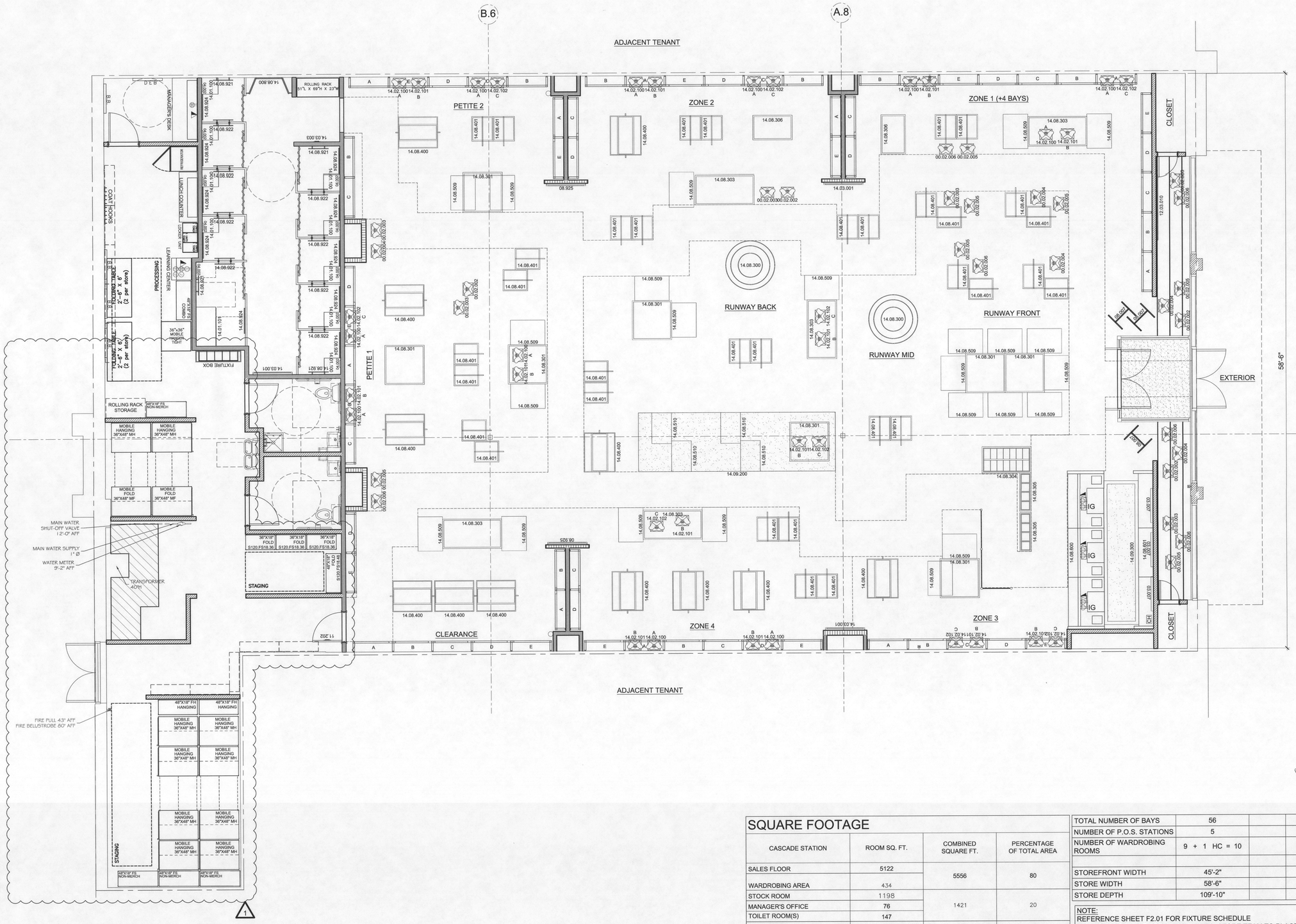

SQUARE FOOTAGE

CASCADE STATION	ROOM SQ. FT.	COMBINED SQUARE FT.	PERCENTAGE OF TOTAL AREA
SALES FLOOR	5122	5556	80
WARDROBING AREA	434		
STOCK ROOM	1198	1421	20
MANAGER'S OFFICE	76		
TOILET ROOM(S)	147		
CORRIDOR	0	0	
TOTAL SQUARE FT	6978	6978	100%

TOTAL NUMBER OF BAYS	56				
NUMBER OF P.O.S. STATIONS	5				
NUMBER OF WARDROBING ROOMS	9 + 1 HC = 10				
STOREFRONT WIDTH	45'-2"				
STORE WIDTH	58'-6"				
STORE DEPTH	109'-10"				

NOTE:
REFERENCE SHEET F2.01 FOR FIXTURE SCHEDULE
G.C. TO PLACE HALF FORMS ON TABLES. STORE TEAM TO PLACE HALF FORMS AS REQUIRED ON STORE FLOOR.

City of Portland
REVIEWED FOR CODE COMPLIANCE
SEP 14 2017
Permit Number

FIXTURE PLAN

1/4" = 1'-0"

1

STORE 3125

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LOFT OUTLET

REVISIONS
1 ISSUED FOR CONSTRUCTION 08.02.2017

REGISTERED ARCHITECT
ALAN S. ANDREAS
MADISON, NJ
LIC. NO. 6809
STATE OF OREGON

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06LOS 002

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

FIXTURE PLAN

DATE: 2017/08/02
SCALE: AS NOTED
DRAWN BY: A.S.
REVIEWED BY: ASA
PROJECT NUMBER: 17051
SHEET: F1.01

FIXTURE SCHEDULE:

SYMBOL	Quantity	ANN_ITEM_NO	DESCRIPTION
14.08.300	2	08.300	TABLE, 60" ROUND, DOUBLE TIERED, WITH RISER
14.08.301	8	08.301	TABLE, 48"x48" SQUARE NESTER
14.08.509	24	08.509	PLATFORM ON CASTERS
14.08.303	5	08.303	TABLE, 72"x36" HARVEST
14.08.304	1	08.304	TABLE, IMPULSE
14.08.305	2	08.305	TABLE, CASHWRAP
14.08.306	2	08.306	TABLE, WARDROBE (LARGE)
14.08.400	12	08.400	WARDROBER, 48"
14.08.401	34	08.401	VALET, 30"
14.08.510	4	08.510	FIXTURE, JEWELRY ACCESSORY TOWER
05.007	3	08.007	SIGN, 24-1/8"x24"x60" EASEL
14.01.100	9	01.100	F.R. BENCH
14.01.101	1	01.101	F.R. BENCH (ADA)
14.08.924	10	08.924	WARDROBER ROOM MIRROR
14.08.921	4	08.921	SINGLE SIDED DRYWALL HANGBAR
14.08.922	16	08.922	DOUBLE SIDED MOUNTED
14.08.923	0	08.923	SINGLE SIDED NON DRYWALL
04.002	10	04.002	WARDROBING ROOM SIGNHOLDER
ROLLING RACK 51"L x 69"H x 23"W	1		WARDROBING ROOM ROLLING RACK
14.08.800	1	08.800	3 WAY MIRROR

FIXTURE SCHEDULE:

SYMBOL	Quantity	ANN_ITEM_NO	DESCRIPTION
14.09.200	1	09.200	RUG, 6'x20' AREA, COLOR BE772
14.09.300	1	09.300	MAT, CHARCOAL, ANTI-FATIGUE, WITH BLACK NOSING 3'-6"x15'-0"
14.09.301	1	09.301-MOD	CUSTOM MAT, NFS CHARCOAL BERBER TO FIT WITHIN VESTIBULE
	1	08.600 08.601	CASHWRAP BACKWRAP
12.03.010	1	03.010	84"X100" STRETCH FRAME
12.03.005	0	03.008	58"X69" STRETCH FRAME
14.03.001	3	03.001	FRAME, 44" GRAPHIC
14.08.925	2	08.925	FLUSH MOUNTED MIRROR
07.001	3	07.001	TRACK KIT (64 LF)
07.002	1	07.002	BANNER KIT, 5' ANOGOTCHA
14.03.003	1	03.003	CREDIT CARD SIGN
12.03.007	3	03.007	CASHWRAP GRAPHIC FRAME
11.202	1	11.202	SIGN, EMPLOYEE ONLY
00.02.002	4	02.002	MANNEQUIN, POSE 2
00.02.003	6	02.003	MANNEQUIN, POSE 3
00.02.004	5	02.004	MANNEQUIN, POSE 4
00.02.005	7	02.005	MANNEQUIN, POSE 5
00.02.006	6	02.006	MANNEQUIN, POSE 6
14.02.100	12	02.100	MANNEQUIN, FORM "A"
B 14.02.101	11	02.101	MANNEQUIN, FORM "B"
C 14.02.102	11	02.102	MANNEQUIN, FORM "C"
	12	08.001	PERIMETER UPRIGHT 'A'
	11	08.002	PERIMETER UPRIGHT 'B'
	11	08.003	PERIMETER UPRIGHT 'C'
	11	08.004	PERIMETER UPRIGHT 'D'
	11	08.005	PERIMETER UPRIGHT 'E'

FIXTURE SCHEDULE:

SYMBOL	Quantity	ANN_ITEM_NO	DESCRIPTION
48"X18" HANGING S120.FS18.48	2		48" FIXED HANGING
36"X18" HANGING S120.FS18.36	0		36" FIXED HANGING
MOBILE SHELF HANGING 36"X48"	10=(20)		48" MOBILE HANGING ((2) 48"x18" HANGING UNITS)
MOBILE SHELF HANGING 36"X36"	0		36" MOBILE HANGING ((2) 36"x18" HANGING UNITS)
FIXED HANGING LINEAR FEET	88		
48"X18" FOLD S120.FS18.48	1		48" FIXED FOLD
36"X18" FOLD S120.FS18.36	3		36" FIXED FOLD
MOBILE SHELF FOLD 36"X48"	2=(4)		48" MOBILE FOLD ((2) 48"x18" FOLD UNITS)
MOBILE SHELF FOLD 36"X36"	0		36" MOBILE FOLD ((2) 36"x18" FOLD UNITS)
FIXED SHELVING LINEAR FEET	29		
48"X18" NON-MERCH S120.FS18.48	4		48" FIXED SHELVING-NON-MERCH.
36"X18" 4on4-4on5on3 S120.FS18.36	0		36" FIXED SHELVING-NON-MERCH.
48"X18" COMBO S120.FSH18.48	1		48" F.S.H.-NON-MERCH
36"X18" COMBO S120.FSH18.36	0		36" F.S.H.-NON-MERCH
ROLLING RACK STORAGE	1		ROLLING RACK STORAGE
LOCKER UNIT	3		LOCKER TOWER
LEARNING CENTER	1		LEARNING CENTER
FIXTURE BOX	1		FIXTURE BOX
REFRIGERATOR	1		REFRIGERATOR (FULL SIZE) G.E. 15.5 CU. FT. TOP FREEZER COLOR: WHITE MAX. PRICE $600
LUNCH COUNTER	1	12.133	LUNCH COUNTER
B.B.	4		48"x36" BULLETIN BOARD
D.E.B.	1		DRY ERASE BOARD
	52'-0"	12.102	BOH OVERHEAD SHELVING
36"x36" MOBILE HANGER TIGHT	1		36" MOBILE HANGER
MANAGER'S DESK	1	12.107	DESK, MANAGER'S DESK
CABINET W/ BUILT IN LOCK	2		TOILET ROOM CABINET
	2		2' BLIND DOOR
	0		3' BLIND DOOR
FOLDING TABLE 2'-6" X 6' (2 per store)	2		FOLDING TABLE (2 PER STORE)

ATYPICAL FIXTURE SCHEDULE:

SYMBOL	Quantity	ANN_ITEM_NO	DESCRIPTION

City of Portland
REVIEWED FOR CODE COMPLIANCE
SEP 14 2017
Permit Number

FIXTURE SCHEDULE

1

STORE 3125

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LOFT OUTLET

REVISIONS
1 ISSUED FOR CONSTRUCTION 08.02.2017

REGISTERED ARCHITECT
ALAN S. ANDREAS
MADISON, NJ
LIC. NO. 6609
STATE OF OREGON

DESIGN TYPE: 2016 SPRING PROTO
THRU DGB: ALL DIV.06LCS.002

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

FIXTURE SCHEDULE

DATE: 2017/08/02
SCALE: AS NOTED
DRAWN BY: A.S.
REVIEWED BY: ASA
PROJECT NUMBER: 17051
SHEET: F2.01

PSE PETERSON STRUCTURAL ENGINEERS
REVIEWED AS NOTED
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9400 SW BARNES RD., SUITE 100
PORTLAND, OR 97225
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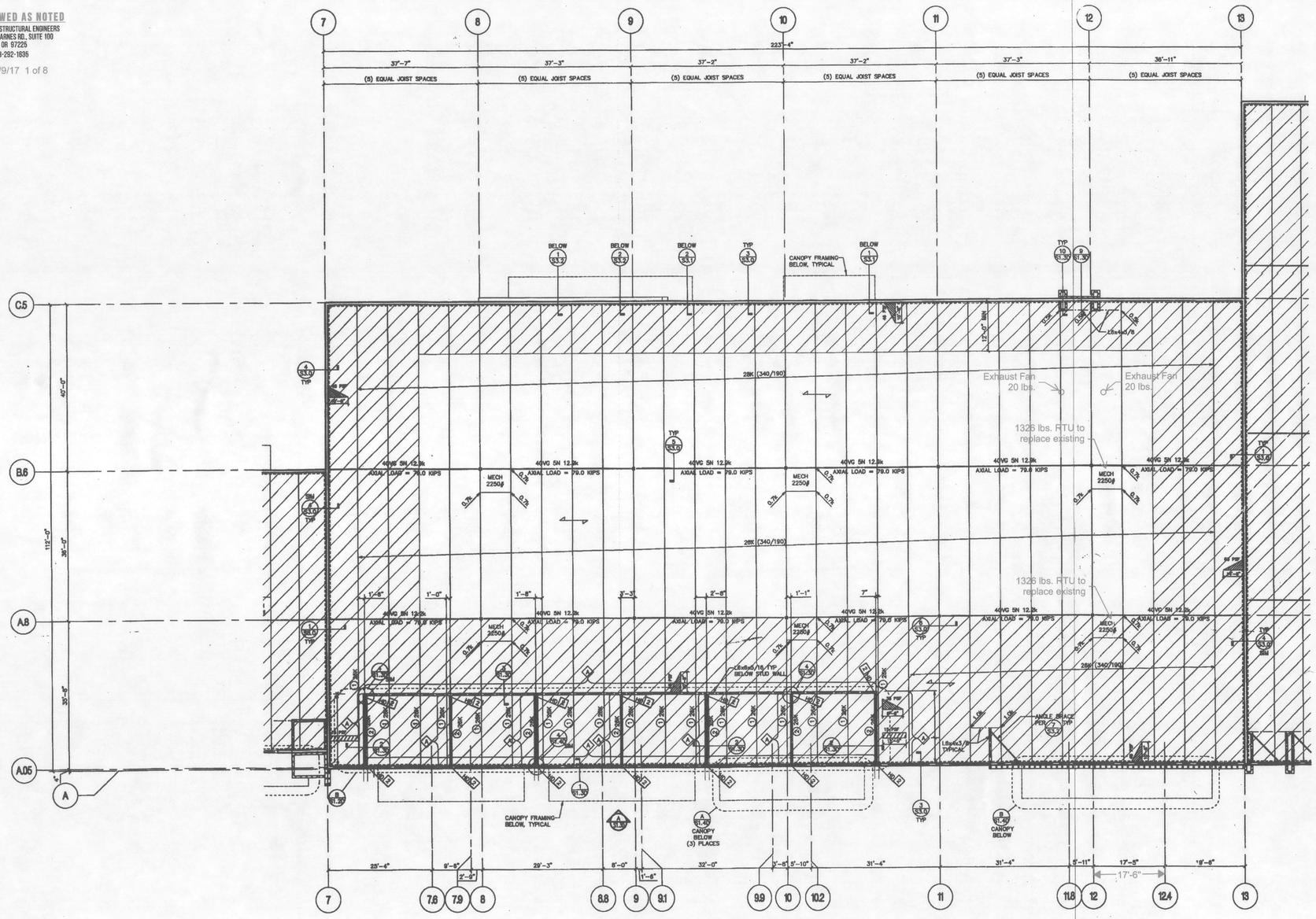
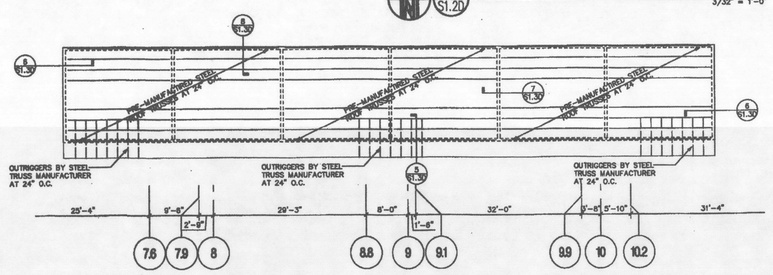
17-284 KEJ 8/9/17 1 of 8



A S1.20 ROOF FRAMING PLAN – BUILDING D
3/32" = 1'-0"



B S1.20 UPPER ROOF FRAMING PLAN – BUILDING D
3/32" = 1'-0"

UPPER ROOF FRAMING NOTES:

1. DESIGN LOADS:
   DEAD = 15 PSF
   LIVE = 25 PSF (SNOW) + DRIFT
   10 PSF NET UPLIFT ON TRUSSES
   LIMIT TRUSS DEFLECTION TO SMALLER OF LL/360, TL/240
2. FACADE ROOF SHEATHING TO BE A.P.A. RATED EXPOSURE 1 FIRE TREATED SHEATHING WITH A MINIMUM SPAN RATING OF 20/0 AND A MINIMUM THICKNESS OF 19/32. ORIENT STRONG AXIS PERPENDICULAR TO SUPPORTS.
3. SHEATHING IS TO BE ATTACHED WITH MIN. #8 FLAT-HEAD SELF-DRILLING TAPPING SCREWS WITH A MINIMUM HEAD DIAMETER OF 0.292 INCHES SPACED 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE FRAMING MEMBERS.
4. PRE-MANUFACTURED STEEL ROOF TRUSSES ARE DEFERRED SUBMITTAL (BIDDER DESIGN) FRAMING MEMBERS.
5. COORDINATE FACADE FRAMING, INCLUDING STRUCTURAL STEEL BEAMS AND COLUMNS (WHERE OCCURS) WITH ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
6. PROVIDE ADDITIONAL STUD FRAMING WHERE REQUIRED TO ACHIEVE ARCHITECTURAL PROFILES. FRAMING TO BE CONSISTENT WITH TYPICAL DETAILS U.O.N. OR APPROVED.

FACADE SHEAR WALL SCHEDULE

	SHEATHING AND FASTENERS	BOTTOM TRACK ANCHORAGE	CAPACITY (ASD)
1	7/16" RATED OSB OR 15/32" STRUCT. 1 PLYWOOD (4-PLY) ONE SIDE W/ SCREWS AT 6" O.C. AT ALL PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. BLOCK ALL PANEL EDGES.	LIGHT GAGE: #8 SCREWS AT 6" O.C. STAGGERED STEEL: 0.145" DIA. POWDER ACTUATED FASTENERS AT 10" O.C., STAGGERED	364 PLF
2	7/16" RATED OSB OR 15/32" STRUCT. 1 PLYWOOD (4-PLY) ONE SIDE W/ SCREWS AT 4" O.C. AT ALL PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS. BLOCK ALL PANEL EDGES.	LIGHT GAGE: #8 SCREWS AT 4" O.C. STAGGERED STEEL: 0.145" DIA. POWDER ACTUATED FASTENERS AT 6" O.C., STAGGERED	564 PLF

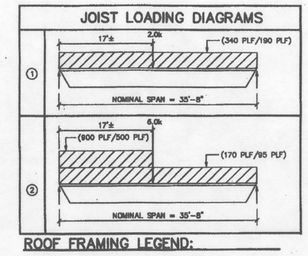
FACADE SHEAR WALL NOTES:
1.) ALL WOOD SHEATHING TO BE FIRE-TREATED SHEATHING
2.) INSTALL SHEATHING HORIZONTAL OR VERTICAL. NO PIECE TO BE SMALLER THAN 2'-0" X 2'-0".
3.) SCREWS FOR SHEATHING ATTACHMENT TO BE MINIMUM #8x 1 1/2" FLAT-HEAD SELF DRILLING TAPPING SCREWS WITH A MINIMUM HEAD DIA. OF 0.292"
4.) BLOCKING TO MATCH STUD GAUGE AND SIZE. WHERE HORIZONTAL STRAP BLOCKING IS USED, IT SHALL BE 1 1/2" WIDE AND MATCH STUD GAUGE.
5.) PROVIDE DOUBLE STUDS PLACED BACK TO BACK AT ENDS OF WALL, OR AS REQ'D PER HOLDOWN SCHEDULE
6.) ADD ADDITIONAL GYPSUM BOARD LAYERS AS REQUIRED BY ARCHITECT OVER SHEATHING

FACADE HOLDOWN SCHEDULE

MARK	HOLDOWN	VERTICAL MEMBER	STUD ATTACHMENT	A.B. DIA.	NOTES
HD 1	SIMPSON S/LTT20	(2) 600S162-43 STUDS	(5) #10 SCREWS	1/2"	SEE DETAIL (4/S1.3D)
HD 2	SIMPSON S/HTT14	(2) 600S162-43 STUDS	(14) #10 SCREWS	5/8"	SEE DETAIL (4/S1.3D)

HOLDOWN NOTES:
1.) INSTALL SIMPSON HOLDOWN PER SIMPSON RECOMMENDATIONS.
2.) SHEARWALL SHEATHING TO BE ATTACHED TO VERTICAL MEMBERS WITH TYPICAL EDGE FASTENER SPACING.
3.) DOUBLE STUDS TO BE CONNECTED WITH (2) #10 SCREWS AT 8" O.C. MINIMUM (STAGGERED).
4.) FOR HOLDOWN CONDITION ABOVE ROOF JOIST SEE DETAIL 4/S1.3D

JOIST LOADING DIAGRAMS



ROOF FRAMING LEGEND:

- 7 1/4" CONCRETE TILT WALL PANEL
- 600S162-43 AT 16" O.C. TYPICAL U.O.N. ON PLAN
- STRUCTURAL BEARING WALL BELOW
- LEDGER ANGLE PER DETAIL 7/S2.0
- COLUMN PER FOUNDATION PLAN
- SPAN OF METAL DECK PER ROOF FRAMING NOTES
- Pd / Wd — ADDITIONAL LOAD DUE TO SNOW DRIFTING. DRIFT LOAD IS IN ADDITION TO THE TYPICAL UNIFORM SNOW LOAD. Wd = WIDTH OF DRIFT; Pd = MAXIMUM DRIFT SURCHARGE
- Pd / Wd — ADDITIONAL LOAD DUE TO SLIDING SNOW. LOAD IS IN ADDITION TO SNOW DRIFT AND TYPICAL UNIFORM SNOW LOAD. Wd = WIDTH OF SLIDING SNOW; Pd = SLIDING SNOW SURCHARGE
- X.Xk — ADDITIONAL POINT LOAD ON JOIST OR GIRDER LOAD APPLIED TO TOP CHORD, U.O.N. (–) INDICATES UPLIFT LOAD
- (XX/XX) — DESIGN UNIFORM LOADING FOR JOIST IN POUNDS PER LINEAL FOOT. (TOTAL LOAD/LIVE LOAD)
- MECH XXXX# — MECHANICAL UNIT. CONTRACTOR TO COORDINATE SIZE, WEIGHT AND LOCATION WITH JOIST MANUFACTURER
- 16/2 / H — SHEAR WALL HOLDOWN – SEE FACADE HOLDOWN SCHEDULE
- SHEAR WALL LOCATION – SEE FACADE SHEAR WALL SCHEDULE

ROOF FRAMING NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS.
2. DESIGN LOADS:
   DEAD = 20 PSF + ADDITIONAL POINT LOADS
   LIVE = 25 PSF (SNOW) + DRIFT
   LIMIT JOIST DEFLECTION TO SMALLER OF LL/360, TL/240
   LIMIT GIRDER DEFLECTION TO TL/240
3. METAL ROOF DECK TO BE 1 1/2" VERCO TYPE 'PLB-36', LAY-UP TO THREE SPAN MINIMUM. SEE SCHEDULE THIS SHEET FOR DECK GAGE AND ATTACHMENT.
4. CONTRACTOR TO VERIFY ALL MECHANICAL UNIT SIZES, LOCATIONS AND WEIGHTS. REINFORCE OPENINGS PER DETAIL 9/S3.0
5. CONTRACTOR TO VERIFY SIZE AND LOCATION OF OPENINGS IN ROOF. REINFORCE OPENINGS PER DETAIL 9/S3.0
6. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR ALL ROOF, WALL AND PARAPET ELEVATIONS.

JOIST DESIGN NOTES:

1. JOIST DESIGN TO INCLUDE THE FOLLOWING ADDITIONAL CONCENTRATED LOADS AT TOP AND BOTTOM CHORD FOR SPRINKLER MAINS AND MECHANICAL LOADS:
   - 600 POUNDS LOCATED AT ANY POINT ON THE TOP CHORD
   - 300 POUNDS LOCATED AT ANY PANEL POINT ON THE BOTTOM CHORD
2. ADDITIONAL JOIST POINT LOADS INDICATED ON PLAN MUST BE ACCOUNTED FOR IN JOIST DESIGN.
3. JOIST BEARING DEPTHS TO BE 5" UNLESS NOTED OTHERWISE.
4. AXIAL LOAD IN TOP CHORD OF JOIST IS 10.5 KIPS UNLESS OTHERWISE NOTED, AS CALCULATED BY SECTION 1620 OF THE 2003 I.B.C. ALLOWABLE STRESS DESIGN. AXIAL LOADS TO BE TRANSFERRED THROUGH BEARING SEATS, UNLESS OTHERWISE NOTED.
5. 3.4 PSF NET UPLIFT ON JOISTS.

GIRDER DESIGN NOTES:

1. GIRDER DESIGN TO INCLUDE THE FOLLOWING ADDITIONAL CONCENTRATED LOADS AT TOP AND BOTTOM CHORD FOR SPRINKLER MAINS AND MECHANICAL LOADS:
   - 3000 POUNDS LOCATED AT ANY POINT ON THE TOP CHORD
   - 1000 POUNDS LOCATED AT ANY PANEL POINT ON THE BOTTOM CHORD
2. ADDITIONAL JOIST AND GIRDER POINT LOADS INDICATED ON PLAN MUST BE ACCOUNTED FOR IN GIRDER DESIGN.
3. GIRDER BEARING DEPTHS TO BE 7 1/2" UNLESS NOTED OTHERWISE.
4. AXIAL LOAD IN TOP CHORD OF GIRDER IS 45.0 KIPS UNLESS OTHERWISE NOTED AS CALCULATED BY SECTION 1620 OF THE 2003 I.B.C. ALLOWABLE STRESS DESIGN. AXIAL LOADS TO BE TRANSFERRED THROUGH BEARING SEATS, UNLESS OTHERWISE NOTED. AXIAL LOAD AT FACE OF WALL IS 0.0 KIPS.
5. NO NET UPLIFT ON GIRDERS.

METAL DECK ATTACHMENT SCHEDULE

ZONE	GAGE	WELD TO SUPPORT/BOUNDARY	SIDE LAP FASTENING	CAPACITY
	20	4 WELDS/SHEET PUDDLE WELD AT 24" O.C.	PUNCHLOK AT 24" O.C.	544 PLF
	18	4 WELDS/SHEET PUDDLE WELD AT 24" O.C.	PUNCHLOK AT 24" O.C.	881 PLF

1.) CAPACITIES BASED ON 8'-0" MAXIMUM JOIST SPACING.
2.) PUDDLE WELDS TO BE 5/8" DIA (1/2" DIA EFFECTIVE).

AS BUILT

REVISIONS
- 1 ADDENDUM 3 9/15/06
- 2
- 3
- 4
- 5
- 6
- 7
- 8

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Perkowitz+Ruth Architects
Architecture/Planning/Store Design
133 S.W. 2nd Avenue, Suite 300, Portland, OR 97204 Tel 503.478.9920 Fax 503.478.9900

PROJECT:
CASCADE STATION
SHELL PACKAGE 2
N.E. CASCADES PARKWAY
PORTLAND, OREGON

City of Portland REVIEWED FOR CODE COMPLIANCE SEP 14 2017 Permit Number

BID DATE: 8.15.06
JOB NUMBER: 2054.14.01
PLOT DATE: 09.30.06
DRAWN BY: KDR
SHEET TITLE: ROOF FRAMING PLAN BUILDING D
SHEET NO: S1.2D

PSE
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PORTLAND, OR 97225
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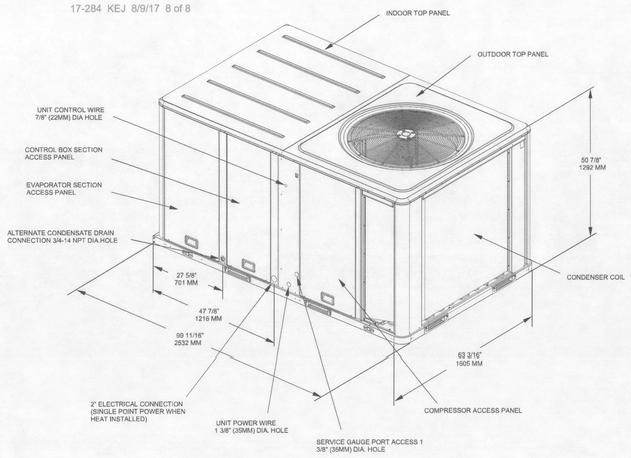
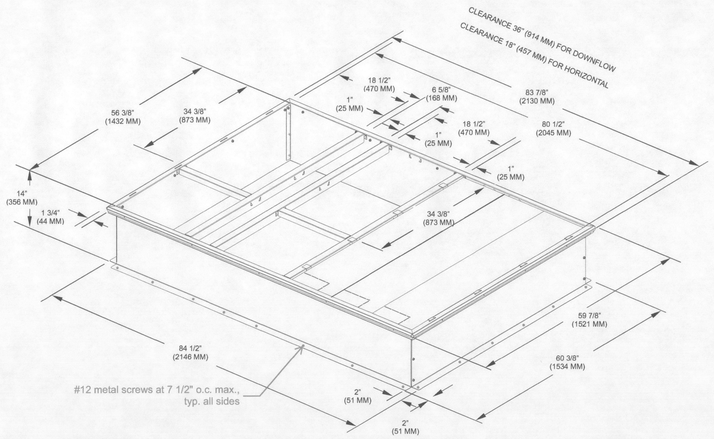
17-284 KEJ 8/9/17 8 of 8





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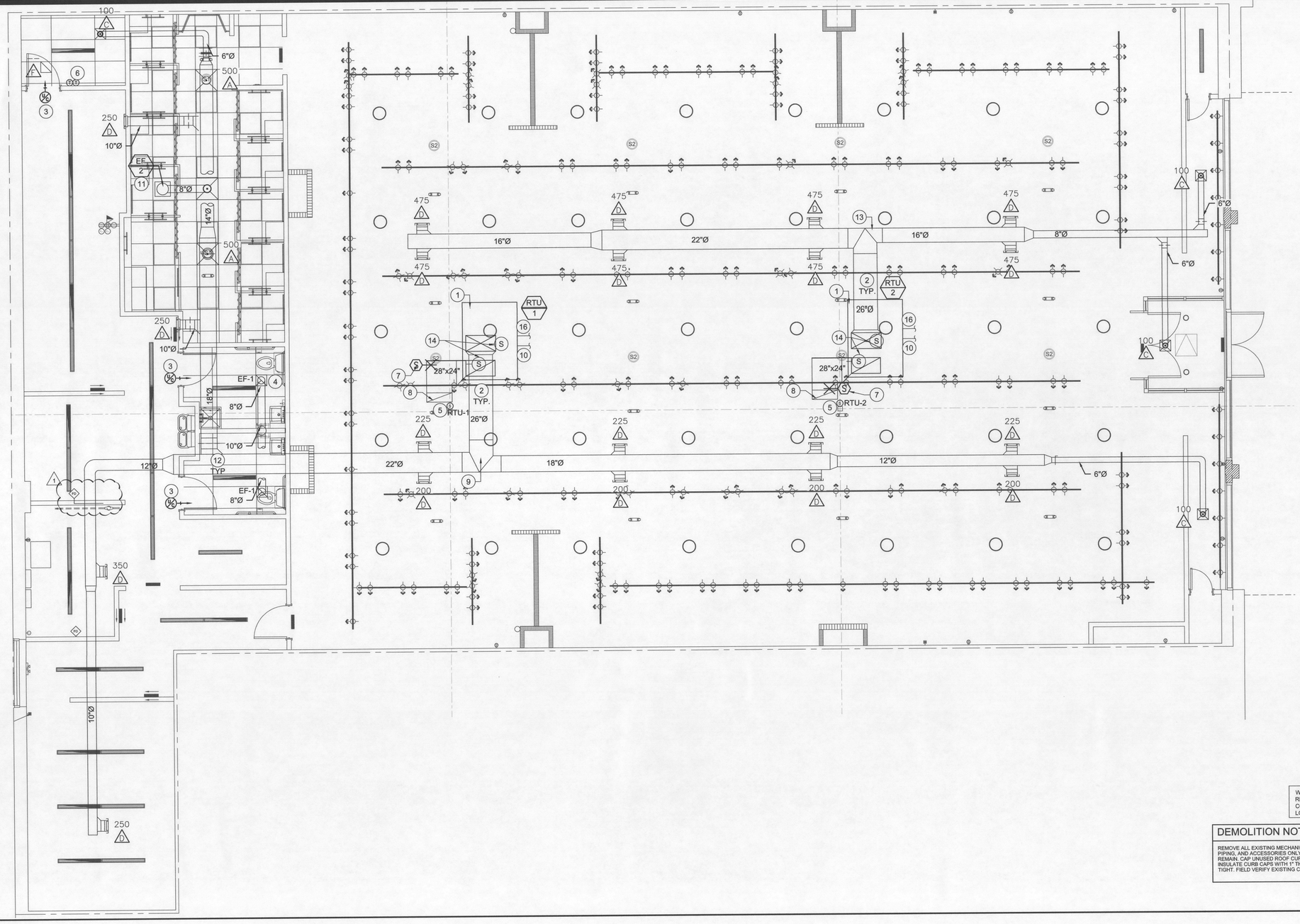

MECHANICAL PLAN

1/4" = 1'-0" | 1

MECHANICAL SYMBOLS LEGEND

GENERAL REFERENCES/NOTATIONS:

- CONNECT TO EXISTING
- CIRCLE NOTE DESIGNATION
- REVISION DESIGNATION
- MECHANICAL EQUIPMENT DESIGNATION
- DIFFUSER DESIGNATION AND CFM
- UNDERCUT DOOR 1"

GRILLES/DIFFUSERS:

- SUPPLY DIFFUSER
- SUPPLY DIFFUSER WITH 3-WAY THROW
- SUPPLY DIFFUSER WITH 2-WAY THROW
- SUPPLY DIFFUSER WITH 1-WAY THROW
- SLOT DIFFUSER
- SIDEWALL MOUNTED SUPPLY REGISTER
- RETURN GRILLE
- EXHAUST GRILLE

DOUBLE LINE DUCT SYMBOLS:

- NEW SHEET METAL DUCTWORK
- EXISTING DUCT/PIPE TO REMAIN
- SUPPLY OR OUTSIDE AIR DUCT
- RETURN AIR DUCT
- EXHAUST AIR DUCT
- DUCTWORK TRANSITION
- DUCTWORK TRANSITION - RECTANGULAR TO ROUND
- SUPPLY DUCT ELBOW UP OR DOWN
- RETURN DUCT ELBOW UP OR DOWN
- EXHAUST DUCT ELBOW UP OR DOWN
- DUCT ELBOW WITH FIXED TURNING VANES
- DUCT BRANCH TAKE-OFF
- ROUND SPIN-IN WITH DAMPER
- FLEXIBLE DUCT CONNECTION

DOUBLE LINE DUCT SYMBOLS, CONTINUED:

- FIRE DAMPER
- MANUAL VOLUME DAMPER
- FLEXIBLE DUCTWORK

EQUIPMENT:

- CEILING MOUNTED EXHAUST FAN
- FAN TERMINAL UNIT
- ROOFTOP UNIT
- UNIT HEATER
- ELECTRIC DUCT HEATER IN DUCT
- THERMOSTAT - ELECTRIC
- HUMIDITY SENSOR
- TEMPERATURE SENSOR
- CARBON DIOXIDE SENSOR
- DUCT SMOKE DETECTOR

MECHANICAL GENERAL NOTES

1	CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.
2	COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.
3	DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
4	ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
5	INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCE.
6	USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN THE RETURN AIR PLENUM. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL EXPOSED WIRING IN THE PLENUM SHALL BE PLENUM RATED.
7	CONTRACT LANDLORD APPROVED ROOFING CONTRACTOR TO FLASH AND SEAL RELATED ROOF PENETRATIONS TO MAINTAIN ROOFING WARRANTY.
8	INSTALL EXHAUST DUCT TERMINATION A MINIMUM OF 10 FT FROM ANY INTAKE AIR OPENINGS.
9	PROTECT ALL DUCT FROM DUST AND CONSTRUCTION DEBRIS DURING CONSTRUCTION.

MECHANICAL PLAN KEYNOTES

#	
1	NEW ROOF TOP PACKAGED AIR CONDITIONING UNIT . TENANT'S NAME AND SPACE NUMBER (LOFT OUTLET, SPACE #XXX) TO BE STENCILED ON UNIT. BALANCE AIRFLOWS TO QUANTITIES AS SCHEDULED. ALL CONDUIT, DUCTWORK, ETC. SERVING UNIT SHALL PENETRATE THE ROOF WITHIN THE ROOF CURB. INSTALL ON MANUFACTURER'S ROOF CURB IN AN APPROVED MECHANICAL ZONE. ALL ROOF WORK TO BE PERFORMED BY LANDLORD'S APPROVED CONTRACTOR. DUCT DROPS TO BE FULL SIZE OF RTU DISCHARGE/RETURN OPENING.
2	1" INTERNALLY LINE FIRST 10' OF DUCTWORK ONLY. INSTALL DUCTWORK AS HIGH AS POSSIBLE. ALL DIMENSIONS ARE INTERNAL CLEAR.
3	UNDERCUT DOOR 1" FOR TRANSFER AIRFLOW.
4	PROVIDE AND INSTALL NEW EXHAUST FAN WITH BACKDRAFT DAMPER EXTEND NEW 10" DUCT THROUGH ROOF WITH BIRD SCREEN. COORDINATE EXACT LOCATION OF PENETRATION AND ENSURE A MINIMUM OF 10' FROM ANY ROOFTOP EQUIPMENT.
5	PROVIDE MONITOR-ONLY TEMPERATURE SENSOR BY EMS VENDOR. PROVIDE WIRING IN CONDUIT TO TIE INTO EMS PANEL. COORDINATE REQUIREMENTS WITH EMS VENDOR. REFER TO RESPONSIBILITY SCHEDULE ON SHEET A0.06.
6	PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER PURCHASED FROM EMS VENDOR. NO EQUAL. MOUNT THERMOSTAT 48" ABOVE FINISHED FLOOR. PROVIDE CONTROL WIRING IN CONDUIT BETWEEN THERMOSTAT AND ROOFTOP UNIT. COORDINATE REQUIREMENTS WITH EMS VENDOR. REFER TO RESPONSIBILITY SCHEDULE ON SHEET A0.06.
7	PHOTOELECTRIC SMOKE DETECTOR IN RETURN AIR DUCT TO DE-ENERGIZE SUPPLY FAN IF ACTIVATED. SMOKE DETECTOR TO BE PROVIDED BY ELECTRICAL CONTRACTOR. INSTALLED BY MECHANICAL CONTRACTOR. WIRED BY ELECTRICAL CONTRACTOR AND LANDLORD CONTRACTOR.
8	PROVIDE MINIMUM 4' RETURN AIR DUCT WITH HARDWARE SCREEN OVER OPEN END. INTERNALLY LINED FULL LENGTH. ELBOW END OF RETURN DUCT UP 4".
9	PROVIDE AND INSTALL 65/35 SPLIT WITH TURNING VANES AND BALANCING DAMPERS
10	INSPECT AND REPAIR OR REPLACE EXISTING CONDENSATE LINE AS REQUIRED. ROUTE CONDENSATE LINE PER CITY CODES AND LL REQUIREMENTS.
11	PROVIDE AND INSTALL ROOF MOUNTED EXHAUST FAN WITH BACKDRAFT DAMPER FOR FITTING AREA SEE SHEET M2.01 FOR MORE INFORMATION.
12	PROVIDE AND INSTALL 1" INSULATION FOR ALL DUCTWORK OVER GYP OR LAY-IN CEILING.
13	PROVIDE AND INSTALL 70/30 SPLIT WITH TURNING VANES AND BALANCING DAMPERS.
14	PROVIDE DUCT TEMPERATURE SENSOR FURNISHED BY FROM EMS VENDOR. PROVIDE WIRING IN CONDUIT TO TIE INTO EMS PANEL COORDINATE REQUIREMENTS WITH EMS VENDOR. REFER TO RESPONSIBILITY SCHEDULE ON SHEET A0.06.
15	PROVIDE AND INSTALL FIRE/SMOKE DAMPERS TO MATCH RATING OF WALLS.
16	EXISTING GAS LINES AND REGULATORS TO REMAIN INSPECT AND REPAIR OR REPLACE AS REQURIED

City of Portland
REV. EW33 FOR CODE COMPLIANCE
SEP 14 2017
Permit Number

REGISTERED PROFESSIONAL ENGINEER 13858PE

OREGON 01/31/18 DONALD JAMES PENN

Exp. 12/31/18

WHEN REQUIRED IT IS THE OWNERS RESPONSIBILITY TO CONTRACT WITH A COMMISSIONING AUTHORITY TO COMPLY WITH LOCAL CODES.

DEMOLITION NOTES

REMOVE ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, HANGERS, SUPPORTS, PIPING, AND ACCESSORIES ONLY SERVING THIS SPACE AND NOT INDICATED TO REMAIN. CAP UNUSED ROOF CURBS WITH 18 GAUGE GALVANIZED SHEET METAL CAP. INSULATE CURB CAPS WITH 1" THICK 3 PCF DENSITY DUCT LINER, AND SEAL WATER TIGHT. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BID.

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LOFT OUTLET

REVISIONS
1 ISSUED FOR CONSTRUCTION 08.02.2017

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06LOS 002

CASCADE STATION
9198 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

MECHANICAL PLAN

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: M1.01

2016SPRING_LOFTOUTLET_PROTOTYPE

PSE
REVIEWED AS NOTED
PETERSON STRUCTURAL ENGINEERS
9400 SW BARNES RD., SUITE 100
PORTLAND, OR 97225
PHONE: 503-292-1535

17-284 KEJ 8/9/17 7 of 8

NOT USED

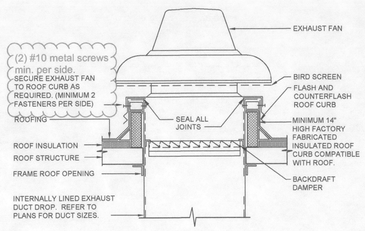
N.T.S. | 10

NOT USED

N.T.S. | 9

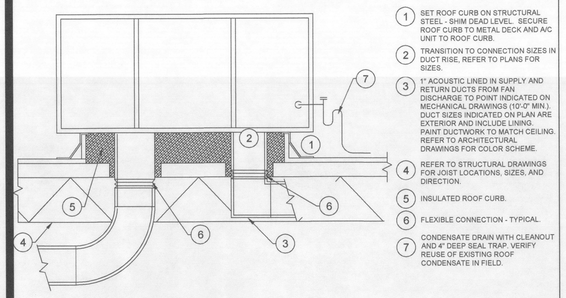
EXHAUST FAN DETAIL

N.T.S. | 8



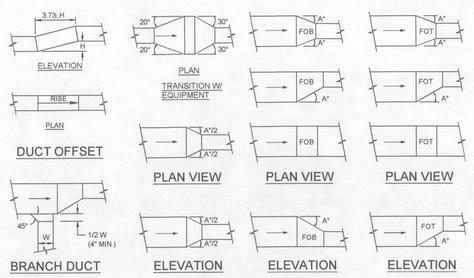
RTU DETAIL

N.T.S. | 7



LOW VELOCITY DUCT FITTINGS

N.T.S. | 12



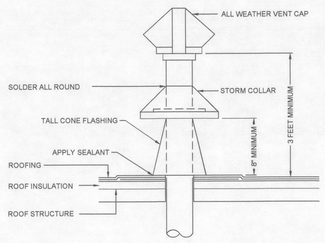
NOTES: 1) ANGLE A = 30° WHEN AIR FLOWS IN DIRECTION OF ARROW (SUPPLY AIR).
2) ANGLE A = 20° WHEN AIR FLOWS IN OPPOSITE DIRECTION OF ARROW (RETURN OR EXHAUST).

NOT USED

N.T.S. | 5

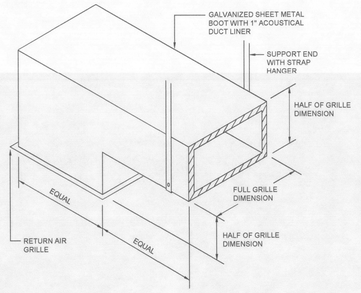
DUCT THROUGH ROOF DETAIL

N.T.S. | 4



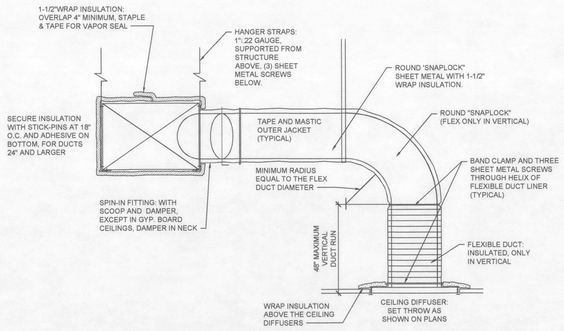
RETURN GRILLE WITH BOOT DETAIL

N.T.S. | 3



CEILING DIFFUSER CONNECTION DETAIL

N.T.S. | 2



SCHEDULES

N.T.S. | 1

AIR DISTRIBUTION DEVICES

(BASED ON TITUS UNLESS NOTED OTHERWISE)

SYMBOL KEY - NOTES :
1. FIRST LETTER: S-SUPPLY R-RETURN E-EXHAUST SECOND LETTER: D-DIFFUSER R-REGISTER G-GRILLE
2. CATALOG NUMBERS REFER TO TITUS AIR DEVICES.
3. 1,2,3, AND 4-WAY AIR DEVICES ARE DETERMINED BY
4. DAMPERS SHALL BE OPERABLE FROM FACE
   ** "A" OPPOSED BLADE
   ** "B" RADIAL OPPOSED BLADE
   ** "C" BUTTERFLY

5. FINISH
"A" METALESCENT ALUM. BAKED ENAMEL
"B" ETCHED FINISH WITH CLEAR FINISH OR ANODIZED
"C" #25 STANDARD WHITE
"D" STANDARD OFF WHITE FINISH G.C. TO FIELD PAINT. TO MATCH CEILING OR WALLS

6.BORDER STYLE-
"A" SURFACE MOUNTED
"B" LAY IN MOUNTING
"C" LAY-IN PANEL. PROVIDE TITUS MODEL # XY-13363 FRAME FOR PLASTER CEILING MOUNTING.

SYMBOL	CATALOG #	SIZE: MOD.	SIZE: NECK	MOUNTING: SIDE WALL	MOUNTING: CEIL TRK	MOUNTING: DUCT	MATERIAL: STEEL	MATERIAL: ALUM.	FINISH	ACCESSORIES: DPR	ACCESSORIES: EQUAL GRID	ACCESSORIES: FIRE DPR	BORDER STYLE	REMARKS
A	TMS	24"..24"			∘		∘		C	B			A	
B	TMS	24"..24"			∘		∘		C	B			B	
C	TMS	12"..12"			∘		∘		C	B			B	
D	301RL	18"..10"				∘	∘		C	A			A	
E	50F	24"..24"			∘		∘		C	A			A	1
F	50F	14"..14"		∘			∘		C	A			A	
G	355RL	22"..10"				∘	∘		C	A			A	
H	FL25	48"			∘		∘		C				A	2

1. PROVIDE GRILLE WITH 30" DEEP INSULATED PLENUM. PAINT INSIDE OF PLENUM FLAT BLACK.
2. (1) 2.5" SLOT 48" LINEAR DIFFUSER WITH TITUS HIGHTHROW PLENUM

..VERIFY BORDER TYPE WITH ARCHITECTURAL REFLECTED CEILING PLAN

NEW ROOFTOP UNIT FURNISHED AND INSTALLED BY G.C.

SYMBOL	MANUFACTURER MODEL #	AIR FLOW (CFM)	O.A. FLOW (CFM)	AMB. O.A.T. (°F)	EXT. S.P. (IN W.C.)	DX COOLING COIL: EAT (°F DB/WB)	DX COOLING COIL: TOTAL LOAD (TONS)	DX COOLING COIL: SENSIBLE LOAD (MBH)	HEATING: INPUT BTUH	HEATING: OUTPUT BTUH	ELECTRICAL: VOLTS/Ø/HZ	ELECTRICAL: MCA	ELECTRICAL: MOCP	ELECTRICAL: SEER/EER	NOTES
RTU-1,2	YHC120A4	4000	715 EA	84	.50	85/67	10	98.2	150	105	480/60/3	21.9	30	--/11.3	1-10

NOTES:
1. SINGLE ENTHALPY ECONOMIZER - FACTORY INSTALLED
2. BAROMETRIC RELIEF - FACTORY INSTALLED
3. GFCI CONVENIENCE OUTLET - FACTORY PROVIDED, FIELD INSTALLED
4. R.A. SMOKE DETECTOR - FACTORY PROVIDED, FIELD INSTALLED
5. PROVIDE ADAPT-A-CURB IF PERMITTED BY LL. VERIFY PRIOR TO BID
6. T'STAT AND SENSORS PER MANUFACTURER RECOMMENDATION
7. FACTORY EQUIPMENT OPERATIONS CHECK (EOC)
8. WARRANTY - 10 YR HEAT EXCHANGER / 5 YR COMPRESSOR / 3 YR CONTROLLER
9. LOW LEAKAGE (1...) DAMPERS
10. FURNISH WITH 2 SETS OF 2" THROW-AWAY FILTERS

REGIONAL OPTIONS
HAIL GUARDS - FACTORY SUPPLIED, FIELD INSTALLED (SUPPLIED WHERE REQ'D)
E-COATING (SUPPLIED WITHIN 20 MILES OF THE COAST)

EXHAUST FANS

MARK	LOCATION	SERVICE	CFM	EXT. S.P. (IN W.G.)	SONES	MOTOR DATA: HP	MOTOR DATA: VOLTS	MOTOR DATA: PH	MOTOR DATA: CYC.	RPM	MFR.	MODEL
EF-1	CEILING	EXHAUST	110	0.5	.8	--	115/60	1	--	--	NUTONE	QTEXN110FLT
EF-2	ROOF	EXHAUST	100	0.5	.8	--	115/60	1	--	--	GREASEMSTR	GMDR12H

1. PROVIDE MOTORIZED BACKDRAFT DAMPER.

VENTILATION REQUIREMENT CALCULATION

PER 2012 IMC TABLE 403.3

ROOM NAME	UNIT SERVICING	PEOPLE PER 1000 SQFT	CFM/PERSON	CFM/SF	AREA (SF)	PEOPLE X CFM/PERSON	SF X CFM/SF	REQUIRED O.A. CFM	PROVIDED O.A. CFM
RETAIL SALES AREA	RTU-1,,2	82	7.5	0.12	5425	615	651	1266	1270
STOCK ROOMS	RTU-2	0	10	0.12	1290	0	154.8	154.8	160
MINIMUM FRESH AIR CFM REQUIRED PER CODE									1420.8
TOTAL OF ALL FRESH INTRODUCED INTO SPACE									1430

RESTROOMS	70 CFM / FIXTURE	# FIXTURES=	2	140	CFM EXHAUST REQ'D	140	CFM EXHAUST

NOTES: REPRESENTS CONDITIONS DURING NORMAL OPERATIONS AND NOT CONSIDERING ECONOMIZER OPERATION.

City of Portland
REVIEWED FOR CODE COMPLIANCE
SEP 14 2017
Permit Number

STORE 3125

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LOFT OUTLET

REVISIONS

REGISTERED ARCHITECT
ALAN S. ANDREAS
MADISON, NJ
LIC. NO. 6809
STATE OF OREGON

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

CASCADE STATION
9180 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

MECHANICAL DETAILS

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: M2.01

2016SPRING_LOFTOUTLET_PROTOTYPE

SECTION 15010 - GENERAL REQUIREMENTS

A. GENERAL
1. SPECIFICATIONS ARE APPLICABLE TO ALL CONTRACTORS AND/OR SUBCONTRACTORS FOR MECHANICAL SYSTEMS.
2. CHECK OTHER PLANS AND SPECIFICATIONS AND FULLY COORDINATE WITH OTHER TRADES, OWNER AND ARCHITECT REQUIREMENTS.
3. CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT AND/OR OWNER.
4. VISIT SITE, CHECK FACILITIES AND CONDITIONS AND MAKE ALL NECESSARY OBSERVATIONS AND MEASUREMENTS. NOTE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND TAKE ALL ITEMS INTO CONSIDERATION IN BID.
5. SYSTEMS ARE TO BE COMPLETE AND WORKABLE IN ALL RESPECTS, PLACED IN OPERATION AND PROPERLY ADJUSTED.
6. EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH DAILY.
7. CONTRACTOR SHALL PROTECT HIS WORK, HIS EXISTING AND ADJACENT PROPERTY AGAINST WEATHER.
8. CONTRACTOR TO PROTECT HIS WORK, MATERIALS, APPARATUS AND FIXTURES FROM DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW MATERIAL AT THE CONTRACTOR'S EXPENSE.
9. CONTRACTOR MUST CONFIRM ALL UTILITY COMPANY REQUIREMENTS AND CONNECTION POINTS IN FIELD, PRIOR TO STARTING WORK.
10. ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS.
11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.
12. NO PIPING, DUCTWORK, WIRING, ETC., SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT.
13. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR AND OBTAIN A WRITTEN APPROVAL IDENTIFYING THE ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.
14. DURING CONSTRUCTION THE CONTRACTOR MAY UNCOVER AN EXISTING CONDITION THAT WILL HAVE TO BE MODIFIED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT EXTRA COST TO THE OWNER, AS THOUGH FULLY DETAILED ON PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.
15. WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS FOR PHASING REQUIREMENTS.

B. CODES, PERMITS, STANDARDS AND REGULATIONS
1. CONFORM TO ALL APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.), GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.
2. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.

C. RELATED WORK SPECIFIED ELSEWHERE
1. OPENINGS AND CHASES, WHEN SHOWN ON ARCHITECTURAL DRAWINGS.
2. TEMPORARY WATER SERVICE, SANITARY FACILITIES, FIRE PROTECTION AND HEATING DURING CONSTRUCTION.
3. POURED-IN-PLACE CONCRETE.
4. FINISHED PAINTING.
5. ELECTRIC POWER WIRING.

D. DRAWINGS
1. THE SYSTEMS AS SHOWN ON MECHANICAL DRAWINGS ARE DIAGRAMMATIC. CONFIRM ALL DIMENSIONS BY FIELD MEASUREMENT.
2. THE EXACT LOCATIONS FOR FIXTURES, EQUIPMENT AND PIPING WHICH IS NOT COVERED BY DRAWINGS, SHALL BE OBTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD AND THE WORK SHALL BE LAID OUT ACCORDINGLY.
3. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE FURNISHED AS IF BOTH WERE MENTIONED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.

E. BASE EQUIPMENT, MATERIALS AND SUBSTITUTIONS
1. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND UL LABELED.
2. BASE BID MANUFACTURERS ARE INCLUDED IN THE SPECIFICATION OR LISTED IN SCHEDULES ON THE DRAWINGS. ALL OTHER MANUFACTURERS ARE CONSIDERED SUBSTITUTION.
3. THE NAME OR MAKE OF ANY ARTICLE, DEVICE, MATERIAL, FORM OF CONSTRUCTION, FIXTURE, ETC., STATED IN THIS SPECIFICATION, WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED, SHALL BE KNOWN AS A "STANDARD".
4. ALL PROPOSALS SHALL BE BASED ON "STANDARDS" SPECIFIED.
5. THE EQUIPMENT SCHEDULES ON THE DRAWINGS INDICATE MANUFACTURERS EQUIPMENT MODEL NUMBERS THAT THIS DESIGN HAS BEEN BASED ON. THE USE OF OTHER MANUFACTURER'S EQUIPMENT THAT IS LISTED AS ACCEPTABLE ALTERNATES THAT ENTAILS GENERAL TRADES, STRUCTURAL, MECHANICAL, ELECTRICAL, ETC., REVISIONS IS THIS CONTRACTOR'S RESPONSIBILITY. ANY ADDITIONAL COST OF SUCH CHANGES SHALL BE PAID BY THE CONTRACTOR SUBMITTING THE ACCEPTABLE ALTERNATES WHICH NECESSITATES CHANGES IN INSTALLING SUCH SUBMITTED ALTERNATE EQUIPMENT, EVEN THOUGH SUCH COSTS MAY BE PART OF ANOTHER DIVISION OF WORK.
6. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IF A SUBSTITUTION IS SUBMITTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE IT AND CERTIFY THAT THE SUBSTITUTION IS EQUIVALENT IN ALL RESPECTS TO THE BASE SPECIFICATIONS
7. IF SUBSTITUTIONS ARE APPROVED, NOTIFY ALL OTHER CONTRACTORS, SUBCONTRACTORS, ETC., AFFECTED BY THE SUBSTITUTION AND FULLY COORDINATE WITH THEM. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY THIS CONTRACTOR OR OTHERS, WILL BE THE RESPONSIBILITY OF AND PAID FOR BY THE SUBSTITUTING CONTRACTOR. APPROVED SHOP DRAWINGS DO NOT ABSOLVE THIS CONTRACTOR FROM THIS RESPONSIBILITY.
8. ALL EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM THESE REQUIREMENTS PRIOR TO STARTING WORK.

F. WARRANTY
1. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
2. EXTEND ALL MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING FIVE (5) YEAR COMPRESSOR AND TEN (10) YEAR HEAT EXCHANGER EXTENDED WARRANTY ON HVAC EQUIPMENT.
3. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH REPLACEMENT OR REPAIR.

G. SHOP DRAWING SUBMITTALS
1. SUBMIT SHOP DRAWINGS FOR MECHANICAL, PLUMBING AND FIRE PROTECTION SYSTEMS, INCLUDING BUT NOT LIMITED TO PLUMBING FIXTURES AND EQUIPMENT WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING THE SAME IDENTIFICATION AS PROVIDED ON THE CONSTRUCTION DOCUMENTS. IT IS NOT NECESSARY TO SUBMIT ON MECHANICAL AND PLUMBING EQUIPMENT IF THE ACTUAL SPECIFIED ITEM IS PROVIDED. SUBMIT ON ALL ALTERNATE MANUFACTURER'S AND EQUIPMENT.
2. FIRE PROTECTION DRAWINGS SHALL BE FULLY DIMENSIONED AND COORDINATED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT ALL CRITICAL LOCATIONS.
3. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE ENGINEER UNLESS THE CONTRACTOR'S APPROVAL IS NOTED. DO NOT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR.
4. SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER INSTALLATION.
5. WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR THE VARIATIONS.
6. EACH MANUFACTURER OR HIS REPRESENTATIVE MUST CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT THE EQUIPMENT SPECIFIED HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON THE DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT THE TIME OF SUBMITTAL.

H. RECORD DRAWINGS
1. EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT DRAWINGS ON THE JOB SITE ON WHICH HE SHALL REGULARLY RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION.
2. THESE DRAWINGS SHALL RECORD THE INSTALLED LOCATION OF ALL CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT, ETC., BY MEASURE DIMENSIONS TO EACH SUCH ITEM FROM COLUMN CENTERLINES OR READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SEWERS AND TOP ELEVATION OF ALL OTHER BELOW-GRADE LINES.
3. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK.
4. AFTER THE PROJECT IS COMPLETED, THESE DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS ACTUALLY CONSTRUCTED.

SECTION 15050 - BASIC MATERIALS AND METHODS

A. GENERAL
1. PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, AND ACCESSORIES REQUIRED TO FURNISH AND INSTALL THE MECHANICAL ITEMS IDENTIFIED IN THIS SECTION.
2. THIS SECTION INCLUDES BASIC MECHANICAL MATERIALS AND METHODS TO COMPLEMENT OTHER DIVISION 15 SECTIONS IN THIS SPECIFICATION AND REQUIREMENTS INDICATED ON THE MECHANICAL DRAWINGS.

B. EXCAVATION AND BACKFILL
1. PERFORM ALL EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION OF BELOW-GRADE PIPING.
2. EXCAVATE AS REQUIRED TO INSTALL PIPING AT REQUIRED DEPTH AND PITCH. PIPE TO BE LAID ON SAND BEDDING TO GIVE UNIFORM BEARING ALONG LENGTH OF PIPE (SAND INSIDE BUILDING AND INTERLOCKING AGGREGATE OUTSIDE BUILDING).
3. BACKFILL WITH BEDDING MATERIAL TO A MINIMUM OF TWELVE (12) INCHES ABOVE TOP OF PIPE AND COMPACT. BALANCE OF BACKFILL IN INDOOR GRASS AREAS SHALL BE CLEAN EARTH UP TO SIX (6) INCHES ABOVE SURROUNDING GRADES. BACKFILL BELOW FINISHED FLOORS SHall BE SAND, AND OUTDOORS UNDER PAVING SHALL BE INTERLOCKING AGGREGATE AND BACKFILL SHALL BE COMPACTED IN MAXIMUM TWELVE (12) INCH LAYERS.
4. ALL OTHER EXCAVATIONS SHALL BE BACKFILLED WITH CLEAN EARTH, EXCLUDING RUBBISH AND BOULDERS. BACKFILL SHALL BE THOROUGHLY TAMPED AND PUDDLED.
5. PATCH FLOOR TO MATCH EXISTING ADJACENT SURFACES.

C. SUPPORTS AND HANGERS
1. HANGERS AND SUPPORTS ARE TO BE PROVIDED TO PROPERLY SUPPORT, SECURE AND ALIGN PIPING AND TO MEET FIELD CONDITIONS AND AS MANUFACTURED BY GRINNELL OR MICHIGAN.
2. SPACING TO COMPLY WITH ASHRAE STANDARDS AND LOCAL CODE REQUIREMENTS.

D. ESCUTCHEONS
1. FIT ALL PIPE PASSING THROUGH WALLS, FLOORS OR CEILINGS IN FINISHED ROOMS WITH STEEL OR BRASS ESCUTCHEONS. WHERE SURFACE IS TO RECEIVE A PAINT FINISH MAKE ESCUTCHEONS PRIME PAINTED; OTHERWISE MAKE ESCUTCHEONS NICKEL OR CHROME PLATED. WHERE PIPING IS INSULATED, FIT ESCUTCHEONS OUTSIDE INSULATION.

E. PIPE IDENTIFICATION
1. IDENTIFY EACH PIPE, VALVE IN EQUIPMENT ROOMS, ABOVE ACCESSIBLE CEILINGS AND IN ACCESSIBLE SHAFTS.
2. COLOR CODE IDENTIFICATION BANDS OR MARKER BACKGROUNDS TO IDENTIFY CONTENTS OF PIPE AND DIRECTION OF FLOW LOCATED NEAR EACH VALVE AND FITTING, ON BOTH SIDES OF PIPE PASSING THROUGH WALLS AND ON LONG RUNS AT NOT OVER 20 FOOT INTERVALS.

F. ACCESS PANELS
1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK. THIS INCLUDES ANY ACCESS PANELS REQUIRED FOR HVAC, PLUMBING AND FIRE PROTECTION. CONTRACTOR SHALL ALSO PROVIDE ACCESS PANELS FOR ANY EXISTING CONDITIONS AS REQUIRED.
2. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR TYPE OF ACCESS PANEL AND COORDINATE LOCATIONS PRIOR TO ANY WORK.

H. ROOF CURBS (AS MANUFACTURED BY PATE, ROOF PRODUCTS AND SYSTEMS AND THYCURB)
1. CURB SHALL BE 18 GAUGE GALVANIZED STEEL WITH CONTINUOUS WELDED SEAMS, WOOD NAILER, COUNTERFLASHING AND INSULATION. TOP OF CURB SHALL BE A MINIMUM OF 12" ABOVE THE FINISHED ROOF SURFACE.
2. PROVIDE CURB FOR ALL ROOF PENETRATIONS OF DUCTS AND PIPING.
3. ALL CUTTING AND PATCHING OF EXISTING ROOF SHALL BE BY THE OWNER'S ROOFING CONTRACTOR AND PAID FOR BY THE MECHANICAL CONTRACTOR.

I. FIRESTOPPING
1. ALL OPENINGS THROUGH FIRE RATED WALLS, FLOORS, AND/OR ROOFS FOR DUCTWORK, PIPING, ETC., SHALL BE FIRE SEALED WITH CALCIUM SALICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS, HILTI FIRETOP SYSTEMS, OR APPROVED EQUAL TO MAINTAIN THE INTENDED FIRE RATING AND ASSOCIATED UL RATINGS.

J. CUTTING, PATCHING AND DRILLING
1. ALL CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED AS TO SIZE AND LOCATION PRIOR TO NEW CONSTRUCTION. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
2. NEATLY SAW CUT ALL RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING.
3. NEATLY SAW CUT FLOORS AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR COVERING.
4. CONTRACTOR SHALL FIELD VERIFY SLAB-ON-GRADE OR SUPPORTED FLOOR CONSTRUCTION TYPE PRIOR TO CUTTING. UNDER NO CIRCUMSTANCES SHALL THIS CONTRACTOR CUT A STRUCTURAL FLOOR SLAB, WHETHER ON GRADE OR SUPPORTED, WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT. IF FLOOR SLAB INDICATED TO BE CUT ON MECHANICAL PLANS IS FOUND TO BE STRUCTURAL IN NATURE, DO NOT CUT. CONTACT ARCHITECT IMMEDIATELY FOR FURTHER DIRECTIONS.
5. CORE DRILL AND SLEEVE ALL ROUND OPENINGS.
6. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S WRITTEN APPROVAL, INCLUDING, BUT NOT LIMITED TO ROOF JOISTS, COLUMNS, FLOOR JOISTS, BEAMS, GIRDERS, STRUCTURAL FLOOR SLABS, ETC.
7. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL SYSTEMS. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER.
8. ALL CONTRACTORS SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRES ACCESS INTO ADJOINING TENANT SPACES. INCLUDE ANY PREMIUM TIME IN BID.
9. EXACT LOCATION OF ROOF TOP AIR CONDITIONING UNITS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SUPPLEMENTAL SUPPORT STEEL FOR EQUIPMENT AND ROOF PENETRATIONS AFTER APPROVAL OF STRUCTURAL ENGINEER.
10. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. THE MECHANICAL CONTRACTOR SHALL PROVIDE INFORMATION REGARDING OPENINGS IN WALLS, FLOORS, ETC., CONCRETE EQUIPMENT PADS AND FOUNDATIONS TO THE GENERAL CONTRACTOR. IF THE MECHANICAL CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT INFORMATION IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL CONTRACTOR, AT THE MECHANICAL CONTRACTOR'S EXPENSE.

K. DEMOLITION AND REMOVAL
1. DISCONNECT, CAP AND REMOVE ALL PIPING, DUCTWORK AND EQUIPMENT INDICATED ON THE DRAWINGS OR AS REQUIRED FOR THE PROJECT.
2. ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO THE OWNER ON SITE.
3. DEMOLITION SHALL BE DONE IN A MANNER SO AS NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
4. ALL OPEN ENDED PIPING AND DUCTWORK THAT IS TO REMAIN SHALL BE CAPPED AND PROPERLY SECURED.
5. ALL ELECTRICAL DEVICES, WIRING, CONDUIT, ETC., RELATED TO DEMOLISHED EQUIPMENT/SYSTEMS SHALL BE REMOVED. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS, REMOVED AND BREAKERS MARKED "SPARE".
6. MECHANICAL CONTRACTOR SHALL REMOVE AND RECLAIM ANY REFRIGERANT IN EXISTING SYSTEMS PRIOR TO DEMOLITION OF ANY EQUIPMENT ACCORDING TO FEDERAL REQUIREMENTS.
7. ALL ASBESTOS REMOVAL WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.
8. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK MUST BE PERFORMED. THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK AND/OR DEMOLITION WORK PERFORMED BY THE OWNER.
9. REMOVE ALL SUPPORTS, HANGERS, ETC., RELATED TO EQUIPMENT AND MATERIAL INDICATED TO BE DEMOLISHED.
10. WHERE TEMPERATURE CONTROLS ARE INDICATED FOR DEMOLITION, RETAIN THE SERVICES OF A TEMPERATURE CONTROL CONTRACTOR TO PERFORM SUCH DEMOLITION.

SECTION 15100 - INSULATION

A. GENERAL
1. FURNISH ALL MATERIAL, LABOR AND EQUIPMENT AS REQUIRED TO INSTALL COMPLETE PLUMBING AND HVAC INSULATION AS INDICATED ON MECHANICAL DRAWINGS AND IN THESE SPECIFICATIONS.
2. INSTALL IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B. PLUMBING INSULATION (AS MANUFACTURED BY OWENS CORNING, KNAUF OR SCHULLER)
1. INSULATE ALL ABOVE GRADE HOT AND COLD WATER PIPING WITH MOLDED FIBERGLASS HAVING AN ALL SERVICE JACKET.
   B.a. INSULATION THICKNESS SCHEDULE:
   1.1. LESS THAN (<) 1-1/2" DIAMETER PIPE: 3/4" THICK.
   1.2. 1-1/2" 8" DIAMETER PIPE: 1" THICK.
2. INCLUDE INSULATION OF FITTINGS AND VALVES. KEEP VAPOR BARRIERS INTACT. APPLY TO MANUFACTURER'S RECOMMENDATIONS.
3. HANDICAPPED LAVATORY INSULATION - INSULATE ALL EXPOSED WASTE AND WATER SUPPLY PIPING UNDER LAVATORY WITH SERVE COVERS PER ADA REQUIREMENTS AS MANUFACTURED BY PLUMBEREX SPECIALTY PRODUCTS, MCGUIRE OR TRUEBRO.
4. REPAIR SECTIONS OF EXISTING PIPING INSULATION DAMAGED OR DAMAGED DURING THIS CONSTRUCTION PERIOD. USE INSULATION OF SAME THICKNESS AS EXISTING INSULATION, INSTALL NEW JACKET LAPPING AND SEALED OVER EXISTING.

C. HVAC INSULATION (AS MANUFACTURED BY OWENS CORNING, KNAUF, SCHULLER, ARMSTRONG, OR RUBATEX)
1. INSULATE ALL NON-LINED SUPPLY, RETURN, AND EXHAUST DUCTS WITH 1-½" THICK FOIL FACED REINFORCED KRAFT JACKET, FIBERGLASS DUCT WRAP FULLY SECURED TO DUCT. LAP AND TAPE SEAMS AND SECURE TIGHTLY TO THE DUCTS WITH WIRE OR STICK PINS
2. ALL INSULATION TO BE APPLIED IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND COMPLY WITH 25/50 FLAME AND SMOKE HAZARD RATINGS PER ASTM E-84, NFPA 255 AND UL 723.
3. INSULATE REFRIGERANT SUCTION LINE WITH 1/2" ELASTOMERIC FOAM INSULATION WITH JOINTS AND SEAMS SEALED VAPOR TIGHT.
4. INSULATE AIR CONDITIONING CONDENSATE DRAIN PIPING WITH 1/2" THICK MOLDED FIBERGLASS INSULATION.
5. PROVIDE REMOVABLE INSULATION SECTIONS TO COVER PARTS OF EQUIPMENT WHICH MUST BE OPENED PERIODICALLY FOR MAINTENANCE INCLUDING METAL VESSEL COVERS, FASTENERS, FLANGES, CHILLED WATER PUMPS, FRAMES AND ACCESSORIES.
6. REPAIR DAMAGED SECTIONS OF EXISTING MECHANICAL INSULATION DAMAGED DURING THIS CONSTRUCTION PERIOD. USE INSULATION OF SAME THICKNESS AS EXISTING INSULATION, INSTALL NEW JACKET LAPPING AND SEAL OVER EXISTING.
7. REPLACE DAMAGED INSULATION WHICH CANNOT BE REPAIRED SATISFACTORILY, INCLUDING UNITS WITH VAPOR BARRIER DAMAGE AND MOISTURE SATURATED UNITS.

SECTION 15200 - PIPING AND VALVES

A. GENERAL
1. FURNISH ALL MATERIAL, LABOR, EQUIPMENT, AND ACCESSORIES AS REQUIRED TO INSTALL COMPLETE PLUMBING AND HVAC PIPING SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS AND IN THESE SPECIFICATIONS.
2. INSTALL IN FULL ACCORDANCE WITH LOCAL CODE REQUIREMENTS, OTHER SPECIFICATION SECTION REQUIREMENTS AND MANUFACTURER'S RECOMMENDATIONS.

B. CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS
1. PROVIDE VALVED WATER AND/OR GAS CONNECTION FOR EQUIPMENT FURNISHED BY OTHER CONTRACTORS OR OWNER.
2. INCLUDE ACCESSORIES REQUIRED BY CODE, DRAWING OR MANUFACTURER'S INSTRUCTIONS.

C. SANITARY SEWERS
1. INSTALL SANITARY SEWERS, STACKS, VENTS, DRAINS, ETC., AS INDICATED ON THE DRAWINGS.
2. SEWERS TO BE PITCHED A MINIMUM OF 1/4" PER FOOT FOR 3" SIZES AND UNDER AND 1/8" PER FOOT FOR 4" SIZES AND LARGER OR TO GRADES INDICATED ON DRAWINGS.
3. CHANGES IN DIRECTION AND BRANCH CONNECTIONS SHALL BE MADE WITH APPROVED DRAINAGE FITTINGS COMPATIBLE WITH THE PIPING SYSTEM MATERIAL IN WHICH IT IS INSTALLED.
4. INSTALL CLEANOUTS AT BASE OF EACH VERTICAL WASTE AND RAINWATER STACK, EACH CHANGE IN A DIRECTION OF PIPING GREATER THAN 45 DEGREES, AND WITHIN FIVE (5) FEET OF MAIN SEWER AFTER EXITING THE BUILDING.
5. ALL FIXTURES AND SANITARY DRAINS SHALL BE VENTED AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH CODE.
6. VENTS ARE TO BE EXTENDED THROUGH ROOF AS INDICATED ON DRAWINGS AND FLASHED WITH 4 LB. LEAD WITH VENT FLASHING TOP TURNED DOWN TWO (2) INCHES MINIMUM INSIDE PIPE.
7. PVC PIPING SHALL NOT BE INSTALLED UNLESS PERMITTED BY CODE AND SHALL NOT BE INSTALLED IN RETURN AIR PLENUMS.
8. SANITARY SEWER AND VENT MATERIAL SHALL BE AS FOLLOWS:
   C.a. BELOW GRADE SANITARY INSIDE BUILDING
   8.1. PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS. PVC TO BE UTILIZED AS BASE BID UNLESS NOT ALLOWED BY LOCAL CODE OR LANDLORD.
   8.2. SERVICE WEIGHT - CAST IRON PIPE ASTM A-74-82 WITH ASTM C-564-80 NEOPRENE COMPRESSION JOINTS.
   C.b. ABOVE GRADE SANITARY SEWER AND VENT MATERIAL SHALL BE AS FOLLOWS:
   8.1. NO-HUB CAST IRON PIPE CISPI 1-301-78.
   8.2. SCH. 40 GALVANIZED STEEL PIPE ASTM A-120-83 WITH CAST IRON SCREWED FITTINGS ANSI B-16.22 1983.

D. DOMESTIC WATER PIPING
1. INSTALL DOMESTIC WATER PIPING AS INDICATED ON DRAWINGS. INCLUDE ALL FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES INCLUDING WATER METER AND BACKFLOW PREVENTER (IF REQ'D). EXTEND DOMESTIC WATER PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRED FOR COMPLETE INSTALLATION.
2. INCLUDE UNIONS, OR OTHER DISCONNECT MEANS, STOPS OR VALVES FOR ISOLATION OF FIXTURES AND EQUIPMENT. VALVES TO BE FULLY COMPATIBLE WITH PIPING FOR SERVICE INTENDED AS MANUFACTURED BY NIBCO, CRANE OR MILWAUKEE. INCLUDE HOSE OR DRAIN VALVES AT LOW POINTS WHERE FIXTURES CANNOT BE USED FOR DRAINAGE.
3. INSTALL SHOCK ABSORBERS AT EACH QUICK CLOSING FIXTURE AND WHERE REQUIRED TO PREVENT WATER HAMMER AS MANUFACTURED BY J.R. SMITH, SIOUX CHIEF OR ZURN.
4. HANGERS ON INSULATED PIPE TO BE OUTSIDE OF INSULATION, SIZED ACCORDINGLY WITH A SUFFICIENT SADDLE TO PROTECT INSULATION AS MANUFACTURED BY GRINNELL OR MICHIGAN.
5. DOMESTIC WATER PIPING SHALL BE AS FOLLOWS:
   D.a. ABOVE GRADE - TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND NON-LEAD OR ANTIMONY SOLDER JOINTS.
   D.b. BELOW GRADE - TYPE "K" SOFT COPPER WITHOUT JOINTS.
6. FLUSH, VENT AND SANITIZE ALL WATER PIPING WITH CHLORINE AS REQUIRED PER AWWA, LOCAL BUILDING DEPARTMENT AND HEALTH DEPARTMENT CODES.
7. DOMESTIC HOT AND COLD WATER PIPING UNDER CONCRETE FLOOR TO BE COVERED WITH SAND SO THAT PIPING WILL NOT BECOME EMBEDDED IN THE FLOOR SLAB.
8. ALL PIPING UNDER CONCRETE FLOOR SHALL BE TYPE "K" SOFT COPPER, CONTINUOUS. NO SPLICES OR FITTINGS WILL BE ALLOWED.
9. EXTREME CAUTION MUST BE TAKEN SO THAT NO COPPER PIPING AND INSULATION UNDER CONCRETE FLOORS BECOMES CRUSHED, CUT, SPLIT OR DEFORMED DURING THE POURING OF THE FLOOR SLAB.

E. GAS PIPING
1. INSTALL GAS PIPING.
2. INCLUDE METER AND REGULATOR (IF REQ'D) AND CONNECT TO ALL GAS USING EQUIPMENT.
3. EQUIPMENT CONNECTIONS AT EACH UNIT SHALL INCLUDE GAS COCK, UNION AND DIRT LEG.
4. CONSTRUCT CONCRETE BASE TO BELOW FROST LINE FOR METER INSTALLATION.
5. ALL GAS PIPING SHALL CONFORM TO RECOMMENDED PRACTICE AND REGULATION OF THE. LOCAL GAS CO. AND THE STATE OF ____ CODE.
6. GAS PIPING SHALL BE AS FOLLOWS:
   E.a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE.
   6.1. SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, BEVELED ENDS.
   E.a.a. 2" AND SMALLER - SCREWED FITTINGS, WROUGHT IRON.
   E.a.b. 2 1/2" AND LARGER - WELDED FITTINGS, BLACK STEEL.
   E.b. INSIDE BUILDING, MEDIUM PRESSURE
   6.1. SCHEDULE 40 BLACK STEEL WITH WELDED BLACK STEEL FITTINGS.
   E.c. BELOW GRADE OUTSIDE BUILDING, LOW AND MEDIUM PRESSURE GAS SERVICE
   6.1. POLYETHYLENE PLASTIC ASTM D

GENERAL ELECTRICAL NOTES

1	INCLUDE ALLOWANCE FOR UNFORESEEN CONDITIONS THAT MAY EFFECT THE SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN THIS ALLOWANCE.
2	SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND CONTACTORS SHALL BE "LISTED" AND "IDENTIFIED" AS RATED FOR A MINIMUM OF 75°C CONDUCTOR TERMINATION.
3	ELECTRICAL DESIGN HAS BEEN BASED ON THE INSTALLATION OF 75°C CONDUCTORS CONNECTED TO TERMINAL LUGS AND EQUIPMENT U.L. LISTED FOR A MINIMUM 75°C. CONDUCTORS TERMINATED ON EQUIPMENT WITH A LOWER RATING (60°C) OR NO RATING SHOWN TO HAVE CONDUCTOR SIZE INCREASED TO CONFORM TO ADOPTED ELECTRICAL CODE AND UL/CUL NO. 489 REQUIREMENTS.
4	CONDUIT INSTALLED INDOORS SHALL BE ELECTRICAL METALLIC TUBING (EMT), MINIMUM 1/2" OR AS NOTED.
5	CONDUIT INSTALLED BELOW SLAB SHALL BE RIGID STEEL, IMC, PVC OR HDPE, MINIMUM 3/4". IF PVC OR HDPE IS USED, TRANSITION TO RIGID STEEL BEFORE TURNING UP AND PENETRATING FLOOR SLAB.
6	CONDUCTORS SHALL BE A MINIMUM OF #12 THHN/THWN COPPER UNLESS NOTED OTHERWISE ON PLANS OR IN SPECIFICATIONS. BRANCH CIRCUITS SHALL BE PROVIDED WITH (2) #12 CONDUCTORS AND (1) #12 EQUIPMENT GROUND CONDUCTOR UNLESS NOTED OTHERWISE.
7	BRANCH CIRCUITS SHOWN WITH TWO GROUNDING CONDUCTORS SHALL HAVE ONE EQUIPMENT GROUND CONDUCTOR (GREEN) AND ONE ISOLATED GROUND CONDUCTOR (GREEN W/ YELLOW STRIP) INSTALLED IN RACEWAY.
8	THERMOSTATS, TEMPERATURE SENSORS, CARBON DIOXIDE SENSORS AND HUMIDISTATS: UNLESS NOTED OTHERWISE, PROVIDE WALL BOX AT +3'-10" AFF WITH 1/2" CONDUIT STUBBED OUT TO ABOVE ACCESSIBLE CEILING WITH NYLON BUSHINGS AND PULLSTRING.
9	PROVIDE FLEXIBLE CONNECTIONS ONLY FOR FINAL CONNECTION TO EQUIPMENT, 6'-0" MAXIMUM LENGTH. PROVIDE LIQUID TIGHT FLEXIBLE CONNECTION AT EXTERIOR LOCATIONS AND WERE EXPOSURE TO MOISTURE IS POSSIBLE.
10	ALL EMPTY CONDUITS SHALL BE PROVIDED WITH A PULL WIRE.
11	ALL RACEWAYS SHALL CONTAIN A GROUNDING ELECTRODE SIZED PER THE ADOPTED ELECTRICAL CODE.
12	COORDINATE WORK ABOVE THE CEILING WITH OTHER TRADES TO PROVIDE THE GREATEST POSSIBLE CLEARANCE. CONDUIT RUNS SHALL BE RUN THROUGH TRUSSES WHERE POSSIBLE.
13	VERIFY EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE CONSTRUCTION DOCUMENTS PRIOR TO FINAL PLACEMENT.
14	ALL RECESSED PANELBOARDS SHALL BE INSTALLED WITH A MINIMUM OF (3) 3/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR FUTURE USE.
15	ALL PANELBOARDS, SWITCHBOARDS AND LINE VOLTAGE CONTROL EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTING, SERVICING OR MAINTENANCE OF EQUIPMENT. MARKING SHALL BE SELF ADHESIVE, COMMERCIAL LABEL CONFORMING TO ADOPTED CODES.
16	LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL
17	ALL 120V AND 277V BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRAL CONDUCTORS. SHARED NEUTRALS WILL NOT BE PERMITTED FOR MULTI-CIRCUIT INSTALLATIONS. WHERE MULTIPLE CIRCUITS ARE ROUTED IN THE SAME RACEWAY, THE AMPACITY OF THE CONDUCTORS SHALL BE PROPERLY DERATED AND THE RACEWAY SIZED PER THE ADOPTED ELECTRICAL CODE. UNDER NO CIRCUMSTANCE SHALL MORE THAN (6) CURRENT CARRYING CONDUCTORS, INCLUDING NEUTRALS, BE INSTALLED IN A SINGLE RACEWAY.
18	ALL PENETRATIONS THROUGH FIRE RATED WALLS AND CEILINGS ASSOCIATED WITH THE ELECTRICAL INSTALLATION SHALL BE SLEEVED AND FIRE-STOPPED USING A UL APPROVED METHOD. UL APPROVED METHODS SHALL MEET OR EXCEED FIRE RATING OF STRUCTURE BEING PENETRATED.
19	TERMS: SHALL - ACTION THAT IS REQUIRED WITHOUT OPTION OR QUALIFICATION. FURNISH - CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING. INSTALL - CONTRACTOR SHALL BE RESPONSIBLE FOR LABOR AND CONSTRUCTION EQUIPMENT NECESSARY TO SET IN PLACE, CONNECT, CALIBRATE AND/OR TEST EQUIPMENT FURNISHED BY HIM OR OTHERS. PROVIDE - CONTRACTOR SHALL FURNISH AND INSTALL.

ADA NOTES

1	LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS SHALL HAVE OPERABLE PARTS OF THE CONTROLS LOCATED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE THE FLOOR. IF THE REACH IS OVER AN OBSTRUCTION BETWEEN 20" AND 25" IN DEPTH, THE MAXIMUM HEIGHT IS REDUCED TO 44" FOR FORWARD APPROACH OR 46" FOR SIDE APPROACH, PROVIDED THE OBSTRUCTION IS NO MORE THAN 24" IN DEPTH. OBSTRUCTIONS SHALL NOT EXTEND MORE THAN 25" FROM THE WALL BENEATH A CONTROL.

SYMBOLS LEGEND

5 3 1	HOME RUN TO PANEL. CIRCUIT NUMBERS, PHASE, NEUTRAL AND GROUND CONDUCTORS INDICATED ALONG WITH ISOLATED GROUND CONDUCTOR IF APPLICABLE.
1	PARTIAL CIRCUIT
$	SINGLE POLE SWITCH, +3'-10" OR AS NOTED
$3	THREE-WAY SWITCH, +3'-10" OR AS NOTED
$WP	WEATHERPROOF TOGGLE SWITCH, +3'-10" OR AS NOTED
	WALL MOUNTED OCCUPANCY SENSOR, +3'-10" OR AS NOTED
	CEILING MOUNTED OCCUPANCY SENSOR
	CEILING MOUNTED INTERIOR DAYLIGHT HARVESTING PHOTOCELL SENSOR
	POWER PACK, INSTALLED ABOVE ACCESSIBLE CEILING
A	SIMPLEX RECEPTACLE FOR STEAMER, +15" OR AS NOTED
	DUPLEX RECEPTACLE, +15" OR AS NOTED
	QUADRUPLEX RECEPTACLE, +15" OR AS NOTED
	RECEPTACLE INSTALLED FLUSH IN CEILING
	TELEPHONE/DATA OUTLET, +15" WITH 1" CONDUIT TO ABOVE CEILING
J	JUNCTION BOX
	PUSHBUTTON, TOP AT +4'-6" OR AS NOTED
	DISCONNECT SWITCH, TOP AT +6'-0" OR AS NOTED
	DISCONNECT SWITCH PROVIDED WITH EQUIPMENT.
T H C M	THERMOSTAT, TEMPERATURE SENSOR, CARBON DIOXIDE SENSOR AND HUMIDISTAT PROVIDED BY MECHANICAL CONTRACTOR, +3'-10" OR AS NOTED
	CHIME
WAP	WIRELESS ACCESS POINT
C	LIGHTING CONTACTOR, INSTALLED AS NOTED
T	TIME CLOCK, +6'-2" OR AS NOTED
R	CONTROL OR POWER RELAY, INSTALLED AS NOTED
EOD	ELECTRICALLY OPERATED DAMPER, PROVIDED BY MECHANICAL CONTRACTOR
FCP	FIRE ALARM CONTROL PANEL, FLUSH MOUNTED, TOP AT +6'-0"
F	MANUAL FIRE ALARM PULL STATION, +3'-10" PER ADA
	FIRE ALARM HORN AND 110cd STROBE, +80" TO BOTTOM OF DEVICE PER ADA
S	STROBE ONLY (110cd UNO), +80" TO BOTTOM OF DEVICE PER ADA
	FIRE ALARM HORN AND 115cd STROBE, CEILING MOUNTED
	STROBE ONLY (115cd UNO), CEILING MOUNTED
	AREA TYPE PHOTOELECTRIC SMOKE DETECTOR, CEILING MOUNTED, OR AS NOTED
	DUCT TYPE PHOTOELECTRIC SMOKE DETECTOR WITH SAMPLING TUBES AND REMOTE INDICATOR LIGHT MOUNTED FLUSH IN CEILING BELOW DETECTOR
R	FIRE ALARM SYSTEM RELAY
FS	SPRINKLER FLOW SWITCH, PROVIDED BY PLUMBING CONTRACTOR
TS	SPRINKLER TAMPER SWITCH, PROVIDED BY PLUMBING CONTRACTOR
	FIRE SPRINKLER SYSTEM BELL (GONG), +10'-0" AFG
SD	COMBINATION FIRE/SMOKE DAMPER PROVIDED BY MECHANICAL CONTRACTOR
AFF/AFG	ABOVE FINISHED FLOOR/GRADE
AHJ	AUTHORITY HAVING JURISDICTION
BAS	BUILDING AUTOMATION SYSTEM
EC	ELECTRICAL CONTRACTOR
FA	FIRE ALARM
GC	GENERAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
NL	NIGHT LIGHT
NF	NON-FUSED
PC	PLUMBING CONTRACTOR
TYP	TYPICAL
WP	WEATHERPROOF
	SYMBOLS LEGEND NOTES: MOUNTING HEIGHTS INDICATED ARE MEASURED FROM FINISHED FLOOR TO THE CENTERLINE OF THE DEVICE UNLESS NOTED OTHERWISE.

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LOFT OUTLET

REVISIONS

REGISTERED PROFESSIONAL ENGINEER — OREGON — EDWARD J. JAMES — 72118PE — RENEWS: 12/31/2018

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

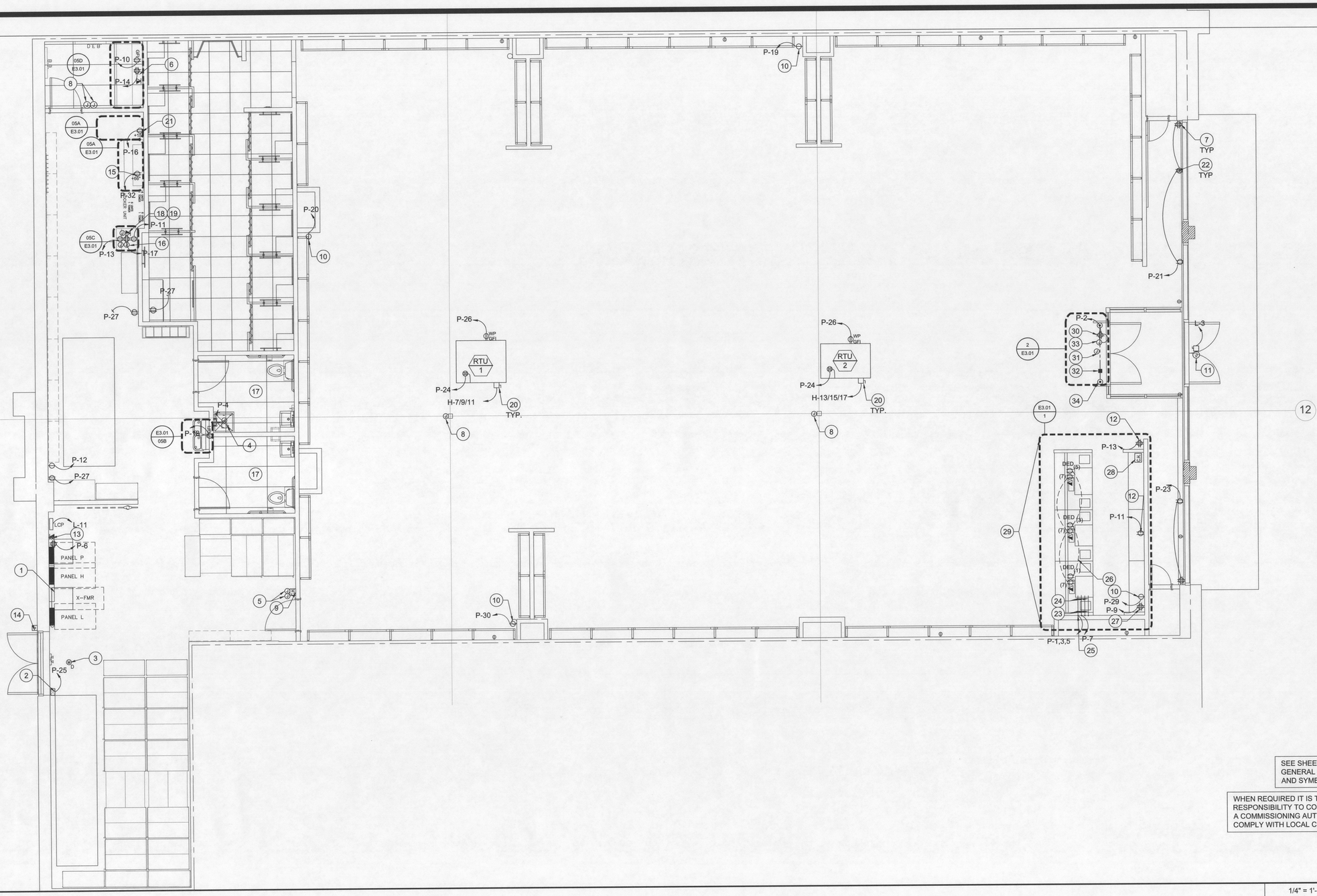
DEC. 31 2018

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

ELECTRICAL NOTES AND SYMBOLS

DATE:	2017/05/27
SCALE:	AS NOTED
DRAWN BY:	HU
REVIEWED BY:	BB
PROJECT NUMBER:	17051
SHEET:	E0.01

2016SPRING_LOFTOUTLET_PROTOTYPE



POWER/DATA PLAN

1/4" = 1'-0" | 1

GENERAL NOTES

DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

INSTALLATION NOTES

1	REFER TO SENSORMATIC DETAIL ON SHEET E3.01.
2	CASHWRAP REQUIREMENTS (PER 1 P.O.S.): A. ONE DEDICATED CIRCUIT WITH A QUADPLEX. B. ONE CONVENIENCE QUADPLEX. C. ONE LOW VOLTAGE TELEPHONE AND POS SIGNAL WIRE.
*	ROUTE POWER FOR THE POS QUADPLEX AND THE CONVENIENCE QUADPLEX TO A 4X4 JUNCTION BOX LOCATED 18" FROM REAR OF FRONT WRAP AND MOUNT 24" A.F.F. ON INSIDE WALL OF WRAP ADJACENT TO THE 3" DIAMETER ACCESS HOLE. COORDINATE EXACT LOCATION AND INSTALLATION WITH FIXTURE CONTRACTOR.
*	WIRE POWER FOR TELEPHONE & POS SIGNAL WIRE (SHARING SAME CONDUIT) 18" FROM REAR OF FRONT WRAP, ABOVE JUNCTION BOX.
*	POWER SHALL STUB UP FROM THE FLOOR AT 6" FROM FACE OF WALL TO A QUAD OUTLET MOUNTED 27" A.F.F. ON THE BACK INSIDE OF THE BACKWRAP. COORDINATE EXACT LOCATION AND INSTALLATION WITH FIXTURE CONTRACTOR.
*	DOOR CHIME TO BE MOUNTED 30" A.F.F. INSIDE OF BACKWRAP TRASH CABINET 4'-0" FROM CW /POS CENTERLINE.
*	REFER TO "VOICE AND DATA SINGLE LINE DIAGRAM" DETAIL ON SHEET E3.01 FOR ADDITIONAL INFORMATION.
*	TRENCH OR CORE DRILL, AS APPLICABLE, (IF REQUIRED) EXISTING SLAB FOR ALL DATA AND POWER WIRING. COORDINATE WITH CASH WRAP SHOP DRAWINGS ON SITE FOR EXACT CUTTING LOCATIONS. SEE DETAIL 1-E3.1.
3	MANAGER'S OFFICE REQUIREMENTS: A. REF. DETAIL 11/D-3.1 FOR EXACT LOCATION OF STOCK AREA FIXTURE RECEPTACLE. B. COORDINATE ALL T-STAT LOCATIONS WITH ARCHITECT.
4	TOILET ROOM(S) REQUIREMENTS: A. PROVIDE CONNECTION TO ELECTRIC WATER HEATER IF APPLICABLE. B. ONE (1) RECEPTACLE (G.F.I.) +44" A.F.F. NEXT TO SINK.
5	ALL OUTLETS TO BE LOCATED AT 15" A.F.F. TO CENTERLINE OF FIXTURE PLATE U.O.N.
6	IF A STORE DOES NOT HAVE DIRECT EXTERIOR ACCESS, IT DOES NOT GET A BURGLAR ALARM.

POWER PLAN KEYNOTES

18	JUNCTION BOX & OUTLET FOR MUSIC SYSTEM AT SALES AREA. (SEE DETAIL05C/E3.01).
19	FURNISH AND INSTALL ALL DEVICES, WIRING, CONDUIT, ETC. AS REQUIRED FOR INSTALLATION OF MUSIC SYSTEM. G.C. TO MAKE ALL FINAL CONNECTIONS. (SEE DETAIL 05C/E3.01)
20	PROVIDE HEAVY DUTY NEMA-3R DISCONNECT SWITCH FOR NEW ROOFTOP UNIT. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR. SEE SHEET E4.01 FOR MORE INFORMATION.
21	RECEPTACLE INSTALLED AT 15" A.F.F. FOR REFRIGERATOR (SEE DETAIL 05A/E3.01). CONTRACTOR TO VERIFY LOCATION WITH LATEST FIXTURE PLAN.
22	NEW DUPLEX RECEPTACLE MOUNTED ON FRONT WALL ABOVE STOREFRONT PER NEC. CONNECT THROUGH LIGHTING CONTROL PANEL SEE SHEET E4.01 FOR ADDITIONAL INFORMATION.
23	RUN CONDUIT THROUGH BASE OF CASHWRAP, COORDINATE WITH MILLWORK VENDOR FOR ALL DATA AND POWER WIRING. COORDINATE WITH CASH WRAP SHOP DRAWINGS.
24	PROVIDE (1) 1" DIA ELEC CONDUIT WITH PULL WIRE FROM CASHWRAP J-BOX TO THE TELEPHONE BOARD LOCATED IN THE STOCKROOM.
25	PROVIDE (2) 1" DIA. ELEC. CONDUIT WITH PULL WIRE FROM THE CASHWRAP TO THE PHONE BOARD IN STOCKROOM NOTE: (3) POS WIRING MAX. PER 1" CONDUIT.
26	PROVIDE (1) 1" DIA ELEC CONDUIT WITH PULL WIRE RUNNING FROM CASHWRAP TO THE ELECTRIC PANELS LOCATED IN STOCKROOM.
27	QUAD OUTLET MOUNTED AT BACKWRAP 15" AFF (WHITE WITH FACEPLATE). (SEE DETAIL 01/E3.01)
28	CHIME MOUNTED INSIDE BACKWRAP. CHIME SHALL BE HELD TIGHT TO THE UNDERSIDE OF THE BACKWRAP. (SEE DETAIL 03/E3.01) (NOTE: DOOR CHIME SHALL BE A CHIME, NOT A BUZZER)
29	CASH REGISTERS ON DEDICATED CIRCUIT(S) WITH DEDICATED GROUND QUADAPLEX RECEPTACLES EQUAL TO HUBBEL IG 5262. CONCEAL ALL WIRING IN COUNTER. CONTRACTOR TO VERIFY LOCATION WITH LATEST FIXTURE PLAN.
30	HARDWIRE SENSORMATIC EQUIPMENT ABOVE STOREFRONT DOORS. PROVIDE CONVENIENCE 24-HOUR DEDICATED CIRCUIT 120V., 3 WIRE QUAD OUTLET ABOVE DOOR FOR SENSORMATIC TESTING. SENSORMATIC POWER UNIT MOUNTED BY G.C.
31	INSTALL JUNCTION BOX AND EQUIPMENT (SUSPENDED FROM UNISTRUT) 5' INTO SALES FLOOR FROM ENTRY DOORS AT 12' A.F.F.
32	SENSORMATIC ALARM SPEAKER MOUNTED TO ADJACENT TO SENSORMATIC EQUIPMENT.
33	G.C. TO PROVIDE CONDUIT FOR PULL STRING IN PLENUM SPACE ONLY; CONDUIT RUN FROM SENSORMATIC EQUIPMENT BOARD TO TERMINATE AT MULLIONS - ONLY PULL STRING.
34	G.C. TO PROVIDE PULL STRING FROM SENSORMATIC EQUIPMENT LOCATED ON SENSORMATIC EQUIPMENT BOARD, THROUGH STOREFRONT MULLIONS TO G.C. PROVIDED 3/4" DIAMETER HOLE FOR PANEL CONNECTION. ONE (1) ANTENNA PER DOOR LEAF. AC VOLTAGE 100-120 VAC OR 220-240 VAC @ 50-60 HZ PRIMARY POWER FUSE-5 AMP, 250V, SLO-BLOW, HI-BREAKING. CONTACT ANDY ORETA, SENSORMATIC/ADT PROJECT MANAGER AT 914-714-4028 FOR FURTHER INFORMATION. SEE 02/E3.01 FOR DETAIL.

POWER PLAN KEYNOTES

1	1 SHEET OF FIRE RATED PLYWOOD BACKBOARD (4'X8'X3/4") FOR PANELBOARDS AND TELEPHONE EQUIPMENT. MOUNT ONE QUADRAPLEX RECEPTACLE AT THE TELEPHONE BOARD. PROVIDE DEDICATED CIRCUIT WITH LOCK-ON TYPE CIRCUIT BREAKER. INSTALL (2) RJ31X PHONE JACKS DIRECTLY AT PHONE BOARD TIE INTO PHONE LINES.
2	PROVIDE JUNCTION BOX MOUNTED ON WALL AND D.C. HOOK UP TO REAR PANIC BAR AT 36" A.F.F. ON HINGE SIDE. RUN POWER TO HARDWARE. COORDINATE EXACT REQUIREMENTS WITH HARDWARE FURNISHED.
3	SECURITY MOTION SENSOR. BY SECURITY CONTRACTOR.
4	EXISTING JUNCTION BOX & DISCONNECT FOR ELECTRIC WATER HEATER TO REMAIN, FIELD VERIFY.
5	PROVIDE (2) JUNCTION BOXES FOR MUSIC SYSTEM VOLUME CONTROL. (1) FOR WARDROBING AREA. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
6	3/4" E.C. WITH PULLWIRE TO TELEPHONE BOARD FOR COMBINED TELEPHONE BOARD FOR COMBINED TELEPHONE/DATA JACK AT MANAGER'S DESK. (SEE DETAIL 4/E3.01) E.C. TO VERIFY LOCATION WITH LATEST FIXTURE PLAN.
7	MOUNT QUAD RECEPTACLES AT STOREFRONT DISPLAY EITHER 15" ABOVE THE FINISHED FLOOR OR 15" ABOVE THE STOREFRONT PLATFORM (IF PLATFORM EXISTS). CONNECT THROUGH LIGHTING CONTACTOR LC3, CONTROLLED BY TIMECLOCK. SEE SHEET E4.01 FOR ADDITIONAL INFORMATION.
8	PROVIDE & INSTALL JUNCTION BOXES FOR THERMOSTATS @ 48" A.F.F & SENSORS @ 60" A.F.F. COORDINATE EXACT LOCATION WITH LOFT PROJECT MANAGER & MECHANICAL CONTRACTOR.
9	CHIME W/ BUILT-IN TRANSFORMER FOR REAR DOOR.
10	PROVIDE "STEAMER" LABEL ON ALL STEAMER OUTLETS. STEAMER OUTLETS SHALL BE WHITE WITH WHITE COVERPLATES.
11	PROVIDE AND INSTALL J-BOX AND DISCONNECT FOR SIGNAGE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ANN INC. PROJECT MANAGER AND SIGNAGE VENDOR
12	PROVIDE AND INSTALL CEILING MOUNTED RECEPTACLE FOR GRAPHIC FRAME.
13	RED EMERGENCY PHONE MOUNTED AT 48" A.F.F. (MAX)
14	LIGHTED PUSH BUTTON (+48" A.F.F.) AT REAR ENTRANCE. CONNECT TO DOOR CHIMES.
15	QUAD OUTLET INSTALLED AT 66" AFF ON SHELF ABOVE LUNCH COUNTER FOR MICROWAVE. (SEE DETAIL 11A/E3.01). CONTRACTOR TO VERIFY LOCATION WITH LATEST FIXTURE PLAN.
16	COMBINATION PHONE/DATA OUTLET (BACK OFFICE PC) MULTI-PORT IS ADDED TO THE PHONE/DATA OUTLET WHICH HANDLES ALL LINES COMING INTO BACK OFFICE PC. MULTI-PORTS PROVIDED BY THE TELECOMMUNICATIONS VENDOR. (SEE DETAIL 04D/E3.01). E.C TO VERIFY LOCATION WITH LATEST FIXTURE PLAN.
17	CONNECT NEW EXHAUST FAN TO THE SAME BRANCH CIRCUIT FEEDING RESTROOM LIGHT FIXTURES AND INTERLOCK WITH OCCUPANCY SENSOR.

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LOFT OUTLET

REVISIONS

DESIGN TYPE: 2016 SPRING PROTO
THRU DOB: ALL DIV-06LOS 002

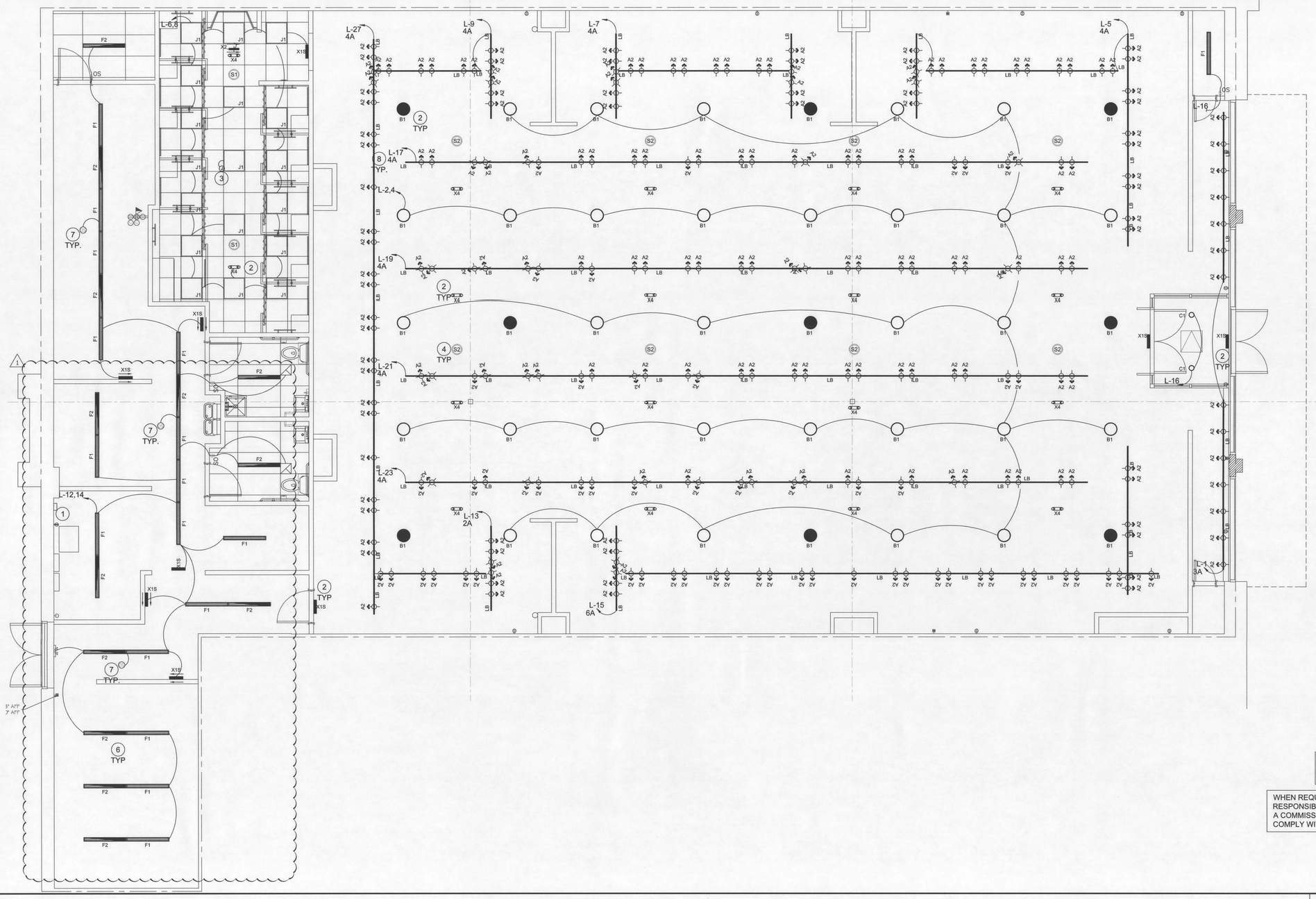
CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

POWER/DATA PLAN

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: E1.01

REGISTERED PROFESSIONAL ENGINEER OREGON DONALD J. AMES
Exp: DEC. 31 2018

2016SPRING_LOFTOUTLET_PROTOTYPE



LIGHTING PLAN

1/4" = 1'-0"

1

LIGHTING GENERAL NOTES

1	CONNECT EXIT SIGNS, EMERGENCY AND NIGHT LIGHTS TO AN UNSWITCHED LIGHTING CIRCUIT, NOT CONTROLLED BY ANY OCCUPANCY SENSORS, SWITCHES OR CONTACTORS.
2	PROVIDE A DEDICATED NEUTRAL WITH ALL DIMMING SYSTEM CIRCUITS. NO COMMON NEUTRALS SHALL BE ALLOWED.
3	REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR THE LOCATION OF ALL LIGHTING FIXTURES AND ALL OTHER EQUIPMENT INSTALLED IN THE CEILING SYSTEM. VERIFY MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
4	REFER TO THE POWER PLANS FOR LOCATIONS OF ELECTRICAL EQUIPMENT.

(XX) LIGHTING PLAN KEYNOTES

1	NEW MASTER LIGHTING SWITCH BANK AT 42" AFF. SEE DETAIL 01 /E4.01 FOR SPECIFIC SWITCHING INFORMATION. PROVIDE LABELS ON SWITCHES AS INDICATED ON DETAIL. COORDINATE EXACT LOCATION WITH PROJECT MANAGER.
2	CONNECT NIGHT LIGHTS, EMERGENCY LIGHTS, AND EXIT SIGNS IN THE SALES AREA TO UNSWITCHED CIRCUIT L-10, AS SHOWN.
3	PROVIDE AND INSTALL JBOX FOR EXHAUST FAN, CONNECT TO LOCAL CIRCUIT.
4	CEILING/PENDANT MOUNTED SPEAKER PROVIDED BY OWNER, INSTALLED BY CONTRACTOR COORDINATE FINAL LOCATIONS WITH ARCHITECTURAL PLANS. FURNISH AND INSTALL ALL DEVICES, WIRING, CONDUIT, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION OF SPEAKER SYSTEM AS DIRECTED BY CONTRACTOR TO MAKE FINAL CONNECTIONS.
5	NOT USED.
6	FIXTURE TO BE NORMALLY SWITCHED. FIXTURE'S EMERGENCY BALLAST TO BE SERVED BY UNSWITCHED LEG OF LIGHTING CIRCUIT TO PROVIDE CONTINUOUS EGRESS AND EMERGENCY ILLUMINATION PER NEC 700-12(A) AND LIFE SAFETY CODE.
7	PROVIDE AND INSTALL CEILING MOUNTED OCCUPANCY SENSORS AND ALL RELATED EQUIPMENT FOR A FULLY FUNCTIONAL SYSTEM.
8	PROVIDE NEW TRACK MOUNTED CURRENT LIMITING DEVICE. REFER TO LUMINAIRE SCHEDULE ON THIS SHEET FOR SPECIFICATION.

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	MANUFACTURER	CATALOG NUMBER & DESCRIPTION	LAMPS	ANN INC ITEM #	WATTAGE
F1		CREE	LS4-40L-35K-10V 4' SURFACE MOUNT LED STRIP FIXTURE WHITE FINISH 3500K	LED	XX.XX.XXX	40
F2		CREE	LS4-40L-35K-10V-EB14 4' SURFACE MOUNT LED STRIP FIXTURE WHITE FINISH 3500K WITH EM BATTERY BACK UP	LED	XX.XX.XXX	40
LA		CON-TECH	LT2B, LT4B, LT8B, LT8B AS REQUIRED SURFACE MOUNTED SINGLE CIRCUIT TRACK MATTE BLACK FINISH	N/A	XX.XX.XXX	N/A
LB		CON-TECH	LT2P, LT4P, LT8P, LT8P AS REQUIRED SURFACE MOUNTED SINGLE CIRCUIT TRACK MATTE WHITE FINISH	N/A	XX.XX.XXX	N/A
B1	B1	SPECTRUM	ALAT18LEDGV55L30KE1/CD96PT-MW/ CD96W-AL18PT/GWI 18" DIAMETER LED HI-BAY FIXTURE, SILVER FINISH WITH WHITE INTERIOR, 96" WHITE CORD AND CANOPY	LED	00.16.052	55W LED
A2	A2	CONTECH	CTL610P-25W UNIVERSAL TRACK HEAD WHITE FINISH WITH 25 WATT MAX STICKER	TCP-44585 LED14P3B30KNFL (00.16.434)	00.16.002	
A6	A6	CONTECH	NACTL171S-M-3-D-P 24" LED DIMMABLE WALL WASHER TRACK HEAD WHITE FINISH 300K	LED	00.16.059	56W LED
J1	J1	TCP	TCP-TRF-2-UNI-32-30K 2X2 LED FLAT PANEL TROFFER 3000K	LED	00.16.104	38W LED
	S	BOSE	FLUSH MOUNT SPEAKER COLOR: WHITE	FLUSH MTD # 32		

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	MANUFACTURER	CATALOG NUMBER & DESCRIPTION	LAMPS	ANN INC ITEM #	WATTAGE
X1S		CON-TECH	REXA-8F-R-EM-P (00.16.001) SINGLE FACE ADJUSTABLE RECESSED OR WALL MOUNT LED EDGE-LIT EXIT SIGN WITH 90 MIN BATTERY BACK UP WITH RED LETTERING ON CLEAR FACEPLATE	N/A	00.16.001	3
X1D		CON-TECH	REXA-DF-R-EM-P (00.16.077) DOUBLE FACE ADJUSTABLE RECESSED OR WALL MOUNT LED EDGE-LIT EXIT SIGN WITH 90 MIN BATTERY BACK UP WITH RED LETTERING ON CLEAR FACEPLATE	N/A	00.16.077	3
X2		LIGHT ALARMS	QLXN500R-N (00.16.205) THERMAPLASTIC EXIT SIGN, UNIVERSAL MOUNTING CEILING/WALL, LED LAMPS AND INTEGRAL BATTERY BACK UP FOR 90 MIN	N/A	00.16.205	3
X3		APERION	APR-2S-LC-UI (00.16.013) FULLY RECESSED EMERGENCY LIGHT WITH 90 MIN BATTERY BACK UP WHITE FINISH	(2)35W MR11 LAMPS	00.16.0013	70
X4		LIGHT ALARMS	LCA-2SQ 2 HEADED EM LIGHT WITH 90 MINUTE BATTERY BACK UP WHITE FINISH	N/A	XX.XX.XXX	12
X5		DUAL LIGHT	LG2SI/BATT-12V 250 WATT SURFACE MOUNTED INVERTER WITH TWO BATTERIES	N/A	XX.XX.XXX	250
C1	C1	CON-TECH	6" INCANDESCENT CAN LIGHT RL-38-CTR3002-CLR. LAMP-TCP-43960 LED 12BR30D30K	N/A	XX.XX.XXX	43
	S	BOSE	PENDANT SPEAKER COLOR: xxx	XXXX		

LIGHTING FIXTURE GENERAL NOTES

A.	INSTALLATION OF LIGHT FIXTURES SHALL BE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE CODE REQUIREMENTS.
B.	VERIFY THE EXACT MOUNTING HEIGHT AND FINISH OF ALL LIGHTING FIXTURES WITH ARCHITECT PRIOR TO PLACING ORDER OR COMMENCING ROUGH-IN.
C.	ELECTRICAL CONTRACTOR SHALL PROVIDE LIGHT FIXTURES. FIXTURES SHALL BE PURCHASED FROM OWNER'S NATIONAL BUY-OUT CONTRACT. THIS INFORMATION SHALL BE VERIFIED PRIOR TO THE PREPARATION OF THIS CONTRACTOR'S BID.
D.	ALL FIXTURES EXPOSED TO PLENUM SHALL BE PLENUM RATED.

SEE SHEET E0.01 FOR GENERAL ELEC NOTES AND SYMBOL LEGEND

WHEN REQUIRED IT IS THE OWNERS RESPONSIBILITY TO CONTRACT WITH A COMMISSIONING AUTHORITY TO COMPLY WITH LOCAL CODES.

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LOFT OUTLET

REVISIONS

1	ISSUED FOR CONSTRUCTION	08.02.2017

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

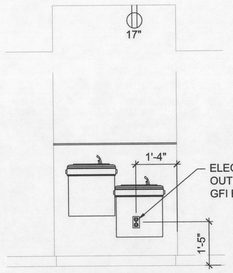
CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

ELECTRICAL LIGHTING PLAN

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: E2.01

2016SPRING_LOFTOUTLET_PROTOTYPE

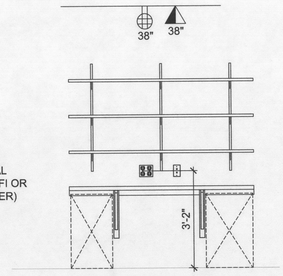
PLAN VIEW



DRINKING FOUNTAIN

B

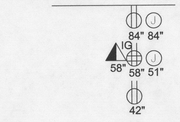
PLAN VIEW

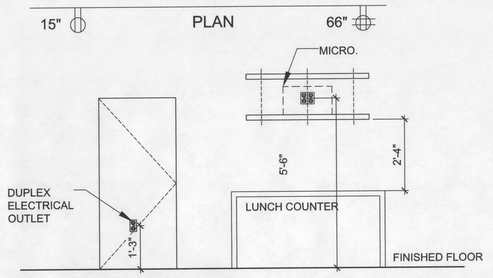


MANAGER'S DESK

D

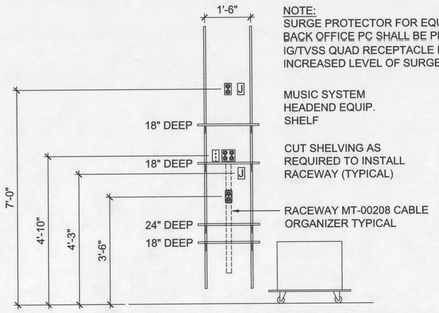
PLAN VIEW





REFRIGERATOR AND MICROWAVE ABOVE LUNCH COUNTER

A

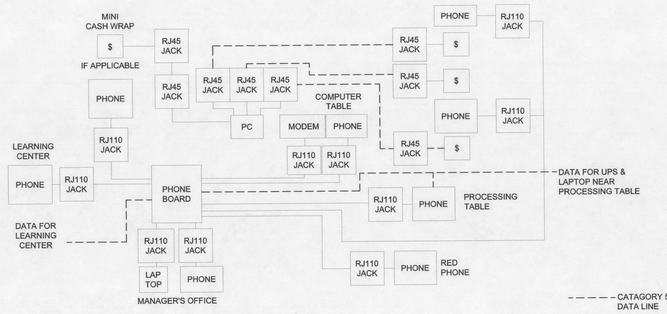


NOTE:
SURGE PROTECTOR FOR EQUIPMENT AT BACK OFFICE PC SHALL BE PLUGGED INTO IG/TVSS QUAD RECEPTACLE FOR AN INCREASED LEVEL OF SURGE SUPPRESSION.

BACK-OFFICE PC (LEARNING CENTER)
(ISP = INTERNET SERVICE PROVIDER)

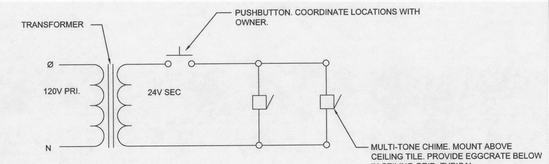
C

STOCK ROOM AREA FIXTURE RECEPTACLE LOCATIONS	1/2" = 1'-0"	5



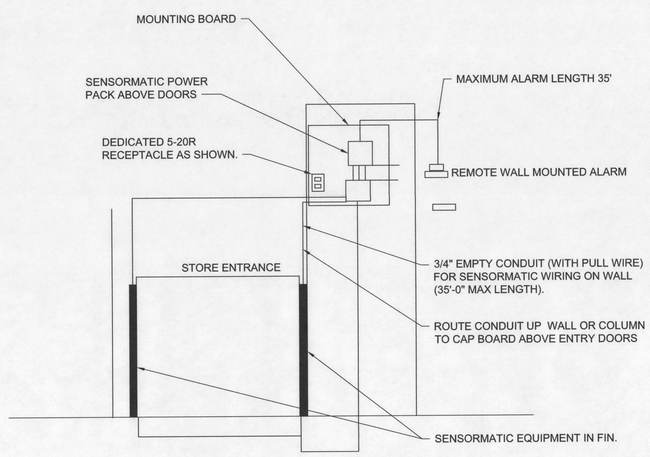
VOICE AND DATA SINGLE LINE DIAGRAM	N.T.S.	4

RESERVED		6



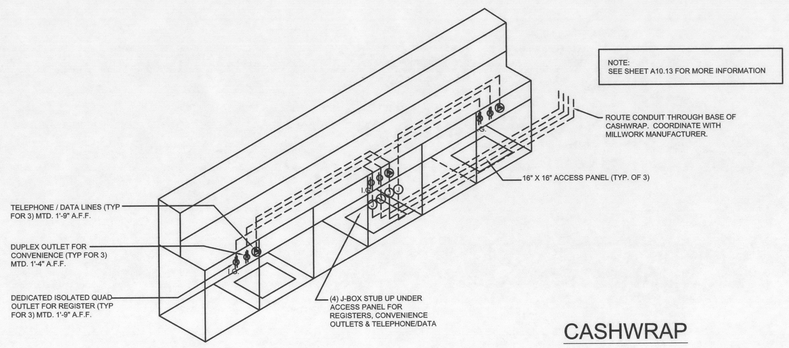
DOOR CHIME SCHEMATIC	N.T.S.	3

DETAIL SPECIFICATIONS	
1	3/4"" METAL CONDUIT (PVC NOT ALLOWED) SHALL BE USED TO INTERCONNECT BETWEEN POWER PACK ABOVE CEILING AND DOOR MAX. CONDUIT TO BE HARD CONNECTED INTO A KNOCKOUT ON CAP BOARD ENCLOSURE. CONDUIT SHALL BE CONCEALED IN FALSE COLUMNS AND SHALL NOT EXCEED 35 FEET IN LENGTH.
2	DUPLEX RECEPTACLE BOX SHALL BE LOCATED IN AREA ABOVE CEILING. IN PLENUM CEILINGS THE OUTLET AND ALL SENSORMATIC EQUIPMENT SHALL BE INSTALLED IN PLENUM RATED ENCLOSURE.
3	24" X 24" ACCESS PANEL TO BE USED FOR SERVICING OF EQUIPMENT LOCATED ABOVE THE CEILING. COORDINATE ROUGH-IN OF JUNCTION BOX AND RECEPTACLE WITH THE GENERAL CONTRACTOR.
4	MOUNT THE CAP BOARD ENCLOSURE AS CLOSE AS POSSIBLE TO POWER PACK.
5	CONTACT ANDY CRETA, SENSORMATIC/ADT PROJECT MANAGER AT 914-714-4028 FOR FURTHER INFORMATION

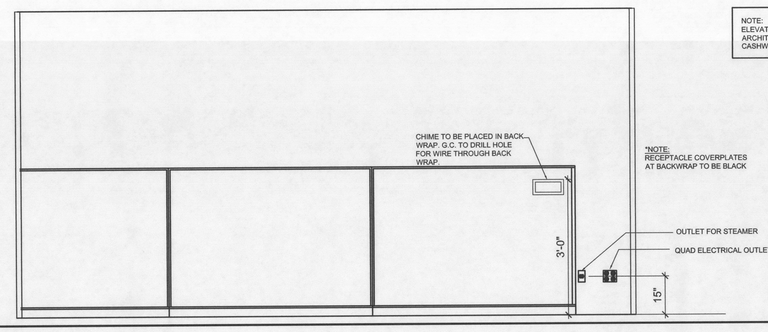


ELEVATION

DOOR MAX DETAILS AND SPECIFICATIONS	1/4" = 1'-0"	2



CASHWRAP



BACKWRAP ELEVATION

P.O.S. ISOMETRIC	1/4" = 1'-0"	1

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LOFT OUTLET

REVISIONS

REGISTERED PROFESSIONAL ENGINEER
OREGON
DON PERRI
DEC. 31, 2017

Exp. DEC 31 2018

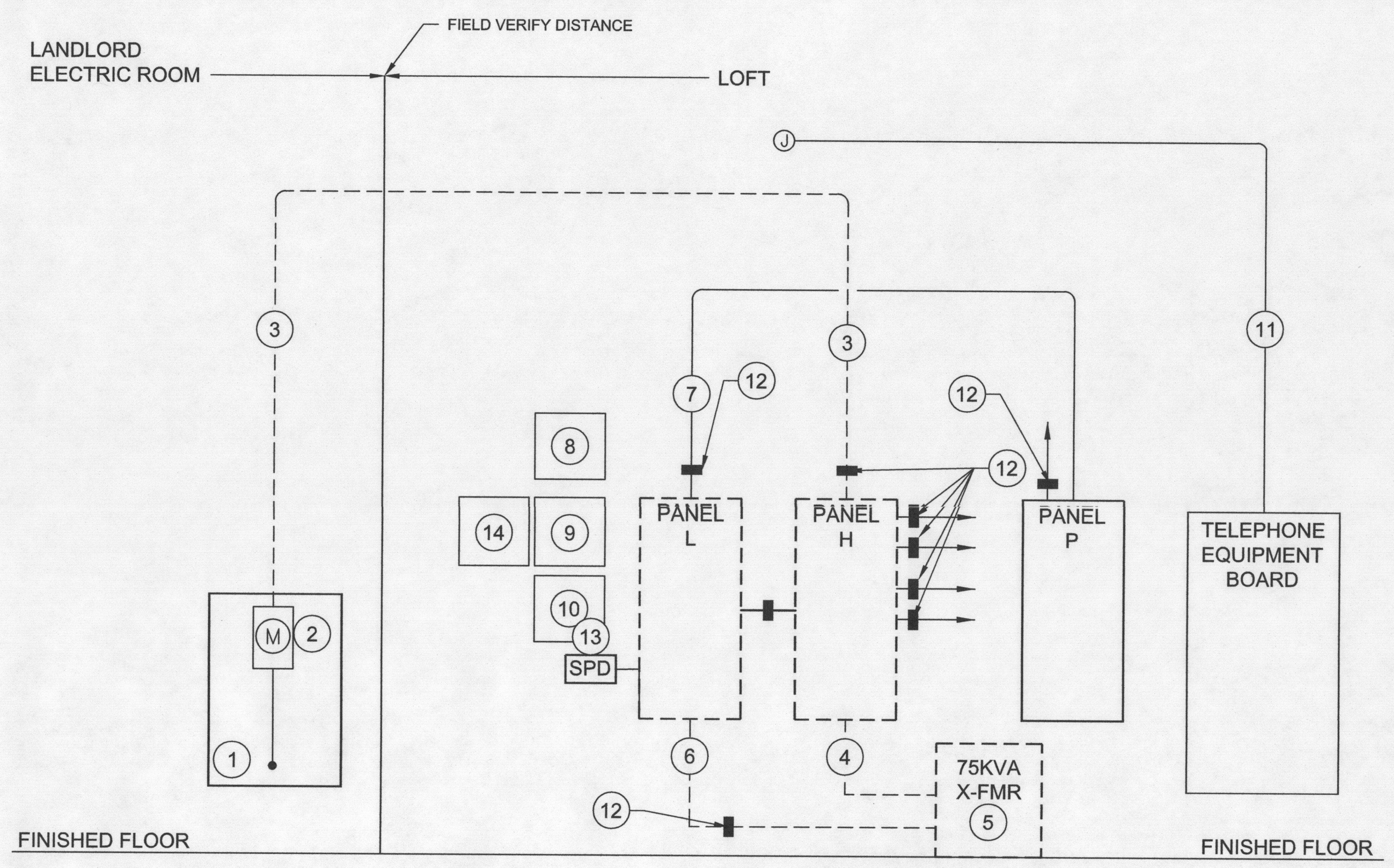
DESIGN TYPE: 2016_SPRING PROTOTYPE
THRU DCB: ALL DIV-08/LOS 002

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

ELECTRICAL DETAILS

DATE:	2017/05/27
SCALE:	AS NOTED
DRAWN BY:	HU
REVIEWED BY:	BB
PROJECT NUMBER:	17051
SHEET:	E3.01

2016SPRING_LOFTOUTLET_PROTOTYPE



ALL WORK DONE OUTSIDE OF TENANT SPACE SHALL BE COORDINATED WITH LANDLORD. CONNECTION TO LANDLORD EQUIPMENT SHALL BE BY LANDLORD'S ELECTRICIAN AT G.C.'s EXPENSE.

RISER DIAGRAM NOTES:

1. EXISTING 250A BREAKER IN LANDLORD'S ELECTRICAL GEAR.
2. EXISTING 200A METER AND CT CABINET IN LANDLORD'S ELECTRICAL ROOM. PROVIDE PRINTED LABEL AT METER TO READ "LOFT OUTLET # XXX".
3. EXISTING (4)#250 AND (1)#2 GROUND IN 2-1/2" CONDUIT
4. EXISTING (3) #1 THWN AND (1) #6G. IN 1-1/2"C.
5. EXISTING 75 KVA 480V TO 120/208V DRY TYPE TRANSFORMER.. PROVIDE #1/0 GROUND BACK TO THE NEAREST GROUNDING ELECTRODE AND TO "BUILDING STEEL" PER NEC 250.30(7). MAINTAIN A SEPARATION DISTANCE OF A MINIMUM OF 12" FROM COMBUSTIBLES." COORDINATE EXACT LOCATION WITH STRUCTURAL PLANS AND DETAILS.
6. EXISTING (4) #3/0 THWN AND (1) #4G. IN 2"C.
7. PROVIDE AND INSTALL NEW (4) #1 THWN AND (1) #6G. IN 1-1/2"C.
8. WIRELESS CONTROLLER FOR EMS CONTROLS.
9. LIGHTING CONTROL PANEL 'LCP'. PANEL SHALL BE PROVIDED WITH FACTORY INSTALLED LIGHTING OVERRIDE SWITCH WITH A MAXIMUM OF 2-HOUR CAPABILITY.
10. CONTACTOR PANEL 'CP'.
11. INTERCEPT AND EXTEND TELEPHONE SERVICE TO NEW LOCATION. REFERENCE SHEET E-1.1.
12. PROVIDE, AS PART OF THE EMS SYSTEM, CTs TO METER THE HVAC EQUIPMENT, THE WATER HEATER, THE FEEDERS TO PANEL 'P' AND THE FEEDERS TO PANEL 'L'.
13. SURGE PROTECTION DEVICE (SPD) UNIT MOUNTED ABOVE PANELBOARD. CONTRACTOR SHALL KEEP CONNECTION DISTANCE AS SHORT AS POSSIBLE, MAXIMUM DISTANCE 18". SPD SHALL BE UL 1449 THIRD EDITION RATED, TYPE 2 WITH A MINIMUM NOMINAL DISCHARGE CURRENT OF 20KA, AN AUDIABLE ALARM AND (1) SET OF DRY CONTACTS. (ADVANCE PROTECTION TECHNOLOGIES XDS SERIES). (5)#10 CONDUCTORS IN 1" PVC CONDUIT.
14. LOCATION OF CODE REQUIRED MANUAL LIGHTING CONTROL SWITCH BANK. REFERENCE DETAIL 1 "MASTER LIGHT SWITCH BANK" ON THIS SHEET.

NOTE:
REFERENCE RESPONSIBILITY MATRIX ON ARCHITECTURAL SHEET A0.06 FOR ECOVA CONTACT INFORMATION.

NOTE:
VERIFY PROPER AMPERAGE PER LOCATION AND LIGHTING DESIGN

HOMERUNS AND BRANCH WIRING FOR 20 AMP CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT WIRE SIZE	HOMERUN WIRE SIZE
1FT TO 50FT	NO.12 AWG	NO.12 AWG
51FT TO 75FT	NO.12 AWG	NO.10 AWG
76FT TO 120FT	NO.10 AWG	NO.8 AWG
121FT TO 190FT	NO.10 AWG	NO.6 AWG
191FT TO 300FT	NO.10 AWG	NO.4 AWG

CONTRACTOR SHALL VERIFY ANY THIRD PARTY INSPECTIONS REQUIRED BY THE LOCAL JURISDICTION PRIOR TO BIDDING THIS PROJECT.

EQUIPMENT SHOWN FADED DASHED IS EXISTING TO REMAIN.

CONTRACTOR TO VERIFY ALL METERING REQUIREMENTS WITH LL AND LOCAL UTILITY PRIOR TO BID

CONTRACTOR SHALL VERIFY EXACT DISTANCE AND ROUTING OF SERVICE FEEDERS FROM LL DISTRIBUTION/SERVICE ENTRANCE EQUIPMENT PRIOR TO BIDDING

CONTRACTOR TO COORDINATE ALL LIGHTING/DIMMING CONTROLS AND LIGHTING SPECIFICATIONS WITH CONTROLS VENDOR PRIOR TO ORDERING TO ENSURE CORRECT COMPONENTS ARE PROVIDED FOR DIMMING AND CONTROLS COMPATIBILITY.

RISER DIAGRAM | N.T.S. | 7

EXISTING PANEL H

Service: 277/480 Volts 3 Phase 4 Wire Cabinets: Surface Mounted
Mains: 200 Amp MLO Total Watts: 59856 NEMA 1

REM	CKT	DESCRIPTION	WATTS	WIRE	BKR	A	B	C	BKR	WIRE	DESCRIPTION	WATTS	CKT	REM
	1	TRANSFORMER	10980	1	3/100	X			1/20		SPARE		2	
	3		10516				X		1/30		SPARE		4	
	5		11780					X	1/20		SPARE		6	
E	7	RTU-1	4430	10	3/30	X			1/20		SPARE		8	
	9		4430				X		1/20		SPARE		10	
	11		4430					X	1/20		SPARE		12	
E	13	RTU-2	4430	10	3/30	X			1/20		SPARE		14	
	15		4430				X		1/20		SPARE		16	
	17		4430					X	1/20		SPARE		18	

TOTAL LOAD PHASE 'A' 19840
TOTAL LOAD PHASE 'B' 19376
TOTAL LOAD PHASE 'C' 20640

TOTAL LOAD ALL PHASES 59856 WATTS
72.03 AMPS

REMARKS
(TC) TIME CLOCK CONTROLLED
(C) VIA CONTACTOR 1, 2 OR 3
(LD) LOCK-ON DEVICE
(IG) ISOLATED GROUND
(HR) HACR RATED CB
(SD) SWITCHING DUTY CB
(E) EXISTING CIRCUIT TO REMAIN

NEW PANEL P

Service: 120/208 Volts 3 Phase 4 Wire Cabinets: Surface Mounted
Mains: 100 Amp MLO Total Watts: 20400 NEMA 1

REM	CKT	DESCRIPTION	WATTS	WIRE	BKR	A	B	C	BKR	WIRE	DESCRIPTION	WATTS	CKT	REM
DED	1	DED POS	360	12	1/20	X			1/20	12	SENSORMATIC	800	2	LD
DED	3	DED POS	360	12	1/20		X		1/20	12	WATER HEATER	1500	4	LD
DED	5	DED POS	360	12	1/20			X	1/20	12	TELEPHONE BOARD REC	360	6	LD
	7	CASHWRAP RECEPT	540	12	1/20	X			1/20	12	FIRE ALARM SYSTEM	200	8	LD
	9	BACKWRAP RECEPT	360	12	1/20		X		1/20	12	MANAGERS OFFICE DED	360	10	DED
DED	11	LEARNING CENTER	180	12	1/20			X	1/20	12	BOH STEAMER	1500	12	
DED	13	LEARNING CENTER	540	12	1/20	X			1/20	12	MANAGERS OFFICE	180	14	
	15	SPARE			1/20		X		1/20	12	REFRIGERATOR	1200	16	LD
	17	SOUND SYSTEM	180	12	1/20			X	1/20	12	WATER COOLER	500	18	LD
	19	SALES STEAMER	1500	12	1/20	X			1/20	12	SALES STEAMER	1500	20	
CP1	21	SHOW WINDOW RECEPT	1200	12	1/20		X		1/20		SPARE		22	
CP1	23	SHOW WINDOW RECEPT	1200	12	1/20			X	1/20	12	DUCT DETECTOR	400	24	LD
LD	25	DOOR CHIME/PANIC BAR	200	12	1/20	X			1/20	12	RR GFI	180	26	
	27	BOH RECEPT	540	12	1/20		X		1/20		SPARE		28	
	29	CASHWRAP STEAMER	1500	12	1/20			X	1/20	12	SALES STEAMER	1500	30	
	31	SPARE			1/20	X			1/20	12	MICROWAVE	1200	32	
	33	SPARE			1/20		X		1/20		SPARE		34	
	35	SPARE			1/20			X	1/20		SPARE		36	
	37	SPARE			1/20	X			1/20		SPARE		38	
	39	SPARE			1/20		X		1/20		SPARE		40	
	41	SPARE			1/20			X	1/20		SPARE		42	

TOTAL LOAD PHASE 'A' 7200
TOTAL LOAD PHASE 'B' 5520
TOTAL LOAD PHASE 'C' 7680

TOTAL LOAD ALL PHASES 20400 WATTS
56.67 AMPS

REMARKS
(TC) TIME CLOCK CONTROLLED
(C) VIA CONTACTOR 1, 2 OR 3
(LD) LOCK-ON DEVICE
DED) DEDICATED GROUND
(HR) HACR RATED CB
(SD) SWITCHING DUTY CB
(E) EXISTING CIRCUIT TO REMAIN

EXISTING PANEL L

Service: 120/208 Volts 3 Phase 4 Wire Cabinets: Surface Mounted
Mains: 225 Amp 200 Amp Main Circuit Breaker Total Watts: 33276 NEMA 1

REM	CKT	DESCRIPTION	WATTS	WIRE	BKR	A	B	C	BKR	WIRE	DESCRIPTION	WATTS	CKT	REM
CP4	1	SHOW WINDOW TRACK	360	12	1/20	X			1/20	12	SALES LIGHTING	800	2	CP3
CP1	3	SIGNAGE	1200	12	1/20		X		1/20	12	SALES LIGHTING	800	4	CP2
CP4	5	SHOW WINDOW TRACK	480	12	1/20			X	1/20	12	FITTING ROOM LIGHTING	400	6	CP3
CP4	7	SALES FLOOR TRACK	480	12	1/20	X			1/20	12	FITTING ROOM LIGHTING	400	8	CP2
CP4	9	SALES FLOOR TRACK	600	12	1/20		X		1/20	12	EM/NIGHT LIGHTING	636	10	LD
	11	LIGHITNG CONTROL PNL	400	12	1/20			X	1/20	12	BOH LIGHTING	660	12	CP2
CP4	13	SALES FLOOR TRACK	240	12	1/20	X			1/20	12	BOH LIGHTING	660	14	CP2
CP4	15	SALES FLOOR TRACK	720	12	1/20		X		1/20	12	VESTIBULE LIGHTING	80	16	
CP4	17	SALES FLOOR TRACK	480	12	1/20			X	1/20		SPARE		18	
CP4	19	SALES FLOOR TRACK	480	12	1/20	X			1/20		SPARE		20	
CP4	21	SALES FLOOR TRACK	480	12	1/20		X		1/20		SPARE		22	
CP4	23	SALES FLOOR TRACK	480	12	1/20			X	1/20		SPARE		24	
CP4	25	SALES FLOOR TRACK	360	12	1/20	X			1/20		SPARE		26	
CP4	27	SALES FLOOR TRACK	480	12	1/20		X		1/20		SPARE		28	
CP1	29	SIGNAGE	1200	12	1/20			X	1/20		SPARE		30	
	31	SPARE			1/20	X			1/20		SPARE		32	
	33	SPARE			1/20		X		1/20		SPARE		34	
	35	SPARE			1/20			X	1/20		SPARE		36	
	37	PANEL P	7200	1	3/100	X			3/20		SPD		38	
	39		5520				X						40	
	41		7680					X					42	

TOTAL LOAD PHASE 'A' 10980
TOTAL LOAD PHASE 'B' 10516
TOTAL LOAD PHASE 'C' 11780

TOTAL LOAD ALL PHASES 33276 WATTS
92.43 AMPS

REMARKS
(TC) TIME CLOCK CONTROLLED
(C) VIA CONTACTOR 1, 2 OR 3
(LD) LOCK-ON DEVICE
(IG) ISOLATED GROUND
(HR) HACR RATED CB
(SD) SWITCHING DUTY CB
(E) EXISTING CIRCUIT TO REMAIN

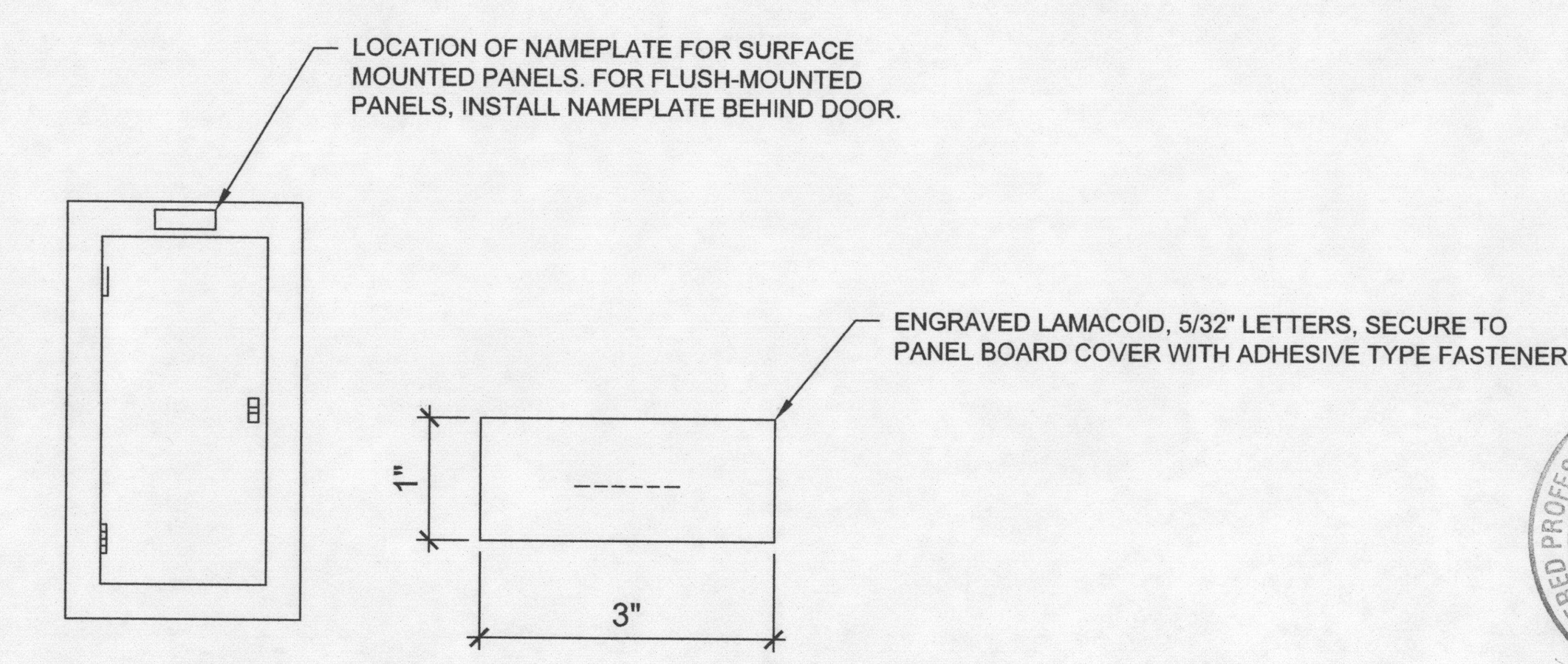
ELECTRICAL LOAD SUMMARY

277/480V 3 PH - 4W

LOAD DESCRIPTION	CONNECTED LOAD (WATTS)	DEMAND FACTOR	DEMAND LOAD (WATTS)	DEMAND LOAD (AMPS)
LIGHTING	10076.0	1.25	12595.0	15.2
RECEPTACLES	18500.0	1.00	14250.0	17.1
MISC	400.0	1.00	400.0	0.5
SIGNAGE	2400.0	1.25	3000.0	3.6
WATER HEATER	1500.0	1.25	1875	2.3
HVAC	26980.0	NOTE 2	27676	33.3
TOTAL	59856.0	—	59796.0	72.0

NOTES:
1. 100% OF FIRST 10,000 WATTS , PLUS 50% OF REMAINING LOAD.
2. 100% OF A/C LOAD, PLUS 25% OF HIGHEST LOAD.

PANEL SCHEDULES | N.T.S. | 3



NOTE:
NAMEPLATES ARE REQUIRED ON ALL PANELBOARDS, STARTERS, DISCONNECT SWITCHES, RELAYS AND JUNCTION BOXES GREATER THAN 4 11/16" SQUARE.

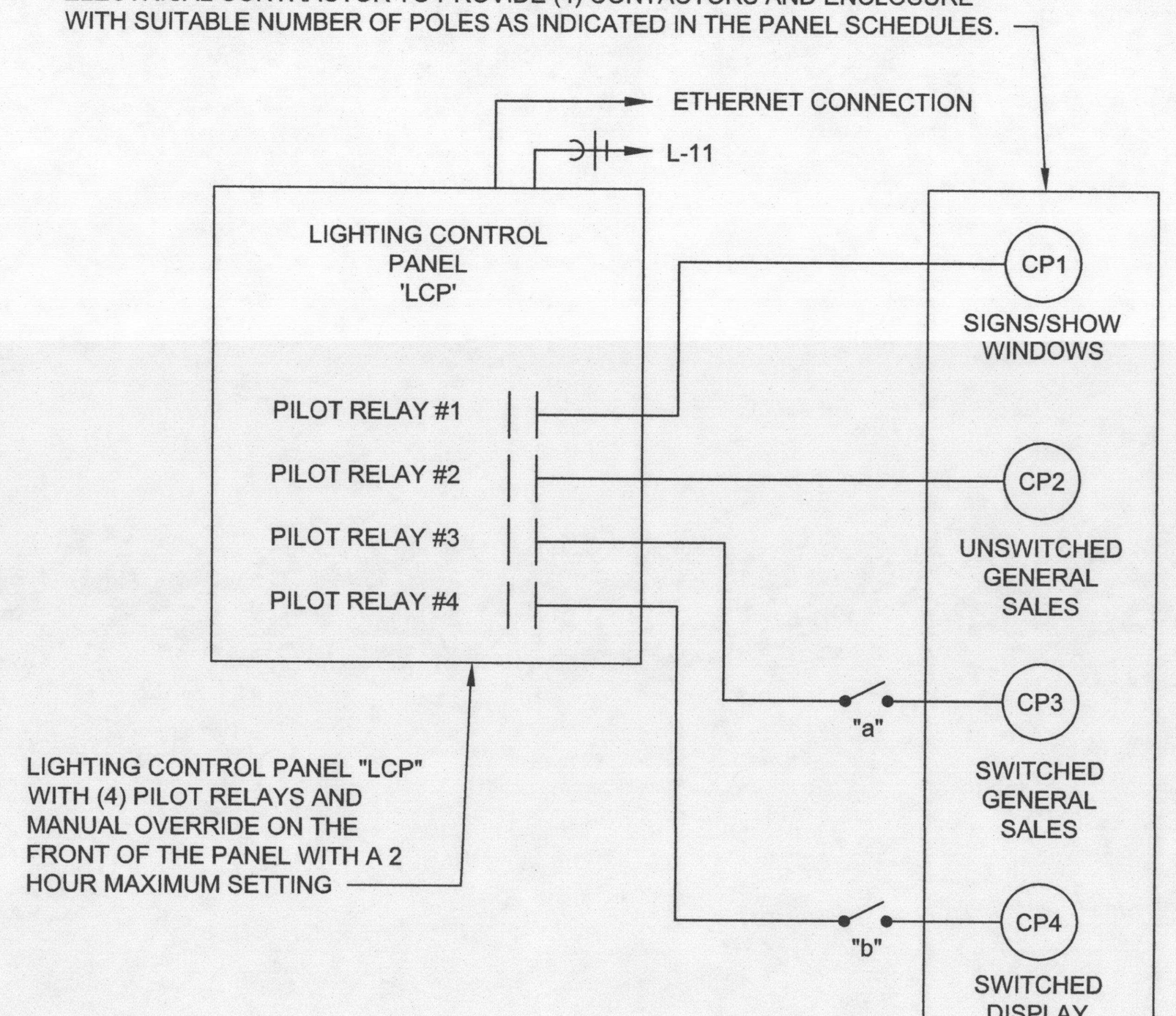
RESERVED | 9

RESERVED | 6

RESERVED | 5

NAMEPLATE DETAIL | N.T.S. | 2

ELECTRICAL CONTRACTOR TO PROVIDE (4) CONTACTORS AND ENCLOSURE WITH SUITABLE NUMBER OF POLES AS INDICATED IN THE PANEL SCHEDULES.

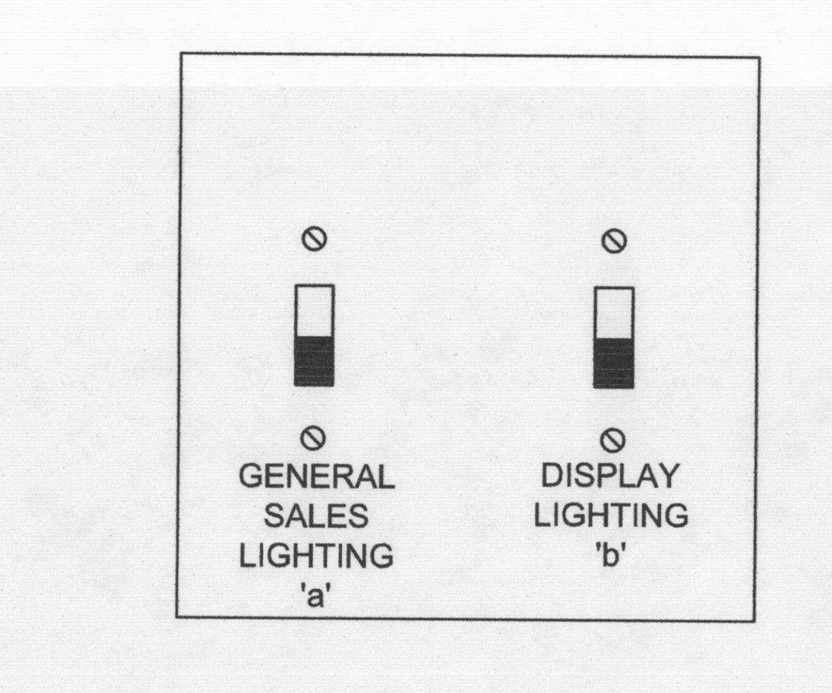


ELECTRICAL CONTRACTOR COORDINATION	LIGHTING CONTROL INTENT
• ELECTRICAL CONTRACTOR SHALL:	• SITESAGE CONTROLLER SHALL BE PROGRAMMED TO AUTOMATICALLY TURN DESIGNATED LIGHTING ON AND OFF.
•• FURNISH, INSTALL AND WIRE THE LIGHTING CONTROL PANEL 'LCP'. G.C. TO PURCHASE FROM ECOVA, NO EQUAL.	•• UNSWITCHED GENERAL SALES LIGHTS SHALL BE PROGRAMMED TO TURN ON AND OFF TO COINCIDE WITH NORMAL EMPLOYEE BUSINESS HOURS. (HOURS TO BE DETERMINED BY ANN INC. PROJECT MANAGER).
•• FURNISH, INSTALL AND WIRE THE NECESSARY ELECTRICALLY HELD LIGHTING CONTACTORS TO CONTROL LIGHTING ZONE PER THESE DESIGN DRAWINGS.	•• SWITCHED SALES LIGHTS SHALL BE PROGRAMMED TO TURN ON AND OFF 15 MINUTES BEFORE AND AFTER NORMAL MALL OPERATION HOURS.
•• FURNISH, INSTALL AND WIRE THE REQUIRED LIGHT SWITCHES ASSOCIATED WITH THE 'LCP' AND LIGHTING DESIGN.	•• SWITCHED DISPLAY LIGHTS SHALL BE PROGRAMMED TO TURN ON AND OFF 15 MINUTES BEFORE AND AFTER NORMAL MALL OPERATION HOURS.
•• FURNISH AND INSTALL A DEDICATED ELECTRICAL POWER OUTLET ADJACENT TO THE 'LCP'.	•• SIGN LIGHTING AND STORE FRONT/DISPLAY WINDOW LIGHTS SHALL BE PROGRAMMED PER MALL REQUIREMENTS. IF THE MALL DOES NOT HAVE A SET REQUIREMENT, TURN LIGHTS ON AND OFF 2 HOURS AFTER NORMAL MALL OPERATION HOURS.
•• FURNISH, INSTALL AND WIRE APPROPRIATE CAT5 CABLING BETWEEN THE 'LCP' AND IT NETWORK SWITCH PROVIDED BY ANN, INC. CORPORATE IT.	• LOCAL TOGGLE SWITCHES SHALL BE INSTALLED TO ALLOW OCCUPANT TO MANUALLY TURN LIGHTING OFF. ONE SWITCH SHALL BE PROVIDED TO CONTROL EACH OF THE FOLLOWING LIGHTING LEVELS: 50% OF GENERAL SALES LIGHTS AND DISPLAY LIGHTS.
•• FURNISH AND INSTALL UNDER SUPERVISION BY THE ECOVA STARTUP AND COMMISSIONING TEAM, THE REQUIRED eMONITORS WITH SPLIT CORE CURRENT TRANSFORMERS TO MEASURE THE BUILDING MAIN POWER, LIGHTING POWER USAGE (IN AGGREGATE) AND INDIVIDUAL HVAC UNIT POWER. TYPICAL CIRCUIT COUNT IS BETWEEN 12 AND 24 CIRCUITS. G.C. TO PURCHASE FROM ECOVA, NO EQUAL.	• LOCAL TOGGLE SWITCHES IN PUBLIC AREAS SHALL NOT BE CAPABLE OF TURNING LIGHTS ON AFTER HOURS.
	• ONE LOCAL BY-PASS SWITCH SHALL BE INSTALLED TO OVERRIDE THE UNSWITCHED GENERAL SALES LIGHTS ON FOR A MAXIMUM OF TWO HOURS. BY-PASS SWITCH SHALL BE LOCATED ON THE COVER OF THE LIGHTING CONTROL PANEL (LCP).

LIGHTING CONTROL PANEL ZONING:

CP1 - STORE SIGNS AND SHOW WINDOW LIGHTING
CP2 - 50% OF GENERAL SALES LIGHTS, UNSWITCHED
CP3 - 50% OF GENERAL SALES LIGHTS WITH MANUAL SWITCH
CP4 - DISPLAY LIGHTS WITH MANUAL SWITCH

REFER TO PANEL SCHEDULES FOR CIRCUITING INFORMATION.



SWITCHES SHALL BE PILOT LIT SWITCHES PER CODE AND LABELED AS SHOWN ABOVE

RESERVED | 8

LIGHTING CONTOLS | N.T.S. | 4

MASTER LIGHT SWITCH BANK | N.T.S. | 1

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LOFT OUTLET

REVISIONS

REGISTERED PROFESSIONAL ENGINEER 18894PE OREGON 01/21/97 DONALD JAMES PENN
JUN 0 8 2017
Exp. DEC 3 1 2018

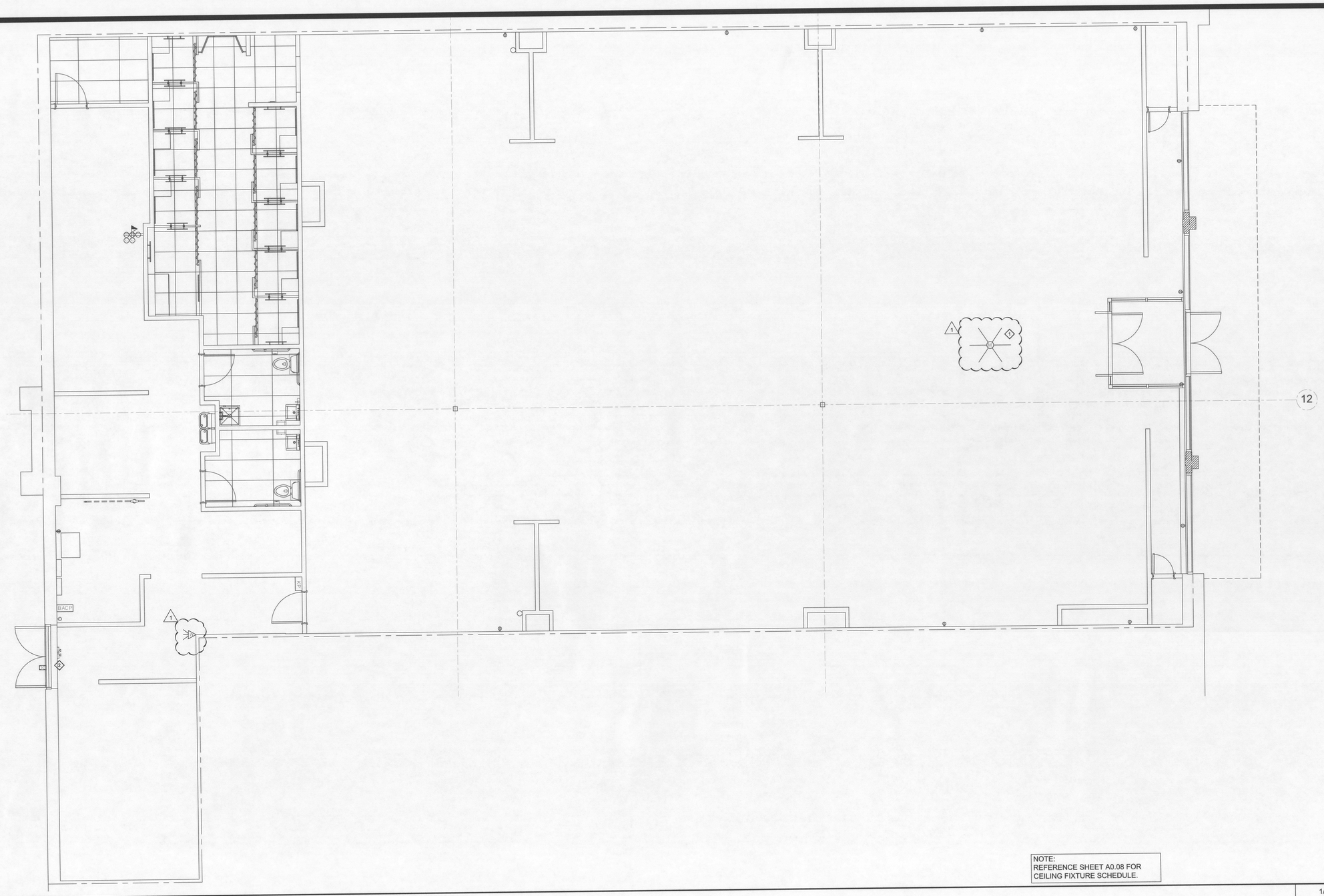
DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

ELECTRICAL SCHEDULES

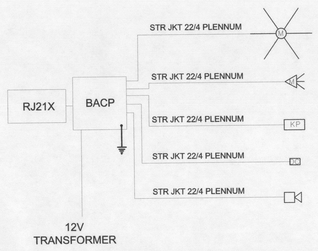
DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: E4.01

2016SPRING_LOFTOUTLET_PROTOTYPE



NOTE:
REFERENCE SHEET A0.08 FOR CEILING FIXTURE SCHEDULE.

CCTV AND BURGLAR ALARM LAYOUT PLAN — 1/4" = 1'-0" — 1



AFA RISER DIAGRAM — N.T.S. — 2

BURGLAR ALARM DEVICE LEGEND

BACP	BURGLAR ALARM CONTROL PANEL
KP	KEYPAD
	WALL-MOUNT MOTION DETECTOR
	360 DEGREE MOTION DETECTOR
DC	DOOR CONTACT
	SIREN

BURGLAR ALARM ZONE LEGEND

1	ENTRY AREA 360 MOTION
2	REAR EMERGENCY EXIT DOORS
3	SPARE
4	SPARE

BURGLAR ALARM SPECIAL INSTRUCTION NOTES

*	AFA TO SUPPLY ALL BURGLAR ALARM EQUIPMENT.
*	CABLE AND CONDUIT SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
*	BURGLAR ALARM SYSTEM MUST BE INDEPENDENT OF FIRE ALARM.
*	BA & FA SYSTEMS NOT TO BE TIED TOGETHER.
*	FRONT CEILING MOTION LOCATED 15' FROM INNER DOOR AS TO PICKUP ANYONE COMING THROUGH THOSE FRONT DOORS. MOUNTING HEIGHT SHOULD BE BETWEEN 8FT-11FT. IF THIS IS NOT POSSIBLE, CONTACT NATIONAL ACCOUNTS ASAP. CEILING MOTION NEEDS TO BE MOUNTED NO MORE THAN 15' FROM FLOOR. ADD CONDUIT AND A 4" BOX IF HEIGHT IS 15' OR MORE.
*	CABLE DROPS MUST HAVE 5' EXPOSED THROUGH SHEET ROCK.
*	CABLE MUST BE RUN FROM TELCO EQUIPMENT TO BURGLAR ALARM PANEL FOR MONITORING.
*	BURGLAR ALARM PANEL MUST BE LOCATED ON PHONE BOARD.
*	ALL CABLING MUST BE TERMINATED AT THE PHONE BOARD.
*	ALL WIRING MUST BE STR JACKET 22/4 PLENUM FOR ALL BURGLAR ALARMS.
*	ALL CABLE DROPS SHALL BE MINIMUM OF CEILING TO FLOOR IN LENGTH.

STORE 3125

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LOFT OUTLET

REVISIONS
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REGISTERED PROFESSIONAL ENGINEER — OREGON — 01/21/97 — DONALD JAMES PENN — Exp. 12/31/16

CASCADE STATION
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PORTLAND, OREGON 97224

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06\LOS 002

ELECTRICAL
CCTV & BURGLAR ALARM

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: E5.01

2016SPRING_LOFTOUTLET_PROTOTYPE

SECTION 16010 - GENERAL PROVISIONS

A. GENERAL
1. REQUIREMENTS SPECIFIED IN DIVISION 1, INSTRUCTIONS TO BIDDERS, SUPPLEMENTAL GENERAL CONDITIONS, SPECIAL CONDITIONS, ADDENDA, ALTERNATES, CONTRACT AND PROPOSAL, ALONG WITH DIVISION 16 AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
7. EXAMINE THE WORK OF OTHER TRADES INSOFAR AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES
8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS, CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB, ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.

B. VISIT TO THE SITE
1. THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS

C. CODE AND PERMITS
1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
2. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
3. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE.
4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT.

D. SHOP DRAWINGS AND PRODUCT DATA:
1. SHOP DRAWINGS SHALL ONLY BE SUPPLIED FOR EQUIPMENT THAT DIFFERS FROM WHAT IS LISTED OR ALREADY APPROVED IN THESE DRAWINGS. CONTRACTOR SHALL COORDINATE WITH ARCHITECT IF UNCERTAIN ABOUT WHICH ITEMS TO SUBMIT.
2. SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY VIA E-MAIL IN PDF FORMAT. ALL ELECTRONIC SUBMITTALS MUST BE SENT TO THE ARCHITECT AND MAY NOT BE SENT DIRECTLY TO THE ENGINEER WITHOUT PRIOR APPROVAL FROM THE ENGINEER AND ARCHITECT.
3. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO ENGINEER FOR REVIEW, CONTRACTOR SHALL APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT TO THE ENGINEER; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. ENGINEER SHALL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION UNLESS CONTRACTOR ADVISES ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT, WHICH IS ACKNOWLEDGED BY ENGINEER IN WRITING.
4. ANY SHOP DRAWING BEING RESUBMITTED SHALL BE FLAGGED AND CLOUDED WHERE CHANGED.
5. CHECKING OF SHOP DRAWINGS IS A GRATUITOUS ASSISTANCE BY THE ENGINEER AND SHALL NOT RELIEVE ANY RESPONSIBILITY FOR DEVIATIONS, ERRORS, OR OMISSIONS WHICH MAY EXIST IN THE SHOP DRAWINGS.
6. A LETTER LISTING THE MANUFACTURER'S NAME AND MODEL NUMBER SHALL BE SUFFICIENT FOR CONDUIT, OUTLET BOXES AND RINGS, WIRE AND CABLE, SWITCHES, RECEPTACLES, PLATES, AND LAMPS.
7. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE FOLLOWING FOR EACH PIECE OF EQUIPMENT AND MATERIAL, AS APPLICABLE:
   7.1. PRODUCT DATA LISTING AND CLEARLY MARKING THE MANUFACTURER, MODEL NUMBER, MATERIALS, AND MISCELLANEOUS DATA AS REQUIRED DESCRIBING THE EQUIPMENT.
   7.2. DIMENSIONAL DRAWINGS SHOWING LAYOUT, CONNECTION POINTS AND SIZES, WEIGHTS, ETC.
   7.3. ACCESSORIES.
   7.4. WIRING DIAGRAMS, INCLUDING POWER AND CONTROL WIRING, DISTINGUISH BETWEEN FACTORY AND FIELD WIRING.
   7.5. PARTS LIST.
   7.6. INSTALLATION AND MAINTENANCE MANUALS.
   7.7. WARRANTY STATEMENT.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL QUANTITIES, AND DIMENSIONS SHALL BE CONFIRMED AND CORRELATED AT THE JOBSITE.

A. RECORD DRAWINGS:
1. RECORD DRAWINGS SHALL BE KEPT AND PREPARED IN ACCORDANCE WITH DIVISION 1 AND AS SPECIFIED HEREIN.
2. A COMPLETE "RECORD" SET OF PRINTS, SHALL BE KEPT AT THE PROJECT SITE AND SHALL BE CORRECTED DAILY TO SHOW ALL CHANGES IN LAYOUT FROM THE ORIGINAL DRAWINGS AND SPECIFICATIONS. THIS "RECORD" SET SHALL BE USED FOR THIS PURPOSE ONLY.
3. ON COMPLETION OF THE PROJECT, CONTRACTOR SHALL TRANSFER ALL CHANGES NOTED ON THE FIELD RECORD SET TO A PDF DOCUMENT AND SEND TO THE ARCHITECT. ALL CHANGES SHALL BE MARKED IN RED.
4. FINAL PAYMENT WILL NOT BE AUTHORIZED UNTIL THESE RECORD DRAWINGS ARE RECEIVED AND CHECKED FOR COMPLETENESS BY THE ARCHITECT/ENGINEER.

B. STANDARDS AND SUBSTITUTIONS
1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATIONS (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".
2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY. THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS OR EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTION (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.
4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.
5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED.

F. TESTING AND PLACING IN SERVICE
1. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACE AT THE CONTRACTOR'S EXPENSE.
2. TESTS SHALL INCLUDE THE FOLLOWING:
   G.A. MEASURE THE LOAD ON EACH PHASE OF EACH PANELBOARD. LOADS SHALL BE BALANCED WITHIN 7% PHASE-TO-PHASE.
   G.B. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).

H. INTERFERENCES
1. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
2. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.

I. QUALITY ASSURANCE
1. ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

SECTION 16050 -BASIC ELECTRICAL MATERIALS AND METHODS

A. MOUNTING ACCESSORIES
1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.
2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BINKLEY, STEEL CITY, OR RACO WILL BE ACCEPTABLE.
3. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD.

B. EXECUTION
1. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
4. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS.
5. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.

C. MATERIALS AND WORKMANSHIP
1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.
2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY.
3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.
5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.

D. SCOPE OF WORK
1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
   E.a. EMERGENCY LIGHTING AND POWER.
   E.b. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING ALL PANELS AND FEEDERS.
   E.c. COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
   E.d. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
   E.e. COMPLETE LIGHTING FIXTURE INSTALLATION.
   E.f. COMPLETE TELEPHONE AND COMMUNICATION CONDUIT.
   E.g. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.
   E.h. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
   E.i. EXIT LIGHT SYSTEM.
   E.j. WIRING DEVICES AND FLOOR BOXES.
   E.k. GROUNDING OF THE ELECTRICAL SYSTEM.

F. TEMPORARY SERVICE
1. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND REMOVE AS REQUIRED ALL TEMPORARY POWER AND TEMPORARY LIGHTING IN ALL AREAS AND INDIVIDUAL ROOMS WHEN NEEDED BY THE INDIVIDUAL TRADES IN THE PERFORMANCE OF THEIR WORK. THIS CONTRACTOR SHALL PROVIDE A MINIMUM OF TWENTY (20) FOOTCANDLES OF ILLUMINATION FOR TEMPORARY LIGHTING. ANY ADDITIONAL LIGHTING REQUIRED BY INDIVIDUAL TRADES SHALL BE PROVIDED BY THE INDIVIDUAL TRADES INCLUDING POWER FOR THE LIGHTING. THE ELECTRICAL WORK FOR CONSTRUCTION PURPOSES SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, SPECIFIC SAFETY REQUIREMENTS, AS WELL AS THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND NATIONAL ELECTRICAL SAFETY CODE. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED APPLICATIONS, PERMITS AND INSPECTIONS PERTAINING TO THIS WORK. THIS COST SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.
2. NEW LIGHT FIXTURES SHALL NOT BE USED FOR TEMPORARY LIGHTING.

G. ELECTRIC SERVICE
1. PROVIDE METERING TO POWER COMPANY AND/OR LANDLORD SPECIFICATIONS.

SECTION 16060 - GROUNDING AND BONDING

A. GROUND ALL EQUIPMENT PER ADOPTED ELECTRICAL CODE.

B. GROUND ALL DRY TYPE TRANSFORMERS AS PER DRAWINGS AND ADOPTED ELECTRICAL CODE.

C. ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZE PER ADOPTED ELECTRICAL CODE. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY.

D. WHERE AN ISOLATED, INSULATED GROUND IS REQUIRED A SEPARATE ISOLATED GREEN GROUND SHALL BE RUN FROM THE PANEL ISOLATED GROUND BUS TO THE ISOLATED GROUND CONNECTION OF THE DEVICE SERVED. IN NO CASE SHALL THE SYSTEM GROUND (GREEN WIRE AND ASSOCIATED OUTLET BOXES, CONDUIT AND BUILDING STEEL) BE ALLOWED TO CONTACT THE ISOLATE GROUND (GREEN WIRE WITH WHITE STRIPE).

SECTION 16120 - WIRING AND CABLE

A. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

	208/120 SYSTEM	480/277 SYSTEM
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

1. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
2. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
3. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. ALUMINUM CONDUCTORS ARE NOT ALLOWED ON THIS PROJECT.

B. INSULATION TYPE SHALL BE TYPE THWN FOR WIRE SIZES #8 AWG AND LARGER AND THHN OR THWN FOR #10 AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.

C. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.

D. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED.
1. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR CLASS I AND #16 FOR CLASS II.

E. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

F. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.

G. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.

H. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.

I. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.

J. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
1. CLEAN OUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.

L. FORM AND TIE ALL WIRING IN PANELBOARDS.

M. THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.

N. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.

O. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCES SHALL MORE THAN SIX (6) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

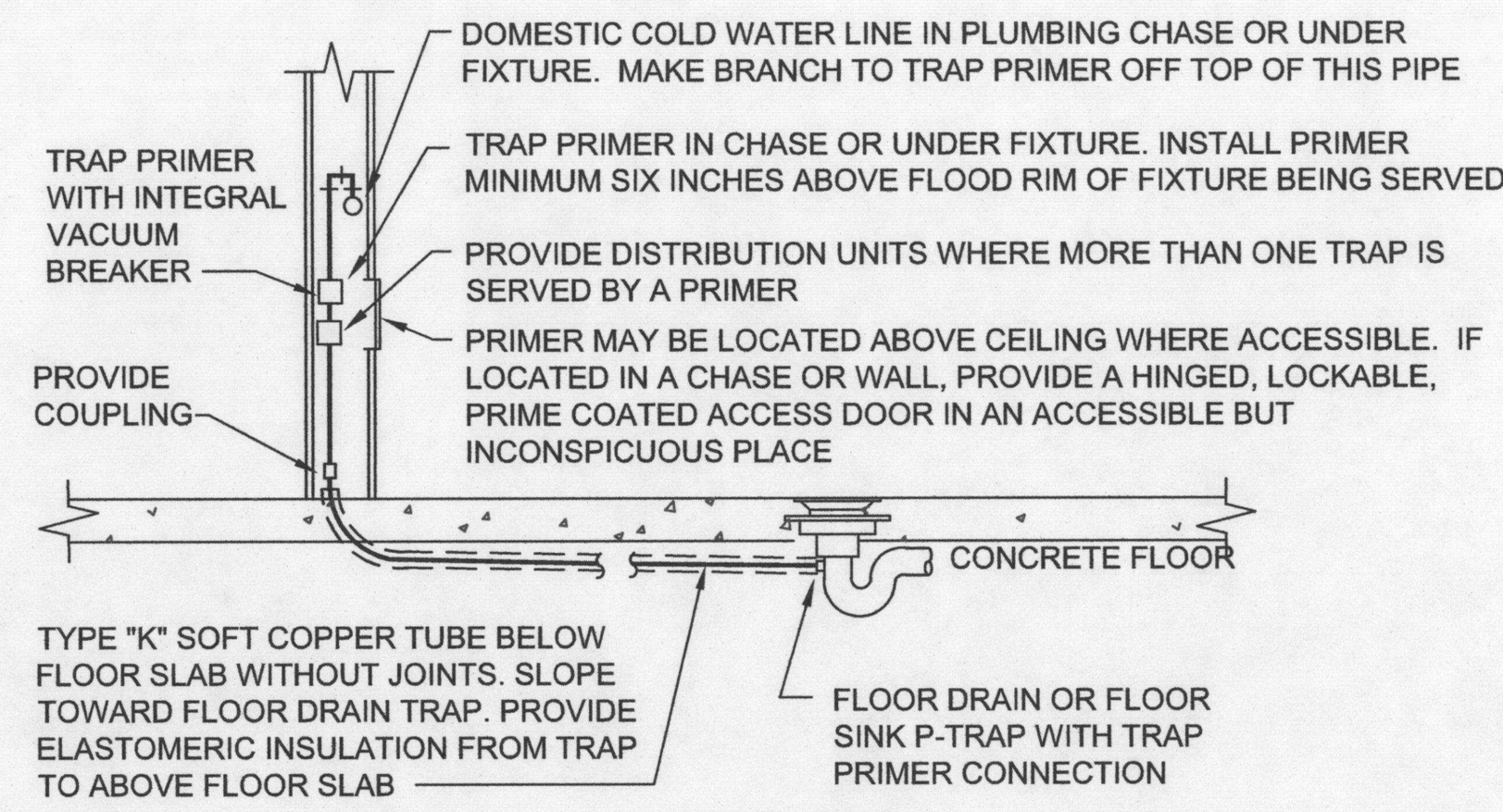
SECTION 16130 - RACEWAYS AND BOXES

A. RACEWAYS
1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.
   A.a. CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.
   A.b. CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.
   A.c. CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY WALL, METAL THREADED TYPE.
2. CONDUIT SIZE SHALL BE 1/2" MINIMUM (3/4" MINIMUM UNDERSLAB).
3. CONDUIT SHALL BE SECURELY FASTENED IN PLACE.
4. ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN THE UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.
5. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.
6. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE ADOPTED ELECTRICAL CODE.
7. INSTALLED EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY-IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
8. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
9. INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.
10. PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF.
11. INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOOR SLABS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.
12. HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEED'ING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.

B. PULL AND JUNCTION BOXES
1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH ADOPTED ELECTRICAL CODE, UNLESS LARGER BOXES ARE INDICATED.
2. PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAUGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE.

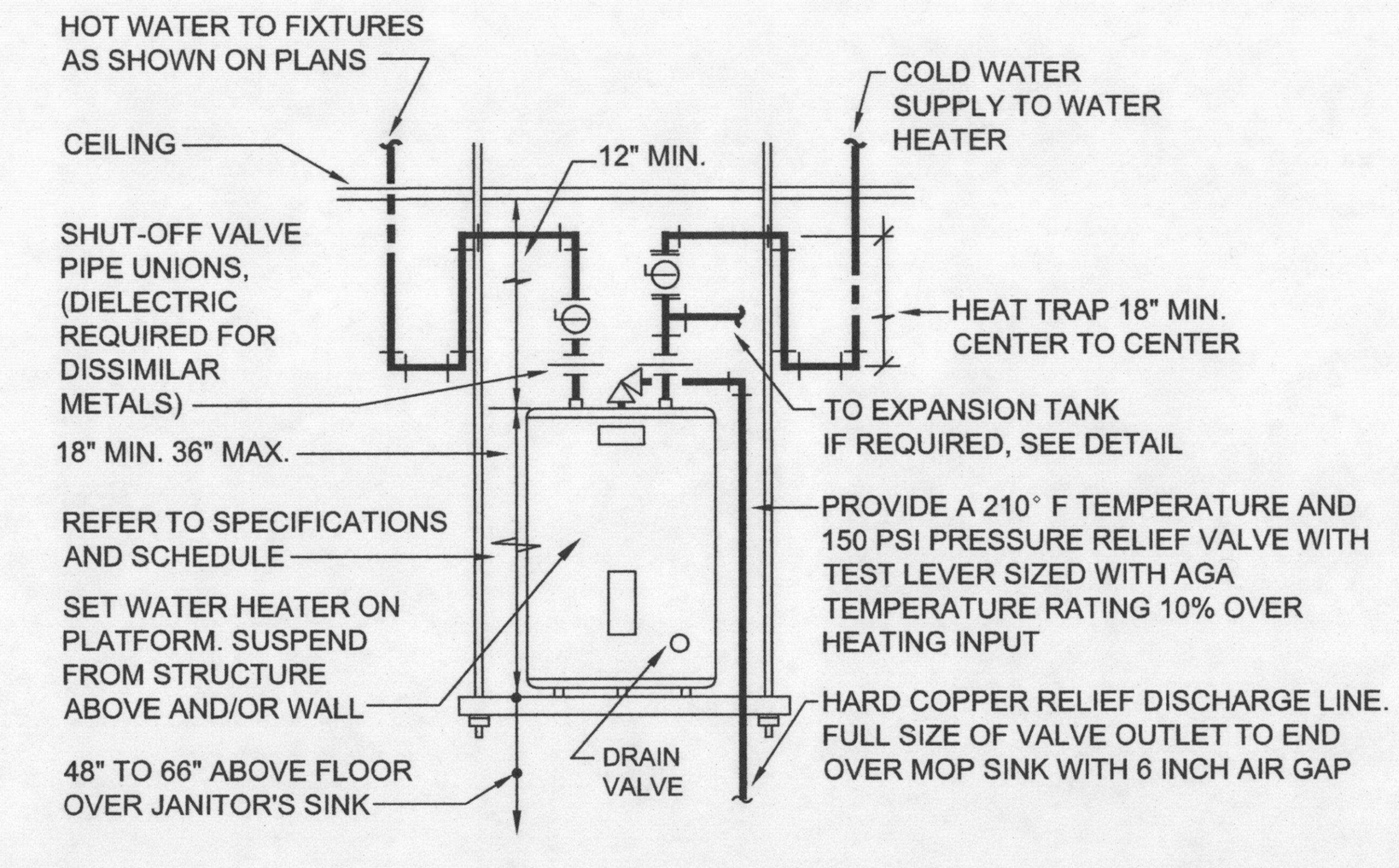
C. OUTLET BOXES
1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR CONCEALED INTERIOR WORK.
2. USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK, AND FOR EXPOSED OR CONCEALED WORK IN WET, DAMP OR EXTERIOR LOCATIONS. CAST BOXES SHALL BE SERIES FD BY CROUSE HINDS OR APPLETON.
3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE X 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE DEPTH MAY BE REDUCED TO 2-1/8" OR 1-1/2" UNDER SPECIAL CONDITIONS.
4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL X 1-1/2" DEEP (4-11/16" OCTAGONAL X 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES).
5. GANGED BOXES SHALL BE ONE PIECE (MINIMUM), 2-1/8" DEEP.
6. PROVIDE CAST IRON, CONCRETE TILE FLOOR BOXES WITH ADJUSTABLE COVERS SET FLUSH AND LEVEL WITH THE FINISHED FLOOR, WITH OUTLETS AS INDICATED ON THE DRAWINGS. PROVIDE HUBBELL #B-2400, 4200, OR 4300 SERIES BOXES WITH LEVELING SCREWS. FLUSH TYPE COVERS AND OPENINGS TO SERVE OUTLETS USED. FURNISH FLUSH CAPS FOR CLOSING OFF BOX WHEN NOT IN USE.
7. FLUSH MOUNT

NOT USED
N.T.S. | 12

TRAP PRIMER


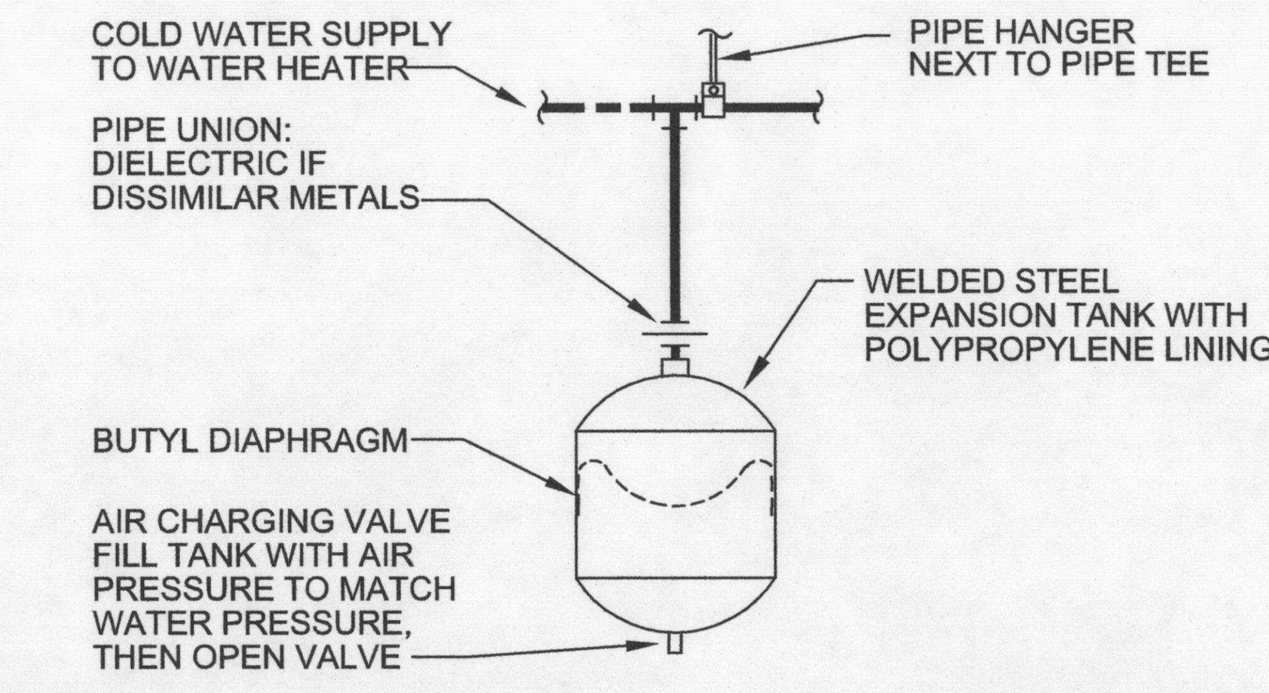
TRAP PRIMER MAY BE LOCATED ABOVE CEILING WHERE ACCESSIBLE.

N.T.S. | 9

WATER HEATER ON PLATFORM


PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. REFER TO FLOOR PLAN FOR PIPE SIZES. SET WATER HEATER THERMOSTAT AT 120° FAHRENHEIT. PROVIDE SEISMIC STRAP OR BRACING AND FLEXIBLE CONNECTORS TO WATER AND GAS CONNECTIONS IF/AS REQUIRED BY LOCAL AUTHORITIES.

N.T.S. | 6

EXPANSION TANK


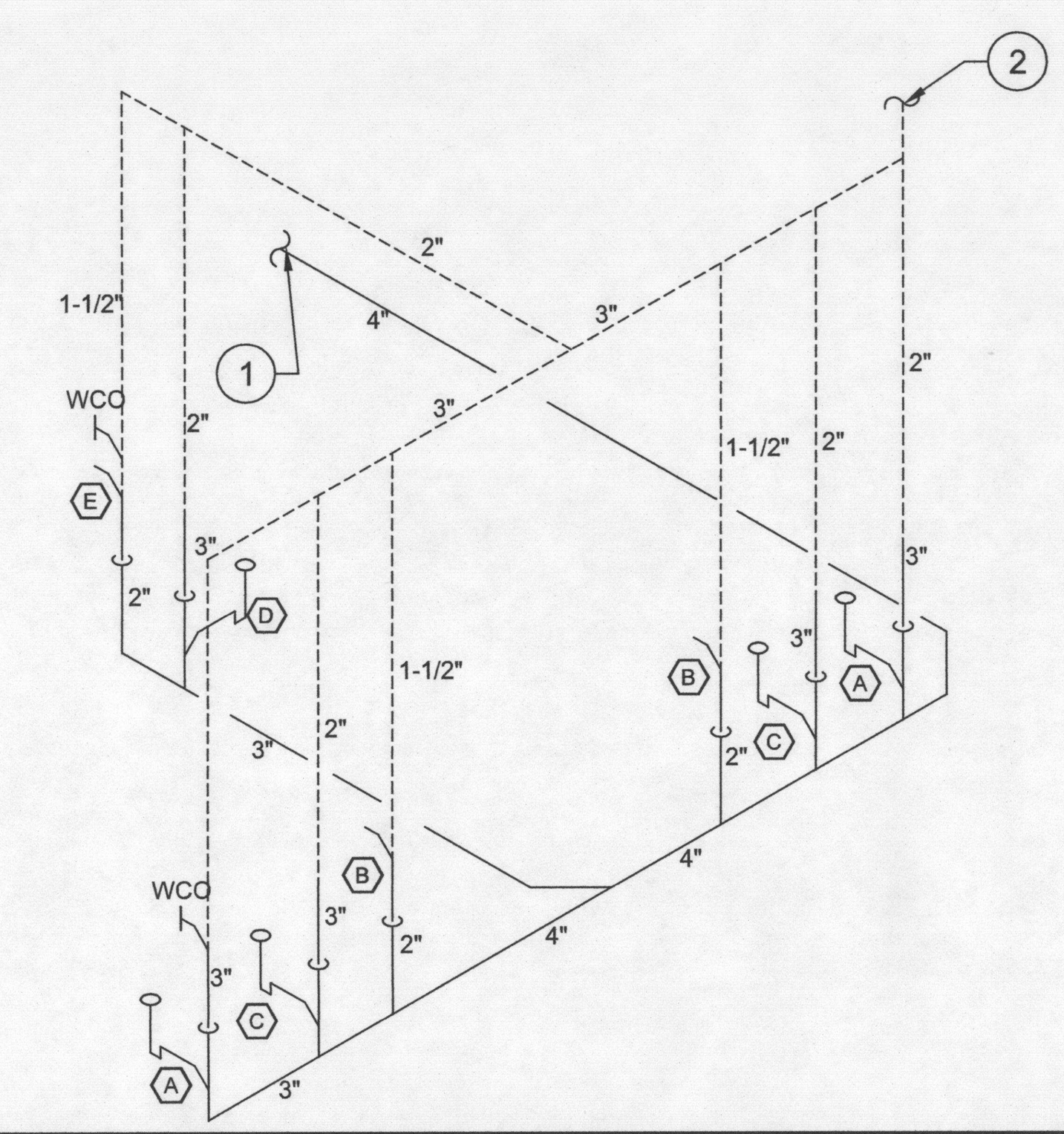
PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. MAKE PIPE SAME SIZE AS TANK FITTING. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION PROCEDURE. VERIFY PROPER OPERATION WHEN INSTALLED.

EXPANSION TANK INSTALLATION SHALL OCCUR ONLY WHEN THERE IS A BACKFLOW PREVENTION DEVICE INSTALLED WITHIN THE TENANT SPACE WATER SYSTEM OR BUILDING WATER SYSTEM.

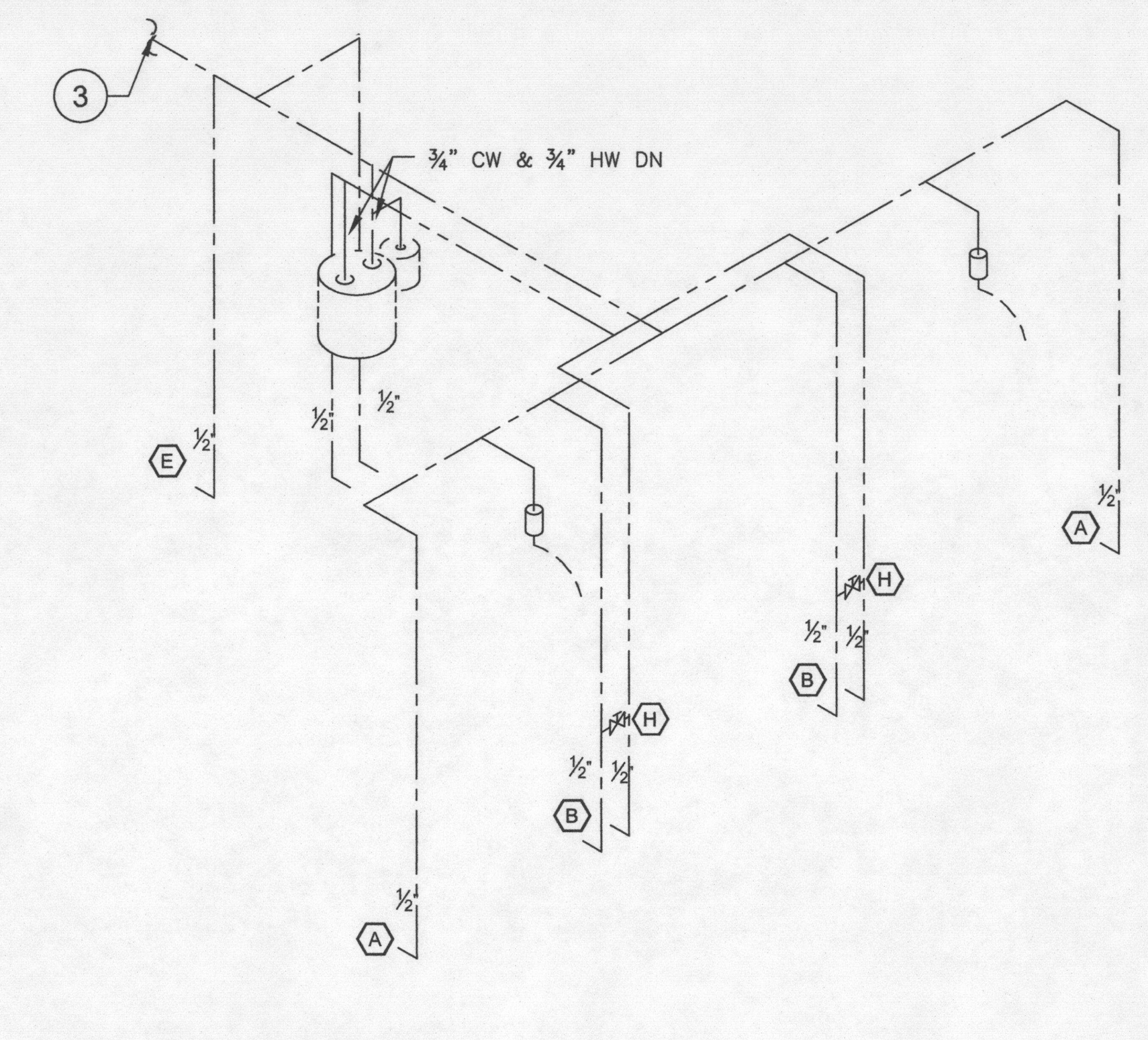
N.T.S. | 3

NOT USED
N.T.S. | 11

NOT USED
N.T.S. | 8

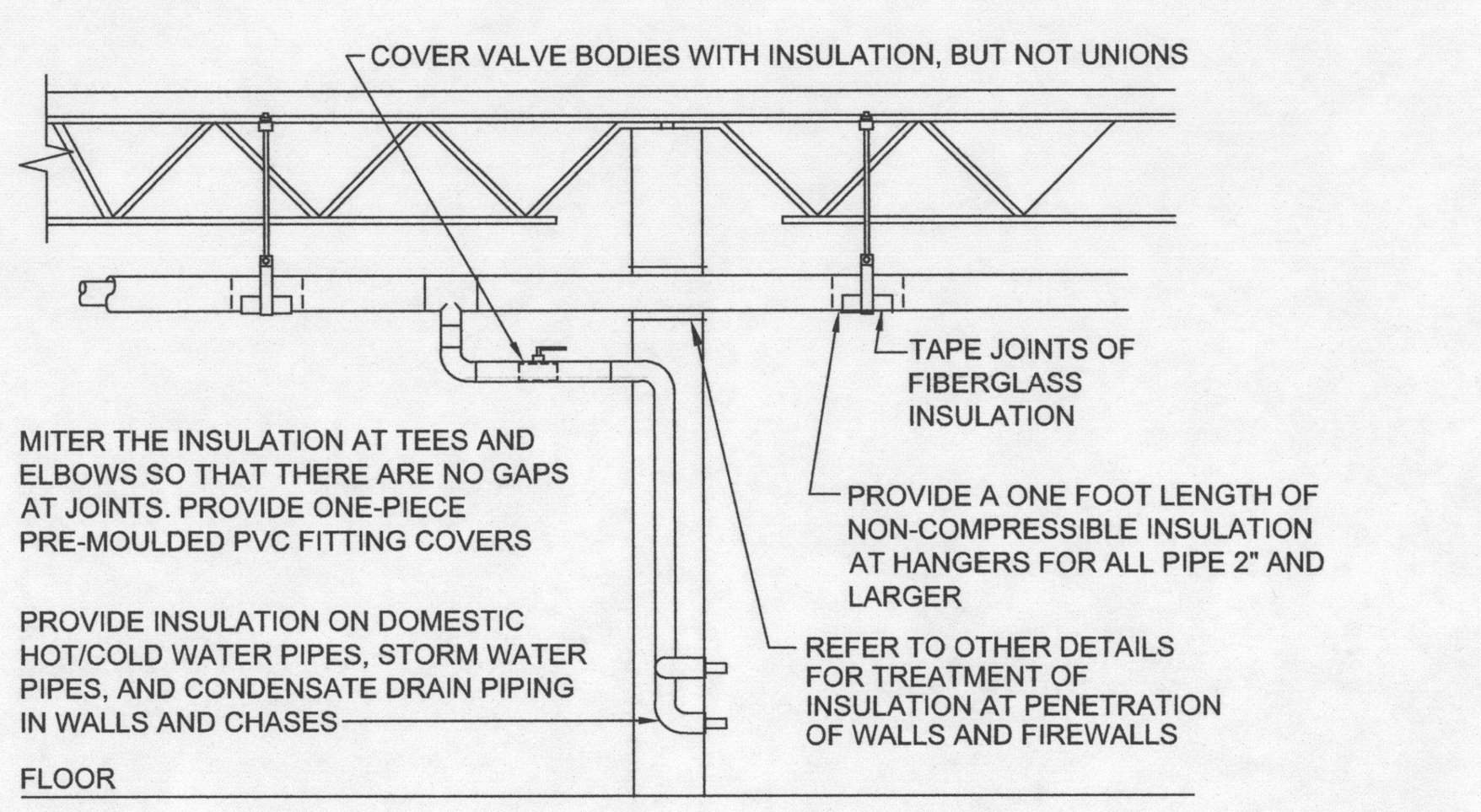
SANITARY WASTE AND VENT RISER


N.T.S. | 5

DOMESTIC WATER RISER


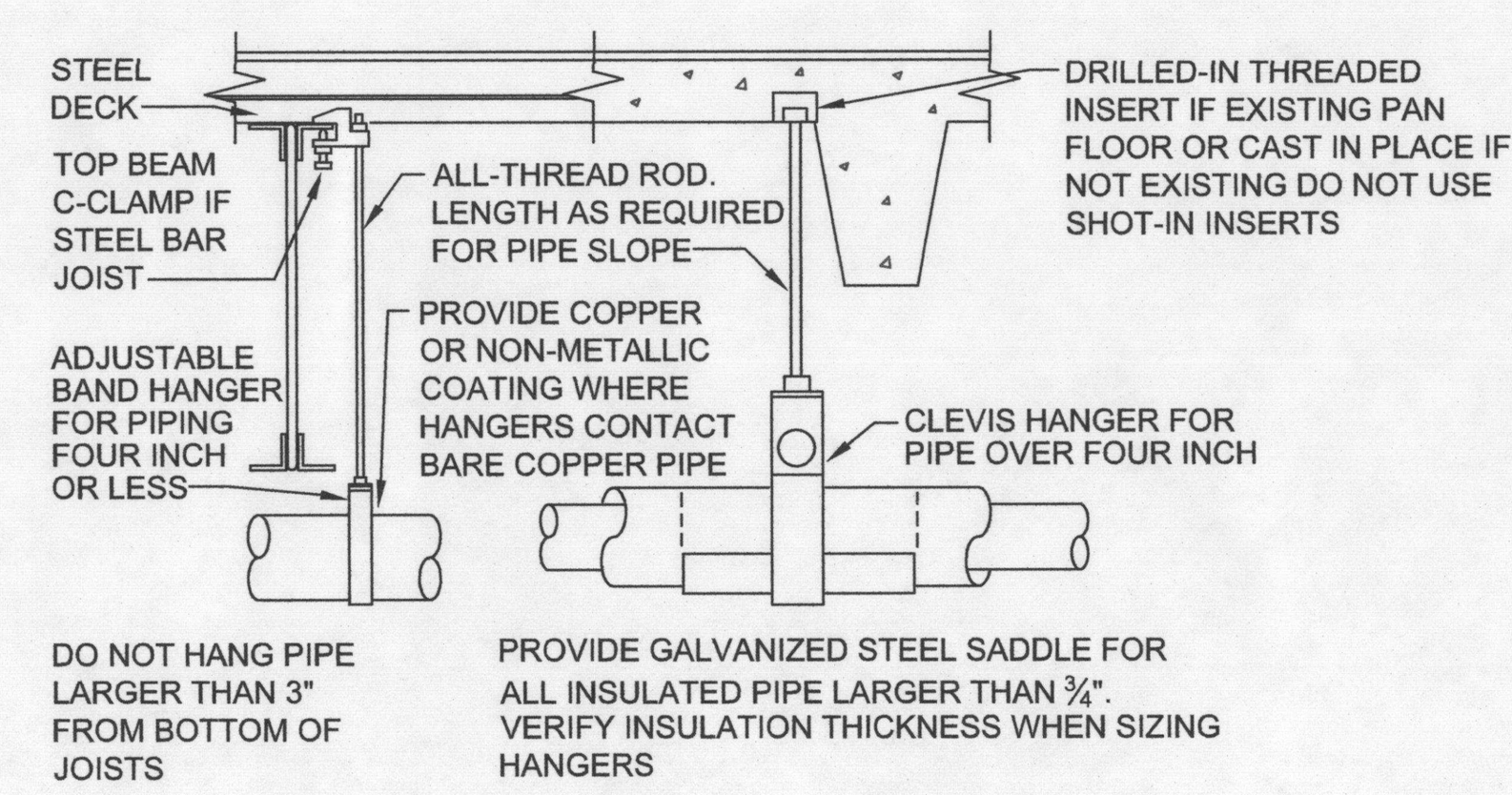
N.T.S. | 2

NOT USED
N.T.S. | 10

PIPE INSULATION


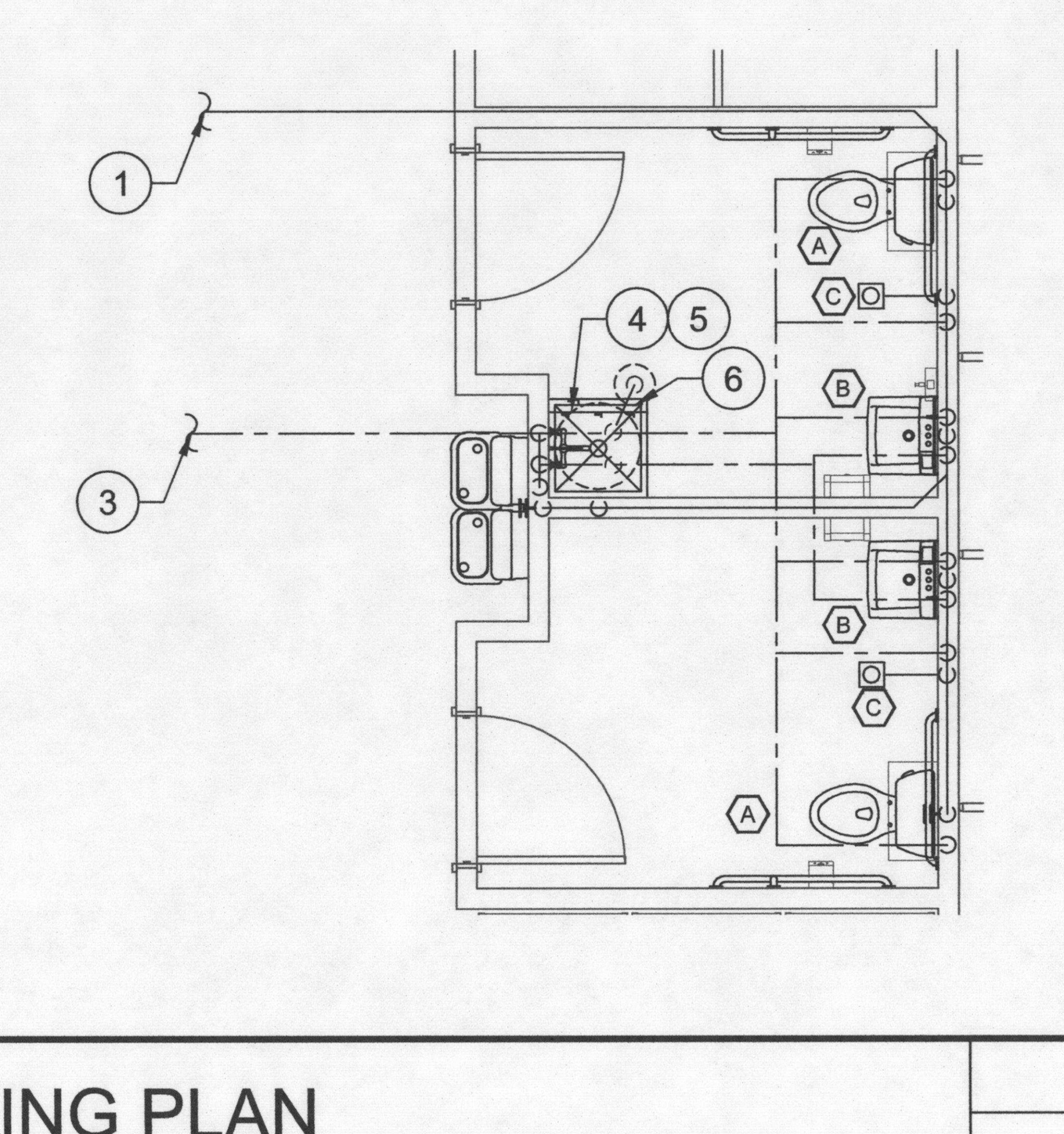
PROVIDE FIBERGLASS INSULATION WITH ALL-SERVICE JACKET WITH VAPOR BARRIER ON ALL COLD/HOT WATER PIPING AND CONDENSATE DRAIN PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION REGARDING INSULATION. INSTALL ALL ITEMS PER SPECIFICATIONS AND MANUFACTURERS INSTRUCTIONS. MAINTAIN VAPOR BARRIER ON COLD PIPING BY MEANS OF SEALANT AND TAPE. FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES SHALL NOT EXCEED 25/50. SEAL EXPOSED ENDS OF FIBERGLASS INSULATION WITH ADHESIVE MASTIC.

N.T.S. | 7

PIPE HANGERS


PROVIDE UPPER ATTACHMENT AS REQUIRED FOR CASES NOT SHOWN HERE. DO NOT INSTALL HANGER INSIDE INSULATION OR OTHERWISE PENETRATE VAPOR BARRIER. DO NOT HANG ONE PIPE FROM ANOTHER EXCEPT IN CHASES. TRAPEZE HANGERS MAY BE USED FOR MULTIPLE PARALLEL PIPES. HANGER SPACING FOR PIPE SIZE: COPPER: 4"=12'-0"; 3"=11'-0"; 2½"=10'-0"; 2"=9'-0"; 1½"=8'-0"; 1¼"=7'-0"; 1" & ¾"=6-0"; ½"=5'-0". CAST IRON: 10'-0" AND ONE NEAR ALL JOINTS. STEEL: 4"=14'-0"; 3"=12'-0"; 2½"=11'-0"; 2"=10'-0"; 1½"=9'-0"; 1"=7'-0"; ¾"=6'-0"; ½"=5'-0". LOCATE HANGERS AS CLOSE AS POSSIBLE TO TURNS AND TEES OF PIPE. PROVIDE SUPPLEMENTARY STEEL STRUTS BETWEEN JOISTS IF REQUIRED. LOCATE HANGERS TO TAKE LOAD OFF OF EQUIPMENT CONNECTIONS. ANCHOR WATER PIPE AGAINST SWAYING DUE TO CHANGES IN WATER VELOCITY. PROVIDE SEISMIC BRACING IF/AS REQUIRED BY LOCAL AUTHORITIES. CHAINS OR PERFORATED STRAP IRON OR STEEL IS NOT ACCEPTABLE. REFER TO CODES AND SPECIFICATIONS FOR FURTHER INFORMATION.

N.T.S. | 4

PLUMBING PLAN


1/4" = 1'-0" | 1

PLUMBING SYMBOLS LEGEND

ABBREVIATIONS:

AFF/AFG	ABOVE FINISHED FLOOR / GRADE	RI	ROUGH-IN
BFP	BACKFLOW PREVENTOR	TYP	TYPICAL
CO	CLEANOUT	UNO	UNLESS NOTED OTHERWISE
FFCO / FGCO	FLUSH FLOOR / GRADE CLEANOUT	VTR	VENT THRU ROOF
FSEC	FOOD SERVICE EQUIPMENT CONTRACTOR	WCO	WALL CLEANOUT
IW	INDIRECT WASTE	(E)	EXISTING
PC	PLUMBING CONTRACTOR		

LINE TYPES:

— — — — —	EXISTING PLUMBING LINE - SEE DWG	—— D ——	CONDENSATE LINE (D)
—— - ——	COLD WATER (CW)	—— OD ——	OVERFLOW CONDENSATE LINE (OD)
— — — — —	COLD WATER (CW) - BELOW SLAB/GRADE	- - - - - - - - -	PLUMBING VENT (V)
—— - - ——	HOT WATER (HW) 140°	————	SANITARY WASTE (SAN) - BELOW SLAB/GRADE
—— G ——	GAS LINE (G)		

GENERAL REFERENCES / NOTATIONS:

(symbol)	CONNECT TO EXISTING		PLAN NOTE DESIGNATION
(#)	FIXTURE / EQUIPMENT NOTE DESIGNATION	(#)	FIRE PROTECTION DESIGNATION
(#)	REVISION DESIGNATION	(#)	HVAC EQUIPMENT DESIGNATION

PIPE SYMBOLS:

(symbol)	PIPE TURNING UP / DOWN	(symbol)	SHUTOFF VALVE (BALL TYPE)
(symbol)	TEEN TURNING UP / DOWN	(symbol)	END CAP

PLUMBING GENERAL NOTES

1	CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.
2	COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.
3	DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM.
4	ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY AND THE AUTHORITY HAVING JURISDICTION. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.
5	PROVIDE WATER HAMMER ARRESTORS THROUGHOUT WATER SYSTEMS AS REQUIRED PER "WATER HAMMER ARRESTERS" DETAIL.
6	PROVIDE BACKFLOW PREVENTION DEVICES IN WATER LINES FEEDING PLUMBING FIXTURES AND/OR EQUIPMENT AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY AUTHORITY HAVING JURISDICTION. USE DEVICES OF APPROVED MANUFACTURER AND TYPE IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
7	CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNER'S REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE.
8	SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED. INSTALL PIPING AS HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS AND CHASES TO SERVE FIXTURES AND EQUIPMENT.
9	VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITY COMPANIES AND/OR CIVIL ENGINEER, AS APPLICABLE.
10	USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN THE RETURN AIR PLENUM. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25 AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
11	WATER ENTRY SERVICE PIPING, NEW AND/OR REVISED. CONTRACTOR SHALL ENSURE AND PROVIDE MINIMUM 10'-0" LINEAR FEET OF METAL PIPING MATERIAL BELOW GRADE IN CONTACT WITH EARTH, FOR CONNECTION OF ELECTRICAL SERVICE GROUNDING.

PLUMBING FIXTURE SCHEDULE

A	WATER CLOSET	AMERICAN STANDARD #2002.014 "CHAMPION 4 RIGHT HEIGHT" ELONGATED TOILET, TRIP LEVER ON LAVATORY SIDE, WHITE VITREOUS CHINA 16 ½" TO MEET ADA GUIDELINES WITH WHITE CHAMPION SLOW-CLOSE ELONGATED TOILET SEAT & COVER #5325.010.	SURFACE
B	LAVATORY	AMERICAN STANDARD #0321.075 "DECLYN, WHITE VITREOUS CHINA, WALL-MOUNTED. COMPLETE WITH DELTA SINGLE HANDLE CENTER SET FAUCET MODEL #523 LF-HGMHDF, GRID DRAIN, OFFSET DRAIN, P-TRAP, SUPPLIES, STOPS CONCEALED ARM SUPPORTS & TRUEBRO MODEL 2018-AS-D MOLDED FIXTURE TO BE INSTALLED TO COMPLY WITH ADA GUIDELINES & ANSI A117.1 REQUIREMENTS.	SURFACE
C	FLOOR DRAIN	J.R. SMITH 2005 GENERAL SERVICE FLOOR DRAIN, CAST IRON BODY WITH FLASHING COLLAR, ADJUSTABLE STRAINER, TRAP PRIMER CONNECTION, VANDAL PROOF SCREWS AND SQUARE TOP STRAINER.	FLOOR
D	MOP SINK	FIAT PRODUCTS #MSBIDTG 24241000 24"x24"x10" AVAILABLE FROM GRAINGER.	FLOOR
E	WATER COOLER	ELKAY #EZSTL8C (HI-LO) BARRIER-FREE, WALL-MOUNTED, STANDARD FINISH, 120V, 4A, 8GPH WITH 80°F INLET WATER 90°F AMBIENT TEMPERATURE	SURFACE
F	TRAP PRIMER	EQUIVALENT TO PRECISION PLUMBING PRODUCT, INC. MODEL #PR-500-DU-4	IN-LINE
G	WATER HEATER	A.O. SMITH #DEL-10, 10 GALLON STORAGE, SINGLE 3000W HEATING INPUT AT 208V, 1PH SERVICE, THREE YEAR LIMITED WARRANTY, MAGNESIUM ANODE, GLASS-LINED, MEETING THE CURRENT EDITION OF ASHRAE 90.1B AND LOCAL ENERGY CONSERVATION REQUIREMENTS. PROVIDE T&P RELIEF VALVE. INSTALL PER DETAIL ON DRAWINGS AND PER MANUFACTURER'S INSTRUCTIONS.	SURFACE
G1	EXPANSION TANK	AMTROL #ST-5 "THERM-X-TROL", TOTAL VOLUME OF 2 GALLONS WITH MAXIMUM ACCEPTANCE VOLUME OF 0.45 GALLONS, ¾" CONNECTION. INSTALL PER MANUFACTURER'S INSTRUCTIONS.	IN-LINE
H	MIXING VALVE	SYMMONS #7-225-CK "MAXLINE", ½" INLETS AND OUTLET, THERMOSTATIC CONTROLLER WITH INTEGRAL CHECKS, ALL BRASS BODY WITH DUAL STAINLESS STEEL STRAINER, VANDAL-RESISTANT TEMPERATURE ADJUSTMENT HANDLE. SET TO 105°F. MOUNT IN ACCESSIBLE LOCATION. MIN FLOW 0.5 GPM AND 5 PSI LOSS YOU GET 4.5 GPM.	IN-LINE

PLUMBING PLAN KEYNOTES

1	CONNECT TO EXISTING SANITARY WASTE LINE. FIELD VERIFY EXACT LOCATION AND MAKE CONNECTIONS AS REQUIRED.
2	CONNECT TO EXISTING SANITARY VENT LINE IN THIS VICINITY. FIELD VERIFY EXACT LOCATION AND MAKE CONNECTIONS AS REQUIRED.
3	CONNECT TO EXISTING DOMESTIC WATER LINE. FIELD VERIFY EXACT LOCATION AND MAKE CONNECTIONS AS REQUIRED.
4	PROVIDE WATER HEATER PER "WATER HEATER ON PLATFORM" DETAIL.
5	ROUTE WATER HEATER T&P AND OVERFLOW DRAIN LINES INDIVIDUALLY TO DISCHARGE IN MOP SINK PER "INDIRECT DRAIN" DETAIL.
6	PROVIDE EXPANSION TANK PER "EXPANSION TANK" DETAIL.

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LOFT OUTLET

REVISIONS

JUN 08 2017
REGISTERED PROFESSIONAL ENGINEER 18894PE OREGON 01/21/97 DONALD JAMES PENN
Exp. DEC 31 2018

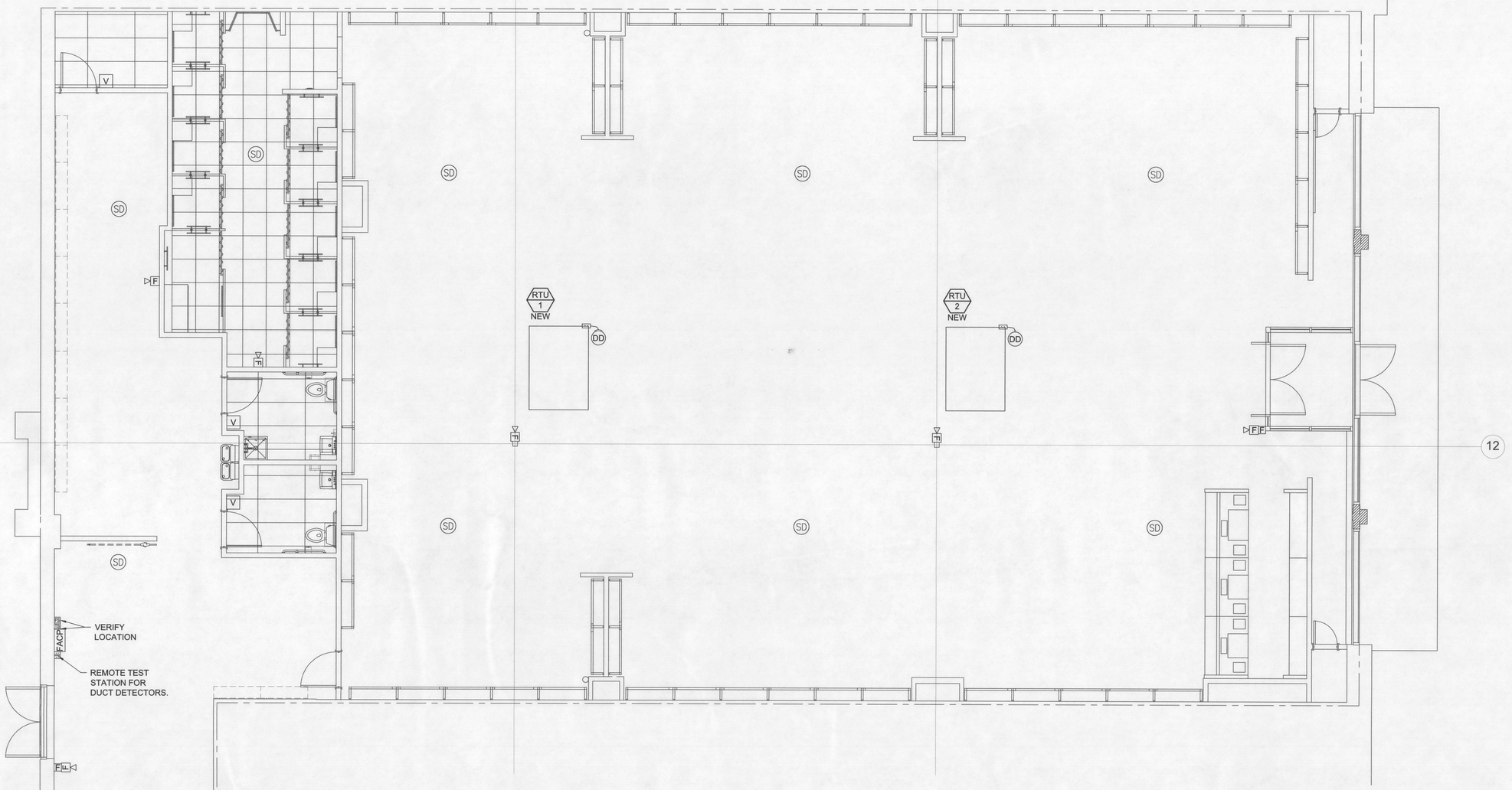
DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

CASCADE STATION
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

PLUMBING PLAN, RISER DIAGRAMS & PLUMBING DETAILS

DATE:	2017/05/27
SCALE:	AS NOTED
DRAWN BY:	HU
REVIEWED BY:	BB
PROJECT NUMBER:	17051
SHEET:	P1.01

2016SPRING_LOFTOUTLET_PROTOTYPE



FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
F	FIRE ALARM MANUAL PULL STATION MOUNTED AT 48"AFF
F	FIRE ALARM AUDIO/VISUAL ALARM SIGNAL WALL MOUNTED AT 80"AFF
V	FIRE ALARM VISUAL ONLY ALARM SIGNAL WALL MOUNTED AT 80"AFF
SD	FIRE ALARM SMOKE DETECTOR
FACP	FIRE ALARM EXTENDER PANEL
DD	DUCT SMOKE DETECTOR WITH REMOTE TEST STATION PROVIDED & WIRED BY E.C. INSTALLED BY M.C. PER CODE. WIRED TO SHUT DOWN HVAC UNIT UPON ALARM CONDITION.
FS	FLOW SWITCH
TS	TAMPER SWITCH

FIRE ALARM PLAN

1/4" = 1'-0" | 2

LANDLORD FIRE ALARM NOTES

FIRE ALARM SYSTEM

1	A TIE-IN NOTFICATION CONNECTION POINT WITHIN THE TENANT'S LEASED SPACE HAS BEEN PROVIDED TO CONNECT TO THE LANDLORD'S ADDRESSABLE FIRE ALARM SYSTEM.
2	TENANT TO UTILIZE THE LANDLORD APPROVED CONTROL PANEL AND CONTRACTOR TO TIE INTO MALL'S FIRE ALARM AT TENANT'S EXPENSE. TENANT'S FIRE ALARM DEVICES MUST COMPLY WITH THE MALL AND LOCAL AHJ CRITERIA. (PULL STATIONS, FLOW SWITCH, STROBE LIGHTS, ETC.)
3	TENANT SHALL CONTACT THE LANDLORD'S DESIGNATED FIRE ALARM CONTRACTOR FOR ALL REQUIREMENTS.
4	ALARM AND SIGNAL CIRCUIT CABLE IS AVAILABLE AT LANDLORD DESIGNATED LOCATIONS, PLEASE VERIFY WITH MALL OPERATIONS DIRECTOR PRIOR TO BID.

FIRE EXTINGUISHER NOTES

1	1. PROVIDE MULTI-PURPOSE DRY CHEMICAL FIRE EXTINGUISHERS, ABC TYPE, OR THE MINIMUM REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION, MOUNTED IN SEMI-RECESSED CABINETS
2	FINAL CONNECTION FROM ALL DEVICES TO BUILDING FIRE ALARM CONTROL PANEL BY L.L. APPROVED FIRE ALARM CONTRACTOR, INCLUDING WIRE & CONDUIT. A. UL. LISTED EXTINGUISHER, 5 LB CAPACITY, ENAMELED STEEL CYLINDER WITH PRESSURE GAUGE, METAL VALVE AND SIPHON TUBE, REPLACEABLE MOLDED VALVE STEM SEALS PULL PIN-UPRIGHT SQUEEZE GRIP OPERATION. B. EXTINGUISHER SHALL BE INSTALLED IN SEMI-RECESSED CABINET, OR SURFACE MOUNTED WHERE INDICATED, CABINET AND FRAME SHALL BE OF STEEL CONSTRUCTION, PRIME COATED. SOLID DOOR SHALL HAVE SATIN FINISH, PULL HANDLE, WITH A SELF-ADJUSTING ROLLER CATCH AND A CONTINUOUS PIANO HINGE (STEEL) C. SIGN ON THE DOOR SHALL BE AS REQUIRED BY LOCAL AUTHORITIES.
3	EXTINGUISHER AND CABINET SHALL BE AS MANUFACTURED BY LARSEN, ZURN INDUSTRIES, OR APPROVED EQUAL

FIRE ALARM GENERAL NOTES

THIS DRAWING IS FOR REFERENCE ONLY.

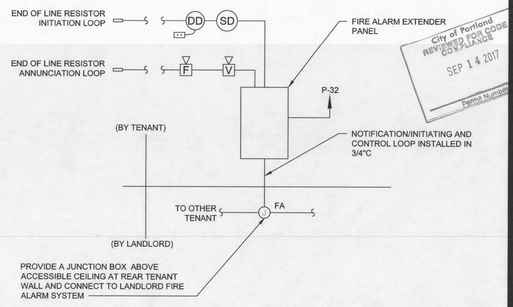
THE ELECTRICAL CONTRACTOR AS PART OF HIS/HER QUOTE TO THE TENANT'S GENERAL CONTRACTOR MUST INCLUDE ALL OF THE CONDUIT, CONNECTORS, BOXES, & MISCELLANEOUS PARTS NECESSARY TO TRANSPORT ALL OF THE WIRING THAT IS FURNISHED & INSTALLED BY THE FIRE ALARM CONTRACTOR. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO CALCULATE AND COORDINATE ALL OF THE MATERIALS NECESSARY TO TRANSPORT THESE FIRE ALARM WIRES BASED ON CONVERSATIONS WITH THE FIRE ALARM SUBCONTRACTOR AND NORMAL NATIONAL ELECTRIC CODE (NEC) WIRE TO CONDUIT SIZE REQUIREMENTS.

SINCE CODES VARY ACROSS REGIONS, IT IS THE GENERAL AND SUBCONTRACTOR'S RESPONSIBILITY TO REVIEW THE CONSTRUCTION DRAWINGS DURING BIDDING AND INCLUDE IN THEIR BID ANY ALTERNATE CODE RELATED RECOMMENDATIONS / DETAILS OR SPECIFICATIONS. IF THERE ARE ANY PROPOSED ALTERATION EQUIPMENT / INSTALLATION CHANGES, THEN THE COSTS FOR THESE CHANGES ARE TO BE EQUAL TO OR GREATER IN VALUE TO THE ITEMS AND QUANTITIES MENTIONED IN THE ORIGINAL CONSTRUCTION DRAWINGS AND THE CHANGES SHALL BE SUBMITTED TO THE ARCHITECT / ENGINEER FOR REVIEW AND APPROVAL. CONTRACTORS WHO DO NOT ADHERE TO THIS REQUIREMENT WILL BE RESPONSIBLE FOR INCURRING THE ADDED COSTS REQUIRED FOR THE DESIGN TO COMPLY WITH LOCAL CODE.

CONTRACTOR TO COMPLY WITH BUILDING / LANDLORD CRITERIA, DESIGN CRITERIA, STANDARD PRACTICES AND LOCAL CODE / ORDINANCE REQUIREMENTS WHEN COMMENCING WORK. THESE REQUIREMENTS SHALL SUPERSEDE ANY AND ALL INFORMATION ON THE DRAWINGS UNLESS AGREEMENT TO THE CONTRARY DURING THE BID PROCESS WHEREAS THE CLIENT WILL BE EXCLUDED FROM INCURRING ANY ADDITIONAL COSTS. THE GENERAL CONTRACTOR SHALL OVERSEE THE EXECUTION AND COMPLETION OF THESE ITEMS ALSO AT NO ADDITIONAL COST TO THE CLIENT. ANY DISCREPANCIES OR INCONSISTENCIES CONCERNING THESE REQUIREMENTS AFTER THE PROJECT IS AWARDED SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OWNER AND TENANT FOR APPROVAL PRIOR TO COMMENCING WORK. ANY UPGRADES TO THE DESIGN / SCOPE OF WORK TO CONFORM TO THE PRECEDING REQUIREMENTS AT THIS JUNCTURE WILL THEN BE AT THE TENANT'S EXPENSE.

FIRE ALARM SYSTEM NOTES

1	THIS DIAGRAM REPRESENTS A TYPICAL SYSTEM AND IS NOT INTENDED FOR INSTALLATION. SYSTEM SUPPLIER SHALL PROVIDE INSTALLATION DRAWINGS AND SCHEMATIC WIRING DIAGRAMS. EXACT SYSTEM REQUIREMENTS SHALL BE COORDINATED WITH THE SYSTEM SUPPLIER. SYSTEM INSTALLER SHALL BE NICET CERTIFIED, IF REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
2	SYSTEM SUPPLIER SHALL SUPERVISE INSTALLATION, PROGRAM AND TEST SYSTEM AND INSTRUCT OWNER ON SYSTEM OPERATION.
3	ALL FIRE ALARM WIRING SHALL BE PLENUM RATED. EXPOSED FIRE ALARM WIRING, 10'-0" AFF AND BELOW, SHALL BE INSTALLED IN CONDUIT TO ABOVE ACCESSIBLE CEILING SPACE OR STRUCTURE.
4	ALL CONTROL CABINETS SHALL BE GROUNDED PER PR REQUIREMENTS AND PER SPECIFICATIONS.
5	REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. REFER TO DRAWINGS FOR DEVICE QUANTITY AND LOCATIONS.
6	ANY CHANGES TO THE FIRE ALARM SYSTEM MUST BE MADE BY THE LANDLORD'S CONTRACTOR AT THE TENANT'S EXPENSE.
7	FIRE ALARM SYSTEM SHALL MATCH EXISTING LANDLORD SYSTEM.



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FIRE ALARM SCHEMATIC

N.T.S. | 1

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LOFT OUTLET

REVISIONS

OREGON EXPIRES: DEC. 31, 2018

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-06/LOS 002

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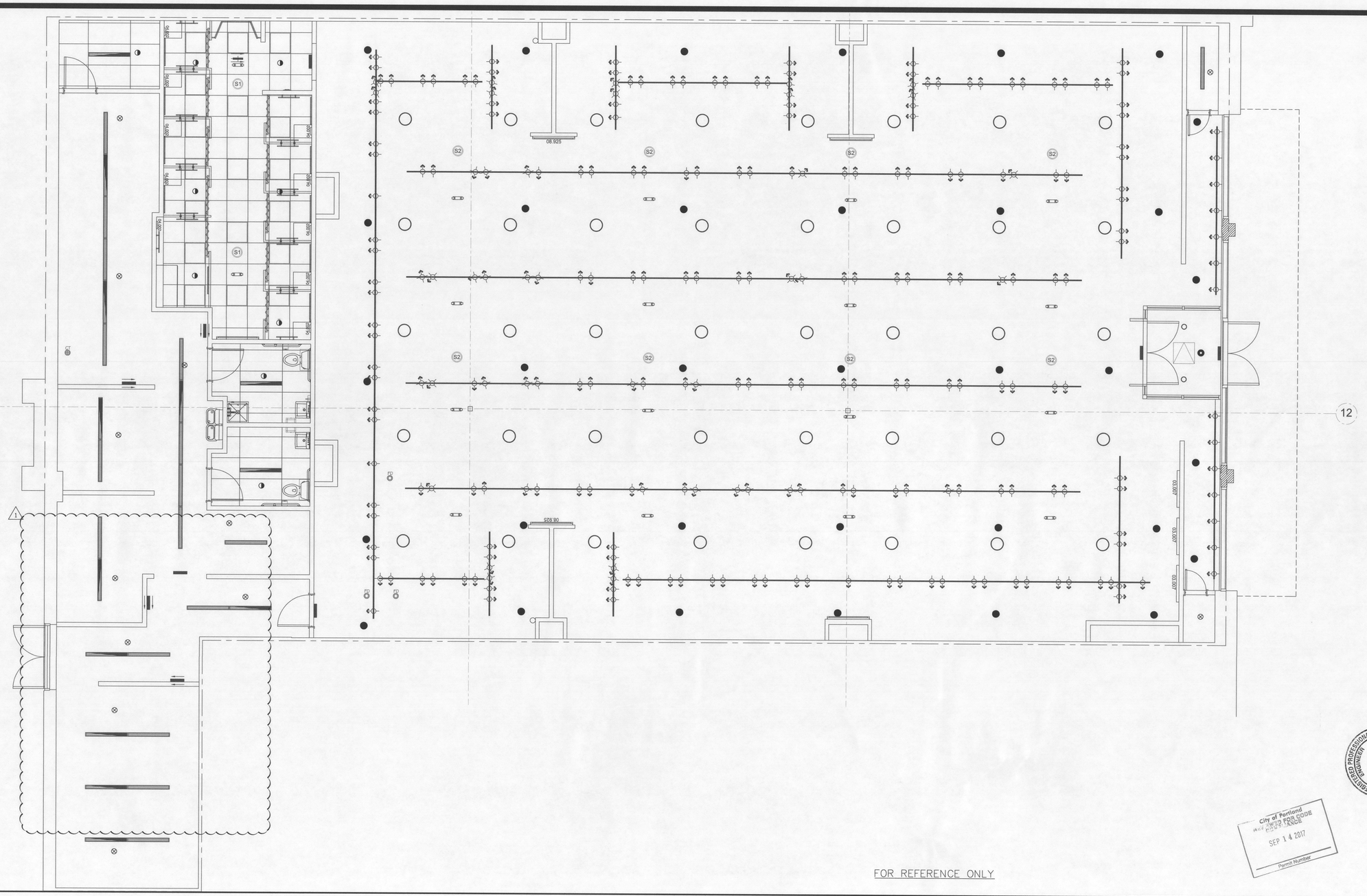
9199 NE CASCADE PARKWAY
PORTLAND, OREGON 97224

FIRE ALARM PLAN

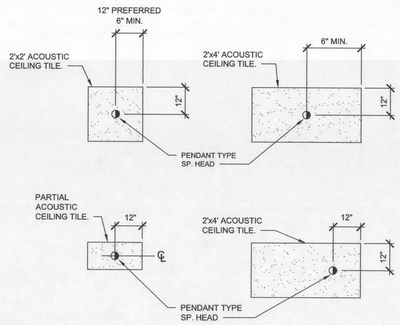
DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: STAFF
REVIEWED BY: A&A
PROJECT NUMBER: 17051
SHEET: FA1.01

2016SPRING_LOFTOUTLET_PROTOTYPE



SPRINKLER PLAN — 1/4"=1' — 1

NOT USED — N.T.S. — 3



SPRINKLER HEAD LOCATION — N.T.S. — 2

SPRINKLER HEAD GENERAL NOTES

1	ALL EXISTING PIPING, HEADS AND OTHER SUCH ITEMS IN TENANCY ARE TO BE VERIFIED ON SITE PRIOR TO BID AND/OR WITH ANY WORK.
2	PRIOR TO ANY WORK VERIFY WITH THE TENANT - LANDLORD AGREEMENT TO DETERMINE WHAT IS THE LANDLORDS AND WHAT IS THE TENANTS SCOPE OF WORK.
3	PRIOR TO CLOSING CEILING PERFORM WALK THROUGH WITH THE LANDLORDS BUILDING OPERATIONS AND LOFT PROJECT MANAGER TO DETERMINE ACCESS PANEL LOCATIONS REQUIRED TO SUIT ANY VALVES, SUPERVISED VALVES, FLOW SWITCHES, ETC. PRIOR TO INSTALLATION FINAL PAINT FIN., SIZE AND LOCATION OF PANEL MUST BE APPROVED BY LOFT PROJECT MANAGER. ACCESS PANELS MUST BE 'SYLEMARK', BY 'INTERSOURCE CO.'.
4	THE SPRINKLER CONTRACTOR SHALL PROVIDE SHOP DRAWINGS, INCLUDING PIPING DIAGRAMS, HYDRAULIC CALCULATIONS, DRUM DRIPS, ZONE DESIGNATION, ETC. DESIGN OF THE SYSTEM MUST BE SIGNED AND SEALED BY THE LANDLORDS BASE BUILDING SPRINKLER CONTRACTORS ENGINEER.
5	THE SPACE SHALL BE SPRINKLERED IN ACCORDANCE WITH NFPA, PROVINCIAL, LOCAL, NATIONAL BUILDING CODE REQUIREMENTS AND THE OWNERS INSURANCE UNDERWRITERS REQUIREMENTS.
6	CONTRACTOR SHALL COORDINATE EXACT LOCATION OF SPRINKLER HEADS WITH ALL OTHER TRADES AND FIELD CONDITIONS.
7	CO-ORDINATE DRAIN DOWN OF SYSTEM WITH LANDLORD.
8	THE SPRINKLER SYSTEM SHALL BE DESIGNED & INSTALLED BY A QUALIFIED COMPANY WHO IS APPROVED BY THE LANDLORD'S INSURANCE UNDERWRITERS.
9	HAVE THE SYSTEM INSPECTED AND TESTED TO THE APPROVAL OF THE LOCAL AUTHORITIES & NFPA GUIDELINES.
10	PROVIDE A PERMANENTLY ATTACHED NAME TAG STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SPRINKLER SYSTEM.
11	PROVIDE HEADS AND DROPS SUIT CEILING TYPES IN AREAS BEING SERVED. TYPICAL FOR ORDINARY HAZARD OCCUPANCY. APPROX. 120 SQ. FT. COVERAGE PER HEAD.
12	VISIT THE SITE & VERIFY ALL EXISTING SPRINKLER CONDITIONS & NEW REQUIREMENTS WITH THE LANDLORDS BASE BUILDING SPRINKLER CONTRACTOR & ENGINEER CARRY PRICE FOR ALL WORK REQUIRED TO DESIGN AND INSTALL NEW PIPING AND HEADS TO SUIT NFPA 13 BASE BUILDING STANDARDS. UPON COMPLETION OF WORK THE FOLLOWING ARE TO BE PROVIDED:
12.1	AS-BUILT MARK UP.
12.2	FINAL LETTER OF CERTIFICATION STATING THAT ALL WORK HAS BEEN INSTALLED AND IS IN ACCORDANCE WITH NFPA & BASE BUILDING STANDARDS. LETTER IS TO BE SIGNED AND SEALED BY THE SPRINKLER CONTRACTORS ENGINEER.
13	ALL WORK AND MATERIAL SHALL BE IN ACCORDANCE WITH LANDLORD'S "ENGINEERING DESIGN CRITERIA". ALL CONTRACTORS SHALL OBTAIN A COPY FROM THE LANDLORD'S TENANT COORDINATOR OR MALL OPERATIONS MANAGER AND BECOME FAMILIAR WITH THE REQUIREMENTS CONTAINED WITHIN PRIOR TO BIDDING THE JOB. WHERE LANDLORD'S REQUIREMENTS CONFLICT WITH CODES OR ORDINANCES, THE STRICTEST INTERPRETATION SHALL APPLY.

FIRE PROTECTION CRITERIA

THIS SPACE IS CURRENTLY SERVED BY AN AUTOMATIC WET PIPE FIRE SPRINKLER SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MODIFICATION OF THE EXISTING FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA REQUIREMENTS. PROVIDE ALL MATERIALS AND LABOR REQUIRED FOR COMPLETE INSTALLATION. SYSTEM MODIFICATIONS SHALL BE DESIGNED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, AND CONTRACTOR SHALL PREPARE ALL REQUIRED SIGNED/SEALED DRAWINGS, CALCULATIONS, AND SHALL OBTAIN APPROVAL OF ALL STATE, LOCAL, AND INSURANCE UNDERWRITING AUTHORITIES. THE SPRINKLER SYSTEM SHALL BE TESTED UNDER PRESSURE BY CONTRACTOR, AND INSPECTED AND APPROVED BY LOCAL FIRE MARSHAL, PRIOR TO ACCEPTANCE BY OWNER.

SPRINKLER HEAD LEGEND

⊙	CONCEALED SPRINKLER HEAD
●	UPRIGHT SPRINKLER HEAD (WHITE)
◑	RECESSED PENDANT SPRINKLER HEAD
⊗	UPRIGHT BRASS

HEADS TO BE WHITE IN OPEN CEILING AREAS AND TO BE MOUNTED AT HIGH LEVEL (UPRIGHT)

SPRINKLER HEAD GENERAL CODED NOTES

1	GENERAL: PROVIDE AUTOMATIC WET PIPE SPRINKLER SYSTEM THROUGHOUT ENTIRE TENANT SPACE, UNLESS OTHERWISE NOTED OR INDICATED. COVERAGE SHALL BE FOR LIGHT HAZARD OCCUPANCY.
2	GENERAL: FIRE SPRINKLER CONTRACTOR SHALL ROUTE FIRE PROTECTION PIPING AS REQUIRED TO AVOID NEW/EXISTING PLUMBING, HVAC, AND ELECTRICAL.
3	PROVIDE SHIELDS, TRAYS, AND OTHER PROTECTION IN ACCORDANCE WITH NFPA REQUIREMENTS OVER ALL ELECTRICAL EQUIPMENT.

STORE 3125

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LOFT OUTLET

REVISIONS
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REGISTERED PROFESSIONAL ENGINEER — 18094PE — OREGON — DONALD JAMES PENN — Exp. 12/31/18

City of Portland — BUREAU OF DEVELOPMENT SERVICES — SEP 14 2017 — Permit Number

DESIGN TYPE: 2016 SPRING PROTO
THRU DCB: ALL DIV-08/LGS 002

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FIRE PROTECTION PLAN NOTES, AND DETAILS

DATE: 2017/05/27
SCALE: AS NOTED
DRAWN BY: HU
REVIEWED BY: BB
PROJECT NUMBER: 17051
SHEET: FP1.01

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