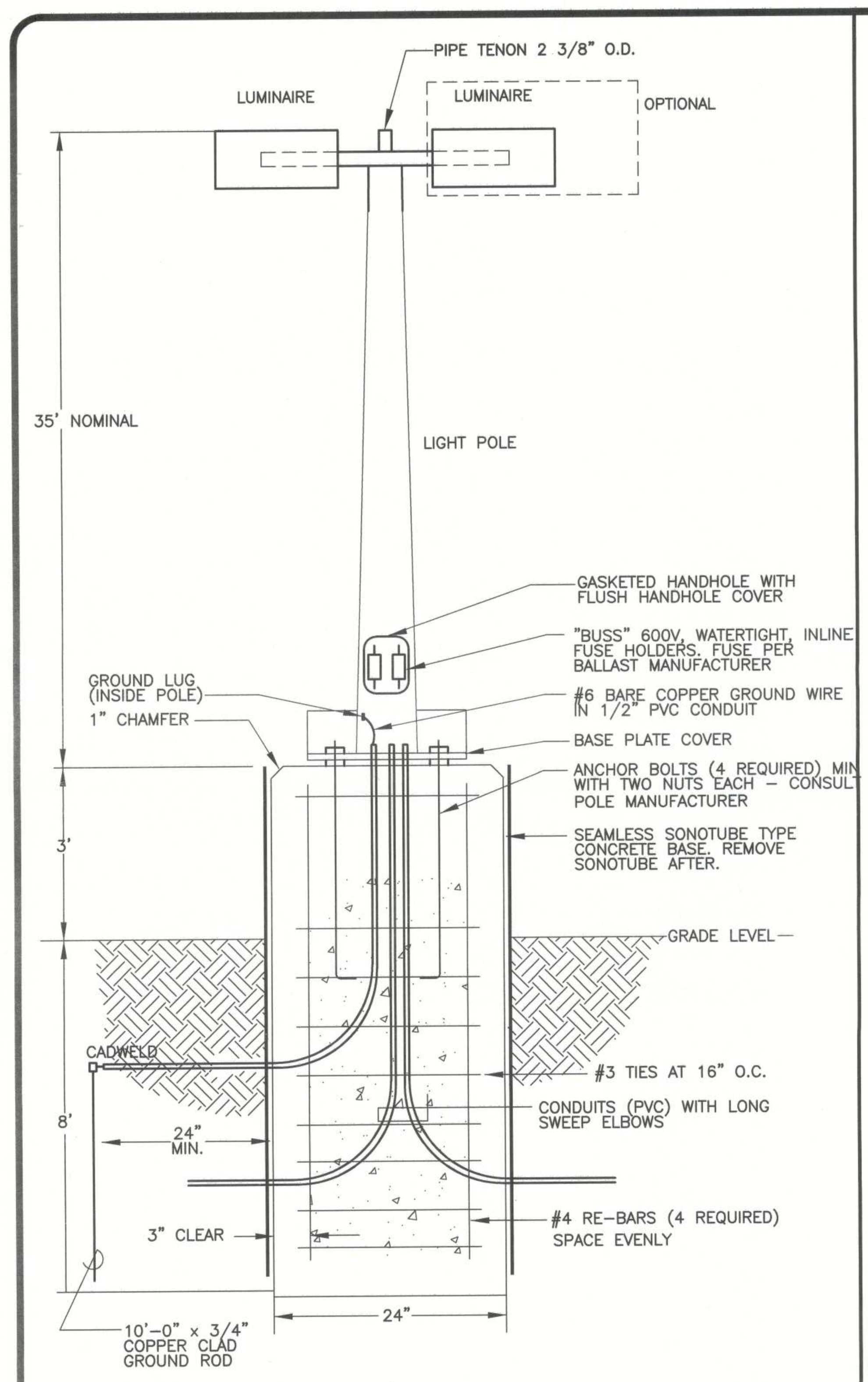
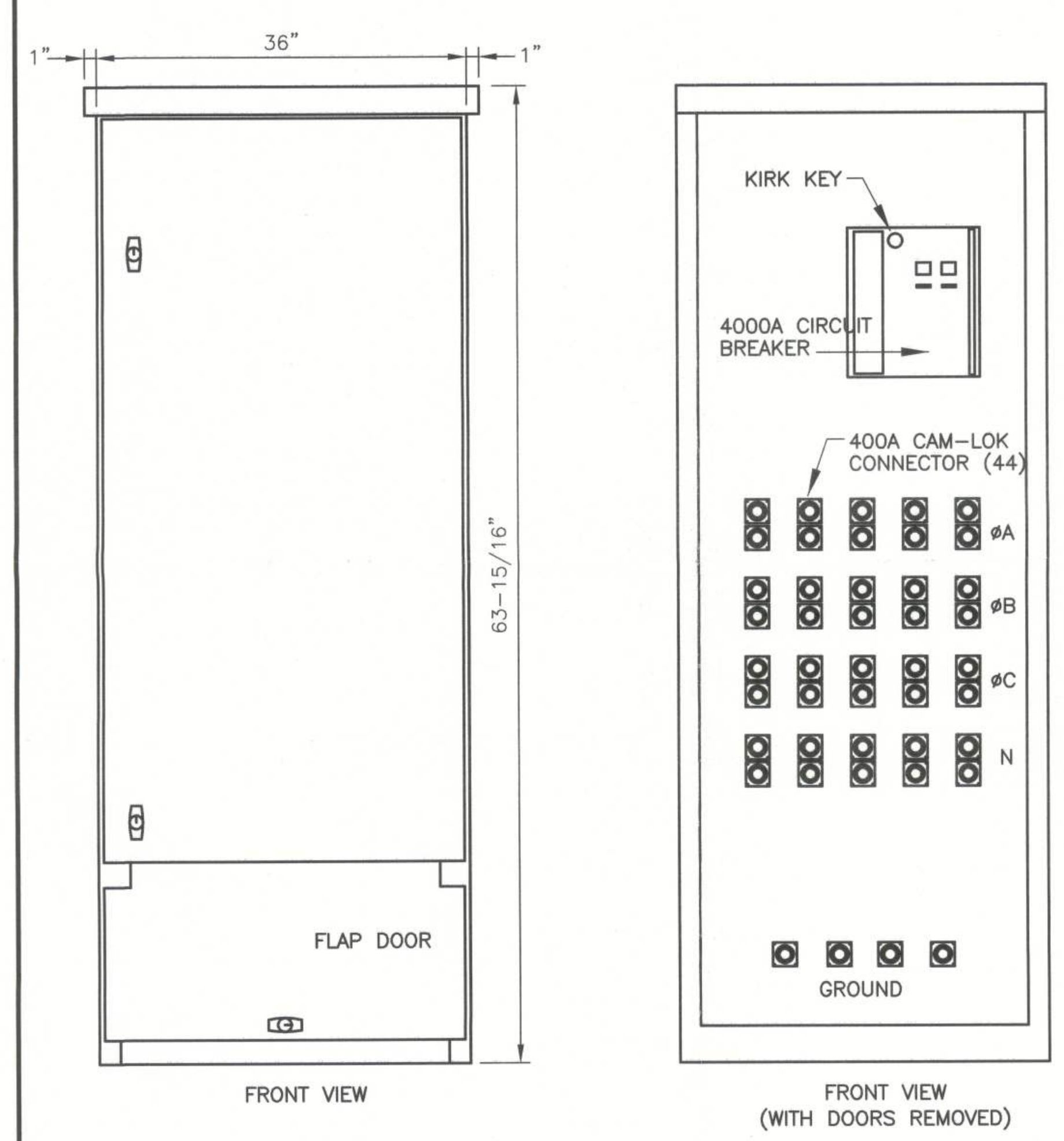


NOTES:

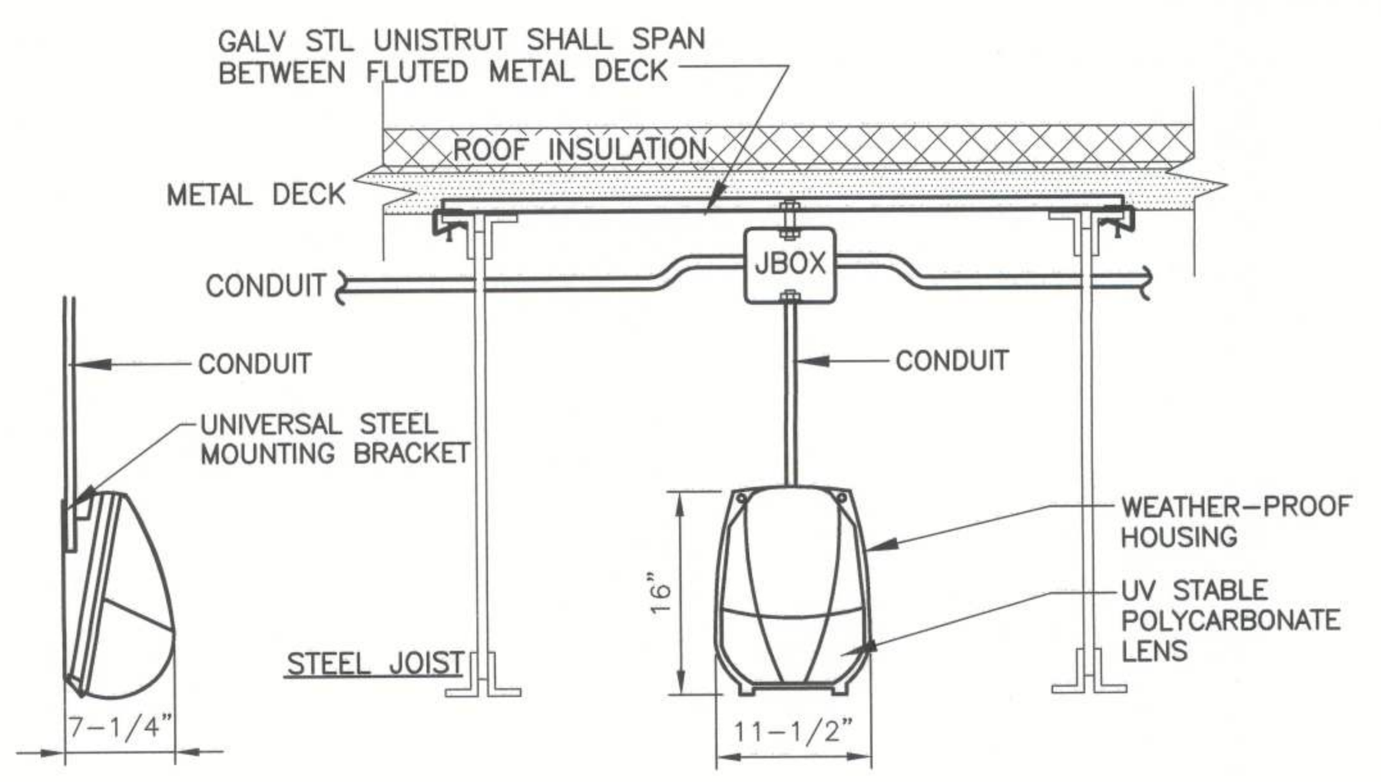
1. ANCHOR BOLTS & TEMPLATES FURNISHED BY ELECTRICAL CONTRACTOR. CONCRETE BASE AND ANCHOR BOLTS INSTALLED BY GENERAL CONTRACTOR.
2. BASE SHALL BE 3000 PSI CONC. STONED & SACKED EXPOSED PORTION.
3. STANDARDS TO WITHSTAND WIND LOADS OF 100 MPH MINIMUM.

SITE LUMINAIRE ASSEMBLY (1)

(2)



GENERATOR QUICK CONNECT SWITCHBOARD (3)



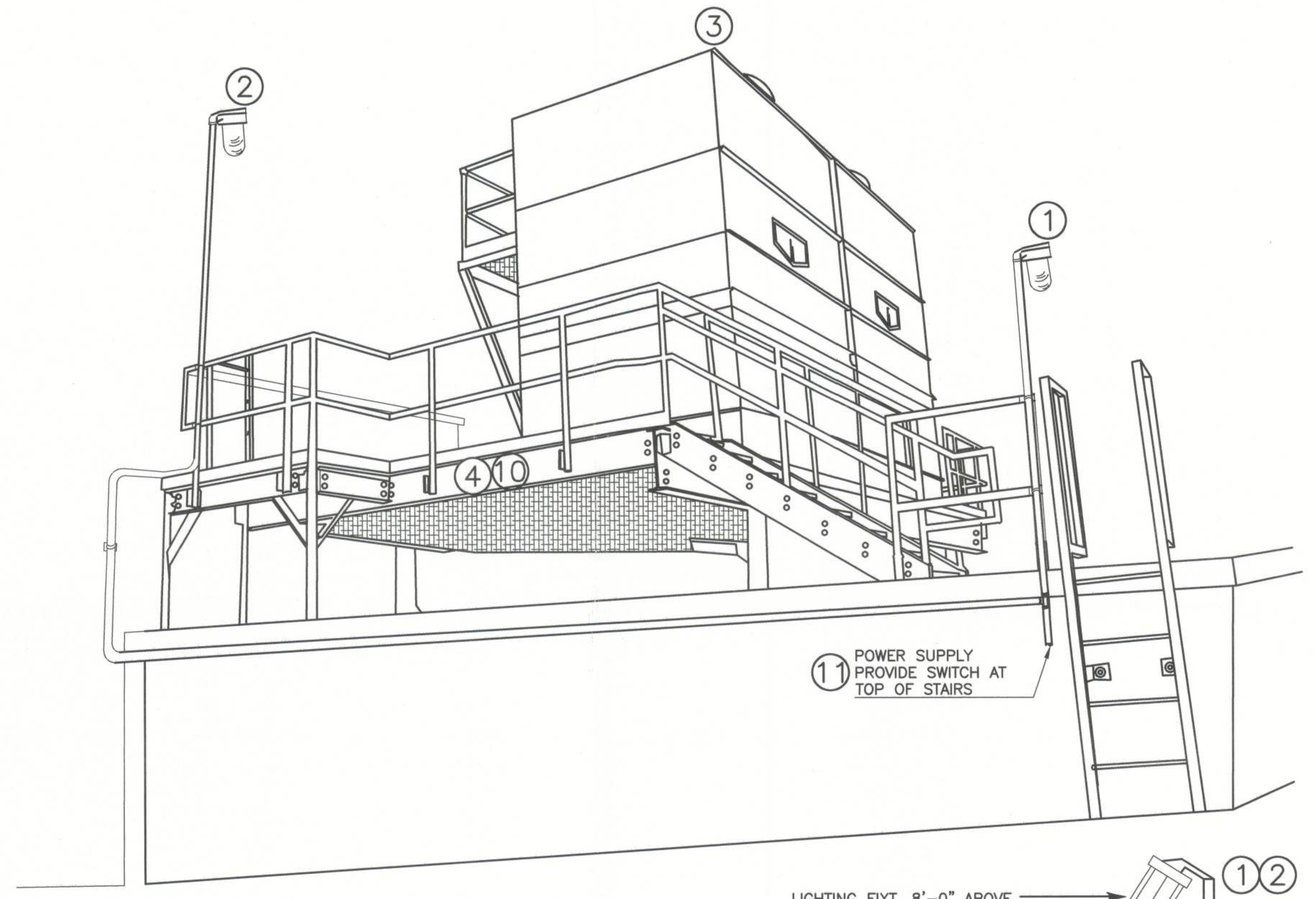
NOTES:

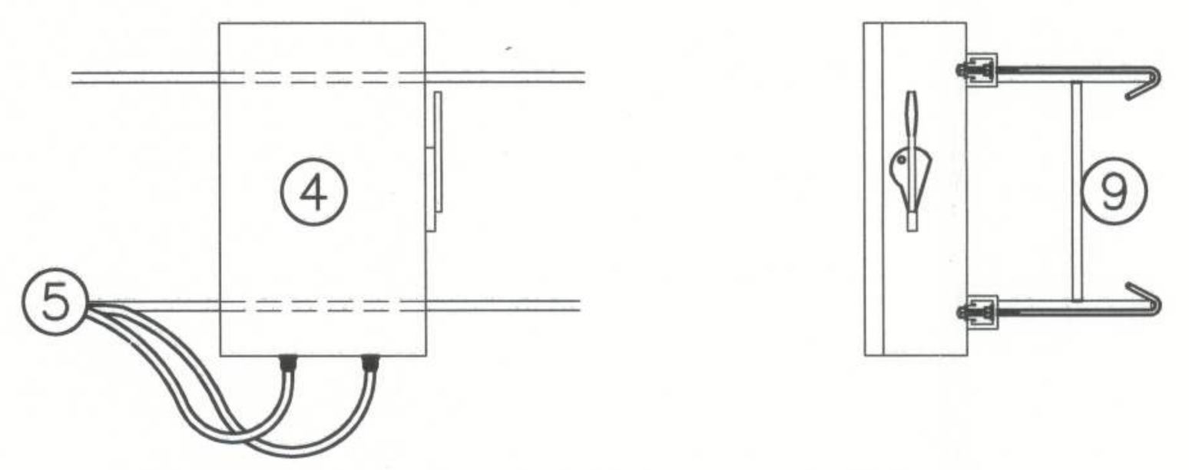
1. INSTALLATION MOUNTING CAN BE BOTH SQUARE AND ROUND COLUMNS, I-BEAMS, UNISTRUT AND PENDANT APPLICATIONS.
2. SEALED AND GASKETED, THE HEAVY DUTY HOUSING IS DUST TIGHT AND CORROSION RESISTANT
3. UNIT HAS BEEN TESTED TO UL50, 4 AND 4X STANDARDS, WHICH PROVIDE PROTECTION AGAINST HOSEDOWN DIRECTED WATER AND DAMAGE FROM EXTERNAL ICE FORMATION

EMERGENCY BATTERY PACK MOUNTING (4)

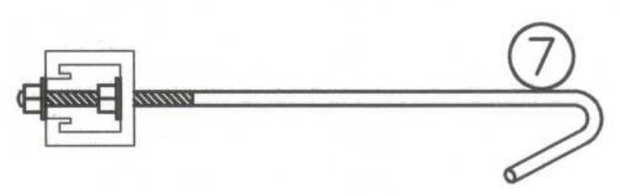
(5)

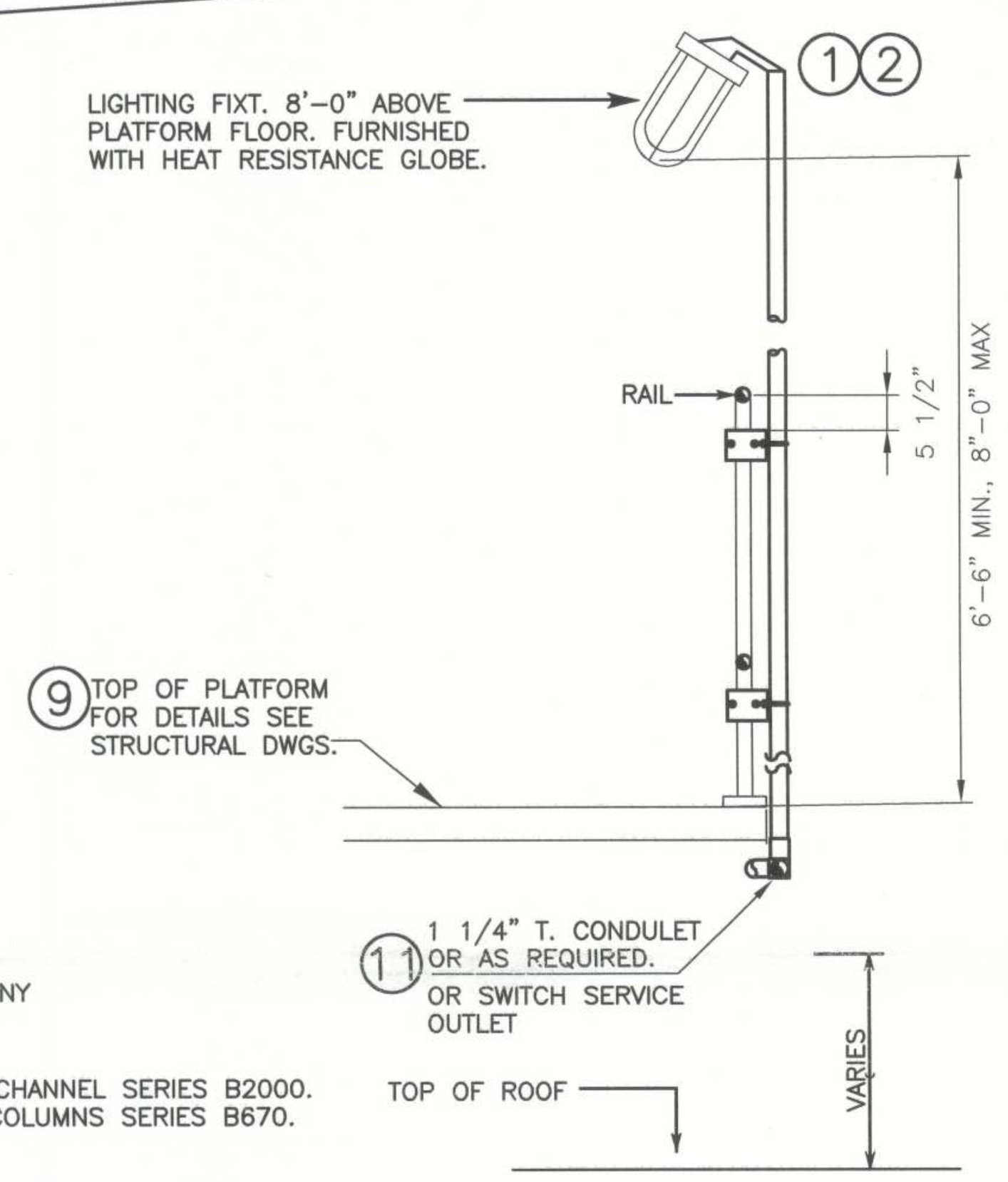
(6)



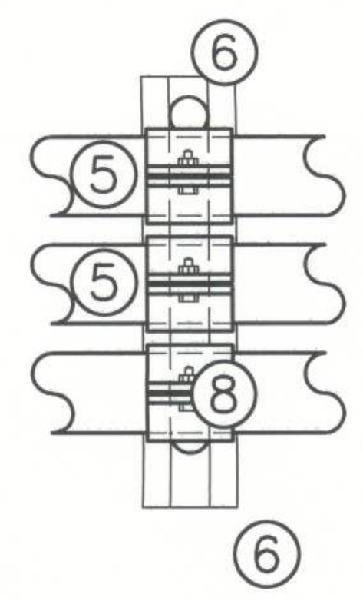


TYPICAL DISCONNECT INSTALLATION

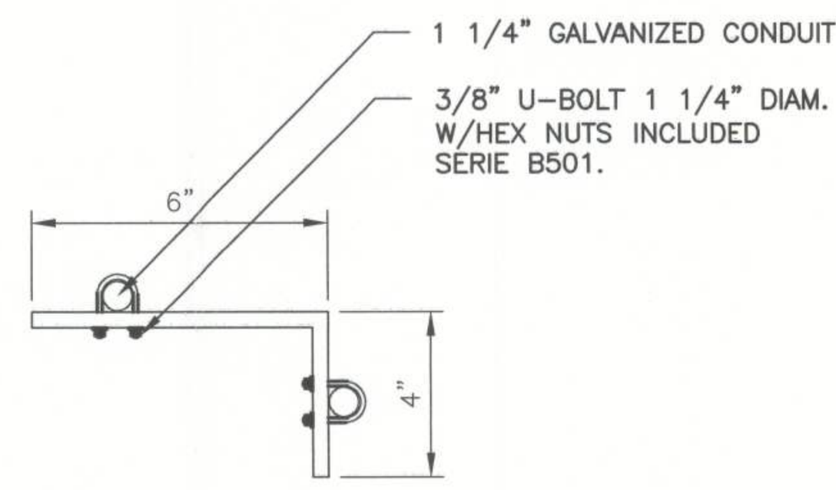


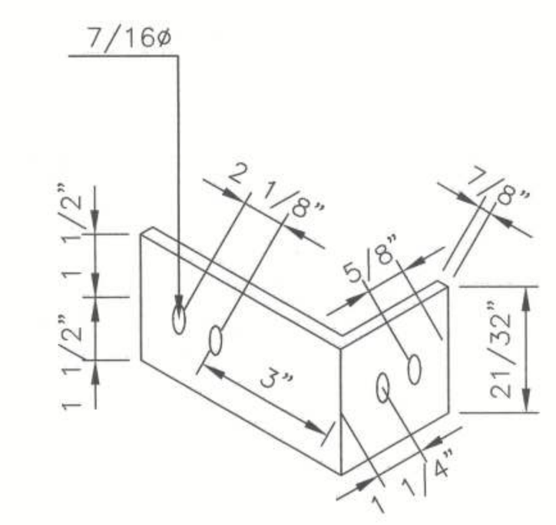


ELECTRICAL CONTRACTOR USED B-LINE SYSTEMS COMPANY FOR CONDUIT ATTACHMENT AND SUPPORT.



(1) (2) TOP OF PLATFORM LIGHTING RIG-A-LITE STANCHION MOUNT SAF17H04GGS, 120VOLTS.
(3) CONDENSER UNIT
(4) TYPICAL ISTALLATION FOR DISCONNECTS.
(5) TYPICAL CONDUIT CONNECTION
(6) STAINLESS STEEL CHANNEL
(7) B-701 SERIES J HOOK W/ CLIP AND NUT.
(8) CONDUIT CLAMPS FOR CHANNEL SERIES B2000. SUPPORT CONDUIT IN COLUMNS SERIES B670.
(9) COLUMN STRUCTURAL SEE B-LINE MAY USED OPTIONAL PARTS.
(10) SERVICES RECEPTACLE (RP1-19 WP)
(11) ALL RECEPTACLES SHALL BE G.F.C.I., WEATHER RESISTANT AND HAVE A W.P. COVER. SUBMIT FOR APPROVAL PER SPECIFICATIONS. PROVIDE RECEPTACLE AT LOCATIONS SHOWN ON PLANS.
(12) CIRCUIT LIGHTING FIXTURES TO CIRCUITS AS INDICATED ON PLAN.
(13) RECEPTACLES SHALL BE UNSWITCHED.





TYPICAL PLATFORM WALKWAY LIGHTING AND CONDUIT ATTACHMENTS (7)

(8)

(9)

(10)

(11)

(12)

stellar

UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

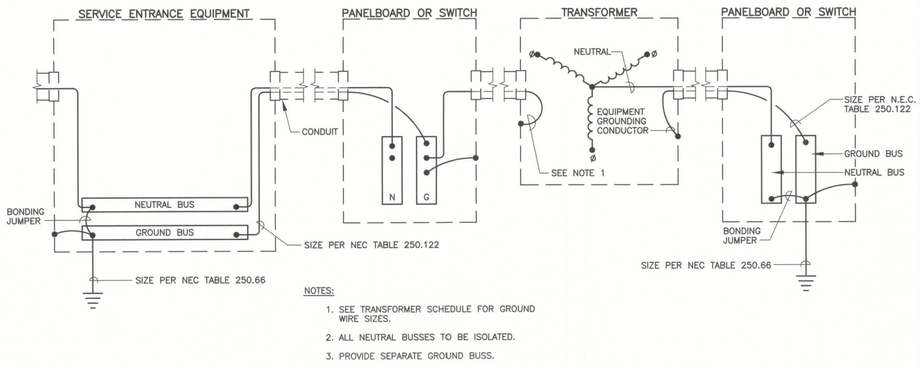
ELECTRICAL DETAILS

REV.	DATE	BY	DESCRIPTION
A	12/21/12	JBS	PERMIT ISSUE

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: NOT TO SCALE

E503
DRAWING NO.

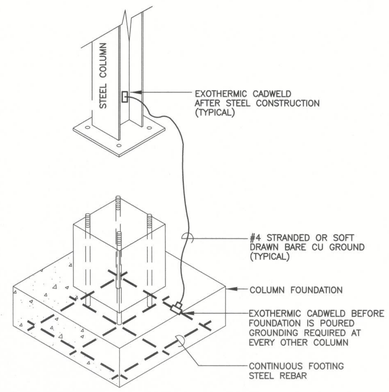
FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E503.dwg DATE: 04/04/08 TIME: 2:08 pm BY: JOEY GABRIEL



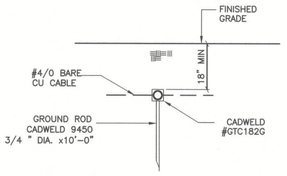
NOTES:

1. SEE TRANSFORMER SCHEDULE FOR GROUND WIRE SIZES.
2. ALL NEUTRAL BUSSES TO BE ISOLATED.
3. PROVIDE SEPARATE GROUND BUSS.

SERVICE AND DISTRIBUTION GROUNDING DETAIL (2)

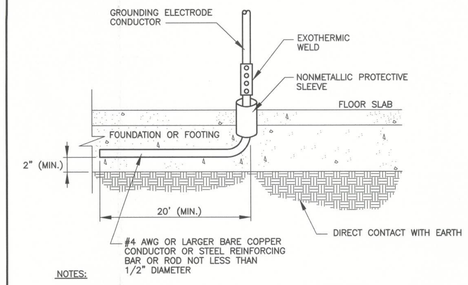


COLUMN BONDING GROUND (3)



GROUND ROD DETAIL (4)

(5)

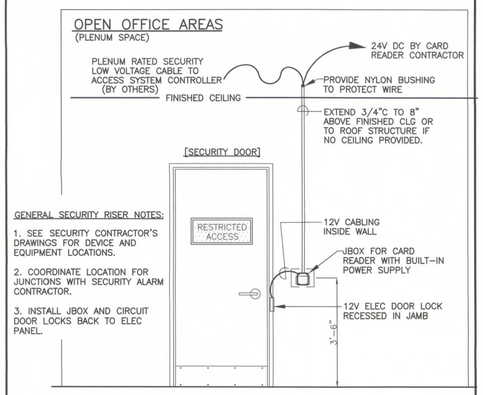


NOTES:

1. SHOULD THIS PIECE OF REBAR BE LEFT OUT OF THE SLAB OR FOOTER, A SUITABLE SUBSTITUTE GROUND CONSISTING OF A CONDUCTOR SIZED PER N.E.C. TABLE 250.66, (BARE COPPER) ENCIRCLING THE ENTIRE BUILDING WILL BE INSTALLED 30" BELOW FINISHED GRADE AND AT NO ADDITIONAL COST TO THE STELLAR GROUP OF FACILITY OWNER.
2. A BONDING POINT MUST BE MADE AVAILABLE FOR OTHER EQUIPMENT WHICH REQUIRES GROUNDING ACCORDING TO N.E.C. SECTION 250-70(b)

(6)

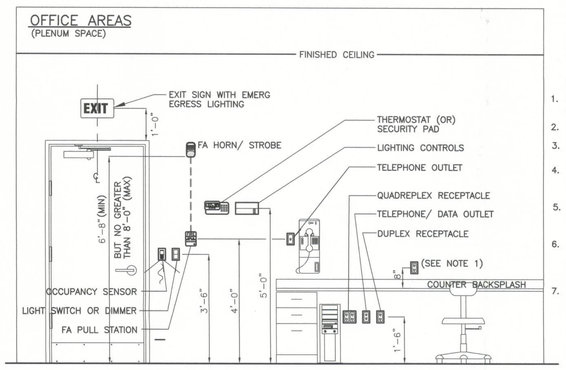
SERVICE GROUNDING DETAIL (7)



GENERAL SECURITY RISER NOTES:

1. SEE SECURITY CONTRACTOR'S DRAWINGS FOR DEVICE AND EQUIPMENT LOCATIONS.
2. COORDINATE LOCATION FOR JUNCTIONS WITH SECURITY ALARM CONTRACTOR.
3. INSTALL JBOX AND CIRCUIT DOOR LOCKS BACK TO ELEC PANEL.

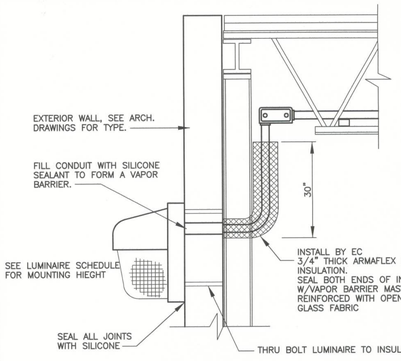
SECURITY DIAGRAM (8)



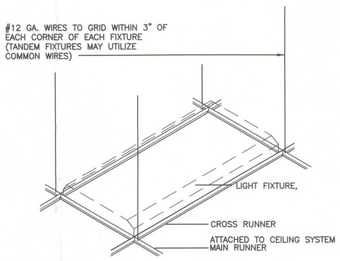
GENERAL DEVICE MOUNTING NOTES:

1. ELECTRICAL CONTRACTOR TO COORDINATE WITH OTHER DISCIPLINES FOR ANY CONFLICTS WITH LOCATION.
2. WAREHOUSE AREAS REQUIRE METAL COVER PLATES FOR POWER OUTLETS
3. EC SHALL PROVIDE AND INSTALL (2) 4" CONDUITS FROM TOP OF EACH IDF CABINET TO THE CEILING BAR JOIST ABOVE.
4. EC SHALL PROVIDE AND INSTALL A SINGLE GANG OUTLET RING WITH PULL STRING ATTACHED ABOVE THE ACCESSIBLE CEILING FOR EACH TELE/DATA OUTLET IN THE OFFICES.
5. EC SHALL PROVIDE AND INSTALL A 4"x4" BACK BOX WITH SINGLE GANG REDUCING RING WITH CONDUIT TO ABOVE ACCESSIBLE CEILING FOR EACH TELE/DATA OUTLET ON BLOCK WALL OR SURFACE MTD.
6. EC SHALL PROVIDE AND INSTALL A 4"x4" BACK BOX WITH SINGLE GANG REDUCING RING WITH CONDUIT TO CABLING PATHWAY FOR EACH TELE/DATA WALL TELE AND STD OUTLET LOCATION IN ALL AREAS WITHOUT A CONCEALED WALL.
7. EC SHALL PROVIDE AND INSTALL A 4"x4" BACK BOX WITH SINGLE GANG REDUCING RING WITH CONDUIT TO CABLE TRAY FOR EACH TELE/DATA OUTLET INSTALLED IN THE DPS RACKING AREA.

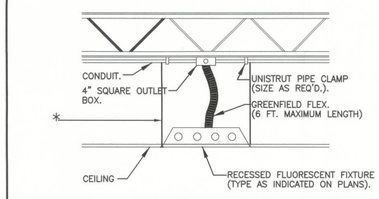
DEVICE MOUNTING DIAGRAM (10)



EXTERIOR WALL PACK MTG DETAIL (11)



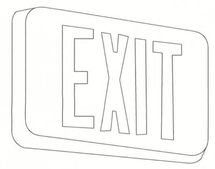
LIGHT FIXTURE SUPPORT (12)



NOTES:

1. FIXTURE SHALL BE SCREWED TO T-BAR GRID AT OPPOSITE CORNERS, TOTAL OF TWO MINIMUM SCREWS BY FIXTURES.
2. FIXTURE SUPPORTING WIRES MUST HAVE THREE TURNS MINIMUM.

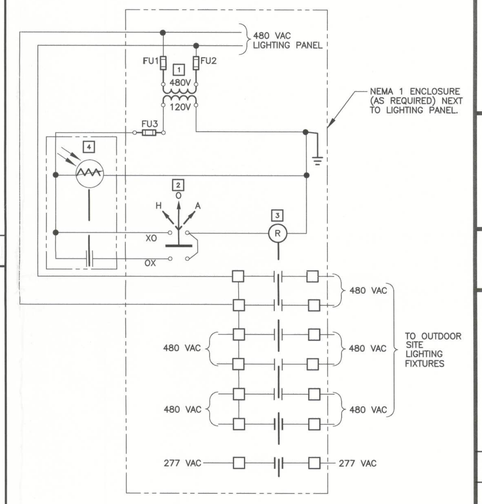
RECESSED FLUORESCENT FIXTURE MTG DETAIL (13)



NOTES:

1. ENGINEERING GRADE THERMOPLASTIC HOUSING IS IMPACT AND SCRATCH RESISTANT, AND CORROSION PROOF. UV STABLE RESIN RESISTANT DISCOLORATION FROM NATURAL AND MAN MADE LIGHT SOURCES.
2. UNIVERAL DIRECTIONAL CHEVRON INSERTS ARE EASILY REMOVED AND REINSERTED. UNIFORM GRAPHICS ILLUMINATION WITHOUT SHADOWS OR HOT SPOTS. REINFORCED IMPACT RESISTANT COLOR PANELS.
3. LEDS MOUNTED ON PRINTED CIRCUIT BOARDS. EPECTED LED LIFE OVER 25 YEARS. LOW ENERGY CONSUMPTION-LESS THAN ONE WATT. LED LAMP OPERATES IN NORMAL (AC INPUT) AND EMEGRENCY (DC INPUT) MODES.
4. SEALED MAINTENANCE FREE NICKEL CADMIUM DELIVERS 90 MINUTE CAPACITY TO EMERGENCY LAMPS. AUTOMATIC RECHARGE AFTER BATTERY DISCHARGE.
5. CONSTANT CURRENT SERIES CHARGER MINIMIZES ENERGY CONSUMPTION AND PROVIDES LOW OPERATING COSTS.
6. UL LISTED AND LABELED, NEC AND OSHA ILUMINATION STANDARDS.

LIGHT MOUNTING (14)



ITEM	DESCRIPTION
1	CONTROL POWER TRANSFORMER
2	HAND-OFF-AUTO SWITCH WITH HAND OFF AUTO LEGEND
3	LIGHTING CONTACTOR - 30 AMPS, 8 POLES, 120 VAC COIL - ELECTRICALLY HELD
4	120 VAC PHOTO CELL MOUNTED A ROOF OF BLDG. (POINTING NORTH)

SCHEMATIC DIAG EXTERIOR & SITE LTG CONTROL (20)

NOTES:

1. COORDINATE LOCATION IN AISLES WITH STRUCTURAL BRIDGING. LUMINAIRES SHALL BE CENTERED IN ASILE.
2. ALL LUMINAIRES SHALL BE MOUNTED AT THE HIGHEST POSSIBLE ELEVATION.
3. REPORT ANY CONFLICTS WITH OTHER TRADES PRIOR TO INSTALLATION OF LUMINAIRES.
4. LUMINAIRES MOUNTED IN ANY AIRSTREAM SHALL BE BRACED TO PREVENT SWAYING.
5. CONDUIT MAY BE RUN IN ROOF DECK FLUTES WHEN STRUCTURE IS WIDE FLANGE BEAMS.
6. GALVANIZED STEEL BOLTS, NUTS, AND WASHERS FOR IMP CEILING. ANCHOR BOLTS AND SCREWS FOR CONCRETE CEILING.

LUMINIARE MOUNTING DETAIL (16)

(17) (18) (19)

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DATE: 04/04/08 TIME: 2:07 pm BY: JOEY GABRIEL

stellar
OPERATING AS THE STELLAR GROUP
2900 HARTLEY ROAD, JACKSONVILLE, FL. 32257 (904) 260-2900
FLORIDA ARCHITECTURAL LICENSE NO. AA-C000112
FLORIDA ENGINEERING LICENSE NO. 30520

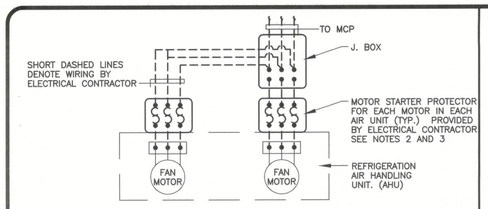
UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

ELECTRICAL DETAILS

REV.	DATE	BY	PERMIT ISSUE DESCRIPTION
A	12/19/12	JBS	

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: NOT TO SCALE

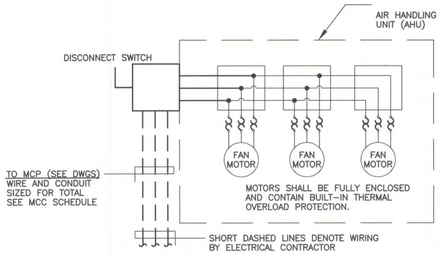
E502
DRAWING NO.



NOTES:
1. QUANTITY OF MOTORS AND MOTOR STARTER PROTECTORS SHOWN IN AIR UNIT ARE FOR EXAMPLE ONLY. SEE MOTOR CONTROL CENTER SCHEDULE AND REFRIGERATION DRAWINGS FOR ACTUAL QUANTITY OF MOTORS IN EACH AIR UNIT.
2. EC SHALL RUN WIRE AND CONNECT THE MOTOR CONTACTS WITH OVERLOADS TO EACH MOTORS IN THE AHU. EC MAY GROUP IN A SINGLE ENCLOSURE.
3. MOTOR STARTER PROTECTORS MAY BE INSTALLED INSIDE A SINGLE ENCLOSURE FOR EACH AIR UNIT AT CONTRACTORS OPTION. ENCLOSURE SHALL BE NEMA 3R OR 4X AS REQUIRED AND SHALL HAVE A HINGED COVER W/ LATCH. (SCREW TYPE NOT ACCEPTABLE)
4. CUTLER HAMMER MANUAL MOTOR STARTER/ PROTECTOR/ DISC TYPES (OR APPROVED EQUAL) :

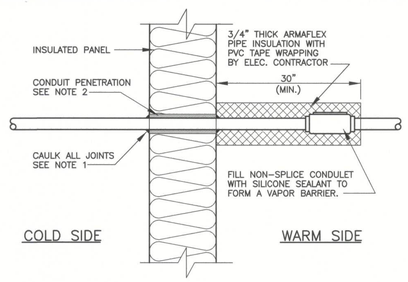
1HP = # A302GN	1.5HP = # A302HN	2HP = # A302HN
3HP = # A302JN	5HP = # A302KN	7.5HP = # A302LN
10HP = # A302LN	15HP = # A302NN	

INTEGER HP AHU WIRING DIAGRAM (1)



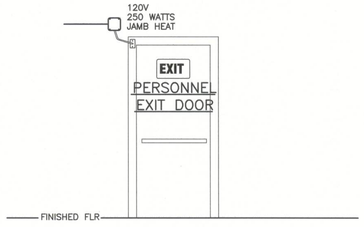
NOTES:
1. QUANTITY OF MOTORS SHOWN IN AHU ARE FOR EXAMPLE ONLY. SEE MOTOR CONTROL CENTER SCHEDULE AND REFRIG DWGS FOR ACTUAL QUANTITY OF MOTORS IN EACH AHU.
2. EACH MOTOR SHALL CONTAIN BUILT-IN THERMAL OVERLOAD PROTECTION. MOTORS ARE PREWIRED TO DISCONNECT BY MANUFACTURER.
3. DISCONNECT SWITCH IS PROVIDED WITH UNIT BY MANUFACTURER.

FRACTIONAL HP MULTI-MOTOR AHU (2)



NOTES:
1. CAULKING & SEALING SHALL MAINTAIN VAPOR BARRIER CONTINUITY OF INSULATED PANEL.
2. PENETRATION SHALL BE DRILLED. AFTER CONDUIT IS INSTALLED AND PROPERLY SUPPORTED ON EACH SIDE OF WALL, REMAINING VOIDS SHALL BE FILLED COMPLETELY WITH APPROVED SEALANT.

CONDUIT PENETRATION DETAIL (3)



FREEZER/ COOLER EXIT TO OUTSIDE

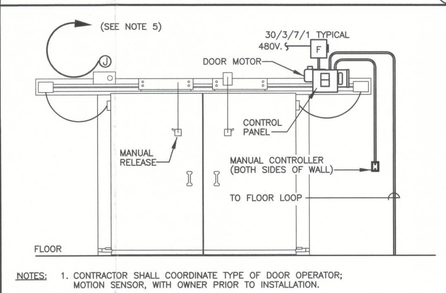
HEAT-TRACE FREEZER/ COOLER DOOR (4)

(5)

CONDENSATE DRAIN HEAT TRACING SYSTEM

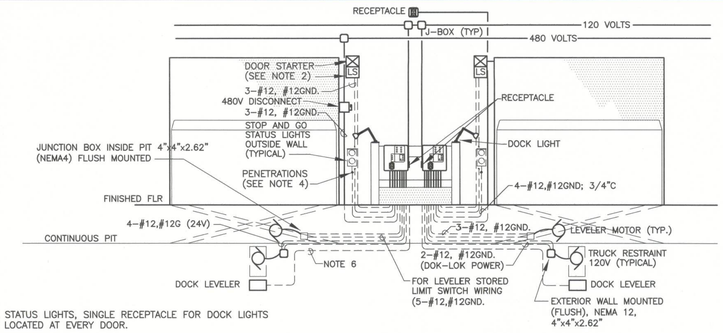
1. DRAIN LINES OF ALL AIR UNITS IN AREAS OF LESS THAN 35° F. DESIGN, SHALL BE TRACED WITH 120 VOLT, SELF-REGULATING TYPE HEAT CABLE RATED AT 6 WATTS/FOOT. CABLE SHALL HAVE AN OVERALL METAL BRAID AND PVC JACKET. CABLES AND ALL TERMINATION KITS AND END SEALS ARE FURNISHED BY REFRIGERATION CONTRACTOR.
2. THE REFRIGERATION CONTRACTOR SHALL INSTALL HEAT CABLE INSIDE DRAIN LINES FROM PAN TO DISCHARGE END OF PIPE. WHERE DRAIN LINES ARE TIED TOGETHER, RUN AT LEAST ONE HEAT CABLE TO DISCHARGE END OF PIPE. REMAINING CABLES MAY BE TERMINATED AT PIPE INTERSECTIONS. REFRIGERATION CONTRACTOR SHALL LEAVE SLACK AT ENDS OF CABLES FOR TERMINATION BY ELECTRICAL.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE A NEMA 3R J-BOX AND CIRCUIT WIRING TO EACH AHU. ELCTRICAL CONTRACTOR SHALL MAKE ALL TERMINATIONS AND INSTALL END SEALS. ALL HEAT TRACE FEEDER BREAKERS SHALL BE 30 MA G.F.C.I.
4. SEE REFRIGERATION DRAWINGS FOR LOCATION AND LENGTH OF DRAIN LINES.

CONDENSATE HEAT TRACE INSTALLATION (6)



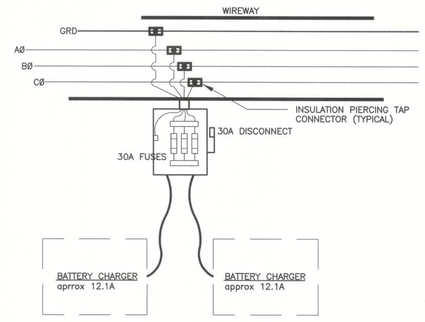
NOTES:
1. CONTRACTOR SHALL COORDINATE TYPE OF DOOR OPERATOR; MOTION SENSOR, WITH OWNER PRIOR TO INSTALLATION.
2. WIRING BETWEEN DISCONNECT SWITCH AND CONTROL PANEL BY ELECTRICAL CONTRACTOR.
3. VERIFY ALL ELECTRICAL REQUIREMENTS WITH MANUFACTURER'S SHOP DRAWINGS PRIOR TO INSTALLATION.
4. POWER DISCONNECT SWITCH SHALL BE MOUNTED ON WARM SIDE OF DOOR. SEE CONDUIT PENETRATION DETAIL.
5. ALL FREEZER DOORS MUST HAVE SEPERATE 120VAC SUPPLY FOR HEATER CABLES.

FREEZER DOOR DETAIL (7)



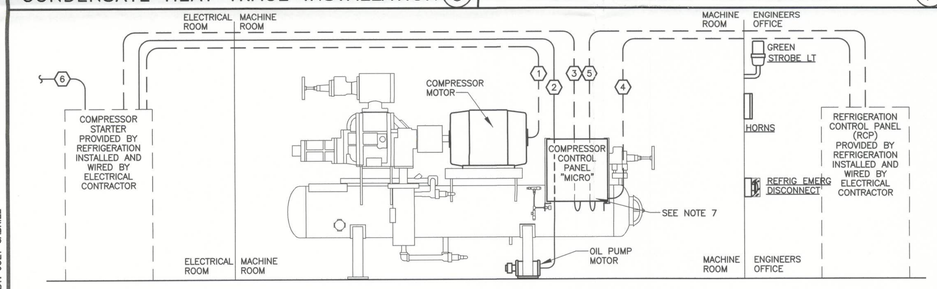
NOTES:
1. TRUCK RESTRAINTS, STATUS LIGHTS, SINGLE RECEPTACLE FOR DOCK LIGHTS AND LEVELERS ARE LOCATED AT EVERY DOOR.
2. PROVIDE AND INSTALL A LIMIT SWITCH TO INTERLOCK THE DOCK DOOR LEVELER AND DOCK DOOR SO THAT THE LEVELER CANNOT ENGAGE UNLESS THE DOOR IS IN THE FULL UP POSITION.
3. TRUCK RESTRAINT/STATUS LIGHTS AND LEVELERS PROVIDED BY OTHERS, INSTALLED BY ELECTRICAL CONTRACTOR. RECEPTACLE FOR TRUCK LOADING LIGHTS PROVIDED AND INSTALLED BY LEVELER SUPPLIER.
4. CONDUIT PENETRATIONS THRU EXTERIOR WALL SHALL HAVE SILICONE SEALANT FILL INSIDE AND AROUND EXTERIOR TO CREATE A VAPOR/MOISTURE BARRIER.
5. TRUCK LOADING LIGHTS PROVIDED BY ELEC. CONTRACTOR.
6. INSTALL AND CONNECT 1-3/C AND 1-5/C CABLE FURNISHED BY SUPPLIER IN CONDUIT.

INTERIOR ELEVATION AT DOCK DOORS (9)



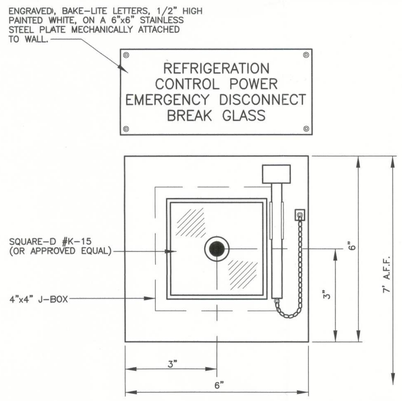
NOTE:
1. CONNECTION FROM FEEDER TO DISCONNECTS SHALL BE MADE WITH AN INSULATION PIERCING TOP CONNECTOR AND #10 TAP CONDUCTORS.

TYPICAL BATTERY CHARGER CONNECTION (10)

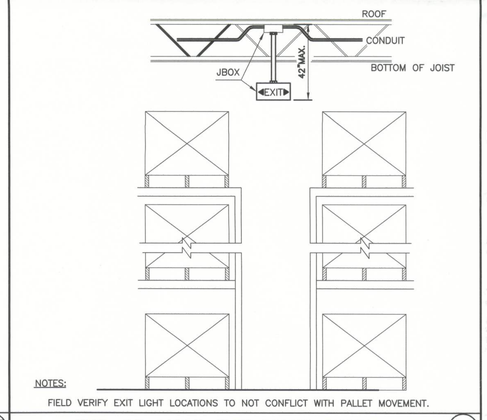


NOTES:
1. COMPRESSOR MOTOR FEEDER FROM COMPRESSOR STARTER. SEE ONE LINE FOR WIRE AND CONDUIT SIZES.
2. OIL PUMP MOTOR FEEDER FROM COMPRESSOR STARTER. 3 #10, #12 G., 3/4" C.
3. 2 #10 FOR POWER, 2 #12 FOR CT, 7 #14 FOR CONTROL AND #10G IN 1" CONDUIT.
4. CAT 5E CABLE FOR COMMUNICATION
5. 7 #14 FOR CONTROL
6. COMPRESSOR STARTER POWER FEEDER FROM MSB. SEE ONE LINE FOR CINDUIT/WIRE SIZES.
7. ALL CONDUIT ENTRIES INTO "MICRO" SHALL BE MADE WITH LIQUID TIGHT FLEX CONDUIT AND ENTER ONLY AT LOCATIONS SHOWN. TOP ENTRY INTO MICRO IS PROHIBITED. ENTRY POINTS SHALL NOT INTERFERE WITH DEVICES WHICH REQUIRE PERIODIC MAINTENANCE.

TYPICAL REFRIGERATION COMPRESSOR WIRING REQUIRMENTS (12)

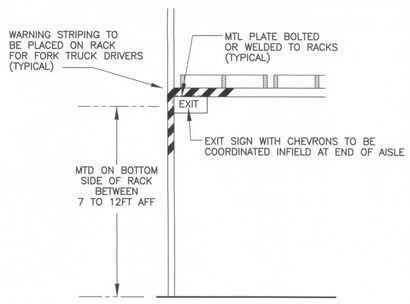


REFRIGERATION EMERGENCY DISCONNECT (13)



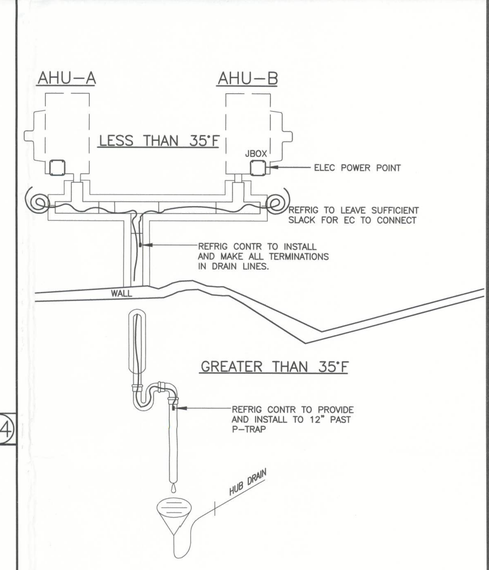
NOTES:
FIELD VERIFY EXIT LIGHT LOCATIONS TO NOT CONFLICT WITH PALLET MOVEMENT.

END OF AISLE EXIT LIGHT DETAIL (14)



NOTES:
1. FIELD VERIFY LIGHT LOCATIONS TO NOT CONFLICT WITH PALLET MOVEMENT.
2. DO NOT MOUNT BATTERY PACKS TO RACKS. PROVIDE BRACKET.

AISLE EXIT DETAIL (19)



NOTES:
1. REFRIG CONTR TO PROVIDE AND INSTALL SELF REGULATING HEATER CABLE TYPE THERMON # RGS-1 (@ 5 - 11 WATTS PER FOOT) IN DRAIN PANS AND CONDENSATE DRAIN PIPES IN AREAS BELOW 35°F INSIDE PIPE TO 12" PAST P-TRAP ON 35°F OR GREATER SIDE OF LINE TO DRAIN. REFRIG CONTR TO RUN AT LEAST ONE HEATER CABLE TO DISCHARGE END OF PIPE WHERE DRAIN LINES ARE TIED TOGETHER. REMAINING HEATER CABLES MAY BE TERMINATED INSIDE PIPE AT INTERSECTIONS WITH (2) HEATER CABLE BOOTS TYPE THERMON # TBX. REFRIG CONTR SHALL LEAVE SUFFICIENT SLACK AT POWER POINT FOR CONNECTION BY EC AND PROVIDE ALL POWER POINT TERMINATION KITS.
2. EC SHALL INSTALL POWER POINT HEATER CABLE TERMINATION KITS AND MAKE ALL FINAL ELEC CONNECTIONS. EC SHALL PROVIDE AND INSTALL AT EACH POWER POINT A NEMA 3R OR 4X J-BOX AND POWER CIRCUIT WITH 30ma GFCI BREAKER. EC SHALL PERFORM A MEGGER TEST BETWEEN CABLE BUS WIRES AND METALLIC BRAID AFTER COMPLETETION OF HEATER CABLE INSTALLATION.
3. FOR BLAST CELL APPLICATIONS RC SHALL INSTALL (2) HEATER-CABLES PER UNIT. ONE IS A SPARE TO BE CONNECTED IF THE OTHER FAILS.

CATALOG #	OPERATING VOLTAGE	HEATER CABLE OUTPUT	MAX CIRCUIT VS BREAKER SIZE		
		COLD TO WARM	15A BKR	20A BKR	30A BKR
RGS-1	110-120 Vac	11W/FT TO 5W/FT	100FT	130FT	180FT
RGS-2	208-277 Vac	11W/FT TO 5W/FT	180FT	240FT	360FT

DRAIN LINE/PAN-HEATER CABLES (20)

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UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

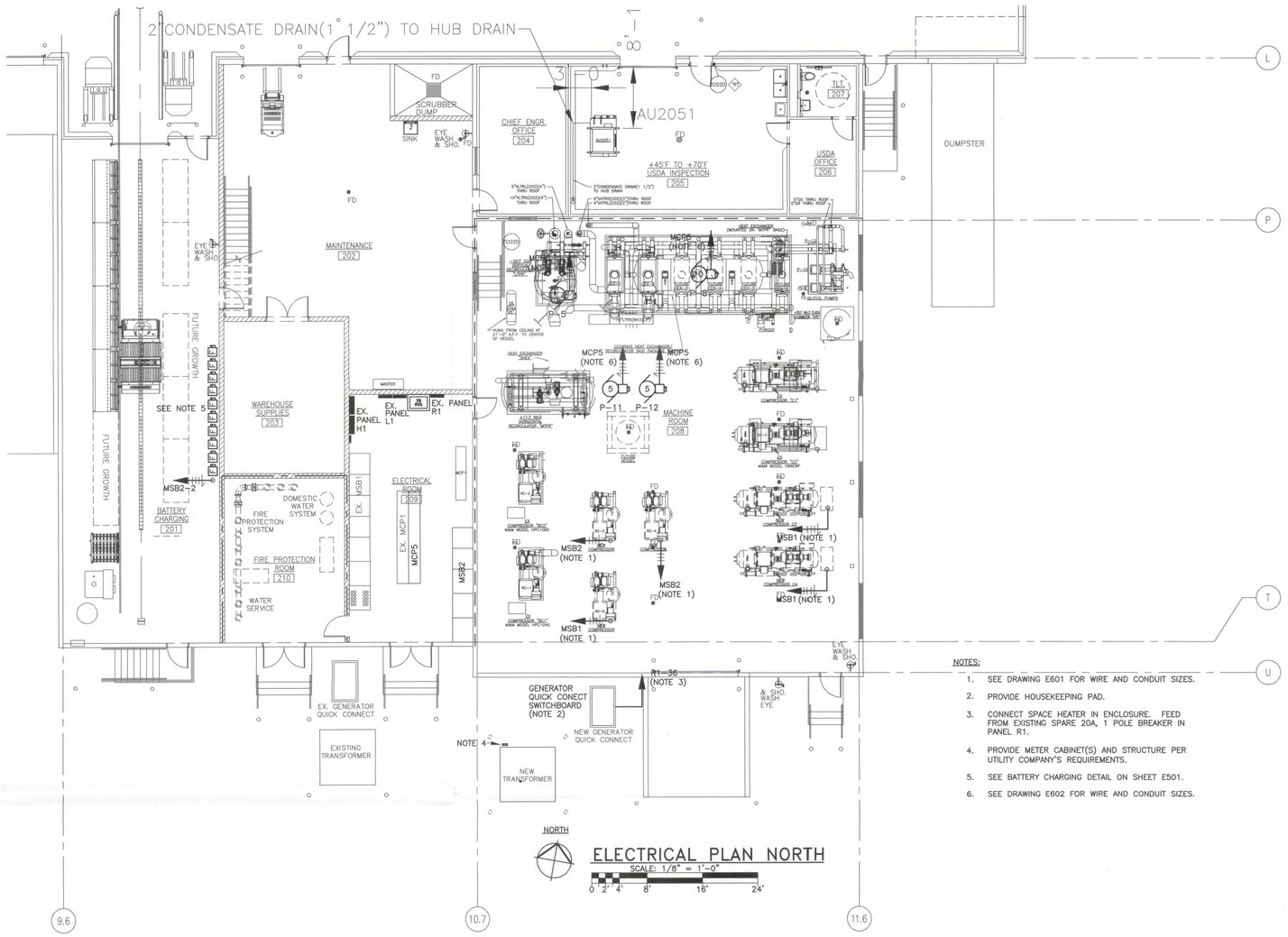
ELECTRICAL DETAILS

REV.	DATE	BY	PERMIT ISSUE DESCRIPTION
A	12/19/12	JBS	

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: NOT TO SCALE

E501
DRAWING NO.

FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E501.dwg DATE: 04/04/08 TIME: 2:07 pm BY: JOEY GABRIEL



NOTES:

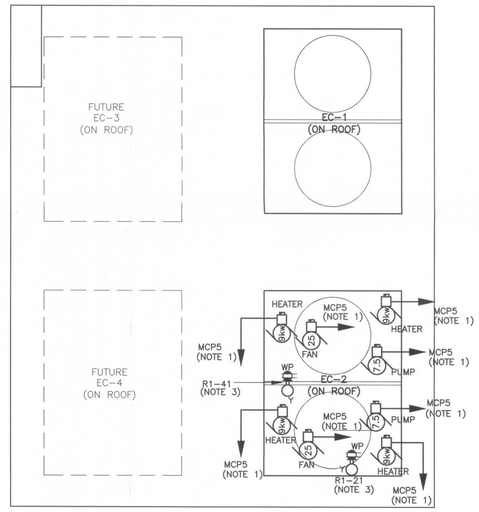
1. SEE DRAWING E601 FOR WIRE AND CONDUIT SIZES.
2. PROVIDE HOUSEKEEPING PAD.
3. CONNECT SPACE HEATER IN ENCLOSURE. FEED FROM EXISTING SPARE 20A, 1 POLE BREAKER IN PANEL R1.
4. PROVIDE METER CABINET(S) AND STRUCTURE PER UTILITY COMPANY'S REQUIREMENTS.
5. SEE BATTERY CHARGING DETAIL ON SHEET E501.
6. SEE DRAWING E602 FOR WIRE AND CONDUIT SIZES.

NORTH

ELECTRICAL PLAN NORTH

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'



NORTH

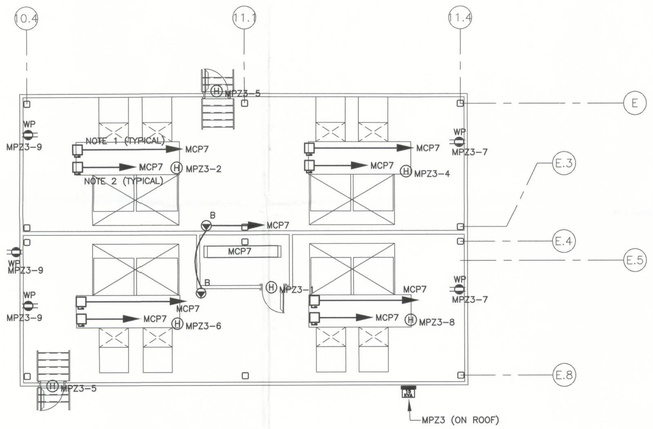
ELECTRICAL ROOF PLAN NORTH

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

NOTES:

1. SEE DRAWING E602 FOR CONDUIT AND WIRE SIZES.
2. PROVIDE INTERLOCK WIRING BETWEEN PUMPS AND IMMERSION HEATERS PER EVAPCO.
3. CONNECT TO EXISTING SPARE 20A, 1 POLE BREAKER IN PANEL R1.



NORTH

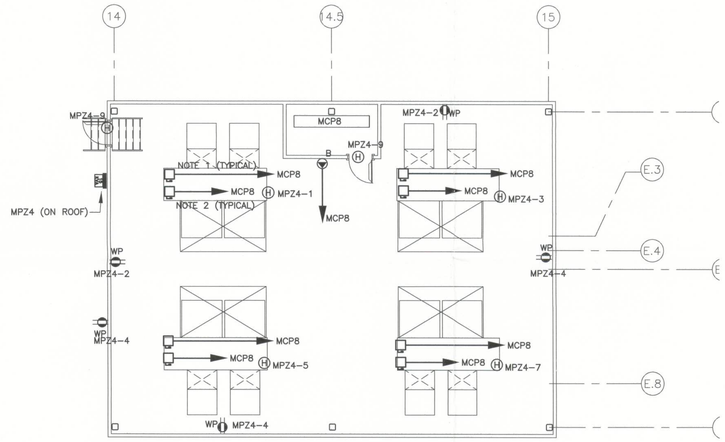
PENTHOUSE POWER PLAN

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

NOTES:

1. CONNECT FANS.
2. CONNECT DEFROST HEATER. (MULTIPLE CIRCUITS – SEE SHEET E602)
3. SEE SHEET E602 FOR CONDUIT AND WIRE SIZE.



NORTH

PENTHOUSE POWER PLAN

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

NOTES:

1. CONNECT FANS.
2. CONNECT DEFROST HEATER. (MULTIPLE CIRCUITS – SEE SHEET E602)
3. SEE SHEET E602 FOR CONDUIT AND WIRE SIZE.

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UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

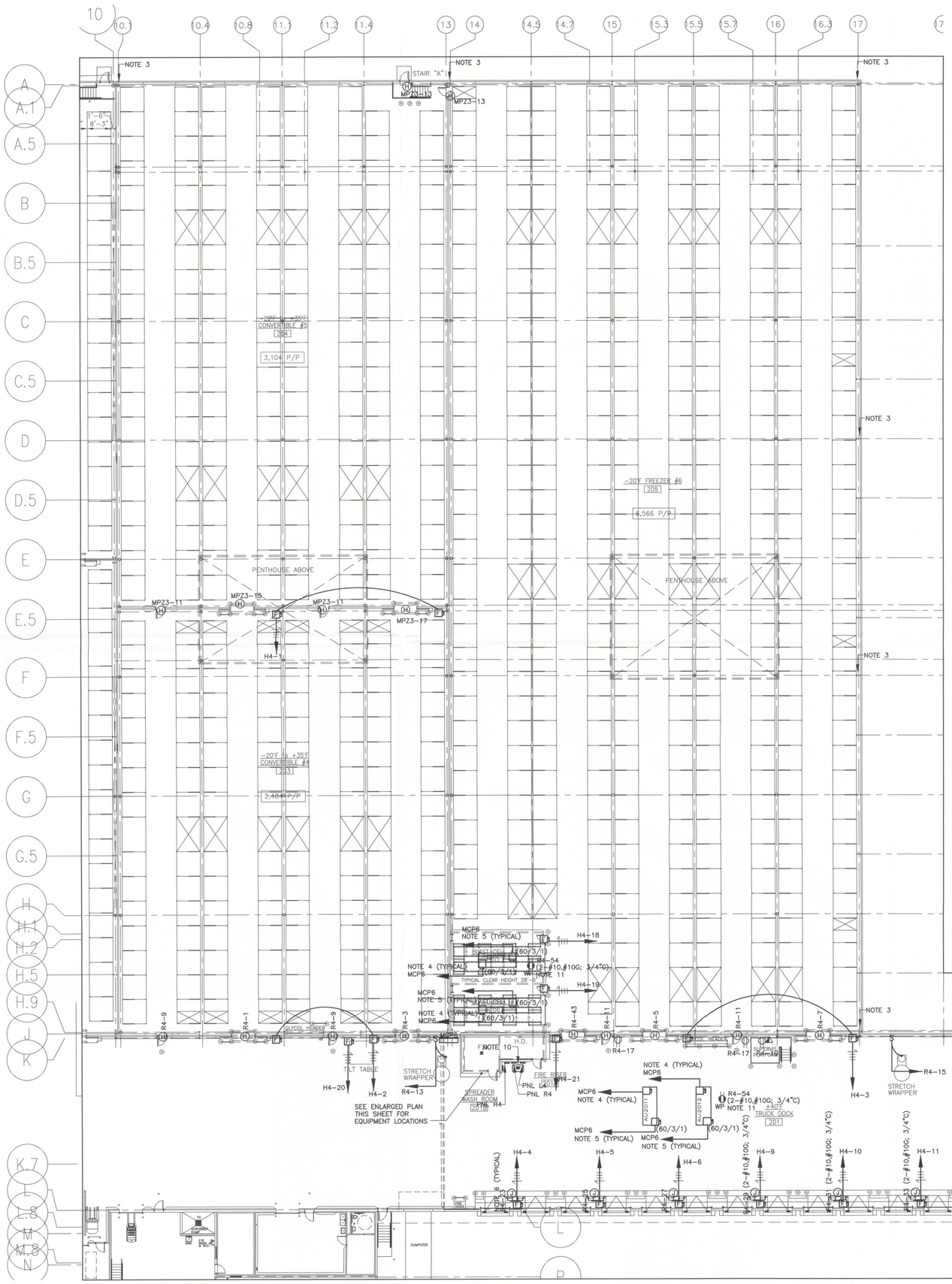
POWER PLAN
MACHINE, ROOF
MAINTENANCE
PENTHOUSES &
MEZZANINE
NORTH

REV.	DATE	BY	DESCRIPTION
A	12/19/12	JBS	PERMIT ISSUE

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: 1/8"=1'-0"

E202
DRAWING NO.

FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Vectrex\Elec\03019E203.dwg DATE: 07/02/08 TIME: 1:52 pm BY: JOEY GABRIEL



FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E201.dwg DATE: 07/02/08 TIME: 1:46 pm BY: JOEY GABRIEL

ENLARGED FIRE RISER ROOM

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

ELECTRICAL FLOOR PLAN

NORTH

SCALE: 1/16" = 1'-0"

0 4' 8' 16' 32' 48'

NOTES:

1. ALL DISCONNECTS SHOWN ARE NEMA 1 30A UON.
2. HOMERUN CIRCUITS TO SOURCE PER SHEET E602 & E603.
3. BOND FOOTING REBAR TO COLUMN STEEL PER DETAIL.
4. CONNECT FANS.
5. CONNECT DEFROST HEAT. (MULTIPLE CIRCUITS—SEE SHEET E602)
6. CONNECT RECEPTACLES AT DOCK COMMANDERS AND ABOVE DOCK DOOR.
7. CONNECT PRE—ACTION ALARM PANEL.
8. RUN 3/4" CONDUIT FROM EACH PRE—ACTION ALARM PANEL TO RCP.
9. ROUGH DOOR FOR FUTURE DOCK LOCK/LIGHT/RECEPTACLE.
10. SUSPEND TRANSFORMER AT ROOF BELOW STRUCTURAL STEEL.
11. INSTALL RECEPTACLE ON ROOF AT CONTROL GROUP.

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J. BRYAN SHAFFER
No 58168
12-19-12

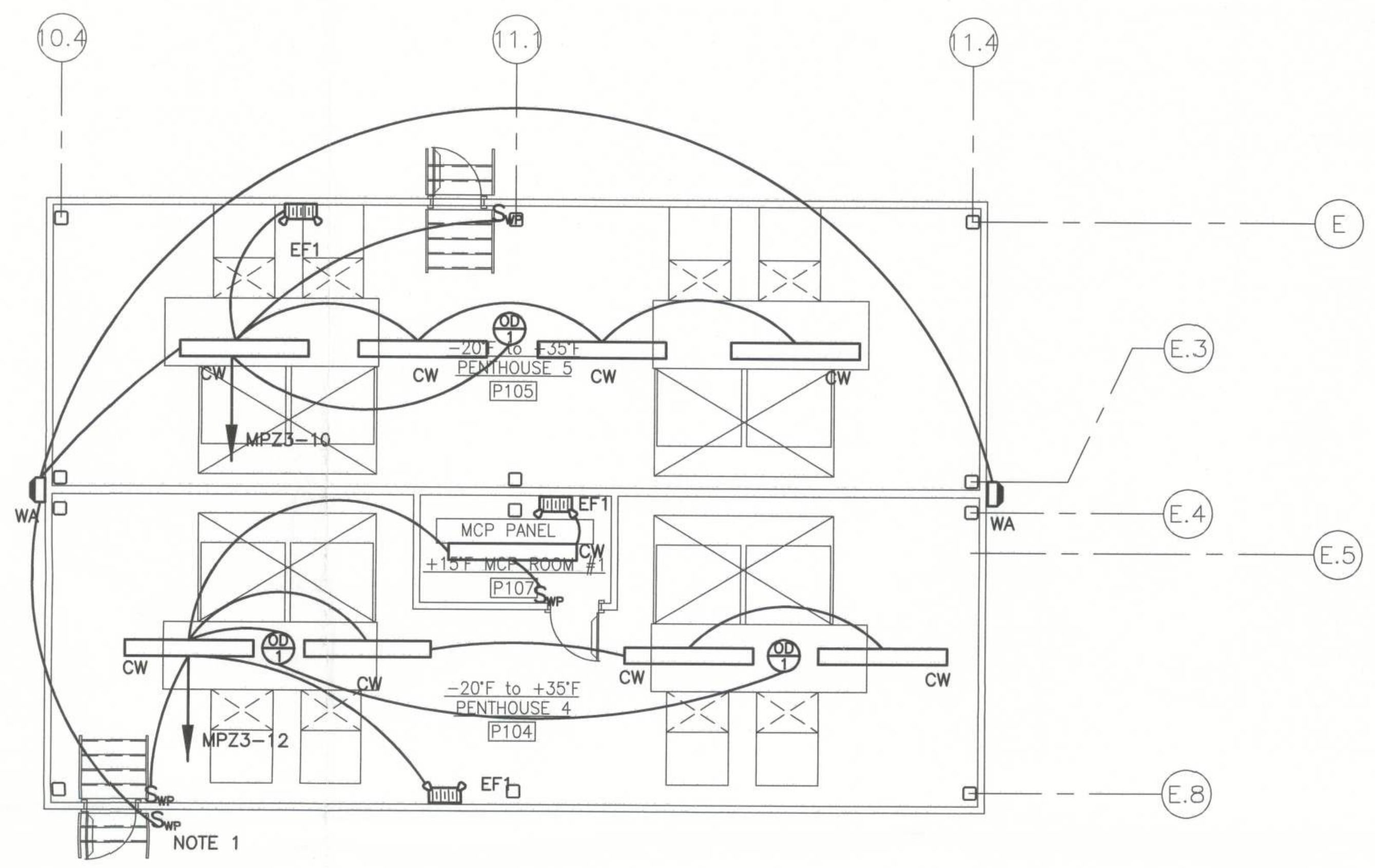
UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

POWER
PLAN
WAREHOUSE
AND DOCK

REV.	DATE	BY	DESCRIPTION
A	12/19/12	JBS	PERMIT ISSUE

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: AS NOTED

E201
DRAWING NO.



NORTH

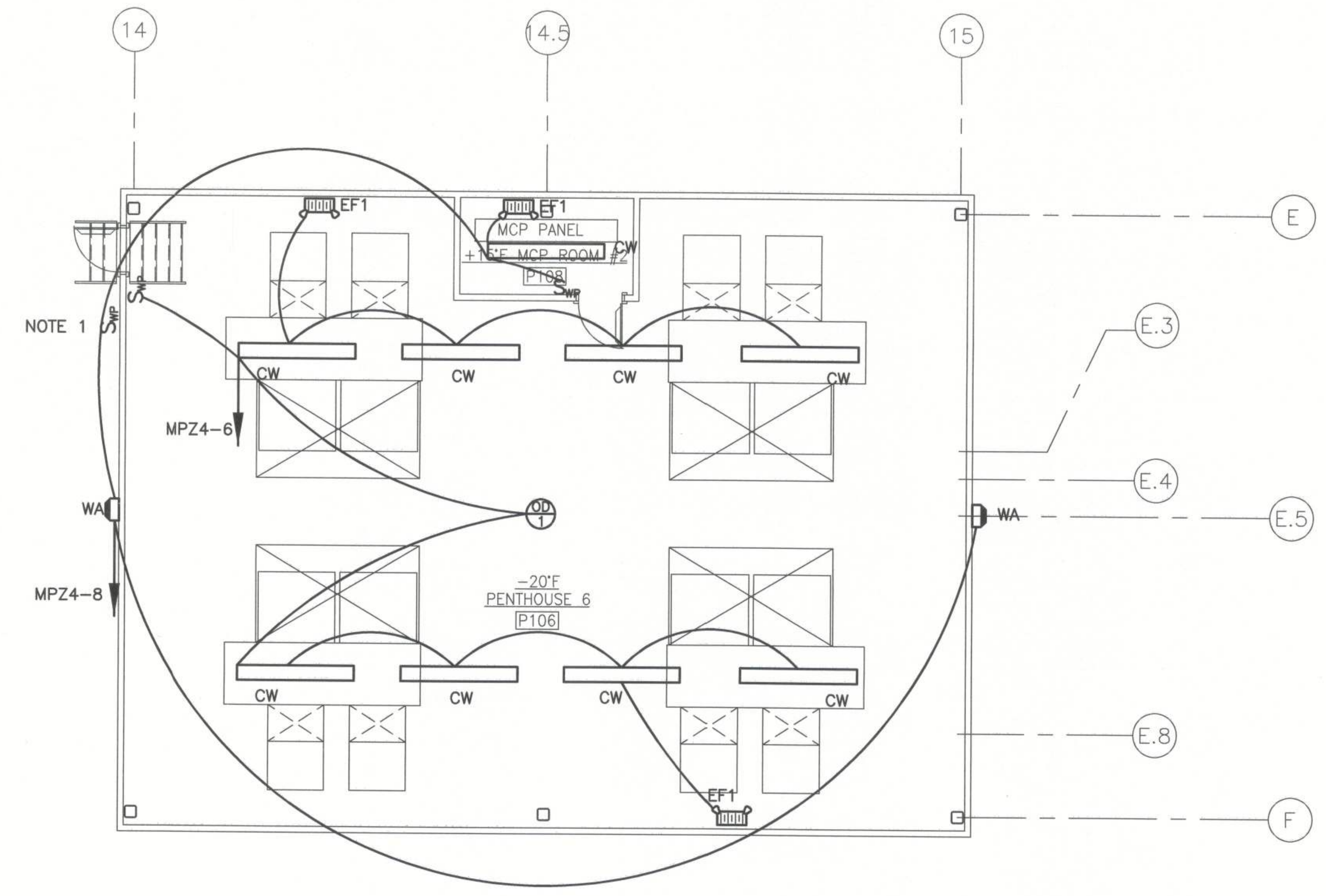
PENTHOUSE ELECTRICAL PLAN SOUTH

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

NOTES:

1. CONTRACTOR TO COORDINATE EXTERIOR SWITCH LOCATION WITH OWNER PRIOR TO INSTALLATION.



NORTH

PENTHOUSE ELECTRICAL PLAN NORTH

SCALE: 1/8" = 1'-0"

0 2' 4' 8' 16' 24'

NOTES:

1. CONTRACTOR TO COORDINATE EXTERIOR SWITCH LOCATION WITH OWNER PRIOR TO INSTALLATION.

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UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

LIGHTING PLAN
PENTHOUSES

REV.	DATE	BY	DESCRIPTION
A	12/9/12	JBS	PERMIT ISSUE

JOB NO. 710-04224

DRAWN: JBS

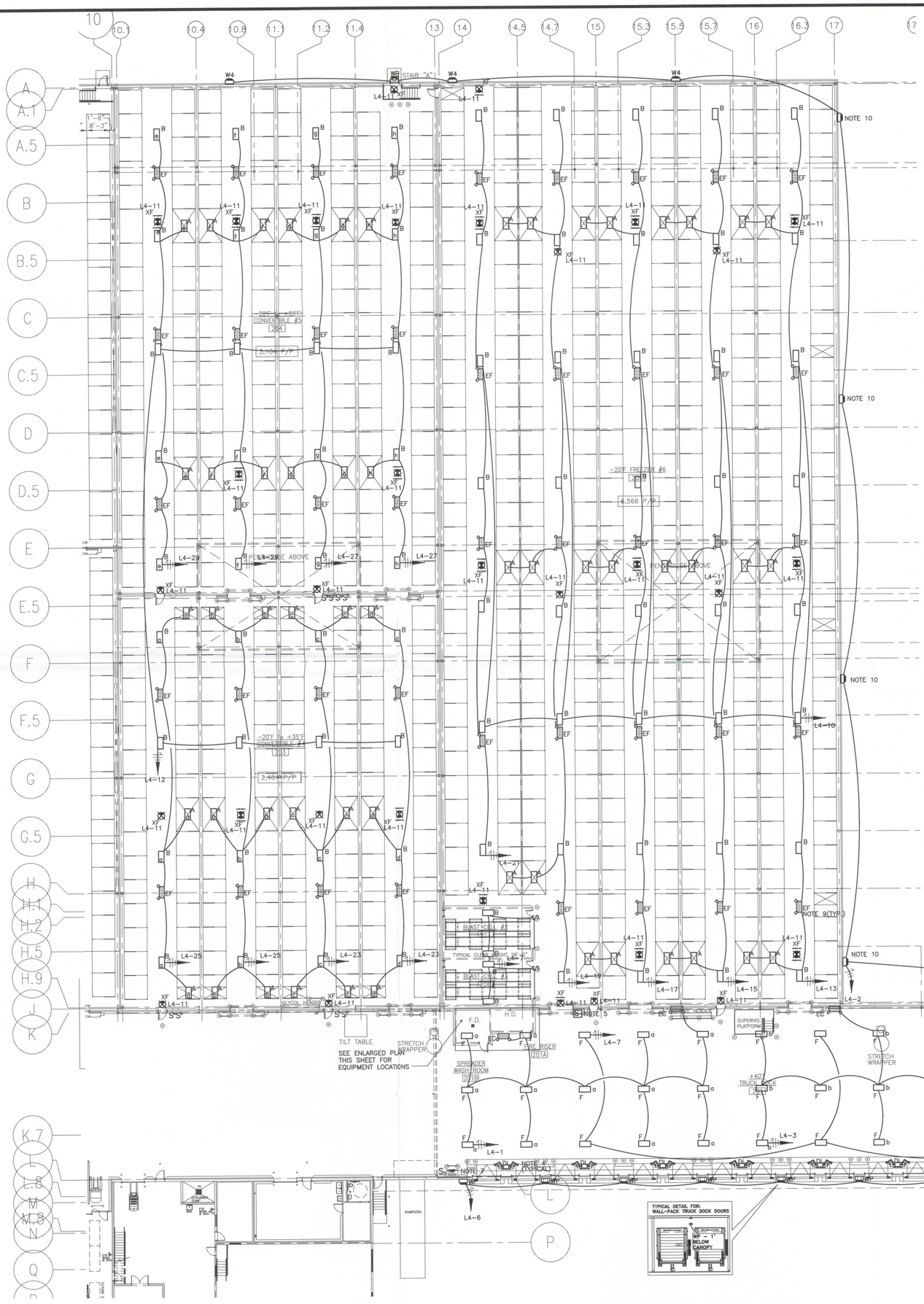
CHECKED: JBS

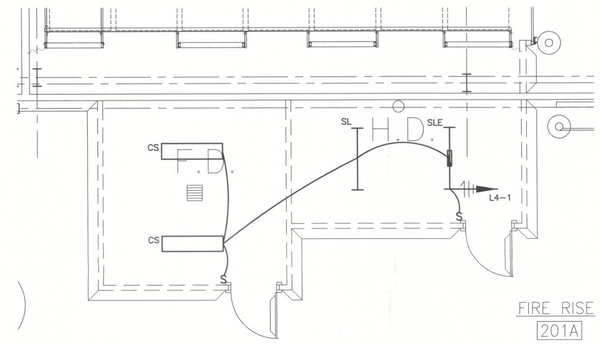
SCALE: 1/8" = 1'-0"

E102

DRAWING NO.

FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E103.dwg DATE: 07/02/08 TIME: 1:45 pm BY: JOEY GABRIEL





NORTH

ENLARGED FIRE RISER ROOM AND SPREADER WASH ROOM PLAN

SCALE: 1/4" = 1'-0"

0 1' 2' 4' 8'

NORTH

ELECTRICAL FLOOR PLAN

SCALE: 1/16" = 1'-0"

0 4' 8' 16' 32' 48'

NOTES:

1. CIRCUIT FREEZER AND CONVERTIBLE LIGHTS TO PANEL L4.
2. PROVIDE 3-WAY SWITCHES FOR DOCK LIGHTING CONTROL.
3. PROVIDE CONTACTOR AND PHOTOCELL FOR ALL EXTERIOR LIGHTING.
4. SEE DRAWING E201 FOR CIRCUITRY TO DOCK LIGHTS, MOUNT EACH LIGHT ON EITHER SIDE OF DOK-COMMANDER.
5. PROVIDE 6 POLE LIGHTING CONTACTOR AND SWITCH WITH PILOT LIGHT TO CONTROL CONTACTORS, CIRCUITS:L4-13,15,17,19,21.
6. NOT USED.
7. PROVIDE 4 POLE LIGHTING CONTACTOR AND 3-WAY SWITCH WITH PILOT LIGHT TO CONTROL CONTACTOR FROM TWO LOCATIONS: CIRCUITS L4-1,3,5, AND ONE SPARES. L4-7 IS NIGHT LIGHT CIRCUIT.
8. SECOND 3-WAY SWITCH TO CONTROL CONTACTOR IN NOTE 7.
9. PROVIDE CONSTANT HOT, UN-SWITCHED CONDUCTOR FOR EMERGENCY LIGHTING FIXTURES.
10. RELOCATE EXISTING WALLPACK FROM EXISTING EXTERIOR WALL BETWEEN FREEZER 203/204 AND 102/103.

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BRIAN P. SHAFFER
LICENSED PROFESSIONAL ENGINEER
No. 68168
STATE OF FLORIDA

UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

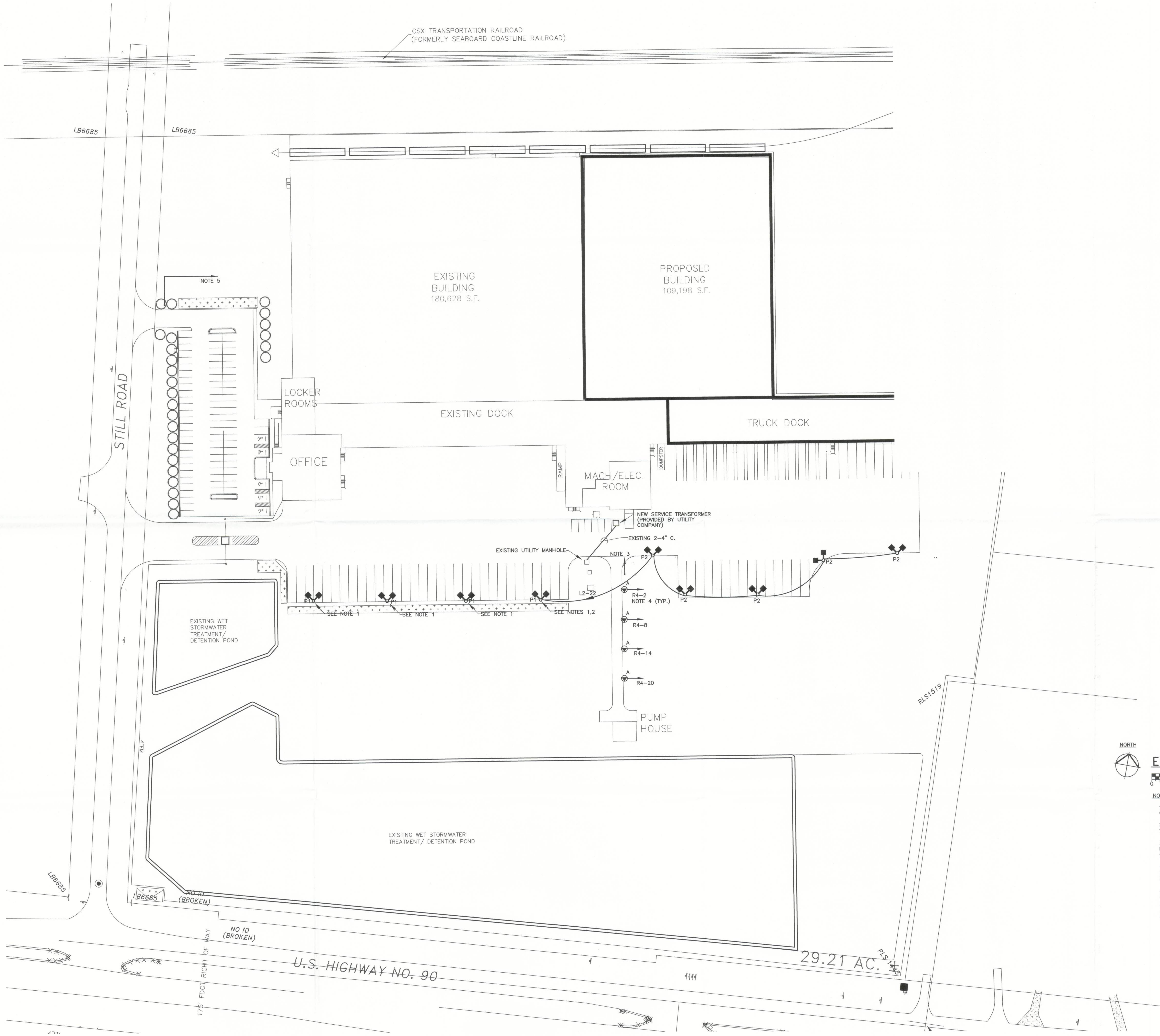
LIGHTING PLAN WAREHOUSE AND DOCK

REV.	DATE	BY	PERMIT ISSUE DESCRIPTION
A	12/17/12	JBS	

JOB NO. 710-04224
DRAWN: JBS
CHECKED: JBS
SCALE: 1/16"=1'-0"

E101
DRAWING NO.

FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E101.dwg DATE: 04/04/08 TIME: 1:33 pm BY: JOEY GABRIEL



NORTH

ELECTRICAL SITE PLAN

SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

NOTES:

1. INSTALL NEW FIXTURE AND ARM ON EXISTING POLE. CONNECT TO SAME CIRCUIT AS EXISTING FIXTURE.

2. EXTEND EXISTING CIRCUIT L2-22 FROM POLE BASE WITH (2) #8, #10G, 1" C. TO NEW POLE LIGHTS.

3. INSTALL (4) 1 1/2" C. WITH PULL STRING TO PANEL R4 FOR FUTURE ROUTE TRUCK RECEPTACLES. CAP CONDUITS BELOW GROUND AND MARK LOCATIONS.

4. INSTALL RECEPTACLE ON 4"X4" CONCRETE POST. PROVIDE 3-#4, #6G, 1" C TO PANEL. COORDINATE EXACT LOCATION IN FIELD WITH OWNER.

5. INSTALL (2) 1" CONDUITS WITH PULL STRING TO ROOMS 603/604 ON 2ND FLOOR OF OFFICE AREA (1 CONDUIT TO EACH ROOM) FOR FUTURE CARD READER AND GATE OPERATOR. STUB CONDUITS ABOVE GRADE AND CAP.

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FLORIDA ENGINEERING LICENSE NO. 5930

J. BRYAN SHAFFER LICENSE No. 58168 STATE OF FLORIDA PROFESSIONAL ENGINEER 12-19-12

UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

ELECTRICAL SITE PLAN

REV.	DATE	BY	DESCRIPTION
A	12/19/12	JBS	PERMIT ISSUE

JOB NO. 710-04224

DRAWN: JBS

CHECKED: JBS

SCALE: 1"=50'-0"

E002

DRAWING NO.

LUMINAIRE SCHEDULE

TYPE	LUMINAIRE DESCRIPTION	MANUFACTURER AND CATALOG NO. (OR APPROVED EQUAL)		INPUT DATA VOLTS	INPUT DATA WATTS	LAMP INFORMATION QTY.	LAMP INFORMATION DESCRIPTION	REFERENCE NOTES
A	1x4 LENSED LED	BEGHELLI	BS100LED–4–HT–80W–WT41–120/277–SS	277	69	NA	4100K LED INCLUDED	6
B	LED HIGHBAY	SMARTWATT	HX–2–VH–50–U2–20–4–1	277	257	NA	5000K LED INCLUDED	7,14
CW	ENLOSED FLUORESCENT COLD WEATHER	LITHONIA	DM 2 96T8 120 CW20	120	160	2	59W T8HO	–
CS	ENLOSED FLUORESCENT COLD WEATHER	LITHONIA	DM 3 32T8 277 CW20	277	95	3	32W T8 GE, 5000K LAMP	–
DL	DOCK LIGHT LED	DL MANUF.	VERSA LIGHT 450	120	58	1	LED INCLUDED –	9
EC	EMER. BATTERY W/HEADS –	LITHONIA	IND654–H2006–PREM	277	21	2	20W HALOGEN INCLUDED	2
EF	EMER. BATTERY W/HEADS WITH HEATER	LITHONIA	IND12100–H5012S–ULT–ELAINDPM	277	22	2	50W LAMPS INCLUDED	12
F	2x4 LENSED FLUORESCENT	ORION	ENF8PIDSPL–42064–PS113	277	258	8	32W T8 GE, 5000K LAMP	14
S1E	STRIP LIGHT WITH BATTERY	LITHONIA	C 2 32 GEB10IS WGCUN HC36 EL	277	64	2	32 WATT, T8 3500K	
SL	STRIP LIGHT –	LITHONIA	C 2 32 GEB10IS WGCUN HC36	277	64	2	32 WATT, T8 3500K	–
WA	WALLPACK –	LITHONIA	TWP–150S–120–SF–DWH	120	175	1	150 WATT HPS	10
WP	WALLPACK –	LITHONIA	TWP–150S–480–DF–DWH	480	175	1	150 WATT HPS	10
W4	OUTDOOR WALLPACK –	LITHONIA	TWH–400S–480–PE–DWH	480	450	1	400 WATT HPS	11
XC	EXIT LIGHT –	LITHONIA	LV S 1 R 120/277 UM ELN	277	10	1	LED INCLUDED –	2
XF	EXIT LIGHT –	LITHONIA	LV S 1 R 120/277 UM ELN CW	277	10	1	LED INCLUDED –	2
Y	CONDENSING TOWER LIGHT –	RIG A LITE	SAF–15–S–12–R5G–S1	120	165	1	150W HPS	8
P1	POLE LIGHT	LITHONIA	KVF 400PSMH ASYFL 480 RP04 EHS DWH	480	462	1	400W PSMH	5
P2	POLE LIGHT	LITHONIA	KVF 400PSMH ASYFL 480 RP04 EHS DWH	480	924	2	400W PSMH	13

LUMINAIRE SCHEDULE NOTES:

1. ALL EMERGENCY EGRESS LUMINAIRES REQUIRE AN UNSWITCHED CONNECTION. WHERE EMERGENCY EGRESS DEVICES ARE CONTAINED WITHIN NORMAL USE LUMINAIRES, PROVIDE LOCAL SWITCHING AS INDICATED ON DRAWINGS.
2. EXIT LIGHTING:
   ALL EXIT SIGNS SHALL BE MOUNTED 7'–6" A.F.F. (UON)
   ALL EGRESS LIGHTING SHALL BE MOUNTED 10'–0" A.F.F. (UON)
3. FOR MOUNTING HEIGHTS AND DETAILS NOT LISTED ON SCHEDULE, REFER TO LIGHTING DRAWINGS.
4. PROVIDE LOW TEMP OPTION IN FREEZERS.
   –
5. FIXTURE TO BE ADDED TO EXISTING POLE. PROVIDE MOUNTING HARDWARE TO ACCEPT 2ND FIXTURE.
6. VERIFY MOUNTING LOCATION AND METHOD WITH OWNER PRIOR TO INSTALLATION. FIXTURE SHALL BE MOUNTED TO BOTTOM OF RACK IN TUNNEL.
7. VERIFY FIXTURE OPTIONS WITH OWNER PRIOR TO BID.
8. SEE DETAIL ON SHEET E503.
9. MOUNT ON SIDE OF DOCK COMMANDER.
10. EXTERIOR WALL MOUNT 15'–0" AFG, UNO.
11. WALL MOUNT 30'–0" AFG.
12. SEE MOUNTING DETAIL ON SHEET E503 FOR INSTALLATION IN FREEZER AISLES.
13. POLE SHALL BE TAPERED ALUMINUM, WHITE IN COLOR. SEE DETAIL 6 ON SHEET E503. POLE SHALL COMPLY WITH STATE OF FLORIDA WIND LOAD REQUIREMENTS.
14. ALL FIXTURES INSTALLED WHERE SUBJECT TO AN AIRSTREAM SHALL BE RIGIDLY MOUNTED TO AVOID SWAYING.

FILE: T:\Jobs\03000-03099\03019 USCS_FL\Design\Active\Elec\03019E001.dwg DATE: 04/04/08 TIME: 1:29 pm BY: JOEY GABRIEL

GENERAL NOTES

1. COORDINATE FINAL LOCATIONS OF ALL MECHANICAL AND REFRIGERATION EQUIPMENT WITH THE APPROPRIATE TRADES.
2. ALL FLEXIBLE CONDUIT SHALL BE LIQUID TIGHT FLEX WITH SUITABLE FITTINGS AND SEALS.
3. CONDUIT SHALL PASS THROUGH WALLS ONLY AT 90 DEGREES AND TO BE RUN PARALLEL OR PERPENDICULAR TO BUILDING COLUMN LINES.
4. BRANCH CIRCUIT HOMERUNS SHALL BE MINIMUM #12 WIRE AND 3/4" CONDUIT. EVERY CONDUIT SHALL HAVE A GROUND WIRE (#12 MINIMUM). CONTROL WIRING SHALL USE #14 SIGNAL AND GROUND (MINIMUM).
5. ALL UNDERGROUND CONDUIT RUNS ENTERING THE BUILDING SHALL BE SEALED TO PREVENT THE ENTRANCE OF MOISTURE AND GASES.
6. ALL LIGHTING FIXTURES SHALL BE PROVIDED WITH ALL THE APPROPRIATE MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
7. PROVIDE PLASTIC ENGRAVED NAMEPLATES ON ALL PANELBOARDS (INCLUDING NAMEPLATES FOR CIRCUITS IN I–LINE PANELBOARDS), SWITCHGEAR, MOTOR CONTROL CENTERS AND TRANSFORMERS. USE THE NAMES PER THE PANEL SCHEDULES. COORDINATE IN FIELD FOR NAMEPLATES OF EQUIPMENT NOT SHOWN ON PANEL SCHEDULES. PROVIDE NAMEPLATE INFORMATION AS INDICATED IN FIELD ON AS BUILT DRAWINGS.
8. IN NO INSTANCE SHALL LIGHT FIXTURES BE LOCATED DIRECTLY OVER PIPING OR DUCTWORK. IF PIPING IS RUN DIRECTLY UNDER A SET LIGHT FIXTURE, THE LIGHT FIXTURE SHALL BE RELOCATED AT NO ADDITIONAL COST. COORDINATE WITH MECHANICAL TRADES FOR LOCATION OF MAJOR PIPE RUNS AND DUCTWORK. IN AREAS WITH HEAVY PIPE AND DUCT WORK, IT IS PERMISSABLE TO MOUNT LIGHT FIXTURES UNDERNEATH PIPING OR DUCTWORK, PROVIDED AMPLE HEAD ROOM IS AVAILABLE.
9. SEE M&M DRAWINGS FOR REFRIGERATION CONTROL. DIV. 16 CONTRACTOR SHALL INSTALL AND CONNECT ALL REMOTE CONTROL DEVICES AND PROVIDE ALL CONTROL WIRING. ALL WIRING SHALL BE IN CONDUIT.
10. ROOMS CONTAINING AMMONIA WILL NOT BE CLASSIFIED PER NEC 500–5(A) FPN NO. 4 AND ASHRAE 15. ALL ROOMS CONTAINING AMMONIA ARE EQUIPPED WITH CONTINOUS VENTILATION AND DETECTION MEANS THAT AUTOMATICALLY START PURGE FANS.
11. ALL ATTACHMENTS TO IMP WALLS SHALL USE "FAB LOCK" SCREWS.
12. EXPOSED CONDUIT BELOW 10' SHALL BE RIGID GALVANIZED, ABOVE 10' SHALL BE EMT. CONCEALED CONDUIT SHALL BE EMT OR MC CABLE (MC CABLE IN OFFICE AREAS ONLY).
13. ALL WIRING DEVICES IN INDUSTRIAL AREAS SHALL BE MOUNTED AT 42" AFF U.O.N.
14. ALL CONDUIT PENETRATIONS THROUGH WALLS OR ROOFS WITH A 10 DEGREE TEMP. DIFFERENCE SHALL BE SEALED AND INSULATED ON THE WARM SIDE.
15. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE REFRIGERATION CONTROLS SYSTEM. IN GENERAL, THE REFRIGERATION CONTRACTOR WILL PROVIDE SENSORS, CONTROL PANELS, LIQUID LEVEL CONTROLLERS AND SOLENOID VALVE OPERATORS. THE ELECTRICAL CONTRACTOR WILL INSTALL THE DEVICES AND WIRE THEM.
16. ALL UNDERGROUND CONDUIT SHALL BE OVERSIZED BY 1 TRADE SIZE.
17. ALL CONDUIT THAT RUNS BEHIND WAREHOUSE RACKS SHALL BE PROTECTED FROM PALLET IMPACT. KEEP CONDUIT PROTECTED BY ROUTING IT DIRECTLY BEHIND VERTICAL OR HORIZONTAL RACK SUPPORTS. ALSO UTILIZE STRUCTURAL STEEL GIRTS AS PROTECTION BY RUNNING BEHIND OR WITHIN THE WEB OF THE GIRT. KEEP CONDUIT AS FAR AWAY AS POSSIBLE FROM THE BACK OF THE RACKS.

ELECTRICAL

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	2 x 4 FLUORESCENT LUMINAIRE
	EMERGENCY 2 x 4 FLUORESCENT LUMINAIRE
	FLUORESCENT STRIP LUMINAIRE
	EMERGENCY FLUORESCENT STRIP LUMINAIRE
	ENCLOSED FLUORESCENT LUMINAIRE
	EMERGENCY ENCLOSED FLUORESCENT LUMINAIRE
	WALL MOUNTED FLUORESCENT LUMINAIRE
	EMERGENCY WALL MOUNTED FLUORESCENT LUMINAIRE
	RECESSED OR PENDANT MOUNTED LUMINAIRE
	EMERGENCY RECESSED OR PENDANT MOUNTED LUMINAIRE
	WALL MOUNTED LUMINAIRE
	WALL MOUNTED LUMINAIRE WITH ADJUSTABLE ARM
	POLE MOUNTED AREA LIGHT (ONE LUMINAIRE SHOWN)
	FLOOD LIGHT MOUNTING AS NOTED
	BUILDING MOUNTED WALL PACK
	EMERGENCY BATTERY PACK WITH TWO INTEGRAL LIGHTS
	EMERGENCY REMOTE SINGLE LIGHT HEAD
	EMERGENCY REMOTE DOUBLE LIGHT HEAD
	EXIT LIGHT (SINGLE, DOUBLE, WALL MOUNTED)
S	SINGLE POLE SINGLE THROW SWITCH (SPST)
S^2	DOUBLE POLE SINGLE THROW SWITCH (DPST)
S^3	THREE WAY SPST SWITCH
S^M	MOTOR RATED SWITCH (SPST UNLESS NOTED OTHERWISE)
S^D	SLIDE TYPE DIMMER SWITCH (1000W CAPACITY) LUTRON #DV–1000–WH
S 1	WALL MOUNTED INFRARED OCCUPANCY DETECTOR (800W @120V – 1200W @277V) LITHONIA LIRW OR EQUAL
S 2	WALL MOUNTED INFRARED OCCUPANCY DETECTOR BI LEVEL (800W @120V – 1200W @277V) LITHONIA LIRW–DS OR EQUAL
OD 1	CEILING MOUNTED OCCUPANCY DETECTOR – LITHONIA #LMTO H OR EQUAL. PROVIDE POWER PACKS AS REQ.
	DUPLEX RECEPTACLE WALL MOUNTED
	QUADRAPLEX RECEPTACLE WALL MOUNTED
	DUPLEX ISOLATED GROUND RECEPTACLE WALL MOUNTED
	DUPLEX RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER
	EQUIPMENT MOUNTED DUPLEX RECEPTACLE WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER AND WEATHERPROOF COVER
	FLUSH MOUNTED MULTI USE FLOOR OUTLET WITH COVER POWER, TELEPHONE AND DATA – AS SPECIFIED
	FLUSH MOUNTED FLOOR RECEPTACLE WITH COVER
AC	DUPLEX RECEPTACLE ABOVE COUNTER
A	50 AMP, 3 PH, 3W, 208 VOLT RECEPTACLE, NEMA 3R.
B	50 AMP, 3 PH, 3W, 480 VOLT RECEPTACLE, NEMA 3R.
	PROVISIONS FOR TELEP/DATA WALL OUTLET 4" SQUARE BOX WITH 3/4" CONDUIT STUB UP
AF	INFRARED CONTROLLED FLUSH VALVE SENSORS LV FOR LAVATORIES, URINALS AND TOILETS
T	CEILING MOUNTED TRANSFORMER FOR ELECTRONIC VALVE
F	CONNECT PRE–WIRED FURNITURE – 4 CIRCUITS FROM CEILING. CONCEAL CONDUIT IN COLUMN.
D	1 1/2"C. TO PRE–WIRED FURNITURE FROM CEILING. CONCEAL CONDUIT IN CEILING.
F.A.P.	FIRE ALARM PANEL
P	FIRE ALARM PULL STATION
H	FIRE ALARM HORN
AV	FIRE ALARM AUDIO/VISUAL DEVICE
V	FIRE ALARM STROBE DEVICE
SD	SMOKE DETECTOR
DSD	DUCT SMOKE DETECTOR
HD	HEAT DETECTOR
TS	TAMPER SWITCH – ELECTRICALLY SUPERVISED
FS	FLOW SWITCH – ELECTRICALLY SUPERVISED
LS	LIMIT SWITCH
SS	SELECTOR SWITCH
HOA	HAND/OFF/AUTO SELECTOR SWITCH
OA	OFF/AUTO SELECTOR SWITCH
HA	HAND/AUTO SELECTOR SWITCH
CCTV	CLOSED CIRCUIT TELEVISON CAMERA
CR	ELECTRONIC CARD READER
DL	MAGNETIC DOOR LOCK
DS	ELECTRONIC DOOR SENSOR
WS	ELECTRONIC WINDOW SENSOR
MS	ELECTRONIC MOTION SENSOR
J	JUNCTION BOX (SIZE PER N.E.C.)
H	JUNCTION BOX FOR DOOR JAMB OR CONDENSATE HEAT (SIZE PER N.E.C.)
	NON–FUSED DISCONNECT SWITCH (FRAME SIZE/# POLES/ENCLOSURE)
F	FUSED DISCONNECT SWITCH (FRAME SIZE/# POLES/FUSE SIZE/ENCLOSURE)
	COMBINATION STARTER (STARTER SIZE/# POLES/ENCLOSURE)
MSP	MOTOR STARTER PROTECTOR (GROUP MOTOR STARTING) (STARTER SIZE/# POLES/ENCLOSURE) SEIMENS PRODUCT #SML + SIZE (OR APPROVED EQUAL)
	PANELBOARD (SEE SCHEDULE FOR CONFIGURATION)
25	MOTOR – NUMBER DENOTES HORSEPOWER
PP	POWER POLE WITH 2 SECTIONS
	CONDUIT
	UNDERFLOOR/UNDERGROUND CONDUIT
	EMERGENCY OR LOW VOLTAGE CONDUIT
	BRANCH CIRCUIT HOMERUN: SEE PANELBOARD CIRCUIT FOR NUMBER OF CONDUCTORS REQUIRED

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	DISC	DISCONNECT	MSB	MAIN SWITCHBOARD
AFG	ABOVE FINISHED GRADE	EF	EXHAUST FAN	N/C	NORMALLY CLOSED
AL	ALUMINUM	EWC	ELECTRIC WATER COOLER	N/O	NORMALLY OPEN
BATT	BATTERY	FVNR	FULL VOLTAGE NON REVERSING	PNL	PANEL
CONC	CONCRETE	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	RCP	REFRIGERATION CONTROL PANEL
CONTR	CONTRACTOR	HOA	HAND OFF AUTO	T/M	THERMAL MAGNETIC
CT	CURRENT TRANSFORMER	INST	INSTANTANEOUS	TRANSF	TRANSFORMER
CPT	CONTROL POWER TRANSFORMER	MCC	MOTOR CONTROL CENTER	TYP	TYPICAL
CU	COPPER	MDP	MAIN DISTRIBUTION PANEL	UON	UNLESS OTHERWISE NOTED
				WP	WEATHERPROOF

ELECTRICAL CONTRACTOR SHALL PROVIDE COMPLETE CODE MINIMUM FIRE ALARM SYSTEM (INCLUDING SPRINKLER FLOW AND TAMPER SWITCH AND POST INDICATOR VALVE MONITORING) FOR THE BUILDING AND SITE. DEVICES INDICATED ON PLANS ARE LOCATION SUGGESTIONS ONLY FOR SOME DEVICES.

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FLORIDA ENGINEERING LICENSE NO. 5830

J. BRYAN SHAFFER LICENSE No. 58168 STATE OF FLORIDA PROFESSIONAL ENGINEER 12/19/12

UNITED STATES COLD STORAGE
PHASE II EXPANSION
LAKE CITY, FL

LEGEND NOTES & FIXTURE SCHEDULE

REV.	DATE	BY	DESCRIPTION
A	12/19/12	JBS	PERMIT ISSUE

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CHECKED: JBS
SCALE: NO SCALE

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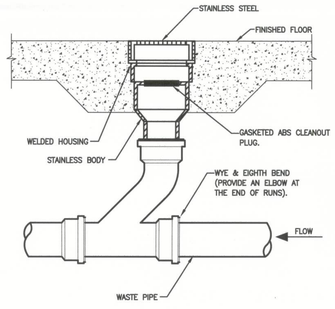

FLOOR CLEANOUT (FCO-2) 5

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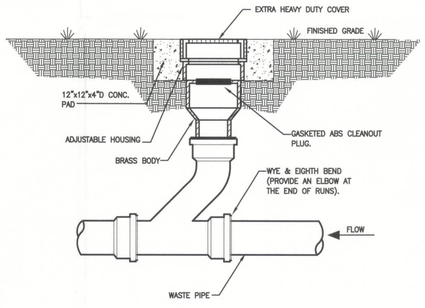

CLEANOUT ON GRADE (COOG) 4

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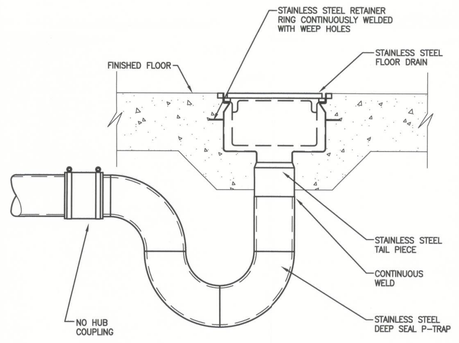

FLOOR DRAIN (FD-4) 3

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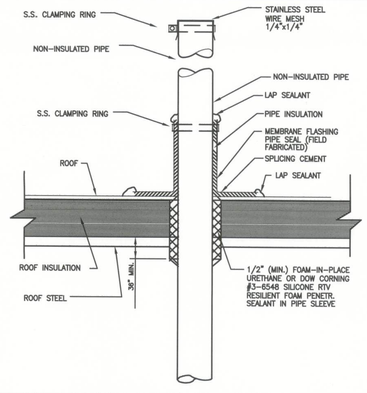
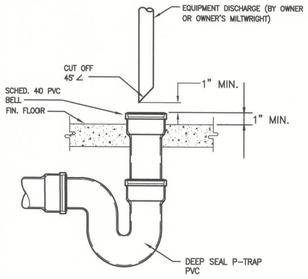


VENT THRU ROOF 2

SCALE: N.T.S.



HUB DRAIN (HD-1) 1

SCALE: N.T.S.

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UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

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FLORIDA ENGINEERING LICENSE NO. 8630

12-19-12

PLUMBING DETAILS

REV.	DATE	BY	PERMIT ISSUE DESCRIPTION
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JOB NO. PB
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CHECKED: RMB
SCALE: NONE

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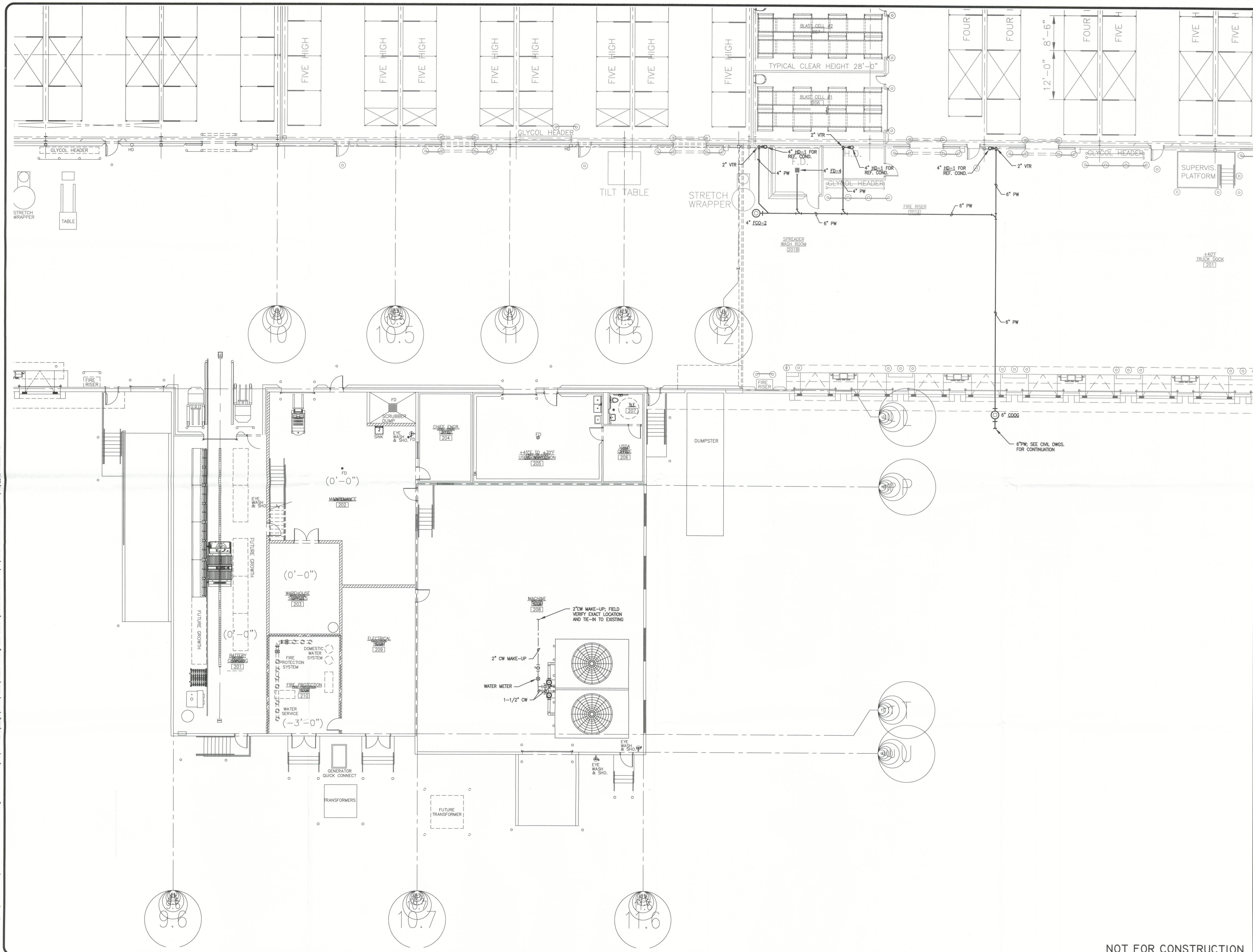

FIVE HIGH
FOUR HIGH
TYPICAL CLEAR HEIGHT 28'-0"
BLAST CELL #2
BLAST CELL #1
12'-0"
8'-6"
GLYCOL HEADER
TILT TABLE
STRETCH WRAPPER
TABLE
SUPERVIS. PLATFORM
2" VTR
4" HD-1 FOR REF. COND.
4" PW
4" FD-4
6" PW
4" FCO-2
FIRE RISER 201A
SPREADER WASH ROOM 201B
+40°F TRUCK DOCK 201
10
10.5
11
11.5
12
FIRE RISER
6" COOG
6"PW; SEE CIVIL DWGS. FOR CONTINUATION
DUMPSTER
SCRUBBER DUMP
SINK
EYE WASH & SHO.
CHIEF ENGR. OFFICE 204
+45°F TO +70°F 205
USDA OFFICE 206
TLT 207
MAINTENANCE 202
(0'-0")
FUTURE GROWTH
WAREHOUSE SUPPLIES 203
BATTERY CHARGING 201
ELECTRICAL ROOM 209
DOMESTIC WATER SYSTEM
FIRE PROTECTION SYSTEM
FIRE PROTECTION ROOM 210
WATER SERVICE
(-3'-0")
MACHINE ROOM 208
2"CW MAKE-UP; FIELD VERIFY EXACT LOCATION AND TIE-IN TO EXISTING
2" CW MAKE-UP
WATER METER
1-1/2" CW
GENERATOR QUICK CONNECT
TRANSFORMERS
FUTURE TRANSFORMER
9.6
10.7
11.6

Filename: T:\Jobs\04200-04299\04224 United States Cold Storage Phase II Facility Expansion_FL\Design\Active\Plumb\04224P101.dwg Last Saved By: JBURDON Date: 12/19/2012 3:47:50 PM Plotted: 12/19/2012 3:58:21 PM

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UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

ENLARGED SANITARY & PROCESS PIPING FLOOR PLAN

REV.	DATE	BY	DESCRIPTION
A	12-19-12	JPB	PERMIT ISSUE

JOB NO.: PB
DRAWN: JPB
CHECKED: RMB
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION

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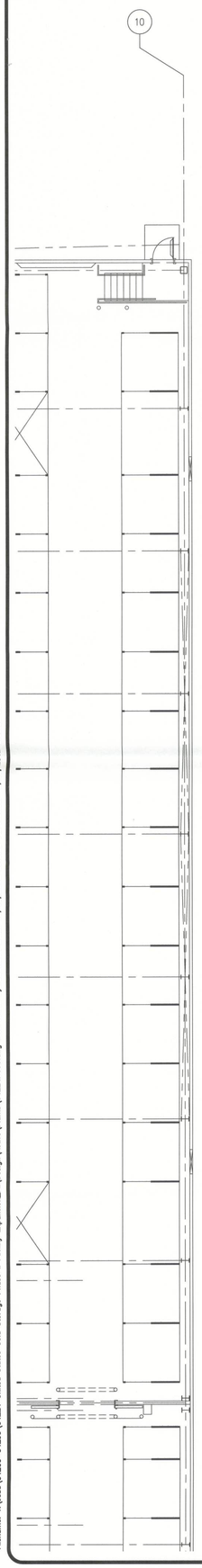

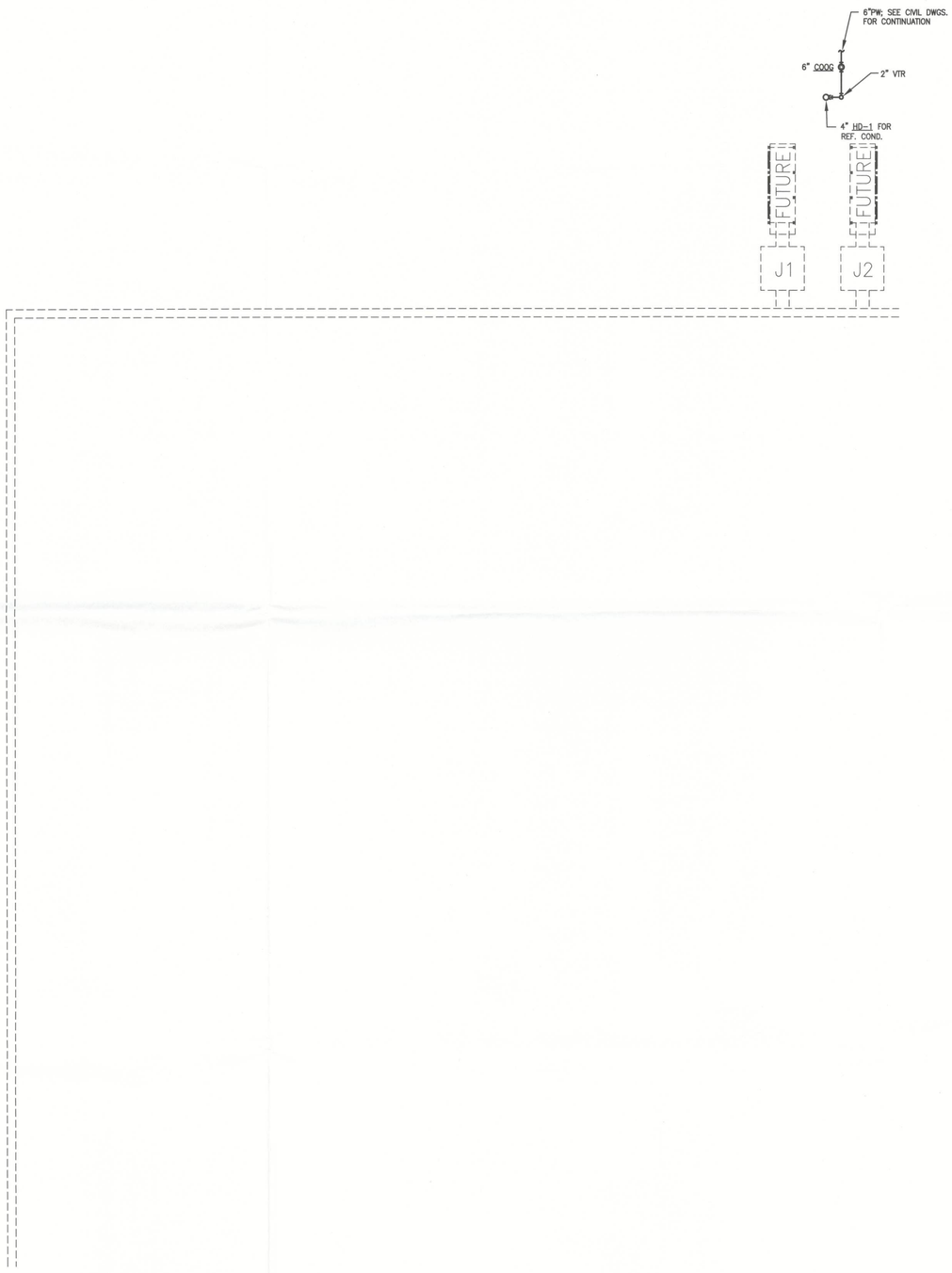

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FLORIDA ENGINEERING LICENSE NO. 9350

12-19-12

UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

ENLARGED SANITARY & PROCESS PIPING FLOOR PLAN

REV.	DATE	BY	DESCRIPTION
A	12-19-12	ELE	PERMIT ISSUE

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P100
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1.1 SCOPE

1.1.1 THE NOTES, TOGETHER WITH OTHER PROJECT SPECIFICATIONS REFERENCED HEREIN, PIPING DRAWING, AND DIAGRAMS (P&ID), ESTABLISH THE REQUIREMENTS FOR FIELD FABRICATION, ERECTION, EXAMINATION, INSPECTION & TESTING, CLEANING & FLUSHING OF PIPING SYSTEMS AND THEIR COMPONENTS FOR SPECIFIC SERVICES.

1.1.2 INTENT IS NOT TO SUBSTITUTE THE CODES AND STANDARDS REFERENCED, BUT TO SUPPLEMENT, AMEND OR LIMIT THEM AS REQUIRED.

1.1.3 THE PIPING MATERIAL SPECIFICATION, PIPING AND INSTRUMENT DIAGRAMS, AND SERVICE INDEX ARE TO BE USED FOR SPECIFIC SERVICES

1.2 CODES AND STANDARDS

1.2.1 ALL PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS AND ADDENDA OF THE APPLICABLE CODES AND STANDARDS LISTED BELOW:

ANSI – AMERICAN NATIONAL STANDARD INSTITUTION
ASTM – AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASME – AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AWWA – AMERICAN WATER WORKS ASSOCIATION
MSS – MANUFACTURER STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY
3–A – SANITARY STANDARDS, INTERNATIONAL ASSOCIATION OF MILK, FOOD AND
– ENVIRONMENTAL SANITARIANS, INC.
AWS – AMERICAN WELDING SOCIETY

1.2.2 PIPING SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
ASTM–B31.7 – UNFIRED PRESSURE VESSEL CODE
ASTM–B31.1 – POWER PIPING (GENERAL PIPING)
ASTM–B31.3 – PROCESS PIPING
ASTM–B31.5 – REFRIGERATION PIPING (REFRIGERATION SYSTEM)
ASTM–B31.4 – FUEL PIPING
ASTM–B31.9 – SERVICE PIPING
3–A – SANITARY STANDARDS, MILK AND FOOD PRODUCTS

1.2.3 UNLESS OTHERWISE NOTED, ALL UNDERGROUND FERROUS (CAST IRON & BLACK STEEL) PIPES SHALL BE COATED AND/OR WRAPPED IN ACCORDANCE WITH THE STANDARD OF AWWA C–203.

1.2.4 ALL STEEL BUTT–WELDING FITTINGS SHALL CONFORM DIMENSIONALLY TO ANSI B16.9, WITH WALL THICKNESS AT LEAST EQUAL TO THAT OF THE PIPE. WHERE THE FITTING IS HEAVIER THAN THE PIPE, INDICATING WELDING ALIGNMENT TO ANSI CODE IS NOT POSSIBLE, ENDS OF FITTINGS SHALL BE BEVELED TO MEET CODE REQUIREMENTS.

1.2.5 PIPE IN SIZES 48" AND SMALLER SHALL CONFORM DIMENSIONALLY TO ANSI B36.10 FOR CARBON STEEL. PIPE WALL THICKNESS SHALL BE AS INDICATED IN THE PIPING MATERIAL SPECIFICATIONS.

1.2.6 ALL STEEL SCREWED AND SOCKET WELDING FITTINGS SHALL CONFORM TO ANSI B16.11.

2.0 PRODUCTS NOTES

2.1 MATERIALS NOTES

2.1.1 PIPING MATERIAL SPECIFICATIONS WILL BE USED AS ASSIGNED ON THE DRAWINGS AND SPECIFICATIONS. ANY DEVIATIONS FROM THE PIPING MATERIAL SPECIFICATIONS WILL BE NOTED ON THE PIPING DRAWINGS.

2.1.2 MATERIALS COVERED BY THE ABOVE SPECIFICATIONS SHALL BE NEW, FREE FROM DEFECTS AND IMPERFECTIONS.

2.1.3 MATERIALS WHICH ARE NOT COVERED BY DETAILED SPECIFICATION SHALL BE STANDARD PRODUCT OF APPROVED MANUFACTURERS AND SUITABLE FOR INTENDED SERVICE.

2.1.4 FULL LENGTHS OF PIPES SHALL BE USED WHEREVER POSSIBLE. SHORT LENGTHS OF PIPES WITH COUPLINGS WILL NOT BE PERMITTED.

2.1.5 LONG RADIUS WELD ELLS SHALL BE USED WHEREVER POSSIBLE. SHORT RADIUS ELLS WILL NOT BE USED UNLESS A WRITTEN APPROVAL IS SECURED FROM ENGINEER.

2.1.6 THE VALVE TYPE: GATE, GLOBE, CHECK, BUTTERFLY, BALL, ETC., SHALL BE AS INDICATED ON PIPING AND INSTRUMENT DIAGRAMS OR PER THE VALVE SPECIFICATIONS FOR SERVICE & FUNCTION. VALVE MATERIALS AND END CONNECTIONS SHALL BE PROVIDED AS SPECIFIED IN PIPING MATERIAL SPECIFICATION.

2.1.7 SHUTOFF VALVES ON BOTH SIDES OF A CONTROL VALVE AND THE BY–PASS VALVE SHALL TAKE THE SAME SPECIFICATION AS THE LINE WITH THE HIGHEST RATING.

2.1.8 VALVE TRIM MATERIAL SHALL BE MANUFACTURER'S STANDARD FOR SERVICE SPECIFIED.

2.1.9 VALVES REQUIRING SPECIAL TRIM OR OTHER FEATURES NOT IN AGREEMENT WITH THE PIPING MATERIAL SPECIFICATION WILL BE NOTED ON THE PIPING AND INSTRUMENT DIAGRAMS.

2.1.10 WHERE A VENT LINE, DRAIN LINE, ETC. CONNECTS TO A PROCESS LINE THAT HAS SPECIAL TRIM VALVES, ALL VALVES IN THE CONNECTING LINE SHALL HAVE THE SPECIAL TRIM.

2.1.11 CHAIN WHEELS OR EXTENSION STEMS SHALL BE PROVIDED FOR VALVE USED IN NORMAL PLANT OPERATION WHEN BOTTOM HAND WHEEL IS IN EXCESS OF 7'–0" ABOVE NORMAL WORKING LEVEL. CHAIN WHEELS OR EXTENSION STEMS MAY BE BUT ARE NOT NECESSARILY SHOWN ON PIPING DRAWING, BUT ARE REQUIRED.

2.1.12 GEAR OPERATORS SHALL BE CONSIDERED FOR VALVES, ONLY WHEN FREQUENT OR RAPID OPERATION IS REQUIRED UNDER UNIT OPERATIONS. GEAR OPERATORS WILL BE REQUIRED FOR BLOCK VALVES LARGER THAN 10"ø.

2.1.13 A MANUFACTURER'S NAME AND FIGURE NUMBER SHOWN IN PIPING MATERIAL SPECIFICATION DOES NOT REPRESENT A PREFERENCE. THE INTENT IS TO INDICATE QUALITY, DESIGN, MATERIALS, AND CONSTRUCTION REQUIRED. EQUIVALENT ITEMS NOT SPECIFIED BY NAME / MODEL SHALL BE SUBMITTED FOR APPROVAL.

2.1.14 PRESSURE AND TEMPERATURE LIMITS FOR VALVES WITH NONMETALLIC SEATING OR LINING MATERIALS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION FOR INTENDED SERVICE.

2.1.15 STEEL OR STAINLESS STEEL FLANGES AGAINST 125 LBS. CAST IRON FLANGES SHALL BE FLAT FACE.

2.1.16 GASKET FOR FLAT FACE FLANGES SHALL BE OF THE FLAT FACE TYPE.

2.1.17 WHERE VALVE LININGS EXTEND OVER FLANGE FACING, NO GASKET IS REQUIRED.

2.2 WELDING.

2.2.1 WELDING PROCEDURES, WELDERS, AND WELDING OPERATORS SHALL BE QUALIFIED IN ACCORDANCE WITH THE ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX AND APPLICABLE ASTM B31 CODE FOR PRESSURE PIPING.

2.2.2 ALL WELDING PROCEDURES AND WELDERS SHALL BE QUALIFIED IN COMPLIANCE WITH STANDARD WELDING PROCEDURE QUALIFICATION TEST AND WELDER QUALIFICATION TEST FOR PIPE WELDING.

2.2.3 BUTT–WELDING ENDS SHALL BE PREPARED FOR WELDING ACCORDING TO THE APPLICABLE ASTM B31 CODE. BUTT WELDS MADE IN THE EFFECTIVE STRAIGHT RUN OF PIPE, BOTH UP AND DOWNSTREAM OF ANY MEASURING DEVICE SHALL BE GROUND FLUSH WITH THE INSIDE PIPE DIAMETER. THE GROUND JOINTS SHALL BE INSPECTED AND APPROVED BY A FIELD REPRESENTIVE PRIOR TO FURTHER FABRICATION OR INSTALLATION.

2.2.4 ALL PIPE ENDS SHALL BE SQUARE AND SMOOTH PRIOR TO WELDING. ALL CHAMFERING SHALL BE DONE BY MACHINING, GRINDING OR FLAME CUTTING.

2.2.5 WELDING SHALL NOT BE USED TO JOIN DISSIMILAR METALS. ALL SUCH JOINTS SHALL BE FLANGED OR THREADED ACCORDING TO THE PIPING MATERIAL SPECIFICATION. DIELECTRIC FITTINGS OR FLANGES SHALL BE UTILIZED.

2.2.6 TACK WELDS SHALL BE MADE BY QUALIFIED WELDERS. TACK WELDS WHICH ARE NOT REMOVED, WILL BE MADE WITH AN ELECTRODE WHICH IS THE SAME AS THE ELECTRODE TO BE USED FOR THE FIRST PASS. TACK WELDS WHICH HAVE CRACKED WILL BE REMOVED.

2.2.7 ALL COMPONENTS (PIPES, FITTINGS, FLANGES AND VALVES) SHALL BE FITTED UP AND RESTRAINED TO ENSURE THAT THE ROOT GAP IS MAINTAINED AT A CLEARANCE OF MINIMUM OF 1/16" AND MAXIMUM OF 1/8" FOR STEEL BUTT WELDING ENDS.

2.2.8 WELDED CONNECTIONS SHALL BE MADE WITH FULL PENETRATION WELDS. BRANCH PIPE REINFORCEMENT WELDING JOINTS SHALL HAVE A MINIMUM THROAT FILLET WELD EQUAL TO THE THICKNESS OF THE THINNER MATERIALS BEING JOINED.

2.2.9 ALIGNMENT: THE INSIDE DIAMETER OF PIPING COMPONENTS TO BE JOINED SHALL BE ALIGNED AS ACCURATELY AS IS PRACTICABLE WITHIN EXISTING TOLERANCES OF DIAMETERS, WALL THICKNESS, AND OUT OF ROUNDNESS. ALIGNMENT SHALL BE PRESERVED DURING WELDING. WHERE ENDS ARE JOINED AND THE INTERNAL MISALIGNMENT EXCEEDS 1/16", IT IS PREFERRED THAT THE COMPONENT WITH THE WALL EXTENDING INTERNAL BE INTERNALLY TRIMMED SO THAT ADJOINING INTERNAL SURFACES ARE APPROXIMATELY FLUSHED. HOWEVER TRIMMING SHALL NOT RESULT IN PIPING COMPONENT WALL THICKNESS LESS THAN MINIMUM DESIGN THICKNESS AND THE CHANGE IN CONTOUR SHALL NOT EXCEED 30°.

2.2.10 NO WELDING SHALL BE DONE IF THERE IS IMPINGEMENT OF ANY RAIN, OR HIGH WINDS ON THE WELD AREAS EXCEPT WHEN SUITABLE PROTECTION OR EFFECTIVE SHIELD AGAINST THE RAIN OR WIND IS PROVIDED.

2.2.11 SPECIAL PRECAUTIONS SHALL BE TAKEN AT ALL TIMES DURING FABRICATION AND ERECTION TO PREVENT ENTRANCE OF ANY FOREIGN MATTER INTO PIPING OR EQUIPMENT. LOOSE RUST, SLAG, WELD SPATTER, DIRT, OIL, GREASE AND OTHER FOREIGN SUBSTANCES SHALL BE REMOVED FROM INTERIOR SURFACES OF PIPING PRIOR TO CONNECTING PIPING TO EQUIPMENT. PRIOR TO FABRICATION IN SHOP OR FIELD, ALL SURFACES FOR WELDING SHALL BE CLEANED TO BRIGHT METAL AND FREE OF PAINT, OIL, RUST OR OTHER FOREIGN MATTER FOR A DISTANCE OF AT LEAST 2 TIMES THE NOMINAL DIAMETER FROM THE JOINT. AFTER FABRICATION OPEN ENDS OF PIPE LINES SHALL BE CAPPED OR PLUGGED TO KEEP OUT DIRT AND OTHER MATERIALS UNTIL PIPE LINES ARE CONNECTED TO EQUIPMENT.

2.2.12 COMPLETED PIPING SHALL BE CLEANED WITH AIR, STEAM AND WATER FLUSHED TO SATISFACTION OF OWNER, ENGINEER, AND THIRD PARTY REPRESENTATIVE BEFORE FINAL CONNECTION TO EQUIPMENT. AFTER COMPLETION OF ANY TESTING WHERE NON–POTABLE SOLUTIONS ARE USED, ALL PARTS OF INSTALLATIONS SHALL BE THOROUGHLY CLEANED.

2.2.13 PROTECT ROOF MEMBRANE WHEN WELDING ON THE ROOF. DAMAGE TO THE ROOF MEMEBRANE WILL BE REPAIRED BY THE ROOFING CONTRACTOR AT THIS CONTRACTORS EXPENSE.

2.3.1 FLANGED JOINTS SHALL BE ARRANGED SO THAT IT IS NOT NECESSARY TO UNDULY STRAIN THE ASSOCIATED PIPE OR EQUIPMENT TO DISMANTLE THE JOINT.

2.3.2 ALL FLANGE JOINTS SHALL BE MADE PERFECTLY SQUARE AND TIGHT WITH THE BOLT HOLES ALIGNED SO THAT THERE IS NO BOLT BINDING. FLANGES SHALL NOT BE ALIGNED BY FORCING OR SPRINGING.

2.3.3 FLANGE BOLTING ARRANGEMENTS SHALL BE MADE SO THAT THE BOLTS HOLES STRADDLE THE CENTERLINE OF THE PIPE.

2.3.4 ALL BOLT HOLES SHALL BE FITTED WITH LOCKING WASHERS AND SHALL SHOW A MINIMUM OF TWO COMPLETE THREADS BEYOND THE NUT AFTER TIGHTENING.

2.3.5 DURING ASSEMBLY, ALL BOLTS SHALL BE COATED WITH AN APPROVED ANTI–SEIZE COMPOUND AND FITTED WITH SPRING WASHERS OR A SIMILAR LOCKING DEVICE.

2.3.6 AFTER ASSEMBLY, ALL FLANGED JOINTS SHALL BE DEGREASED AND RE–PAINTED WITH PRIMER.

2.4 THREADED JOINTS

2.4.1 THE PIPE ASSEMBLY SHALL BE ARRANGED SO THAT:

ALL JOINTS MAY BE DISMANTLED FOR MAINTENANCE WITHOUT FORCING OR SPRINGING THE PIPING.

THERE IS ADEQUATE SPACE AROUND THE JOINT TO USE APPROPRIATE TOOLS TO ENSURE THAT THE JOINT IS PROPERLY MADE.

2.4.2 THE THREAD SHALL BE MADE WITH UNIFORM TAPERED THREADS PROPERLY CUT WITH SHARP, CLEAN DIES.

BEFORE ASSEMBLY:

THE CUT THREAD SHALL BE DEGREASED TO REMOVE CUTTING LUBRICANT.
THE INSIDE OF THE PIPE SHALL BE THOROUGHLY CLEANED OF ALL BURRS OR FOREIGN MATERIAL.

2.4.3 DURING ASSEMBLY, THE JOINT SHALL BE MADE PERFECTLY TIGHT WITH AN APPROVED FOOD GRADE SEALANT. UNION TYPE COUPLINGS SHALL BE COATED WITH AN APPROVED TYPE OF ANTI–SEIZE COMPOUND. TEFLON TAPE OR ANY DERIVATIVE IS NOT ACCEPTABLE.

2.4.4 AFTER ASSEMBLY, ALL THREADED JOINTS SHALL BE DEGREASED AND RE–PAINTED WITH PRIMER IN ACCORDANCE WITH THE SPECIFICATION FOR PIPING AND EQUIPMENT PAINTING.

3.0 EXECUTION

3.1 PREPARATION

3.1.1 CONTRACTOR SHALL CAREFULLY CHECK AND BECOME FAMILIAR WITH THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS AND DETAILS AND MAKE NOTE OF ALL LOCATIONS WHERE WALLS, PARTITIONS, CEILINGS, STRUCTURAL MEMBERS, ETC. ARE CALLED FOR TO BE FURRED OR CLOSED IN.

3.1.2 MODIFICATIONS TO THE ARRANGEMENT OF PIPING SYSTEMS MAY BE REQUIRED TO SUIT STRUCTURAL CONDITIONS OR TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES. CONTRACTOR SHALL FURNISH ALL OFFSETS, ADDITIONAL DETAIL FITTINGS, ETC., AS REQUIRED TO MEET THE INSTALLATION CONDITIONS WHETHER DETAILED ON THE PLANS OR NOT.

3.1.3. ANY QUESTIONABLE INFORMATION IN THE SPECIFICATIONS AND DRAWINGS, SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR CLARIFICATION BEFORE PROCEEDING WITH FABRICATION OR ERECTION OF THE PARTS AFFECTED. IF, IN THE OPINION OF THE CONTRACTOR, ANY ADDITIONAL DETAIL DRAWINGS ARE NECESSARY, THE CONTRACTOR SHALL PREPARE THEM AT HIS OWN EXPENSE, TOGETHER WITH A BILL OF MATERIALS.

3.2 INSTALLATION

3.2.1 WHENEVER PRACTICABLE, PIPING SHALL BE GROUPED AND RUN OVERHEAD. SPECIFIC ELEVATIONS SHALL BE ESTABLISHED FOR ALL PIPING RUNNING IN ANY ONE DIRECTION AND AT ANOTHER SPECIFIC ELEVATION FOR PIPING RUNNING AT RIGHT ANGLES TO PROVIDE FOR BRANCH CONNECTIONS AND CROSSING OF LINES.

3.2.2 PIPING AT PUMP NOZZLES SHALL BE ARRANGED TO PERMIT REMOVAL OF PUMP OR DRIVE WITHOUT REMOVING BLOCK VALVES.

3.2.3 PERMANENT STRAINERS SHALL BE PROVIDED AS INDICATED ON PIPING AND INSTRUMENT DIAGRAMS.

3.2.4 ALL PIPING SHALL BE ARRANGED AND ALIGNED IN ACCORDANCE WITH THE DRAWINGS. REFERENCE ELEVATIONS GIVEN WAS BASED ON PLANT BENCHMARK ELEVATION. DIMENSIONS WHERE NOTED MUST BE HELD AS CLOSELY AS POSSIBLE. ALL DIMENSIONS ARE TO BE FIELD CHECKED FOR ACCURACY BEFORE PIPE IS FABRICATED. DO NOT SCALE DRAWINGS.

3.2.5 RUN PIPING IN WALL CHASES, PIPE SHAFT, CEILINGS, RECESSES, ETC., WHERE PROVIDED.

3.2.6 DO NOT MITER PIPES TO FORM ELBOWS, NOTCHING STRAIGHT PIPE RUNS TO FORM FULL FIXED TEES OR ANY SIMILAR CONSTRUCTION METHOD.

3.2.7 BENDING OF PIPE TO FORM ELBOWS IS NOT BE PERMITTED. BENDING OF TUBING MAY BE PERMITTED PROVIDED IT HAS BEEN REVIEWED AND APPROVED BY OWNER'S ENGINEER AND:

THE BEND RADIUS IS AT LEAST 5 TIMES THE PIPE DIAMETER.

THE BEND IS FREE OF ANY FLATTENING, WRINKLING, THINNING OR DIAMETER REDUCTION.

THE ELBOWS ARE STRESS RELIEVED AFTER BENDING BY AN APPROVED HEAT TREATMENT METHOD.

3.2.8 DRAWINGS IN GENERAL ARE TO SCALE. IN ORDER TO CLARIFY THE WORK, HOWEVER, SOME OF THE PIPING MAY BE SHOWN ON THE DRAWINGS NOT TO SCALE, THE CONTRACTOR SHALL USE DIMENSIONS AND GRADES, WHERE GIVEN. ALL DIMENSIONS, SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR BEFORE FINAL CONNECTIONS ARE FABRICATED. REPORT ANY CONFLICTS TO THE ENGINEER. DO NOT SCALE DRAWINGS.

3.2.9 DRAWINGS FOR SMALL BORE PIPING ARE IN GENERAL DIAGRAMMATIC AND THE EXACT LOCATION OF THESE LINES SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD MEASUREMENTS TAKEN BY HIM. THE ACTUAL ARRANGEMENT OF THE SMALL SIZE PIPING, WHEN ERECTED, SHALL FOLLOW THE GENERAL LOCATIONS SHOWN ON THE DRAWINGS AS FAR AS PRACTICABLE. THE INSTALLATION MADE IN THIS WAY SHALL BE NEAT IN APPEARANCE AND CONVENIENT TO OPERATE, AND SHALL PROVIDE FOR PROPER EXPANSION AND DRAINAGE.

3.2.10 INSTALLATION OF PIPING SYSTEMS SHALL BE COORDINATED WITH THE OTHER WORKED / OR WITH EXISTING FACILITIES, TO AVOID BLOCKING BUILDING OPENINGS, LIGHT FIXTURES, ETC. PIPING SHALL NOT INTERFERE WITH ACCESS TO VALVES OR EQUIPMENT AND SHALL NOT OBSTRUCT PASSAGEWAYS.

3.2.11 LINES SHALL NOT BE EXTENDED BY MEANS OF DEAD END BRANCH FOR THE PURPOSE OF PROVIDING SUPPORT.

3.2.12 ALL PIPES SHALL BE CUT TO EXACT MEASUREMENT TO BE INSTALLED WITHOUT FORCING, (EXCEPT WHERE COLD SPRINGING IS SPECIFICALLY CALLED FOR). AFTER CUTTING, ENDS SHALL BE REAMED AND CLEANED TO ELIMINATE FOREIGN MATTER.

3.2.13 CUTTING OR OTHER WEAKENING OF THE BUILDING STRUCTURE TO FACILITATE PIPING INSTALLATION WILL NOT BE PERMITTED.

3.2.14 ALL PIPE PENETRATIONS THROUGH WALLS SHALL BE THROUGH A SLEEVE WHICH IS WHICH IS SEALED AND DOES NOT RESTRAIN PIPE MOVEMENT. ALL PENETRATIONS THROUGH EXTERNAL WALLS OF THE BUILDINGS SHALL BE FINISHED IN AN APPROVED MANNER.

PIPE PENETRATIONS SHALL NOT BE USED FOR SUPPORT OR RESTRAINT UNLESS THE WALL HAS BEEN SPECIFICALLY DESIGNED TO ACCEPT THE ADDITIONAL LOADS. WHERE INSULATED PIPE PASSES THROUGH THE WALLS, THE PIPE PENETRATION SHALL ENSURE CONTINUITY OF THE INSULATION AND VAPOR BARRIER.

PIPES PASSING THROUGH FIRE RATED WALLS MUST BE FIRE STOPPED IN AN APPROVED MANNER TO MAINTAIN THE INTEGRITY OF THE FIRE RATING.

3.2.15 PIPING COMPONENTS (VALVES, FITTINGS OR JOINTS) SHALL NOT BE PLACED WITHIN 12" OF ANY WALL, FLOOR CEILING PENETRATION. SUCH FITTINGS SHALL NOT BE CONCEALED WITHIN ANY WALL, FLOOR OR CEILING.

3.2.16 CLOSE NIPPLES SHALL NOT BE PERMITTED; NIPPLES WITH A SHOULDER LENGTH OF LESS THAN 1–1/2" MUST BE OF SAME SCHEDULE AS CONNECTED PIPE.

3.2.17 UNLESS OTHERWISE SHOWN ON THE DRAWINGS, INSTALL ALL SUPPLY PIPING TO COILS, PUMPS AND OTHER EQUIPMENT INCLUDING VALVES AND STRAINERS THEREIN, AT LINE SIZE. IF A REDUCTION IS REQUIRED AT A PUMP OR CONTROL VALVE, THE REDUCER SHALL BE INSTALLED ABUTTING THE INLET AND OR OUTLET OF THE PUMP VALVE.

3.2.18 USE ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS TO PREVENT POCKETING OF LIQUID OR NON–CONDENSABLES.

3.2.19 REDUCTIONS IN LINE SIZE SHALL BE MADE WITH BUTT–WELDING REDUCERS, SWAGE NIPPLES, SCREWED OR SOCKET WELD REDUCERS. DO NOT USE BUSHINGS.

3.2.20 ALL PIPE SYSTEMS SHALL BE DESIGNED FOR EXPANSION AND / OR CONTRACTION UNDER START UP, OPERATING, SHUT–DOWN, AND STEAM–OUT CONDITIONS, WITHOUT OVER–STRESSING PIPING, VALVES OR EQUIPMENT.

3.2.21 PIPE ANCHORS, GUIDES, HANGERS AND SUPPORTS SHALL BE PROVIDED AS REQUIRED AND IN ACCORDANCE WITH PIPING DRAWINGS AND PIPE SUPPORT DETAILS.

3.2.22 SANITARY PIPING AT EQUIPMENT SHALL BE ARRANGED TO FACILITATE COMPLETE AND EASY REMOVAL OF EQUIPMENT. WHERE NECESSARY, REMOVAL OF PIECES WITH UNION OF FLANGE TYPE ENDS SHALL BE INSTALLED AT EQUIPMENT NOZZLES.

3.2.23 SYSTEM COMPONENTS WHICH REQUIRE OBSERVATION OPERATION OR MAINTENANCE SUCH AS VALVES, TRAPS, GAUGES, CONTROLS, STRAINERS, DIRT POCKETS, CLEANOUTS, UNIONS AND FLANGES, ETC. SHALL BE LOCATED SO AS TO BE READILY ACCESSIBLE.

3.2.24 INSTALL ALL VALVES WITH STEMS IN EITHER AN UPRIGHT (PREFERRED) OR HORIZONTAL POSITION. CONTROL VALVES SHALL BE INSTALLED WITH TOP WORKS UPWARD UNLESS SPECIFICALLY SHOWN OTHERWISE.

3.2.25 CHECK VALVES SHALL BE INSTALLED HORIZONTALLY, OR IN A VERTICAL LINE WITH UPWARD FLOW ONLY.

3.2.26 ALL PIPING VALVES SHALL BE FREE DRAINING IN THEIR INSTALLED POSITION.

3.2.27 CLEANING THE USE OF COMPANION FLANGES IN PIPING SHALL BE LIMITED TO CONNECTIONS AT FLANGED EQUIPMENT AND DISSIMILAR METALS. FIELD JOINTS MAY BE FLANGED WHERE EXPEDIENT AND ECONOMICAL TO AVOID FIELD WELDING OF JOINT REQUIRING HEAT TREATMENT AND EXAMINATION.

3.2.28 THE LOCATION OF FLANGED JOINTS ARE SHOWN ON PIPING DRAWINGS, STRADDLE THE CENTER LINES OF PIPE UNLESS OTHERWISE SHOWN AND NOTED. EACH PIPING MATERIAL SPECIFICATION DESCRIBES THE TYPE OF FLANGES TO BE USED TOGETHER WITH THE MATERIAL, FACING ETC.

3.2.29 VENTS AND DRAINS SHALL BE PROVIDED FOR PIPING AND EQUIPMENT AS INDICATED ON PIPING AND INSTRUMENTATION DIAGRAMS AND AS REQUIRED FOR THE PURPOSE OF FILLING AND DRAINING SYSTEMS FOR TESTING, START–UP, SHUT–DOWN AND IN BY–PASS PIPING. VENTS AND DRAINS SHALL BE PROVIDED IN ADDITION TO THOSE SHOWN ON PIPING AND INSTRUMENTATION DIAGRAMS WHEN THE PHYSICAL ARRANGEMENT OF PIPING RESULTS IN HIGH AND LOW POINTS THAT CANNOT BE VENTED OR DRAINED THROUGH CONNECTION SHOWN.

3.2.30 ALL DRAINS EMPTYING INTO OPEN OUTLET SHALL BE PROVIDED.

3.2.31 PUMP CASING VENTS AND DRAINS SHALL BE PROVIDED.

3.2.32 COMPRESSIBLE FLUID CONNECTIONS SHALL BE MADE EITHER ON TOP OR SIDE OF MAIN LINE, NEVER OFF THE BOTTOM.

3.2.33 VENT, DRAIN AND SAMPLE CONNECTIONS ON PIPING SHALL BE 3/4" UNLESS OTHERWISE NOTED ON PIPING AND INSTRUMENT DIAGRAMS.

3.2.34 VENTS AND DRAINS ON ALL LINES WITH SOCKET WELD VALVES TO HAVE PIPE NIPPLE WITH ONE END PLAIN AND ONE END THREADED WITH CAP.

3.2.35 INSTRUMENT CONNECTIONS ON PIPING AND EQUIPMENT SUCH AS LOCAL MOUNTED PRESSURE AND TEMPERATURE INSTRUMENTS, GAGE GLASS AND LEVEL CONTROLS, SHALL BE ACCESSIBLE FROM GRADE, PLATFORMS OR LADDERS.

3.2.36 SEAL WELDING IS NOT PREMITTED ON SCREWED THERMOMETERS AND THERMOCOUPLES.

3.2.37 PLATFORMS SHOULD BE PROVIDED FOR ACCESS WHEN THE LOWER CONNECTIONS OF THE GAGES AND LEVEL CONTROL ON THE PROCESS TANK OR VESSEL ARE 10'–0" AND MORE ABOVE FINISHED SURFACE.

3.2.38 ALL CONTROL VALVES SHALL BE ACCESSIBLE FROM GRADE OR PERMANENT PLATFORMS AND CONVENIENTLY LOCATED FOR OPERATION.

3.2.39 RELIEF VALVES SHALL BE IN AN UPRIGHT VERTICAL POSITION. WHEN DISCHARGING TO ATMOSPHERE, PROVIDE A 3/4" DIAMETER HOLE AT LOW POINT AND CHAMFER OUTLET PIPE END AT 30 DEGREE ANGLE.

3.2.40 PRESSURE RELIEF VALVE DISCHARGING LINES, VENTING NON TOXIC, NON FLAMMABLE GASES OR MEDIA BELOW 140°F TO ATMOSHPERE, SHALL TERMINATE A MINIMUM OF 10' ABOVE ANY SERVICE PLATFORM WITHIN A RADIUS OF 40' OF THE OUTLET. FOR TOXIC AND FLAMMABLE GASES THE CONTRACTOR SHALL SUBMIT A PROPOSED ARRANGEMENT FOR APPROVAL WITH THE OWNER.

3.2.41 INSTRUMENTS (I.E. PRESSURE GAUGES, THERMOMETERS, ETC.) WHERE SHOWN ON THE DRAWINGS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. EXACT LOCATIONS SHALL CONSIDER VISIBILITY AND ANY SPECIAL INSTALLATION REQUIREMENTS, AND SHALL BE AS APPROVED BY OWNER'S REPRESENTATIVES. ANY RELOCATION REQUIRED BECAUSE CONTRACTOR FAILED TO OBTAIN APPROVAL SHALL BE DONE AT CONTRACTOR'S EXPENSE.

3.2.42 DRIP LEGS WITH STEAM TRAPS ARE TO BE PROVIDED UPSTREAM OF ALL PRESSURE REDUCING STATIONS, OR TEMPERATURE CONTROL STATIONS, AT LOW POINT OF PIPING SYSTEM AND AT THE END OF HEADERS AND MAINS.

3.2.43 INSULATION FOR ALL PIPING AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE INSULATION SPECIFICATION. NO LOOSE FIBER, WRAP TYPE, OR FIBERGLASS INSULATION SHALL BE PERMITTED ON SITE.

4.0 PIPE SUPPORTS

4.1.1 WELDING

WELDING OF PIPE SUPPORTS WHICH ARE WELDED TO THE PIPE DIRECTLY SHALL CONFORM TO THE SAME REQUIREMENTS AS FOR THE PIPE CONNECTION. ALL WELDING SHALL CONFORM TO THE STANDARD OF LATEST EDITION OF AWS.

4.1.2 FABRICATION

ALL SUPPORTS, INCLUDING ANCHOR BOLTS, SHALL BE FABRICATED TO THE DIMENSIONS AND MATERIALS CONFORMING TO PIPE SUPPORT DETAIL DRAWINGS UNLESS SPECIFIED OTHERWISE ON THE PIPING DRAWINGS. EACH SUPPORT SHALL BE FABRICATED AND ASSEMBLED SO THAT IT CANNOT BE DISENGAGED BY MOVEMENT OF THE SUPPORTED PIPING.

4.1.3 ERECTION

PIPE SUPPORTS SHALL BE PROPERLY LEVELED AND PLUMBED AS INDICATED ON PIPING DRAWINGS AND PIPE SUPPORT DETAIL SHEETS. SHIMS AND WEDGES MAY BE EMPLOYED FOR LEVELING AND ALIGNMENT OF THE SUPPORTS ON THE GRADE. RIGID TEMPORARY FRAMES OR OTHER SUITABLE DEVICES MAY BE USED SUPPORTING PIPING BEFORE INSTALLATION OF PIPE SUPPORTS. SUCH FRAMES SHALL BE RIGID SO AS NOT TO MISALIGN THE PIPING SYSTEM.

4.1.4 SUPPORTS PERMITTING PIPE MOVEMENT

SUPPORTS PERMITTING PIPE MOVEMENT SHALL BE ASSEMBLED TO ALLOW THE NECESSARY MOVEMENT OF PIPE AS CAUSED BY THERMAL EXPANSION AND CONTRACTION IN ACCORDANCE WITH THE PIPING DRAWING. REFER TO SPECIFICATIONS AND DETAILS ON DRAWINGS.

4.1.5 BRACING

THE FIRST NIPPLE AND VALVE OF SMALL CONNECTIONS INCLUDING INSTRUMENT CONNECTIONS TO PIPING, VESSEL OR EQUIPMENT SHALL BE BRACED TO PREVENT DAMAGE / BREAKAGE.

NOTE: FOR 2" AND SMALLER PIPING, ADDITIONAL PIPE SUPPORTS MAY BE REQUIRED TO IMPROVE THE STABILITY OF THE PIPING AFTER APPROVAL OF OWNER'S ENGINEER OR TO COMPLY WITH SUPPORT DETAILS REQUIRED BY THESE DOCUMENTS OR BY CODE.

5.0 QUALITY CONTROL FOR WELDING

5.1 INSPECTION AND MAINTENANCE OF WELDING MACHINE

WELDINIG MACHINES SHALL BE PERIODICALLY INSPECTED AT LEAST ONCE A MONTH.

THIS INSPECTION AND MAINTENANCE SHALL BE DONE MAINLY TO CHECK ELECTRICAL INSULATION, INTERNAL TROUBLES OF THE MACHINES, LUBRICATION, AND ADJUSTMENT OF ELECTRIC CURRENT FOR THE MACHINES.

ALL WELDING MACHINES SHALL BE NUMBERED FOR QUANTITY AND QUALITY CONTROL PURPOSE AND SHALL BE PERIODICALLY RECORDED ON A LIST SHOWING THE LOCATIONS AND CONDITIONS OF THE WELDING MACHINES BEING USED.

5.1.2 INSTALLATION

LOCATION OF WELDING MACHINES AND SWITCHBOARDS SHALL BE DECIDED IN CONSULTATION WITH OWNER TO PREVENT DISTURBING OTHER WORK AND TO PREVENT OVERLOADING OF THE SWITCH BOARDS, CABLES AND ELECTRICAL POWER SOURCES.

5.1.3 ELECTRICAL CABLES, SWITCH AND CONNECTIONS FOR WELDING MACHINES SHALL BE CAREFULLY CHECKED AND REPAIRED AT LEAST ONCE A MONTH AND BEFORE OPERATING THE WELDING MACHINES.

5.1.4 PORTABLE POWER CABLES USED WITH WELDING MACHINES SHALL BE CAREFULLY EXAMINED EVERY DAY AND REPAIRED AS NECESSARY.

5.2.1 QUALIFICATION OF WELDERS

ALL WELDING ON PIPING SHALL BE CARRIED OUT BY SUITABLY QUALIFIED WELDERS, WITH RECENT SIMILAR EXPERIENCE, WHO (MUST DOCUMENT AND COPY BE ON FILE WITH CONSTRUCTION MANAGER) HAVE PASSED AN APPROVED QUALIFICATION TEST WITHIN ONE MONTH OF COMMENCING WORK.

THE REQUIRED QUALIFICATION TESTS SHALL:

BE CARRIED OUT WITH THE MOST CRITICAL MATERIALS TO BE USED IN THE SYSTEM. TESTS ON MORE THAN ONE MATERIAL MAY BE NECESSARY.

USE WELDING METHOD APPROPRIATE FOR THE INSTALLATION.

TAKE INTO ACCOUNT WELDING POSITION IN DIFFICULT LOCATIONS.

BE APPROVED AND WITNESSED BY OWNER OR THIRD PARTY REPRESENTATIVE.

OWNER RESERVES THE RIGHT TO REJECT ANY WELDER, WHO IN THE OPINION OF OWNER OR THIRD PARTY REPRESENTATIVE, DOES NOT HAVE SUITABLE QUALIFICATIONS, EXPERIENCE OR COMPETENCE FOR THE REQUIRED WORK.

SEE SECTION 2.2.1 FOR RECOMMENDED TESTING PROCEDURE.

5.2.2 WELDER CERTIFICATES

CERTIFICATES SHALL BE GIVEN BY INSPECTION ENGINEER TO WELDERS WHO HAVE PASSED THE QUALIFICATIONS TEST. ALL WELDERS SHOULD KEEP THESE CERTIFICATES WITH THEM DURING THE WELDING WORK, SO THAT UPON REQUEST THEY CAN BE SHOWN.

5.2.3 IDENTIFICATION OF WELD

AN IDENTIFICATION NUMBER SHALL BE GIVEN TO EACH WELDER. EACH WELD SHALL BE IDENTIFIED BY THE WELDER'S IDENTIFICATION NUMBER. THIS SHALL BE MARKED ON THE WELDED SEAM OR ADJACENT PLACE UNLESS OTHERWISE ELSEWHERE, SO THAT IN THE EVENT OF FAILURE OF THE WELD TO PASS INSPECTION, THE WELD MAY BE TRACED TO THE WELDER.

6.0 TESTING

6.0.1 THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ARRANGING AND EXECUTING ALL TESTING IN ACCORDANCE WITH SECTION AND INTERPRETATION OF RESULTS, INCLUDING ALL COSTS AND ENSURING THAT THE APPROPRIATE INSPECTORS ARE PRESENT TO WITNESS THE TESTS.

AT LEAST TWO (2) WORKING DAYS NOTICE IN WRITING SHALL BE GIVEN TO OWNER OR THIRD PARTY REPRESENTATIVE OF ANY TEST TO BE DONE ON ANY PART OF THE PIPING SYSTEM.

WHERE SUCH NOTICE IS NOT GIVEN, OWNER SHALL HAVE THE RIGHT TO REQUEST THAT THE TESTS BE REPEATED AND RE–TESTING SHALL BE AT THE CONTRACTOR'S EXPENSE.

WHILE THE INTERPRETATION OF THE TEST RESULTS IS THE CONTRACTORS' RESPONSIBILITY, OWNER RESERVES THE RIGHT TO HAVE THE RESULTS INTERPRETED BY A THIRD PARTY AT THE CONTRACTORS EXPENSE.

THE CONTRACTOR SHALL PROVIDE AT NO COST, ALL FILMS AND OTHER INFORMATION TAKEN DURING SUCH TEST.

WHERE THERE IS A CONFLICT IN THE INTERPRETATION, OWNER SHALL HAVE THE OPTION TO ACCEPT EITHER INTERPRETATION OR REQUEST A RE–TEST.

6.1 WELD INSPECTION

6.1.1 WELDS ARE TO BE INSPECTED IN ACCORDANCE WITH THE EXAMINATION AND ACCEPTANCE CRITERIA OF ASME B31–3 AND B31–9.

6.1.2 LINE CHECKS BEFORE PRESSURE TEST

AFTER COMPLETION OF THE FABRICATION AND INSTALLATION WORK AND PRIOR TO PRESSURE TEST, LINE CHECK SHALL BE CARRIED OUT FOR ALL WORK TO ASSURE THAT WORK HAS BEEN PERFORMED PROPERLY AND THAT QUALITY OF WORK IS ACCEPTABLE.

CHECK POINTS:

THIS SHALL INCLUDE THE FOLLOWING CONFIRMATION OF OVERALL AND INDIVIDUAL WORKMANSHIP; IT SHALL INCLUDE, BUT NOT BE LIMITED TO, THESE ITEMS:

LINES AND COMPONENTS

PIPING LAYOUT / INSTALLATION IS IN ACCORDANCE WITH THE APPLICABLE DRAWING INCLUDING P & ID.

SIZE, DIMENSIONS, RATINGS, AND MATERIAL SPECIFICATIONS ARE IN ACCORDANCE WITH THE APPLICABLE DRAWINGS AND SPECIFICATIONS.

ELBOWS, TEES, REDUCERS AND OTHER FITTINGS ARE IN ACCORDANCE WITH THE APPLICABLE DRAWINGS.

DRAINS, VENTS, THERMAL EXPANSION REQUIREMENTS, HEADERS AND OTHER COMPONENTS ARE IN ACCORDANCE WITH APPLICABLE DRAWINGS.

7.0 PRESSURE TEST

7.1 GENERAL

7.1.1 PRESSURE TESTS SHALL BE PERFORMED IN THE PRESENCE OF OWNER OR THIRD PARTY REPRESENTATIVE

7.1.2 TEST MEDIA SHALL BE WATER EXCEPT THAT PLANT AIR, MAY BE USED IF APPROVED BY OWNER OR THIRD PARTY REPRESENTATIVE.

7.1.3 NO INSULATION SHOULD BE INSTALLED BEFORE TESTING. IF INSULATION IS APPLIED BEFORE TESTING, ALL WELDS AND SCREWED CONNECTIONS SHALL BE LEFT EXPOSED UNTIL TESTING IS COMPLETED.

7.2 EXTENT OF TEST PRESSURE

7.2.1 PIPING SYSTEM SHALL BE FULLY PRESSURE TESTED NOT ONLY FOR FIELD FABRICATED PIPING BUT ALSO FOR SHOP FABRICATED PIPING.

7.2.2 THE FOLLOWING PIPING COMPONENTS SHOULD NOT BE INCLUDED IN THE PRESSURE TEST AND SHOULD BE ISOLATED BY VALVES OR OTHER SUITABLE MEANS.

PUMPS, TURBINES AND COMPRESSORS, ASSOCIATED LUBE AND SEAL OIL SYSTEMS WHICH COULD BE IMPAIRED BY THE PRESENCE OF WATER, CONTROL VALVES, SAFETY VALVES, FLAME ARRESTERS, RUPTURE DISCS AND FILTER ELEMENTS. PRESSURE GAGES, FLOW METERS AND OTHER INSTRUMENTS AS SPECIFIED BY THE OWNER OR THIRD PARTY INSPECTOR. EXPANSION JOINTS, STEAM TRAPS. ANY OTHER EQUIPMENT DESIGNATED BY THE OWNER OR THIRD PARTY INSPECTOR.

7.2.3 LINES AND SYSTEMS WHICH ARE OPEN TO THE ATMOSPHERE, SUCH AS DRAINS, VENTS, OPEN SAFETY VALVE DISCHARGES, AND ATMOSPHERIC SEWERS, DO NOT REQUIRE PRESSURE TESTING. OTHER THAN THOSE REQUIRED BY MECHANICAL BLDG. CODE AND STATE REQUIREMENTS.

7.2.4 INSTRUMENT TAKE–OFF PIPING SHALL BE TESTED UP TO THE FIRST BLOCK VALVE WITH THE PIPING OR EQUIPMENT TO WHICH IT IS CONNECTED, EXCEPT FOR PIPING FOR PRESSURE GAUGES WHICH SHALL BE TESTED UP TO THE PIPE COUPLINGS TO BE PLUGGED BEFORE THE PRESSURE GAUGES ARE INSTALLED.

7.2.5 PIPING SHALL BE ISOLATED BY VALVES OR TEST BLINDS AT THE POINT OF JUNCTION OF TWO DESIGN CONDITIONS, WHICH HAVE DIFFERENT TEST PRESSURES.

7.3 TEST PRESSURES

SPECIFIC TESTING REQUIREMENTS AND PROCEDURES ON PIPING AND EQUIPMENT MUST BE REVIEWED AND APPROVED BY OWNER'S ENGINEER PRIOR TO START OF TESTING. IN GENERAL THE TESTS WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE ASME B–31 CODE.

7.3.1 HYDROSTATIC TEST

7.3.1.1 THE HYDROSTATICALLY TEST PRESSURE TO BE USED FOR EACH LINE SHALL BE NOT LESS THEN 1.5 TIMES THE DESIGN PRESSURE, UNLESS THE TEST PRESSURE OF THE WEAKEST ELEMENT IN THE SYSTEM BEING TESTED IS LOWER THAN THAT. TEST PRESSURE SHALL NORMALLY BE MAINTAINED FOR A 4 TO 6 HOUR PERIOD; MINIMUM TIME ALLOWABLE IS 1 HOUR.

7.4 RETEST

REPAIRS OR ADDITIONS MADE AFTER THE PRESSURE TEST, SHALL BE RETESTED HYDROSTATICALLY OR PNEUMATICALLY WITH THE APPROVAL OF THE OWNER'S ENGINEER OR THIRD PARTY REPRESENTATIVE AT CONTRACTORS EXPENSE.

8.0 RECORDS

FABRICATION DETAILS AND RESULTS OF INSPECTION OF PIPING SHALL BE RECORDED ON THE PIPING DRAWINGS AND ATTACHED INSPECTION RECORD SHEETS.

10 IDENTIFYING DEVICES AND LABELS

10.1 SUBMITTALS

A. PRODUCT DATA FOR IDENTIFICATION MATERIALS AND DEVICES
B. SAMPLES OF COLOR, LETTERING STYLE, AND OTHER GRAPHIC REPRESENTATION REQUIRED FOR EACH IDENTIFICATION MATERIAL AND DEVICE.
C. VALVE SCHEDULES: SUBMIT VALVE SCHEDULES FOR EACH PIPING SYSTEM. REPRODUCE ON STANDARD–SIZED BOND PAPER. TABULATE VALVE NUMBER, PIPING SYSTEM, SYSTEM ABBREVIATION (AS SHOWN ON TAG), LOCATION OF VALVE (ROOM OR SPACE), AND VARIATIONS FOR IDENTIFICATION MARK VALVES INTENDED FOR EMERGENCY SHUTOFF AND SIMILAR SPECIAL USES, FURNISH EXTRA COPIES (IN ADDITION TO MOUNTED COPIES) FOR MAINTENANCE MANUALS.

10.2 QUALITY ASSURANCE

A. COMPLY WITH ASME A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS AND VIEWING ANGLES OF IDENTIFICATION DEVICES.

10.3 SEQUENCING AND SCHEDULING

A. COORDINATE INSTALLATION OF IDENTIFYING DEVICES AFTER COMPLETION OF COVERING AND PAINTING WHERE DEVICES ARE APPLIED TO SURFACES. INSTALL IDENTIFYING DEVICES PRIOR TO INSTALLATION OF ACOUSTICAL CEILINGS AND SIMILAR CONCEALMENT.

10.4 EQUIPMENT NAMEPLATES

10.4.1 METAL OR ENGRAVED PLASTIC

10.4.2 NAMEPLATE PERMANENTLY FASTENED TO EQUIPMENT AND HAVING DATA ENGRAVED OR STAMPED.

10.4.3 DATA: MANUFACTURER, PRODUCT NAME, MODEL NUMBER, SERIAL NUMBER, CAPACITY, OPERATING AND POWER CHARACTERISTICS, LABELS OR TESTED COMPLIANCES, AND ESSENTIAL DATA.

10.4.4 LOCATION: AN ACCESSIBLE AND VISIBLE LOCATION

10.4.5 SUBMIT SAMPLES FOR APPROVAL

10.5 PLASTIC PIPE MARKERS: MANUFACTURERS STANDARD PRE–PRINTED, SEMI–RIGID SNAP–ON, COLOR–CODED PIPE MARKERS CONFORMING TO ASME A13.1.

10.6 PRESSURE–SENSITIVE PIPE MARKERS: MANUFACTURERS STANDARD PRE–PRINTED COLOR–CODED, PRESSURE SENSITIVE VINYL PIPE MARKERS, WITH PERMANENT ADHESIVE CONFORMING TO ASME A13.1.

10.7 PIPES SMALLER THAN 6 INCHES: FULL–BAND PIPE MARKERS, EXTENDING 360 DEGREES AROUND PIPE AT EACH LOCATION.

10.5 PLASTIC PIPE MARKERS: MANUFACTURERS STANDARD PRE–PRINTED, SEMI–RIGID SNAP–ON, COLOR–CODED PIPE MARKERS CONFORMING TO ASME A13.1.

10.6 PRESSURE–SENSITIVE PIPE MARKERS: MANUFACTURERS STANDARD PRE–PRINTED COLOR–CODED, PRESSURE SENSITIVE VINYL PIPE MARKERS, WITH PERMANENT ADHESIVE CONFORMING TO ASME A13.1.

10.7 PIPES SMALLER THAN 6 INCHES: FULL–BAND PIPE MARKERS, EXTENDING 360 DEGREES AROUND PIPE AT EACH LOCATION.

10.8 PIPES 6 INCHES AND LARGER: EITHER FULL–BAND OR STRIP–TYPE PIPE MARKERS, AT LEAST 3 TIMES THE LETTER HEIGHT AND OF LENGTH REQUIRED FOR LABEL.

10.9 LETTERING: MANUFACTURER'S STANDARD PRE–PRINTED TERMS AS SELECTED BY OWNER'S ENGINEER. MUST MATCH EXISTING.

10.10 LETTERING: USE PIPING SYSTEM TERMS AS INDICATED AND ABBREVIATE ONLY AS NESCESSARY FOR EACH APPLICATION LENGTH.

10.10.1 ARROWS: EITHER INTEGRALLY WITH PIPING SYSTEM SERVICE LETTERING (TO ACCOMOCATE BOTH DIRECTIONS), OR AS SEPERATE UNIT, ON EACH PIPEMARKER TO INDICATE DIRECTION OF FLOW.

10.11 PLASTIC TAPE: MANUFACTURER'S STANDARD COLOR–CODED, PRESSURE SENSITIVE, SELF–ADHESIVE, VINYL TAPE AT LEAST 3–MILS THICK.

10.11.1 WIDTH: 1–1/2–INCHES WIDE ON PIPES WITH OUTSIDE DIAMETER (INCLUDING INSULATION) LESS THAN 6–INCHES; 2–1/2 –INCHES WIDE FOR LARGER PIPES.

10.11.2 COLOR: COMPLY WITH ASME A13.1, EXCEPT WHERE ANOTHER COLOR SELECTION IS INDICATED.

10.12 VALVE TAGS: STAMPED OR ENGRAVED WITH 1/4–INCH LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2 INCH SEQUENCED NUMBERS DESIGNATING WHICH PORTIONS OF A PARTICULAR SYSTEM THE VALVE CONTROLS. PROVIDE A 5/32–INCH HOLE FOR FASTENER.

10.12.1 ALL MAIN AND BRANCH SHUT OFF VALVES SHALL BE TAGGED.

10.12.2 MATERIAL: 18–GAGE STAINLESS STEEL.

10.12.3 SIZE: 2–INCH DIAMETER, EXCEPT AS OTHERWISE INDICATED.

10.12.4 PROVIDE TWO TYPE WRITTEN CHARTS INDICATING THE VALVE NUMBERS TOGETHER WITH THEIR LOCATION AND USE. MOUNT THE CHARTS IN 8–1/2 –NCH BY 11–INCH VALVE SCHEDULE FRAME WITH PROVISIONS FOR MOUNTING TO THE WALL.

10.12.5 NUMBER AND METHOD OF VALVE INDENTIFICATION WILL BE PROVIDED BY OWNER'S ENGINEER.

10.13 VALVE TAG FASTENERS: STAINLESS STEEL S–HOOKS.

10.13.1 SECURELY FASTEN THE DISC TAG TO THE VALVE STEM OR HANDLE.

10.14 ACCESS PANEL MARKERS: 1/16–INCH THICK LAMINATE MARKERS, WITH ABBREVIATED TERMS AND NUMBERS CORRESPONDING TO CONCEALED VALVE. PROVIDE 1/8 INCH CENTER HOLE FOR ATTACHMENT.

10.5 EXECUTION

10.5.1 LABELING AND IDENTIFYING

10.5.1.1 INSTALL PIPE MARKERS ON EACH PIPING SYSTEM. INCLUDE ARROWS SHOWING NORMAL DIRECTION OF FLOW.

10.5.2 LOCATE PIPE MARKERS AND COLOR BANDS AS FOLLOWS WHEREVER PIPING IS EXPOSED TO FINISHED SPACES, MACHINE ROOMS, ACCESSIBLE MAINTENANCE SPACES (SHAFTS, TUNNELS, PLENUMS) AND EXTERIOR NON–CONCEALED LOCATIONS.

10.5.2.1 NEAR EACH VALVE AND CONTROL DEVICE

10.5.2.2 NEAR EACH BRANCH CONNECTION, EXCLUDING SHORT TAKE–OFFS FOR FIXTURES AND TERMINAL UNITS. MARK EACH PIPE AT BRANCH, WHERE FLOW PATTERN IS NOT OBVIOUS.

10.5.2.3 NEAR PENETRATIONS THRU WALLS, FLOORS, CEILINGS, OR ENTER NON–ACCESSIBLE ENCLOSURES.

10.5.2.4 AT ACCESS DOORS, MANHOLES, AND SIMILAR ACCESS POINTS THAT PERMIT VIEW OF CONCELED PIPING.

10.5.2.5 NEAR MAJOR EQUIPMENT ITEMS AND OTHER POINTS OF ORIGINATION AND TERMINATIONS.

10.2.5.6 SPACED AT A MAXIMUM OF 50–FEET INTERVALS ALONG EACH RUN. REDUCE INTERVALS TO 20 FEET IN CONGESTED AREAS OF PIPING AND EQUIPMENT.

10.5.2.7 ON PIPING ABOVE REMOVABLE ACOUSTICAL CEILINGS.

10.5.3 IDENTIFY PIPING AS FOLLOWS:

PIPE LINE CONTENTS	COLOR FIELD	COLOR OF LETTERS IN LEGEND
COLD WATER	GREEN	BLACK

10.5.4 SIZE PIPING IDENTIFICATION AS FOLLOWS:

OUTSIDE DIAMETER OF PIPE OR PIPE INSULATION		LENGTH OF COLOR FIELD		SIZES OF LETTERS	
INCHES	MILLIMETERS (MM)	INCHES	MILLIMETERS (MM)	INCHES	MILLIMETERS (MM)
3/4 TO 1	19 TO 32	8	200	1/2	
1–1/2 TO 2	38 TO 51	8	200	3/4	
2–1/2 TO 6	64 TO 150	12	300	1–1/4	
8 TO 12	200 TO 250	24	600	2–1/2	

10.5.5 EQUIPMENT: INSTALL ENGRAVED PLASTIC LAMINATE SIGNS OR EQUIPMENT MARKERS ON OR NEAR EACH MAJOR ITEM OF MECHANICAL EQUIPMENT. PROVIDE SIGNS FOR FOLLOWING GENERAL CATEGORIES OF EQUIPMENT.

A) ALL OWNER FURNISHED EQUIPMENT AND ACCESSORIES.
B) MAIN CONTROL AND OPERATING VALVES, INCLUDING SAFETY DEVICES AND HAZARDOUS UNITS SUCH AS GAS OUTLETS.
C) METERS, GAGES, THERMOMETERS AND SIMILAR UNITS.
D) FUEL–BURNING UNITS INCLUDING BOILERS, FURNACES, HEATERS, STILLS, AND ABSORBTION UNITS.
E) PUMPS, COMPRESSORS, CHILLERS, CONDENSERS, AND SIMILAR MOTOR–DRIVEN UNITS.
F) HEAT EXCHANGERS, COILS, EVAPORATORS, COOLING TOWERS, HEAT RECOVERY UNITS, AND SIMILAR EQUIPMENT.
G) FANS, BLOWERS, PRIMARY BALANCING DAMPERS, AND MIXING BOXES.
H) TANKS AND PRESSURE VESSELS.
I) STRAINERS, FILTERS, HUMIDIFIERS, WATER TREATMENT SYSTEMS, AND SIMILAR EQUIPMENT.

11.0 PAINTING

11.1 THIS SPECIFICATION COVERS THE REQUIREMENTS FOR PAINTS AND SURFACE COATING MATERIALS AND THE SURFACE PREPERATION, APPLICATION AND INSPECTION OF PAINT AND PROTECTIVE COATINGS TO BE SHOP FABRICATED OR FIELD APPLIED.

11.2 GENERALLY THIS SECTION APPLIES TO NATURAL GAS AND COMPRESSED AIR PIPE IN NON FOOD PROCESSING AREAS OF THE PLANT AND UNINSULATED BOILER ROOM PIPING, HANGERS, SUPPORT STEEL ETC.

11.3 GENERAL

ALL MATERIAL, SURFACE PREPARATION AND APPLICATION SHALL BE RATED, TESTED AND CERTIFIED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:
ASTM AMERICAN SOCIETY OF TESTING MATERIALS
SSPC STEEL STRUCTURES PAINTING COUNCIL
MSS MATERIAL SPECIFICATIONS STANDARDS

THE COATING MANUFACTURER'S SPECIFICATIONS COVERING SURFACE PREPARATION, PAINT AND PROTECTIVE COATINGS AND APPLICATION THEREOF BECOME PART OF THIS SPECIFICATION AND SHALL BE ADHERED TO IN DETAIL. THE PAINT PRODUCTS MUST BE SUITABLE FOR USE IN A FOOD PLANT ENVIROMENT AND MUST BE APPROVED BY THE OWNER.

11.4 PREPARATION

11.4.1 SURFACE PREPARATION: CLEAN AND PREPARE SURFACES TO BE PAINTED ACCORDING TO MANUFACTURER'S INSTRUCTIONS FOR EACH PARTICULAR SUBSTRATE CONDITION, AND AS SPECIFIED.

11.4.1.1 FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP–COATED; REMOVE GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING MET THAT COMPLY WITH RECOMMENDATIONS OF THE STEEL STRUCTURES PAINTING COUNCIL (SSPC).

A. BLAST STEEL SURFACES CLEAN AS RECOMMENDED BY THE PAINT SYSTEM MANUFACTURER AND ACCORDING TO REQUIREMENTS OF THE SSPC SPECIFICATION SSPC–SP 10.
B. TREAT BARE AND SANDBLASTED OR PICKLED CLEAN METAL WITH A METAL TREATMENT WASH COAT BEFORE PRIMING.
C. TOUCH UP BARE AREAS AND SHOP–APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE–BRUSH CLEAN WITH SOLVENTS RECOMMENDED BY THE PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
11.4.1.2 GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NONPETROLEUM BASED SOLVENTS SO THAT THE SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.

11.5 APPLICATION

11.5.1 GENERAL: APPLY PAINT ACCORDING TO MANUFACTURER'S DIRECTIONS. USE APPLICATORS AND TECHNIQUES BEST SUITED FOR SUBSTRATE AND TYPE OF MATERIAL BEING APPLIED.

11.5.2 MECHANICAL ITEMS TO BE PAINTED (IN NON FOOD PROCESSING AREAS) INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
A. PIPING
  –NATURAL GAS PIPEWORK
  –CONDENSER WATER PIPEWORK (AIR COMPRESSORS)
  –COMPRESSED AIR
B. STEEL PIPE HANGERS, AND SUPPORTS

11.5.3 PRIME COATS: BEFORE APPLYING FINISH COATS, APPLY A PRIME COAT AS RECOMMENDED BY THE MANUFACTURER, RECOAT PRIMED AND SEALED SURFACES WHERE EVIDENCE OF SUCTION SPOTS OR UNSEALED AREAS IN FIRST APPEARS, TO ENSURE A FINISH COAT WITH NO BURN–THROUGH OR OTHER DEFECTS DUE TO INSUFFICIENT SEALING.

11.6 WARRANTY PERIOD

11.6.1 THE CONTRACTOR SHALL WARRANT ALL PAINTING WORKS FROM ANY DEFECTS SUCH AS PEELING OF PAINT BLEEDING AND DISCOLORATION, AND SURFACE CHALKING FOR A PERIOD OF TWELVE (12) MONTHS AFTER ACCEPTANCE BY THE OWNER

11.6.2 DURING THE WARRANTY PERIOD, THE CONTRACTOR SHALL BE LIABLE TO REPAIR SUCH DEFECTS AT HIS EXPENSE.

11.7 COATINGS

11.7.1 FERROUS METALS

LUSTERLESS (FLAT) FINISH: TWO FINISH COATS OVER PRIMER WITH TOTAL DRY FILM THICKNESS NOT LESS THAN 2.5 MILS.

12.0 BALANCING

12.1 BALANCING HOT RECIRCULATION SYSTEM TO PROVIDE UNIFORM DOMESTIC WATER TEMPERATURE IN ALL MAINS, BRANCHES, & SUB BRANCHES.

NOT FOR CONSTRUCTION

stellar
OPERATING AS THE STELLAR GROUP
2900 HARTLEY ROAD, JACKSONVILLE, FL 32257 (904) 260-2900
WWW.STELLAR.NET
FLORIDA ARCHITECTURAL LICENSE NO. AA-F000112
FLORIDA ENGINEERING LICENSE NO. 5930

12-19-12

UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

GENERAL SPECS.

REV.	DATE	BY	DESCRIPTION
A	12-19-12	JPB	PERMIT ISSUE

JOB NO. 04224
DRAWN: JPB
CHECKED: RMB
SCALE: NONE

P002
DRAWING NO.

Filename: T:\Jobs\04200-04299\04224 United States Cold Storage Phase II Facility Expansion_FL\Design\Active\Plumb\04224P002.dwg Last Saved By: JBURDON Date: 12/19/2012 3:15:32 PM Plotted: 12/19/2012 3:17:53 PM

PLUMBING SPECIFICATIONS

PART I – GENERAL

1.01 DESCRIPTION

THE GENERAL REQUIREMENTS, ARE HEREBY MADE A PART OF THIS SECTION AS IF FULLY REPEATED HEREIN.

THIS WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

TRENCH EXCAVATION, PUMPING, BACKFILLING AND COMPACTION FOR UNDERGROUND PIPING AND PLUMBING.

DOMESTIC SOIL, WASTE AND VENT PIPING.

DOMESTIC HOT AND COLD WATER PIPING CONNECTIONS TO FIXTURES.

FIXTURES INCLUDING ELECTRIC WATER COOLERS.

JOINTS, FITTINGS, HANGERS, SLEEVES, ESCUTCHEONS, ETC.

LEAD FLASHING.

GREASE TRAPS AND INTERCEPTORS.

ACID NEUTRALIZING TANK.

RELATED WORK: PIPING SYSTEMS REQUIRING FIXED LOCATIONS AND SLOPES SHALL TAKE PRIORITY OVER THOSE, WHICH DO NOT HAVE BOTH REQUIREMENTS. THE FOLLOWING WORK IS SPECIFIED IN OTHER SECTIONS OF THESE SPECIFICATIONS.

FIRE PROTECTION SPRINKLERS: FIRE PROTECTION SPRINKLERS

AIR CONDITIONING AND HEATING: HEATING, VENTILATING & AIR CONDITIONING

PROCESS WASTE LINES BEYOND THE BUILDING AND SEWAGE TREATMENT FACILITIES: SEWAGE TREATMENT PLANT, INFLUENT STRUCTURE, PUMPING STATIONS, AND ON-SITE PROCESS WASTE LINES

WELL: DEEP WELL, PUMP AND PUMP FOR EXISTING DEEP WELL

WATER STORAGE TANK: GROUND STORAGE TANK & AERATOR

EXCAVATION & BACKFILL: EXCAVATION AND BACKFILL

POWER WIRING: ELECTRICAL

1.02 QUALITY

MATERIALS AND EQUIPMENT: ALL MATERIALS SHALL BE NEW AND FIRST CLASS IN EVERY RESPECT. AS FAR AS IS PRACTICAL, SIMILAR PRODUCTS SHALL BE BY ONE MANUFACTURER.

INDUSTRY STANDARDS: WHERE COMPLIANCE WITH AN INDUSTRY, SOCIETY, OR ASSOCIATION STANDARD IS SPECIFIED OR INDICATED, CERTIFICATION OF SUCH COMPLIANCE SHALL BE SUBMITTED WITH SHOP DRAWINGS.

1.03 SUBMITTALS

MANUFACTURER'S SUBMITTALS: REFER TO SECTION ENTITLED "BASIC MECHANICAL MATERIALS AND METHODS" SUBMIT SHOP DRAWINGS OR CATALOG DATA FOR THE ENGINEER'S REVIEW AND RECEIVE APPROVAL BEFORE PURCHASING OR INSTALLING EQUIPMENT. THIS INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

PIPING WHERE REVISED FROM DRAWINGS.

FLOOR DRAINS AND ROOF DRAINS.

FIXTURE SUPPLIES, TRAPS AND STOP VALVES AND APPURTENANCES.

PIPE HANGERS.

INSULATION.

WHERE COMPLIANCE WITH AN INDUSTRY, SOCIETY OR ASSOCIATION STANDARD IS SPECIFIED OR INDICATED, CERTIFICATION OF SUCH COMPLIANCE SHALL BE MADE WITH SHOP DRAWINGS.

1.04 STORAGE OF MATERIALS:

PIPE AND FITTINGS MAY BE STORED AT THE SITE PROVIDED THEY ARE STORED IN SUCH A MANNER AS TO PROTECT THEM FROM DAMAGE AND PROHIBIT ENTRANCE OF DIRT AND CONSTRUCTION DEBRIS. USE OF THE SITE SHALL COMPLY WITH GENERAL CONDITIONS AND SUCH OTHER PROVISIONS OF CONTRACT DOCUMENTS AS MAY LIMIT OR RESTRICT SAID USE.

PART II – PRODUCTS

2.01 FIXTURES AND TRIM

GENERAL: PROVIDE ALL FIXTURES AND TRIM AS SCHEDULED ON THE DRAWINGS. ALL EXPOSED METAL PARTS SHALL BE POLISHED CHROMIUM PLATED BRASS. COLOR SHALL BE WHITE. COMPARABLE ITEMS OF THE FOLLOWING MANUFACTURERS ARE CONSIDERED EQUAL.

STAINLESS STEEL FIXTURES: AMTEKCO, ELKAY AND JUST.

STAINLESS STEEL FLOOR DRAINS: KUSEL, SCHERPING.

2.02 PIPE

PIPING SHALL BE AS SPECIFIED IN PIPE SPECS BELOW.

LEAD:

PIPE: CLASS D FOR SOIL AND WASTE CONNECTIONS, CONFORMING TO FED. SPEC. WW-P-325.

SHEET: WEIGHT NOT LESS THAN FOUR (4) LBS. PER SQUARE FOOT, CONFORMING TO FED. SPEC. QQ-L-201, GRADE A.

CAULKING: FED. SPEC. QQ-L-156, TYPE 1.

SOLDERING NIPPLES: RED BRASS PIPE CONFORMING TO ASTM STD. SPEC. B-43, AND OF FOLLOWING WEIGHTS:

DIAMETER IN INCHES	WEIGHT IN OUNCES
1-1/4	6
1-1/2	8
2	14

CAULKING FERRULES: STANDARD QUALITY RED CAST BRASS, WITH WEIGHTS AND DIMENSIONS AS FOLLOWS:

PIPE SIZE	INSIDE DIAMETER	LENGTH	WEIGHT
2"	2-1/2"	4-1/2"	1 LB.
3"	3-1/2"	4-1/2"	1 LB.-12 OZ.
4"	4-1/4"	4-1/2"	2 LB.-8 OZ.

WIPING SOLDER: COMPOSITION SN35, FED. SPEC. QQ-S-571D.

2.07 DRAINAGE SPECIALTIES

GENERAL: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

FLOOR DRAINS: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

FLOOR CLEANOUTS: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

WALL CLEANOUTS: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

2.08 PIPE HANGERS: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

2.09 PIPE SLEEVES: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

2.10 ESCUTCHEONS: AS SPECIFIED IN FIXTURE SPECIFICATIONS.

2.11 INSULATION

AS SPECIFIED IN INSULATION SPECIFICATION SCHEDULE.

2.12 GREASE TRAPS

SHALL BE AS SCHEDULED ON THE DRAWINGS.

PART III – EXECUTION

3.01 INSPECTION

EXAMINE AREAS TO RECEIVE PIPING FOR:

DEFECTS THAT ADVERSELY AFFECT EXECUTION AND QUALITY OF WORK.

DEVIATIONS BEYOND ALLOWABLE TOLERANCES FOR PIPING CLEARANCES.

CHECK LOCATION OF ROUGH-IN WORK TO ASSURE MATCH WITH FIXTURES.

VERIFY THAT ELECTRICAL FACILITIES ARE COMPATIBLE WITH EQUIPMENT.

START WORK ONLY WHEN CONDITIONS ARE SATISFACTORY.

3.02 INSTALLATION

PIPING LAYOUT:

COMPLETE INSTALLATION TO PRESENT A NEAT, ORDERLY APPEARANCE.

RUN PIPING PARALLEL TO WALLS OF BUILDING UNLESS OTHERWISE INDICATED.

KEEP PIPING FREE FROM CONTACT WITH STRUCTURE OF INSTALLED ITEMS.

ABOVE CEILING: HANG AND SUPPORT AS REQUIRED.

PIPING WITHIN WALLS: ANCHOR AS REQUIRED TO PREVENT RATTLE OR MOVEMENT OF ANY KIND.

PENETRATIONS:

COORDINATE PENETRATIONS FOR VENTS WITH ROOF SYSTEM AND HVAC SYSTEMS AIR INTAKES.

DO NOT PENETRATE STRUCTURAL MEMBERS UNLESS APPROVED IN WRITING BY ENGINEER.

A. JOINTS AND CONNECTIONS:

  1. GENERAL: JOINTS AND CONNECTIONS SHALL BE MADE PERMANENTLY AIR, GAS, AND WATER TIGHT.

  2. CAST IRON:

     A. HUB AND SPIGOT JOINTS: INSERT THE SPIGOT INTO HUB AFTER CAREFULLY CLEANING BOTH. INSERT AN OAKUM STRAND INTO JOINT SUFFICIENTLY LONG TO MAKE THREE TURNS AROUND PIPE AND OF A DIAMETER THAT CAN BE PRESSED INTO THE JOINT BY HAND. DRIVE THE OAKUM TO THE BOTTOM OF JOINT USING A YARNING IRON, THEN PACK SOLIDLY AND EVENLY USING A PACKING IRON AND HAMMER. INSERT ADDITIONAL STRANDS OF OAKUM SUFFICIENT TO FILL THE JOINT TO WITHIN ONE-HALF INCH (1/2") OF THE TOP AND THEN PACK WITH HAMMER AND PACKING IRON TO FORM A UNIFORM SURFACE ONE INCH (1") BELOW TOP OF THE HUB. POUR MOLTEN LEAD INTO THE JOINT UNTIL IT ARCHES SLIGHTLY ABOVE TOP OF THE HUB. ALLOW LEAD TO COOL AND DRIVE IT DOWN AT QUARTER POINTS USING A CAULKING IRON. CAULK THE JOINT ON THE INSIDE AND OUTSIDE EDGES USING A ONE POUND BALL PEEN HAMMER AND APPROPRIATE CAULKING IRONS.

  3. COPPER: CUT PIPE SQUARE USING CUTTING TOOL WHICH DOES NOT CRIMP THE PIPE. REMOVE ALL BURRS USING PIPE REAMER AND TAKING CARE NOT TO FLARE THE PIPE END. THOROUGHLY CLEAN THE OUTSIDE OF THE PIPE AND THE INTERIOR OF THE VALVES AND FITTINGS USING A FINE SAND CLOTH. APPLY NONCORROSIVE PASTE FLUX TO THE CLEANED SURFACES IMMEDIATELY AND APPLY SOLDER AND HEAT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS TO COMPLETE JOINT. USE CARE NOT TO DAMAGE VALVES AND FOLLOW THE VALVE MANUFACTURER'S INSTALLATION INSTRUCTIONS EXPLICITY.

  4. CONNECTIONS: PROVIDE FIXTURE AND EQUIPMENT CONNECTIONS IN COMPLIANCE WITH REQUIREMENTS OF LOCAL CODES.

B. FLASHINGS: PROVIDE PROPER FLASHINGS FOR PIPES PASSING THROUGH ROOFING. FLASHINGS SHALL BE OF SHEET LEAD WITH FLANGES NOT LESS THAN EIGHTEEN INCHES (18") SQUARE AND WITH TUBULAR SECTIONS EXTENDING OVER TOP OF THE VENT AND TURNED INTO TOP APPROXIMATELY ONE INCH (1"). VENT EXTENSION SHALL STAND APPROXIMATELY ONE FOOT (1') ABOVE ROOF. PROVIDE FOR EXPANSION WHERE LEAD TURNS INTO PIPE.

C. FIXTURES, FLOOR DRAINS AND CLEANOUTS: PROVIDE ALL FIXTURES AND FLOOR DRAINS WITH TRAPS TO COMPLY WITH LOCAL REGULATIONS, AND AS HEREINAFTER SPECIFIED. PROVIDE EXPOSED TRAPS WITH BRASS CLEANOUT PLUGS. PROVIDE CLEANOUTS IN SOIL AND WASTE LINES AS SHOWN ON THE PLANS AND AS REQUIRED BY THE GOVERNING CODES. EXTEND CLEANOUTS FOR PIPING CONCEALED IN FLOOR OR CEILING CONSTRUCTION THROUGH THE FLOOR ABOVE AND PROVIDE WITH ADJUSTABLE FLOOR LEVEL CLEANOUT SET FLUSH WITH THE FINISHED FLOOR. USE SCREW TYPE CLEANOUTS FOR PIPING CONCEALED IN WALL CONSTRUCTION AND PROVIDE CHROMIUM PLATED BRONZE ACCESS COVER PLATES.

D. WATER SUPPLY PIPING: PROVIDE A COMPLETE SYSTEM OF HOT AND COLD WATER PIPING EXTENDING FROM WATER SUPPLY TO EACH FIXTURE AND ITEM OF EQUIPMENT REQUIRING WATER AS INDICATED ON THE DRAWINGS. INSTALL GATE VALVES AT TAKEOFF FROM THE MAIN AND UPSTREAM OF ALL EQUIPMENT CONNECTIONS AND ELSEWHERE AS INDICATED ON THE DRAWINGS OR AS REQUIRED. PROVIDE WATER HAMMERS ARRESTORS IN ACCORDANCE WITH PDI SELECTION STANDARDS. MAKE FINAL CONNECTION TO THE PLUMBING FIXTURES AS SPECIFIED WITH THE PLUMBING FIXTURE. PROVIDE A UNION IN THE CONNECTION TO EACH THREADED VALVE, FIXTURE OR PIECE OF APPARATUS SO THAT IT MAY BE READILY REMOVED. INSTALL UNIONS DOWNSTREAM OF SHUT OFF VALVES.

E. ESCUTCHEONS: PROVIDE ESCUTCHEONS ON ALL FINISHED SURFACES WHERE EXPOSED PIPING, BARE OR INSULATED, PASS THROUGH FLOORS, WALLS, OR CEILINGS, EXCEPT IN BOILER, UTILITY OR EQUIPMENT ROOMS. FASTEN ESCUTCHEONS SECURELY TO PIPE OR PIPE COVERING.

F. PIPE HANGERS: PVC PIPES SHALL BE SUPPORTED BY SPLIT RING TYPE, ADJUSTABLE SWIVEL RING HANGERS. HANGERS FOR COPPER PIPES SHALL BE COPPER PLATED OR PLASTIC COATED. PIPE HANGERS SHALL BE COMPLETE WITH RODS AND SUPPORTS, PROPORTIONED TO THE SIZE OF PIPE TO BE SUPPORTED.

3.03 TESTS

A. GENERAL REQUIREMENTS: TESTING REQUIREMENTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. TEST PRIOR TO COVERING OR CONCEALING PIPING.

B. DRAINAGE AND VENT PIPING: ALL DRAINAGE, VENT AND INSIDE CONDUCTOR PIPING SHALL BE TESTED BEFORE FIXTURES ARE INSTALLED, BY CAPPING OR PLUGGING THE OPENINGS AND FILLING THE ENTIRE SYSTEM WITH WATER TO A MINIMUM OF 15' HEAD AND ALLOWING IT TO STAND THUS FILLED FOR 24 HOURS. PROVIDE NECESSARY TEST TEES AND PLUGS TO TEST THE SYSTEM IN SECTIONS. REMAKE ALL LEAKING JOINTS.

C. FIXTURES: TEST EACH FIXTURE FOR SOUNDNESS, STABILITY OF SUPPORT, AND SATISFACTORY OPERATION OF ALL ITS PARTS.

3.04 STERILIZATION

A. GENERAL REQUIREMENTS: AFTER TESTS ARE COMPLETED AND APPROVED BY THE CONTRACTOR, FILL ALL WATER SUPPLY SYSTEMS WITH A SOLUTION CONTAINING 50 PPM OF AVAILABLE CHLORINE AND ALLOW TO STAND FOR A PERIOD OF 4 HOURS BEFORE BEING FLUSHED WITH CLEAN WATER, STERILIZE IN ACCORDANCE WITH LOCAL CODES. THEN DELIVER TO THE ENGINEER A DATED LETTER CERTIFYING STERILIZATION.

PLUMBING LEGEND AND ABBREVIATIONS

———	SANITARY PIPING (S)	—⋈—	GATE VALVE (GV)
———	WASTE PIPING (W)	—ıϕı—	BALL VALVE (BV)
– – – – –	VENT PIPING (V)	——⊖	FLOOR DRAIN
—— – ——	COLD WATER PIPING (CW)	——○	HUB DRAIN
—— – – ——	HOT WATER PIPING (HW)	——◎	FLOOR CLEAN-OUT
⫲ ⊕	TEE (PLAN, UP, DOWN)	——○‖	WALL CLEAN-OUT
⌐ ⨯	ELBOW (90°, 45°)	╫	VENT THRU ROOF (VTR)
○ — ⊃	ELBOW (UP, DOWN)		

AFF	ABOVE FINISHED FLOOR	FD	FLOOR DRAIN
B.F.F.	BELOW FINISHED FLOOR	HD	HUB DRAIN
B.F.G.	BELOW FINISHED GRADE	FS	FLOOR SINK
RW	RAINWATER	SAN	SANITARY
OF	OVERFLOW	S.S.	STAINLESS STEEL
CO	CLEANOUT (ON PIPE STACK)	TYP	TYPICAL
ST	STORM	VTR	VENT THRU ROOF
DN	DOWN	W/	WITH
I.E.	INVERT ELEVATION	FL	FLOOR
RD	ROOF DRAIN	V	VENT

PLUMBING NOTES

1. PRIOR TO ORDERING OR FABRICATING ANY NEW EQUIPMENT THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES AND REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL FIELD CONDITIONS TO THE ENGINEER.
2. ALL PIPE SIZES ARE NOT SHOWN ON PLANS. REFER TO RISER DIAGRAMS FOR COMPLETE PIPE SIZING AND CONFIGURATION.
3. VERIFY ALL FLOOR DRAIN FINISH ELEVATIONS AND LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL PLANS.
4. ALL PIPING AND EQUIPMENT SHALL BE COORDINATED WITH MECHANICAL, ELECTRICAL, STRUCTURAL AND GENERAL CONTRACTORS BEFORE INSTALLATION.
5. OFFSET VENTS THROUGH ROOF AS REQUIRED TO MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL DISTANCE FROM OUTSIDE AIR INTAKES. REFER TO MECHANICAL DRAWINGS FOR COORDINATION.
7. PROVIDE ALL VENTS WITH EFFECTIVE RODENT SCREENS.
8. ALL FLOOR DRAIN TRAPS AND CLEANOUTS BELOW GRADE SHALL BE ENCASED IN CONCRETE.
9. FLOOR DRAINS AND CLEANOUTS SHALL NOT BE LOCATED NEAR DOORS OR IN LINE WITH PATHWAYS OF DOORS AND HEAVY TRAFFIC AREAS.
10. SHOP DRAWINGS: SUBMIT TO THE ENGINEER FOR APPROVAL, BEFORE COMMENCING WORK, SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT. THE FOLLOWING APPLIES TO THE SHOP DRAWINGS:
    - A. DESIGN IS BASED ON MANUFACTURER NAMED DRAWINGS OR IN SPECIFICATIONS. SHOP DRAWINGS SHALL INDICATE EXCEPTIONS TO OR DEVIATIONS FROM THE DESIGN BASIS.
    - B. EQUIPMENT IS GENERALLY SELECTED AT MIDRANGE CAPACITY TO PROVIDE FLEXIBILITY FOR CHANGES. SELECTIONS AT FULL MAXIMUM OR MINIMUM CAPACITY WILL NOT BE ACCEPTED.
11. SECURE EQUIPMENT TO SUPPORTS PER LOCAL CODE AUTHORITY. PROVIDE SEISMIC BRACING PER LOCAL CODE AUTHORITY. PLUMBING SUBCONTRACTOR SHALL PROVIDE SHOP DRAWINGS INDICATING METHODS INTENDED.
12. ANY LOAD SUSPENDED FROM THE ROOF OR FLOOR STRUCTURE ABOVE SHALL HANG DIRECTLY FROM THE BAR JOIST OR STRUCTURAL MEMBER; OTHERWISE, PROVIDE ADDITIONAL SUPPORT MATERIAL DESIGNED TO CARRY THE LOAD BETWEEN THE STRUCTURAL MEMBERS. DO NOT SUPPORT LOADS FROM BRIDGING.
13. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC. INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
14. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF "INSTALLATION AND OPERATING MANUALS" ON SITE DURING CONSTRUCTION FOR THE USE OF THE BUILDING OFFICIAL. (CMC 304)

PLUMBING FIXTURE SPECIFICATIONS

FD-1	FLOOR DRAIN – KUSEL MDEL KE-100 304 STAINLESS STEEL WITH STAINLESS STRAINER BASKET, SOLID STAINLESS STEEL TOP AND FIXED OUTLET STRAINER. PROVIDE UNIT WITH KUSEL STAINLESS STEEL P-TRAP TO MATCH OUTLET SIZE INDICATED ON DRAWINGS.
FCO-1	FLOOR CLEANOUT – KUSEL STAINLESS STEEL TYPE CLEANOUT WITH SEALING STAINLESS STEEL COVER AND NYLON PLUG.
COOG	CLEANOUT ON GRADE – ZURN MODEL 1444 CAST IRON BODY WITH AIR TIGHT ABS THREADED PLUG. PROVIDE CAST IRON COVER. PROVIDE CONCRETE PAD SURROUNDING TOP.
HD-1	HUB DRAIN – STAINLESS STEEL FUNNEL AS MANUFACTURED BY ZURN.

PIPING SPECIFICATION PS-4a

SYSTEM	DOMESTIC WATER– (CW, IW, HW AND HWR)	
PRESSURE	UP TO 100 PSIG	
TEMPERATURE	UP TO 120 DEGREES FAHRENHEIT	
SIZE	3" AND SMALLER	4" AND LARGER
PIPE	HARD COPPER TUBE, TYPE L TO ASTM B 88	SCHEDULE 40, CARBON STEEL TO ASTM A53 GR B SEAMLESS, GALVANIZED
JOINTING	95-5 TIN-ANTIMONY SOLDER TO ASTM B62 GR 95 TA	VICTAULIC FLEXIBLE GALVANIZED STEEL COUPLING STYLE 75 OR EQUAL WITH EDPM WITH EDPM GASKET AND PLATED NUTS AND BOLTS TO ASTM A-183.
FITTINGS	COPPER PRESSURE FITTINGS WROUGHT COPPER SOLDER JOINT FITTINGS TO ASTM B16.22 CAST COPPER ALLOY FITTINGS TO ASTM B16.18	GALVANIZED STEEL ROLL GROOVE IPS PIPING SYSTEM EQUAL TO VICTAULIC: FLEXIBLE SYSTEM
FLANGES	CLASS 150 BRONZE, SOLDER JOINT TO ASME B16.24	VICTAULIC ON EQUAL STYLE 741 CLASS 125
UNIONS	CAST COPPER ALLOY, HEXAGONAL STOCK BODY, METAL-TO-METAL SEATING, SOLDER JOINT OR THREADED ENDS TO MSS-SP-123	NOT APPLICABLE
BALL VALVES	VALVES SHALL BE 600 WOG ASTM B584 BRONZE BODY WITH FULL PORTING, STAINLESS STEEL BALL AND STEM, REINFORCED TEFLON SEATS, PTFE PACKING AND PACKING ADJUSTMENT NUT. VALVES SHALL COMPLY WITH MSS-SP-110. EQUAL TO CRANE 9303 (THREADED) OR 9323-S (SOLDER ENDS).	NOT APPLICABLE
CHECK VALVE	VALVES SHALL BE CL125 ASTM B62 BRONZE T-PATTERN BODY WITH BRONZE INTEGRAL SEAT, FREE ROTATING BRONZE DISC, AND SCREWED CAP. VALVES SHALL COMPLY WITH MSS-SP-80. EQUAL TO CRANE 1707 (THREADED) OR 1707S (SOLDER ENDS).	SWING CHECK, 125 LB, BRONZE DISC 3" TO 6" BRONZE FACED IRON DISC 8" AND UP" CAST IRON BODY, EQUAL TO CRAINE SERIES 373
STRAINER	STRAINERS SHALL BE Y-TYPE CL125 ASTM B62 BRONZE BODY WITH STRAIGHT THREAD CAP, MACHINED SCREEN SEAT, AND 20 MESH T304 STAINLESS STEEL SCREENS. EQUAL TO TITAN YS55-BZ (THREADED) OR YS56-BZ (SOLDER ENDS).	NOT APPLICABLE
DRAIN VALVES	BRASS BODY, THREADED OR SOLDER CONNECTION, AND HOSE THREAD CONNECTION WATTS SERIES BD.	NOT APPLICABLE
BUTTERFLY VALVES	NOT APPLICABLE	200 PSI, DI BODY, ALUMINUM / BRONZE DISC 316 SS STEM, EDPM SEAT LEVER LOCKING HANDLE, GEAR OPERATOR 12" AND LARGER; EQUAL TO CRANE QUARTERMASTER SERIES
PRESSURE GAUGE	4" DIA LIQUID FILLED, 304SS CASE, WHITE DIAL WITH BLACK FIGURES AND GRADUATIONS, IN PSI, POLYCARBONATE WINDOW, BRONZE BOURDON TUBE, SNUBBER 1/4" NPT CONNECTION, ACCURACY, 1% OF FULL SCALE PER ASME B40.1 EQUAL TO TRERICE SERIES 700. RANGE TO EQUAL TWO TIMES SYSTEM WORKING PRESSURE. USE 1/4" BALL VALVE FOR ISOLATION.	
THERMOMETER	7", ALUMINUM CASE, ACRYLIC WINDOW, ALCOHOL FILLED TUBE, SCALE WITH WHITE BACKGROUND, BLACK NUMBERS AND GRADUATIONS, ACCURACY OF + 1 SCALE DIVISION, ADJUSTABLE BASE, RANGE 0-200 DEGREES F. 3/4" NPT CONNECTION, EQUAL TO TRERICE NO 700 SERIES. SELECT INSERTION LENGTH AND 304SS THERMOWELL TO SUIT PIPE SIZE AND INSULATION THICKNESS.	
NOTES:	1 SLOPE PIPE IN DIRECTION OF FLOW 1" / 40' DOWN. PROVIDE MANUAL DRAIN VALVES AT SYSTEM DRIP LEGS. 2 PERFORM A HYDROSTATIC PRESSURE TEST ON THE SYSTEM AT 1 1/2 TIMES WORKING PRESSURE BUT NOT LESS THAN 150 PSIG FOR 2 HOURS, WITH MAX PRESSURE LOSS OF 2 PSIG. 3 CONNECTIONS TO ALL DISSIMILAR METALS SHALL BE MADE WITH DIELECTRIC ISOLATED COUPLINGS	

PIPE & FITTINGS SPECIFICATION (PS-7c)

SERVICE	PROCESS DRAIN, WASTE AND VENT PIPING	
PRESSURE	GRAVITY	
LOCATION	ABOVE AND BELOW GROUND	
SIZE	2" AND SMALLER	3" AND LARGER
SLOPE (MIN.)	1/4" PER FOOT	1/8" PER FOOT
PIPE & FITTINGS	CAST IRON NO-HUB PIPE AND FITTINGS CONFORMING TO LATEST VERSION OF OF FEDERAL SPECIFICATION WW-P-401 F, ASTM A-888, CISPI 301.	CAST IRON NO-HUB PIPE AND FITTINGS CONFORMING TO LATEST VERSION OF OF FEDERAL SPECIFICATION WW-P-401 F, ASTM A-888, CISPI 301.
JOINTS	JOINT GASKETS SHALL CONFORM TO ASTM C-564 AND CISPI HSN.	JOINT GASKETS SHALL CONFORM TO ASTM C-564 AND CISPI HSN.
TESTING	TEST PIPING USING REQUIREMENTS OF LOCAL OR STATE CODE OR BY MEANS OF THE WATER TEST TEST WITH A WATER HEIGHT OF 10'-0" OR 4.3 PSI.	
NOTES:	1 BEDDING, COMPACTION AND BACKFILL SHALL CONFORM TO LOCAL AND STATE CODES, CISPI AND MANUFACTURES RECOMMENDATIONS. 2 FOR VENT AND ABOVE GROUND PIPING, REFER TO ABOVE GROUND PIPING SPECIFICATION THIS DRAWING. 3 USE OF NO-HUB PIPING MEETING THE ABOVE MENTIONED APPLICABLE CODES IS ACCEPTABLE.	

SPECIFICATION PIPEWORK INSULATION -1A

PIPE INSULATION (INSULATION TYPES) TABLE 1

ITEM	DESCRIPTION
INS-TYPE1	PREFORMED FLEXIBLE ELASTOMERIC PIPE INSULATION: COMPLY WITH ASTM C-534, TYPE I, AND ASTM E-84 FOR FLAME SPREAD RATE OF 25 OR LESS AND SMOKE DEVELOPED RATING OF 50 OR LESS, FOR 1" THICKNESS. K VALUE OF 0.30 AT 75°F MEAN TEMPERATURE; EQUAL TO AP ARMAFLEX, CLOSED CELL TUBE AND PIPE INSULATION. UTILIZE ADHESIVE RECOMMENDED BY INSULATION MANUFACTURER FOR JOINTS AND SEAMS.
INS-TYPE2	PREFORMED POLYISOCYANURATE PIPE INSULATION: COMPLY WITH ASTM E-84 FOR FLAME SPREAD RATE OF 25 OR LESS AND . SMOKE DEVELOPED RATING OF 50 OR LESS FOR 1 ½" THICKNESS AND LESS. K VALUE OF 0.19 AT 75°F. COMPRESSIVE STRENGTH OF 25 PSI. EQUAL TO DOW TRYMER 2000. UTILIZE ADHESIVES RECOMMENDED BY THE INSULATION MANUFACTURER FOR JOINTS AND SEAMS.

SPECIFICATION PIPEWORK INSULATION -1B

PIPE INSULATION (INSULATION THICKNESS) TABLE 2

SERVICE	INSULATION TYPE	INSULATION JACKET	INSULATION THICKNESS (INCHES)					
			PIPE SIZE (INCHES)					
			1/2"	3/4"	1"	1-1/4" to 2"	2-1/2' to 6"	8" to 12"
CW, HW, HW RECIRC.	INS-TYPE1	J1 & J3	1?	1?	1?	1?	1?	NA

GENERAL INSTALLATION NOTES

1.. REVIEW TABLE 1 FOR INSULATION TYPES
2.. REVIEW TABLE 3 FOR JACKET TYPES AND LOCATIONS WHERE J1, J2 AND J3 JACKETS MAY BE USED.
3. PROVIDE DOUBLE LAYER OF INSULATION TO THICKNESS SHOWN
4. OFFSET ALL LATERAL AND LONGITUDINAL JOINTS
5. THICKNESS OF INSULATION SHALL LIMIT SURFACE TEMPERATURE OF INSULATION TO 139°F MAXIMUM
6. THE TEMPERATURE OF THE THERMAL FLUID SHALL BE ASSUMED AT 600°F
7. PROVIDE 5 WATTS PER FOOT TRACING ON ALL PIPEWORK COMPLETE WITH TEMPERATURE CONTROLLER

SPECIFICATION PIPEWORK INSULATION -1C

DESCRIPTION	SYMBOL	PIPE INSULATION (INSULATION INSTALLATION NOTES) TABLE 3
HOT WATER SUPPLY AND RECIRCULATION COLD WATER	HW AND HWR CW	1. USE J1 JACKET IN ALL LOCATIONS OTHER THAN FINAL CONNECTIONS TO HOSE STATIONS AND EQUIPMENT IN PROCESS AREAS 2. USE J3 JACKET FOR FINAL CONNECTIONS TO HOSE STATIONS & PROCESS EQUIPMENT IN PROCESS AREAS. JACKET SHALL EXTEND FROM EQUIPMENT TO 10'-00" ABOVE FINISHED FLOOR 3. COVER INSULATION ON CW WITH VAPOR BARRIER VB-1.

GENERAL INSTALLATION NOTES

A. USE PREFORMED INSULATION WITH PREFABRICATED SECTIONS FOR FITTINGS AND VALVES. IF FABRICATED SECTIONS ARE NOT AVAILABLE, MITER AND/OR FABRICATE FROM LARGER SIZED INSULATION TO INSULATION THICKNESS SPECIFIED.

B. BUTT ALL JOINTS TOGETHER FIRMLY AND SEAL WITH TAPE OR ADHESIVE ACCORDING TO MANUFACTURERS? RECOMMENDATIONS.

C. ALL FITTINGS AND VALVES TO BE COVERED WITH THE SAME JACKETING AS PIPING. (NO HAND APPLIED SEALER).

D. CONTROL VALVES AND REGULATORS SHALL NOT BE INSULATED. SEAL PIPE INSULATION INDEPENDENTLY OF VALVES TO ENABLE REMOVAL OF VALVE WITHOUT DAMAGE TO VAPOR BARRIER OF PIPE INSULATION.

E. INSULATION COVERS ON ALL SHUTOFF VALVES MUST BE TRIMMED AND VAPOR SEALED TO ALLOW ACCESS TO PACKING NUTS AND SCREWED BONNETS.

F. PROVIDE STAINLESS STEEL SHEET METAL SADDLES, GAUGE AS REQUIRED TO PROTECT INSULATION FROM BEING CRUSHED, AT EACH HANGER OR STAND. INSULATION CONTRACTOR SHALL SEAL AND GLUE THE SADDLES TO THE INSULATION JACKET TO AVOID MOISTURE ACCUMULATION.

G. PIPE HANGERS AND SUPPORTS MUST NOT PENETRATE INSULATION. WHERE PIPE WEIGHT WILL CRUSH OR DEFORM THE INSULATION, INSTALL INSULATING BLOCKS TO CARRY WEIGHT. SADDLE SHALL BE SIZED TO DISTRIBUTE WEIGHT TO BELOW MANUFACTURERS MAXIMUM LOAD RECOMMENDATIONS.

H. NO INSULATION SHALL BE APPLIED UNTIL ALL PIPES AND EQUIPMENT HAVE BEEN PRESSURE TESTED, DRIED AND PROVEN TIGHT, BALANCED, AND ACCEPTED BY THE ENGINEER AND ALL WELD AREAS AND EXPOSED BARE METAL INCLUDING PIPE THREADS HAS BEEN CLEANED AND PRIMED.

J. INSULATION ON ALL COLD SURFACES WHERE VAPOR BARRIER JACKETS ARE USED WILL BE APPLIED WITH A CONTINUOUS UNBROKEN VAPOR SEAL. HANGERS, SUPPORTS, ANCHORS, ETC. THAT ARE SECURED DIRECTLY TO COLD SURFACES MUST BE ADEQUATELY INSULATED AND VAPOR SEALED TO PREVENT CONDENSATION.

K. CONTRACTOR SHALL SUBMIT MATERIAL DATA SHEETS AND RECEIVE APPROVAL BEFORE STARTING WORK DO NOT USE GLASS FIBER INSULATION.

L. USE SELF ADHESIVE PIPE MARKERS TO IDENTIFY ALL PIPE SERVICES AND FLOW DIRECTION PER ASME A 13.1

M. INSTALL INSULATION TO PREVENT LATERAL AND LONGITUDINAL JOINT SEPARATION WHEN PIPEWORK EXPANDS TO OPERATING TEMPERATURE

N. INSULATION SHALL BE CONTINUOUS THROUGH ALL WALLS. COORDINATE WITH MECHANICAL UTILITIES AND PLUMBING CONTRACTOR TO ENSURE SLEEVES ARE CORRECTLY SIZED

O. WHERE INSULATION PASSES THROUGH RATED FIRE WALL PROVIDE INSULATION TO MATCH THE FIRE RATING OF THE WALL. IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS

NOT FOR CONSTRUCTION

stellar
OPERATING AS THE STELLAR GROUP
2900 HARTLEY ROAD, JACKSONVILLE, FL 32257 (904) 260-2900
WWW.STELLAR.NET
FLORIDA ARCHITECTURAL LICENSE NO. AA-F000112
FLORIDA ENGINEERING LICENSE NO. 5930

12-19-12

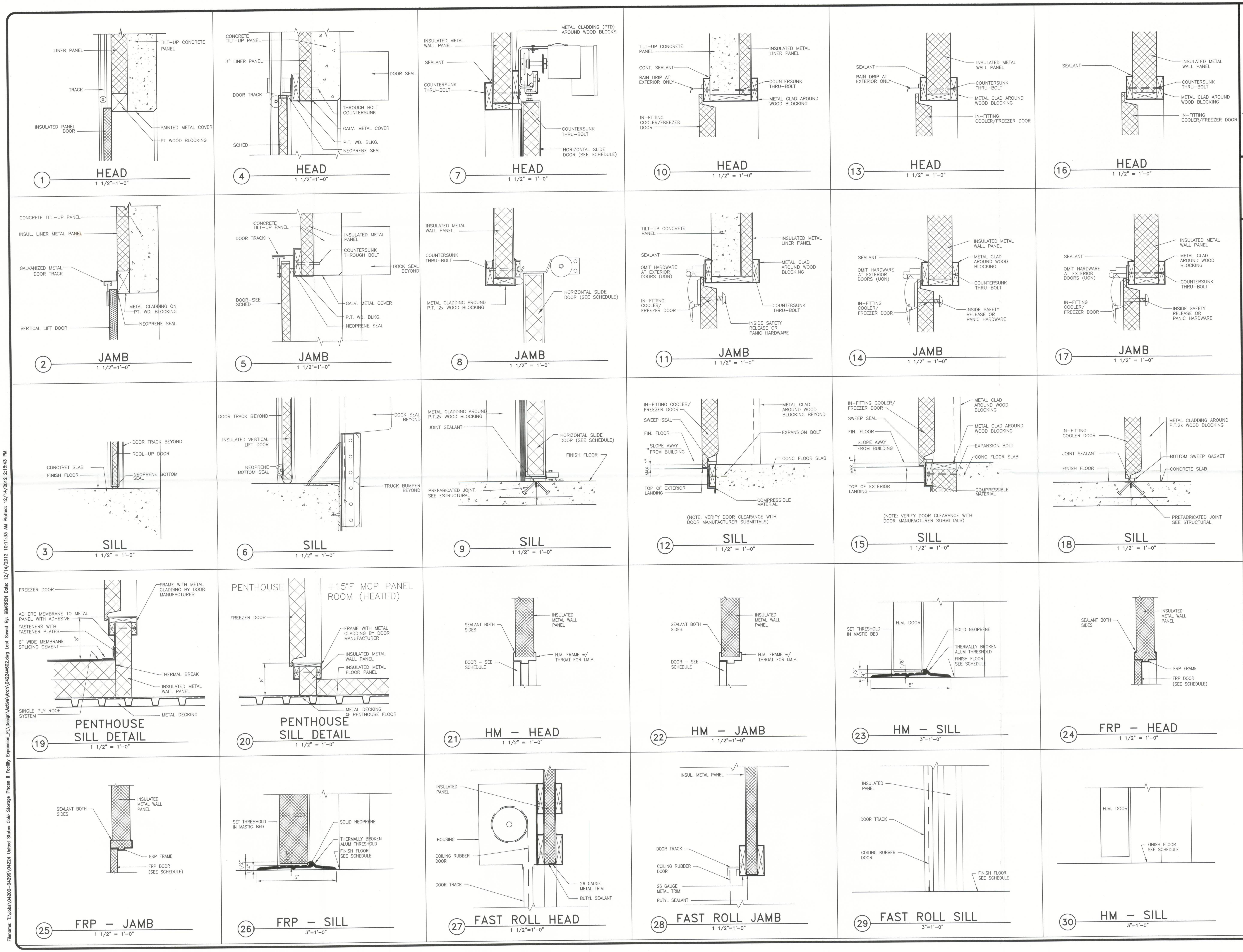
UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

NOTES, LEGEND, SCHEDULES AND SPECS

REV.	DATE	BY	DESCRIPTION
A	12-19-12	JPB	PERMIT ISSUE

JOB NO.	04224
DRAWN:	JPB
CHECKED:	RMB
SCALE:	NONE

P001
DRAWING NO.



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WWW.STELLAR.NET
FLORIDA ARCHITECTURAL LICENSE NO. AA-C000112
FLORIDA ENGINEERING LICENSE NO. 5630

12-18-12

UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

DOOR DETAILS

REV.	DATE	BY	DESCRIPTION
A	12-18-12	BB	PERMIT ISSUE

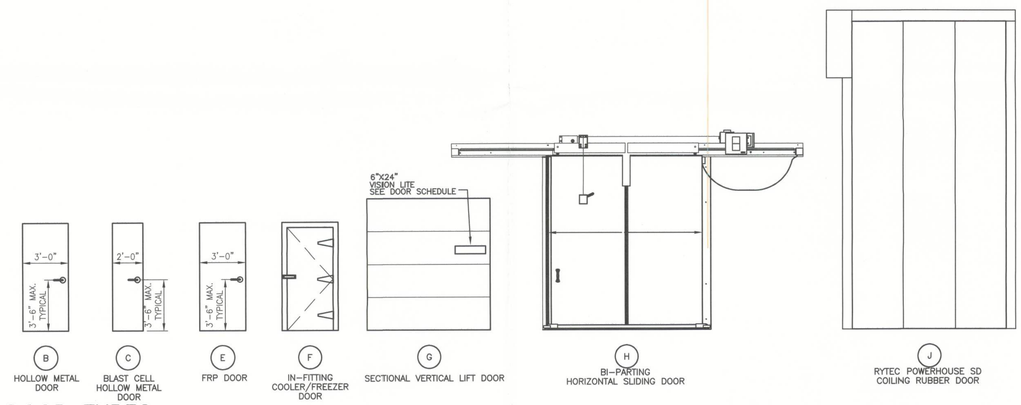
JOB NO.	710-04224
DRAWN:	BB
CHECKED:	BB
SCALE:	1 1/2"=1'-0"

A602
DRAWING NO.

DOOR SCHEDULE

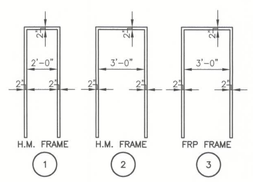
DOOR NUMBER	INSIDE ROOM NUMBER	OUTSIDE ROOM NUMBER	TYPE	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICK	DOOR MATERIAL	DOOR GLASS	FRAME TYPE	FRAME MATERIAL	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	LABEL	KEYING	HARDWARE SET NO.	HW BY DOOR MFG	REMARKS
PHASE II WAREHOUSE & TRUCK DOCK DOORS																		
201A	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201AA	201A	201	B	3'-0"	7'-0"	1 3/4"	H.M.	–	2	H.M.	21/A602	22/A602	23/A602	–	–	1	NO	H.M. DOOR & FRAME
201B	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201BA	201B	201	E	3'-0"	7'-0"	1 3/4"	F.R.P.	–	3	F.R.P.	24/A602	25/A602	26/A602	–	–	1	NO	F.R.P. DOOR & FRAME
201C	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201D	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201E	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201F	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201G	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201H	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201J	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201K	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201L	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201M	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201N	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201P	201	EXT.	G	10'-0"	11'-3 1/2"	2"	INSUL. METAL	6"x24"	–	STEEL	4/A602	5/A602	6/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201Q	201	EXT.	G	10'-0"	10'-0"	2"	INSUL. METAL	6"x24"	–	STEEL	1/A602	2/A602	3/A602	–	–	–	YES	INSULATED SECTIONAL VERTICAL LIFT – ELECTRIC
201R	201	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	10/A602	11/A602	12/A602	–	–	–	YES	IN-FITTING COOLER DOOR
203A	203	201	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
203B	203	201	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
203C	203	201	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
203D	203	201	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
203E	205	201	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
204A	204	204	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
204B	204	203	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
204C	204	203	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
204D	204	203	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
204E	204	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	15/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
205A	205	201	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
205B	205	201	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
205C	205	201	H	8'-0'	15'-0"	4"	METAL CLAD	–	–	METAL CLAD	7/A602	8/A602	9/A602	–	–	–	YES	HORIZ. BI-PARTING IXP DOORS
205D	205	201	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
205F	205	204	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	16/A602	17/A602	18/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
206A	206	205	J	10'-0"	20'-0"	–	RUBBER	–	–	STEEL	27/A602	28/A602	29/A602	–	–	–	YES	RYTEC POWERHOUSE H.P. COILING RUBBER DOOR
206B	206	205	C	2'-0"	7'-0"	1 3/4"	H.M.	–	1	H.M.	21/A602	22/A602	30/A602	–	–	2	NO	H.M. DOOR & FRAME
207A	207	205	J	10'-0"	20'-0"	–	RUBBER	–	–	STEEL	27/A602	28/A602	29/A602	–	–	–	YES	RYTEC POWERHOUSE H.P. COILING RUBBER DOOR
207B	207	205	C	2'-0"	7'-0"	1 3/4"	H.M.	–	1	H.M.	21/A602	22/A602	30/A602	–	–	2	NO	H.M. DOOR & FRAME
PHASE II PENTHOUSE DOORS																		
P104A	P104	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	19/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
P105A	P105	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	19/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
P106A	P106	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	19/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
P107A	P107	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	20/A602	–	–	–	YES	IN-FITTING FREEZER DOOR
P108A	P108	EXT.	F	3'-0"	7'-0"	4"	METAL CLAD	–	–	METAL CLAD	13/A602	14/A602	20/A602	–	–	–	YES	IN-FITTING FREEZER DOOR

HARDWARE SCHEDULE	NOTE: ONE MASTER KEY TO ALL LOCKS IN THE BUILDING.
HARDWARE SET 1	HARDWARE SET 2
DOORS 201AA & 201BA	DOORS 206B & 207B
PER DOOR	PER DOOR
ITEM	ITEM
3 EA. HINGE HAGEER BB1191 4.5 X 4.5 NRP US32D 1 EA. STOREROOM LOCK SARGENT 10-28 10G04 LP UD26D 1 EA. CLOSER SARGENT 1431 UO EN 1 EA. EXTERIOR STOP HAGER 267F US26D 1 EA. KICKPLATE HAGER 190S 8 X 34 US32D 1 EA. THRESHOLD HAGER 412SA – 36" AL 1 EA. WEATHERSTRIP HAGER 874SA – 3684 AL 1 EA BOTTOM SEAL HAGER 753SA – 36" AL	3 EA. HINGE HAGER BB1191 4.5 X 4.5 US32D 1 EA. PASSAGE SET HAGER 10-28 10U15 LP US26D 1 EA. CLOSER SARGENT 1431 SRI UO EN 1 EA. KICK PLATE HAGER 190S 8 X 34 US32D 1 EA. OVERHEAD STOP RIXON 4 SERIES 3 FUNCTION US32D 3 EA. SILENCER HAGER 307D GREY



DOOR TYPES:

1/4"=1'-0"



HM FRAME TYPE

1/4"=1'-0"

ROOM FINISH SCHEDULE

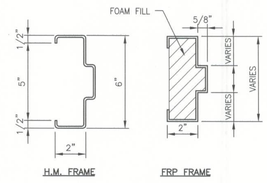
KEY: MATL (CMU) N | FINISH (PAINT) 1 | COLOR (PAINT) P-3

MATERIALS
A VINYL TREAD PLATE (VCT)
B BRICK
C CARPET
D CONCRETE
E CERAMIC TILE
F VINYL FABRIC
G GYP WALLBOARD
H AC CLG T (ACT)
I INSUL MET PNL(IMP)
J GLASS
K METAL DECKING
L LINEAR METAL PANELS
M CONC. MAS. UNIT (CMU)
N MARBLE TILE
O NONE
P PORCELAIN TILE
Q QUARRY TILE
R RUBBER
S STEEL
T TERRAZZO
U
V VINYL
W WOOD
X EXP CONST
Y
Z

FINISH
1 PAINT
2 PRE-FINISHED
3 UNFINISHED
4 2'X2' GRID/MINERAL FIBER
5 2'X2' GRID/GLASS FIBER
6 W/ HARDENER
7 GALVANIZED
8 2'X4' VINYL FACED CEILING TILES
9 W/ SEALER

COLOR
P1 = WHITE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL N	WALL E	WALL S	WALL W	CEILING	CEILING HEIGHT	REMARKS
PHASE II WAREHOUSES & TRUCK DOCK										
201	+40'F TRUCK DOCK	D 9 –	D 7 –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	18'-0" MIN. CLEAR HEIGHT. 24" HIGH W/ SLOPED TOP CONC. CURB PAINTED SAFETY YELLOW.
201A	FIRE RISER ROOM	D 9 –	– – –	I 2 –	I 2 –	I 2 –	X 2 –	I – –	VARIES	12'-0" MIN. CEILING SLOPE PANEL UP AT 30° TOWARDS FREEZER WALL
201B	SPREADER WASH ROOM	D 9 –	– – –	I 2 –	I 2 –	I 2 –	X 2 –	I – –	VARIES	12'-0" MIN. CEILING SLOPE PANEL UP AT 30° TOWARDS FREEZER WALL. 8" HIGH w/ SLOPED TOP CONCRETE CURB ON INTERIOR WALLS.
202	+40'F FUTURE TRUCK DOCK	D 9 –	D 7 –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	18'-0" MIN. CLEAR HEIGHT. 24" HIGH W/ SLOPED TOP CONC. CURB PAINTED SAFETY YELLOW.
203	–20'F TO +35'F CONVERTIBLE 3	D 9 –	D – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	40'-6" MIN. CLEAR HEIGHT. 8" HIGH W/ SLOPED TOP CONC. CURB–NOT PAINTED TO ALL EXPOSED WALLS.
204	–20'F TO +35'F CONVERTIBLE 4	D 9 –	D – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	40'-6" MIN. CLEAR HEIGHT. 8" HIGH W/ SLOPED TOP CONC. CURB–NOT PAINTED TO ALL EXPOSED WALLS.
205	–20'F FREEZER	D 9 –	D – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	40'-6" MIN. CLEAR HEIGHT. 8" HIGH W/ SLOPED TOP CONC. CURB–NOT PAINTED TO ALL EXPOSED WALLS.
206	BLAST CELL #1	D 9 –	D – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	28'-0" MIN. CLEAR HEIGHT.
207	BLAST CELL #2	D 9 –	D – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	28'-0" MIN. CLEAR HEIGHT.
PHASE II PENTHOUSES										
P104	–20'F TO +35'F PENTHOUSE 4	K 2 –	– – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	METAL ROOF DECK FLOORING w/ GALV. STEEL GRATING AT RETURN AIR OPENING
P105	–20'F TO +35'F PENTHOUSE 5	K 2 –	– – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	METAL ROOF DECK FLOORING w/ GALV. STEEL GRATING AT RETURN AIR OPENING
P106	–20'F TO +35'F PENTHOUSE 6	K 2 –	– – –	I 2 –	I 2 –	I 2 –	I 2 –	X – –	VARIES	METAL ROOF DECK FLOORING w/ GALV. STEEL GRATING AT RETURN AIR OPENING
P107	+15'F MCP ROOM #1	I 2 –	– – –	I 2 –	I 2 –	I 2 –	I 2 –	I 2 –	VARIES	I.M.P. WALLS, FLOOR & CEILING TO MAINTAIN A MINIMUM OF +15'F
P108	+15'F MCP ROOM #2	I 2 –	– – –	I 2 –	I 2 –	I 2 –	I 2 –	I 2 –	VARIES	I.M.P. WALLS, FLOOR & CEILING TO MAINTAIN A MINIMUM OF +15'F



TYPICAL DOOR FRAME PROFILE

3" = 1'-0"

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FLORIDA ENGINEERING LICENSE NO. 9330

12-18-12

UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

DOOR & FINISH SCHEDULE, DOOR TYPES

REV.	DATE	BY	DESCRIPTION
A	12-14-12	BB	PERMIT ISSUE

JOB NO. 710-04224
DRAWN: BB
CHECKED: BB
SCALE: AS NOTED

A601
DRAWING NO.

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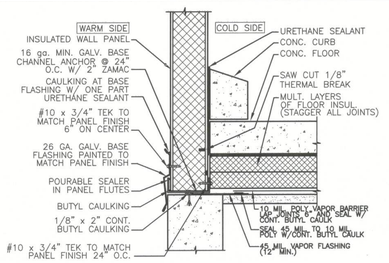
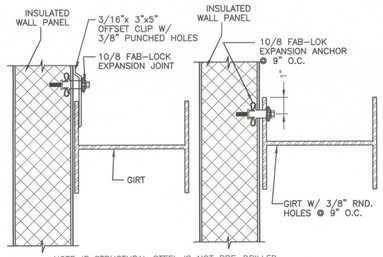
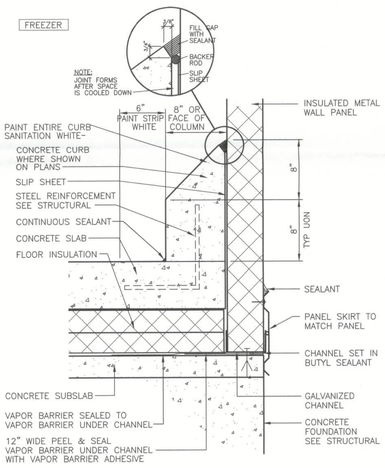


1 CORNER DETAIL
1 1/2" = 1'-0"

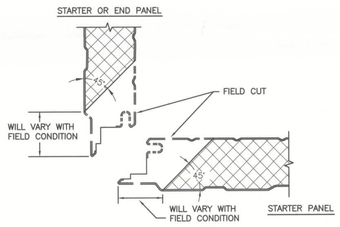


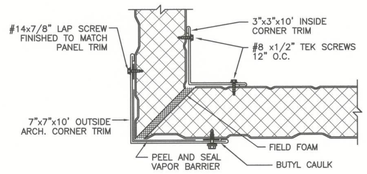
NOTE: IF STRUCTURAL STEEL IS NOT PRE-DRILLED 4"x6", 10 GAUGE OFFSET GIRT CLIP IS ACCEPTABLE.

2 GIRT ATTACHMENT
1 1/2" = 1'-0"

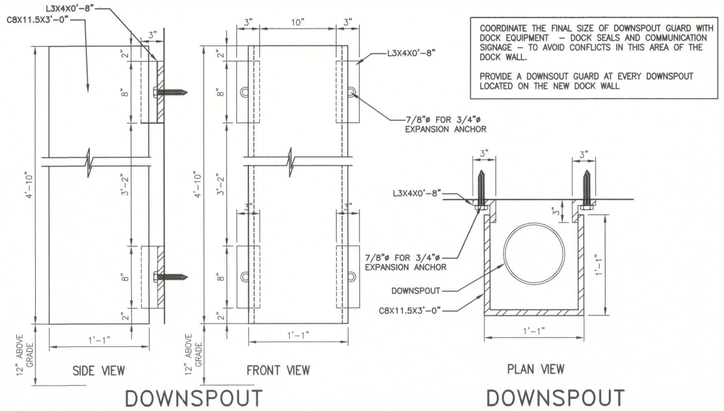


FREEZER CONC. CURB DETAIL
3
1 1/2" = 1'-0"





4 CORNER DETAIL
1 1/2" = 1'-0"

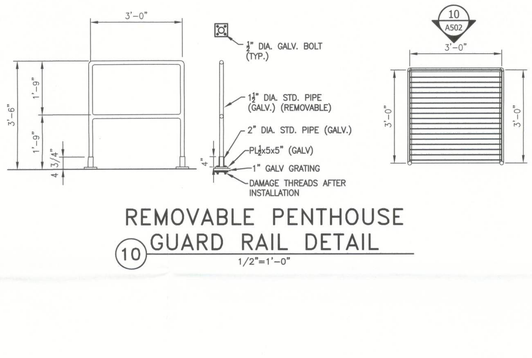


COORDINATE THE FINAL SIZE OF DOWNSPOUT GUARD WITH DOCK EQUIPMENT – DOCK SEALS AND COMMUNICATION SIGNAGE – TO AVOID CONFLICTS IN THIS AREA OF THE DOCK WALL.

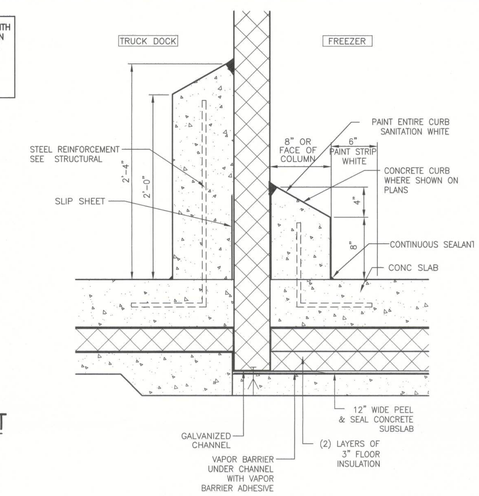
PROVIDE A DOWNSOUT GUARD AT EVERY DOWNSPOUT LOCATED ON THE NEW DOCK WALL

DOWNSPOUT PROTECTION BRACKET
5
1 1/2"=1'-0"

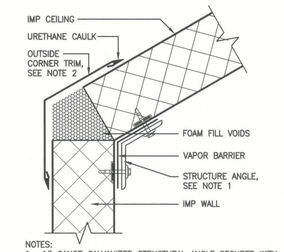
DOWNSPOUT PROTECTION BRACKET
6
1 1/2"=1'-0"



REMOVABLE PENTHOUSE GUARD RAIL DETAIL
10
1/2"=1'-0"

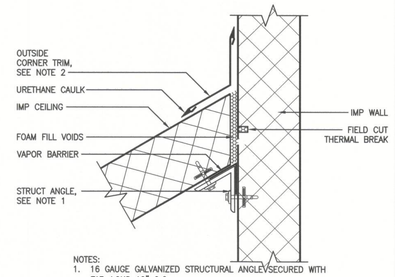


FREEZER/TRUCK DOCK CONC. CURB DETAIL
7
1 1/2" = 1'-0"



NOTES:
1. 16 GAUGE GALVANIZED STRUCTURAL ANGLE SECURED WITH FAB-LOKS 12" O.C.
2. TRIM IS SUPPLIED IN THE SAME GAUGE AND COLOR AS IMP SKIN. FASTEN WITH #10x3/4" TEK SCREWS AT 12" O.C.

THERMAL DETAIL
8
3"=1'-0"



NOTES:
1. 16 GAUGE GALVANIZED STRUCTURAL ANGLESECURED WITH FAB-LOKS 12" O.C.
2. TRIM IS SUPPLIED IN THE SAME GAUGE AND COLOR AS IMP SKIN. FASTEN WITH #10x3/4" TEK SCREWS AT 12" O.C.

THERMAL DETAIL
9
3"=1'-0"

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FLORIDA ENGINEERING LICENSE NO. 3920

12-18-12

UNITED STATES COLD STORAGE, INC.
PHASE II EXPANSION
LAKE CITY, FLORIDA

MISC. DETAILS

REV.	DATE	BY	PERMIT ISSUE DESCRIPTION
A	12-18-12	BB	

JOB NO. 710-04224
DRAWN: BB
CHECKED: BB
SCALE: AS NOTED

A502
DRAWING NO.

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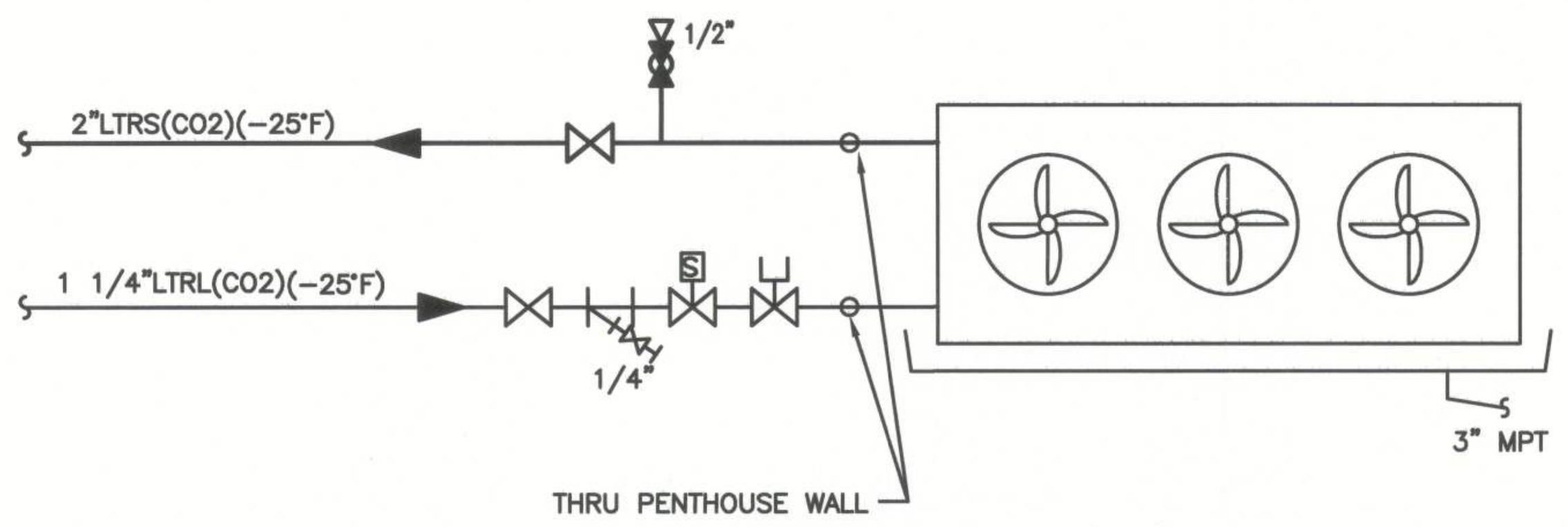
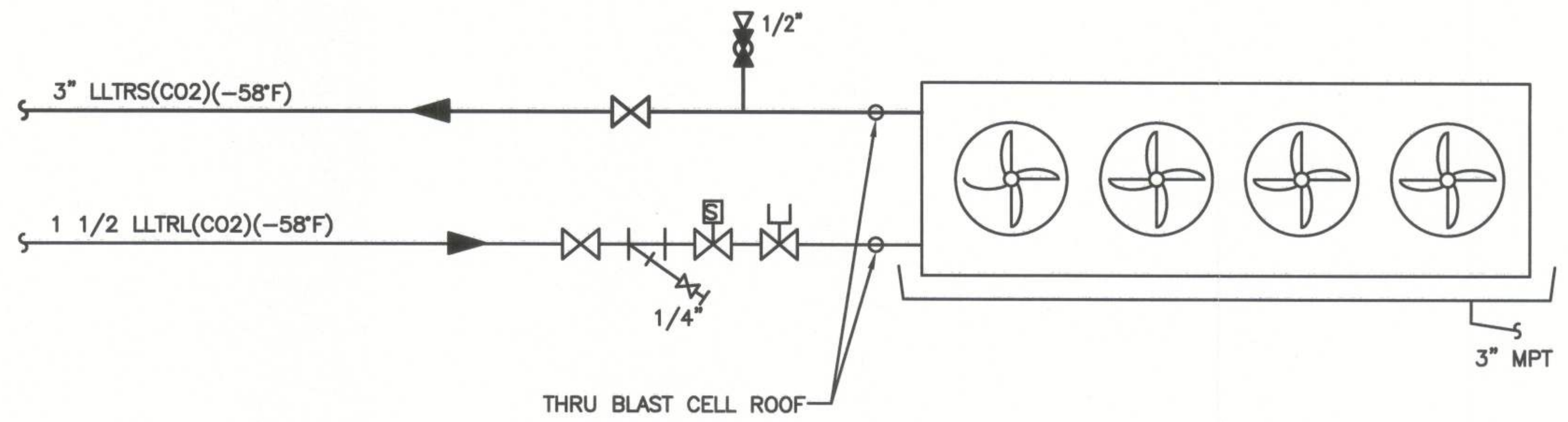


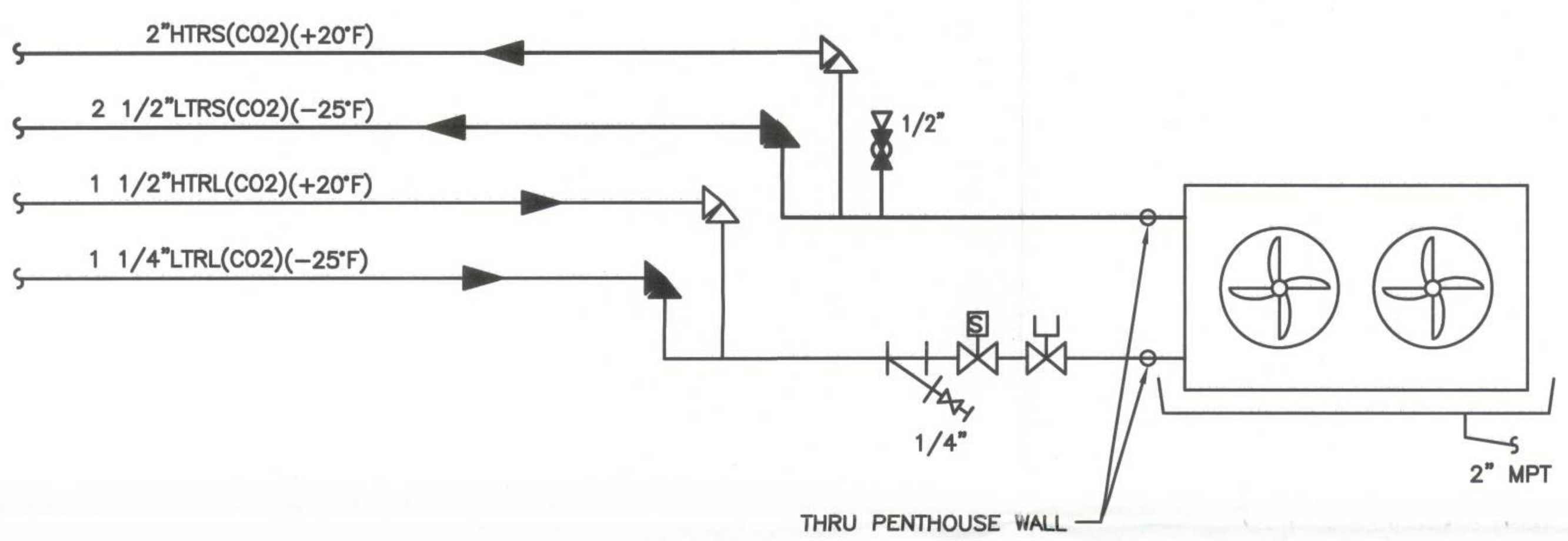
CONTROL GROUP F1, F2, F3 & F4

-20°F FREEZER
AU2051 – AU2054
34 TR EACH@ -30°F



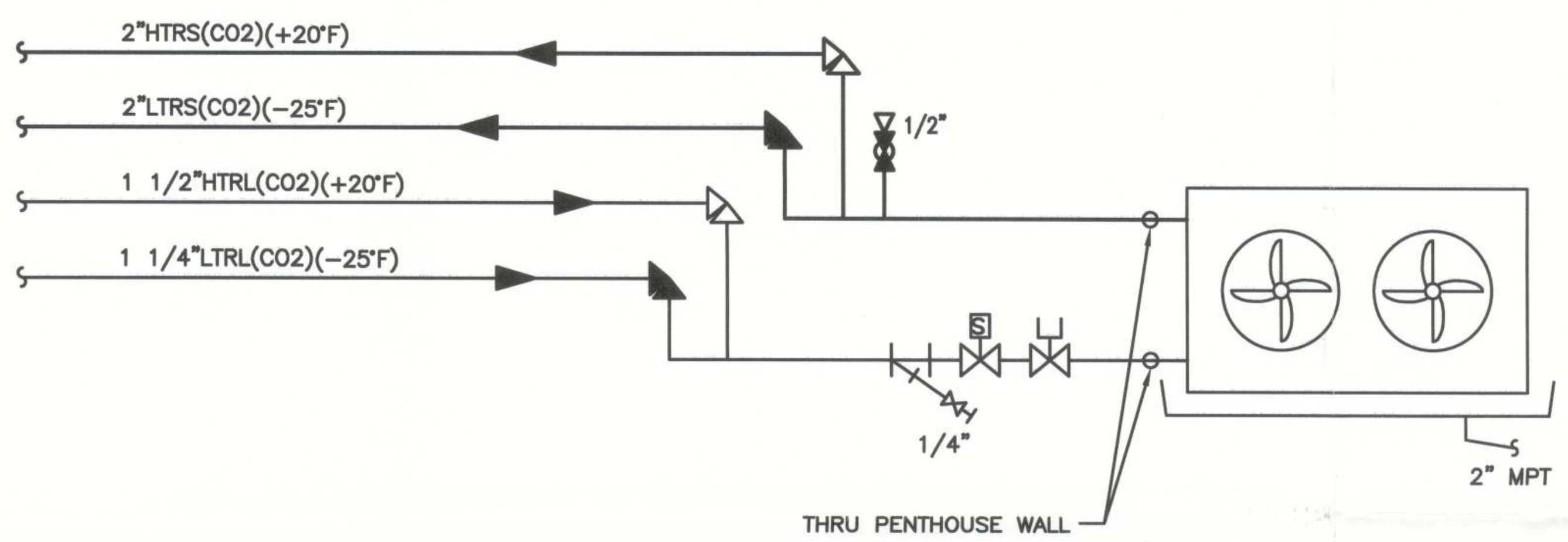
CONTROL GROUP G1 & G2

BLAST FREEZERS
AU2061 & AU2071
64 TR EACH@ -58°F



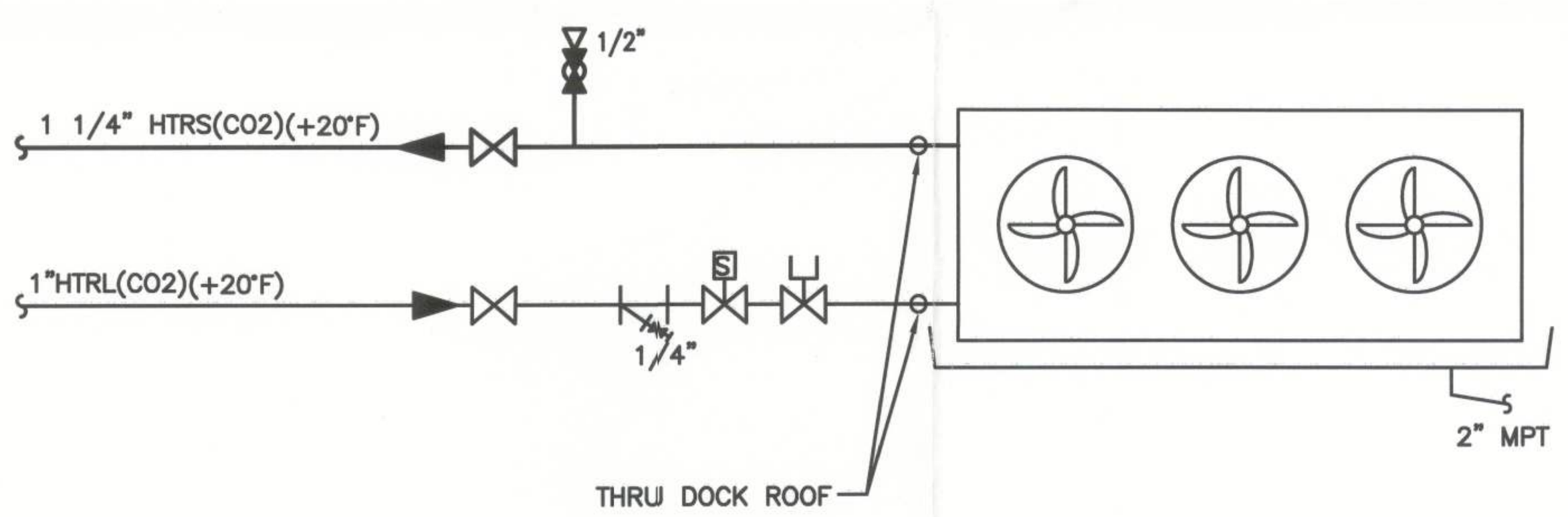
CONTROL GROUP D1 & D2

-20°F CONVERTIBLE ROOM
AU2041 & AU2042
38 TR EACH@ -30°F/+20°F



CONTROL GROUP E1 & E2

-20°F CONVERTIBLE ROOM
AU2031 & AU2032
34 TR EACH@ -30°F/+20°F



CONTROL GROUP H1, H2, H3 & H4

+40°F TRUCK DOCK
AU2011 – AU2014
20 TR EACH@ +20°F

NOTE:
1. PILOT LIGHTS TO BE RATED FOR OUTDOOR SERVICE.

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FLORIDA ENGINEERING LICENSE NO. 5930

LUKE THOMAS FACEMYER ★ LICENSE No. 71579 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER

UNITED STATES COLD STORAGE, INC
PHASE II EXPANSION
LAKE CITY, FLORIDA

CONTROL GROUP P&ID

REV.	DATE	BY	DESCRIPTION
A	12-19-12	YJV	PERMIT ISSUE

JOB NO. 04224
DRAWN: YJV
CHECKED: BEK
SCALE: AS NOTED

R706
DRAWING NO.

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