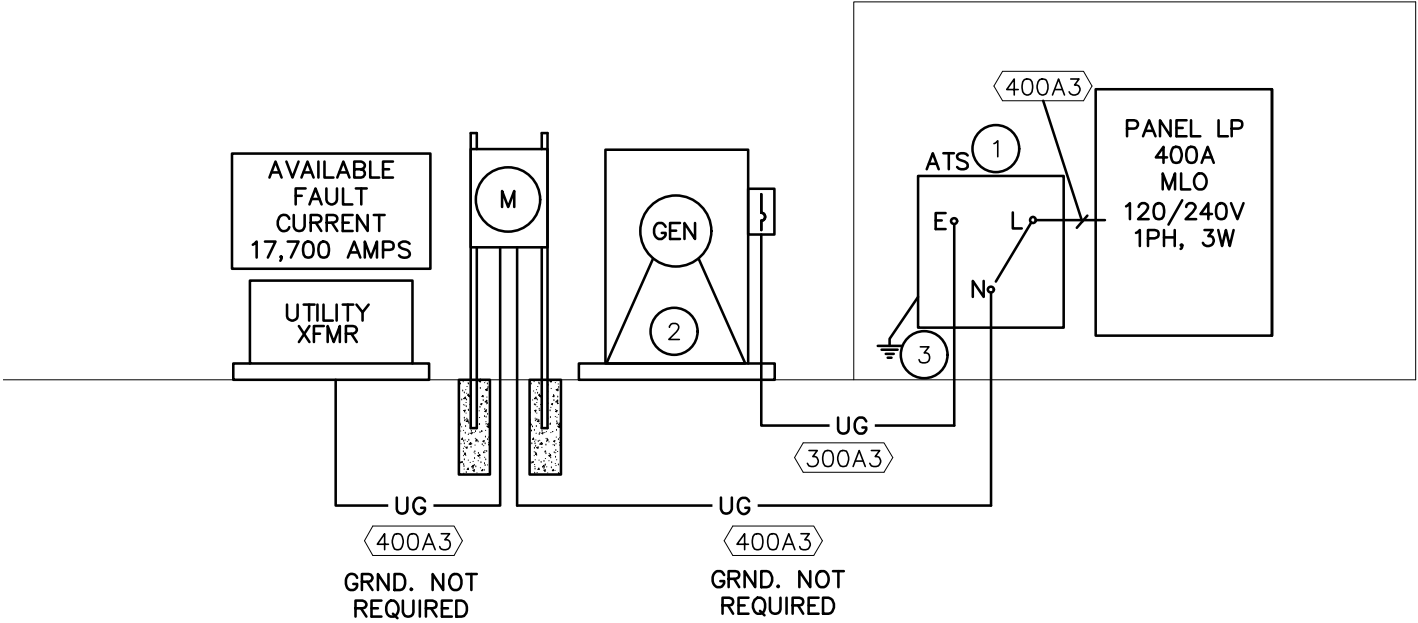
<div> <h1>SYMBOLS</h1> <p>THESE SYMBOLS COMPRISE A STANDARD LIST; NOT ALL SYMBOLS MAY APPEAR ON THIS PROJECT.</p> <p>ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE ABOVE FINISHED FLOOR. MOUNTING HEIGHTS INDICATED ON ARCH. WALL ELEVATIONS OR AS NOTED SPECIFICALLY ON THE DRAWINGS OR IN THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED BELOW.</p> </div>			
LIGHTING			
<div>   </div> <div> <p>CEILING SURFACE MOUNT FIXTURE. (Capital letter indicates lighting type. Small letter indicates switching. Typical for all fixture types).</p> </div> <div>  <p>EMERGENCY CEILING SURFACE MOUNT FIXTURE</p> </div> <div>  <p>WALL FIXTURE</p> </div> <div>  <p>EMERGENCY WALL FIXTURE</p> </div> <div>  <p>RECESSED FIXTURE</p> </div> <div>  <p>EMERGENCY RECESSED FIXTURE</p> </div> <div>  <p>EXTERIOR POLE LIGHT</p> </div> <div>  <p>BOLLARD LIGHT</p> </div> <div>  <p>SURFACE MOUNT FLUORESCENT FIXTURE</p> </div> <div>  <p>EMERGENCY SURFACE MOUNT FLUORESCENT FIXTURE</p> </div>	<div>  <p>RECESSED FLUORESCENT FIXTURE</p> </div> <div>  <p>EMERGENCY RECESSED FLUORESCENT FIXTURE</p> </div> <div>  <p>FLOOR LIGHT</p> </div> <div>  <p>TRACK LIGHT</p> </div> <div>  <p>PHOTO ELECTRIC CELL</p> </div> <div>  <p>LIGHTING CONTACTOR (54" M.H.)</p> </div> <div>  <p>TIME CLOCK (60" M.H.)</p> </div> <div>  <p>EMERGENCY LIGHTING W/BATTERY PACK</p> </div> <div>  <p>CEILING EXIT LIGHT (FACE(S) SHADED, ARROW INDICATES CHEVRON)</p> </div> <div>  <p>WALL EXIT LIGHT (FACE(S) SHADED, ARROW INDICATES CHEVRON)</p> </div> <div>  <p>OCCUPANCY SENSOR</p> </div>	<div>  <p>SINGLE POLE SWITCH (46" M.H.)</p> </div> <div>  <p>DOUBLE POLE SWITCH (46" M.H.)</p> </div> <div>  <p>THREE-WAY SWITCH (46" M.H.)</p> </div> <div>  <p>FOUR-WAY SWITCH (46" M.H.)</p> </div> <div>  <p>SWITCH WITH PILOT (46" M.H.)</p> </div> <div>  <p>KEY OPERATED SWITCH (46" M.H.)</p> </div> <div>  <p>MOMENTARY CONTACT SWITCH (60" M.H.)</p> </div> <div>  <p>DIMMER SWITCH (46" M.H.)</p> </div> <div>  <p>TIMER SWITCH (60" M.H.)</p> </div> <div>  <p>VARIABLE SPEED SWITCH</p> </div> <div>  <p>FUSED SWITCH</p> </div>	
POWER			
<div>  <p>PUSH BUTTON STATION (62" M.H.)</p> </div> <div>  <p>DOUBLE PUSH BUTTON STATION</p> </div> <div>  <p>EMERGENCY SHUTDOWN PUSHBUTTON</p> </div> <div>  <p>ISOLATED GROUND RECEPTACLE (18" M.H.)</p> </div> <div>  <p>DUPLEX CONVENIENCE RECEPTACLE (18" M.H.)</p> </div> <div>  <p>SINGLE RECEPTACLE (18" M.H.)</p> </div> <div>  <p>DOUBLE DUPLEX CONVENIENCE RECEPTACLE (18" M.H.)</p> </div> <div>  <p>SPLIT WIRED DUPLEX RECEPTACLE (18" M.H.)</p> </div> <div>  <p>SAFETY CONVENIENCE RECEPTACLE</p> </div> <div>  <p>POWER RECEPTACLE</p> </div> <div>  <p>EMERGENCY DUPLEX RECEPTACLE</p> </div> <div>  <p>TWIST LOCK RECEPTACLE</p> </div> <div>  <p>GFI DUPLEX CONVENIENCE RECEPTACLE</p> </div> <div>  <p>GFI DOUBLE DUPLEX CONVENIENCE RECEPTACLE</p> </div> <div>  <p>SPECIAL PURPOSE OUTLET OR CONNECTION</p> </div> <div>  <p>CORD/PLUG</p> </div> <div>  <p>CEILING DUPLEX RECEPTACLE</p> </div> <div>  <p>FLUSH FLOOR DUPLEX RECEPTACLE</p> </div> <div>  <p>FLUSH FLOOR MULTI-SERVICE OUTLET (WITH DEVICES INDICATED)</p> </div> <div>  <p>MULTI-SERVICE POLE (WITH DEVICES INDICATED)</p> </div> <div>  <p>BLANK OUTLET</p> </div>	<div>  <p>JUNCTION BOX</p> </div> <div>  <p>PULL BOX</p> </div> <div>  <p>MOTOR</p> </div> <div>  <p>DISCONNECT SWITCH</p> </div> <div>  <p>GENERATOR ANNUNCIATOR PANEL</p> </div> <div>  <p>AUTOMATIC TRANSFER SWITCH</p> </div> <div>  <p>VARIABLE FREQUENCY DRIVE</p> </div> <div>  <p>COMBINATION VARIABLE FREQUENCY DRIVE DISCONNECT</p> </div> <div>  <p>MAGNETIC STARTER</p> </div> <div>  <p>COMBINATION STARTER/DISCONNECT</p> </div> <div>  <p>MOTOR THERMAL SWITCH</p> </div> <div>  <p>OR TRANSFORMER</p> </div> <div>  <p>ELECTRIC METER</p> </div> <div>  <p>SWITCHBOARD/DISTRIBUTION PANEL SECTION</p> </div> <div>  <p>PANELBOARD OR LOAD CENTER</p> </div> <div>  <p>PANELBOARD OR LOAD CENTER (EXISTING TO REMAIN)</p> </div> <div>  <p>TRANSIENT VOLTAGE SURGE SUPPRESSOR</p> </div> <div>  <p>CIRCUIT BREAKER</p> </div> <div>  <p>FUSE</p> </div> <div>  <p>HUMIDISTAT</p> </div> <div>  <p>THERMOSTAT</p> </div>	<div>  <p>REMOTE HVAC SENSOR</p> </div> <div> </div>	

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 7069
MICHAEL G. FISHER
SOUTH DAKOTA
12-20-19

WPE WEST PLAINS
ENGINEERING, INC.

4609 SOUTH TECHLINK CIRCLE ■ SIOUX FALLS, SD 57106
PHONE: (605) 362-3753 ■ FAX: (605) 362-3759
www.westplainsengineering.com

RAPID CITY, SD ■ SIOUX FALLS, SD ■ CASPER, WY ■ CEDAR RAPIDS, IA ■ SMARICK, ND



ELECTRICAL ONE-LINE DIAGRAM
SCALE: NO SCALE

ELECTRICAL SERVICE/FEEDER SCHEDULE

SERVICE/FEEDER AMPACITY	3 WIRE SERVICE/FEEDER	4 WIRE SERVICE/FEEDER
300 A	3"C, 3#350 & 1#4 GND	3"C, 4#350 & 1#4 GND
400 A	(2) 2 1/2"C, 3#3/0 & 1#3 GND	(2) 2 1/2"C, 4#3/0 & 1#3 GND

<100A3> AMPERAGE	100A	3
# OF CONDUCTORS		
NOTES:		
*OPTIONAL INSTALLATION, UNLESS NOTED OTHERWISE.		
(#)= PROVIDE PARALLEL SETS OF CONDUCTORS AS INDICATED.		

ELECTRICAL ONE-LINE DIAGRAM NOTES:

- PROVIDE A 240V, 1 PHASE, 3 POLE, 400A, MINIMUM 20,000 AIC RATING, SERVICE ENTRANCE RATED 'SMART' AUTOMATIC TRANSFER SWITCH (ATS) WITH MAIN CIRCUIT BREAKER. OWNER SHALL BE ABLE TO EXERCISE THE GENERATOR UNDER LOAD. PROVIDE ONE (1) 1" CONDUIT FROM ATS LOCATION TO RTU FOR CONTROL WIRING. SEE "19" SERIES SHEETS FOR ADDITIONAL REQUIREMENTS.
- PROVIDE & INSTALL AN 80 KW, 240 VOLT, 1-PHASE, 3-WIRE, LIQUID PROPANE GAS GENERATOR WITH A WEATHERPROOF ENCLOSURE, A 300A MAIN CIRCUIT BREAKER. PROVIDE BATTERY CHARGER, BLOCK HEATER, AND LIQUID PROPANE WITHDRAWAL SYSTEM CIRCUITS FROM PANEL LP AS REQUIRED. PROVIDE CONDUIT AND WIRING TO ATS AS REQUIRED (SEE NOTE #1). PROVIDE GENERATOR START SIGNAL AND REMOTE ANNUNCIATOR WIRING IN CONDUITS TO RTU AS REQUIRED (SEE "19" SERIES SHEETS). PROVIDE INTERFACE (BOTH HARDWARE AND SOFTWARE), AS REQUIRED FOR COMPLETE INSTALLATION. INSTALL PAD PER MANUFACTURERS REQUIREMENTS.
- GROUND PER NEC.

ELECTRIC HEAT SCHEDULE

UNIT NO	MANUFACTURER'S DESIGNATION	CATALOG NUMBER	MOUNTING	ELECTRIC DATA			THERMOSTAT TYPE	REMARKS
				KW	VOLT	PHASE		
UH-1	BERKO	HUHAA1024 SERIES OR EQUAL	SURFACE	10	240	1	INTEGRAL	INTEGRAL DISC & T-STAT
UH-2	BERKO	HUHAA1024 SERIES OR EQUAL	SURFACE	10	240	1	INTEGRAL	INTEGRAL DISC & T-STAT
UH-3	BERKO	HUHAA1024 SERIES OR EQUAL	SURFACE	10	240	1	INTEGRAL	INTEGRAL DISC & T-STAT
UH-4	BERKO	FRA1512 SERIES OR EQUAL	2" SEMI-RECESSED	1.5	120	1	INTEGRAL	(EQUIPMENT IS FOR REFERENCE ONLY) INTEGRAL DISC & T-STAT, FUTURE EQUIPMENT

NOTE: CONTRACTOR RESPONSIBLE FOR TRIM TYPE AND HANGING ACCESSORIES.ACCEPTABLE MANUFACTURERS: QMARK, RAYWALL, MARLEY. IF CONTACTORS ARE USED LOCATE THEM IN ELECTRICAL OR MECHANICAL ROOMS OR AREAS.



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www.westplainsengineering.com
RAPID CITY, SD ■ SIOUX FALLS, SD ■ CASPER, WY ■ CEDAR RAPIDS, IA ■ DESMOINES, IA

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PROJECT / SHEET TITLE:
LEWIS & CLARK REGIONAL WATER SYSTEM - UNION CO. RESERVOIR

ELECTRICAL DIAGRAMS & SCHEDULES

BERESFORD, SOUTH DAKOTA

REV.	DATE	DESCRIPTION

JOB No.: 20000.26.00
DATE: 12/20/2019
DESIGNED BY: TEB
CHECKED BY: MGF
DRAWN BY: JM

SCALE REDUCTION BAR
0 1/2" 1"

SHEET No. : 18.5

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PANEL LP		VOLTS:		120/ 240		PHASE: 1		WIRE: 3			MAIN CAP.:		400 AMPERES		
		A/C RATING:		22,000		NOTES:		GROUND BAR, TYPED CIRCUIT DIRECTORY							
		MOUNTING:		SURFACE		FEEDER SIZE:		SEE RISER					MAIN CONNECTION:		MLO
CCT NO	ITEM FED	LOAD WATTS	WIRE SIZE	CIRCUIT BREAKER			NEUTRAL	CIRCUIT BREAKER			WIRE SIZE	LOAD WATTS	ITEM FED	CCT NO	
				AMPS	POLES	FRAME		FRAME	POLES	AMPS					
1	OVERHEAD DOOR	100	12	20	1	BOLT-ON	L1	BOLT-ON	2	90	3	10080	AIR CONDITIONING A-C-1	2	
3	RECEPT COLD STORAGE ROOM	180	12	20	1	BOLT-ON	L2				3	10080		4	
5	RECEPT PROCESS ROOM	360	12	20	1	BOLT-ON	L1	BOLT-ON	2	30	10	5000	UH-1	6	
7	RTU-25.0 PANEL	500	12	20	1	BOLT-ON	L2				10	5000		8	
9	FAA PANEL	500	12	20	1	BOLT-ON	L1	BOLT-ON	2	30	10	5000	UH-2	10	
11	DEHUMIDIFICATION DH-1	800	12	20	1	BOLT-ON	L2				10	5000		12	
13	SPARE			20	1	BOLT-ON	L1	BOLT-ON	2	30	10	5000	UH-3	14	
15	ROOF RECEPT	180	12	20	1	BOLT-ON	L2	BOLT-ON			10	5000		16	
17	ROOF RECEPT	180	12	20	1	BOLT-ON	L1	BOLT-ON	1	20			SPARE	18	
19	POWER TO POE PANEL	500	12	20	1	BOLT-ON	L2	BOLT-ON	1	20	12	220		20	
21	GEN - BATTERY CHARGER	1,200	12	20	1	BOLT-ON	L1	BOLT-ON	1	20	12	330	INTERIOR LIGHTING	22	
23	GEN - BLOCK HEATER	1,400	12	20	1	BOLT-ON	L2	BOLT-ON	1	20				24	
25	GEN - LP WITHDRAWAL SYSTEM	1,200	12	20	1	BOLT-ON	L1	BOLT-ON	2	90			SPARE	26	
27	MIXING CONTROL PANEL	600	12	20	1	BOLT-ON	L2							28	
29	WH-1	7,000	6	60	2	BOLT-ON	L1	BOLT-ON	2	80			SPARE	30	
31		7,000	6			BOLT-ON	L2							32	
33	WH-2 - FUTURE EQUIPMENT	2,400	10	30	1	BOLT-ON	L1	BOLT-ON	1	20			SPARE	34	
35	RECPT BATHROOM, PROCESS, TOWER	540	12	20	1	BOLT-ON	L2	BOLT-ON	1	20			SPARE	36	
37	UH-4 - FUTURE EQUIPMENT	1,500	12	20	1	BOLT-ON	L1	BOLT-ON	1	20			SPARE	38	
39	SPARE			20	1	BOLT-ON	L2	BOLT-ON	1	20			SPARE	40	
41	SPARE			20	1	BOLT-ON	L1	BOLT-ON	1	20			SPARE	42	

STARTER AND DISCONNECT SCHEDULE									
EQUIP NO.	EQUIPMENT DESCRIPTION	VOLTS/ PHASE	HP OR WATTS	FLA	MCA	OCPD SIZE	EQUIPMENT FEEDER	DISCONNECT AT EQUIP.	NOTES
AC-1	PACKAGED AIR CONDITIONING UNIT	240/1	-	-	84.0	90 A	2#3, 1#8 GRND.	100/2, WP	
DH-1	DEHUMIDIFIER	120/1	-	-	14.0	20 A	2#12, 1#12 GRND.	30/2	
WH-1	WATER HEATER	240/1	7.3 KW	-	38.0	50 A	2#8, 1#10 GRND.	60/2	
WH-2	FUTURE WATER HEATER	120/1	2.4 KW	-	25.0	30 A	2#10, 1#10 GRND.	30/2	1
EF-1	FUTURE EXHAUST FAN	120/1	1/8 HP	-	FRAC	20 A	2#12, 1#12 GRND.	1P-SWITCH	1
NF = NON-FUSED SSY = BUSSMAN FUSED SWITCH OCPD = OVERCURRENT PROTECTIVE DEVICE 4X = NEMA 4X TYPE WP = WEATHERPROOF FLA = FULL LOAD AMPS MCA = MINIMUM CIRCUIT AMPS 1P SWITCH = 1 POLE TOGGLE SWITCH FE = FURNISHED WITH EQUIPMENT									
NOTES: 1. EQUIPMENT NOTED IS FOR REFERENCE ONLY.									



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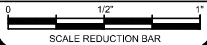
ELECTRICAL SCHEDULES

BERESFORD, SOUTH DAKOTA

DESCRIPTION

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LIGHTING FIXTURE SCHEDULE										
MARK	FIXTURE		VOLT.	LAMP(S)		MOUNTING		MANUFACTURER		REMARKS
	TYPE	DIFFUSER		# & WATTS	TYPE	TYPE	HT.	NAME	SERIES NO.	
A	4' VAPOR-TIGHT	ACRYLIC HIGH IMPACT	UNIV.	48W-5100 LUMENS	LED 4000K	SURFACE	CEILING	RAB LIGHTING OR EQUAL	SHARK	IMPACT & UV RESISTANT FIBERGLASS HOUSING, WET LOCATION, STANDARD DRIVER, FIXTURE TYPE FOR REFERENCE ONLY.
B	8' VAPOR-TIGHT	ACRYLIC HIGH IMPACT	UNIV.	70W-10000 LUMENS	LED 4000K	SURFACE	CEILING	RAB LIGHTING OR EQUAL	SHARK	IMPACT & UV RESISTANT FIBERGLASS HOUSING, WET LOCATION, STANDARD DRIVER, SEE NOTE ON SHEET 18.2 FOR EMERGENCY INVERTER..
W1	WALLPACK	PRISMATIC GLASS	UNIV.	55W - 7000 LUMENS	LED 4000K	WALL	10' AFF	RAB LIGHTING OR EQUAL	WP3LED	DIE-CAST ALUMINUM HOUSING, PRISMATIC, HEAT-RESTANT BOROSILICATE GLASS WITH HIGH-TEMPERATURE SILICONE GASKET, FURNISH WITH PHOTOCELL. SEE NOTE ON SHEET 18.2 FOR EMERGENCY INVERTER..
W2	WALLPACK	PRISMATIC GLASS	UNIV.	55W - 7000 LUMENS	LED 4000K	WALL	10' AFF	RAB LIGHTING OR EQUAL	WP3LED	DIE-CAST ALUMINUM HOUSING, PRISMATIC, HEAT-RESTANT BOROSILICATE GLASS WITH HIGH-TEMPERATURE SILICONE GASKET. SEE NOTE ON SHEET 18.2 FOR EMERGENCY INVERTER..
W3	WALL MOUNT LED	POLYCARBONATE	UNIV.	12W - 1284 LUMENS	LED 5000K	WALL	WALL NEXT TO LADDER	RAB LIGHTING OR EQUAL	ENTRA 12	DIE-CAST ALUMINUM HOUSING, VANDAL RESISTANT POLYCARBONATE MOLDED HOUSING LENS, IP66 RATED SEE NOTE ON SHEET 18.3 FOR EMERGENCY INVERTER NOTE
F1	L-864 OBSTRUCTION LIGHT	UV RESISTANT POLYCARBONATE	UNIV.	20W	LED	POLE	ON ROOF	UNIMAR OR EQUAL	12004-D564-A 13-001	FAA CERTIFIED, IP66 RATED, SHOCK AND VIBRATION RESISTANT, CAST ALUMINUM BASE AND HOUSING. MOUNTING BRACKET FOR WATERTOWER
F2	L-810 OBSTRUCTION LIGHT	UV RESISTANT POLYCARBONATE	UNIV.	13W	LED	POLE	ON ROOF	UNIMAR OR EQUAL	RTO-1R07-001	FAA CERTIFIED, IP66 RATED, SHOCK AND VIBRATION RESISTANT, CAST ALUMINUM BASE AND HOUSING. MOUNTING BRACKET FOR WATERTOWER
X	EMERGENCY LIGHTING	HIGH TEMP ACRYLIC	UNIV.	2-3W	LED	WALL	6" BFC	LITHONIA OR EQUAL	ELM2	UV STABILIZED POLYCARBONATE HOUSING ADJUSTABLE LAMPS SEE NOTE ON SHEET 18.2 FOR EMERGENCY INVERTER.
UNV. = UNIVERSAL DRIVER										
ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR TRIM TYPES, COORDINATE WITH REFLECTED CEILING PLANS										



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ELECTRICAL SCHEDULES

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