City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

BUILDING PERMIT SET
INTEGRUS PROJECT NO.: 22135.00

OWNER
STATE OF WASHINGTON

CONTRACTING AGENCY
DEPARTMENT OF ENTERPRISE SERVICES
ENGINEERING & ARCHITECTURAL SERVICES
1500 JEFFERSON STREET S.E.
OLYMPIA, WA

CLIENT AGENCY
PIERCE COLLEGE PUYALLUP

integrus ARCHITECTURE
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TELEPHONE: (206)628-3737 FAX: (206)628-3738

9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

City of Puyallup
Building
APPROVED
See permit for additional requirements.
JMontgomery
09/09/2022
6:48:32 AM

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

Approval of submitted plans is not an approval of omissions or oversights by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

City of Puyallup
Development Engineering
APPROVED
See permit for additional requirements.
Linda Lian
08/18/2022
7:36:02 AM

A commercial development's water services must have installed an approved backflow prevention assembly to protect the public potable water supply. See PMC 14.02.220(3)

All commercial development must have a sampling tee installed on their sewer lateral. See Standard Detail 04.03.04

The applicant shall request an inspection with a City Engineering Inspector through the CityView portal least 48 hours in advance of job start.

Refer to approved civil plan: PRCCP2022077 for sedimentation and erosion control methods

Refer to approved civil plan: PRCCP2022077 for roof downspout control methods

Mark-up Legend
- Building Review
- Engineering Review
- Fire Review
- Planning Review
- Public Works Review
- Traffic Review

PROJECT TEAM

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SIGNATURES

APPROVED BY:
PIERCE COLLEGE PUYALLUP — DATE

APPROVED BY:
DES/ENGINEERING & ARCHITECTURAL SERVICES — DATE

APPROVED BY:
DES/ENGINEERING & ARCHITECTURAL SERVICES — DATE

ISSUED ON: 06/30/22

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Revisions

#	Date	Description

COVER SHEET

PRCNC20221036

G000

BUILDING PERMIT SET

SHEET INDEX

GENERAL

G000	COVER SHEET
G001	INDEX
G010	SITE PLAN, VICINITY MAP, LEGAL DESCRIPTION
G019	CODE ANALYSIS
G020	LEVEL 0 - LIFE SAFETY PLAN
G021	LEVEL 1 - LIFE SAFETY PLAN
G022	LEVEL 2 - LIFE SAFETY PLAN
G023	LEVEL 3 - LIFE SAFETY PLAN
G025	ENERGY CODE ANALYSIS

STRUCTURAL

S001	STRUCTURAL GENERAL NOTES
S002	STRUCTURAL GENERAL NOTES
S003	STRUCTURAL GENERAL NOTES
S021	TYPICAL FOUNDATION DETAILS
S022	TYPICAL CONCRETE AND VENEER DETAILS
S023	TYPICAL METAL STUD DETAILS
S024	TYPICAL METAL STUD DETAILS
S025	TYPICAL STEEL AND METAL DECK DETAILS
S026	TYPICAL STEEL DETAILS
S027	TYPICAL STEEL DETAILS
S028	TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS
S029	TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS
S100	FOUNDATION/ LEVEL 0 FLOOR PLAN
S101	FOUNDATION/LEVEL 1 FLOOR PLAN
S102	LEVEL 2 FRAMING PLAN
S103	LEVEL 3 FRAMING PLAN / LOW ROOF FRAMING PLAN
S104	ROOF FRAMING PLAN
S201	BRACE FRAME ELEVATIONS
S202	BRACE FRAME ELEVATIONS
S203	EXTERIOR WALL ELEVATIONS
S204	EXTERIOR WALL ELEVATIONS
S205	EXTERIOR WALL ELEVATIONS
S301	FOUNDATION DETAILS & SECTIONS
S311	FRAMING DETAILS & SECTIONS
S401	ENLARGED STAIR & ELEVATOR PLANS
S402	ENLARGED STAIR PLANS
S403	ENLARGED VESTIBULE PLANS & DETAILS
S404	ENLARGED MECHANICAL PENTHOUSE PLAN

ARCHITECTURAL

A001	GENERAL ARCHITECTURAL NOTES
A010	INTERIOR ASSEMBLIES
A011	EXTERIOR ASSEMBLIES
A100	LEVEL 0 - FLOOR PLAN
A101	LEVEL 1 - FLOOR PLAN
A102	LEVEL 2 - FLOOR PLAN
A103	LEVEL 3 - FLOOR PLAN
A104	ROOF PLAN
A120	LEVEL 0 - REFLECTED CEILING PLAN
A121	LEVEL 1 - REFLECTED CEILING PLAN
A122	LEVEL 2 - REFLECTED CEILING PLAN
A123	LEVEL 3 - REFLECTED CEILING PLAN
A201	EXTERIOR ELEVATIONS - OVERALL
A202	EXTERIOR ELEVATIONS
A203	EXTERIOR ELEVATIONS
A301	BUILDING SECTIONS
A312	WALL SECTIONS
A313	WALL SECTIONS
A314	WALL SECTIONS
A315	WALL SECTIONS
A351	DETAILS - FOUNDATION
A352	DETAILS - EXTERIOR WALLS
A361	DETAILS - ROOF
A362	DETAILS - ROOF
A400	FINISH & COLOR SCHEDULE, FINISH PLAN
A401	LEVEL 1 - FINISH PLANS
A402	LEVEL 2 - FINISH PLANS
A403	LEVEL 3 - FINISH PLANS
A410	GENERAL INTERIOR NOTES, SCHEDULES & LEGENDS
A411	ENLARGED FLOOR PLANS W/ ELEVATIONS
A412	ENLARGED FLOOR PLANS W/ ELEVATIONS
A451	INTERIOR ELEVATIONS
A452	INTERIOR ELEVATIONS
A453	INTERIOR ELEVATIONS
A454	INTERIOR ELEVATIONS
A455	INTERIOR ELEVATIONS
A456	INTERIOR ELEVATIONS
A457	INTERIOR ELEVATIONS
A458	INTERIOR ELEVATIONS
A471	DETAILS - INTERIOR FLOOR/ WALL
A501	STAIR - PLANS AND SECTIONS
A502	STAIR - PLANS AND SECTIONS
A503	STAIR - PLANS AND SECTIONS
A511	STAIR - DETAILS
A512	STAIR - DETAILS
A521	ELEVATOR
A600	DOOR, FRAME, & RELITE TYPES
A601	DOOR AND FRAME SCHEDULE
A611	DETAILS - EXTERIOR DOOR
A621	STOREFRONT & LOUVER TYPES
A622	STOREFRONT TYPES
A631	DETAILS - LOUVER AND WINDOW
A632	DETAILS - LOUVER AND WINDOW

LAB FURNISHINGS

LF001	LAB FURNISHINGS GENERAL NOTES
LF002	LAB FURNISHINGS SCHEDULES
LF003	LAB FURNISHINGS FITTING SCHEDULE
LF004	LAB FURNISHINGS CASEWORK MENU
LF101	LAB FURNISHINGS LEVEL 1 - OVERALL FLOOR PLAN
LF101A	LAB FURNISHINGS LEVEL 1 - PARTIAL FLOOR PLAN
LF101B	LAB FURNISHINGS LEVEL 1 - PARTIAL FLOOR PLAN
LF102	LAB FURNISHINGS LEVEL 2 - OVERALL FLOOR PLAN
LF102A	LAB FURNISHINGS LEVEL 2 - PARTIAL FLOOR PLAN
LF102B	LAB FURNISHINGS LEVEL 2 - PARTIAL FLOOR PLAN
LF103	LAB FURNISHINGS LEVEL 3 - OVERALL FLOOR PLAN
LF103A	LAB FURNISHINGS LEVEL 3 - PARTIAL FLOOR PLAN
LF103B	LAB FURNISHINGS LEVEL 3 - PARTIAL FLOOR PLAN
LF103C	LAB FURNISHINGS LEVEL 3 - PARTIAL FLOOR PLAN
LF201	LAB FURNISHINGS ELEVATIONS
LF202	LAB FURNISHINGS ELEVATIONS
LF203	LAB FURNISHINGS ELEVATIONS
LF301	LAB FURNISHINGS DETAILS
LF302	LAB FURNISHINGS DETAILS
LF303	LAB FURNISHINGS DETAILS
LF304	LAB FURNISHINGS DETAILS
LF305	LAB FURNISHINGS DETAILS
LF306	LAB FURNISHINGS DETAILS
LF401	LAB FURNISHINGS FITTING DETAILS
LF402	LAB FURNISHINGS FITTING DETAILS

FIRE PROTECTION

FP001	SYMBOLS, LEGENDS AND ABBREVIATIONS - FIRE PROTECTION
FP002	EQUIPMENT SCHEDULE - FIRE PROTECTION
FP010	SITE PLANS - FIRE PROTECTION
FP100	LEVEL 0 - FLOOR PLAN - FIRE PROTECTION
FP101	LEVEL 1 - FLOOR PLAN - FIRE PROTECTION
FP102	LEVEL 2 - FLOOR PLAN - FIRE PROTECTION
FP103	LEVEL 3 - FLOOR PLAN - FIRE PROTECTION
FP104	ROOF PLAN - FIRE PROTECTION
FP601	DETAILS - FIRE PROTECTION
FP701	DIAGRAMS - FIRE PROTECTION

PLUMBING

P0.01	ABBREVIATIONS, NOTES, AND LEGEND
P0.02	PLUMBING SCHEDULE 1
P0.03	PLUMBING SCHEDULE 2
P0.04	PLUMBING SCHEDULE 3
P1.00	LEVEL 0 UNDERGROUND PLUMBING PLAN
P1.01	LEVEL 0 FLOOR PLAN & LEVEL 1 UNDERGROUND PLUMBING PLAN
P1.02	LEVEL 1 PLUMBING PLAN
P1.03	LEVEL 2 PLUMBING PLAN
P1.04	LEVEL 3 PLUMBING PLAN
P1.05	ROOF PLUMBING PLAN
P3.01	SANITARY RISER
P3.02	WATER RISER
P3.03	GAS & VACUUM RISER
P3.04	WATER 3D RISER
P3.05	SANITARY 3D RISER
P4.01	PLUMBING DETAILS 1
P4.02	PLUMBING DETAILS 2

MECHANICAL

M001	SYMBOLS, LEGENDS AND ABBREVIATIONS - MECHANICAL
M002	EQUIPMENT SCHEDULE - MECHANICAL
M003	EQUIPMENT SCHEDULES - MECHANICAL
M004	EQUIPMENT SCHEDULES - MECHANICAL
M005	EQUIPMENT SCHEDULES - MECHANICAL
M006	EQUIPMENT SCHEDULES - MECHANICAL
M007	EQUIPMENT SCHEDULES - MECHANICAL
M008	EQUIPMENT SCHEDULES - MECHANICAL
M009	EQUIPMENT SCHEDULES - MECHANICAL
M010	SITE PLANS - MECHANICAL
M100	LEVEL 0 - FLOOR PLAN - MECHANICAL ZONING
M101	LEVEL 1 - FLOOR PLAN - MECHANICAL ZONING
M102A	LEVEL 2 - FLOOR PLAN - MECHANICAL ZONING
M103A	LEVEL 3 - FLOOR PLAN - MECHANICAL ZONING
M200	LEVEL 0 - FLOOR PLAN - MECHANICAL
M201	LEVEL 1 - FLOOR PLAN - MECHANICAL
M202	LEVEL 2 - FLOOR PLAN - MECHANICAL
M203	LEVEL 3 - FLOOR PLAN - MECHANICAL
M204	ROOF PLAN - MECHANICAL
M300	LEVEL 0 - FLOOR PLAN - MECHANICAL PIPING
M301	LEVEL 1 - FLOOR PLAN - MECHANICAL PIPING
M302	LEVEL 2 - FLOOR PLAN - MECHANICAL PIPING
M303	LEVEL 3 - FLOOR PLAN - MECHANICAL PIPING
M304	ROOF PLAN - MECHANICAL PIPING
M401	ENLARGED PLANS - MECHANICAL
M601	DETAILS - MECHANICAL
M602	DETAILS - MECHANICAL
M701	FLOW DIAGRAMS - MECHANICAL
M702	FLOW DIAGRAMS - MECHANICAL
M703	FLOW DIAGRAMS - MECHANICAL
M801	CONTROL DIAGRAMS - MECHANICAL
M802	CONTROL DIAGRAMS - MECHANICAL
M803	CONTROL DIAGRAMS - MECHANICAL

ELECTRICAL

E001	SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL
E002	LUMINAIRE SCHEDULE
E003	LIGHTING CONTROLS
E004	EQUIPMENT CONNECTION SCHEDULE
E005	EQUIPMENT CONNECTOIN SCHEDULE
E010	SITE PLANS - ELECTRICAL
E011	SITE PLANS - LIGHTING
E100	LEVEL 0 - FLOOR PLAN - ELECTRICAL
E101	LEVEL 1 - FLOOR PLAN - ELECTRICAL
E102	LEVEL 2 - FLOOR PLAN - ELECTRICAL
E103	LEVEL3 - FLOOR PLAN - ELECTRICAL
E104	ROOF PLAN - ELECTRICAL
E120	LEVEL 0 - REFLECTED CEILING PLAN - LIGHTING
E121	LEVEL 1 - REFLECTED CEILING PLAN - LIGHTING
E122	LEVEL 2 - REFLECTED CEILING PLAN - LIGHTING
E123	LEVEL 3 - REFLECTED CEILING PLAN - LIGHTING
E131	LEVEL 1 - FLOOR PLAN - FIRE ALARM
E132	LEVEL 2 - FLOOR PLAN - FIRE ALARM
E133	LEVEL 3 - FLOOR PLAN - FIRE ALARM
E401	ENLARGED PLAN - ELECTRICAL
E601	DETAILS - ELECTRICAL
E701	SINGLE-LINE DIAGRAM - ELECTRICAL
E701.1	SINGLE-LINE DIAGRAM - ELECTRICAL (ALTERNATE)
E702	PRIMARY SINGLE-LINE DIAGRAM
E703	FIRE ALARM RISER - ELECTRICAL

TECHNOLOGY

T001	SYMBOLS, LEGENDS AND ABBREVIATIONS - TECHNOLOGY
T010	SITE PLANS - TECHNOLOGY
T100	LEVEL 0 - FLOOR PLAN - TECHNOLOGY
T101	LEVEL 1 - FLOOR PLAN - TECHNOLOGY
T102	LEVEL 2 - FLOOR PLAN - TECHNOLOGY
T103	LEVEL 3- FLOOR PLAN - TECHNOLOGY
T104	ROOF PLAN - TECHNOLOGY
T401	LEVEL 1 - ENLARGED PLAN - TECHNOLOGY
T402	LEVEL 2 - ENLARGED PLAN - TECHNOLOGY
T403	LEVEL 3 - ENLARGED PLAN - TECHNOLOGY
T701	DIAGRAMS - TECHNOLOGY

Page 43

Page 128

Page 132

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
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Revisions

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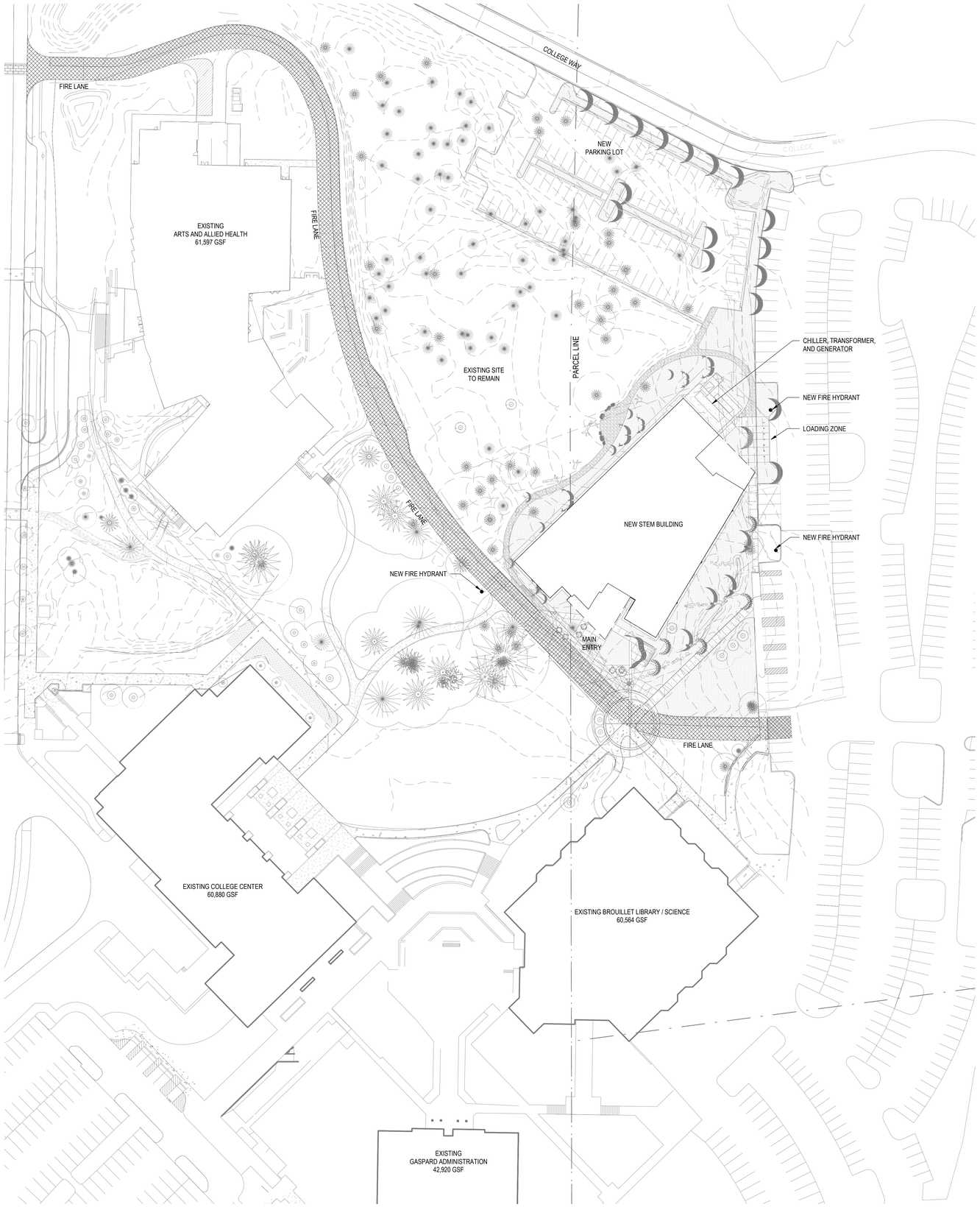
INDEX

PRCNC20221036

G001

BUILDING PERMIT SET



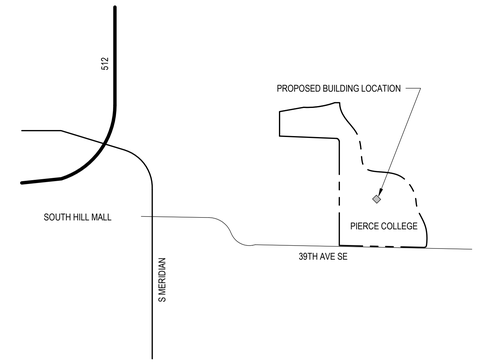
SITE PLAN - TRUE NORTH

SCALE: 1" = 40'-0"

LEGAL DESCRIPTION

Section 02 Township 19 Range 04 Quarter 33 THAT POR OF W 1/2 OF SW LY SLY & WLY OF WILDWOOD PARK DR (SCHOOL RD E) & LY NLY OF FOLL DESC LI COM AT SW COR OF SW OF SW TH ALG W LI SD SUBD N 00 DEG 55 MIN 34 SEC W 789.74 FT TO POB SD DESC LI TH N 83 DEG 21 MIN 05 SEC E 967.35 FT TO A PT ALG SD W R/W LI WILDWOOD PARK DR & TERMINUS PT SD DESC LI OUT OF 3-009 SEG M-2723 SP EMS EASE OF REC PER ETN 672741 (DC5077ES5-7-87)

PARCEL #: 0419023016



VICINITY MAP

SCALE: 1" = 100'-0"

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STATE PROJECT NO.: 2020-148
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Revisions

#	Date	Description

SITE PLAN, VICINITY MAP, LEGAL DESCRIPTION

PRCNC20221036

G010

BUILDING PERMIT SET

PROJECT DATA

- PROJECT NAME: PIERCE COLLEGE PUYALLUP - NEW STEM BUILDING

- PROJECT ADDRESS: 1601 39TH AVE SE PUYALLUP, WA 98374

CODE TYPE	CODE TITLE	TECHNICAL BASIS
BUILDING	2018 INTERNATIONAL BUILDING CODE (IBC) & WASHINGTON STATE AMENDMENTS	WAC 51-50
ACCESSIBILITY	ACCESSIBLE & USABLE BUILDINGS & FACILITIES	ICC A117.1-2009
MECHANICAL	2018 INTERNATIONAL MECHANICAL CODE (IMC)	WAC 51-52
FIRE	2018 INTERNATIONAL FIRE CODE (IFC)	WAC 51-54A
PLUMBING	2018 UNIFORM PLUMBING CODE	WAC 51-56
ELECTRICAL	NATIONAL ELECTRICAL CODE (NEC)	NFPA 70
ENERGY	WASHINGTON STATE ENERGY CODE	WAC 51-11C
FIRE SPRINKLERS	STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS	NFPA 13
FIRE ALARM	NATIONAL FIRE ALARM AND SIGNALING CODE	NFPA 72

USE AND OCCUPANCY CLASSIFICATION

(SECTIONS 302, 303, 304 & 311)

- GROUPS:
  - GROUP "B" — BUSINESS (HIGHER EDUCATION FACILITIES, OFFICES, ALL OTHER AREAS EXCEPT AS NOTED BELOW)
  - GROUP "A-3" — ASSEMBLY (LECTURE HALL)
  - GROUP "S-1" — STORAGE

OCCUPANCY SEPARATIONS

(SECTION 508)

B BUSINESS - MAIN BUILDING OCCUPANCY
A-3 ASSEMBLY (LECTURE HALL ON LEVEL 1) - UTILIZING ACCESSORY OCCUPANCY 508.2.
A-3 OCCUPANCY=1,479 SF OF AREA ON LEVEL 1
LEVEL 1 =19,538 SF
A-3 IS 8% OF LEVEL 1 FLOOR AREA AND MAY BE CONSIDERED ACCESSORY TO B OCCUPANCY
S-1 STORAGE - IS ACCESSORY TO GROUP B SECTION 311.1.1

CONTROL AREAS

(SECTION 414.2)

STORY	PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA	NUMBER OF CONTROL AREAS PER STORY	FIRE RESISTANCE RATING FOR FIRE BARRIERS	FIRE RESISTANCE RATING FOR FLOOR ASSEMBLY AND STRUCTURE SUPPORTING FLOOR
3	50%	2	1 HR	2 HR

CONSTRUCTION TYPE

(CHAPTER 6)

- TYPE II-B, FULLY SPRINKLERED.

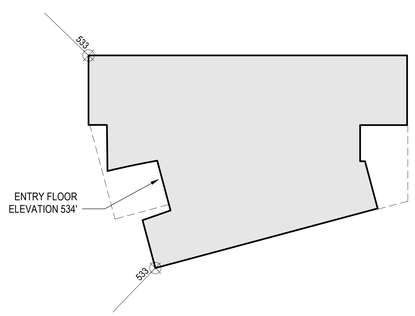
BUILDING HEIGHTS AND AREAS

(SECTION 504 & 506)

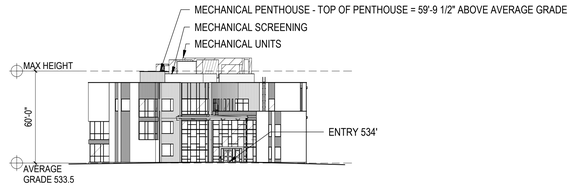
ALLOWABLE VS. ACTUAL BUILDING HEIGHTS & STORIES (TABLES 504.3 & 504.4)

- TYPE OF CONSTRUCTION TO BE TYPE II-B, EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM

OCCUPANCY	ALLOWABLE BUILDING HEIGHT / FT	ACTUAL BUILDING HEIGHT / FT	ALLOWABLE BUILDING HEIGHT / FLOORS	ACTUAL BUILDING HEIGHT / FLOORS
"B"	75 FT.	49 FT.	4 STORY	3 STORY



BUILDING HEIGHT
SCALE: 1" = 40'-0"



BUILDING HEIGHT

ALLOWABLE VS. ACTUAL BUILDING AREAS (TABLE 506.2)

- TOTAL ALLOWABLE BUILDING AREA PER 506.2.4

CONSTRUCTION TYPE: II-B.

	At (ALLOWABLE AREA PER FLOOR)	ACTUAL AREA PER FLOOR
LEVEL 1	B (SM) = 69,000 SF	19,538 SF
LEVEL 2	B (SM) = 69,000 SF	18,354 SF
LEVEL 3	B (SM) = 69,000 SF	16,105 SF
TOTAL BLDG AREA: 53,997 SF		

FIRE RESISTANCE REQUIREMENTS

(SECTION 602, TABLE 601)

SEE SECTION 707- FIRE BARRIERS FOR RATED WALL/FLOOR ASSEMBLIES, EXITS, INCIDENTAL USE AREAS

BUILDING ELEMENT	FIRE RESISTANCE FOR CONSTRUCTION TYPE II-B
PRIMARY STRUCTURAL FRAME:	0 HOUR
BEARING WALLS- EXTERIOR:	0 HOUR
BEARING WALLS- INTERIOR:	0 HOUR
NONBEARING- EXTERIOR WALLS/PARTITIONS:	0 HOUR (PER TABLE 602)
NONBEARING- INTERIOR WALLS/PARTITIONS:	0 HOUR
OPENINGS IN EXTERIOR WALLS:	NOT REQ'D (PER TABLE 705.8)
FLOOR CONSTRUCTION & SECONDARY MEMBERS:	0 HOUR
ROOF CONSTRUCTION & SECONDARY MEMBERS:	0 HOUR
ROOF COVERING	0 HOUR

INTERIOR WALLS & CEILING FINISHES, TABLE 803.13 - FULLY SPRINKLERED BUILDING, TYPE IIB

GROUP	EXIT ENCLOSURES & PASSAGEWAYS	CORRIDORS	ROOMS & ENCLOSED SPACES
BUSINESS "B"	B	C	C

MEANS OF EGRESS

- OCCUPANT LOAD (TABLE 1004.5)
  - 15 NET — ASSEMBLY - TABLES AND CHAIRS
  - 20 NET — CLASSROOMS
  - 50 NET — LABS
  - 150 ~~100~~ GROSS — OFFICES
  - 300 GROSS — STORAGE AREAS / MECHANICAL

- COMMON PATH OF TRAVEL (TABLE 1006.2.1):
  MAX. 100 FEET FOR GROUP "B" OCCUPANCIES WITH AUTOMATIC SPRINKLERS

- EXIT ACCESS TRAVEL (TABLE 1017.2): WITH AUTOMATIC SPRINKLER
  MAX. 300 FEET FOR GROUP "B" OCCUPANCY WITH AUTOMATIC SPRINKLERS

- DEAD ENDS IN CORRIDORS (1020.4):
  MAX. 50 FEET FOR GROUP "B" OCCUPANCIES WHERE AUTOMATIC SPRINKLER SYSTEM IS PROVIDED

-CORRIDOR WALLS (TABLE 1020.1 & 1020.2) NOT RATED IN A FULLY SPRINKLERED BUILDING, 44" MIN. EXIT WIDTH REQ'D

-STAIRWAY WIDTH (1011.2) SHALL NOT BE LESS THAN 44"

- REQUIRED EGRESS WIDTH (SECTION 1005.3)
  .20" PER OCCUPANT FOR STAIRWAYS
  .15" PER OCCUPANT REQUIRED FOR "OTHER" EGRESS COMPONENTS INCLUDING DOORS, CORRIDORS, ETC.

- REQUIRED NUMBER OF EXITS (TABLE 1006.3.2)
  OCCUPANT LOAD 1-500 PER STORY 2 EXITS

- EXIT ACCESS DOORWAY CONFIGURATION (SECTION 1007.1.1, EXCEPTION #2)
  WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE SEPARATION DISTANCE OF THE EXIT DOORS OR EXIT ACCESS DOORWAYS SHALL NOT BE LESS THAN 1/3 OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED

PLUMBING FIXTURE REQUIREMENTS

WA STATE AMENDMENTS CHAPTER 50-51 WAC, (TABLE 2902.1)
PER 2902.2.2 GENDER INCLUSIVE FACILITIES MAY BE PROVIDED AS LONG AS THERE IS NO REDUCTION TO THE AGGREGATE NUMBER OF FIXTURES REQUIRED BY CODE FOR THE OCCUPANCY TYPE.

OCCUPANCY	OCCUPANT LOAD			WC FACTOR (TABLE 2902.1)	# REQ'D WATER CLOSETS			LAV FACTOR(TABLE 2902.1)	# REQ'D LAVS		
GROUP B	844	M	422	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50	M	10	20 INCLUSIVE WATER CLOSETS	1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80	M	7	14 INCLUSIVE LAVS
		F	422		F	10			F	7	

- DRINKING FOUNTAINS (2903.4):
  (1) FOR FIRST 150 OCCUPANTS, ADDITIONAL (1) FOR EACH ADDITIONAL 500 OCCUPANTS = 3 REQUIRED DRINKING FOUNTAINS.

PROVIDE ENGINEER APPROVED DEFERRED SUBMITTALS ON SITE FOR INSPECTORS

DEFERRED SUBMITTALS
- FIRE SPRINKLER SYSTEMS
- SEISMIC RESTRAINT AND VIBRATION ISOLATION FOR MECHANICAL EQUIPMENT AND PIPING
- FIRE ALARM SYSTEM
- FIRE ALARM SYSTEM
- EMERGENCY RESPONDER RADIO SYSTEM
- CONCRETE MIX
- INTERIOR METAL STUD SYSTEMS: WALLS, SOFFITS, AND CEILINGS
- METAL DECK
- FALL RESTRAINT SYSTEM
- TEMPORARY SHORING/BRACING
- MEP ANCHORAGE AND BRACING
- BUCKLING RESTRAINED BRACES AND THEIR
- GUSSET PLATE CONNECTIONS
- PRECAST CONCRETE ELEMENTS
- ROOF CURBS FOR MEP EQUIPMENT
- SEISMIC BRACING FOR ARCHITECTURAL CEILINGS
- PRE FABRICATED PRE ENGINEERED STAIRS AND SHIPS LADDERS

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	JL
Checked By:	JL

Revisions

#	Date	Description

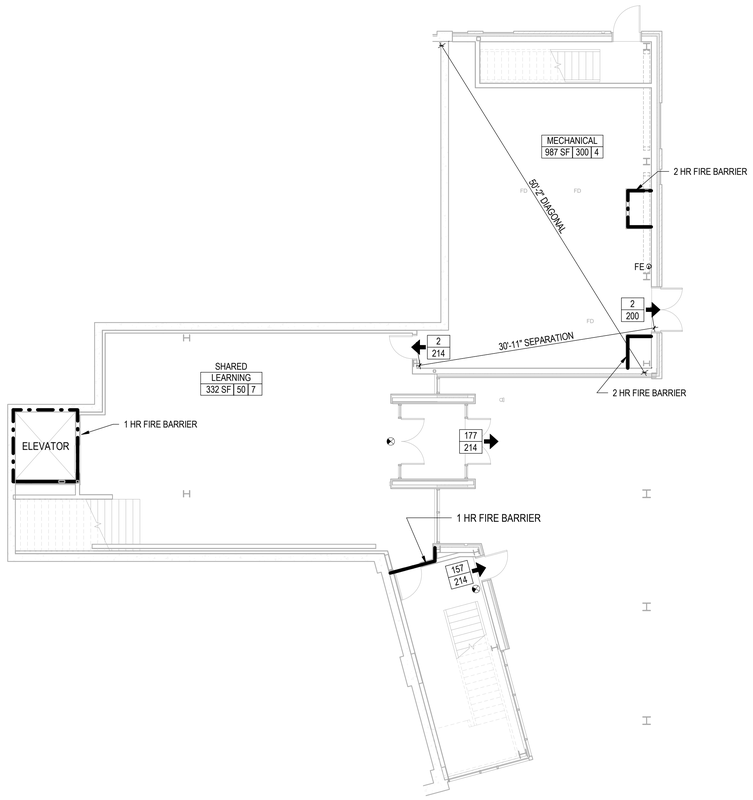
CODE ANALYSIS

PRCNC20221036

G019

BUILDING PERMIT SET

LEVEL 0 OCCUPANT LOAD = 11



LEVEL 0 - LIFE SAFETY
SCALE: 1/8" = 1'-0"

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Revisions

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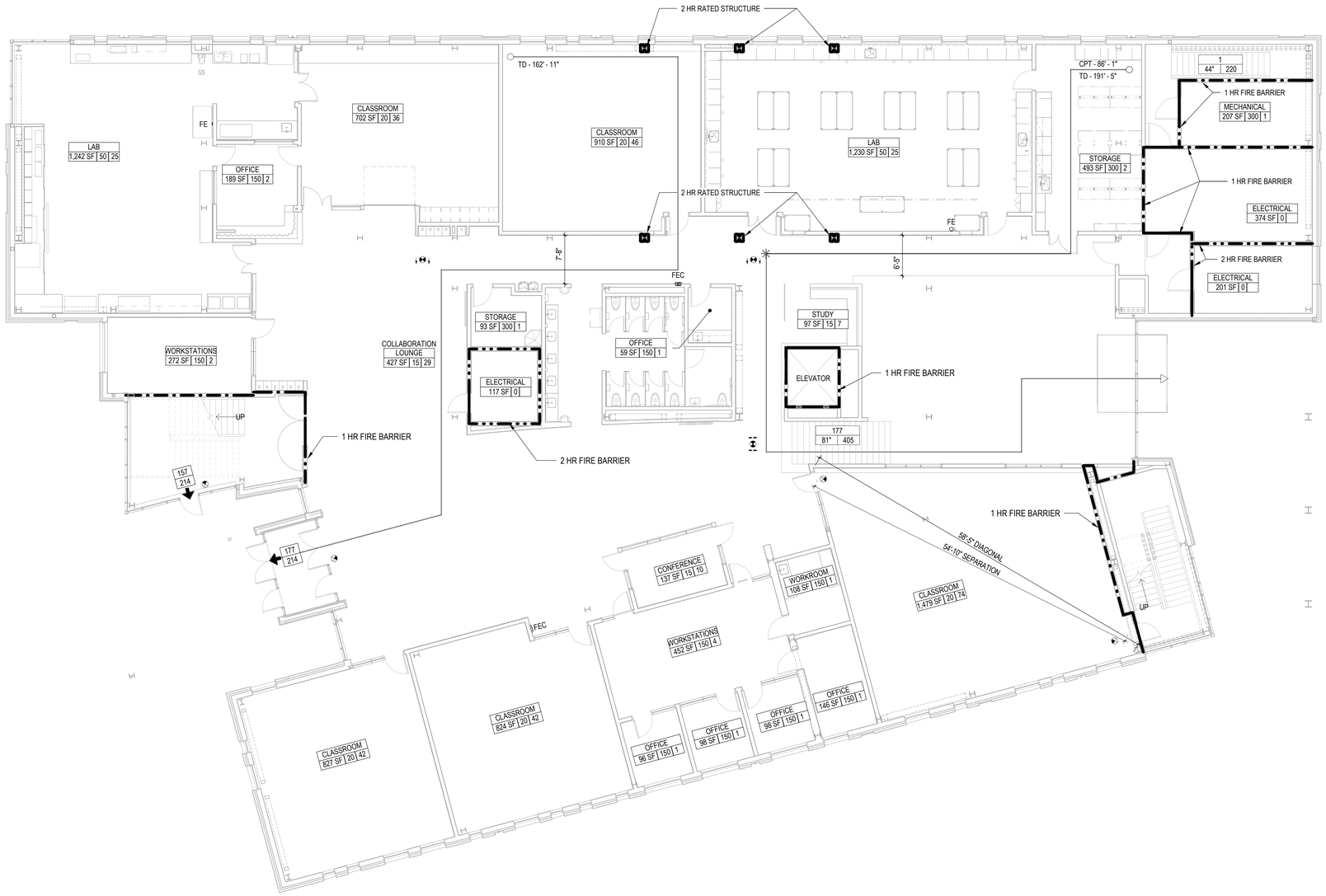
LEVEL 0 - LIFE SAFETY PLAN

PRCNC20221036

G020

BUILDING PERMIT SET

LEVEL 1 OCCUPANT LOAD = 354



LEVEL 1 - LIFE SAFETY
SCALE: 1/8" = 1'-0"

LIFE SAFETY LEGEND

EXIT SYMBOL CODES

ROOM | X | X | X
- OCCUPANCY
- OCCUPANT LOAD
- OCCUPANT LOAD FACTOR
- AREA

40 | 360
- # OF PEOPLE USING EXIT
- EXIT FROM FLOOR
- EXIT CAPACITY

40 | 48" | 240
- # OF PEOPLE USING STAIR
- STAIR CAPACITY
- STAIR WIDTH

FE	BRACKET MOUNTED FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
	ILLUMINATED EXIT SIGN

REQUIRED FIRE PROTECTION KEY

	1 HOUR FIRE BARRIER/WALL
	2 HOUR FIRE BARRIER/WALL
	3 HOUR FIRE BARRIER/WALL
	CONSTRUCTION CAPABLE OF WITHSTANDING THE PASSAGE OF SMOKE

EGRESS TRAVEL DISTANCES

	TD - EXIST ACCESS TRAVEL DISTANCE
	CPT - COMMON PATH OF TRAVEL
	DE - DEAD END CORRIDOR

GENERAL NOTE:

1. AT ALL LOCATIONS THAT REQUIRE A FIRE PROTECTION RATING PROVIDE IDENTIFICATION WITH 4" TALL LETTERING NOTING: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS". LOCATE 2' ABOVE CEILING, WITHIN 15 FEET FROM EACH WALL END AND AT INTERVALS NOT EXCEEDING 30 FEET HORIZONTALLY.

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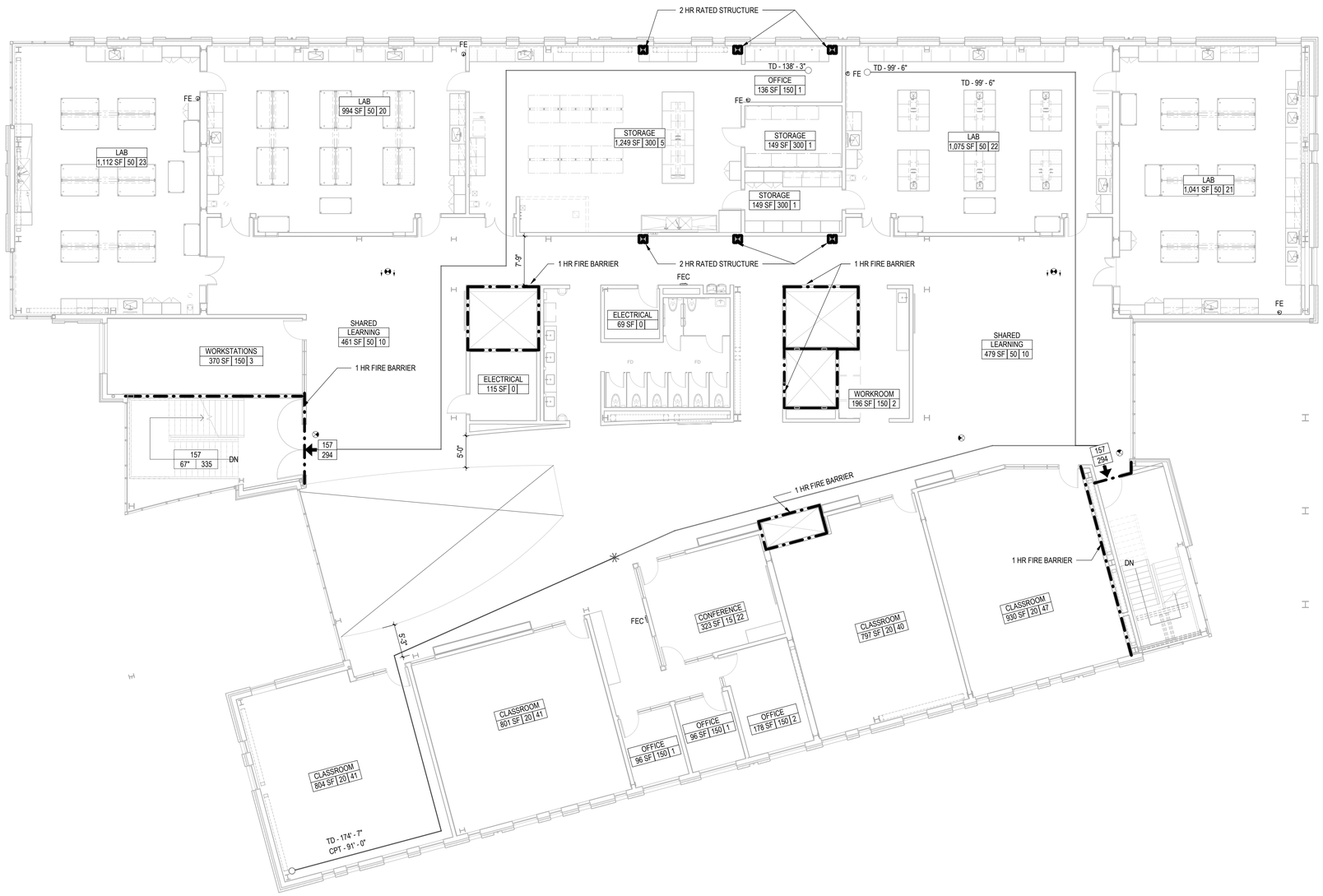
LEVEL 1 - LIFE SAFETY PLAN

PRCNC20221036

G021

BUILDING PERMIT SET

LEVEL 2 OCCUPANT LOAD = 314



LEVEL 2 - LIFE SAFETY

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

LIFE SAFETY LEGEND

EXIT SYMBOL CODES

ROOM | X | X | X

- OCCUPANCY
- OCCUPANT LOAD
- OCCUPANT LOAD FACTOR
- AREA

40 | 360

- # OF PEOPLE USING EXIT
- EXIT FROM FLOOR
- EXIT CAPACITY

40 | 48" | 240

- # OF PEOPLE USING STAIR
- STAIR CAPACITY
- STAIR WIDTH

FE — BRACKET MOUNTED FIRE EXTINGUISHER

FEC — FIRE EXTINGUISHER CABINET

FHC — FIRE HOSE CABINET

ILLUMINATED EXIT SIGN

REQUIRED FIRE PROTECTION KEY

- 1 HOUR FIRE BARRIER/WALL
- 2 HOUR FIRE BARRIER/WALL
- 3 HOUR FIRE BARRIER/WALL
- CONSTRUCTION CAPABLE OF WITHSTANDING THE PASSAGE OF SMOKE

EGRESS TRAVEL DISTANCES

- TD - EXIST ACCESS TRAVEL DISTANCE
- CPT - COMMON PATH OF TRAVEL
- DE - DEAD END CORRIDOR

GENERAL NOTE:

1. AT ALL LOCATIONS THAT REQUIRE A FIRE PROTECTION RATING PROVIDE IDENTIFICATION WITH 4" TALL LETTERING NOTING: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS". LOCATE 2' ABOVE CEILING, WITHIN 15 FEET FROM EACH WALL END AND AT INTERVALS NOT EXCEEDING 30 FEET HORIZONTALLY.

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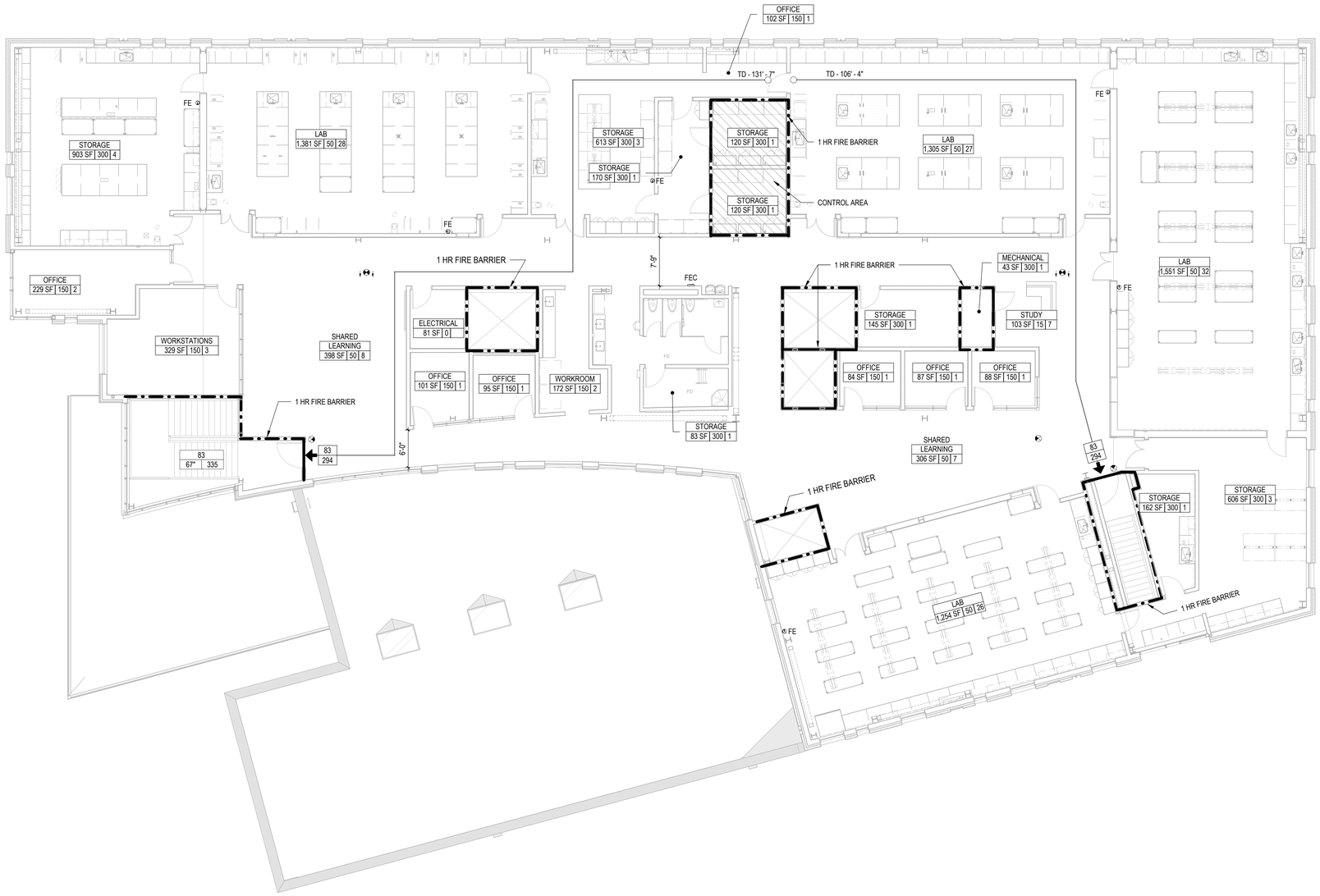
LEVEL 2 - LIFE SAFETY PLAN

PRCNC20221036

G022

BUILDING PERMIT SET

LEVEL 3 OCCUPANT LOAD = 165



LEVEL 3 - LIFE SAFETY

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

LIFE SAFETY LEGEND

EXIT SYMBOL CODES

- OCCUPANCY (ROOM)
- OCCUPANT LOAD
- OCCUPANT LOAD FACTOR
- AREA
- # OF PEOPLE USING EXIT (40)
- EXIT FROM FLOOR
- EXIT CAPACITY (360)
- # OF PEOPLE USING STAIR (40)
- STAIR CAPACITY (240)
- STAIR WIDTH (48")

FE — BRACKET MOUNTED FIRE EXTINGUISHER

FEC — FIRE EXTINGUISHER CABINET

FHC — FIRE HOSE CABINET

ILLUMINATED EXIT SIGN

REQUIRED FIRE PROTECTION KEY

- 1 HOUR FIRE BARRIER/WALL
- 2 HOUR FIRE BARRIER/WALL
- 3 HOUR FIRE BARRIER/WALL
- CONSTRUCTION CAPABLE OF WITHSTANDING THE PASSAGE OF SMOKE

EGRESS TRAVEL DISTANCES

- TD - EXIST ACCESS TRAVEL DISTANCE
- CPT - COMMON PATH OF TRAVEL
- DE - DEAD END CORRIDOR

GENERAL NOTE:

1. AT ALL LOCATIONS THAT REQUIRE A FIRE PROTECTION RATING PROVIDE IDENTIFICATION WITH 4" TALL LETTERING NOTING: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS". LOCATE 2' ABOVE CEILING, WITHIN 15 FEET FROM EACH WALL END AND AT INTERVALS NOT EXCEEDING 30 FEET HORIZONTALLY.

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LEVEL 3 - LIFE SAFETY PLAN

PRCNC20221036

G023

BUILDING PERMIT SET

COMPONENT PERFORMANCE ALTERNATIVE RESULTS PER 2018 WSEC_C

CONDITIONED SPACE:

PROPOSED TOTAL UA / ALLOWABLE TOTAL UA **5311.72 / 6276.81** = 0.846 = 15.4% REDUCTION

PROPOSED TOTAL UA = UA- GLAZ-PROP + US-SKY-PROP + UA-OPAQUE-PROP + FL-SLAB-PROP
= 5311.72

UA-GLAZ-PROP = (PROPOSED U-VALUE STOREFRONT X PROPOSED STOREFRONT AREA) + (PROPSED U-VALUE GLASS DOOR X PROPOSED GLASS DOOR AREA)
= (U-0.348 X 9315.25 SF) + (U-0.58 X 117.5 SF)
= 3309.86

PROPOSED U-VALUE STOREFRONT = U-0.348
ASSUMES GUARDIAN GLASS SNX 62/27 WITH A LOW E COATING AND KAWNEER VG 451T, BACK SET STOREFRONT SYSTEM

PROPOSED U-VALUE GLASS DOOR = U-0.58
ASSUMES KAWNEER 260 INSULCLAD THERMAL ENTRANCES

UA-SKY-PROP = (PROPOSED U-VALUE SKYLIGHT X PROPOSED SKYLIGHT AREA)
= (U-0.36 X 168 SF)
= 60.48

PROPOSED U-VALUE SKYLIGHT = U-0.36
ASSUMES SUN OPTICS SIGNATURE SERIES DOME 800 MD - DBL GLAZED W/ FLAT INSERT W/W/W

UA-OPAQUE-PROP = (PROPOSED U-VALUE EACH WALL ASSEMBLY X PROPOSED EACH WALL ASSEMBLY AREA) + (PROPOSED U-VALUE OPAQUE DOOR X PROPOSED OPAQUE DOOR AREA) + (PROPSED U-VALUE EACH ROOF ASSEMBLY X PROPOSED EACH ROOF ASSEMBLY AREA) + (PROPSED U-VALUE ELEVATED SLAB / EXT SOFFIT X PROPOSED ELEVATED SLAB / EXT SOFFIT AREA)
= ((6S.MP-1 U-0.047 X 270 SF) + (S8.CB U-0.0627 X 482 SF) + (S8.MP-1, S8.MP-2, & S8.MV-1 U-0.0462 X (11539 SF + 15446 SF + 215 SF))+ (DOOR U-0.36 X 121.92 SF) + ((R1 U-0.0104 X 15579.61 SF) + (R2 -0.006 X 4036.72 SF) + (R4 U-0.0206 X 416 SF) + (VEST. ROOF U-0.0242 X 187)) + ((S1 U-0.0479 X 1146.84 SF) + (S2 U-0.0479 X 104.62 SF))
= 1603.94

PROPOSED U-VALUE S6.MP-1 = U-0.047
PER SHEET A011 OF THIS SET (COMPONENTS BELOW)
- 6" STUD AND BLANKET INSULATION (Rs)= R7.35 PER TABLE C402.1.4.1
- SEE S8.MP-1 FOR ALL ELSE

= 1/[Rs + (ER)] PER C402.1.4.1
= 1/[R7.35 + (R12 + R0.67 + R0.68 + R0.056)]
= U-0.047

PROPOSED U-VALUE S8.CB = U-0.0627
PER SHEET A011 OF THIS SET (COMPONENTS BELOW)
- 1/4" COVERBOARD = R0.28 ASSUMES GEORGIA-PACIFIC DENSELEMENT SHEATHING
- 3" MINERAL WOOL = R12 ASSUMES ROCKWOOL COMFORTBOARD 110
- WRB SHEATHING = R0.67ASSUMES GEORGIA-PACIFIC DENSELEMENT SHEATHING
- 8" STUD AND BLANKET INSULATION (Rs)= R7.75 PER TABLE C402.1.4.1
- VAPOR RETARDER = R0.68 PER TABLE A101.5
- 5/8" GYPSUM WALL BOARD = R0.56 PER TABLE A101.5

= 1/[Rs + (ER)] PER C402.1.4.1
= 1/[R7.75 + (R12 + R0.67 + R0.68 + R0.056)]
= U-0.0627

PROPOSED U-VALUE S8.MP-1 = U-0.0462
SIMILAR WALL TYPES: S8.MP-2 & S8.MV-1
PER SHEET A011 OF THIS SET (COMPONENTS BELOW)
- 3" MINERAL WOOL = R12 ASSUMES ROCKWOOL COMFORTBOARD 110
- WRB SHEATHING = R0.67 ASSUMES GEORGIA-PACIFIC DENSELEMENT SHEATHING
- 8" STUD AND BLANKET INSULATION (Rs)= R7.75 PER TABLE C402.1.4.1
- VAPOR RETARDER = R0.68 PER TABLE A101.5
- 5/8" GYPSUM WALL BOARD = R0.56 PER TABLE A101.5

= 1/[Rs + (ER)] PER C402.1.4.1
= 1/[R7.75 + (R12 + R0.67 + R0.68 + R0.056)]
= U-0.0462

PROPOSED U-VALUE OPAQUE DR = U-0.36
ASSUMES TRIO-E CURRIES DOOR W/O HEAVY DUTY REINFORCEMENT AT FRAME

PROPOSED U-VALUE ROOF R1 = U-0.0104
PER SHEET A011 OF THIS SET (COMPONENTS BELOW), R5 SIMILAR
- TPO SINGLE LAYER ROOFING = R0.1 ASSUMES JOHNS MANVILLE TPO
- 5/8" SUBSTRATE SHEATHING BOARD = R0.67 ASSUMES GEORGIA-PACIFIC DENS-DECK PRIME FIREGUARD ROOF GUARD TYPE X
- CONTINUOUS INSULATION = R94.4 (R38 @ R4) ASSUMES 16" (6" @ R4)OF JOHNS MANVILLE FLAT ENERGY 3 POLYISOCYANURATE ROOF INSULATION
- METAL DECK = 0 PER TABLE A101.5

= 1/(R0.1 + R0.67 + R94.4 + R0.67+ R0)
= U-0.0104

PROPOSED U-VALUE ROOF R2 = U-0.006
PER SHEET A011 OF THIS SET (COMPONENTS BELOW)
- CONTINUOUS INSULATION RMIN = R94 ASSUMES 8" OF JOHNS MANVILLE FLAT ENERGY 3 POLYISOCYANURATE ROOF INSULATION
- CONTINUOUS INSULATION RMAX = R250
- TAPERED INSULATION Reffective = (RMAX - RMIN) / (Ln (RMAX/RMIN)) PER EQUATION d. OF C402.1.4. AND TABLE A102.2.6.1

= 1/(Reffective)
= 1/((250-94) / (Ln(250/94))
= U-0.006

PROPOSED U-VALUE ROOF R4 = U-0.0242
PER SHEET A011 OF THIS SET (SEE R1 FOR COMPONENTS)

PROPOSED U-VALUE ROOF @ VESTIBULES = U-0.021
PER DETAILS 3 & 8/A361 OF THIS SET (COMPONENTS BELOW)
- 5/8" SUBSTRATE SHEATHING BOARD = R0.67 ASSUMES GEORGIA-PACIFIC DENS-DECK PRIME FIREGUARD ROOF GUARD TYPE X
- CONTINUOUS INSULATION = R38 ASSUMES 6.66" OF JOHNS MANVILLE FLAT ENERGY 3 POLYISOCYANURATE ROOF INSULATION
- 1/4" SUBSTRATE SHEATHING BOARD = R0.28 ASSUMES GEORGIA-PACIFIC DENS-DECK PRIME FIREGUARD ROOF GUARD TYPE X
- 6" STUD AND BLANKET INSULATION = R7.35 PER TABLE C402.1.4.1
- VAPOR RETARDER = R0.68 PER TABLE A101.5
- 5/8" GYPSUM WALL BOARD = R0.56 PER TABLE A101.5

= 1/(R0.67 + R38 + R0.28 + R7.35+ R.68 + R.56)
= U-0.021

PROPOSED U-VALUE S1 = U-0.0479
SIMILAR WALL TYPE S8.MP-2
PER SHEET A011 OF THIS SET (COMPONENTS BELOW)
- 3" MINERAL WOOL = R12 ASSUMES ROCKWOOL COMFORTBOARD 110
- 5/8" SUBSTRATE SHEATHING BOARD = R0.67 ASSUMES GEORGIA-PACIFIC DENS-DECK PRIME FIREGUARD ROOF GUARD TYPE X
- 8" STUD AND BLANKET INSULATION = R7.75 PER TABLE C402.1.4.1
- VAPOR RETARDER = R0.68 PER TABLE A101.5

= 1/(R12 + R0.67 + R7.75 + R0.68)
= U-0.0479

UA-FL-SLAB-PROP = (PROPOSED F-VALUE FLOORS X PROPOSED FLOOR AREA)
= (F-0.48 X 703 FT)
= 337.44

PROPOSED F-VALUE FLOOR = F-0.48
ASSUMES UNHEATED SLAB ON GRADE WITH R10 INSULATION ADDED FOR 4FT ON VERTICAL EXTERIOR SURFACE AT SLAB EDGES PER TABLE A106.1

ALLOWABLE TOTAL UA = UA- GLAZ-ALLOW + UA-SKY-ALLOW + UA-OPAQUE-ALLOW + FL-SLAB-ALLOW
= 6276.81

UA-GLAZ-ALLOW = (CODE MAX U-VALUE STOREFRONT X PROPOSED STOREFRONT AREA) + (CODE MAX U-VALUE GLASS DOOR X PROPOSED GLASS DOOR AREA)
= (U-0.38 X 9315.25 SF) + (U-0.65 X 117.5 SF)
= 3616.17

ALLOWABLE U-VALUE STOREFRONT = U-0.38 PER TABLE C402.4

ALLOWABLE U-VALUE GLASS DOOR = U-0.65 PER TABLE C303.1.3(1)

UA-SKY-ALLOW = (CODE MAX U-VALUE SKYLIGHT X PROPOSED SKYLIGHT AREA)
= (U-0.5 X 168 SF)
= 84

ALLOWABLE U-VALUE SKYLIGHT = U-0.5 PER TABLE C402.4

UA-OPAQUE-ALLOW = (CODE MAX U-VALUE WALLS X PROPOSED WALL AREA) + (CODE MAX U-VALUE OPAQUE DOOR X PROPOSED OPAQUE DOOR AREA) + (CODE MAX U-VALUE ROOF X PROPOSED ROOF AREA) + (CODE MAX U-VALUE ELEVATED SLAB X PROPOSED ELEVATED SLAB AREA) + (CODE MAX LOUVER X PROPOSED LOUVER AREA)

= (WALLS U-0.055 X 26971.78 SF) + (DOOR U-0.037 X 121.92 SF) + (ROOF U-0.027 X 20219.33 SF) + (U-0.055 X 1251.46 SF)
= 2197.02

ALLOWABLE U-VALUE WALL = U-0.055 PER TABLE C402.1.4

ALLOWABLE U-VALUE OPAQUE DR = U-0.037 PER TABLE C402.1.4

ALLOWABLE U-VALUE ROOF = U-0.027 PER TABLE C402.1.4

ALLOWABLE U-VALUE ELEV. SLAB = U-0.055 PER TABLE C402.1.4 (SLAB PROTECTED BY EXTERIOR SOFFIT S1)

UA-FL-SLAB-PROP = (CODE MAX F-VALUE FLOORS X PROPOSED FLOOR AREA)
= (F-0.54 X 703 FT)
= 379.62

PROPOSED F-VALUE FLOOR = F-0.54 PER TABLE C402.1.4

AIR LEAKAGE TEST NOTES

AIR BARRIER BOUNDARY AREAS:

1ST FLOOR	= 19,538 SF
EXTERIOR WALLS	= 26,972 SF
ROOFS	= 20,219 SF
EXTERIOR SOFFITS	= 1,252 SF
TOTAL	= 67,981 SF

NOTE:

AIR LEAKAGE TESTING AND BUILDING PERFORMANCE SHALL COMPLY WITH WSEC C402.5.1.2 CRITERIA AS FOLLOWS:

1. Test shall be accomplished using either (1) both pressurization and depressurization or (2) pressurization alone, but not depressurization alone. The test results shall be plotted against the correct P for pressurization in accordance with Section 9.4 of ASTM E779.
2. The test pressure range shall be from 25 PA to 80 Pa per Section 8.10 of ASTM E779, but the upper limit shall not be less than 50 Pa.
3. If the pressure exponent n is less than 0.45 or greater than 0.85 per Section 9.6.4 of ASTM E779, the test shall be rerun with additional readings over a longer time interval.
4. The leakage rate test results shall not exceed 0.17 cfm/ft2 at 0.3 in. wg (75 Pa).
5. Submit building enclosure air leakage test reports to jurisdiction and owner;
   - If initial test result exceeds 0.17 cfm/ft2, indicate that inspection and all practical corrective actions be completed and documented in the air leakage test report;
   - If initial test result exceeds 0.34 cfm/ft2, indicate that corrective actions shall also include re-testing;
   - Corrective measures and retesting must be repeated until the test result is 0.34 cfm/ft2 or less;
   - Air barrier test report to be included in project close out documentation provided to building owner.

AIR BARRIER NOTES

Air Barrier system description:

Connections to Adjacent Materials: Provide connections to prevent air leakage and vapor mitigations at the following locations:

1. Foundations and walls, including penetrations, ties and anchors.
2. Walls, windows, storefronts, louvers, or doors.
3. Different wall assemblies and fixed openings with those assemblies.
4. Wall and roof connections.
5. Walls, floor, and roof across construction, control, and expansion joints.
6. Walls, floors, and roof to utility, pipe, and duct penetrations.
7. Seismic and expansion joints.
8. All other leakage pathways in the building envelope.

Installation

1. Install in accordance with Manufacturer's writen instructions over WRB sheathing. Seal Joints and penetrations through weather-resistive barrier with specified tape prior to installation of finish material. Air infiltration barrier with specified tape prior to installation of finish material. Air infiltration barrier shall be air tight and free from holes, teas, and punctures. All window and door penetrations are to be flashed and sealed per manufacturer's instructions.
2. Seal WRB sheathing to associated materials at building envelope penetrations as detailed.
3. Adhere WRB sheathing with manufacturer's recommended adhesive to stainless steel masonry flashing.
4. All relief, outside air intake and exhaust openings shall be provided with dampers in accordance with Mechanical Section C403.7.8
   A. Boiler combustion air ducts do not require an isolation damper per 2018 WSEC C403.7.8.1 exception 2.1.
5. All recessed lighting fixtures shall be IC rated and have an air leakage rating not greater than 2 cfm per ASTM E283 test;
   A. All recessed lighting will be fully caulked at builing penetrations.

CONT. INS. PENETRATION CALC

ASSUMPTION:

6" - 20 GA. METAL Z-CLIPS INTERMITTENTLY SPACED @ 32" O.C. HORIZONTAL & 36" VERTICAL

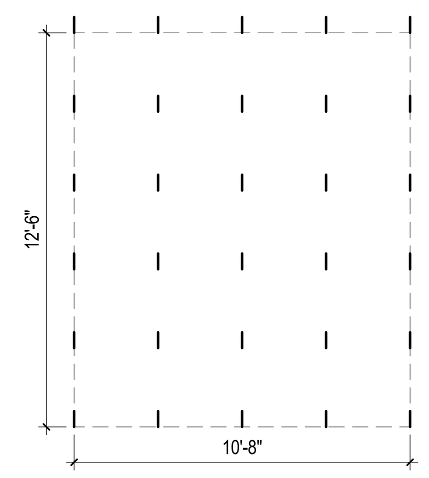
6" - 20 GA. METAL Z-FURRING THICKNESS = .0375"

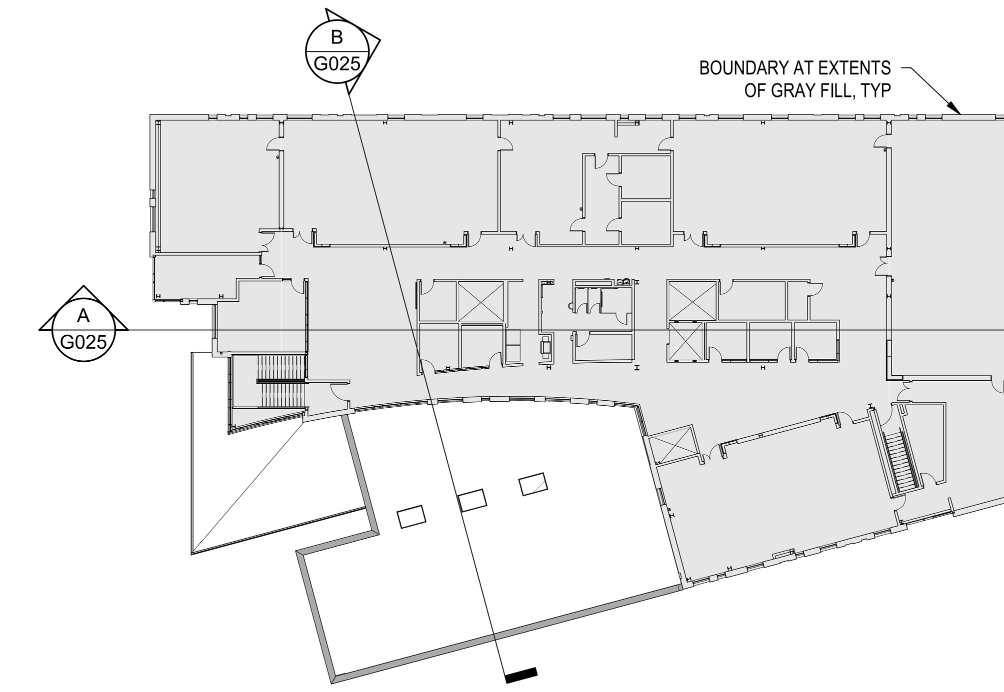
TYPICAL Z-FURRING LAYOUT (SEE DIAGRAM):
AREA = 150" X 128" = 19,200 SQ. IN
# OF Z-FURRING PENETRATIONS + 25

Z-FURRING CROSS SECTIONAL AREA:
(6") x (.0375") = 0.225 SQ. IN / PENETRATION

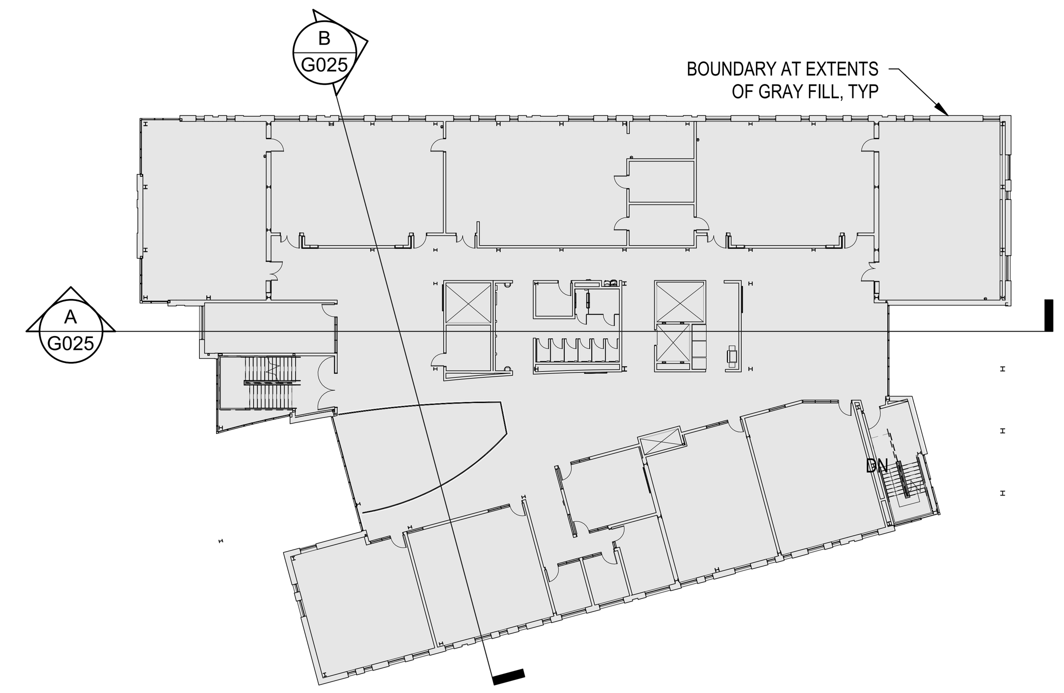
TOTAL PENETRATION AREA PER SAMPLE LAYOUT:
(.225 IN²) X (25) = 5.625 SQ. IN

RATIO OF CROSS SECTIONAL AREA OF METAL PENETRATIONS:
5.625 IN² / 19,200 SQ. IN = .0003

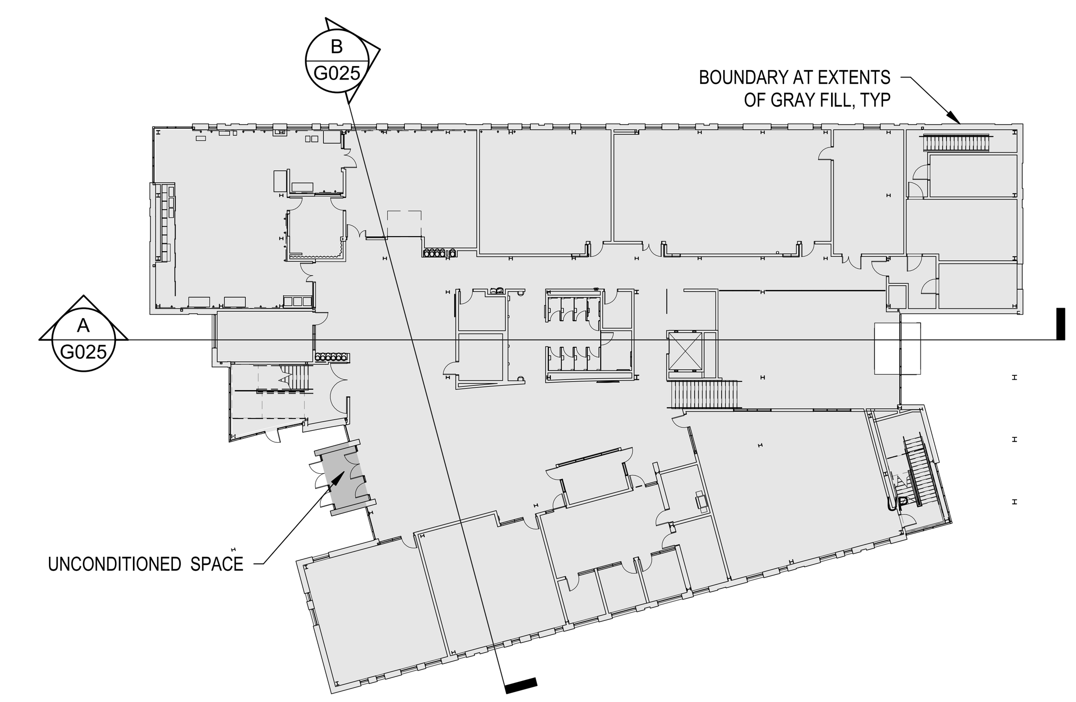




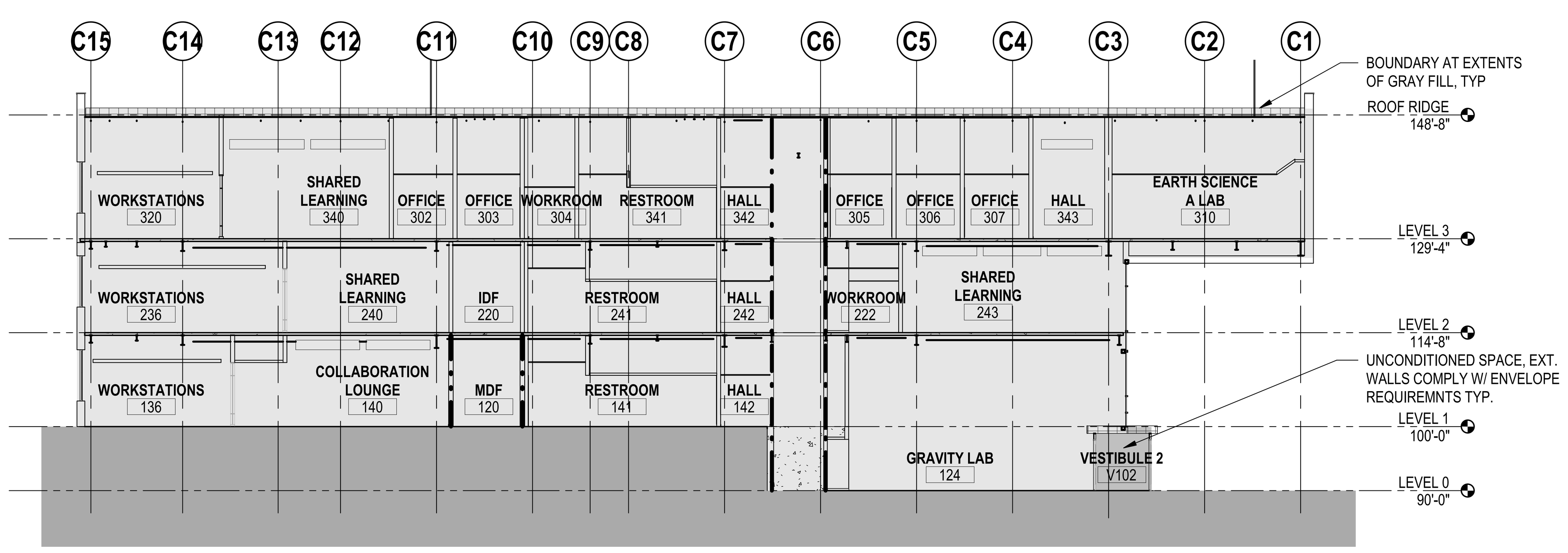
3 AIR BARRIER BOUNDARY - LEVEL 3
SCALE: 1" = 30'-0"



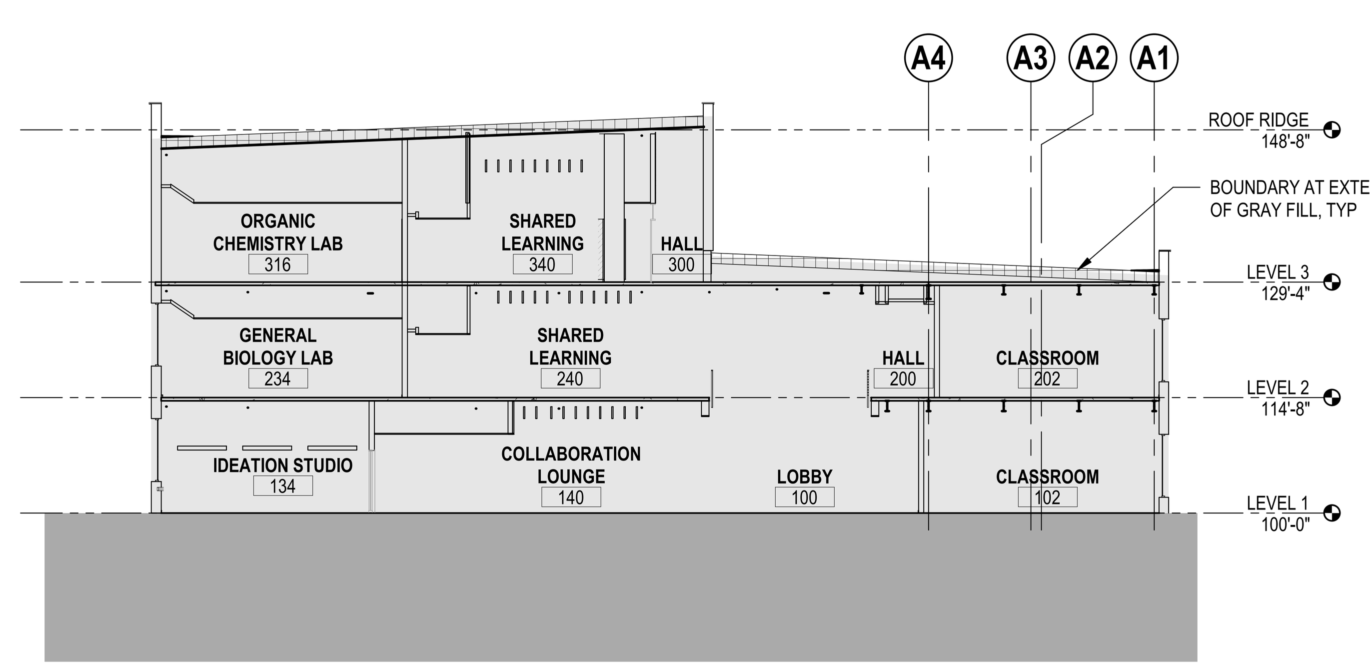
2 AIR BARRIER BOUNDARY - LEVEL 2
SCALE: 1" = 30'-0"



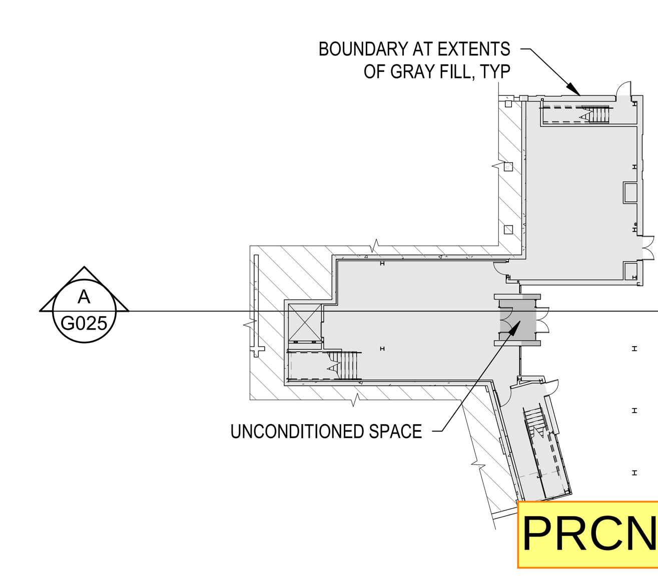
1 AIR BARRIER BOUNDARY - LEVEL 1
SCALE: 1" = 30'-0"



A AIR BARRIER BOUNDARY - SECTION A
SCALE: 1/16" = 1'-0"



B AIR BARRIER BOUNDARY - SECTION B
SCALE: 1/16" = 1'-0"



0 AIR BARRIER BOUNDARY - LEVEL 0
SCALE: 1" = 30'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA. 98104
TELEPHONE: (206)628-3137 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BECKY JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

#	Date	Description

ENERGY CODE ANALYSIS

PRCNC20221036

G025

BUILDING PERMIT SET

GENERAL STRUCTURAL NOTES

These notes shall govern unless otherwise noted in the drawings. Refer to written specifications for further requirements and amplification of these notes.

Codes
International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction.
Project Jurisdiction: City of Puyallup, State of Washington.

Design Loads
Reference code: ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures.

Dead Loads
Refer to Load Maps & Load Diagrams (S-501)

Floor	
Typical Floor	68 psf
Mechanical Floor	118 psf (or Typical Floor wt + actual wt of equip.)
Roof	
Typical Metal Deck Roof	31 psf (Includes 8 psf PV panels, +5 psf above corridor)
Typical Composite Deck Roof	84 psf (Includes 8 psf PV panels)
Roof Extension above Front Entry	61 psf (No PV loads)

Mechanical Equipment
- Actual operating weight is by manufacturer.
- Weight indicated on drawings is the maximum design load.
- Notify Architect/Engineer if the manufacturer's operating weight of the equipment provided exceeds the maximum design load, prior to installation of the equipment.

Live Loads
(live load reduction is applied as allowed by the reference code)

Floor	
Assembly (movable seats)	100 psf
Classrooms	40 psf; 1000 lb on any 2.5 ft sq
First Floor Corridors	100 psf
Upper Level Library Corridors	100 psf; 1000 lb on any 2.5 ft sq
Upper Level Office Corridors	100 psf; 2000 lb on any 2.5 ft sq
Upper Level School Corridors	100 psf
Other Upper Floor Corridors	same as occupancies served
Offices	50 psf; 2000 lb on any 2.5 ft sq
Stairs and exit ways	100 psf
Storage (light)	125 psf or max load expected
Storage (heavy) (Rock Storage)	250 psf or max load expected
Roof	
Typical Roof	20 psf
Handrails/Guardrails	
Assembly	50 psf
Intermediate rails/panels	50# on any 1.0 ft sq, in any direction
Grab Bar	250# at any point, in any direction
Snow	
Ground snow load	Pg = 18 psf
Calculated flat roof snow load	Pf = 22 psf
Minimum flat roof snow load	Pf = 25 psf
Minimum uniform snow load	25 psf
Importance factor (snow)	Is = 1.1
Snow exposure factor	Ce = 1.0
Thermal factor	Ct = 1.0
Drifts	see Snow Drift Plan
Other Surcharges	per reference code
Unbalanced loads	per reference code
Wind	
Basic wind speed (3 second gust)	V = 104 mph
Exposure Category	B
Importance factor (wind)	Iw = 1.15
Topographical Factor	Kzt = 1.0
Directional Coefficient	Kd = 0.85
Gust Effect Factor	G = 0.85
Internal pressure coefficient	Gcpi = 0.18
Minimum Net Uplift	16 psf
Seismic	
Analysis Procedure	Modal Response Spectrum Analysis
Occupancy category	III
Importance factor - seismic	Ie = 1.25
Long-period transition period	Tl = 6.0 sec
Building period coefficient	Ct = 0.030
Site Class	C
Spectral acceleration parameters	Ss = 1.253
Spectral acceleration parameters	S1 = 0.432
Site coefficients	Fa = 1.2
Site coefficients	Fv = 1.0
Spectral response coefficient	Sds = 1.003
Spectral response coefficient	Sd1 = 0.432
Seismic design category	D
Lateral system	Steel buckling-restrained braced frames
Response modification coefficient	R = 8.0
Seismic response coefficient	Cs = 0.116
Structural wall out-of-plane	Fp = 0.501 x Wp
Non-structural components(rigid)	ap = 1.0, Fp = 0.481 x Wp
Non-structural components(flexible)	ap = 2.5, Fp = 1.203 x Wp
Earth	

Loading based on geotechnical report
by: GeoEngineers
dated: January 21, 2021

Active pressure (drained)	35 pcf + 13*H seismic surcharge
Active pressure (undrained)	80 pcf + 13*H seismic surcharge (includes hydrostatic pressures)
At-rest pressure (drained)	55 pcf + 13*H seismic surcharge
At-rest pressure (undrained)	90 pcf + 13*H seismic surcharge (includes hydrostatic pressures)

An additional 2 feet of fill shall be added to represent a traffic surcharge of 250 psf if vehicles are within .5*H of the wall
An additional 1 foot of fill shall be added to represent adjacent 100 psf occupant live load at top of wall condition

Passive resistance	290 pcf
Coefficient of friction	0.40

Refer to load maps sheets and drawings for additional loads

CONSTRUCTION LOADS

1. Reference code: ASCE/SEI 37-14, Design Loads on Structures During Construction
2. The structure represented in these drawings has been designed to resist vertical and lateral loads prescribed by the reference code in its final constructed condition. The sequence of construction is the responsibility of the general contractor. All loads experienced by the structure due to the incomplete nature of the structure are the sole responsibility of the general contractor. The general contractor must design and provide temporary shoring and bracing until the final built condition, as shown in these drawings, is achieved.
3. The structure represented in these drawings has not been designed to resist vertical and lateral loads imparted by construction equipment. All loads experienced by the structure while supporting construction equipment are the sole responsibility of the general contractor. The general contractor must design and provide temporary shoring and bracing where required to support construction equipment.
4. Where temporary shoring or bracing is required, retain the services of a structural engineer registered in the project jurisdiction to design and detail the bracing of that equipment for the gravity and lateral forces prescribed by the reference code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.

GENERAL CONDITIONS

TYPICAL CONDITIONS
1. Typical details are not referenced at all locations for which they apply and may not be referenced at all. Details located on typical detail sheets represent the method of construction to be used at all locations, unless otherwise indicated in the drawings.

COORDINATION
1. The written specifications and the drawings of the architectural, mechanical, electrical and civil/landscape disciplines are to be used in conjunction with the structural drawings for bidding and construction.
2. Dimensions for some secondary elements such as windows, doors, walls and floor edges are located only in the architectural drawings. Shop drawing production for structural elements will require dimensional information contained in both the architectural and structural drawings. All requests for dimensions in shop drawing submittals will be referred to the general contractor.
3. The contractor shall coordinate dimensions and conditions between the drawings (including the architectural, mechanical, electrical and civil/landscape disciplines), the specifications, and the site conditions prior to fabrication and construction. Notify Architect/Engineer in writing of any discrepancies in dimensions or conditions found prior to fabricating and executing work in the area of the discrepancy. Architect/Engineer will respond in writing according to the provisions of the general conditions found in the specifications. Any related work performed by the contractor between the discovery of the discrepancy and receipt of the Architect's/Engineer's written response will be done at the contractor's risk.
4. Where the bracing of mechanical, plumbing, fire-suppression and/or electrical equipment is not specifically detailed in the mechanical, plumbing, fire-protection and/or electrical drawings or specifications, retain the services of a structural engineer registered in the jurisdiction of this project to design and detail the bracing of that equipment for the gravity and lateral forces prescribed by the governing building code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
5. Where the bracing of ceilings and other architectural elements is not specifically detailed in the architectural drawings or specifications, retain the services of a structural engineer registered in the jurisdiction of this project to design and detail the bracing of those elements for the gravity and lateral forces prescribed by the governing building code. Submit the stamped and signed design documents to the project jurisdiction as a deferred submittal for approval prior to performing the work.
6. Provide coordination drawings showing all anticipated penetrations through the structural elements shown in these drawings. No penetrations through structural elements shall be allowed unless already indicated in the structural drawings or approved in writing by the structural engineer.

SUBMITTALS
1. Construction utilizing any given material shall not occur until the approved submittals for that material are received from the Architect/Engineer.

LATERAL FORCE AND SEISMIC LOAD RESISTING SYSTEMS

LATERAL FORCE RESISTING SYSTEM
1. Lateral-forces are transferred by the roof and floor diaphragms to the vertical lateral-force resisting elements (shearwalls, braced frames). Moments and shears resulting from these lateral-forces are transferred to the foundation system by the vertical lateral-force resisting elements. Lateral-forces are distributed through this load path in proportion to the stiffness of the transferring and resisting elements. Lateral-forces are resisted by the foundation system through passive pressure of the adjacent earth, sliding friction resistance at the soil interface, and overturning resistance of the structure's tributary dead load.
2. Any member designated '(C)' in the drawings is a chord/collector and is a component of the Lateral Force Resisting System.
3. Any weld designated 'DC' in the drawings is participating in the Lateral Force Resisting System and is 'Demand Critical'. See the Welding notes and the Special Inspection notes for requirements specific to Demand Critical welds.
4. Discontinuities created by fabrication or erection operations, such as tack welds, erection aids, air-arc gouging and thermal cutting are not allowed within the Protected Zone.
5. Welded shear studs and decking attachments that penetrate the beam flange shall not be placed on the beam flanges within the Protected Zone.
6. Welded, bolted, screwed or shot-in attachments for perimeter edge angles, exterior facades, partitions, duct work, piping or other construction shall not be placed within the Protected Zone. Refer to the drawings and these notes for definition of the Protected Zones.
7. Where violations of the Protected Zone occur, inform the Architect/Engineer in writing. Repair the discontinuity as required by the engineer of record's written response. All repairs in the Protected Zone will be subject to special inspection by the owner's agent.

DESIGNATED SEISMIC LOAD RESISTING SYSTEM
Buckling-Restrained Braced Frames (BRBF)
Buckling Restrained Braced Frames are composed of steel beams spanning between steel columns and buckling restrained braces (steel core encased in grout that is surrounded by a steel casing) spanning between the intersections of those beams and columns with gusset plate connections at the ends of those braces. See sheets S201 and S202 for brace frame elevations.

FOUNDATION

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 18

Strength
Capacities are based on geotechnical report and Addendum No. 1
by: GeoEngineers
project #: 21342-002-00
dated: January 21, 2021 & June 29, 2022

Allowable soil bearing pressure	3,500 psf
Passive equivalent fluid pressure	290 pcf
Coefficient of friction	0.40

Coordination
1. Coordinate grading and excavating requirements with civil/landscape drawings. Foundations are designed to bear on undisturbed native soils or compacted structural fill, as described in the Geotechnical Report, over undisturbed native soils.

Execution
1. Footing excavations should be cleaned of all loose soil, leveled, and protected from water and construction traffic.
2. Refer to geotechnical report and follow recommendations specific to wet weather earthwork.
3. Refer to geotechnical report and follow recommendations specific to temporary cut slopes.

Submittals
1. Suitability of soils for bearing is as described in the geotechnical report. Soil bearing surfaces must be observed and approved by the geotechnical engineer of record prior to pouring foundation concrete. Submit the written field report by the geotechnical engineer of record to the Architect/Engineer for approval.

REINFORCING

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction
- ACI 318-14, Building Code Requirements for Structural Concrete
- ACI 301-10, Specification for Structural Concrete
- TMS 402/602-16, Building Code Requirements and Specification for Masonry Structure
- AWS D1.4/D1.4M-18, Structural Welding Code - Steel Reinforcing Bars

Strength

Deformed Bars (new billet stock)	ASTM A615	Fy = 60 ksi
Weldable Deformed Bars	ASTM A706	Fy = 60 ksi
Epoxy Coated Deformed Bars	ASTM A775	Fy = 60 ksi
Plain Welded Wire Fabric (electrically welded)	ASTM A1064	Fy = 60 ksi

Fiber reinforced concrete shall conform to ACI Report 544.1R. Follow manufacturer's recommended mix quantity, but use no less than 1.5#/cu yd.

CONCRETE

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 19
- ACI 301-10, Specification for Structural Concrete
- ACI SP66 (04), ACI Detailing Manual
- ACI 318-14, Building Code Requirements for Structural Concrete

Strength
Provide concrete mix design in accordance with ACI 301, and meeting the requirements of the CONCRETE MIX DESIGN TABLE.

Coordination
1. Conduits embedded within slabs, walls or beams shall be placed between rebar mats where double mats occur. The outside diameter of the conduit shall be smaller than 1/4 x the member thickness and shall be spaced greater than 4 x the conduit outside diameter.
2. Coordinate reinforcing steel placement details with structural embeds and embeds specified in other disciplines. Utilize templates for placing steel in congested areas.
3. No concrete work shall be penetrated for piping or ducts, unless shown in the drawings or approved by the Engineer in writing.

Execution
1. Provide bar supports as required in the contract documents. Concrete dobies shall be minimum 4000 psi with cast-in double annealed 16 ga iron wires for tying. Wire chairs shall have Class 1 plastic tips.
2. Provide cover as shown in drawings, with a minimum cover as required by the CONCRETE REINFORCING COVER TABLE.
3. Provide rebar splice lengths as shown in the drawings, with a minimum splice as required by the CONCRETE REINFORCING SPLICE TABLE.
4. Camber concrete forms as shown plus deflection due to the weight of wet concrete.
5. One-way slabs shall be cambered 1/1000 of the span, unless noted otherwise on the drawings. Cambers of less than 1/8" may be neglected.
6. Air Content and Slump shall be measured at the truck discharge or at the end of the pump, wherever concrete is pumped. Slump shall be within +1"/-2" of slump specified in the approved mix design submittal.
7. Tie reinforcement into the correct positions using double annealed 16 ga iron wire. Use wire chairs at maximum 36 inch spacing in formed construction and concrete dobies at maximum 24 inch spacing at concrete cast against grade or rigid insulation to elevate the rebar into the designated positions and to maintain the required concrete cover.
8. Cold Bend bars as noted in drawings to radius specified in ACI 315. Bend bars one time only.
9. Trim bars may be omitted when the opening dimensions are less than the rebar spacing, for opening less than 12"x12". Relocate all interrupted rebar along one side of the opening and place an identical bar on the opposite side of the opening. Alternatively, where the interrupted bar is within 3" of opening edge, rebar may be sprung around the opening with no additional rebar required on the opposite side of the opening.
10. Provide 3/4" chamfer at all exposed concrete edges, unless noted otherwise.

Submittals
1. Mix Designs meeting or exceeding the requirements of the CONCRETE MIX DESIGN TABLE must be submitted to and approved by the Engineer prior to use. Provide mix designs which correspond to anticipated placement requirements and finish conditions. Deviation from the specified mix design must be demonstrated to be in accordance with ACI 318, Chapter 26 and must be submitted a minimum of two weeks prior to use for approval by the Engineer, with a written explanation of the reason for deviating from the specified mix design. Approval of deviation from the specified mix design is at the discretion of the Engineer.
2. Provide coordinated shop drawings with 1/4" scale elevations of all walls with all reinforcing, openings, structural embeds, and embedded items from other disciplines, all shown in conjunction and dimensioned relative to a common datum. Before submitting shop drawings for structural review, Mechanical and Electrical contractors must mark size and locations of all required penetrations and embeds on wall elevations.
3. Provide certification to show that all rebar welders hold a current WABO certification and are prequalified according to AWS D1.4 for all weld sizes and positions required.
4. Slab-on-Grade control joints shown in plan are schematic. Contractor shall provide control joint layout submittal to Engineer for approval showing all control joints that will be provided, conforming to the maximum joint spacing allowed.

MASONRY VENEER

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 21
- TMS 402/602-16, Building Code Requirements and Specification for Masonry Structures

Execution
1. Provide seismic veneer ties, spaced at 16" on center horizontal and 16" on center vertical per typical detail.
2. Where veneer is not laid in running bond, joint reinforcement is required. See Masonry Veneer specification for requirements.
3. Provide hot dip galvanized steel angles over all openings in masonry veneer per typical detail.

METAL DECKING

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 22
- AISC 360-16, Specifications for Structural Steel Buildings
- AISC 341-16, Seismic Provisions for Structural Steel Buildings.
- AWS D1.3-08, Structural Welding Code - Sheet Steel

Strength
ASTM A653, Gr A, minimum yield 38 ksi.

Coordination
1. Deck gage shown in plan is the minimum gage required to conform to the structural design of the finished building. Provide a deck gage which meets this minimum requirement, as well as maximum span requirements, design for construction loads, and shoring requirements.
2. Provide acoustic deck where required by structural or architectural drawings. Provide acoustic deck with perforated vertical webs and acoustical insulation in the low flutes.

Execution
1. Layout deck to span continuously over a minimum of four supports, except where framing layout does not permit.
2. Design and provide closure plates at all deck ends, including at floor openings, floor edges, and around columns.
3. Fasten the deck to supporting framing with 3/4" diameter (5/8" effective diameter) puddle welds, one at each flute perpendicular to framing support and at spacing to match flute spacing parallel to framing support, unless noted otherwise. Welded shear studs may serve as substitute for puddle weld in composite deck systems.
4. Fasten sidelaps of untopped deck with interlocking punch at 12" maximum spacing, unless noted otherwise.
5. Fasten sidelaps of concrete topped deck with button punch at 12" maximum spacing, unless noted otherwise.
6. Provide G90 galvanized deck at exterior applications.
7. Provide G60 galvanized deck at interior applications.
8. Factory apply gray acrylic primer over the galvanized coating where deck is to receive paint - refer to architectural drawings for locations.

Submittals
1. Provide design calculations showing that the deck provided is sufficient to resist all construction loads and in-place loads specified in the contract documents. Calculations and shop drawings shall be stamped and signed by an engineer registered in the project jurisdiction. Calculations and shop drawings must be approved by the Engineer and the Building Official prior to installation of the deck.

STRUCTURAL STEEL

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 22
- AISC 360-16, Specifications for Structural Steel Buildings
- AISC 341-16, Seismic Provisions for Structural Steel Buildings.

Strength

W Shapes, WT Shapes	ASTM A992 or A913, Gr 50	Fy = 50 ksi
Angles, Channels	ASTM A36	Fy = 36 ksi
HSS Square Structural Tube	ASTM A500, Gr C	Fy = 50 ksi
HSS Rectangular Structural Tube	ASTM A500, Gr C	Fy = 50 ksi
HSS Round Structural Tube	ASTM A500, Gr C	Fy = 46 ksi
Steel Pipe	ASTM A53, Gr B	Fy = 35 ksi
All other Steel Shapes	ASTM A572 or A588	Fy = 50 ksi
All Steel Plate, UNO	ASTM A572 or A588	Fy = 50 ksi
Steel Plate Designated as 36 ksi	ASTM A36	Fy = 36 ksi

1. Plates 2" thick and thicker, that are part of the Lateral Force Resisting System, shall have a minimum Charpy V-notch toughness of 20 ft-lb at 70 degrees F, measured at any location permitted by ASTM A673.
2. Hot rolled shapes that are part of the Lateral Force Resisting System shall have a minimum Charpy V-notch toughness of 20 ft-lb at 70 degrees F, tested in the alternate core location as described in ASTM A6.

Coordination
1. Refer to architectural drawings for dimensions required for the location of steel elements including, but not limited to, framing around window and door openings, top of parapet and bottom of soffit elevations, wall locations, and edge of deck dimensions.

Execution
1. The corners of continuity plates and stiffeners placed in the webs of rolled shapes that are part of the Lateral Force Resisting System shall be clipped according to AISC 341 Commentary F3.5b.4 and AWS D1.8 Commentary Section 4.
2. Weld access holes shall comply with the requirements of AISC 360, Section J1.6.
3. Provide N-Bearing 3/4" diameter bolts through horizontal short slotted holes at beam shear connections, unless noted otherwise.
4. Where connection is not accessible to Twist-off Bolt Guns, provide A325 Bolts with load indicator washers.
5. All exterior exposed structural steel shall be hot-dip galvanized, unless noted otherwise.
6. Unless otherwise noted, beams are equally spaced between dimension points.
7. The Contractor shall be responsible for all erection aids and joint preparations.
8. The Contractor shall be responsible for compliance with all current OSHA requirements.
9. Modification to the structural steel, including holes and copes, shall not be made in the field without prior approval of the Engineer.

Submittals
1. Shop drawings shall include the following information relative to the Lateral Force Resisting System:
   a. Designate all members and connections that are part of the Lateral Force Resisting System.
   b. Designate all shop welds that are Demand Critical.
   c. Designate and dimension all protected zones.
   d. Include welding requirements as specified in AWS D1.8.

COLD-FORMED METAL FRAMING

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 22
- AISI S-100-16, North American Specification for the Design of Cold-Formed Steel Structural Members, including Supplement No. 1 Dated 2018.
- AISI S202-15, Code of Standard Practice for Cold-formed Steel Framing
- AWS D1.3-08, Structural Welding Code - Sheet Steel

Strength

Material thickness < 54 mil	ASTM A1003, Gr33, 33 ksi
Material thickness 54 mil & greater	ASTM A1003, Gr50, 50 ksi

Design
1. Where required by the drawings, design cold-formed steel members and connections to resist construction and building loads described in these documents.

Coordination
1. Structural walls are those shown in the structural drawings. Refer to architectural drawings for non-structural walls, partitions and soffits.

Execution
1. Installation of cold-formed metal stud walls shall conform to ASTM C1007.
2. The framing members shall have ends squarely cut by shearing or sawing, be installed plumb, square, true to line and securely fastened per the contract documents or according to the manufacturer's approved engineered connection design
3. Structural "C" members are not permitted to have splices or cut-outs in the flanges, unless shown in the drawings.
4. Fastening of structural members shall be accomplished by screws, power actuated fasteners, welding, or a combination of methods. The type, size, and spacing shall be as required by the documents or according to the manufacturer's approved engineered connection design.
5. Provide members and connectors with minimum protective coating of G-60 galvanized finish.
6. Wherever protective coating is damaged or removed for the purpose of fastening, repair by painting with a zinc rich primer.

Submittals
1. All designs required to be provided by the manufacturer shall include drawings and calculations, stamped and signed by an engineer registered to work in the jurisdiction of this project.

SHEET LIST

STRUCTURAL

S001	STRUCTURAL GENERAL NOTES
S002	STRUCTURAL GENERAL NOTES
S003	STRUCTURAL GENERAL NOTES
S021	TYPICAL FOUNDATION DETAILS
S022	TYPICAL CONCRETE AND VENEER DETAILS
S023	TYPICAL METAL STUD DETAILS
S024	TYPICAL METAL STUD DETAILS
S025	TYPICAL STEEL AND METAL DECK DETAILS
S026	TYPICAL STEEL DETAILS
S027	TYPICAL STEEL DETAILS
S028	TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS
S029	TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS
S100	FOUNDATION/ LEVEL 0 FLOOR PLAN
S101	FOUNDATION/LEVEL 1 FLOOR PLAN
S102	LEVEL 2 FRAMING PLAN
S103	LEVEL 3 FRAMING PLAN / LOW ROOF FRAMING PLAN
S104	ROOF FRAMING PLAN
S201	BRACE FRAME ELEVATIONS
S202	BRACE FRAME ELEVATIONS
S203	EXTERIOR WALL ELEVATIONS
S204	EXTERIOR WALL ELEVATIONS
S205	EXTERIOR WALL ELEVATIONS
S301	FOUNDATION DETAILS & SECTIONS
S311	FRAMING DETAILS & SECTIONS
S401	ENLARGED STAIR & ELEVATOR PLANS
S402	ENLARGED STAIR PLANS
S403	ENLARGED VESTIBULE PLANS & DETAILS
S404	ENLARGED MECHANICAL PENTHOUSE PLAN

CONCRETE MIX DESIGN TABLE

Type	Use	28 Day Strength (psi)	Max Aggregate Size	Max W/C Ratio	Required Additives*	Exposure Categories & Classes** Freeze-Thaw (F)	Sulfate (S)	Contact w/ Water (W)	Corrosion (C)	% Air Range
A	Footings	4500	1"	0.50	-	F1	S0	W0	C1	2% max
B	Exterior Walls & Col's	4500	3/4"	0.45	-	F2	S0	W0	C1	6% ±1%
C	Interior Walls & Col's	4000	3/4"	0.45	-	F0	S0	W0	C0	2% max
D	Interior Slabs & Column Pour-backs	4000	3/4"	0.43	Superplasticizer (6"-8" Slump)	F0	S0	W0	C0	2% max
E	Exterior Slabs	5000	1"	0.40	Polyfiber Reinf	F2	S0	W1	C2	6% ±1%
F	Metal Deck Topping	4000	3/4"	0.43	Superplasticizer (6"-8" Slump) Polyfiber where noted	F0	S0	W0	C0	2% max
G	Stair Pan Topping	5000	3/8"	0.43	Polyfiber Reinf	F0	S0	W0	C0	2% max
J	Retaining Walls	5000	3/4"	0.45	-	F2	S0	W0	C1	2% max
K	All Others	Consult with EOR on case-by-case basis								

Notes:
1. Concrete mixes A-K shall meet the requirements of ACI 318-14 Chapter 19 and Table 19.3.2.1 REQUIREMENTS FOR CONCRETE BY EXPOSURE CLASS
2. Air Entrainment shall be 2% max except where a higher range is required by it's exposure class

* All admixtures shall be chloride free otherwise approved by the Engineer
** Where the application applies to more than 1 type, the more stringent design parameters shall be used (e.g. Metal Deck topping would be 5000, 3/4", 6%, 0.40, F2, S0, W1, C2)

CONCRETE REINFORCING COVER TABLE

Location	Size	Cover
Cast against and permanently exposed to earth	All	3"
Exposed to earth or weather	#5 or smaller	1 1/2"
	#6 or larger	2"
Interior Wall Faces	#11 or smaller	3/4"
	#14 and #18	1 1/2"
Slab-on-Grade cast against vapor barrier	#11 or smaller	1" (see note 1)
	#14 and #18	1 1/2"
Elevated Slabs	#11 or smaller	1" (see note 1)
	#14 and #18	1 1/2"
Interior Frames - Beams and Columns (to Ties, Spirals, or stirrups)	All	1 1/2"
Exterior Frames - Beams and Columns (to Ties, Spirals, or stirrups)	All	2" (see note 2)

Notes:
1. Can be 3/4 for 1-hour fire - refer to code plan.
2. Can be 1 1/2 for less than 4-hour fire rating, unless exposed to earth or weather - refer to code plan.

CONCRETE REINFORCING SPLICE TABLE

	f'c = 4000 psi			
	Tension Development Length		Tension Lap Splice	
Reinforcing Size	Ld (inches)	Top Bars, Ldt (inches)	Ls (inches)	Top Bars, Lst (inches)
#3	15	20	20	26
#4	19	25	25	33
#5	24	32	32	42
#6	29	38	38	50
#7	42	55	55	72
#8	48	63	63	82
#9	54	71	71	93
#10	60	78	78	102
#11	66	86	86	112

1. Lengths shown are for reinforcing satisfying the following spacing and cover dimensions (multiply lengths shown by 1.5 if these requirements are satisfied):
   a. walls and slabs - clear cover > db & clear spacing > 2db
   b. beams and columns - clear cover > db & clear spacing > db
2. Top bars are horizontal beam reinforcing with more than 12" of concrete below.
3. Tension lap splice lengths shown are for Class B splices (1.3xLd).
4. Multiply lengths by 1.3 for lightweight concrete.
5. For splices of different bar sizes: use max of Ld of larger bar or Ls of smaller bar.

BUILDING PERMIT SET

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

Revisions

#	Date	Description

STRUCTURAL GENERAL NOTES

PRCNC20221036

S001

WELDS

Reference Codes
- AWS D1.1/D1.1M-15, Structural Welding Code - Steel
- AWS D1.3-08, Structural Welding Code - Sheet Steel
- AWS D1.4/D1.4M-18, Structural Welding Code - Steel Reinforcing Bars
- AWS D1.8-/D1.8M-16, Structural Welding Code - Seismic Supplement
- AISC 341-16, Seismic Provisions for Structural Steel Buildings

Strength

Electrodes: Minimum yield strength = 70 ksi for all weld processes

1. Where welds are designated as demand critical, they shall be made with a filler metal capable of providing a minimum Charpy V-notch toughness of 20 ft-lb at -20 degrees F as determined by the appropriate AWS classification test method or manufacturer certification, and a minimum Charpy V-notch toughness of 40 ft-lb at 70 degrees F per AWS D1.8.
2. All other weld used in members and connections in the Lateral Force Resisting System shall be made with a filler metal that can produce welds that have a minimum Charpy V-notch toughness of 20 ft-lb at 0 degrees F, as determined by the appropriate AWS A5 classification test method or manufacturer certification.

Execution
1. Welding shall be performed in accordance with a welding procedure specification (WPS) as required in AWS D1.1. The WPS variables shall be within the parameters established by the filler metal manufacturer.
2. Field welding symbols have not necessarily been indicated on the drawings. Where no field welding symbols are shown, it is the Contractor's responsibility to coordinate the use of shop and field welds.

Submittals
1. All welders shall be AWS or WABO certified. Provide certification that each welder is prequalified per AWS D1.1 for each position and weld type that the welder will perform.
2. Provide written Welding Procedure Specifications adhering to AWS D1.1 for all welds to be performed. Welding Procedure Specifications must be approved by the Owner's testing agency prior to fabrication or erection.
3. Wherever a weld is included in the Lateral Force Resisting System, provide a Welding Procedure Specification which includes all essential variables of AWS D1.1 as well as the following:
   a. Type of power source (constant current or constant voltage)
   b. Manufacturer and trade name of electrodes used in Demand Critical welds
   c. Manufacturer's certification of notch toughness requirements for electrodes used in Demand Critical welds.

BOLTS/RODS

Reference Codes
- AISC, Specification for Structural Joints Using ASTM A325 or A490 Bolts.

Strength

Erection Bolts in Steel	ASTM A307, Snug Tight
All other Bolts in Steel	ASTM F1852, Twist-off Tension Control Bolts
All Bolts in Wood	ASTM A307
Anchor Rods	ASTM F1554, Grade 55
Threaded Rods	ASTM A36
Hardener Steel Washers	ASTM F436
Nuts	ASTM A563, Heavy Hex Nuts

Execution
1. Place hardened steel washers between nuts and slotted or oversized holes.
2. All high-strength bolts shall be installed, tightened, and inspected in accordance with the AISC Specification for Structural Joints using ASTM A325 Bolts. The criteria for slip critical connections shall apply to all connections, unless noted as snug tight.
3. Use galvanized bolts, rods, nuts and washers wherever used in exterior applications and wherever connecting galvanized steel elements.

Submittals
1. Include anchor rod setting templates with all base plate shop drawings.

SHEAR CONNECTOR STUDS

Reference Codes
- AWS D1.1/D1.1M-15, Structural Welding Code - Steel
- AISC 360-16, Specifications for Structural Steel Buildings

Execution
1. Shear connectors shall be installed per manufacturer's recommendation, using the manufacturer's specified equipment.
2. Provide shear studs at a maximum spacing of 12" on center at all beams supporting a steel deck with concrete fill or a cast-in-place concrete slab, even if no stud quantity is shown in plan for that beam.

Submittals
1. Provide manufacturer's certification of conformity with AWS D1.1.

FASTENERS

Execution
1. At repetitive fasteners, place end fasteners no more than 6" from the end of the member.
2. Locate fasteners according to the drawings and with the following minimum edge distance and spacing, unless noted otherwise:

Fastener	Typical size, UNO	Substrate	Min Edge Dist.	Min Spacing
Powder Driven	0.157Ø x 1 long	Concrete	3"	4"oc
Powder Driven	0.157Ø x 1/2 long	Steel	1 1/2"	1 1/2"oc
Self-Tapping Screw	1/4Ø x 1 3/4 long	Concrete	2 1/2"	3"oc
Self-Tapping Screw	1/4Ø x 1 3/4 long	Steel	1 1/2"	1 1/2"oc

DEFORMED BAR ANCHORS

Reference Codes
- AWS D1.1/D1.1M-15, Structural Welding Code - Steel
- AISC 360-16, Specifications for Structural Steel Buildings

Strength
ASTM A496 and requirements from Type C studs in accordance with AWS D1.1

Execution
1. Deformed Bar Anchors shall be installed per manufacturer's recommendation, using the manufacturer's specified equipment

Submittals
1. Provide manufacturer's certification of conformity with AWS D1.1.

WOOD STRUCTURAL PANELS

Reference Codes
- International Building Code (IBC), 2018 edition, as adopted and amended by the project jurisdiction, Chapter 23

Strength
Plywood sheathing shall be grade Structural I.
Exterior glue shall be in conformance with the building code, United States Voluntary Product Standards PS-1 or PS-2.

Execution
1. Stagger panel end joints.
2. Provide approved edge clips at 24 inches on center at unblocked roof and floor sheathing edges.
3. Provide 1/8 inches gap between all abutting panel edges.
4. Provide the following minimum nailing unless noted otherwise on plans:
   a. 8d at 6 inches on center at all supported panel edges.
   b. 8d at 12 inches on center field nailing.

CONSTRUCTION ADMIN

Deferred Submittals

The following items are defined as Deferred Submittal Structural Components:
- Concrete mix
- Interior metal stud systems: walls, soffits, and ceilings
- Metal deck
- Fall restraint system
- Temporary shoring/bracing
- MEP anchorage and bracing
- Buckling restrained braces and their gusset plate connections
- Precast concrete elements
- Roof curbs for MEP equipment
- Vibration isolation system for MEP equipment
- Seismic bracing for architectural ceilings
- Stairs where indicated on plan

1. Deferred Submittal components are intended to be vendor designed and have not been designed by the Architect/Engineer. Refer to the drawings, the specifications, and the material sections of these general notes for design and submittal requirements.
2. Deferred Submittal components have not been permitted under the base building application. The contractor shall submit the approved submittals for the Deferred Submittal components to the building official. Deferred Submittal components shall not be installed until the building official has permitted the Deferred Submittal.
3. When the manufacturer is registered and approved to perform work without special inspection, the Contractor is to submit to the Building Official certificates of compliance from the manufacturers at the completion of manufacture stating that the work was performed in accordance with the approved construction documents.

Structural Observations
1. Structural Observation by the Structural Engineer is for the purpose of confirming general conformance of the construction with the design intent of the structure.
2. Structural observations will occur as required to confirm general conformance of the construction with the design intent of the structure.
3. Structural Observation is not intended to review the Contractor's construction procedures or the Contractor's conformance with the contract.
4. Structural Observation is not intended to replace the required Special Inspection program.

Special Inspection

Special inspections shall be performed by an agency which:
1. Is employed by the owner;
2. Is qualified to perform special inspection activities in accordance with IBC Section 1704.2;
3. Has been approved by the building official to perform special inspections.

The special inspector shall provide written documentation of qualifications per IBC section 1704.2.1.

The special inspector shall furnish inspection reports and a final report in accordance with IBC Section 1704.2.4.

The construction or work for which special inspection is required shall remain accessible and exposed of special inspection purposes until completion of the required special inspections.

Each contractor responsible for the construction of a main wind- or seismic force-resisting system, designated seismic system or a wind- or seismic-resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the building official and the owner prior to the commencement of work on the system or component. The contractor's statement of responsibility shall contain acknowledgement of awareness of the special requirements contained in the statement of special inspection.

Fabricators

The special inspector shall verify fabrication and implementation procedures of the following items per IBC Section 1704.2.5 unless the fabricator is registered and approved by the building official to perform such work without special inspection. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.
1. Structural Steel - to include the requirements of AISC 360 Chapter N.
2. Ready Mix Concrete
3. Light-gage Steel Studs
4. Light-gage Metal Deck

SUBMITTALS TO SPECIAL INSPECTOR CERTIFICATE

Welding	Structural Steel	AWS D1.1 Prequalification
	Light Gage Steel	AWS D1.3 Prequalification
	Reinforcing	AWS D1.4 Prequalification
	Welding	WABO Certified (all welders)
Bolting	High Strength Bolts	Manufacturer's Letter of Certification
CMU Walls	Block Units	Manufacturer's Letter of Certification
	Grout	Manufacturer's Letter of Certification
	Mortar	Manufacturer's Letter of Certification
Adhesive Anchor	Epoxy Adhesive	Manufacturer's Letter of Certification
Concrete	All Concrete Material ratio in truck	All trip tickets, including water/cement
Slab-on-Grade	Concrete	In place water/cement ratio test results
Metal Deck Topping	Concrete	In place water/cement ratio test results

Inspector to review submittals before installation begins. Inspector must inspect job from approved & stamped design & shop drawings, including all clarifications, both written & in drawing form.

STATEMENT OF SPECIAL INSPECTIONS

Seismic Requirements (IBC 1704.3.2)

Special Inspections for Seismic Resistance (IBC 1705.12)

Seismic Structural Steel and Steel Elements (IBC 1705.12.1, 1705.12.1.2 and AISC 341 Chapter J):

Special inspection for structural steel seismic force-resisting systems (moment frames, braced frames, steel plate shear walls, etc) and structural steel elements (struts, collectors, chords, foundation elements, etc) shall be in accordance with the quality assurance (QA) requirements of AISC 341 and as noted below;
1. The special inspector shall provide written documentation of practices and personnel as required by AISC 341 sections J3 and J4.
2. Inspection of welding shall be in accordance with AISC 341 Section J6 and Tables J6-1, J6-2, and J6-3, inspection tasks prior, during, and after welding.
3. Inspection of high-strength bolting shall be in accordance with AISC 341 Section J7 and Tables J7-1, J7-2, and J7-3, inspection tasks prior, during, and after bolting.
4. Inspection of protected zones and reduced beam section moment frames shall be in accordance with AISC 341 section J8 and table J8-1
5. Inspection of composite structures shall be in accordance with AISC 341 section J9 and table J9-1, J9-2, and J9-3, inspection tasks prior, during and after concrete placement.

Structural Wood Construction (IBC 1705.12.2):
Structural Wood seismic force-resisting systems (shear walls, diaphragms, collectors, drag struts, hold downs, etc) shall be inspected in accordance with IBC Section 1705.12.2.

Structural Cold-Formed Steel Light Frame Construction (IBC 1705.12.3):
Cold-formed steel light frame seismic force-resisting systems (shear walls, braces, diaphragms, collectors, drag struts, hold downs, etc) shall be inspected in accordance with IBC Section 1705.12.3.

Designated Seismic Systems (IBC 1705.12.4):
The special inspector shall examine architectural, mechanical, and electrical components, supports, and attachments indicated in Table 13.2-1 of ASCE 7 and verify that the label, anchorage or mounting conforms to the certificate of compliance required by Sections 13.2.1 and 13.2.2 of ASCE 7.

Architectural Components (IBC 1705.12.5):
Periodic special inspection is required during erection and fastening of exterior cladding, interior and exterior veneer, and interior and exterior non-bearing walls over 30 feet in height above grade or walking surface, and for anchorage of access floors. Inspection and limitations to be per IBC Section 1705.12.5.

Mechanical, Electrical and Plumbing Components (IBC 1705.12.6):
Periodic special inspection is required during the installation and anchorage of the following items:
1. Electrical equipment for emergency or standby power systems.
2. Piping systems designed to carry hazardous materials and their associated mechanical units.
3. Ductwork designed to carry hazardous materials.
4. Vibration isolation systems where a nominal clearance of 1/4 inch (6.4 mm) or less is required between the equipment support frame and restraint.
5. Minimum clearances of Mechanical and electrical equipment, including duct work, piping systems and their structural supports per IBC section 1705.12.6.6 and ASCE 7 Section 13.2.3

Storage Racks (1705.12.7):
Periodic special inspection is required during the anchorage of storage racks 8 feet (2438 mm) or greater in height per IBC Section 1705.12.7.

Seismic Isolation Systems (IBC 1705.12.8)
Periodic special inspection is required during the fabrication and installation of seismic isolation systems in accordance with IBC Section 1705.12.8.

Cold-Formed Steel Special Bolted Moment Frames (IBC 1705.12.9)
Periodic special inspection is required during the installation of cold-formed special bolted moment frames in accordance with IBC Section 1705.12.9.

Testing and Qualification for Seismic Resistance (IBC 1705.13)

Seismic Structural Steel and Steel Elements (IBC 1705.13.1 and AISC 341):
Nondestructive testing for welded joints within the structural steel seismic force-resisting system shall be in accordance with section J6.2 of AISC 341. This includes testing of k-area welds, CJP Groove welds, where base material is greater than 1.5" thick, welded splices, thermally cut surfaces or beam copes and access holes, reduced beam section repairs, and weld tab removals.

Concrete Reinforcement (IBC 1705.12 Item 1 and 1705.12.1):
Certified mill test reports indicating compliance with Section 20.2.2 of ACI 318 shall be provided for each shipment of reinforcement used in those elements designated in the drawings as shear walls, moment frames, and coupling beams.

Seismic Certification of Designated Seismic Systems (IBC 1705.13.3)
Manufacturer's certification of seismic qualification in accordance with Section 13.2.2 of ASCE 7 shall be provided for active mechanical and electrical equipment that must remain operable following the design earthquake ground motion and for components with hazardous substances.

Seismic Certification of Architectural, Mechanical and Electrical Components (IBC 1705.13.2):
Manufacturer's certification of seismic qualification by analysis, testing or experience data in accordance with ASCE 7 Section 13.2 as well as the applicable sections indicated in ASCE 7 Table 13.2-1 shall be provided for architectural, mechanical and electrical components, supports and attachments per IBC Section 1705.13.2.

Wind Requirements (IBC 1705.11)
Special inspections for wind resistance are not required.

STATEMENT OF SPECIAL INSPECTIONS (cont.)

Steel Construction (IBC 1705.2 and AISC 360 Chapter N)
Special inspection for structural steel shall be in accordance with the quality assurance (QA) requirements of AISC 360.

Inspection of welding shall be in accordance with;
1. AISC 360 sections N4.2 and N5.4
2. AISC 360 Table N5.4-1 - Inspection Tasks Prior to Welding
3. AISC 360 Table N5.4-2 - Inspection Tasks During Welding
4. AISC 360 Table N5.4-3 - Inspection Tasks After Welding
5. Nondestructive testing of welded joints shall be in accordance with AISC 360 sections N4.3 and N5.5

Inspection of high-strength bolting shall be in accordance with;
1. AISC 360 sections N5.6
2. AISC 360 Table N5.6-1 - Inspection Tasks Prior to Bolting
3. AISC 360 Table N5.6-2 - Inspection Tasks During Bolting
4. AISC 360 Table N5.6-3 - Inspection Tasks After Bolting

Other Inspection tasks, including inspection of anchor rods and embedments supporting structural steel shall be in accordance with AISC 360 N5.8.

Inspection of composite construction, including steel deck, headed stud anchors shall be in accordance with;
1. AISC 341 Section J9
2. AISC 341 Tables J9.1 - J9.3 - Inspection of Steel Elements of Composite Construction Prior to Concrete Placement

Quality assurance inspections, testing and report submittal shall be in accordance with AISC 360 sections N5.2 and N7.

Cold-Formed Steel Deck (IBC 1705.2.2)
Special inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck shall be in accordance with the quality assurance inspection requirements of SDI QA/QC and in accordance with IBC Section 1705.2.2.

Open-Web Steel Joists and Joist Girders (IBC 1705.2.3)
Special inspections for open-web steel joists and joist girders shall be in accordance with;
1. IBC Section 1705.2.3
2. IBC Table 1705.2.3 - Required Special Inspection of Open-Web Steel Joists and Joist Girders

Cold-Formed Steel Trusses Spanning 60 feet or Greater (IBC 1705.2.4)
Special inspections for cold-formed steel trusses with a span greater than 60 feet shall be in accordance with IBC Section 1705.2.4.

Concrete Construction (IBC 1705.3)
Special inspection for concrete construction shall be in accordance with IBC Table 1705.3 - Required Verification and Inspection of Concrete Construction.

Masonry Construction (IBC 1705.4)
Special inspections and tests for masonry construction shall be in accordance with the quality assurance requirements of TMS 402-16 section 1.3 and TMS 602-16 section 1.6.

(use for risk categories I, II, or III)
1. Inspection and testing of CMU shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 2 Quality Assurance)
2. Inspection of Masonry Veneer shall verify compliance with the approved submittals. (Level 1 Quality Assurance)

(use for risk category IV)
1. Inspection and testing of CMU shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 3 Quality Assurance)
2. Inspection and testing of Masonry Veneer shall be in accordance with TMS 602-16 Table 3 and Table 4 (Level 2 Quality Assurance)

Wood Construction (IBC 1705.5)
Special inspections for wood construction shall be in accordance with IBC 1705.5
Per IBC Section 1705.5.1 diaphragm special inspection shall include inspection of;
1. Wood structural panel sheathing grade and thickness
2. Nominal size of framing members at adjoining structural panel sheathing
3. Fastener (nail or staple) diameter and length, the number of fastener lines, and the spacing between fasteners in each line and at edge margins

Metal-plate-connected wood trusses;
Special inspections of wood trusses with overall heights of 60 inches (1524 mm) or greater shall be performed to verify that the installation of the permanent individual truss member restraint/bracing has been installed in accordance with the approved truss submittal package per IBC Section 1705.5.2. For wood trusses with a clear span of 60 feet (18 288 mm) or greater, the special inspector shall verify during construction that the temporary installation restraint/bracing is installed in accordance with the approved truss submittal package per IBC Section 1705.5.2.

Soils (IBC 1705.6)
Special inspection for existing site soil conditions, fill placement and load-bearing requirements shall be in accordance with;
1. IBC 1705.6
2. IBC Table 1705.6 - Required verification and Inspection of Soils

Driven Deep Foundations (IBC 1705.7)
Special inspections and tests during installation of driven deep foundation elements shall be in accordance with IBC Section1705.7.

Cast-in-Place Deep Foundations (IBC 1705.8)
Special inspections and tests during installation of cast-in-place deep foundation elements shall be in accordance with IBC Section1705.8.

Helical pile Foundations (IBC 1705.9)
Continuous special inspections during installation of helical pile foundation elements shall be in accordance with IBC Section 1705.9.

Fabricated Items (IBC 1705.10)
Special inspections of fabricated items shall be in accordance with IBC Section 1705.10.

Sprayed Fire-Resistant Materials (IBC 1705.14)
Special inspection for sprayed fire-resistant materials shall be in accordance with IBC Sections 1705.14.1 though 1705.14.6

Mastic and Intumescent Fire-Resisting Coatings (IBC 1705.15)
Special inspection for mastic and intumescent fire-resistant materials shall be in accordance with IBC Sections 1705.15 and AWCI 12-B

Exterior Insulation and Finish Systems (IBC 1705.16)
Special inspection for exterior insulation and finish systems shall be in accordance with IBC Sections 1705.16

Fire-Resistant Penetrations and Joints (IBC 1705.17)
Special inspection for fire-resistant penetrations and joints shall be in accordance with IBC Sections 1705.17, 1705.17.1, and 1705.17.2

Smoke Control (IBC 1705.18)
Special inspection for smoke control systems shall be in accordance with IBC Sections 1705.18

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STRUCTURAL GENERAL NOTES

PRCNC20221036

S002

BUILDING PERMIT SET

ABBREVIATIONS

***MISC**	
"	INCH, INCHES
#	NUMBER or POUND
%	PERCENT
&	AND
'	FOOT, FEET
=	EQUAL
@	AT
CL	CENTERLINE
FL	FLAT PLATE
L	ANGLE
PL	PLATE
SQ/FT	SQUARE FOOT
°	DEGREE
±	PLUS OR MINUS
Ø	DIAMETER
≤	LESS THAN OR EQUAL TO
≥	MORE THAN OR EQUAL TO
A	
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDENDUM
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT
AEC	ARCHITECTURAL, STRUCTURAL and ENGINEERING
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AISC	AMERICAN INSTITUTE of STEEL CONSTRUCTION
ALT	ALTERNATE
ANCH	ANCHOR, ANCHORAGE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECT, ARCHITECTURAL
ASCE	AMERICAN SOCIETY of CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATR	ALL THREADED REBAR
AWS	AMERICAN WELDING INSTITUTE
B	
BAL	BALANCE
BCX	BOTTOM CHORD EXTENSION
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOD	BOTTOM OF DECK
BOF	BOTTOM OF FOOTING, FOUNDATION
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BP	BASE PLATE or BUTTON PUNCH
BRB	BUCKLING RESTRAINT BRACE
BRG	BEARING
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
C	
(c)	COLLECTOR
C	CAMBER or CHANNEL
C-C	CENTER TO CENTER
C-GROUT	COURSE GROUT
CANT	CANTILEVER
CF	CUBIC FOOT
CFP	POLYFIBER REINFORCING (SEE SPECS)
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR, CLEARANCE
CLT	CROSS LAMINATED TIMBER
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPOSITE or COMPRESSION
CONC	CONCRETE
CONFIG	CONFIGURATION
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CTR	CENTER, CENTERED
CU	CUBIC
CW	CURTAIN WALL
CY	CUBIC YARD
D	
d	PENNY (NAIL)
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DC	DEMAND CRITICAL
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIM	DIMENSION
DISC	DISCONTINUE, DISCONTINUOUS
DL	DEAD LOAD
DN	DOWN
do.	DITTO
DP, D	DEEP, DEPTH
DTL	DETAIL
DWG, DWGS	DRAWING, DRAWINGS
DWL, DWLS	DOWEL, DOWELS
E	
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELECT	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQP, EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EXIST, (E)	EXISTING
EXP	EXPANSION

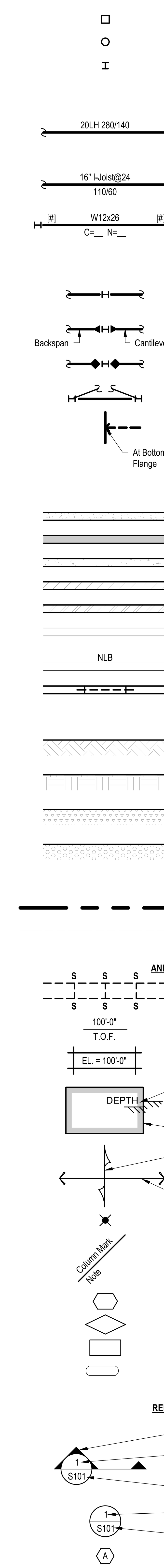
ABBREVIATIONS

EXT	EXTERIOR
F	
F-GROUT	FINE GROUT
FAB	FABRICATE
FB	FLAT BAR
FCJ	FLOOR CONTROL JOINT
FDN, FDTN	FOUNDATION
FFE	FINISH FLOOR ELEVATION
FIL	FILLET
FIN	FINISH
FLG	FLANGE
FLI	FERRULE LOOP INSERT
FLR	FLOOR
FOB	FACE OF BRICK
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOV	FACE OF VENEER
FOW	FACE OF WALL
FRC	FLANGE BAR COUPLER
FRMG	FRAMING
FS	FAR SIDE
FT	FOOT, FEET
FTG	FOOTING
G	
GA	GAUGE, GAGE
GALV	GALVANZIED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
GLB	GLUE LAMINATED BEAM
GP	GUSSET PLATE
GR	GRADE, GRADING
GWB	GYPSUM WALL BOARD
H	
HAS	HEADED ANCHOR STUD
HCP	HOLLOW CORE PLANK
HCS	HOLLOW CORE SLAB
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HORIZ, H	HORIZONTAL
HP	HIGH POINT or BEARING PILE
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HVAC	HEATING/ VENTILATION/ AIR CONDITIONING
I	
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE of BUILDING OFFICIALS
ICC-ES	ICC EVALUATION SERVICE
ICMU	INSULATED CONCRETE MASONRY UNIT
ID	INSIDE DIAMETER
IF	INSIDE FACE
IJ	ISOLATION JOINT
IN	INCH, INCHES
INCL	INCLUDED, INCLUDING
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
J	
JST	JOIST
JT, JTS	JOINT, JOINTS
K	
k, KIP	KILOPOUND
KSF	KIPS PER SQUARE FOOT
ksi	KIPS PER SQUARE INCH
L	
L	ANGLE or LENGTH
LAT	LATERAL
LB	LAG BOLT OR POUND
LE	LEFT END
LF	LINEAR FOOT
LFRS	LATERAL FORCE RESISTING SYSTEM
LGT, LONG	LONGITUDINAL
LIB	LOAD INDICATOR BOLT
LIN	LINEAR
LIW	LOAD INDICATOR WASHER
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNDG	LANDING
LNTL	LINTEL
LOC	LOCATION
LP	LOW POINT
LSH	LONG SLOTTED HOLE
LSL	LAMINATED STUD LUMBER
LVL	LAMINATED VENEER LUMBER
M	
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT (A-307)
MC	MISCELLANEOUS CHANNEL
MCR	MODIFIED CHLOROPRENE RUBBER
MECH	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLB	MICROLAM BEAM
MO	MASONRY OPENING
MPT	MAGNETIC-PARTICLE TEST
MT	STRUCTURAL TEE CUT FROM 'M' SECTION
MTL	METAL
N	
N-GROUT	NON-SHRINK GROUT
NIC	NOT IN CONTRACT
NLB	NON-LOAD BEARING
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OH	OVERSIZED HOLE
OPNG	OPENING
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
OPT	OPTIONAL
OSB	ORIENTED STRAND BOARD

ABBREVIATIONS

OWJ	OPEN WEB JOIST
P	
PAF	POWER ACTUATED FASTENER
PC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PDF	POWER DRIVEN FASTENERS
PEN	PENETRATION
PERIM	PERIMETER
PERP	PERPENDICULAR
PHW	PARTIAL HEIGHT WALL
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PP	PARTIAL PENETRATION
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PRSTR	PRESTRESSED
PSC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POINT
PTC	POST-TENSION CONCRETE
PTFE	POLYTETRAFLUOROETHYLENE
PVC	POLYVINYL CHLORIDE
Q	
QTY	QUANTITY
R	
R	RADIUS
RC	REINFORCED CONCRETE
RE	REFER TO
REF	REFERENCE
REINF	REINFORCE(D), (ING), (MENT)
REQD	REQUIRED
RETG	RETAINING
REV	REVISION, REVISED
RFRE	RANDOM FIBER REINFORCED ELASTOMERIC
RJ	RUSTICATION JOINT
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
S	
S	AMERICAN STANDARD SHAPE
SC	SLIP CRITICAL
SCH, SCHED	SCHEDULE
SEC	SECURITY
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILIAR
SOG	SLAB ON GRADE
SPA	SPACING
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SSH	SHORT SLOTTED HOLE
SSPC	SOCIETY for PROTECTIVE COATINGS
ST	STRUCTURAL TEE CUT FROM 'S' SECTION
STD	STANDARD
STGD	STAGGERED
STIFF	STIFFENER
STL	STEEL
STR	STAIR
STRUCT	STRUCTURAL
SW	SHEAR WALL
SYM	SYMMETRICAL
T	
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TCX	TOP CHORD EXTENSION
TEMP	TEMPERATURE, TEMPERED, TEMPORARY
TENS	TENSION
THK	THICK, THICKNESS
THRD	THREAD, THREADED
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOCW	TOP OF CONCRETE WALL
TOF	TOP OF FOOTING
TOP	TOP OF PARAPET
TOS	TOP OF STEEL
TOSLAB	TOP OF SLAB
TOW	TOP OF WALL
TPG	TOPPING
TRA	THREADED ROD IN ADHESIVE ANCHOR
TRANS	TRANSVERSE
TSF	THICKENED SLAB FOOTING
TYP	TYPICAL
U	
UBC	UNIFORM BUILDING CODE
UFRC	UPSET END FLANGE REBAR COUPLER
UNO	UNLESS NOTED OTHERWISE
UT	ULTRASONIC TEST
V	
VERT, V	VERTICAL
VIF	VERIFY IN FIELD
VMS	VERTICAL MOVEMENT SYSTEM
VNR	VENEER
W	
W	WIDTH or WIDE FLANGE
W/	WITH
W/O	WITHOUT
WABO	WASHINGTON ASSOCIATION of BUILDING OFFICIALS
WCJ	WALL CONTROL JOINT
WD	WOOD
WF	WIDE FLANGE
WP	WORKING POINT
WPS	WELDING PROCEDURES SPECIFICATIONS
WS	WELD STUD
WT	WEIGHT or STRUCTURAL TEE CUT FROM 'W' SECTION
WWF	WELDED WIRE FABRIC
X	
X-STR	EXTRA STRONG
XX-STR	DOUBLE EXTRA STRONG

LEGEND



COLUMNS

HSS Column in Plan

Pipe Column in Plan

Wide Flange Column in Plan

MEMBERS

Open Web Steel Designation
[Depth] [Type] [Total Load]/[Live Load]
(PLF) (PLF)

Wood I-Joist Designation
[Depth] I-Joist @ Spacing
[Total Load (PLF)]/[Live Load (PLF)]

[Beam Reaction] Beam Size [Beam Reaction]

Camber & Number of Weld Studs Designation

CONNECTIONS

Denotes Shear Connection

Denotes Cantilever Moment Connection
(Size of Cantilever Beam matches the size of the Backspan Beam, UNO)

Denotes Thermal Break Connection

Denotes Braced Frame

Bottom Flange Bracing

WALLS

Existing Concrete in Plan or Section

Cast-in-Place Concrete in Plan or Section

Precast Concrete in Plan or Section

CMU in Plan or Section

Structural Stud Wall in Plan

Full Height Wall below

Full Height Non-Load Bearing Wall below

Lintel Beam in Plan

SOILS

Natural Grade/Earth

Structural Fill

Compacted Gravel

Capillary Break

LINEWORK

Matchline

Floor Control Joint (FCJ)

ANNOTATION/SYMBOLS

Stepped Footing in Plan

Top of Footing Elevation

Top of Slab Elevation

Depth of Depression

Slab Depression

Extent of Depression in Plan

Direction of Framing Designation

Extent of Framing Designation

Hold Down

Column Size Designation

CMU Designation

Structural Stud Shear Wall Designation

Column/Wall Footing Designation

Timber Connector Designation

REFERENCE SYMBOLS

Direction of View

Detail/Section Number Designation

Sheet Detailed on Designation

Detail/Section Number Designation

Sheet Detailed on Designation

Reference for Portion of Details

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

Revisions

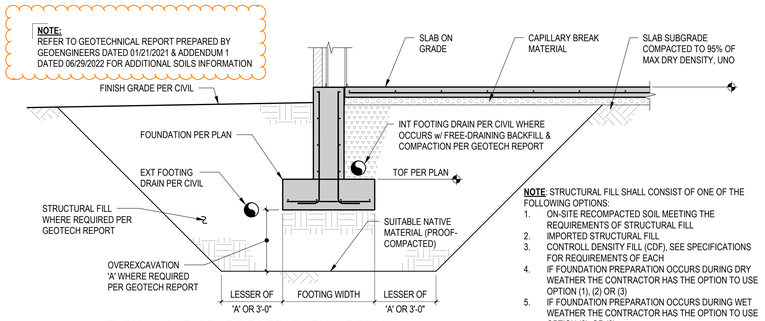
#	Date	Description

STRUCTURAL GENERAL NOTES

PRCNC20221036

S003

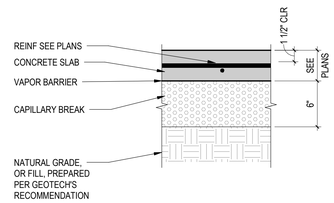
BUILDING PERMIT SET



NOTE: STRUCTURAL FILL SHALL CONSIST OF ONE OF THE FOLLOWING OPTIONS:
1. ON-SITE RECOMPACTED SOIL MEETING THE REQUIREMENTS OF STRUCTURAL FILL
2. IMPORTED STRUCTURAL FILL
3. CONTROLL DENSITY FILL (CDF), SEE SPECIFICATIONS FOR REQUIREMENTS OF EACH
4. IF FOUNDATION PREPARATION OCCURS DURING DRY WEATHER THE CONTRACTOR HAS THE OPTION TO USE OPTION (1), (2) OR (3)
5. IF FOUNDATION PREPARATION OCCURS DURING WET WEATHER THE CONTRACTOR HAS THE OPTION TO USE OPTION (2) OR (3)

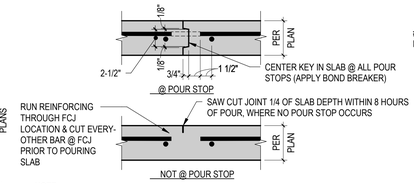
S0FF31

1 TYPICAL SUB-GRADE PREPARATION DETAIL
SCALE: 1/2" = 1'-0"



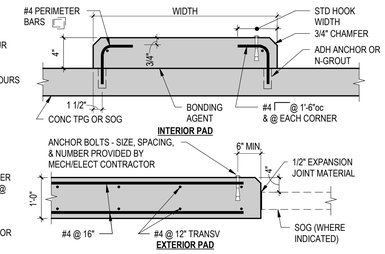
S0SL02

3 TYPICAL SLAB-ON-GRADE SECTION
SCALE: 1 1/2" = 1'-0"



NOTE:
1. REFER TO ARCH FLOOR PLANS FOR JOINT LAYOUT AT EXPOSED FLOORS. AT ALL OTHER LOCATIONS, LAY OUT JOINTS WITH MAX SPACING TO BE 12'-0"oc @ EXPOSED / 16'-0"oc @ COVERED AND LENGTH/WIDTH OF JOINT SPACING NOT TO EXCEED 1.5:1.
2. RIGID FLOOR FINISHES NOT TO CROSS OVER FCJ'S. COORDINATE FCJ'S W/ FLOORING INSTALLER
3. FCJ'S SHOWN IN PLAN ARE SCHEMATIC. CONTRACTOR TO SUBMIT JOINT LOCATIONS FOR ARCH. APPROVAL, WHICH COMPLY WITH CONDITIONS LISTED HERE
4. REFER TO TYPICAL STRUCTURAL DETAILS FOR ADDITIONAL JOINT LOCATION REQUIREMENTS. PLACE MIN 4'-0" AWAY FROM WALLS RETAINING SOIL

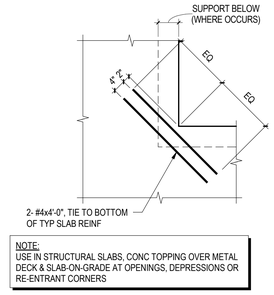
4 FLOOR CONTROL JOINTS (FCJ) INTERIOR SLAB-ON-GRADE
SCALE: 1 1/2" = 1'-0"



NOTE: SIZE OF PAD TO BE PROVIDED BY EQUIP MFR SEE MECH/ELECT DWGS FOR PAD LOCATIONS

S0SL12

5 MECH/ELECT EQUIPMENT PAD
SCALE: 1" = 1'-0"

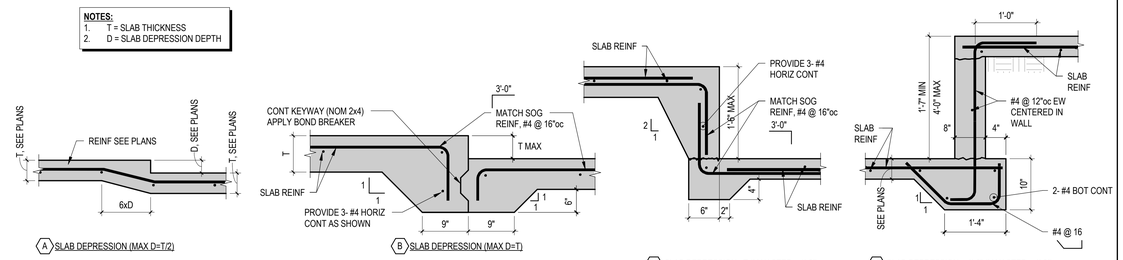


NOTE:
USE IN STRUCTURAL SLABS, CONC TOPPING OVER METAL DECK & SLAB-ON-GRADE AT OPENINGS, DEPRESSIONS OR RE-ENTRANT CORNERS

S0SL18

6 ADDITIONAL SLAB REINF AT REENTRANT CORNERS
SCALE: 3/4" = 1'-0"

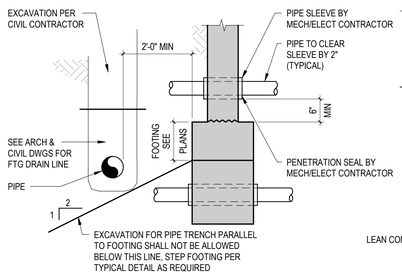
NOTES:
1. T = SLAB THICKNESS
2. D = SLAB DEPRESSION DEPTH



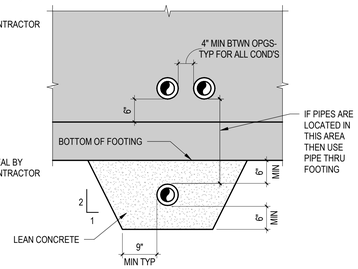
A SLAB DEPRESSION (MAX D=T/2)
B SLAB DEPRESSION (MAX D=T)
C SLAB DEPRESSION >T (MAX STEP = 1'-6")
D SLAB DEPRESSION > 1'-6" (MAX STEP = 4'-0")

S0SL37

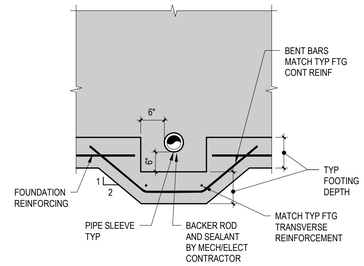
10 SLAB-ON-GRADE ELEVATION CHANGE
SCALE: 1" = 1'-0"



SECTION



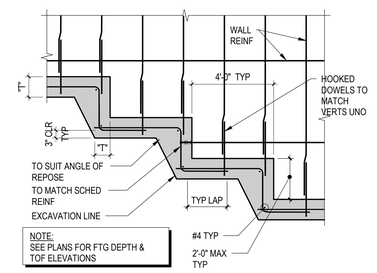
PIPE ABOVE OR BELOW FOOTING



PIPE THRU FOOTING

S0FF18

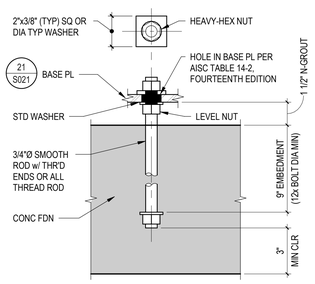
15 TYPICAL PIPE AT CONCRETE WALL FOOTING
SCALE: 3/4" = 1'-0"



NOTE:
SEE PLANS FOR FTG DEPTH & TOF ELEVATIONS

S0FF09

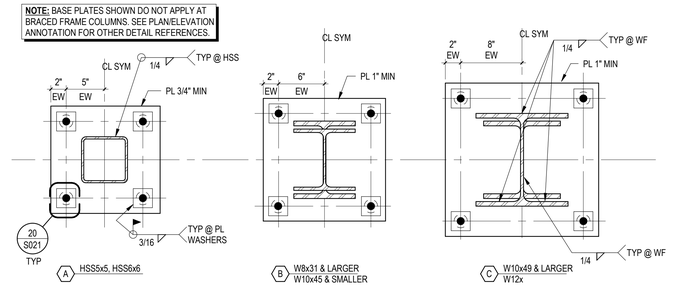
18 STEPPED FOOTING AT CONCRETE OR CMU WALLS
SCALE: 1/2" = 1'-0"



S0SS02

20 ANCHOR ROD ASSEMBLIES
SCALE: 3" = 1'-0"

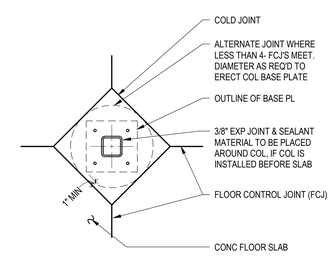
NOTE: BASE PLATES SHOWN DO NOT APPLY AT BRACED FRAME COLUMNS. SEE PLAN/ELEVATION ANNOTATION FOR OTHER DETAIL REFERENCES.



A HSS5x5, HSS6x6
B W8x31 & LARGER W10x45 & SMALLER
C W10x49 & LARGER W12x

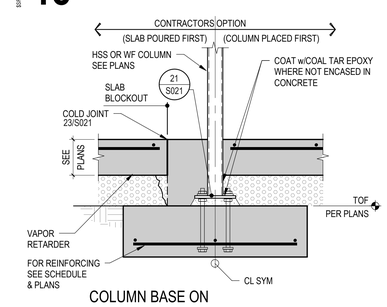
S0SS06

21 BASEPLATE
SCALE: 1 1/2" = 1'-0"



S0SL10

23 FLOOR CONTROL JOINT AT COLUMN
SCALE: 1" = 1'-0"



S0FF08

24 COLUMN BASE ON CONCRETE FOOTING
SCALE: 1" = 1'-0"

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Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM/RB
Checked by:	TD

Revisions

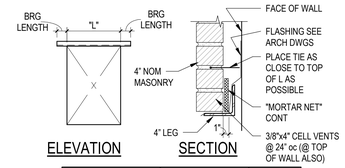
#	Date	Description

TYPICAL FOUNDATION DETAILS

PRCNC20221036

S021

BUILDING PERMIT SET



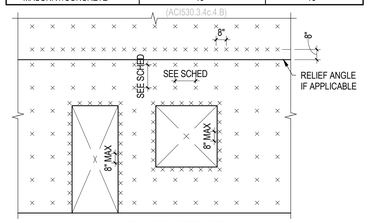
CLEAR SPAN "L"	LINTEL (LLV)	BRG LENGTH
UP TO 6'-0"	L4x4x5/16	0'-8"
6'-0" TO 9'-0"	L6x4x5/16	1'-0"

NOTE:
ALL LINTEL ANGLES ARE TO BE HOT DIP GALVANIZED

5 MASONRY VENEER LINTEL SCHEDULE

SCALE: NTS

VENEER TIE SPACING SCHEDULE		
SUBSTRATE	HORIZONTAL SPACING	VERTICAL SPACING
METAL STUDS @ 16oc	16"	16"
MASONRY/CONCRETE	16"	16"



6 MASONRY VENEER TIES

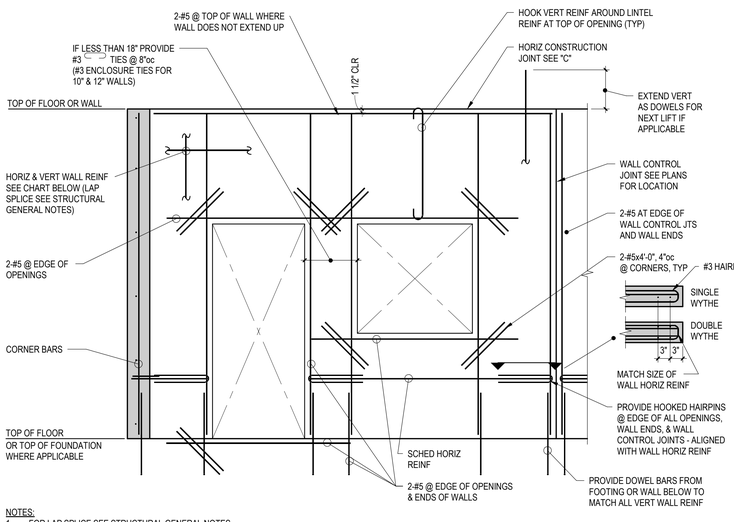
SCALE: 1/4" = 1'-0"

ANCHOR	WELD STUDS	SCREW ANCHOR	EXPANSION BOLTS	ADHESIVE ANCHOR	ANCHOR RODS
TYPE	HEADED	FLUSH	BOLT	INJECTION	HEADED
DIAMETER	LENGTH	EMBED	EMBED	EMBED	EMBED
1/4"	4 1/8"	1"	2"	3"	---
3/8"	4 1/8"	1 1/2"	3 1/2"	4"	---
1/2"	5 5/16"	2"	4"	4 1/2"	6"
5/8"	6 9/16"	5"	4 1/2"	5 1/2"	7 1/2"
3/4"	6 3/16"	6"	5"	6 1/2"	9"
7/8"	7 3/16"	---	5 1/2"	7 1/2"	10 1/2"

NOTES:
1. ALL ANCHORS IN CMU TO BE IN FULLY GROUTED CELLS & ARE NOT ALLOWED IN HEAD JOINTS
2. SCREEN SLEEVES REQUIRED FOR ADHESIVE CONNECTION IN CMU & BRICK
3. EMBEDMENTS INDICATED ARE MINIMUMS. SEE DETAILS FOR LOCATIONS REQUIRING ADDITIONAL EMBEDMENT

12 STANDARD ANCHOR EMBEDMENT

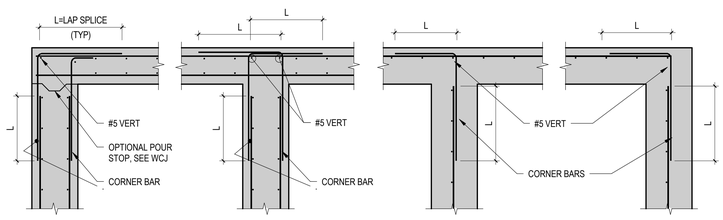
SCALE: 3/4" = 1'-0"



NOTES:
1. FOR LAP SPLICE SEE STRUCTURAL GENERAL NOTES
2. ALL VERTICAL REINFORCING IN CONCRETE WALLS SHALL BE CONTINUOUS FROM STRUCTURAL FLOOR TO STRUCTURAL FLOOR OR FROM TOP OF FOOTING TO FIRST STRUCTURAL FLOOR ABOVE UNLESS NOTED OR SHOWN OTHERWISE IN SECTION
3. UNLESS NOTED OR SHOWN OTHERWISE, ALL WALLS ARE TO BE REINFORCED WITH THE MINIMUM AMOUNTS SHOWN IN THE CHART AT LEFT

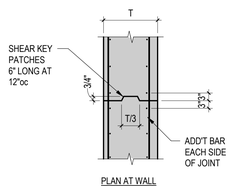
25 CONCRETE WALL REINFORCING SCHEDULE AND PLACEMENT GUIDE

SCALE: 1/2" = 1'-0"



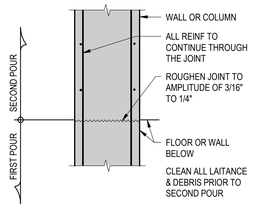
NOTES:
1. FOR LAP SPLICES SEE STRUCTURAL GENERAL NOTES
2. CORNER BARS SAME SIZE AND SPACING AS HORIZ REINF
3. FOR CORNER BARS INTERRUPTED BY OPENINGS, HOOK AROUND OPENING VERTS w/180° HOOK

A CORNER BARS



NOTES:
1. ALL REINF PERPENDICULAR TO JOINT TO CONTINUE THROUGH JOINT
2. LOCATE JOINT NEAR THE 1/3 POINT OF THE SPAN BUT NOT AT A PLANNED BAR. SPLICE, UNO ON DWGS
3. CLEAN JOINT OF LAITANCE, & PAINT w/BONDING AGENT PRIOR TO SECOND POUR

B VERTICAL CONSTRUCTION JOINT (CJ)



MARK	WALL THICKNESS	REINFORCING	
		HORIZ	VERT
C8	8"	#5 @ 10"oc CTR	#5 @ 12"oc CTR
C12	12"	#5 @ 10"oc EF	#5 @ 18"oc EF
C16A	16"	#5 @ 10"oc EF	#5 @ 16"oc EF
C16B	16"	#5 @ 10"oc EF	#6 @ 12"oc IF #6 @ 16"oc OF
C16C	16"	#5 @ 10"oc EF	#6 @ 8"oc IF #6 @ 16"oc OF
C24	24"	#5 @ 10"oc EF	#6 @ 15"oc EF

C HORIZ CONSTRUCTION JOINT (CJ)

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
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THERESA H. DANIEL
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38621
REGISTERED
PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM/BO/RB
Checked by:	TD

Revisions

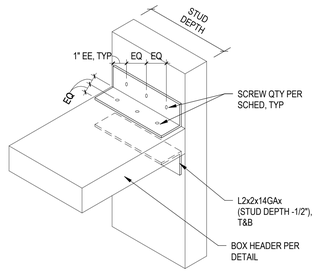
#	Date	Description

TYPICAL CONCRETE AND VENEER DETAILS

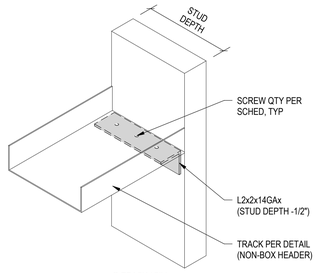
PRCNC20221036

S022

BUILDING PERMIT SET



@ BOX HEADER

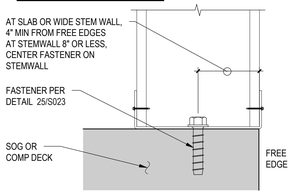


@ TRACK / SILL

1 HEADER/SILL AT BOX BEAM

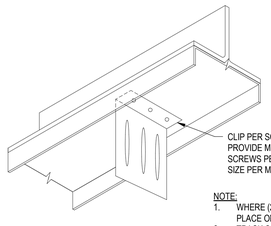
SCALE: 3" = 1'-0"

NOTE:
1. FOR INFO NOT SHOWN SEE REFERENCING DETAIL
2. IF NOT AT FREE EDGE, CTR BOLT ON STUD WALL



3 TRACK ATTACHMENT DETAIL

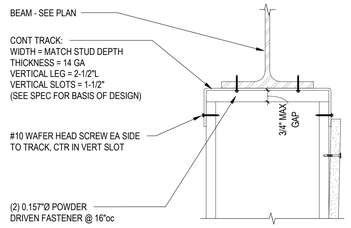
SCALE: 3" = 1'-0"



NOTE:
1. WHERE (2) CLIPS ARE NOTED, PLACE ONE EACH SIDE OF JAMB
2. TRACK CAN RUN CONTINUOUS OVER CLIP

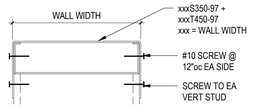
4 JAMB CONN DETAIL

SCALE: 1 1/2" = 1'-0"



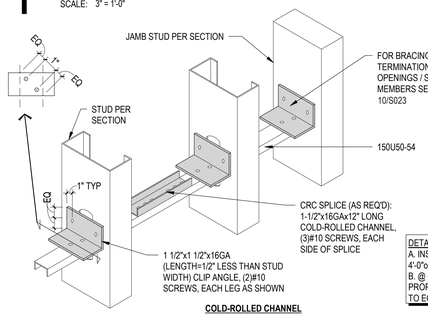
5 DEFLECTION TRACK AT BOS

SCALE: 3" = 1'-0"



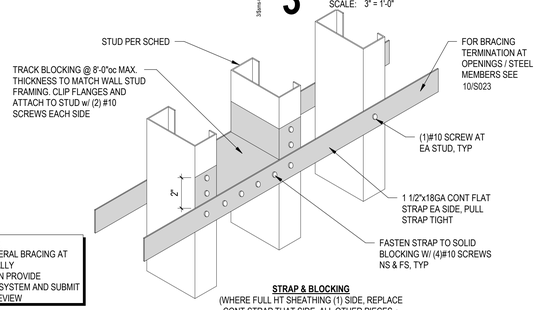
6 SILL DETAIL

SCALE: 1" = 1'-0"



COLD-ROLLED CHANNEL

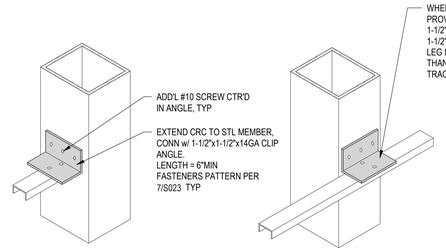
DETAIL NOTES:
A. INSTALL LATERAL BRACING AT 4'-0"oc VERTICALLY
B. @ GC OPTION PROVIDE PROPREITARY SYSTEM AND SUBMIT TO EOR FOR REVIEW



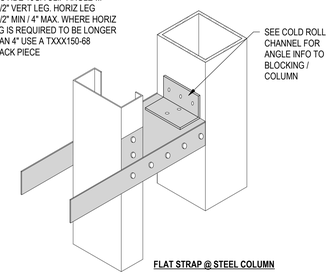
STRAP & BLOCKING
(WHERE FULL HT SHEATHING (1) SIDE, REPLACE CONT STRAP THAT SIDE, ALL OTHER PIECES + FASTENERS REMAIN THE SAME)

7 LATERAL BRACING AT PUNCHED STUDS ALTERNATIVES

SCALE: 3" = 1'-0"

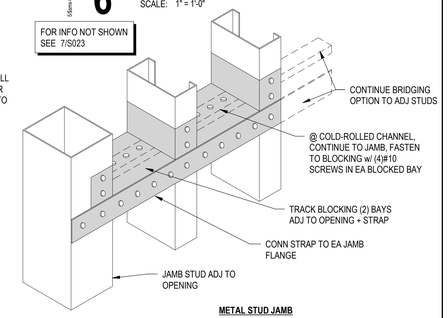


COLD ROLL CHANNEL @ STEEL COLUMN



FLAT STRAP @ STEEL COLUMN

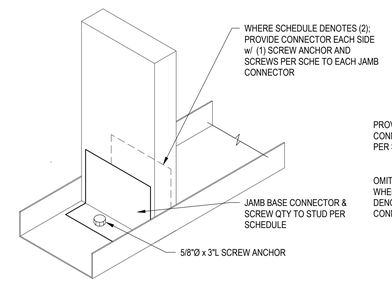
FOR INFO NOT SHOWN SEE 7/S023

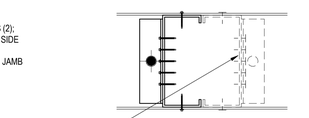


METAL STUD JAMB

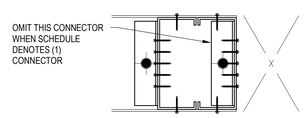
10 LATERAL BRACING AT UNPUNCHED STUDS

SCALE: 3" = 1'-0"





TYPICAL JAMB BASE CONN



BASE CONN ADJ TO OPENINGS

17 JAMB BASE CONNECTION

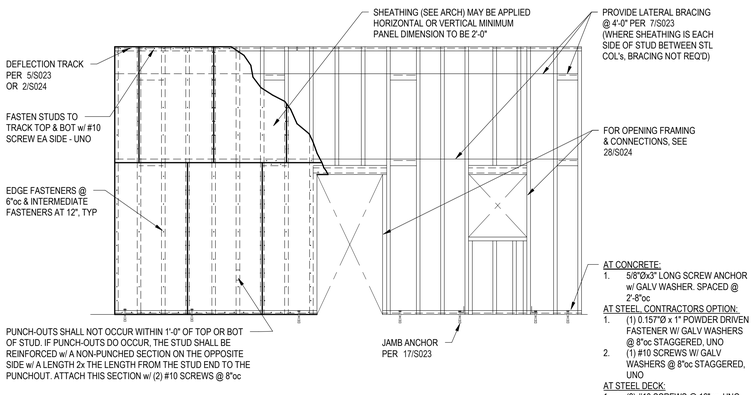
SCALE: 3" = 1'-0"

FRAMING*	
MARK	S8
STUD TYPE	800S162-54
SPACING	16"
FINISH	GALV
TRACK	xxxT125-54

*UNO ON ELEVATIONS

FASTENERS		
TYPE	SIZE	HEAD
DRY WALL	#6	BUGLE
FRAMING	#10	PAN
PLYMETAL	#10	BUGLE

NOTE: SCREWS IN EXT. STUDS SHALL BE ZINC COATED.



25 EXTERIOR STEEL STUD WALL

SCALE: 1/2" = 1'-0"

integrus ARCHITECTURE
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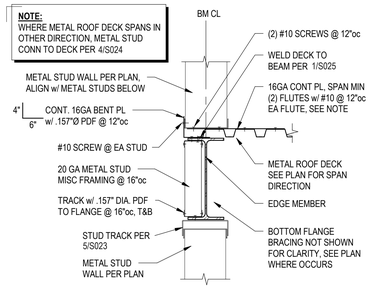
TYPICAL METAL STUD DETAILS

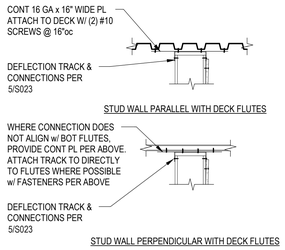
PRCNC20221036

S023

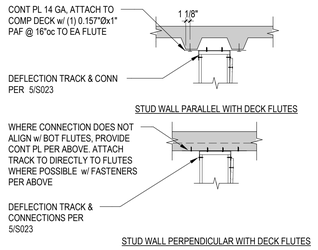
BUILDING PERMIT SET



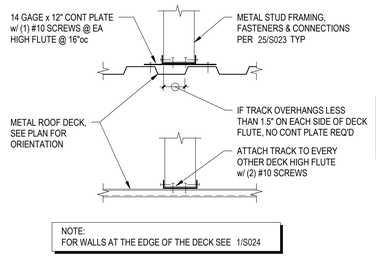
1 EXTERIOR STUD WALL AT ROOF
SCALE: 1" = 1'-0"

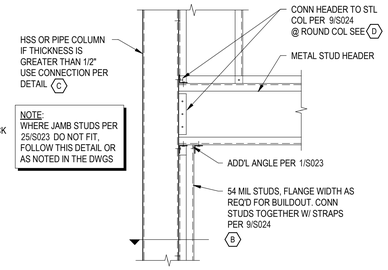


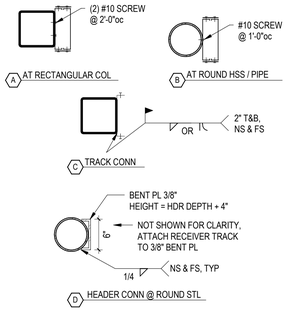
2 DEFLECTION TRACK AT BOD
SCALE: 3/4" = 1'-0"



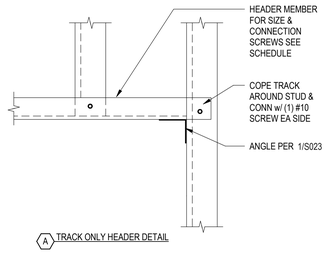
4 METAL STUD BEARING AT DECK
SCALE: 1" = 1'-0"

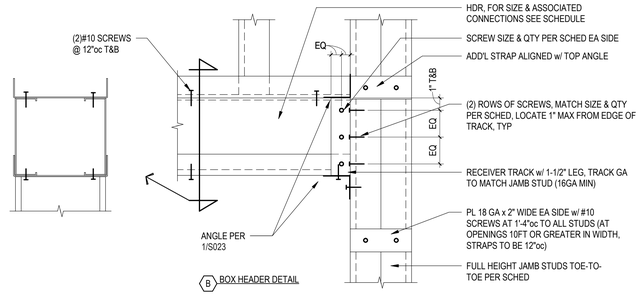




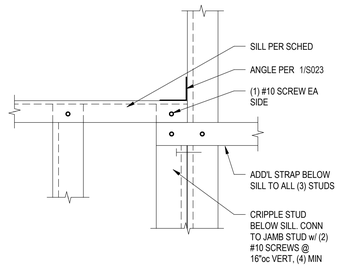


5 TYPICAL MTL STUD HEADER TO COLUMN
SCALE: 1" = 1'-0"

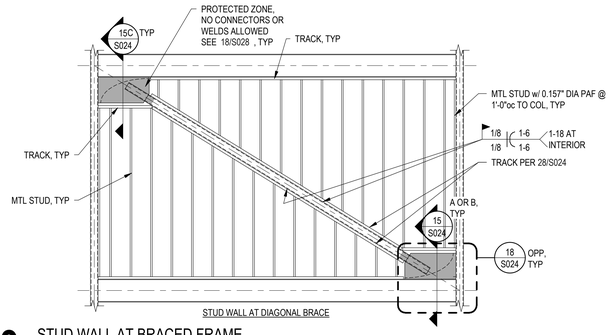




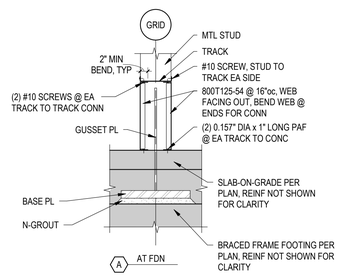
9 EXTERIOR WALL STEEL STUD HEADER DETAIL
SCALE: 3/4" = 1'-0"

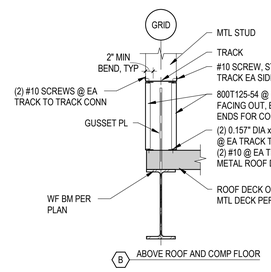


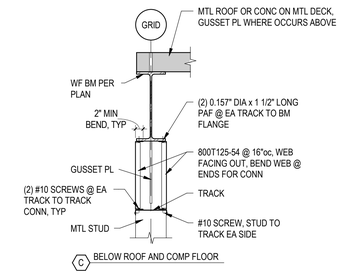
12 SILL CONN DETAIL
SCALE: 3/4" = 1'-0"

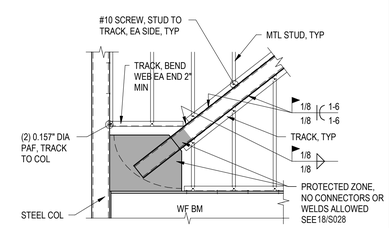


13 STUD WALL AT BRACED FRAME
SCALE: 1/4" = 1'-0"





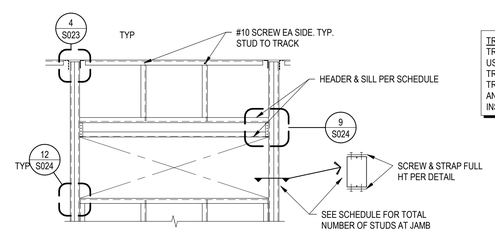




15 STUD WALL AT BRACE GUSSET
SCALE: 3/4" = 1'-0"

18 STUD WALL AT BRACE GUSSET
SCALE: 1/2" = 1'-0"

HDR SPAN	HDR PER	HDR VERTICAL MEMBERS	HDR HORIZ MEMBERS	SILL	JAMB STUDS	SCREWS FOR RECEIVER TRACK 9/S024	SCREWS PER ANGLE LEG 1/S023	JAMB CONN @ HEAD 4/S023	JAMB CONN @ BASE
4'-0" MAX	A	-	800T200-68	800T150-54	(1) 800S300-68	-	(2) #10 EA. LEG	SCAFCO: (1) ESC OR (1) PLS2	(1) SCAFCO FA750-68 w/ (3) #10 SCREWS
6'-0" MAX	B	(2) 600S162-54	(2) 800T150-54	800T150-54	(2) 800S200-54	(3) #10 EA. SIDE	(2) #10 EA. LEG	SCAFCO: (1) ESC OR (1) PLS2	(1) SCAFCO FA750-68 w/ (3) #10 SCREWS
8'-0" MAX	B	(2) 600S162-54	(2) 800T150-54	800T150-54	(2) 800S300-54	(3) #10 EA. SIDE	(2) #10 EA. LEG	SCAFCO: (1) ESC OR (1) PLS2	(2) SCAFCO FA750-68 w/ (4) #10 SCREWS
10'-0" MAX	B	(2) 800S200-54	(2) 800T200-68	800T150-97	(2) 800S350-68	(4) #10 EA. SIDE	(3) #10 EA. LEG	SCAFCO: (1) ESC OR (1) DPLS2	(2) SCAFCO FA750-68 w/ (4) #10 SCREWS
12'-0 MAX	B	(2) 800S200-54	(2) 800T200-68	6/S023	(2) 800S350-68	(4) #10 EA. SIDE	(3) #10 EA. LEG	SCAFCO: (2) ESC OR (1) PLS2	(2) SCAFCO FA750-68 w/ (4) #10 SCREWS
14'-0" MAX	B	(2) 1000S250-54	(2) 800T200-97	6/S023	(2) 800S250-97	(4) #10 EA. SIDE	(3) #10 EA. LEG	SCAFCO: (2) ESC OR (2) PLS2	(2) SCAFCO FA750-68 w/ (4) #10 SCREWS



TRACK SPLICE NOTE:
TRACK SHALL NOT BE SPLICED WHEN USED AT BOX HEADERS OR SILLS. IF TRACK IS REQUIRED TO BE SPLICED, THE TRACK SHALL HAVE A FULL BUTT-WELD AND BE TESTED BY THE SPECIAL INSPECTOR FOR ACCEPTANCE

28 EXTERIOR STEEL STUD WALL OPENING DETAIL
SCALE: 1/2" = 1'-0"

integrus ARCHITECTURE
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THERESA H. DANIEL, STATE OF WASHINGTON, 38621, REGISTERED PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
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Checked by:	TD

Revisions

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TYPICAL METAL STUD DETAILS

PRCNC20221036

S024

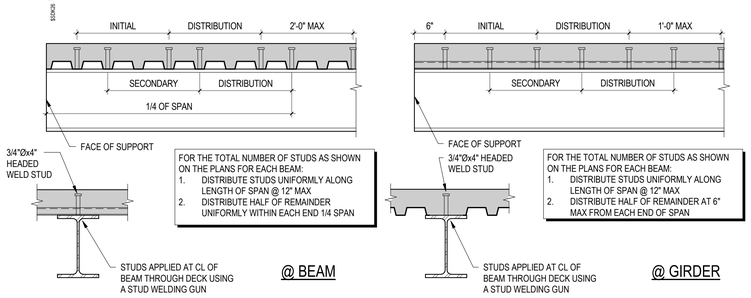
BUILDING PERMIT SET

DECK PROPERTIES						FASTENING			DECK ELEVATION
DECK TYPE	PAINT OR GALV	GAGE	WIDTH	I (IN^4)	ST/SB (IN^3)	ATTACHMENT PATTERN	@ SIDE LAP	@ EDGE	(SEE PLANS FOR TOPPING THICKNESS AND REINFORCING)
1 1/2" ROOF, PLB	G[1]	18	36"	.306	.314 / .331	36/7/4 PW	IP @ 8"	PW @ 6"	
2" COMP UN-TOPPED, PLW2	G[1,2]	18	36"	.565	.471 / .481	36/4 PW	IP @ 24"	PW @ 9"	
2" COMP, PLW2	G[1]	18	36"	.565	.471 / .481	36/4 PW	IP @ 24"	PW @ 9"	

KEY: PW= TYPICAL WELDS 5/8"Ø PUDDLE WELDS
IP = INTERLOCK PUNCH (BUTTON PUNCH NOT ALLOWED)
G = GALVANIZING (SEE STRUCTURAL NOTES FOR EXT & INT APPLICATIONS)

KEY: 1 - SEE ARCHITECTURAL PLANS WHERE DECK IS EXPOSED TO VIEW AND IT IS TO BE PAINTED IN THE FEILD, SHOP PRIME IS REQUIRED
2 - AT EXTERIOR PERMANETLY EXPOSED LOCATIONS, PROVIDE G90

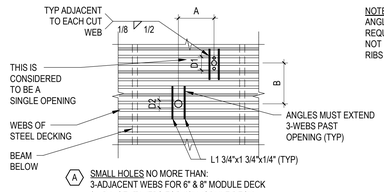
1 STEEL ROOF AND COMPOSITE DECK WELDING
SCALE: 3/4" = 1'-0"



FOR THE TOTAL NUMBER OF STUDS AS SHOWN ON THE PLANS FOR EACH BEAM:
1. DISTRIBUTE STUDS UNIFORMLY ALONG LENGTH OF SPAN @ 1/2" MAX
2. DISTRIBUTE HALF OF REMAINDER UNIFORMLY WITHIN EACH END 1/4 SPAN

FOR THE TOTAL NUMBER OF STUDS AS SHOWN ON THE PLANS FOR EACH BEAM:
1. DISTRIBUTE STUDS UNIFORMLY ALONG LENGTH OF SPAN @ 1/2" MAX
2. DISTRIBUTE HALF OF REMAINDER AT 6" MAX FROM EACH END OF SPAN

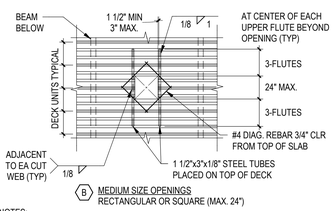
7 COMPOSITE BEAM AND GIRDER WELD STUDS
SCALE: 1" = 1'-0"



(A) SMALL HOLES NO MORE THAN:
3-ADJACENT WEBS FOR 6" & 8" MODULE DECK
2-ADJACENT WEBS FOR 12" MODULE DECK

NOTES:
1. ANGLES SHALL BE PLACED ON TOP OF DECK
2. IF DIMENSION "A" IS GREATER THAN D1, D2, OR 32" WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "B"
3. IF DIMENSION "B" IS GREATER THAN D1, D2, OR 32" WHICHEVER IS LARGER THEN THERE IS NO RESTRICTION ON DIMENSION "A"
4. IF DIMENSION "A" AND "B" ARE LESS THAN D1, D2, OR 32" WHICHEVER IS LARGER, THE OPENING GROUP WILL BE CONSIDERED AS A SINGLE HOLE AND MUST BE REINFORCED FOR THE LARGER OPENING

4 OPENING IN ROOF DECK (18" TO 6')
SCALE: 3/4" = 1'-0"

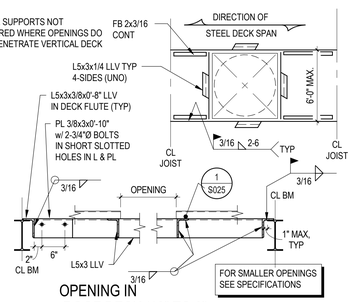


(B) MEDIUM SIZE OPENINGS
RECTANGULAR OR SQUARE (MAX. 24")

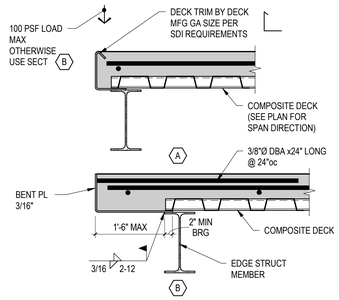
NOTES:
1. IF THE OPENING OR GROUP OF OPENINGS OCCUR IN ONE DECK UNIT THE OPENING OR GROUP MAY BE CUT PRIOR TO POURING OF CONC
2. IF, AS SHOWN IN THE DETAIL ABOVE, THE OPENING GROUP THROUGH TWO DECKING UNITS, THE DECK SHALL NOT BE CUT UNTIL CONC HAS BEEN PLACED AND CURED
3. WHEN THE MAXIMUM DIMENSION OF AN OPENING OR OPENING GROUP EXCEEDS 24", PLACE HEADER BEAM AROUND OPENING

9 OPENING IN COMPOSITE DECK
SCALE: 1/8" = 1'-0"

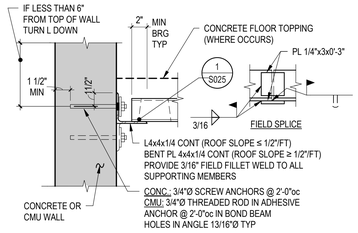
NOTE:
ANGLE SUPPORTS NOT REQUIRED WHERE OPENINGS DO NOT PENETRATE VERTICAL DECK RIBS



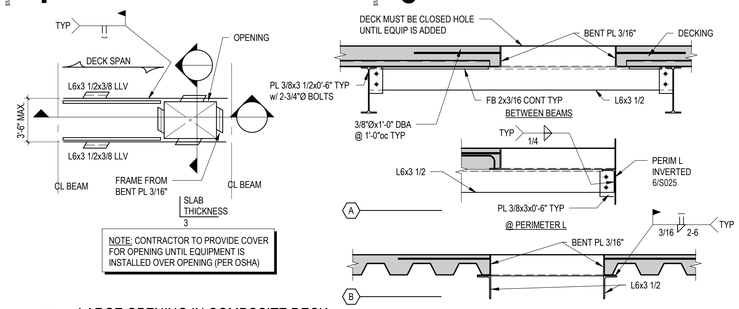
5 COMPOSITE DECK EDGE CLOSURE
SCALE: 1 1/2" = 1'-0"



6 PERIMETER DECK ANGLE AT CONCRETE OR CMU WALL
SCALE: 1 1/2" = 1'-0"

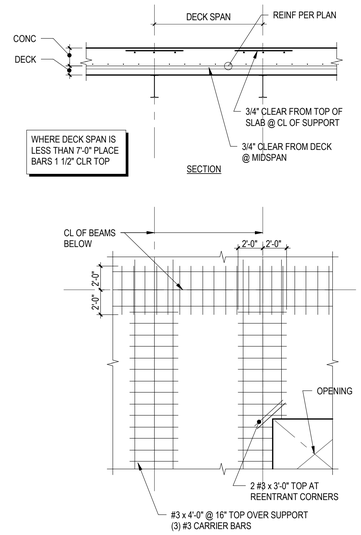


10 LARGE OPENING IN COMPOSITE DECK
SCALE: 3/4" = 1'-0"

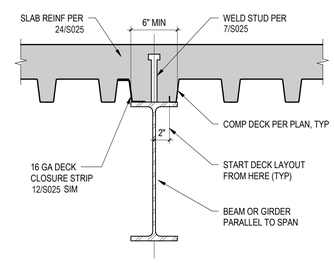


NOTE: CONTRACTOR TO PROVIDE COVER FOR OPENING UNTIL EQUIPMENT IS INSTALLED OVER OPENING (PER OSHA)

12 DECK CLOSURE STRIP
SCALE: 3" = 1'-0"

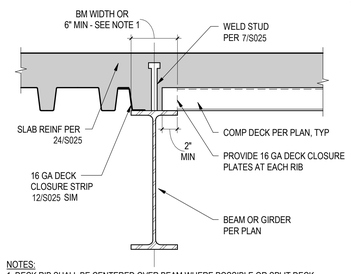


24 COMPOSITE DECK REINFORCING
SCALE: 1/4" = 1'-0"



NOTE: DECK RIB SHALL BE CENTERED OVER BEAM WHERE POSSIBLE OR SPLIT DECK FOR FULL LENGTH OF BEAM AND PROVIDE CONCRETE WIDTH AS SHOWN ABOVE.

13 DECK AT COMPOSITE GIRDER
SCALE: 1 1/2" = 1'-0"



NOTES:
1. DECK RIB SHALL BE CENTERED OVER BEAM WHERE POSSIBLE OR SPLIT DECK FOR FULL LENGTH OF BEAM AND PROVIDE CONCRETE WIDTH AS SHOWN ABOVE.

14 COMPOSITE DECK DIRECTION CHANGE
SCALE: 1 1/2" = 1'-0"

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM/RB
Checked by:	TD

Revisions

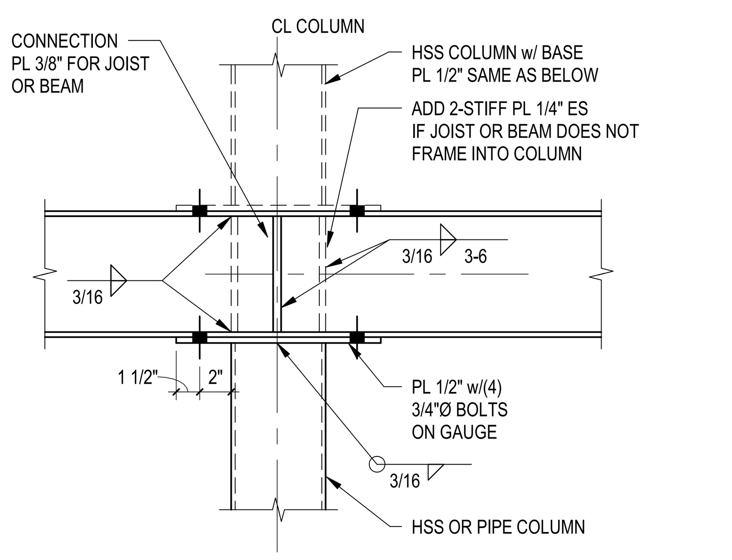
#	Date	Description

TYPICAL STEEL AND METAL DECK DETAILS

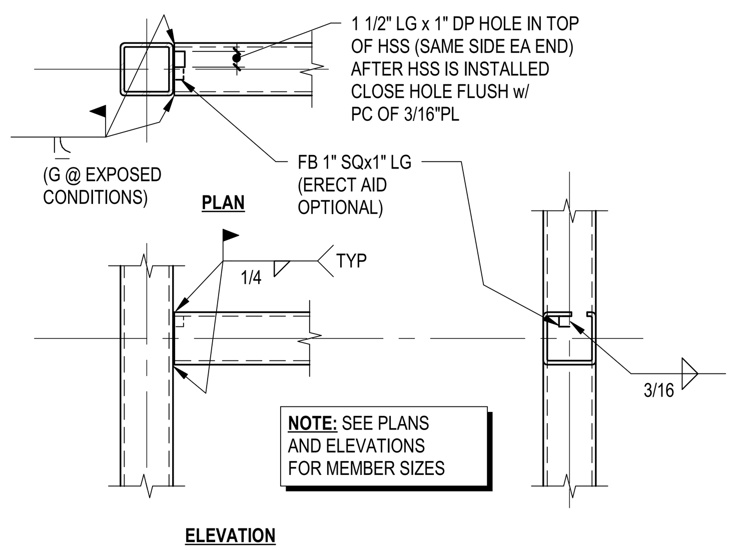
PRCNC20221036

S025

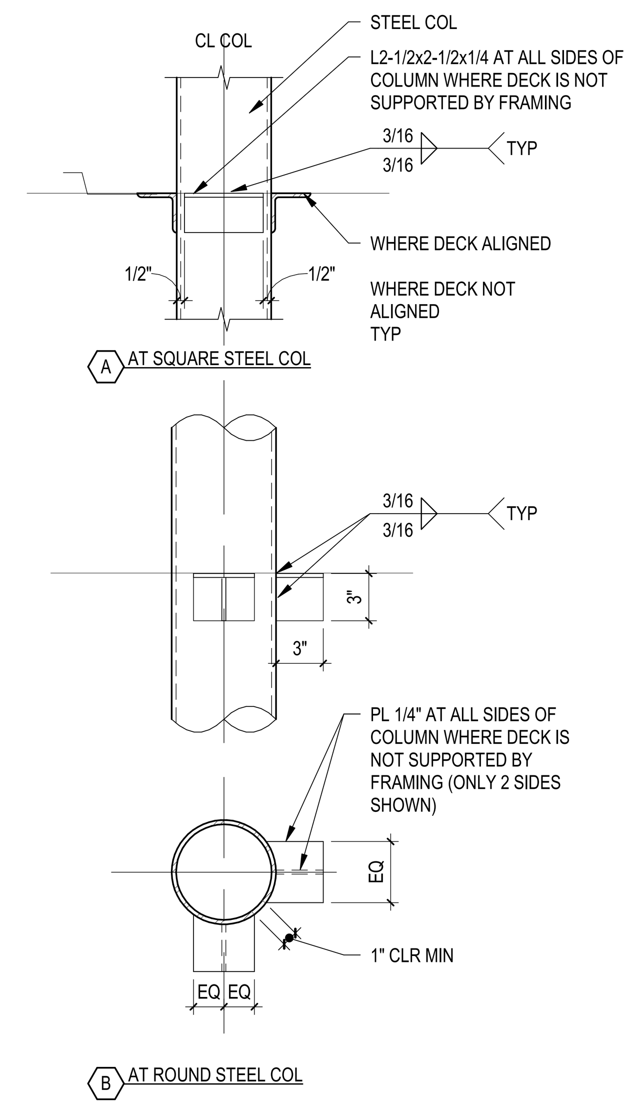
BUILDING PERMIT SET



1 COLUMN BEARING PLATE @ STEEL BEAM
SCALE: 1 1/2" = 1'-0"

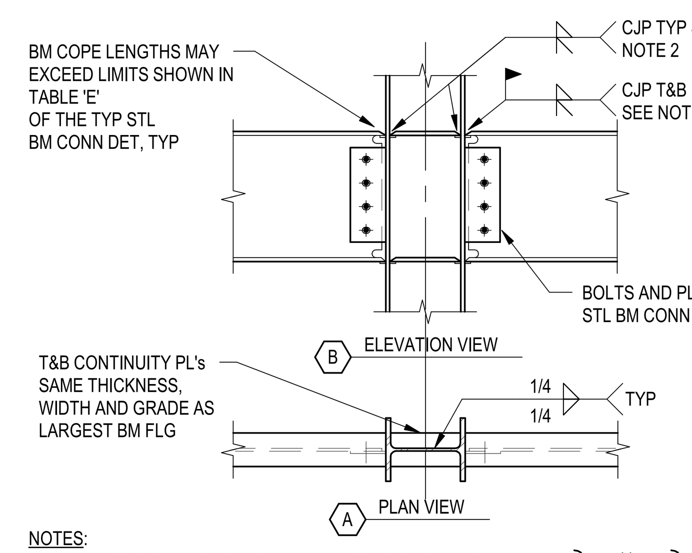


2 TYPICAL FRAME CONNECTION
SCALE: 1" = 1'-0"



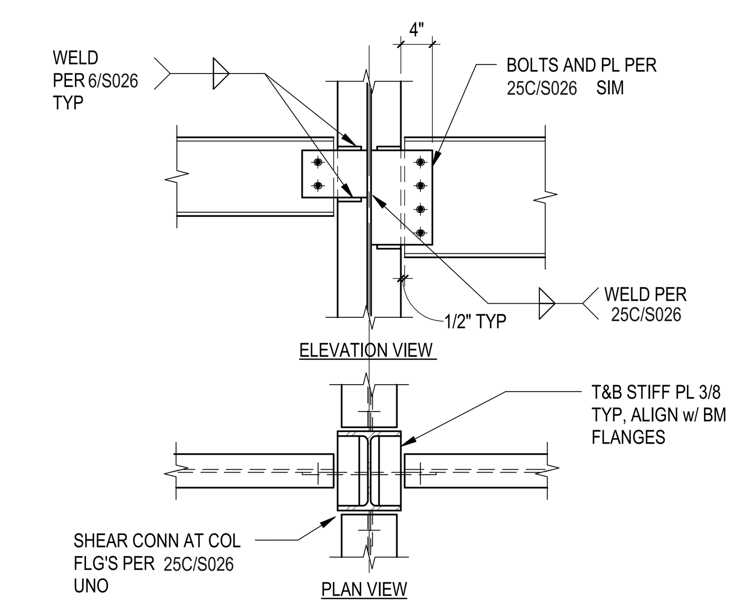
NOTE:
THIS DETAIL APPLIES AT BOTH ROOF DECKS AND COMPOSITE FLOOR DECKS

9 DECK SUPPORT AT COLUMN
SCALE: 1 1/2" = 1'-0"

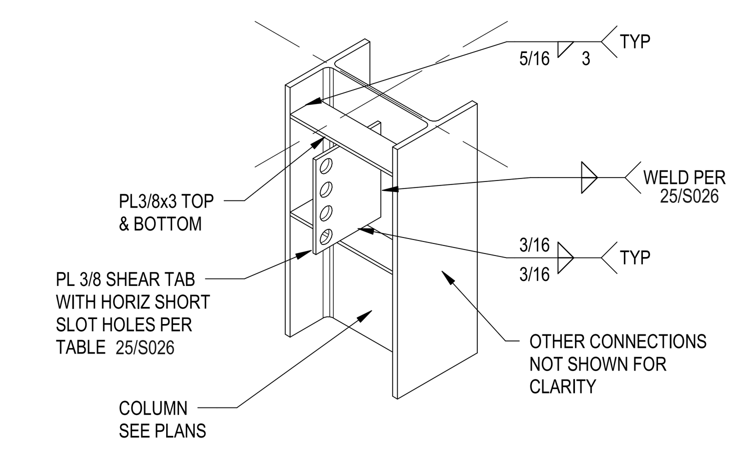


NOTES:
1. MOMENT CONNECTIONS SHOWN WITH THIS SYMBOL ON PLAN:
2. REMOVE BACKER PL AFTER WELDING AND GRIND SMOOTH

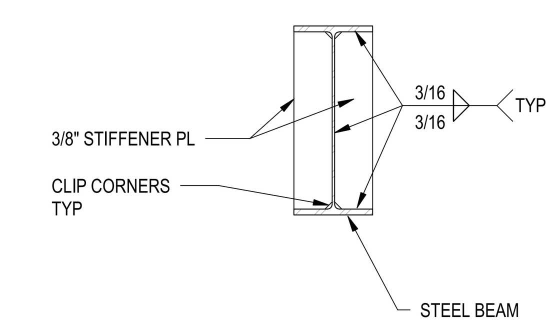
10 TYP BM TO COL FLG MOMENT CONN
SCALE: 3/4" = 1'-0"



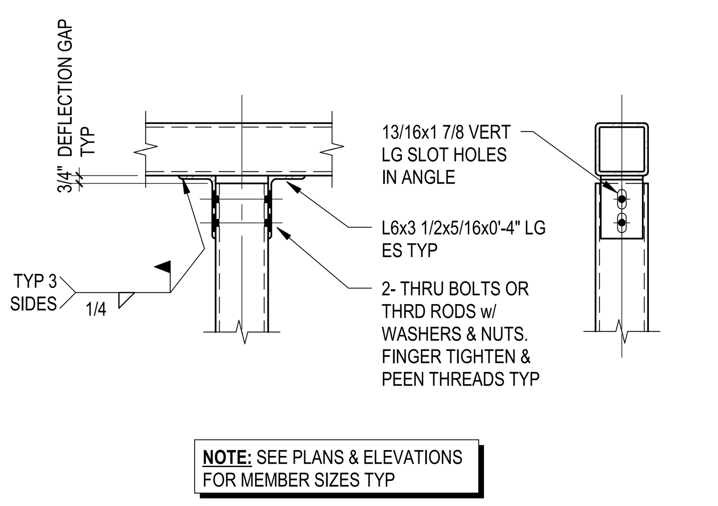
11 TYP BM TO WIDE FLANGE COLUMN CONNECTION
SCALE: 3/4" = 1'-0"



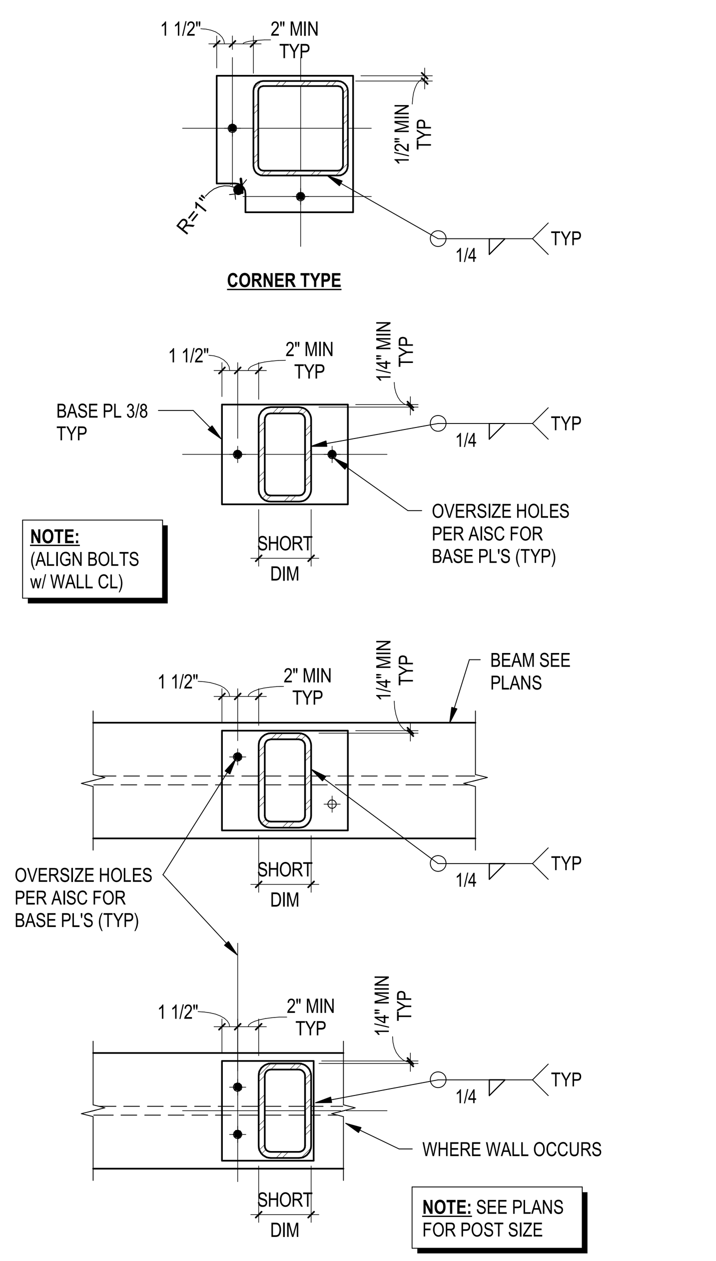
6 EXTENDED SHEAR TAB
SCALE: 3/4" = 1'-0"



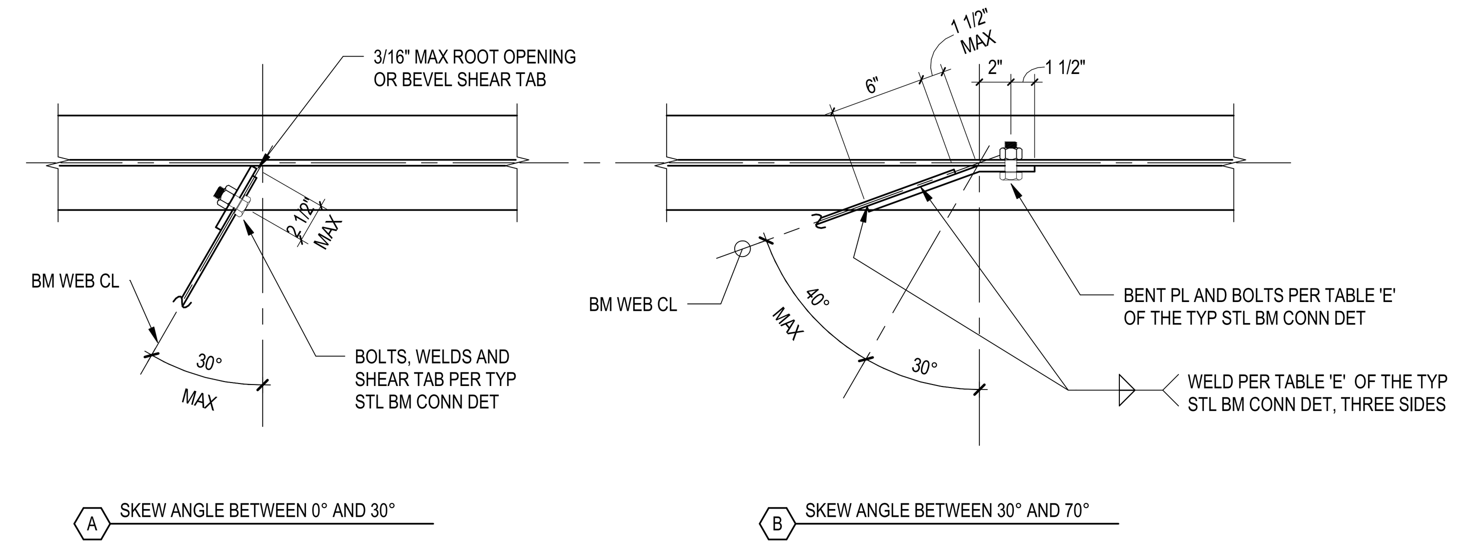
12 STIFFENER PLATE AT STEEL BEAM
SCALE: 1" = 1'-0"



8 HSS POST TO BEAM CONNECTION
SCALE: 1" = 1'-0"

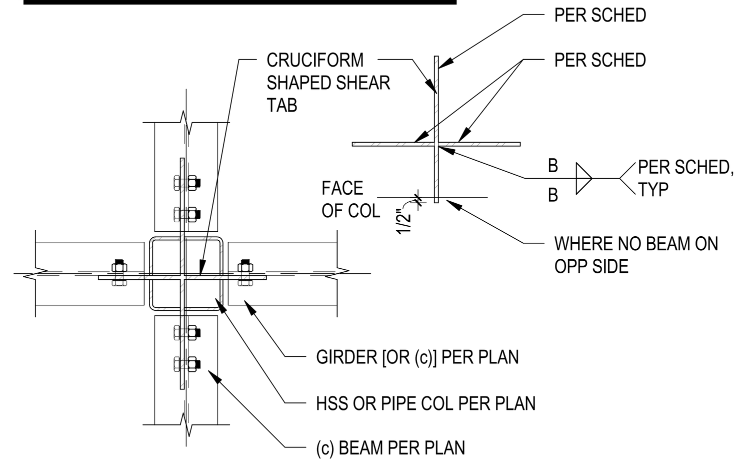


13 POST BASE PLATES
SCALE: 1" = 1'-0"

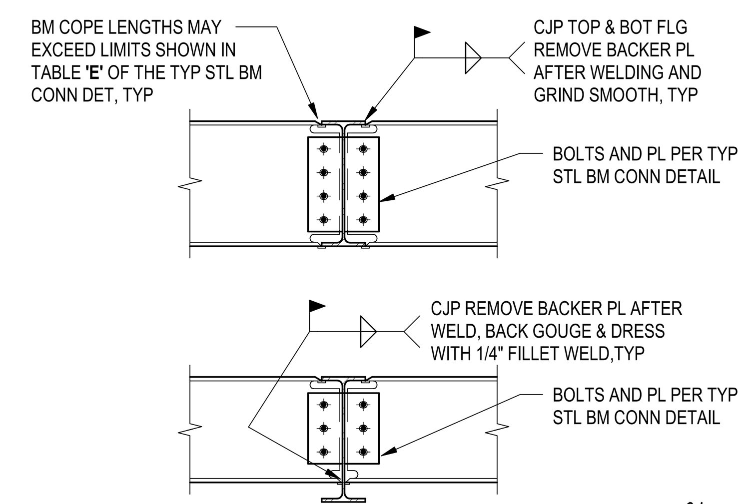


15 TYPICAL SKEWED BEAM CONNECTION
SCALE: 1 1/2" = 1'-0"

NOTES:
1. FOR INFO NOT SHOWN SEE 7/S027
2. WHERE COL CONTINUES ABOVE CRUCIFORM CONN, CJP COL ALL AROUND AND GRIND SMOOTH AFTER CRUCIFORM CONN IS INSTALLED

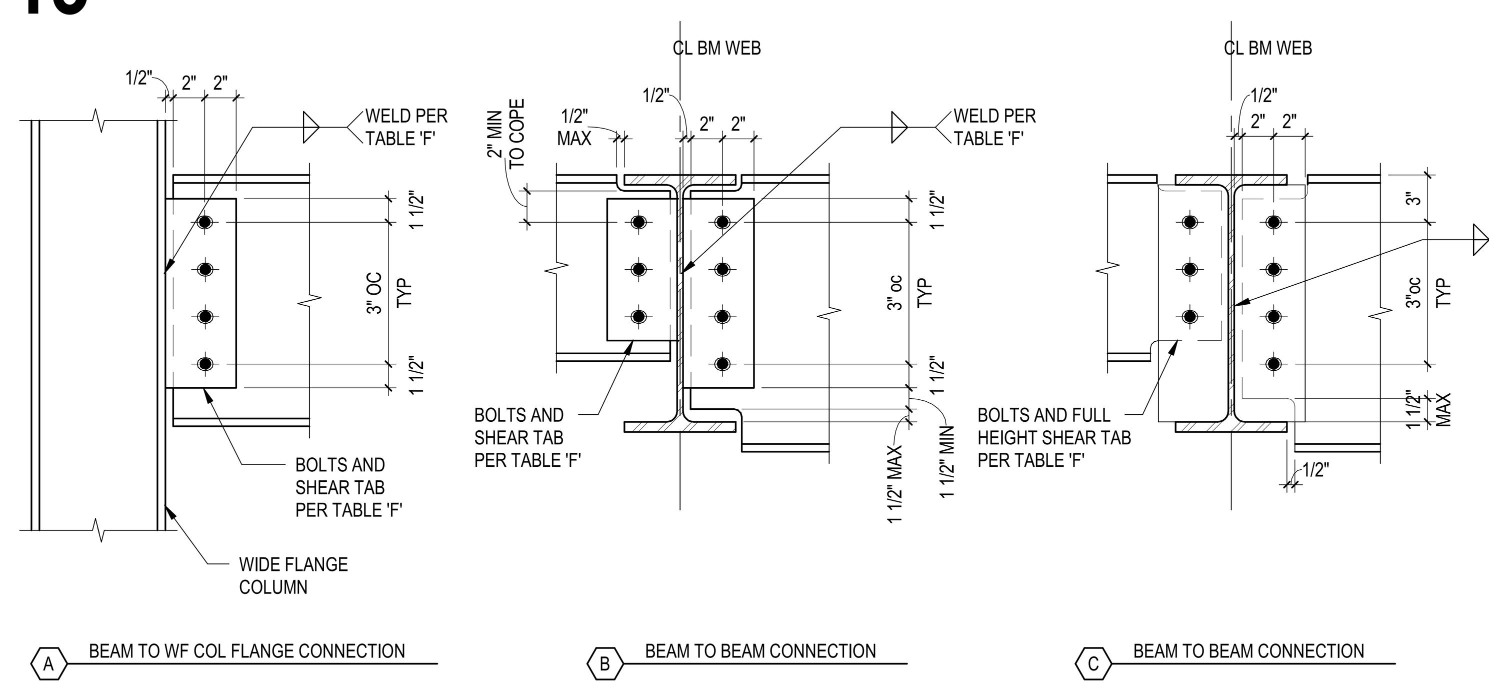


17 STEEL BEAM TO COLUMN
SCALE: 1" = 1'-0"

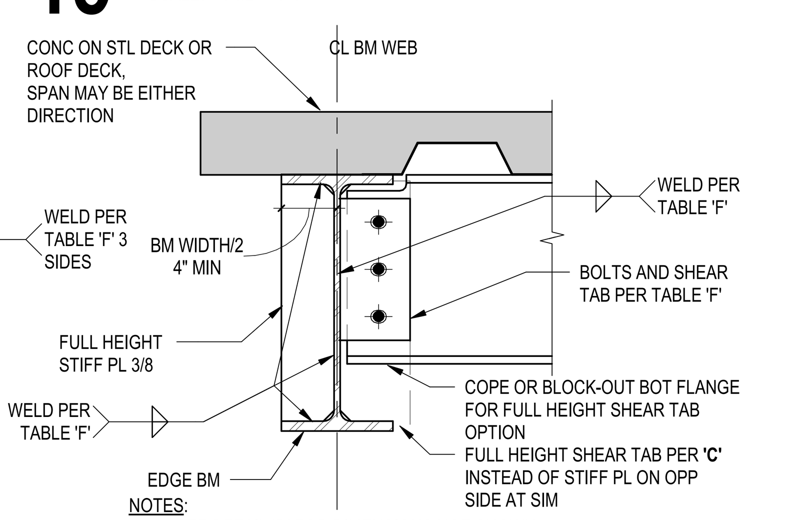


NOTES: MOMENT CONN SHOWN WITH THIS SYMBOL ON PLAN:

18 TYP BEAM TO BEAM MOMENT CONNECTION
SCALE: 3/4" = 1'-0"

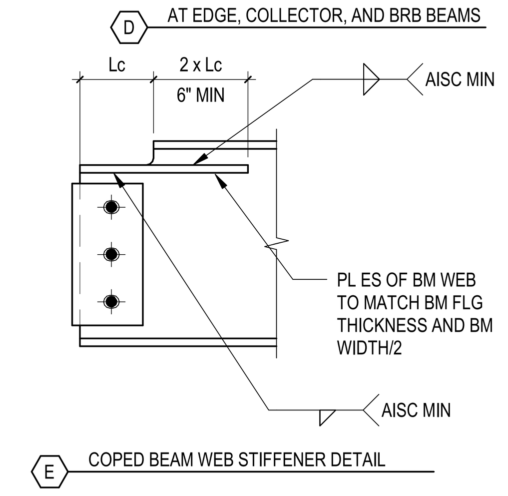


STEEL BEAM CONNECTION TABLE (F)							
MEMBER SIZE		MINIMUM NUMBER OF 3/4"Ø F1852 BOLTS	SHEAR TAB THICKNESS (A36) (in)	WELD SIZE (in)	MAX TOP COPE DEPTH (in)	MAX COPE LENGTH	
CHANNEL	WIDE FLANGE, WT					TOP COPE ONLY (in)	TOP & BOT COPE (in)
C8-C9-C10 MC9-MC10	W8-W10	2	3/8	1/4	2	6	2.5
C12 MC12-MC13	W12-W14, WT13.5	3	3/8	1/4	2	6	3
C15 MC18	W16, WT16.5	4	3/8	1/4	2	7	4
	W18	5	3/8	1/4	3	9	5
	W21-W24	6	3/8	1/4	3	11	7
	W27	7	3/8	1/4	3	14	10
	W30	8	3/8	1/4	3	18	14



NOTES:
1. SEE DETAIL 'B' FOR DIMENSIONS NOT SHOWN.
2. THIS DETAIL SHALL APPLY AT ALL EDGE BM CONDITIONS.
3. THIS DETAIL SHALL APPLY ALONG ALL COLLECTOR BM's, PROVIDE FULL HT PL ON EA SIDE.
4. THIS DETAIL SHALL APPLY ALONG ALL BRB FRAME BEAM's, PROVIDE FULL HT PL ON EA SIDE.

D AT EDGE, COLLECTOR, AND BRB BEAMS

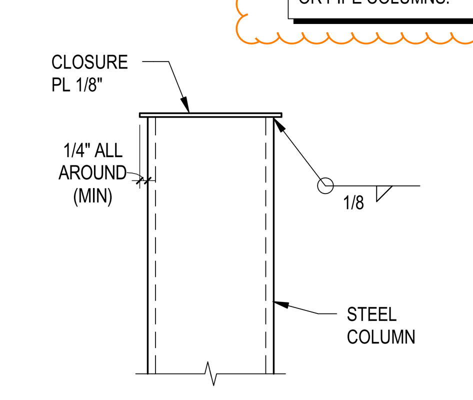


E COPED BEAM WEB STIFFENER DETAIL

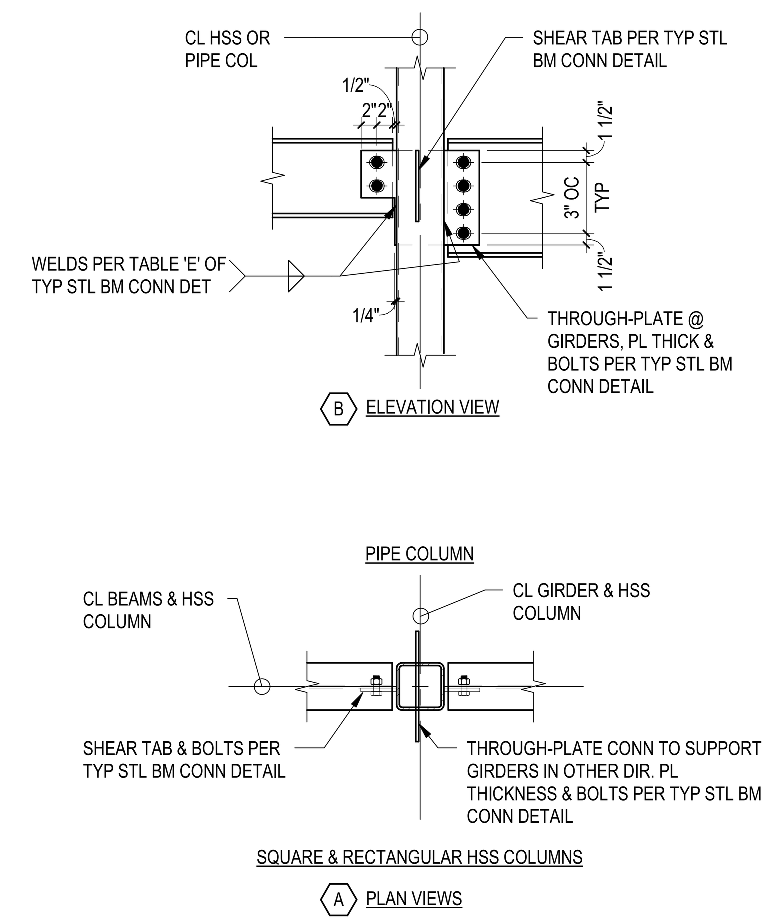
NOTES:
1. BOLTS SHALL BE ASTM F1852 TWIST-OFF TENSION CONTROL BOLT ASSEMBLIES
2. SHEAR TABS SHALL HAVE HORIZONTAL SHORT SLOTTED HOLES AND BEAMS SHALL HAVE STANDARD ROUND HOLES, UNO
3. COPED BEAMS SHALL MEET THE LIMITS SHOWN IN TABLE 'F' FOR COPE DEPTHS AND LENGTHS. WHEN ACTUAL COPE LENGTH EXCEEDS LIMITS SHOWN IN TABLE, A WEB STIFFENER SHALL BE ADDED PER DETAIL 'E'

25 TYPICAL SHEAR TAB STEEL BEAM CONNECTION
SCALE: 1 1/2" = 1'-0"

NOTE:
USE THIS DETAIL WHEN NO OTHER CAP IS SHOWN ON THE PLANS FOR HSS COLUMNS OR PIPE COLUMNS.



22 COLUMN CLOSURE PLATE
SCALE: 1 1/2" = 1'-0"



30 TYPICAL STEEL BEAM TO HSS COLUMN CONNECTION
SCALE: 3/4" = 1'-0"

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date: 06/30/22
Job No.: 22135.00
Drawn By: RB
Checked by: CHECKED BY

Revisions

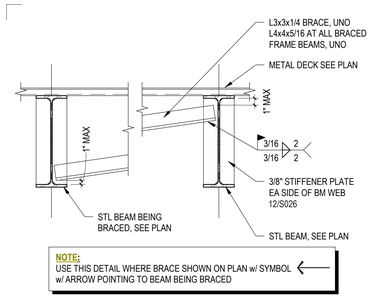
#	Date	Description

TYPICAL STEEL DETAILS

PRCNC20221036

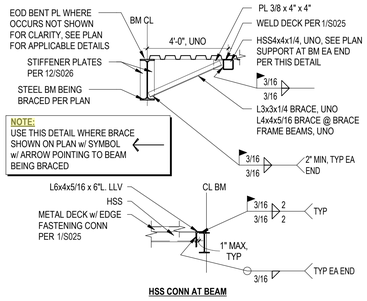
S026

BUILDING PERMIT SET



1 STIFFENER BRACE AT BEAM

SCALE: 1" = 1'-0"



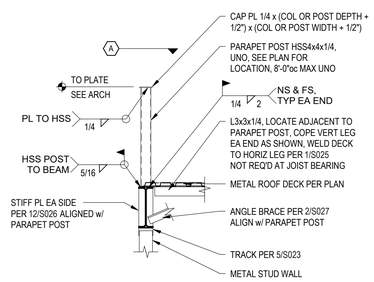
2 BOTTOM FLANGE BRACE DETAIL

SCALE: 1/2" = 1'-0"

MEMBER	PL THICKNESS	BOLT Ø (IN)	"N"	Lh (IN)	Sh (IN)	Lv (IN)	Sv (IN)	WELD SIZE "B"
W8, W10	1/2"	3/4	2	2	3	1-1/2	3	5/16
W12	1/2"	3/4	3	2	3	1-1/2	3	5/16
W14	1/2"	3/4	3	2	3	1-1/2	3	5/16
W16	1/2"	3/4	4	2	3	1-1/2	3	5/16
W18	1/2"	3/4	5	2	3	1-1/2	3	5/16
W21-W24	1/2"	3/4	6	2	3	1-1/2	3	5/16
W27	1/2"	3/4	7	2	3	1-1/2	3	5/16
W30	3/4"	1	8	2	3	1-1/2	3	1/2

NOTES:

1. THIS DETAIL APLLIES TO ALL BEAMS INDICATE AS (c) ON PLAN.
2. WHERE COLLECTOR BEAMS FRAME INTO MULTIPLE SIDES, OR WHERE COLLECTOR BEAMS FRAME IN ONE DIRECTION AND GIRDERS FRAME IN THE PERPENDICULAR DIRECTION, PROVIDE CRUCIFORM SHAPE PER 17/S026 , UNO.
3. AT HSS THRU PL, WHERE THICKNESS & WELD DIFFER DUE TO DIFFERENT BEAM SIZES, USE THE LARGER OF THE TWO.

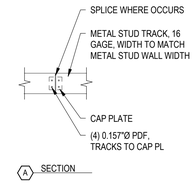


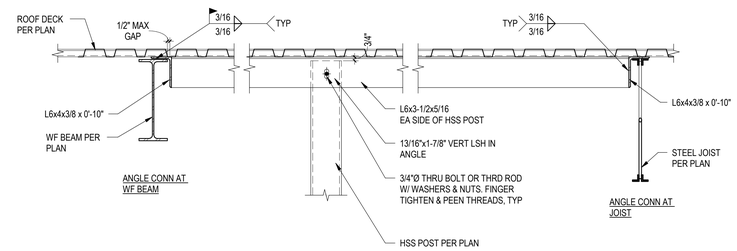
3 PARAPET POST DETAIL

SCALE: 1/2" = 1'-0"

NOTES:

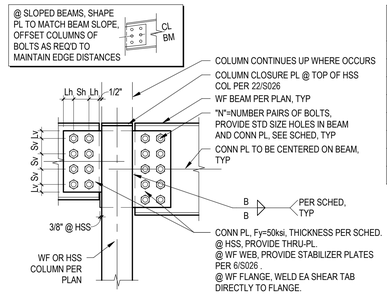
1. COLUMNS SHALL BE EXTENDED FOR PARAPET WHERE NOTED ON PLAN.
2. SEE 1/S024 FOR INFO NOT SHOWN.
3. WHERE METAL STUD TRACKS INTERSECT AT CORNERS, COPE LEGS AND ATTACH TRACKS w/ (4) #10 SCREWS.





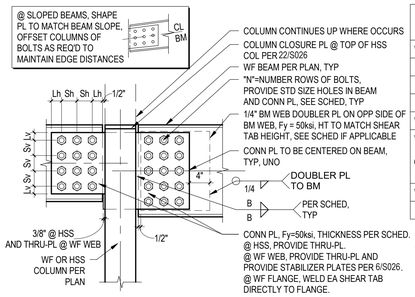
5 POST CONN AT ROOF DECK

SCALE: 1" = 1'-0"



7 DRAG CONNECTION AT BEAM/COLUMN

SCALE: 1" = 1'-0"



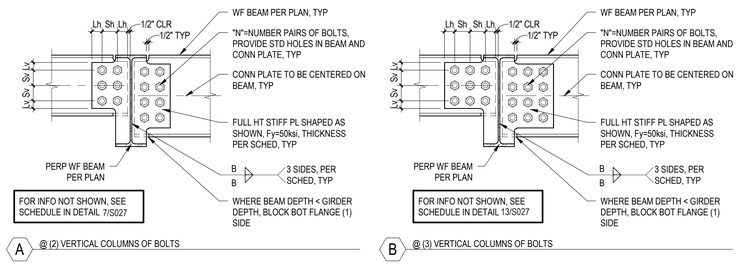
MEMBER	PL THICKNESS	BOLT Ø (IN)	"N"	Lh (IN)	Sh (IN)	Lv (IN)	Sv (IN)	WELD SIZE "B"	BM WEB DOUBLER PL
W12x40 (c)*	1"	1	3	2	3	1-1/2	3	5/8	YES
W14	1"	1	3	2	3	1-1/2	3	3/8	NO
W16	1"	1	4	2	3	1-1/2	3	3/8	NO
W18	1"	1	5	2	3	1-1/2	3	3/8	NO
W18x50 (c)*	1"	7/8	5	2	3	1-1/2	3	3/8	NO
W18x55 (c)* ALONG GRIDS B7 & C7 @ RF	1"	1	5	4	3	1-1/2	3	5/8	NO
W18x55 (c)*	1"	1	5	3	3	1-1/2	3	5/8	NO
W21-W24	1"	1	6 NOTE 4	2	3	1-1/2	3	5/8	NO

NOTES:

1. THIS DETAIL APLLIES TO ALL BEAMS INDICATE AS (c)* ON PLAN.
2. WHERE COLLECTOR BEAMS FRAME INTO MULTIPLE SIDES, OR WHERE COLLECTOR BEAMS FRAME IN ONE DIRECTION AND GIRDERS FRAME IN THE PERPENDICULAR DIRECTION, PROVIDE CRUCIFORM SHAPE PER 17/S026 , UNO.
3. AT THRU PL's, WHERE THICKNESS & WELD DIFFER DUE TO DIFFERENT BEAM SIZES, USE THE LARGER OF THE TWO.
4. WHERE (C)* BEAM FRAME INTO PERPENDICULAR BEAM WITH LESS DEPTH, NUMBER OF ROWS OF BOLTS TO BE BASED ON PERPENDICULAR BEAM SIZE. BOLT GROUP SHALL BE CENTERED ON PERPENDICULAR BEAM.

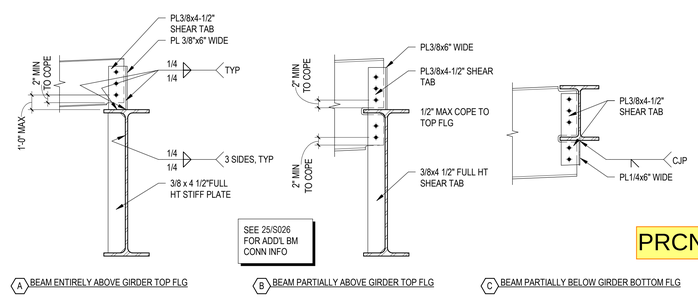
13 DRAG CONNECTION AT BEAM/COLUMN

SCALE: 1" = 1'-0"



19 DRAG CONN AT BEAM/BEAM

SCALE: 1" = 1'-0"



29 BEAM TO BEAM WITH VARIOUS HEIGHTS & DEPTHS

SCALE: 3/4" = 1'-0"

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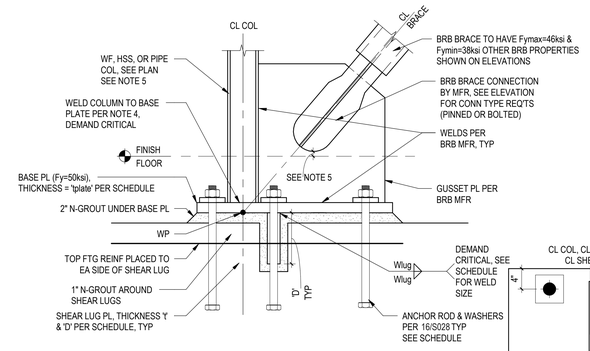
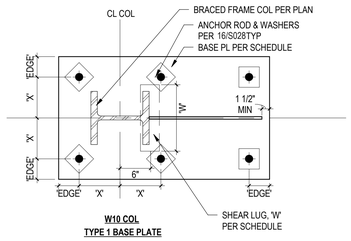
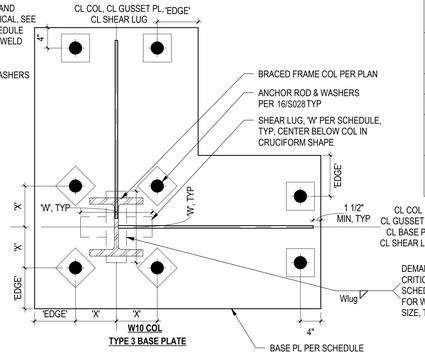
PRCNC20221036

S027

BUILDING PERMIT SET





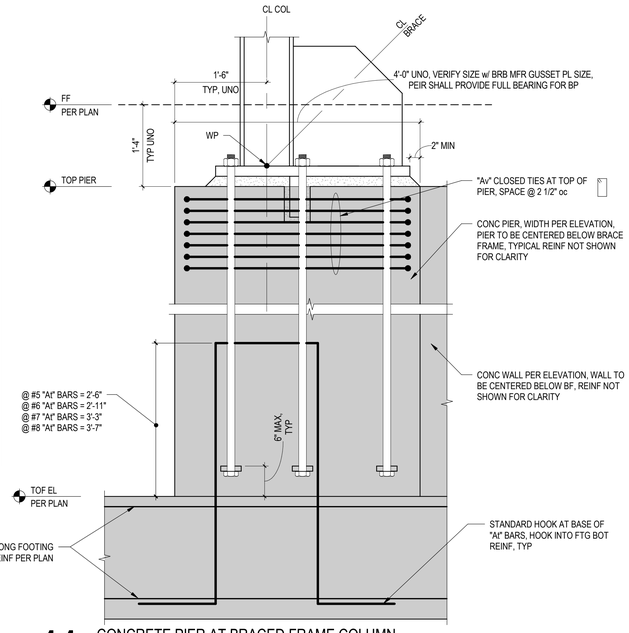


BASE PLATE SCHEDULE

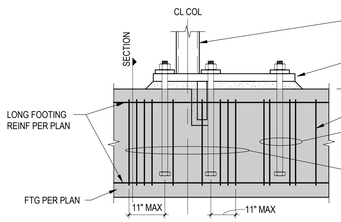
BASE PLATE						ANCHOR RODS			SHEAR LUG				REINF "At"	REINF "Av"
BRACE FRAME	BF COL	BASE PLATE ID	'tplate'	'EDGE'	'X'	DIAMETER	EMBED	EMBED PL WASHER	't'	'D'	'W'	Wlug		
BF1	A4	BP1	2"	3"	7"	1"	18"	PL1"x4"x4"	3"	8"	14"	3/4"	(8) #5	(6) #6
	A1	BP1	2"	3"	7"	1"	18"	PL1"x4"x4"	3"	8"	14"	3/4"	(8) #5	(6) #6
BF2	C16	BP1	2 1/2"	3"	7"	1 1/2"	20"	PL1"x4"x4"	3"	8"	14"	1"	(15) #5	(7) #6
BF3	D1	BP1	2 1/4"	3"	7"	1 1/4"	20"	PL1"x4"x4"	3"	8"	14"	1"	(13) #5	(7) #6
	D3	BP1	2 1/4"	3"	7"	1 1/4"	20"	PL1"x4"x4"	3"	8"	14"	1"	(13) #5	(7) #6
BF4	C7	BP1	3"	4"	7 1/2"	2"	NOTE 6	PL1"x5"x5"	3 1/2"	8"	16"	1 1/4"	(13) #7	(12) #6
	C10	BP1	3"	4"	7 1/2"	2"	NOTE 6	PL1"x5"x5"	3 1/2"	8"	16"	1 1/4"	(13) #7	(12) #6
BF5	D3	BP1	2 3/4"	3"	7"	1 1/2"	NOTE 6	PL1"x4"x4"	3 1/2"	8"	14"	1 1/4"	(13) #6	(9) #6
	D1	BP1	2 3/4"	3"	7"	1 1/2"	NOTE 6	PL1"x4"x4"	3 1/2"	8"	14"	1 1/4"	(14) #6	(9) #6
BF7	B4	BP1	2 3/4"	4"	7 1/2"	1"	NOTE 6	PL1"x5"x5"	3 1/2"	8"	16"	1 1/4"	(14) #6	(10) #6
BF8	A1	BP1	2 1/2"	3"	7"	1 1/2"	NOTE 6	PL1"x4"x4"	2 1/2"	8"	14"	1"	(8) #6	(7) #6
BF9	C9	BP1	4"	4"	8"	2 1/2"	NOTE 6	PL1 1/2"x4"x4"	4"	8"	14"	1 1/4"	(14) #8	(12) #6
	C7	BP2	4"	8"	8"	3"	NOTE 6	PL2"x9"x9"	4"	8"	14"	1 1/4"	(26) #8	(12) #6
BF10	D4	BP1	4"	4"	8"	2 1/2"	NOTE 6	PL1 1/2"x4"x4"	4"	8"	14"	1 1/4"	(13) #8	(11) #6
	D6	BP2	4"	8"	8"	3"	NOTE 6	PL2"x9"x9"	4"	8"	14"	1 1/4"	(26) #8	(11) #6

NOTES:
1. FOR ADD'L INFO NO SHOWN SEE 16/S028AND 17/S028
2. ALL DEMAND CRITICAL WELDS REQUIRE 100% SPECIAL INSPECTION
3. FOR ADDITIONAL FOOTING REINF SEE 13/S028
4. AT COLUMNS, WELD COLUMN TO BASE PLATE PER 15/S028
5. AT PIN CONNECTED BRACES, MAINTAIN 1" CLEAR BETWEEN BRACE AND SLAB.
6. SEE DETAIL 11/S028 FOR ANCHOR ROD EMBEDMENT INTO CONCRETE PIER.

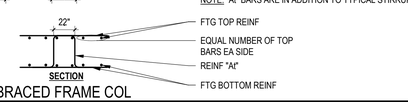
7 GUSSET & BASE PL AT BRACED FRAME
SCALE: 1" = 1'-0"



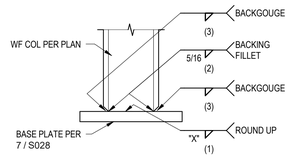
11 CONCRETE PIER AT BRACED FRAME COLUMN
SCALE: 1" = 1'-0"



SEE 7/S028 FOR INFO NOT SHOWN



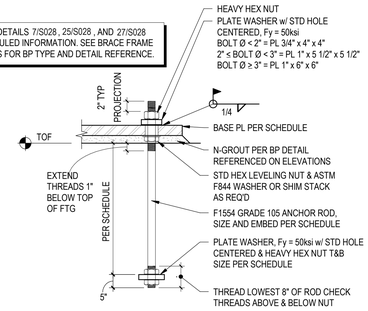
13 FTG REINF AT BRACED FRAME COL
SCALE: 3/4" = 1'-0"



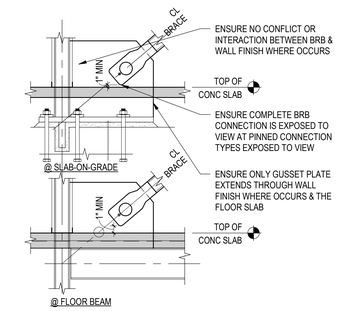
WELD PROCEDURE PER AISC DESIGN GUIDE #4
- PREPARE THE FLANGES WITH A 45 DEGREE, FULL DEPTH BEVEL
-FIT UP END-PLATE WITH A MINIMUM ROOT OPENING
-PREHEAT THE SPECIMENS AS REQ'D BY AWS SPEC
-PREPARE SURFACES FOR WELDING AS REQ'D BY AWS SPEC
-PLACE WEB WELD (1), SIZED "X" = WF WEB THICKNESS/2 + 1/8", ROUND SIZE UP TO NEAREST 1/16"
-PLACE 5/16" BACKING FILLET WELD ON BEAM WEB SIDE OF THE BEAM FLANGES (2)
-BACKGOUGE THE ROOT OF THE BEVEL TO REMOVE ANY CONTAMINANTS FROM THE 5/16" BACKER FILLET WELDS (3)
-PLACE THE FLANGE GROOVE WELDS (AWS TC-U4b-GF)
NOTE FOR INSPECTION, FLANGE GROOVE WELD IS CJP & DEMAND CRITICAL

15 BRBF WF COLUMN WELD TO BASE PLATE
SCALE: 1" = 1'-0"

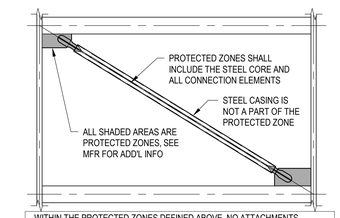
NOTE: SEE DETAILS 7/S028 , 25/S028 , AND 27/S028 FOR SCHEDULED INFORMATION. SEE BRACE FRAME ELEVATIONS FOR BP TYPE AND DETAIL REFERENCE.



16 ANCHOR BOLT AT BRACED FRAME
SCALE: 1" = 1'-0"



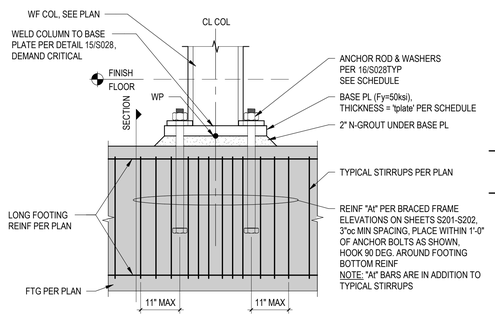
17 EXPOSED TO VIEW CONNECTION
SCALE: 1/2" = 1'-0"

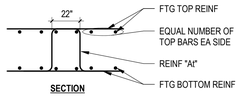


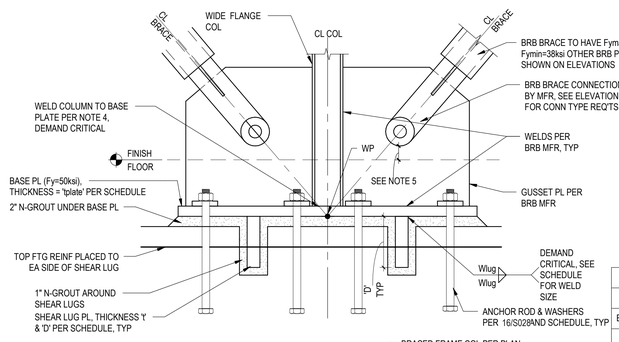
WITHIN THE PROTECTED ZONES DEFINED ABOVE, NO ATTACHMENTS (EITHER TEMPORARY OR PERMANENT) ARE ALLOWED. IN THE PROTECTED ZONES, ALL DISCONTINUITIES CREATED BY FABRICATION OR ERECTION OPERATIONS, SUCH AS TACK WELDS, ERECTION AIDS, AIR-ARC GOUGING AND THERMAL CUTTING SHALL BE REPAIRED BY METHOD REQUIRED BY THE ENGINEER OF RECORD. CONTACT ENGINEER OF RECORD WITHIN 24 HOURS WHENEVER VIOLATION OF THE PROTECTED ZONE OCCURS.

ATTACHMENTS WHICH SUPPORT OVER 50 LBS SHALL BE APPROVED BY THE EOR AND THE BRB MFR

18 PROTECTED ZONE DEFINITION REQUIREMENTS @ BRACED FRAMES
SCALE: 3/16" = 1'-0"

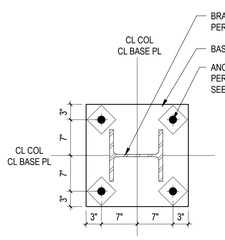






BASE PLATE SCHEDULE

BASE PLATE						ANCHOR RODS			SHEAR LUG						REINF "At"	REINF "Av"
BRACE FRAME	BF COL	BASE PLATE ID	'tplate'	'EDGE'	'X'	DIAMETER	EMBED	EMBED PL WASHER	't'	'D'	'W'	Wlug	Quantity	'CC'		
BF6	A2	BP4	2"	3"	7"	1 1/2"	NOTE 6	PL1"x4"x4"	3 1/2"	8"	18"	5/8"	2	19"		(11) #6

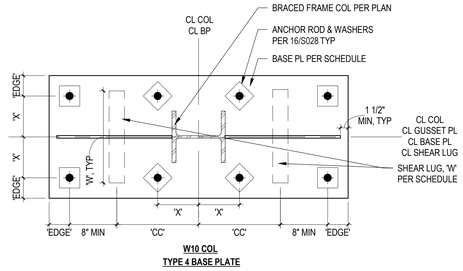


NOTES:
1. ALL DEMAND CRITICAL WELDS REQUIRE 100% SPECIAL INSPECTION.
2. NO "Av" REINFORCING OR SHEAR LUGS IN THIS DETAIL.
3. SEE DETAIL 11/S028 FOR ANCHOR ROD EMBEDMENT INTO CONCRETE PIER.

BASE PLATE SCHEDULE

BASE PLATE						ANCHOR RODS			REINF "At"
BRACE FRAME	BF COL	BASE PLATE ID	'tplate'	'EDGE'	'X'	DIAMETER	EMBED	EMBED PL WASHER	
BF2	C15	BP3	2 1/2"	3"	7"	1 1/2"	20"	PL1"x4"x4"	(18) #5
BF3	D2	BP3	1"	3"	7"	1"	20"	PL1"x4"x4"	(6) #5
BF4	C8	BP3	1"	3"	7"	1"	20"	PL1"x4"x4"	(6) #5
BF5	D2	BP3	1"	3"	7"	1"	NOTE 3	PL1"x4"x4"	(6) #5
BF6	A1	BP3	2 1/2"	3"	7"	1 1/2"	NOTE 3	PL1"x5"x5"	(12) #6
	A4	BP3	2 1/2"	3"	7"	1 1/2"	NOTE 3	PL1"x5"x5"	(12) #6
BF7	B6	BP3	3"	4"	7 1/2"	2"	NOTE 3	PL1"x5"x5"	(17) #6
BF8	A3	BP3	2 1/4"	3"	7"	1 1/2"	NOTE 3	PL1"x4"x4"	(10) #6

25 BASE PL AT BRACED FRAME
SCALE: 1" = 1'-0"



NOTES:
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2. ALL DEMAND CRITICAL WELDS REQUIRE 100% SPECIAL INSPECTION
3. FOR ADDITIONAL FOOTING REINF SEE 13/S028
4. AT COLUMNS, WELD COLUMN TO BASE PLATE PER 15/S028
5. AT PIN CONNECTED BRACES, MAINTAIN 1" CLEAR BETWEEN BRACE AND SLAB.
6. SEE DETAIL 11/S028 FOR ANCHOR ROD EMBEDMENT INTO CONCRETE PIER.

27 CENTER GUSSET & BASE PL AT BRACED FRAME
SCALE: 1" = 1'-0"

integrus ARCHITECTURE
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TELEPHONE (206)623-3139 FAX (206)623-3138

THERESA H. DANIELL, STATE OF WASHINGTON, 38621, REGISTERED PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

Revisions

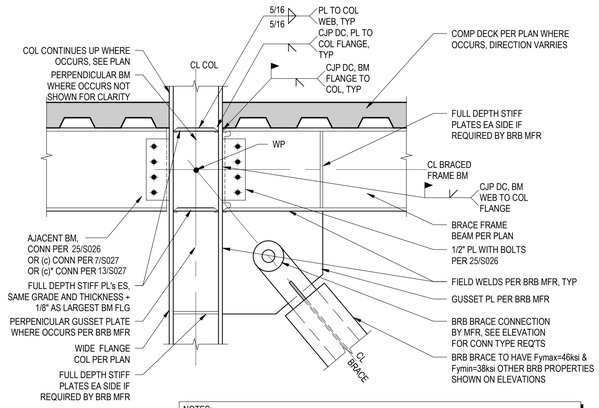
#	Date	Description

TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS

PRCNC20221036

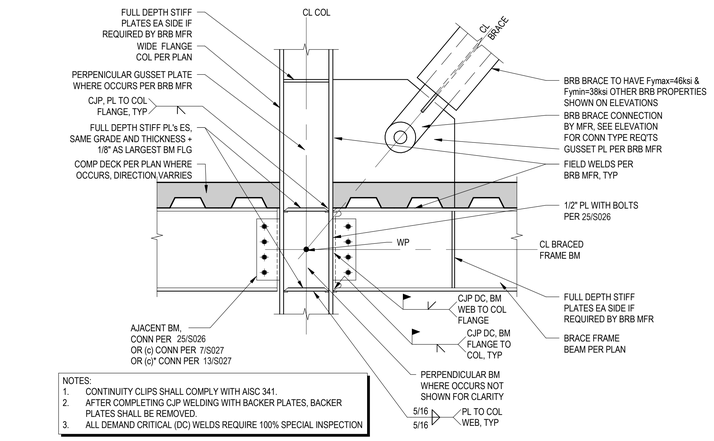
S028

BUILDING PERMIT SET



NOTES:
1. CONTINUITY CLIPS SHALL COMPLY WITH AISC 341.
2. AFTER COMPLETING CJP WELDING WITH BACKER PLATES, BACKER PLATES SHALL BE REMOVED.
3. ALL DEMAND CRITICAL (DC) WELDS REQUIRE 100% SPECIAL INSPECTION

7 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



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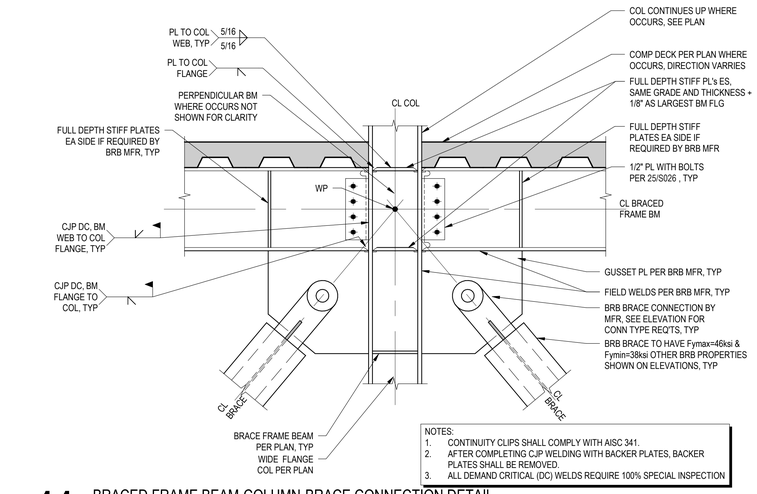
9 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



NOTES:
1. CONTINUITY CLIPS SHALL COMPLY WITH AISC 341.
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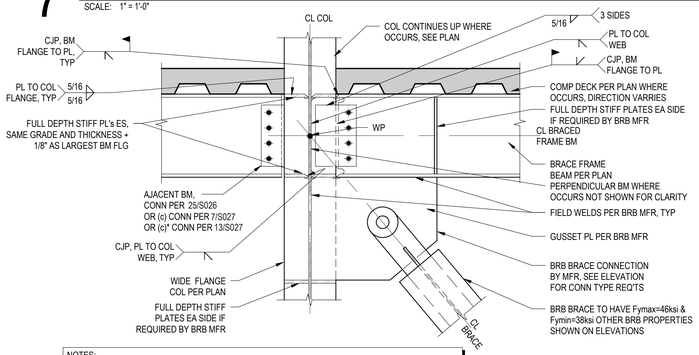
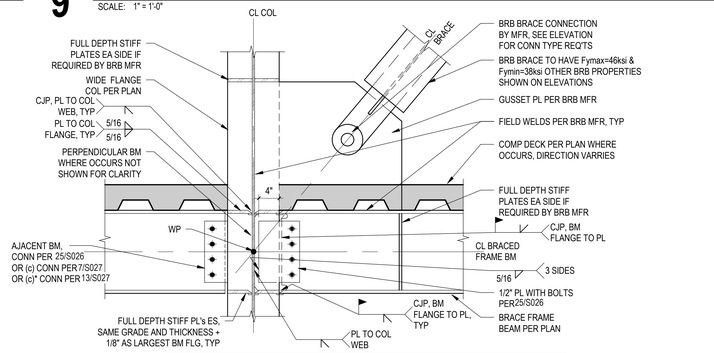
3. ALL DEMAND CRITICAL (DC) WELDS REQUIRE 100% SPECIAL INSPECTION

11 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



NOTES:
1. CONTINUITY CLIPS SHALL COMPLY WITH AISC 341.
2. AFTER COMPLETING CJP WELDING WITH BACKER PLATES, BACKER PLATES SHALL BE REMOVED.
3. ALL DEMAND CRITICAL (DC) WELDS REQUIRE 100% SPECIAL INSPECTION

13 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



NOTES:
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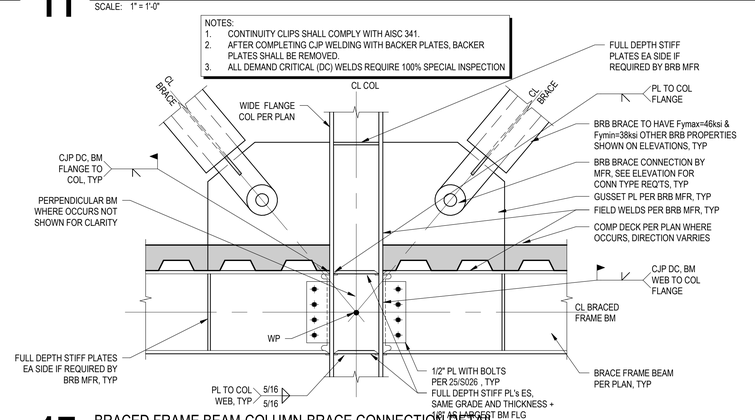
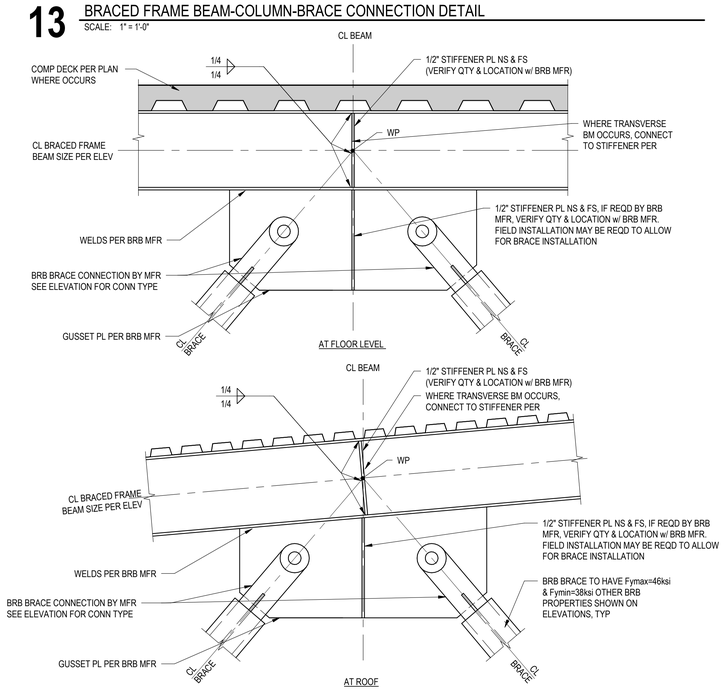
15 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



17 BRACED FRAME BEAM-COLUMN-BRACE CONNECTION DETAIL
SCALE: 1" = 1'-0"



25 V-BRACE BEAM CONNECTION DETAIL
SCALE: 1" = 1'-0"

integrus ARCHITECTURE
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Revisions

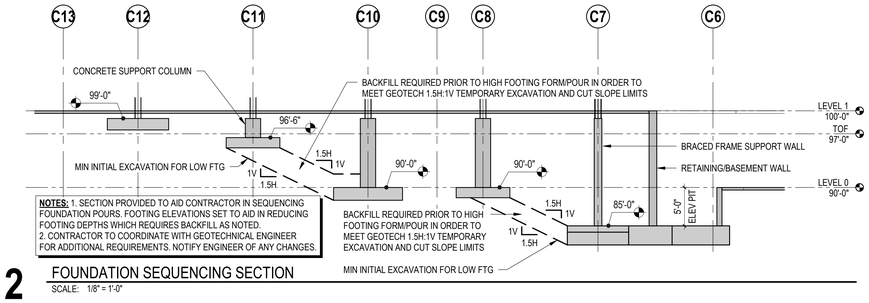
#	Date	Description

TYPICAL BUCKLING-RESTRAINED BRACED FRAME DETAILS

PRCNC20221036

S029

BUILDING PERMIT SET



2 FOUNDATION SEQUENCING SECTION

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

STEEL COLUMNS AND POSTS

1. ALL COLUMNS BEAR AT TOP OF FOOTING OR TOP OF PIER. VERTICAL STEEL ELEMENTS SHOWN IN PLAN ARE 'COLUMNS', UNLESS NOTED OTHERWISE.
2. COLUMNS ARE CENTERED AT GRIDLINE INTERSECTIONS, UNLESS NOTED OTHERWISE.
3. ALL POST BEAR AT TOP OF SLAB OR STEM WALL. VERTICAL STEEL ELEMENTS ARE ONLY POSTS IF LABELED 'POST' IN PLAN.
4. SEE THE FOLLOWING DETAILS FOR ADDITIONAL INFORMATION:

COLUMN BASEPLATE: 21/S021

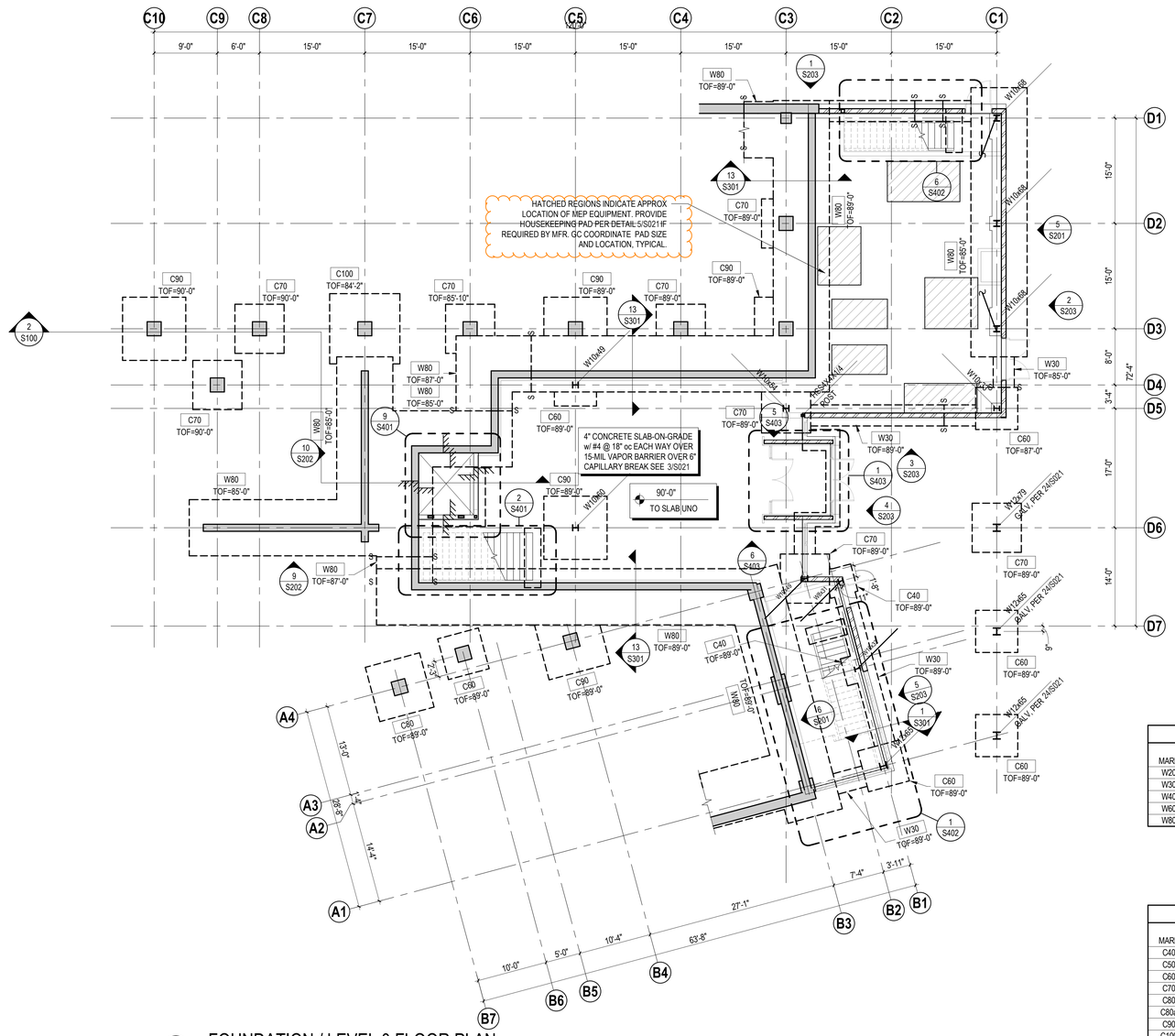
TYPICAL COLUMN CAP PLATE: 22/S026

TYPICAL INTERIOR STEEL COLUMN FOOTING, UNO: 24/S021

POST BASEPLATE: 13/S026

FOUNDATION/FIRST FLOOR PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S029 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. REFER TO DETAILS 3/S021 AND EARTHWORK SPECIFICATION FOR SOIL PREPARATION AT SLABS-ON-GRADE
6. INDICATES EXTENTS AND DEPTH OF RECESSED SLAB-ON-GRADE. CONFIRM DEPTH OF RECESS INDICATED WITH ARCHITECTURAL AND FLOOR FINISH MANUFACTURER WHERE NOT INDICATED ON PLAN. FLOOR FINISHES WITHIN REGION OF RECESS SHALL FLUSH WITH FINISHES ON ADJACENT SLAB SURFACES. SEE DETAIL 10/S021
7. REFER TO DETAIL 5/S021 FOR EQUIPMENT PADS. SEE MECH, ELEC, CIVIL FOR PAD QUANTITIES AND LOCATIONS. PAD SIZES TO BE PROVIDED BY EQUIPMENT MFRS
8. INDICATES FOOTING MARK NUMBER. SEE SCHEDULE THIS SHEET FOR SIZE AND REINFORCEMENT
9. S— — —S INDICATES FOOTING STEP LOCATION. SEE DETAIL 18/S021
10. INDICATES APPROXIMATE LOCATION OF PIPE OR CONDUIT PENETRATION THROUGH FOUNDATION WALL. SEE DETAIL 15/S021. NOT ALL LOCATIONS ARE INDICATED. COORDINATE WITH MEP DRAWINGS FOR QUANTITIES, SIZES AND LOCATIONS
11. STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH-UP AND GRIND SMOOTH
12. LOCALIZED SLOPE TO DRAIN. PROVIDE MAXIMUM 2% SLOPE TO DRAIN WITHIN 1'-0" RADIUS AROUND DRAIN
13. CONTINUE ALL WALL FOOTING REINFORCING THROUGH COLUMN FOOTINGS WHEREVER THEY INTERSECT
14. EXTEND LONGITUDINAL FOOTING REINFORCING INTO ADJACENT FOOTING WITH EXTENSION LENGTH EQUAL TO THE TYPICAL HORIZONTAL SPLICE LENGTH REQUIRED BY THE CONC REINF SPLICE TABLE ON SHEET S001.
15. APPLY COAL TAR EPOXY TO ALL STRUCTURAL STEEL SURFACES, INCLUDING ANCHOR BOLTS, EXPOSED TO SOIL IN THE FINISHED CONDITION
16. BRACED FRAMES AND FOOTINGS ARE CENTERED ON GRID LINES, UNLESS NOTED OTHERWISE
17. BRACED FRAME FOOTINGS SHALL EXTEND 4'-0" BEYOND CENTERLINE OF BRACED FRAME COLUMNS, TYPICAL UNLESS NOTED OTHERWISE IN PLAN



FOUNDATION / LEVEL 0 FLOOR PLAN

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

FOOTING SCHEDULE - WALL			
	SIZE		
MARK	WIDTH	DEPTH	REINFORCING
W20	2'-0"	12"	(3) #4 LONG
W30	3'-0"	12"	(4) #5 LONG w/ #5 TRANS @ 12" oc
W40	4'-0"	12"	(6) #6 LONG w/ #5 TRANS @ 12" oc
W60	6'-0"	18"	(8) #6 LONG w/ #5 TRANS @ 12" oc
W80	8'-0"	30"	(10) #7 LONG T&B w/ #5 STIRRUPS @ 6" oc

FOOTING SCHEDULE - COLUMN				
	SIZE			
MARK	WIDTH	LENGTH	DEPTH	REINFORCING (BOTTOM UNO)
C40	4'-0"	4'-0"	12"	(4) #5 EA WAY
C50	5'-0"	5'-0"	12"	(5) #5 EA WAY
C60	6'-0"	6'-0"	16"	(6) #6 EA WAY
C70	7'-0"	7'-0"	16"	(7) #6 EA WAY
C80	8'-0"	8'-0"	18"	(9) #6 EA WAY
C80a	8'-0"	8'-0"	24"	(9) #6 T&B, EA WAY
C90	9'-0"	9'-0"	20"	(11) #6 T&B, EA WAY
C100	10'-0"	10'-0"	20"	(13) #6 T&B, EA WAY

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REGISTERED PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	RB
Checked by:	TD

Revisions

#	Date	Description

FOUNDATION/ LEVEL 0 FLOOR PLAN

PRCNC20221036

S100

BUILDING PERMIT SET

BEAM END CONNECTIONS

1. BEAMS MARKED WITH (c) AND (c)* ARE SEISMIC COLLECTORS. THESE BEAMS ARE PART OF THE LATERAL FORCE RESISTING SYSTEM.

TYPICAL BEAM/GIRDER TO COLUMN: 11 S026

TYPICAL BEAM/GIRDER BOLTED CONNECTION: 25 S026

TYPICAL (c) CONNECTION AT COLUMNS: 7 S027

TYPICAL (c)* CONNECTION AT COLUMNS: 13 S027

TYPICAL (c) AND (c)* CONNECTION TO BEAM/GIRDER: 19 S027

FLOOR FRAMING PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S029 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. 3" CONCRETE TOPPING OVER 2" COMPOSITE 18 GAGE METAL DECK w/ 6x6 W2.9xW2.9 WELDED WIRE FABRIC REINFORCING, UNLESS NOTED OTHERWISE. SEE DETAILS 1/S025 AND 24/S025.
6. AT ALL COMPOSITE DECK, INSTALL HEADED STUDS AT 12" ON CENTER AT ALL SUPPORTS UNLESS NOTED OTHERWISE. SEE DETAIL 7/S025 .
7. COORDINATE SIZES AND LOCATIONS OF FLOOR AND ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. NOT ALL REQUIRED OPENINGS ARE INDICATED IN THE STRUCTURAL DRAWINGS. REFER TO DETAILS 9/S025 AND 10/S025 FOR OPENINGS IN COMPOSITE FLOOR DECK. REFER TO DETAIL 4/S025 FOR OPENINGS IN ROOF DECK
8. INDICATES EXTENTS OF RECESSED CONCRETE SLABS. 1/2" RECESS UNO ON PLAN
9. HOT DIP GALVANIZE ALL STEEL, CONNECTIONS, AND BOLTS EXPOSED TO WEATHER.
10. AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE UNLESS NOTED OTHERWISE.
11. STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY, PATCH, TOUCH UP AND GRIND SMOOTH.
12. LOCALIZED SLOPE TO DRAIN. PROVIDE MAXIMUM 2% SLOPE TO DRAIN WITHIN 1'-0" RADIUS AROUND DRAIN
13. REFER TO SHEET S001 FOR SNOW DRIFT LOADING. DESIGN JOISTS FOR ADDITIONAL LOAD COMBINATIONS INCLUDING DRIFTED SNOW LOADS IN ADDITION TO DISTRIBUTED SNOW LOAD

STEEL COLUMNS AND POSTS

1. ALL COLUMNS BEAR AT TOP OF FOOTING OR TOP OF PIER. VERTICAL STEEL ELEMENTS SHOWN IN PLAN ARE 'COLUMNS', UNLESS NOTED OTHERWISE.
2. COLUMNS ARE CENTERED AT GRIDLINE INTERSECTIONS, UNLESS NOTED OTHERWISE.
3. ALL POST BEAR AT TOP OF SLAB OR STEM WALL. VERTICAL STEEL ELEMENTS ARE ONLY POSTS IF LABELED 'POST' IN PLAN.
4. SEE THE FOLLOWING DETAILS FOR ADDITIONAL INFORMATION:

COLUMN BASEPLATE: 21 S021

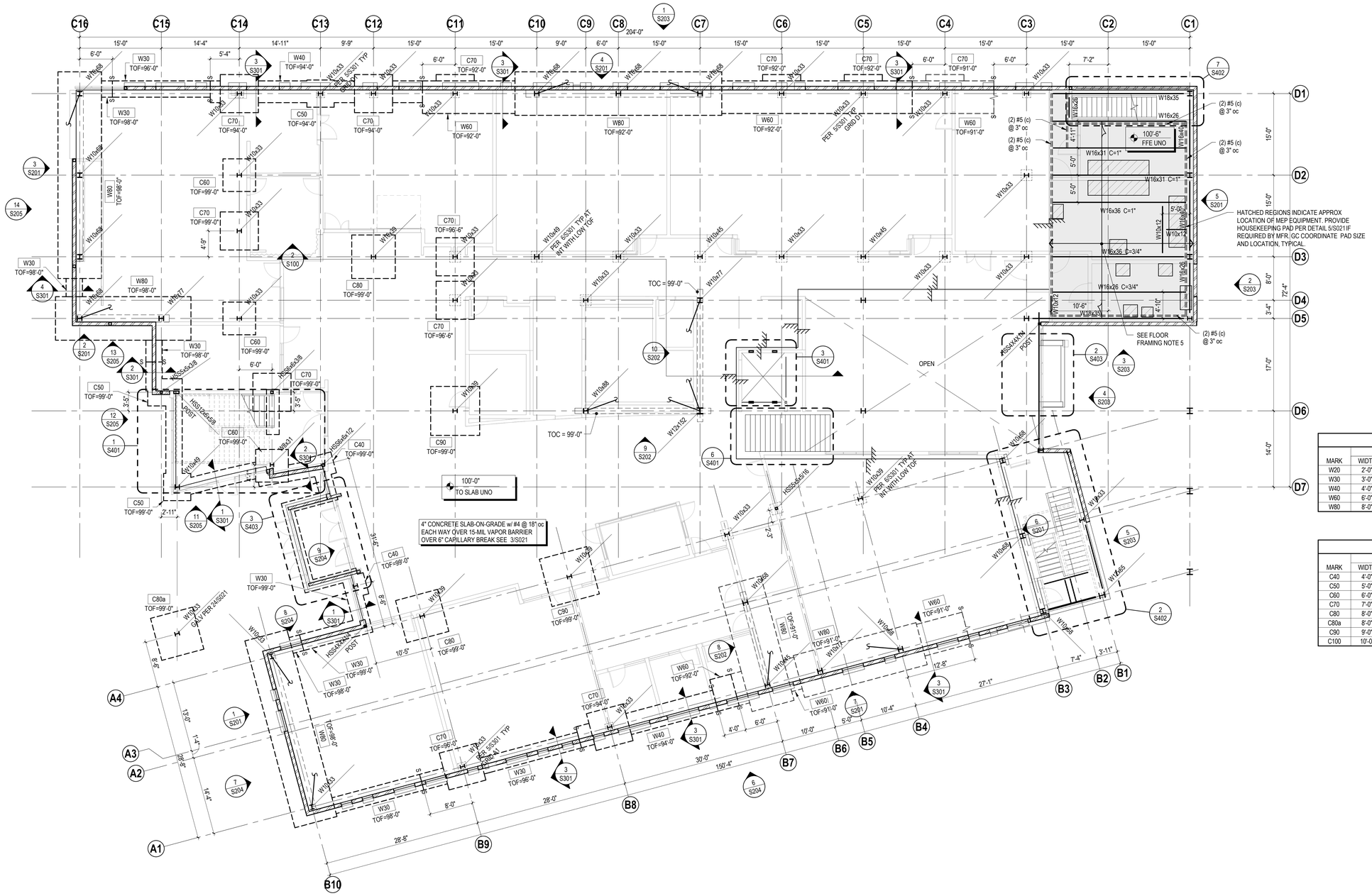
TYPICAL COLUMN CAP PLATE: 22 S026

TYPICAL INTERIOR STEEL COLUMN FOOTING, UNO: 24 S021

POST BASEPLATE: 13 S026

FOUNDATION/FIRST FLOOR PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S029 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. REFER TO DETAILS 3/S021 AND EARTHWORK SPECIFICATION FOR SOIL PREPARATION AT SLABS-ON-GRADE
6. INDICATES EXTENTS AND DEPTH OF RECESSED SLAB-ON-GRADE. CONFIRM DEPTH OF RECESS INDICATED WITH ARCHITECTURAL AND FLOOR FINISH MANUFACTURER WHERE NOT INDICATED ON PLAN. FLOOR FINISHES WITHIN REGION OF RECESS SHALL FLUSH WITH FINISHES ON ADJACENT SLAB SURFACES. SEE DETAIL 10/S021
7. REFER TO DETAIL 5/S021 FOR EQUIPMENT PADS. SEE MECH, ELEC, CIVIL FOR PAD QUANTITIES AND LOCATIONS. PAD SIZES TO BE PROVIDED BY EQUIPMENT MFRS
8. INDICATES FOOTING MARK NUMBER. SEE SCHEDULE THIS SHEET FOR SIZE AND REINFORCEMENT
9. S— — —S INDICATES FOOTING STEP LOCATION. SEE DETAIL 18/S021
10. INDICATES APPROXIMATE LOCATION OF PIPE OR CONDUIT PENETRATION THROUGH FOUNDATION WALL. SEE DETAIL 15/S021 . NOT ALL LOCATIONS ARE INDICATED. COORDINATE WITH MEP DRAWINGS FOR QUANTITIES, SIZES AND LOCATIONS
11. STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH-UP AND GRIND SMOOTH
12. LOCALIZED SLOPE TO DRAIN. PROVIDE MAXIMUM 2% SLOPE TO DRAIN WITHIN 1'-0" RADIUS AROUND DRAIN
13. CONTINUE ALL WALL FOOTING REINFORCING THROUGH COLUMN FOOTINGS WHEREVER THEY INTERSECT
14. EXTEND LONGITUDINAL FOOTING REINFORCING INTO ADJACENT FOOTING WITH EXTENSION LENGTH EQUAL TO THE TYPICAL HORIZONTAL SPLICE LENGTH REQUIRED BY THE CONC REINF SPLICE TABLE ON SHEET S001.
15. APPLY COAL TAR EPOXY TO ALL STRUCTURAL STEEL SURFACES, INCLUDING ANCHOR BOLTS, EXPOSED TO SOIL IN THE FINISHED CONDITION
16. BRACED FRAMES AND FOOTINGS ARE CENTERED ON GRID LINES, UNLESS NOTED OTHERWISE
17. BRACED FRAME FOOTINGS SHALL EXTEND 4'-0" BEYOND CENTERLINE OF BRACED FRAME COLUMNS, TYPICAL UNLESS NOTED OTHERWISE IN PLAN



FOUNDATION / LEVEL 1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

FOOTING SCHEDULE - WALL			
	SIZE		
MARK	WIDTH	DEPTH	REINFORCING
W20	2'-0"	12"	(3) #4 LONG
W30	3'-0"	12"	(4) #5 LONG w/ #5 TRANS @ 12" oc
W40	4'-0"	12"	(6) #6 LONG w/ #5 TRANS @ 12" oc
W60	6'-0"	18"	(8) #6 LONG w/ #5 TRANS @ 12" oc
W80	8'-0"	30"	(10) #7 LONG T&B w/ #5 STIRRUPS @ 6" oc

FOOTING SCHEDULE - COLUMN				
	SIZE			
MARK	WIDTH	LENGTH	DEPTH	REINFORCING (BOTTOM UNO)
C40	4'-0"	4'-0"	12"	(4) #5 EA WAY
C50	5'-0"	5'-0"	12"	(5) #5 EA WAY
C60	6'-0"	6'-0"	16"	(6) #6 EA WAY
C70	7'-0"	7'-0"	16"	(7) #6 EA WAY
C80	8'-0"	8'-0"	18"	(9) #6 EA WAY
C80a	8'-0"	8'-0"	24"	(9) #6 T&B, EA WAY
C90	9'-0"	9'-0"	20"	(11) #6 T&B, EA WAY
C100	10'-0"	10'-0"	20"	(13) #6 T&B, EA WAY

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REGISTERED PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM/BO
Checked by:	TD

Revisions

#	Date	Description

FOUNDATION/LEVEL 1 FLOOR PLAN

PRCNC20221036

S101

BUILDING PERMIT SET

BEAM END CONNECTIONS

1. BEAMS MARKED WITH (c) AND (c)* ARE SEISMIC COLLECTORS. THESE BEAMS ARE PART OF THE LATERAL FORCE RESISTING SYSTEM.

TYPICAL BEAM/GIRDER TO COLUMN: 11 / S026

TYPICAL BEAM/GIRDER BOLTED CONNECTION: 25 / S026

TYPICAL (c) CONNECTION AT COLUMNS: 7 / S027

TYPICAL (c)* CONNECTION AT COLUMNS: 13 / S027

TYPICAL (c) AND (c)* CONNECTION TO BEAM/GIRDER: 19 / S027

KEY FRAMING NOTES

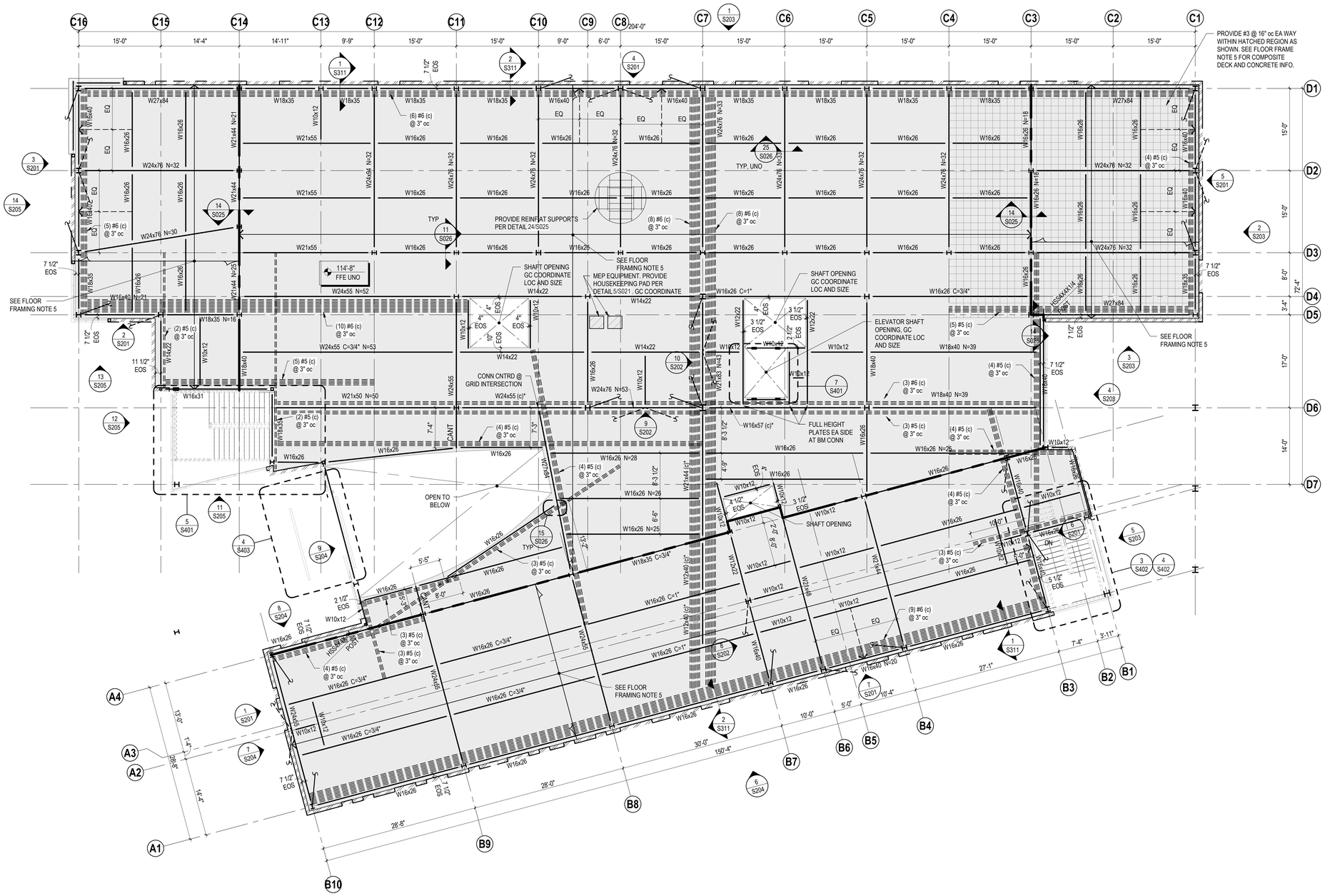
DESIGNATES CHANGE IN FLOOR OR ROOF DECK DIRECTION, SEE PLAN FOR SPAN DIRECTION

DESIGNATES MECHANICAL, ELECTRICAL, AND/OR PLUMBING EQUIPMENT. COORDINATE SIZE AND LOCATION WITH MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER. PROVIDE HOUSEKEEPING PAD AS REQUIRED BY MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER.

DENOTES BOTTOM FLANGE BRACING. REFERENCE DETAILS 1/S027, OR 2/S027.

FLOOR FRAMING PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S029 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. 3" CONCRETE TOPPING OVER 2" COMPOSITE 18 GAGE METAL DECK w/ 6x6 W2.9xW2.9 WELDED WIRE FABRIC REINFORCING, UNLESS NOTED OTHERWISE. SEE DETAILS 1/S025 AND 24/S025.
6. AT ALL COMPOSITE DECK, INSTALL HEADED STUDS AT 12" ON CENTER AT ALL SUPPORTS UNLESS NOTED OTHERWISE. SEE DETAIL 7/S025 .
7. COORDINATE SIZES AND LOCATIONS OF FLOOR AND ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. NOT ALL REQUIRED OPENINGS ARE INDICATED IN THE STRUCTURAL DRAWINGS. REFER TO DETAILS 9/S025 AND 10/S025 FOR OPENINGS IN COMPOSITE FLOOR DECK. REFER TO DETAIL 4/S025 FOR OPENINGS IN ROOF DECK
8. INDICATES EXTENTS OF RECESSED CONCRETE SLABS. 1/2" RECESS UNO ON PLAN
9. HOT DIP GALVANIZE ALL STEEL, CONNECTIONS, AND BOLTS EXPOSED TO WEATHER.
10. AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE UNLESS NOTED OTHERWISE.
11. STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH UP AND GRIND SMOOTH.
12. LOCALIZED SLOPE TO DRAIN. PROVIDE MAXIMUM 2% SLOPE TO DRAIN WITHIN 1'-0" RADIUS AROUND DRAIN
13. REFER TO SHEET S001 FOR SNOW DRIFT LOADING. DESIGN JOISTS FOR ADDITIONAL LOAD COMBINATIONS INCLUDING DRIFTED SNOW LOADS IN ADDITION TO DISTRIBUTED SNOW LOAD



LEVEL 2 - FRAMING PLAN

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

integrus ARCHITECTURE

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

Revisions

#	Date	Description

LEVEL 2 FRAMING PLAN

PRCNC20221036

S102

BUILDING PERMIT SET

BEAM END CONNECTIONS

1. BEAMS MARKED WITH (c) AND (c)* ARE SEISMIC COLLECTORS. THESE BEAMS ARE PART OF THE LATERAL FORCE RESISTING SYSTEM.

TYPICAL BEAM/GIRDER TO COLUMN: 11 / S026

TYPICAL BEAM/GIRDER BOLTED CONNECTION: 25 / S026

TYPICAL (c) CONNECTION AT COLUMNS: 7 / S027

TYPICAL (c)* CONNECTION AT COLUMNS: 13 / S027

TYPICAL (c) AND (c)* CONNECTION TO BEAM/GIRDER: 19 / S027

KEY FRAMING NOTES

DESIGNATES CHANGE IN FLOOR OR ROOF DECK DIRECTION, SEE PLAN FOR SPAN DIRECTION.

DESIGNATES MECHANICAL, ELECTRICAL, AND/OR PLUMBING EQUIPMENT. COORDINATE SIZE AND LOCATION WITH MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER. PROVIDE HOUSEKEEPING PAD AS REQUIRED BY MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER.

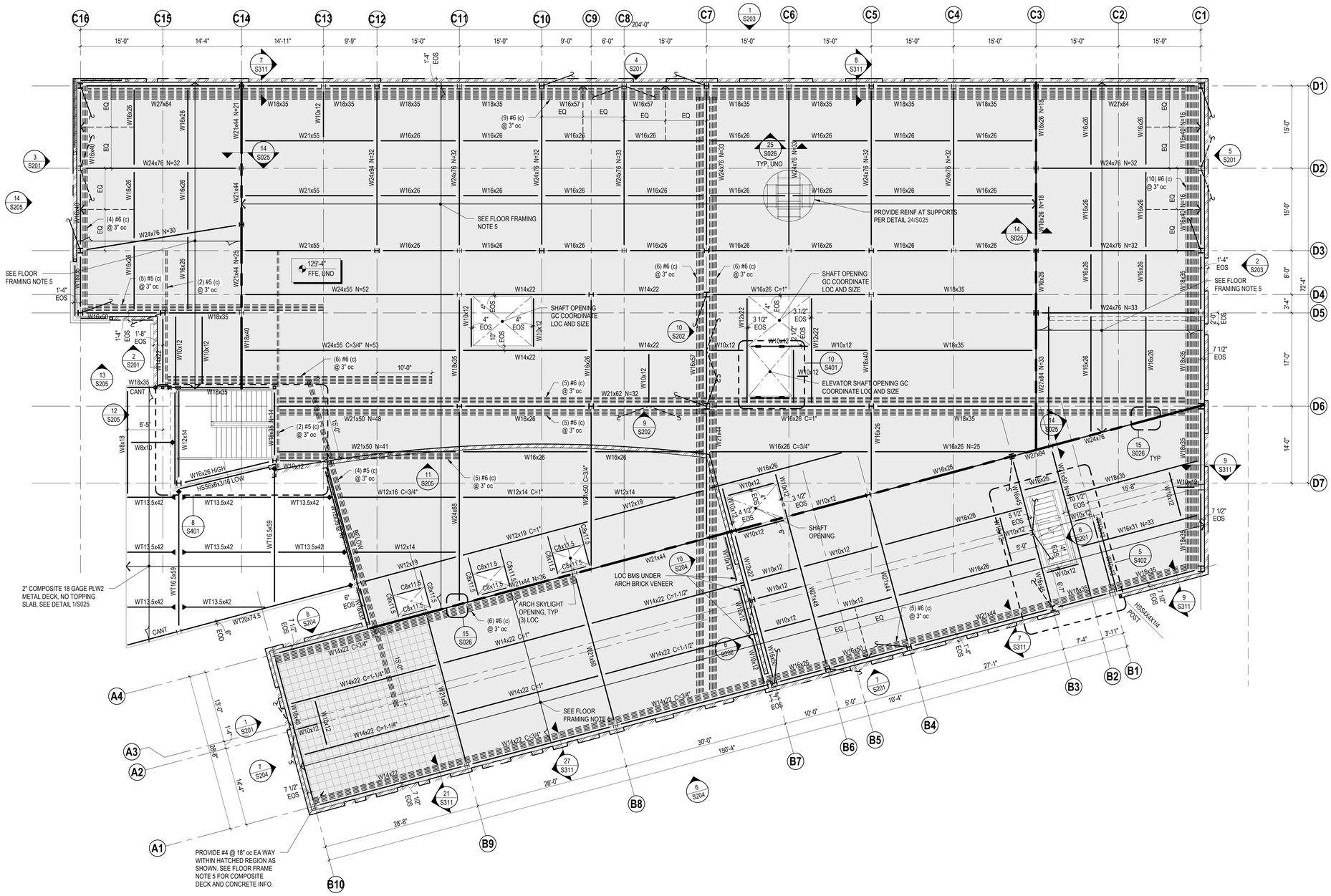
DENOTES BOTTOM FLANGE BRACING. REFERENCE DETAILS 1/S027, OR 2/S027.

FLOOR FRAMING PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S029 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. 3" CONCRETE TOPPING OVER 2" COMPOSITE 18 GAGE METAL DECK w/ 6x6 W2.9xW2.9 WELDED WIRE FABRIC REINFORCING, UNLESS NOTED OTHERWISE. SEE DETAILS 1/S025 AND 24/S025.
6. AT ALL COMPOSITE DECK, INSTALL HEADED STUDS AT 12" ON CENTER AT ALL SUPPORTS UNLESS NOTED OTHERWISE. SEE DETAIL 7/S025 .
7. COORDINATE SIZES AND LOCATIONS OF FLOOR AND ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. NOT ALL REQUIRED OPENINGS ARE INDICATED IN THE STRUCTURAL DRAWINGS. REFER TO DETAILS 9/S025 AND 10/S025 FOR OPENINGS IN COMPOSITE FLOOR DECK. REFER TO DETAIL 4/S025 FOR OPENINGS IN ROOF DECK
8. INDICATES EXTENTS OF RECESSED CONCRETE SLABS. 1/2" RECESS UNO ON PLAN
9. HOT DIP GALVANIZE ALL STEEL, CONNECTIONS, AND BOLTS EXPOSED TO WEATHER.
10. AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE UNLESS NOTED OTHERWISE.
11. STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH UP AND GRIND SMOOTH.
12. LOCALIZED SLOPE TO DRAIN. PROVIDE MAXIMUM 2% SLOPE TO DRAIN WITHIN 1'-0" RADIUS AROUND DRAIN
13. REFER TO SHEET S501 FOR SNOW DRIFT LOADING. DESIGN JOISTS FOR ADDITIONAL LOAD COMBINATIONS INCLUDING DRIFTED SNOW LOADS IN ADDITION TO DISTRIBUTED SNOW LOAD

ROOF FRAMING PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S024 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. AT ALL COMPOSITE DECK, INSTALL HEADED STUDS AT 12" ON CENTER AT ALL SUPPORTS UNLESS NOTED OTHERWISE. SEE DETAIL 7/S025 .
6. COORDINATE SIZES AND LOCATIONS OF ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. NOT ALL REQUIRED OPENINGS ARE INDICATED IN THE STRUCTURAL DRAWINGS. REFER TO DETAIL 4/S025 FOR OPENINGS IN ROOF DECK
   STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH UP AND GRIND SMOOTH.
7. HOT DIP GALVANIZE ALL STEEL, CONNECTIONS, AND BOLTS EXPOSED TO WEATHER.
8. AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE UNLESS NOTED OTHERWISE.
9. EQUIPMENT SHALL NOT BE SUPPORTED FROM ROOF DECK. EQUIPMENT CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPLEMENTAL SUPPORT SPANNING BETWEEN PRIMARY STRUCTURAL MEMBERS FOR SUPPORT OF EQUIPMENT
10. REFER TO SHEET S501 FOR SNOW DRIFT LOADING



LEVEL 3 - FRAMING PLAN / LOW ROOF FRAMING PLAN

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

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
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Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

Revisions

#	Date	Description

LEVEL 3 FRAMING PLAN / LOW ROOF FRAMING PLAN

PRCNC20221036

S103

BUILDING PERMIT SET

BEAM END CONNECTIONS

1. BEAMS MARKED WITH (c) AND (c)* ARE SEISMIC COLLECTORS. THESE BEAMS ARE PART OF THE LATERAL FORCE RESISTING SYSTEM.

TYPICAL BEAM/GIRDER TO COLUMN:	TYPICAL BEAM/GIRDER BOLTED CONNECTION:	TYPICAL (c) CONNECTION AT COLUMNS:	TYPICAL (c)* CONNECTION AT COLUMNS:
11 / S026	25 / S026	7 / S027	13 / S027

TYPICAL (c) AND (c)* CONNECTION TO BEAM/GIRDER: 19 / S027

KEY FRAMING NOTES

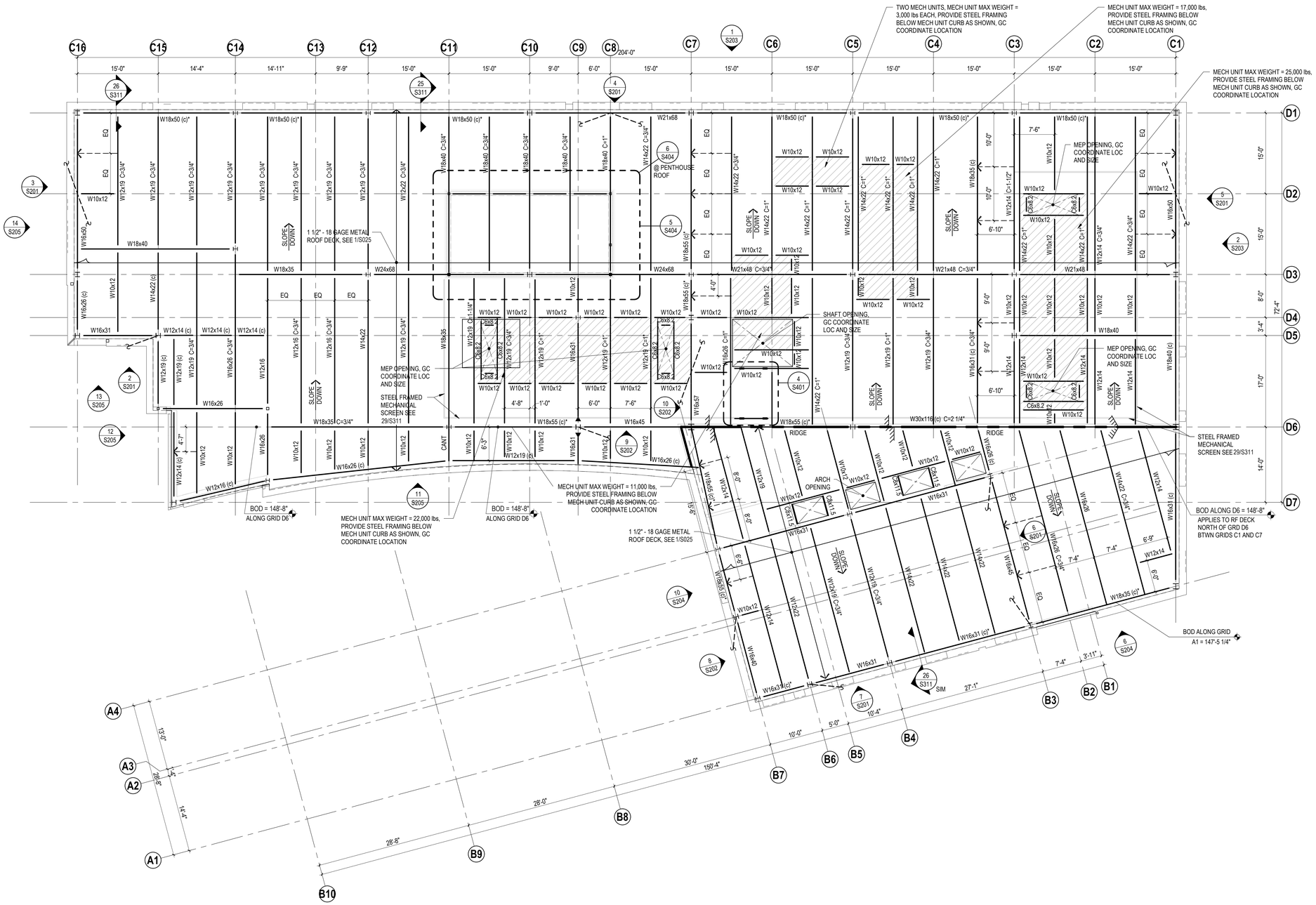
DESIGNATES CHANGE IN FLOOR OR ROOF DECK DIRECTION, SEE PLAN FOR SPAN DIRECTION

DESIGNATES MECHANICAL, ELECTRICAL, AND/OR PLUMBING EQUIPMENT. COORDINATE SIZE AND LOCATION WITH MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER. PROVIDE HOUSEKEEPING PAD AS REQUIRED BY MEP DESIGN TEAM AND EQUIPMENT MANUFACTURER.

DENOTES BOTTOM FLANGE BRACING. REFERENCE DETAILS 1/S027, OR 2/S027.

ROOF FRAMING PLAN NOTES

1. REFER TO SHEETS S001, S002 AND S003 FOR GENERAL STRUCTURAL AND SPECIAL INSPECTION NOTES
2. REFER TO SHEETS S021 THROUGH S024 FOR TYPICAL DETAILS
3. PROJECT ELEVATION 100'-0" = DATUM ELEVATION 534.0' PER CIVIL DRAWINGS.
4. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS
5. AT ALL COMPOSITE DECK, INSTALL HEADED STUDS AT 12" ON CENTER AT ALL SUPPORTS UNLESS NOTED OTHERWISE. SEE DETAIL 7/S025 .
6. COORDINATE SIZES AND LOCATIONS OF ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. NOT ALL REQUIRED OPENINGS ARE INDICATED IN THE STRUCTURAL DRAWINGS. REFER TO DETAIL 4/S025 FOR OPENINGS IN ROOF DECK STRUCTURAL STEEL SHOP TAGS, ERECTION AIDS AND MILL MARKINGS EXPOSED TO VIEW SHALL BE REMOVED AFTER FIELD ASSEMBLY. PATCH, TOUCH UP AND GRIND SMOOTH.
7. HOT DIP GALVANIZE ALL STEEL, CONNECTIONS, AND BOLTS EXPOSED TO WEATHER.
8. AT CANTILEVERS DESIGNATED AS "CANT" ON PLAN, CANTILEVER MEMBER SIZE SHALL MATCH BACKSPAN MEMBER SIZE UNLESS NOTED OTHERWISE.
9. EQUIPMENT SHALL NOT BE SUPPORTED FROM ROOF DECK. EQUIPMENT CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SUPPLEMENTAL SUPPORT SPANNING BETWEEN PRIMARY STRUCTURAL MEMBERS FOR SUPPORT OF EQUIPMENT
10. REFER TO SHEET S501 FOR SNOW DRIFT LOADING



ROOF FRAMING PLAN

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

integrus ARCHITECTURE

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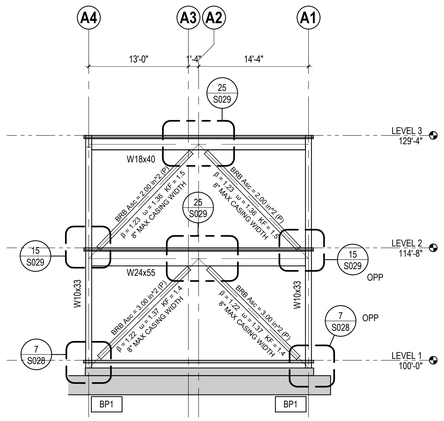
#	Date	Description

ROOF FRAMING PLAN

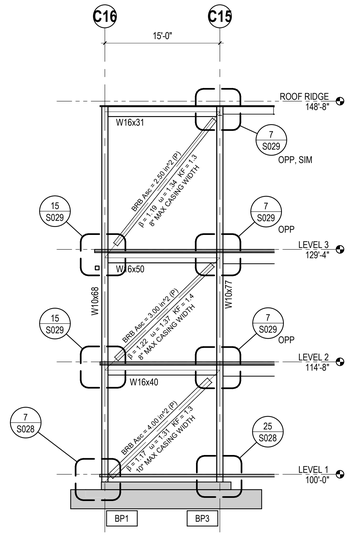
PRCNC20221036

S104

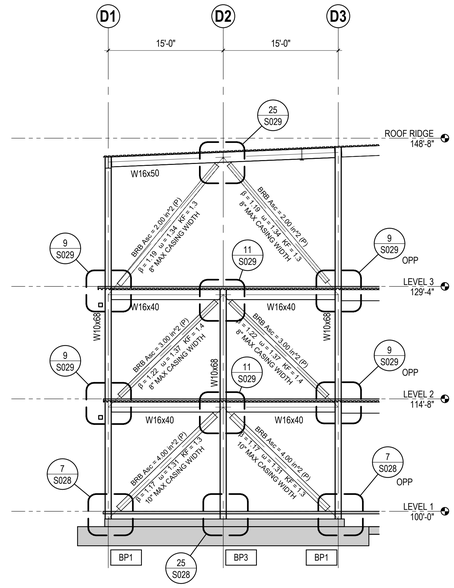
BUILDING PERMIT SET



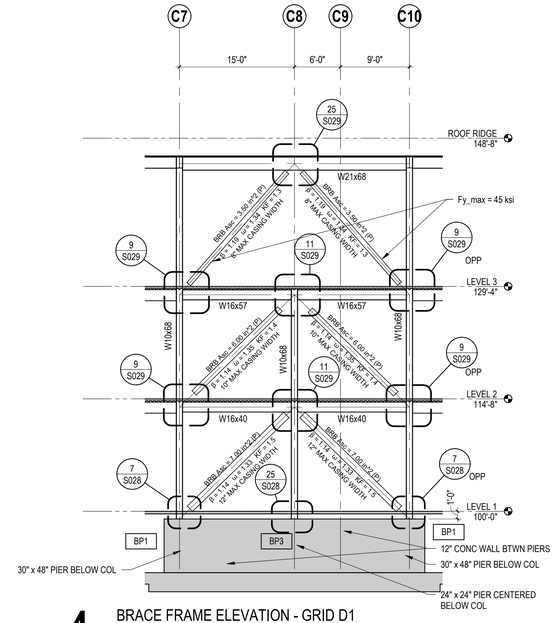
1 BRACE FRAME ELEVATION - GRID B9
SCALE: 1/8" = 1'-0"



2 BRACE FRAME ELEVATION - GRID D5
SCALE: 1/8" = 1'-0"



3 BRACE FRAME ELEVATION - GRID C16
SCALE: 1/8" = 1'-0"

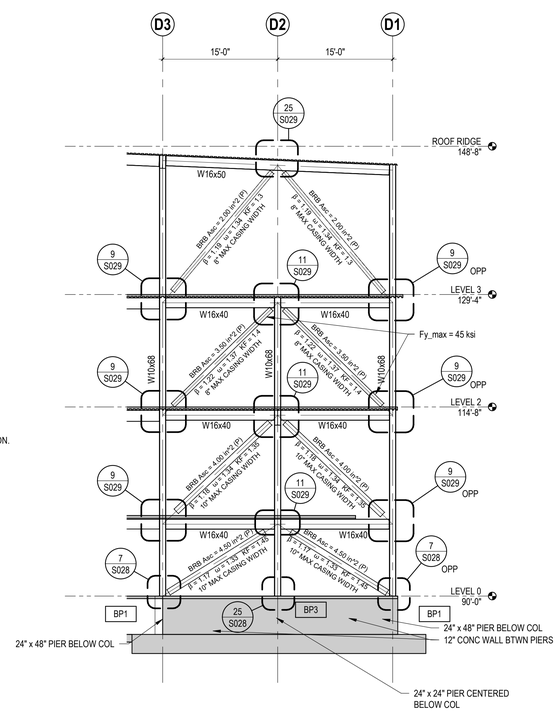


4 BRACE FRAME ELEVATION - GRID D1
SCALE: 1/8" = 1'-0"

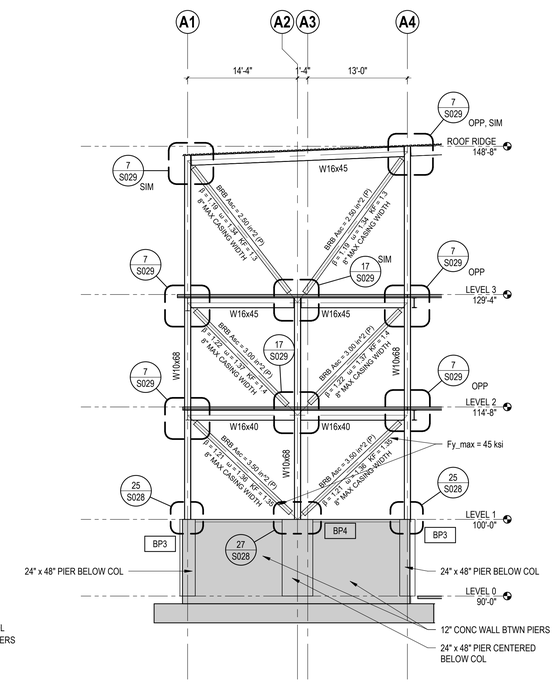
BUCKLING-RESTRAINED BRACED FRAME NOTES

1. Fy_min FOR ALL BUCKLING-RESTRAINED BRACES = 38 ksi
2. Fy_max FOR ALL BUCKLING-RESTRAINED BRACES = 46 ksi, UNLESS NOTED OTHERWISE ON ELEVATIONS
3. Asc = STEEL CORE AREA
   (P) = PINNED BRACE END CONNECTIONS

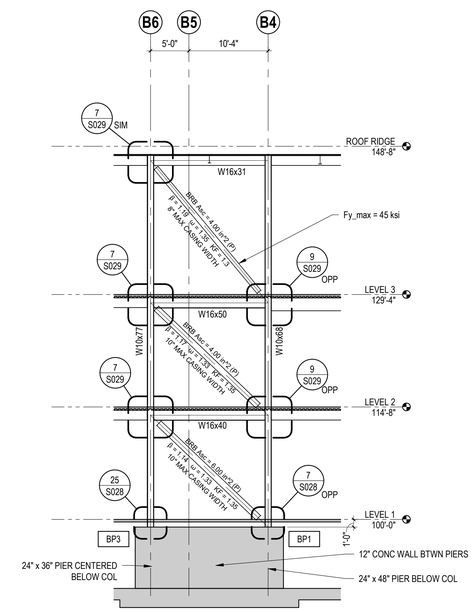
5. BPx CALLED OUT ON BUCKLING-RESTRAINED BRACE FRAME ELEVATIONS INDICATES A COLUMN BASE PLATE ID. SEE DETAILS 7/S028, 25/S028, AND 27/S028 FOR BASE PLATE SCHEDULE AND ADDITIONAL INFORMATION.
7. SEE 18/S028 FOR BRACED FRAME PROTECTED ZONE INFORMATION.
8. SEE SHEETS S028 AND S029 FOR TYPICAL BRB DETAILS.



5 BRACE FRAME ELEVATION - GRID C1
SCALE: 1/8" = 1'-0"



6 BRACE FRAME ELEVATION - GRID B2
SCALE: 1/8" = 1'-0"



7 BRACE FRAME ELEVATION - GRID A1
SCALE: 1/8" = 1'-0"

BUILDING PERMIT SET

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THERESA H. DANIEL
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REGISTERED PROFESSIONAL ENGINEER

PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM
Checked by:	TD

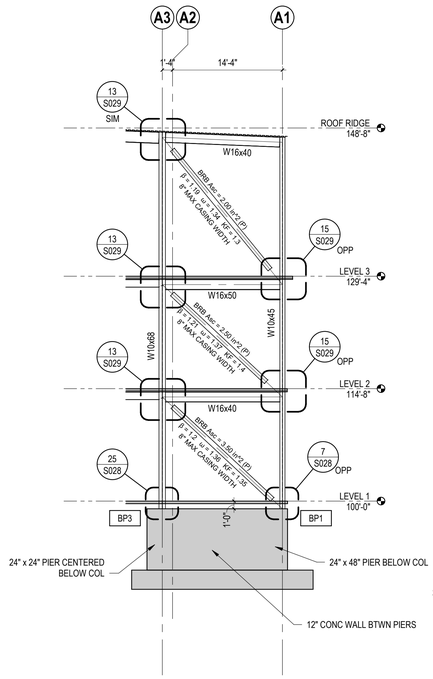
Revisions

#	Date	Description

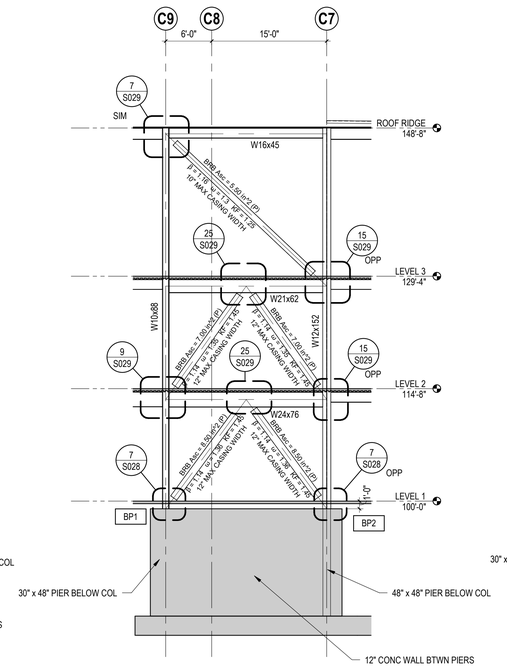
BRACE FRAME ELEVATIONS

PRCNC20221036

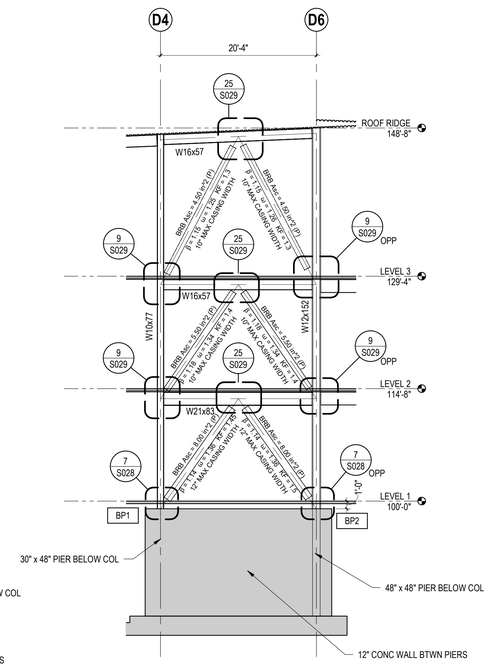
S201



8 BRACE FRAME ELEVATION - GRID B5
SCALE: 1/8" = 1'-0"



9 BRACE FRAME ELEVATION - GRID D7
SCALE: 1/8" = 1'-0"



10 BRACE FRAME ELEVATION - GRID C4
SCALE: 1/8" = 1'-0"

BUCKLING-RESTRAINED BRACED FRAME NOTES

1. Fy_min FOR ALL BUCKLING-RESTRAINED BRACES = 38 ksi
2. Fy_max FOR ALL BUCKLING-RESTRAINED BRACES = 46 ksi, UNLESS NOTED OTHERWISE ON ELEVATIONS
3. Asc = STEEL CORE AREA
   (P) = PINNED BRACE END CONNECTIONS

5. BPx CALLED OUT ON BUCKLING-RESTRAINED BRACE FRAME ELEVATIONS INDICATES A COLUMN BASE PLATE ID. SEE DETAILS 7/S028, 25/S028, AND 27/S028 FOR BASE PLATE SCHEDULE AND ADDITIONAL INFORMATION.
7. SEE 18/S028 FOR BRACED FRAME PROTECTED ZONE INFORMATION.
8. SEE SHEETS S028 AND S029 FOR TYPICAL BRB DETAILS.

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Revisions

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BRACE FRAME ELEVATIONS

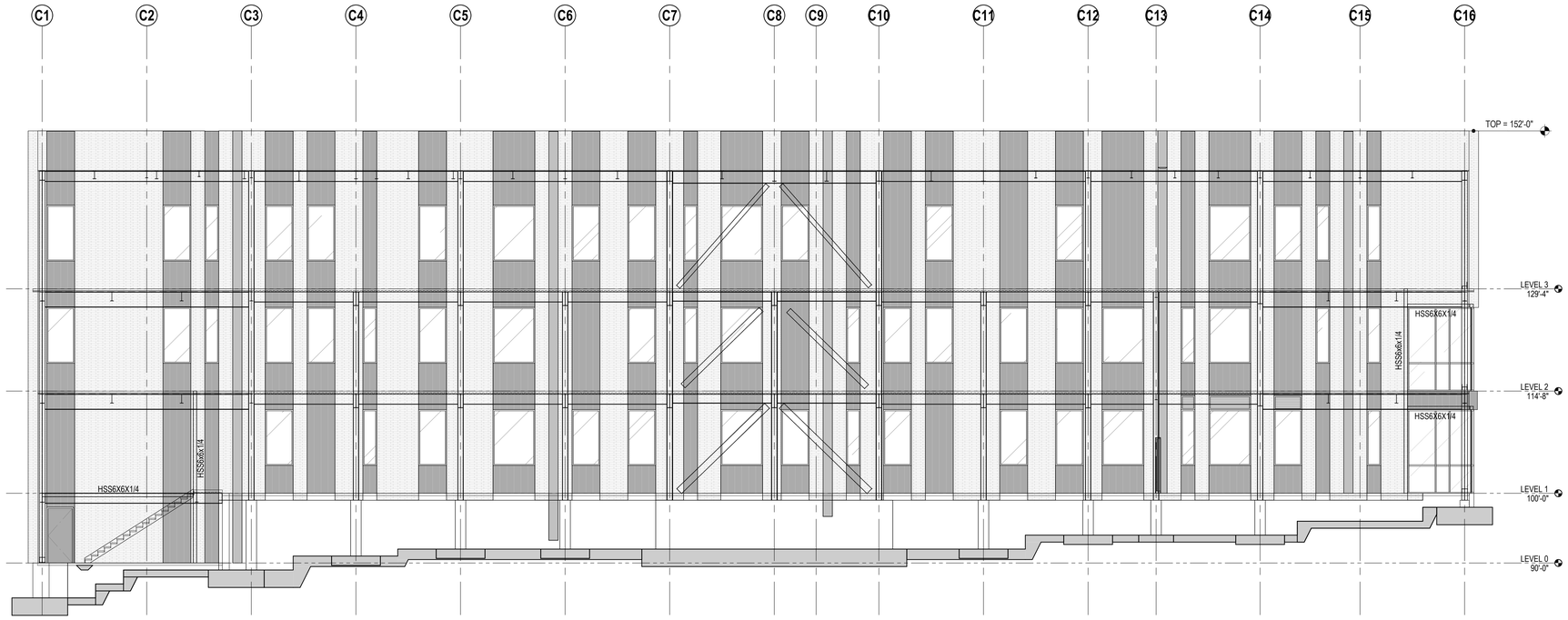
PRCNC20221036

S202

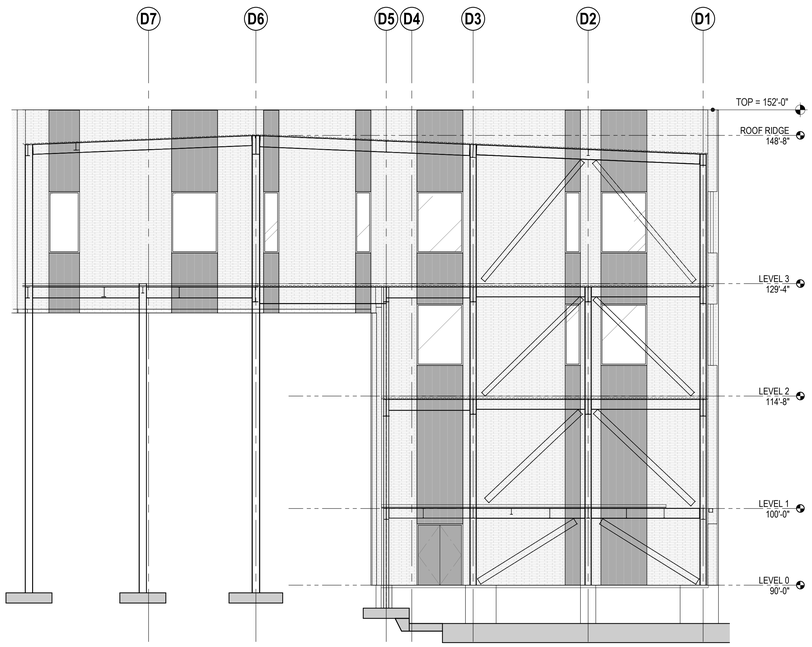
BUILDING PERMIT SET

EXTERIOR METAL STUD WALL NOTES:

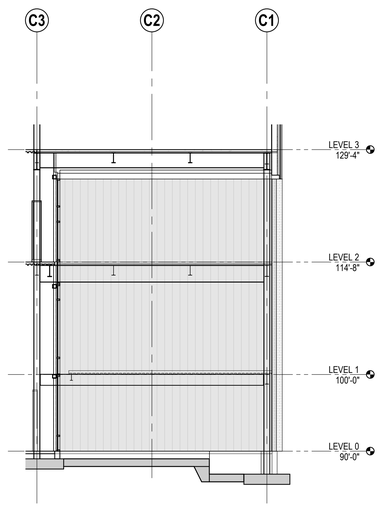
1. FOR TYPICAL METAL STUD DETAILS SEE SHEETS S023 & S024
2. WALL STUDS ARE 600S162-54 @ 16"oc, UNO
3. FOR TYPICAL MASONRY VENEER DETAILS SEE SHEET S022
4. PROVIDE LOOSE STEEL LINTEL ANGLES PER 5/S022 WHERE REQUIRED
5. SEE GENERAL NOTES FOR ADDITIONAL METAL STUD REQUIREMENTS
6. VERIFY ALL OPENING SIZES & LOCATIONS WITH ARCHITECTURAL DRAWINGS AND MEP SUBCONTRACTORS PRIOR TO CONSTRUCTION
7. TOP OF PARAPET (TOP) IS TOP OF METAL STUD FRAMING



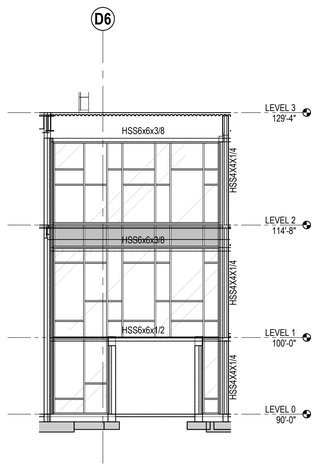
1 EXTERIOR WALL ELEVATION GRID D1
SCALE: 1/8" = 1'-0"



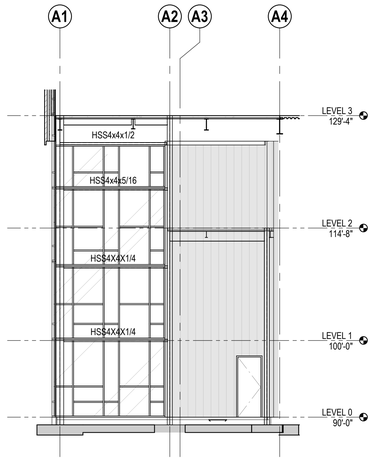
2 EXTERIOR WALL ELEVATION GRID C1
SCALE: 1/8" = 1'-0"



3 EXTERIOR WALL ELEVATION GRID D5
SCALE: 1/8" = 1'-0"



4 EXTERIOR WALL ELEVATION NEAR GRID C3
SCALE: 1/8" = 1'-0"



5 EXTERIOR WALL ELEVATION GRID B1
SCALE: 1/8" = 1'-0"

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EXTERIOR WALL ELEVATIONS

PRCNC20221036

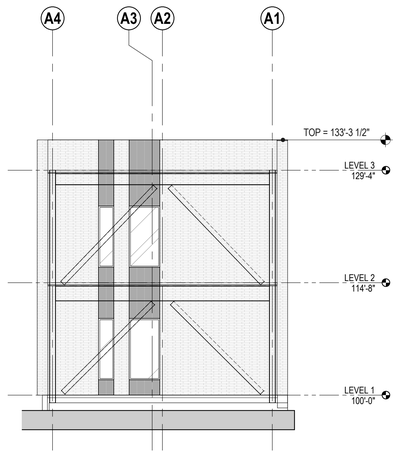
S203

BUILDING PERMIT SET

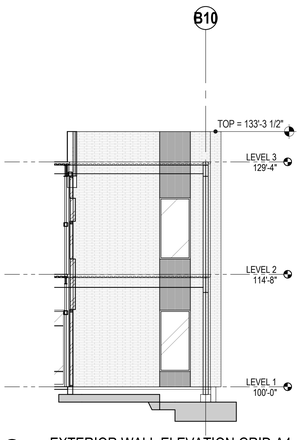
EXTERIOR METAL STUD WALL NOTES:

1. FOR TYPICAL METAL STUD DETAILS SEE SHEETS S023 & S024
2. WALL STUDS ARE 800S162-54 @ 16"oc, UNO
3. FOR TYPICAL MASONRY VENEER DETAILS SEE SHEET S022
4. PROVIDE LOOSE STEEL LINTEL ANGLES PER 5/S022 WHERE REQUIRED
5. SEE GENERAL NOTES FOR ADDITIONAL METAL STUD REQUIREMENTS
6. VERIFY ALL OPENING SIZES & LOCATIONS WITH ARCHITECTURAL DRAWINGS AND MEP SUBCONTRACTORS PRIOR TO CONSTRUCTION
7. TOP OF PARAPET (TOP) IS TOP OF METAL STUD FRAMING

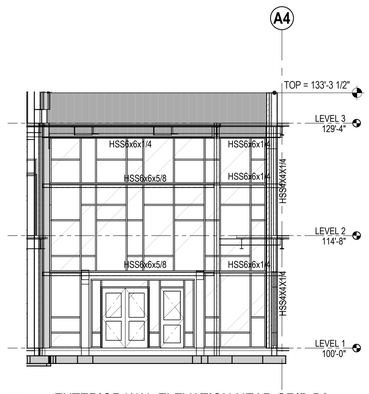
6 EXTERIOR WALL ELEVATION GRID A1
SCALE: 1/8" = 1'-0"



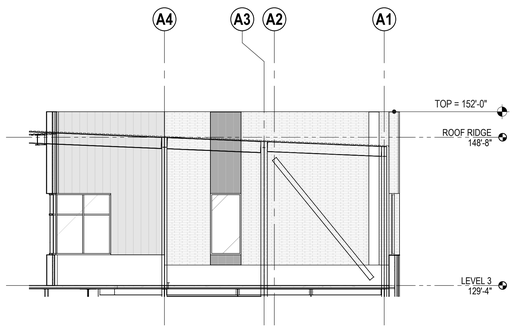
7 EXTERIOR WALL ELEVATION GRID B9
SCALE: 1/8" = 1'-0"



8 EXTERIOR WALL ELEVATION GRID A4
SCALE: 1/8" = 1'-0"



9 EXTERIOR WAL ELEVATION NEAR GRID B8
SCALE: 1/8" = 1'-0"



10 EXTERIOR WALL ELEVATION GRID B6
SCALE: 1/8" = 1'-0"

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NEW STEM BUILDING

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Date:	06/30/22
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Checked by:	TD

Revisions

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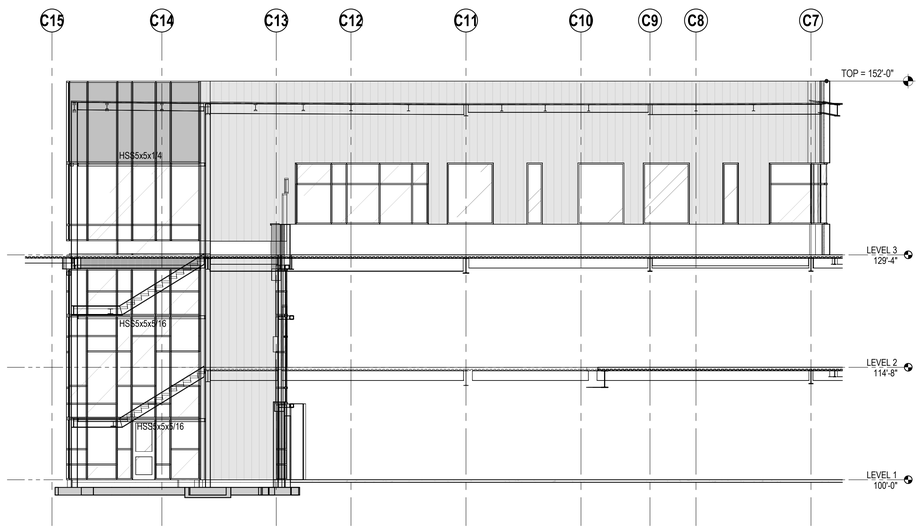
EXTERIOR WALL ELEVATIONS

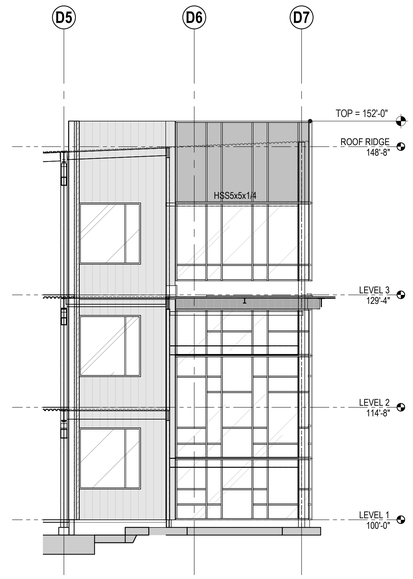
PRCNC20221036

S204

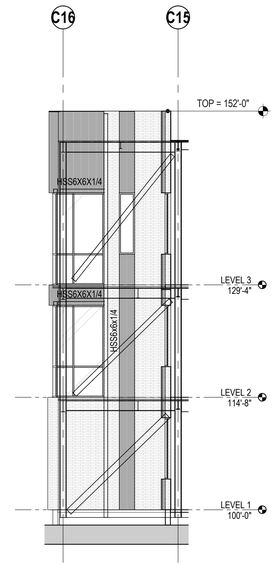
BUILDING PERMIT SET



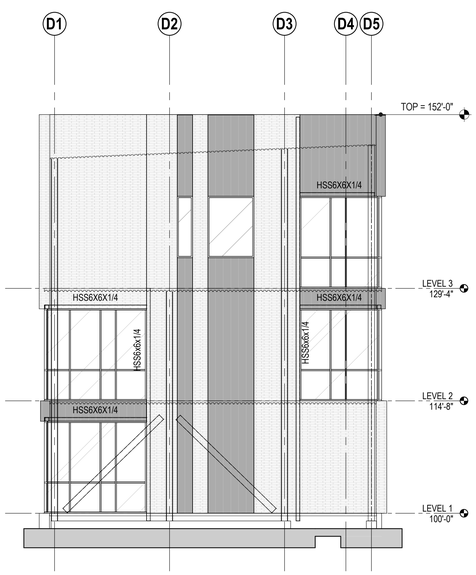
11 EXTERIOR WALL ELEVATION NEAR GRID D7
SCALE: 1/8" = 1'-0"



12 EXTERIOR WALL ELEVATION GRID C15
SCALE: 1/8" = 1'-0"



13 EXTERIOR WALL ELEVATION GRID D5
SCALE: 1/8" = 1'-0"



14 EXTERIOR WALL ELEVATION GRID C16
SCALE: 1/8" = 1'-0"

EXTERIOR METAL STUD WALL NOTES:

1. FOR TYPICAL METAL STUD DETAILS SEE SHEETS S023 & S024
2. WALL STUDS ARE 800S162-54 @ 16"oc, UNO
3. FOR TYPICAL MASONRY VENEER DETAILS SEE SHEET S022
4. PROVIDE LOOSE STEEL LINTEL ANGLES PER 5/S022 WHERE REQUIRED
5. SEE GENERAL NOTES FOR ADDITIONAL METAL STUD REQUIREMENTS
6. VERIFY ALL OPENING SIZES & LOCATIONS WITH ARCHITECTURAL DRAWINGS AND MEP SUBCONTRACTORS PRIOR TO CONSTRUCTION
7. TOP OF PARAPET (TOP) IS TOP OF METAL STUD FRAMING

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Puyallup, WA 98374

Date:	06/30/22
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Drawn By:	RB
Checked by:	TD

Revisions

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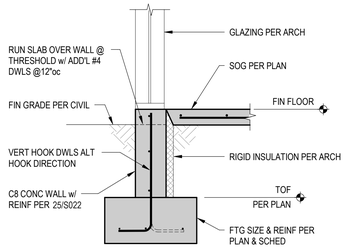
EXTERIOR WALL ELEVATIONS

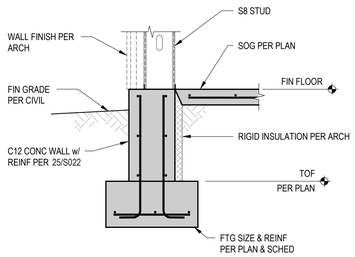
PRCNC20221036

S205

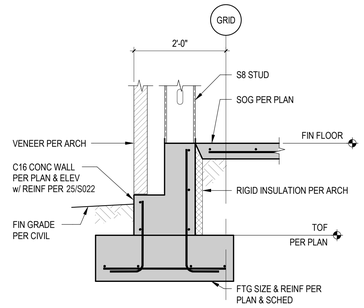
BUILDING PERMIT SET



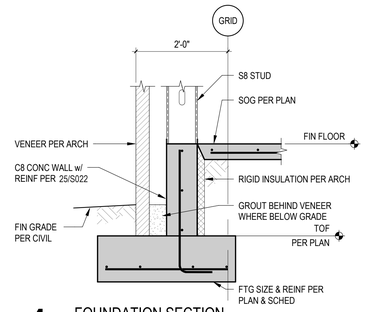
1 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



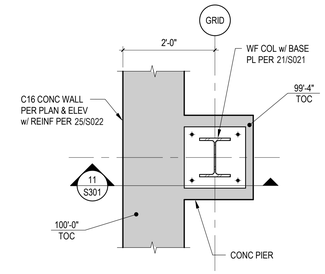
2 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



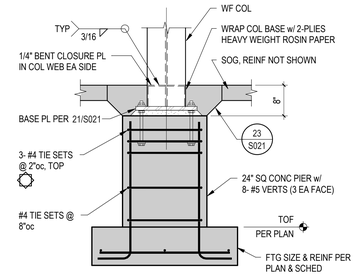
3 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



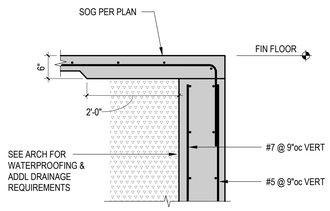
4 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

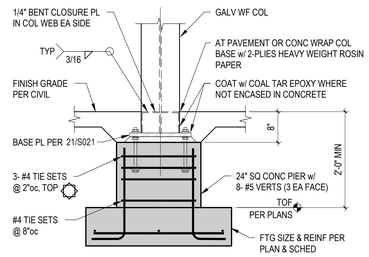


5 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

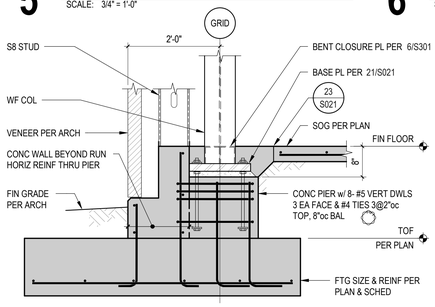


6 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"

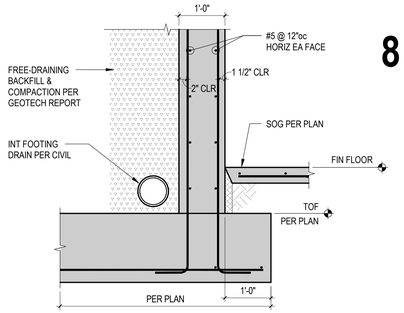




8 FOUNDATION DETAIL
SCALE: 3/4" = 1'-0"



11 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



13 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

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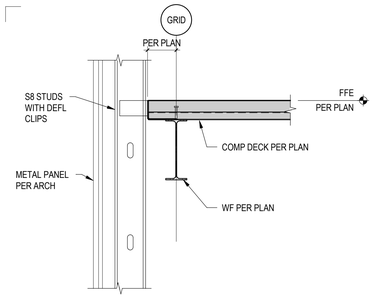
FOUNDATION DETAILS & SECTIONS

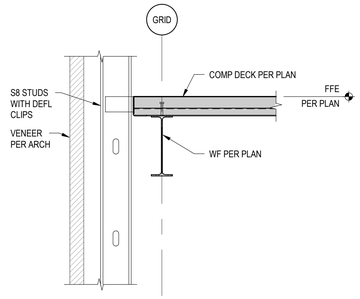
PRCNC20221036

S301

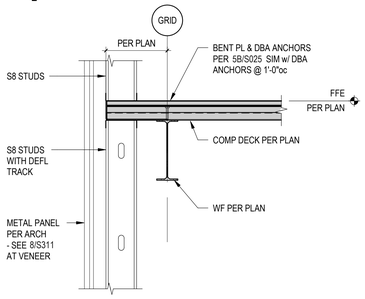
BUILDING PERMIT SET



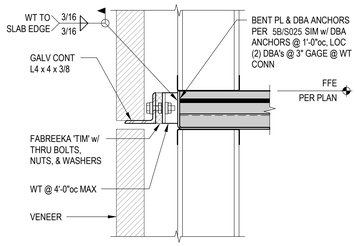
1 SECTION
SCALE: 3/4" = 1'-0"



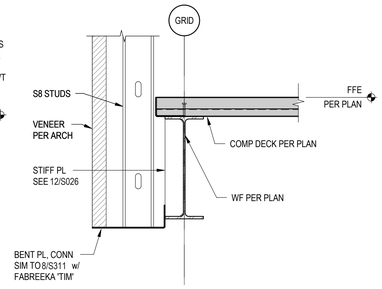
2 SECTION
SCALE: 3/4" = 1'-0"



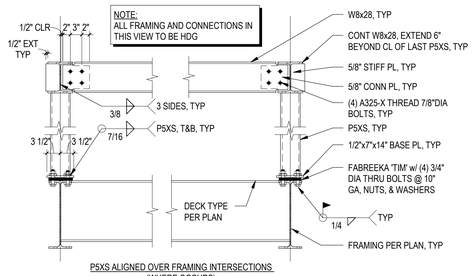
7 SECTION
SCALE: 3/4" = 1'-0"



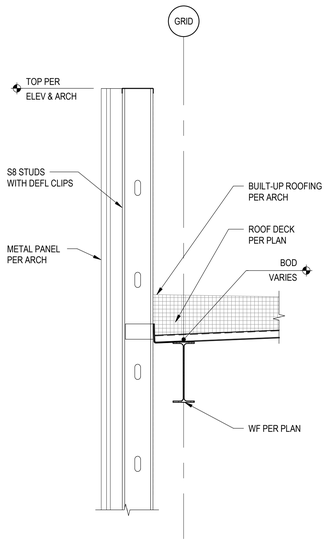
8 DETAIL
SCALE: 1 1/2" = 1'-0"



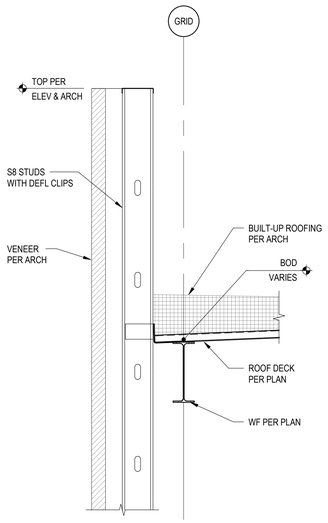
9 SECTION
SCALE: 3/4" = 1'-0"



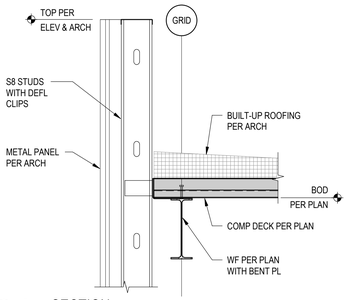
6 LAB EXHAUST SUPPORT FRAMING
SCALE: 3/4" = 1'-0"



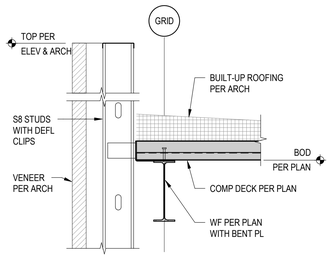
25 SECTION
SCALE: 3/4" = 1'-0"



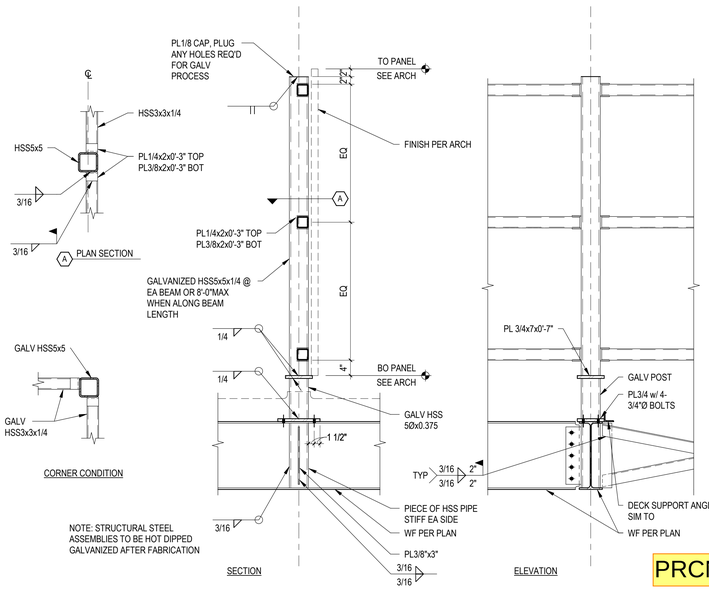
26 SECTION
SCALE: 3/4" = 1'-0"



21 SECTION
SCALE: 3/4" = 1'-0"



27 SECTION
SCALE: 3/4" = 1'-0"



29 SCREENWALL DETAIL
SCALE: 3/4" = 1'-0"

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1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	AM/BO/RB
Checked by:	TD

Revisions

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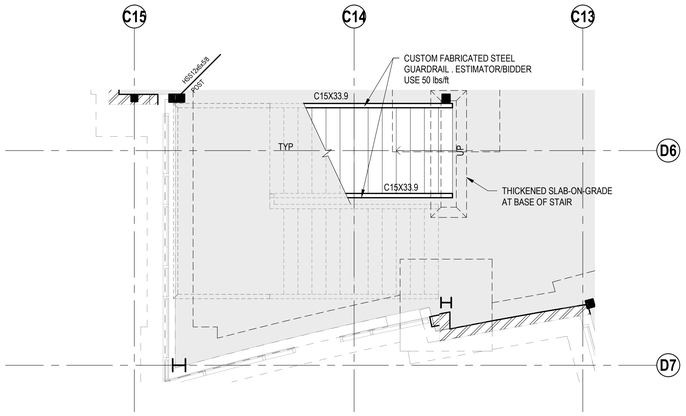
FRAMING DETAILS & SECTIONS

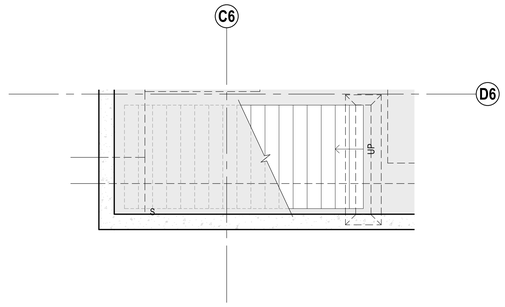
PRCNC20221036

S311

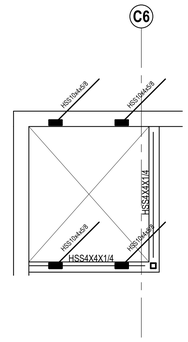
BUILDING PERMIT SET



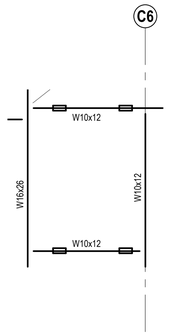
1 ENLARGED PLAN - STAIR 1-LEVEL 1
SCALE: 1/4" = 1'-0"



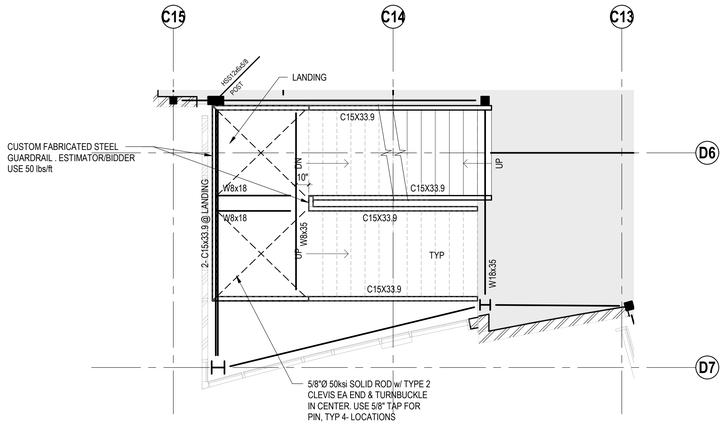
2 ENLARGED PLAN - STAIR 2-LEVEL 0
SCALE: 1/4" = 1'-0"



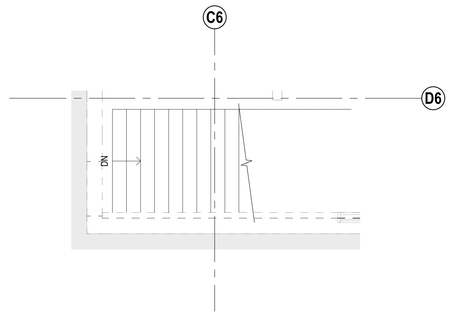
3 ENLARGED PLAN - ELEVATOR - LEVEL 1
SCALE: 1/4" = 1'-0"



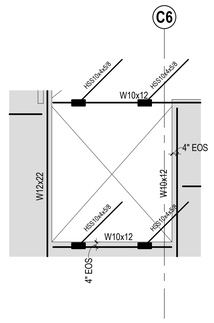
4 ENLARGED PLAN - ELEVATOR - ROOF
SCALE: 1/4" = 1'-0"



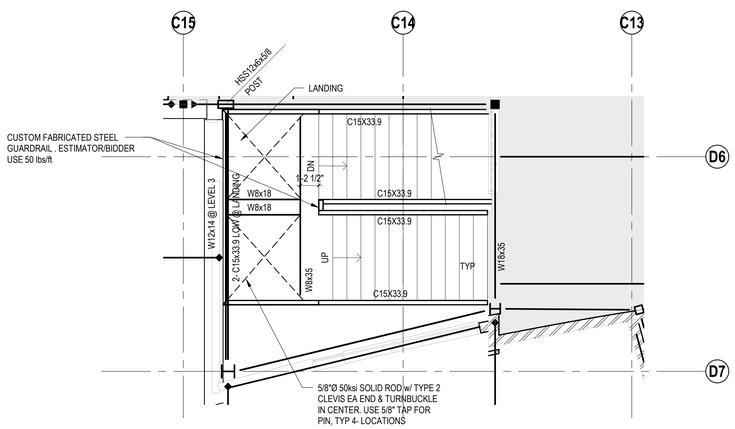
5 ENLARGED PLAN - STAIR 1-LEVEL 2
SCALE: 1/4" = 1'-0"



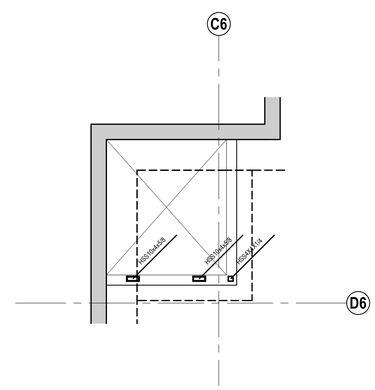
6 ENLARGED PLAN - STAIR 2-LEVEL 1
SCALE: 1/4" = 1'-0"



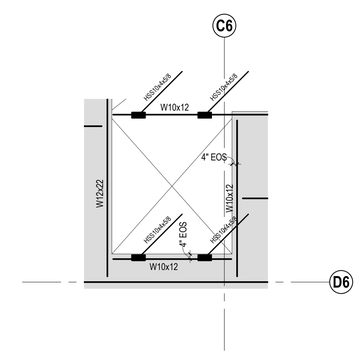
7 ENLARGED PLAN - ELEVATOR - LEVEL 2
SCALE: 1/4" = 1'-0"



8 ENLARGED PLAN - STAIR 1-LEVEL 3
SCALE: 1/4" = 1'-0"



9 ENLARGED PLAN - ELEVATOR - LEVEL 0
SCALE: 1/4" = 1'-0"



10 ENLARGED PLAN - ELEVATOR - LEVEL 3
SCALE: 1/4" = 1'-0"

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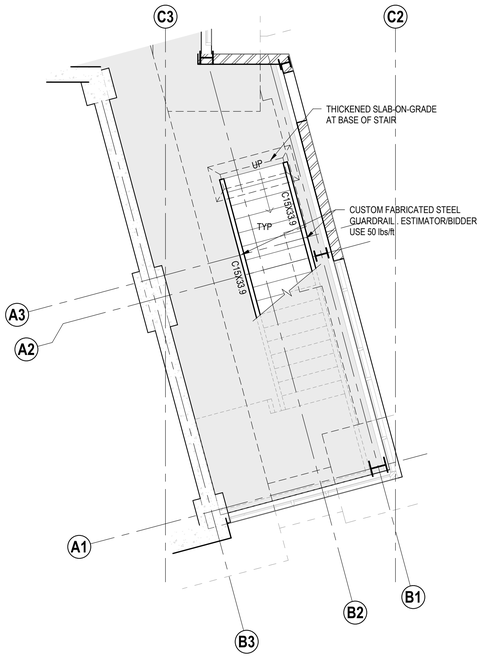
ENLARGED STAIR & ELEVATOR PLANS

PRCNC20221036

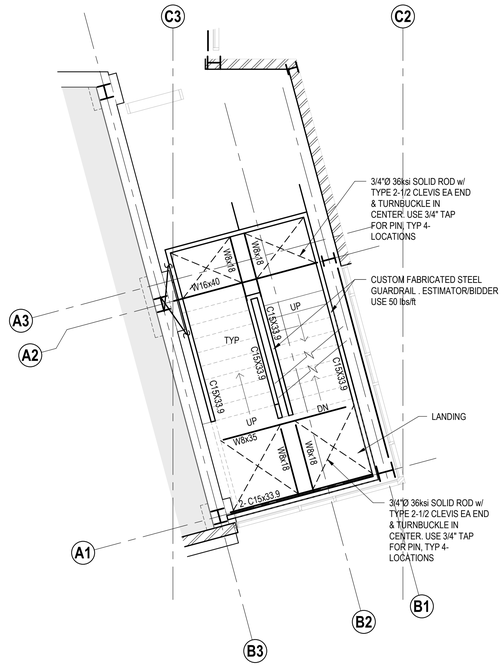
S401

BUILDING PERMIT SET



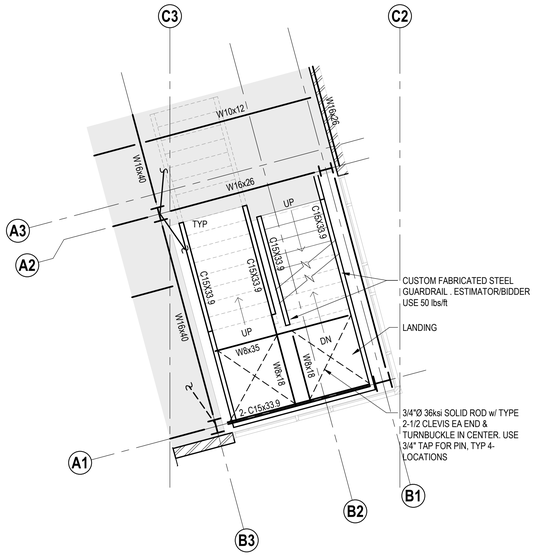
1 ENLARGED PLAN - STAIR 3-LEVEL 0

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



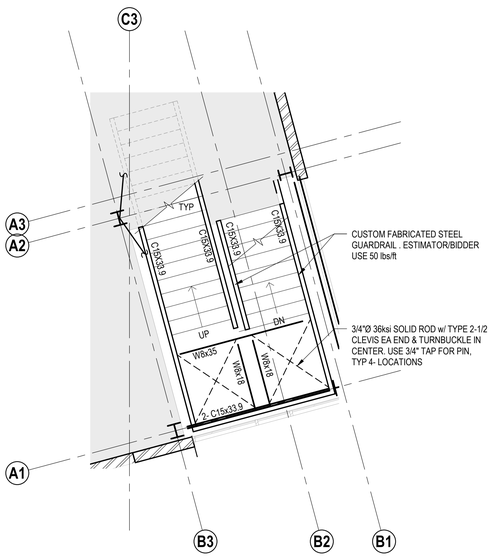
2 ENLARGED PLAN - STAIR 3-LEVEL 0.5

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



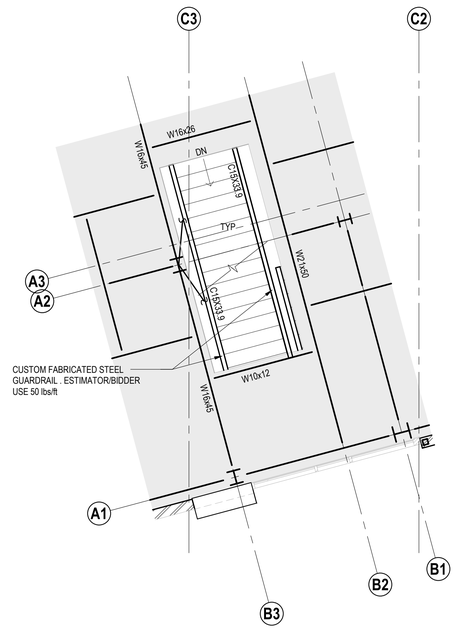
3 ENLARGED PLAN - STAIR 3-LEVEL 2

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



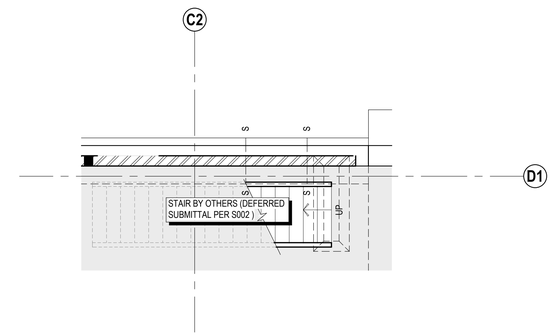
4 ENLARGED PLAN - STAIR 3-LEVEL 2.5

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



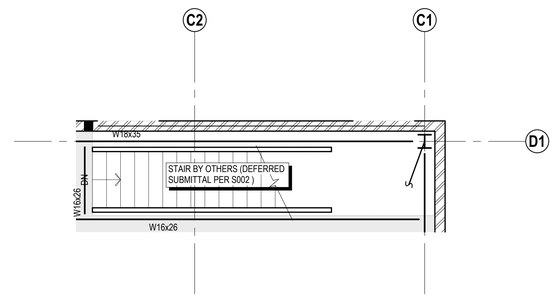
5 ENLARGED PLAN - STAIR 3-LEVEL 3

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



6 ENLARGED PLAN - MEZZANINE STAIRS - LEVEL 0

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



7 ENLARGED PLAN - MEZZANINE STAIRS - LEVEL 1

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

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ENLARGED STAIR PLANS

PRCNC20221036

S402

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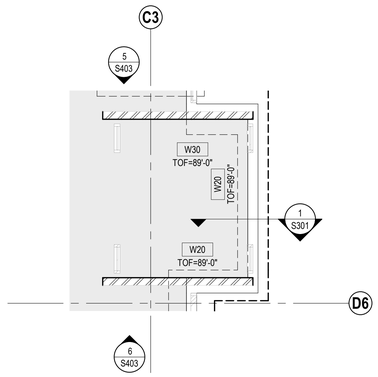
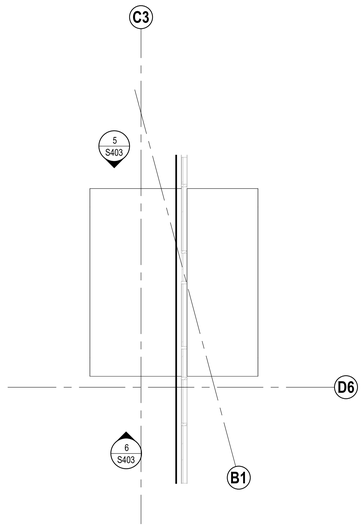
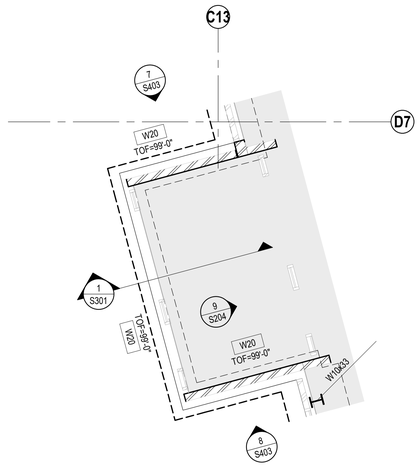


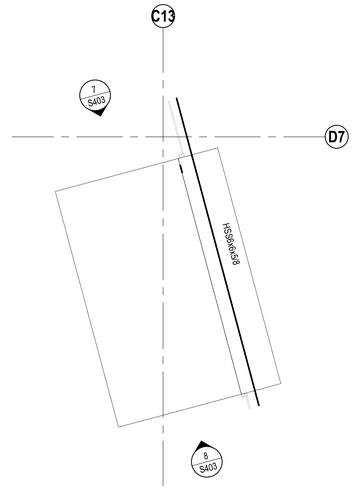
1 ENLARGED PLAN - VESTIBULE 2
SCALE: 1/4" = 1'-0"



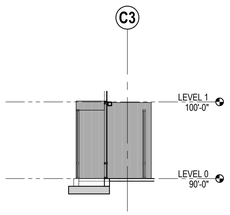
2 ENLARGED PLAN - VESTIBULE 2
SCALE: 1/4" = 1'-0"



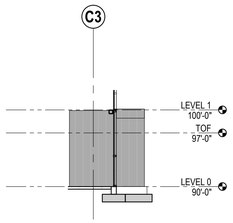
3 ENLARGED PLAN - VESTIBULE 1
SCALE: 1/4" = 1'-0"



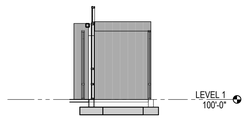
4 ENLARGED PLAN - VESTIBULE 1
SCALE: 1/4" = 1'-0"



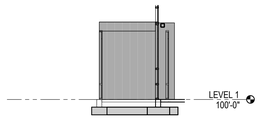
5 VESTIBULE 2 - NORTH WALL ELEVATION
SCALE: 1/8" = 1'-0"



6 VESTIBULE 2 - SOUTH WALL ELEVATION
SCALE: 1/8" = 1'-0"



7 VESTIBULE 1 - NORTH WALL ELEVATION
SCALE: 1/8" = 1'-0"



8 VESTIBULE 1 - SOUTH WALL ELEVATION
SCALE: 1/8" = 1'-0"

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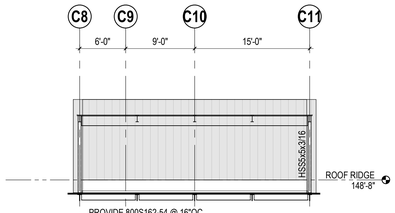
ENLARGED VESTIBULE PLANS & DETAILS

PRCNC20221036

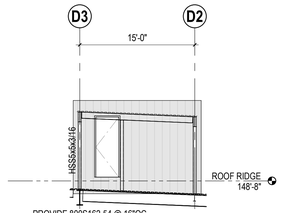
S403

BUILDING PERMIT SET



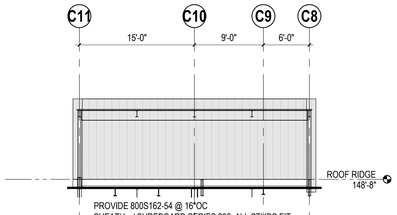
PROVIDE 800S162-54 @ 16"OC
SHEATH w/ SUREBOARD SERIES 200. ALL STUDS FIT
TIGHT, BLOCK ALL EDGES. ATTACH w/ #8 SCREWS @
2"oc ALL EDGES AND 12"oc IN THE FIELD
CONFORM TO IAPMO IAPMO-ER-0126-010518

1 MECH PENTHOUSE NORTH WALL ELEVATION
SCALE: 1/8" = 1'-0"



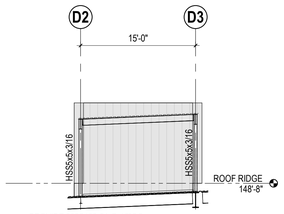
PROVIDE 800S162-54 @ 16"OC
SHEATH w/ SUREBOARD SERIES 200. ALL STUDS FIT
TIGHT, BLOCK ALL EDGES. ATTACH w/ #8 SCREWS @
2"oc ALL EDGES AND 12"oc IN THE FIELD
CONFORM TO IAPMO IAPMO-ER-0126-010518

2 MECH PENTHOUSE EAST WALL ELEVATION
SCALE: 1/8" = 1'-0"



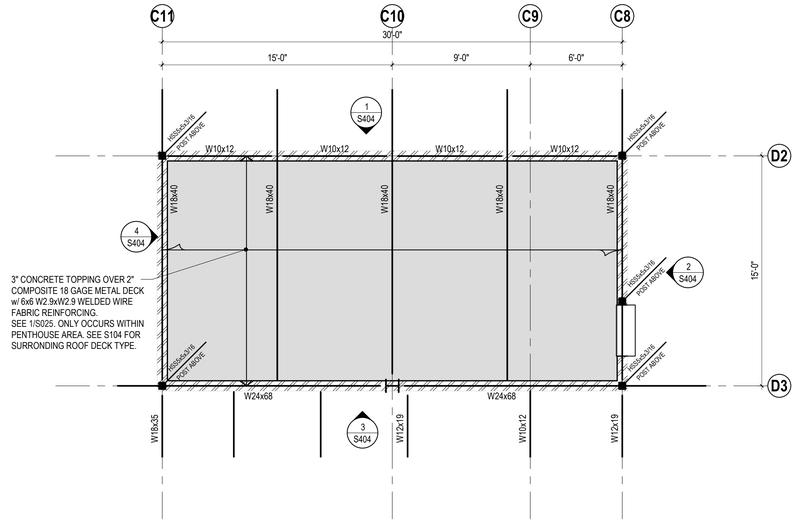
PROVIDE 800S162-54 @ 16"OC
SHEATH w/ SUREBOARD SERIES 200. ALL STUDS FIT
TIGHT, BLOCK ALL EDGES. ATTACH w/ #8 SCREWS @
2"oc ALL EDGES AND 12"oc IN THE FIELD
CONFORM TO IAPMO IAPMO-ER-0126-010518

3 MECH PENTHOUSE SOUTH WALL ELEVATION
SCALE: 1/8" = 1'-0"

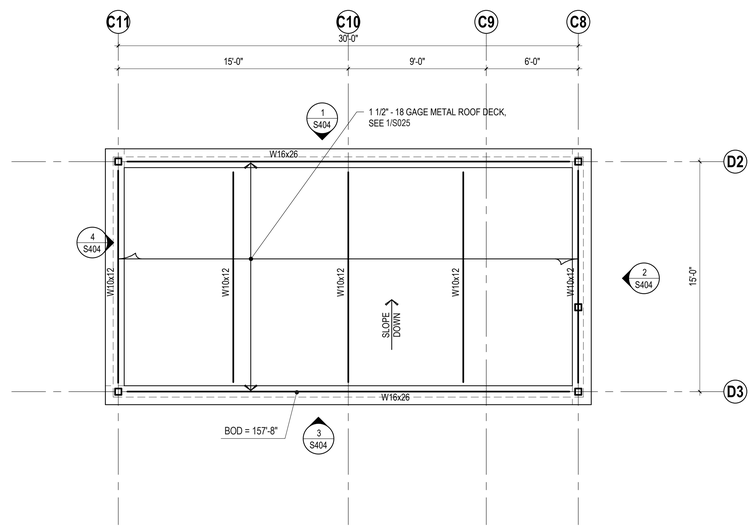


PROVIDE 800S162-54 @ 16"OC
SHEATH w/ SUREBOARD SERIES 200. ALL STUDS FIT
TIGHT, BLOCK ALL EDGES. ATTACH w/ #8 SCREWS @
2"oc ALL EDGES AND 12"oc IN THE FIELD
CONFORM TO IAPMO IAPMO-ER-0126-010518

4 MECH PENTHOUSE WEST WALL ELEVATION
SCALE: 1/8" = 1'-0"



5 ENLARGED PLAN - MECHANICAL PENTHOUSE
SCALE: 1/4" = 1'-0"



6 ENLARGED PLAN - MECHANICAL PENTHOUSE ROOF
SCALE: 1/4" = 1'-0"

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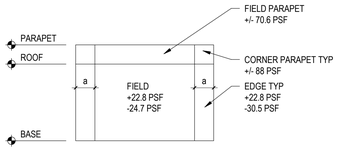
ENLARGED
MECHANICAL
PENTHOUSE PLAN

PRCNC20221036

S404

BUILDING PERMIT SET



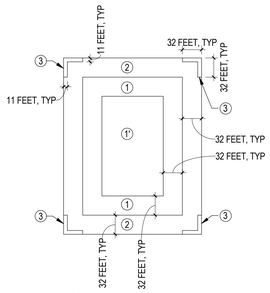
NOTES:
1. "a" IS 10% OF LEAST HORIZONTAL DIMENSION OR 21.5 FEET, WHICHEVER IS SMALLER, BUT NOT LESS THAN 4% OF LEAST HORIZONTAL DIMENSION OR 3 FEET.
3. REFERENCE ASCE 7-16 FIGURE 30.3-1 AND FIGURE 30.8-1
2. SEE **WIND PRESSURE NOTES** ON THIS SHEET FOR ADDITIONAL INFORMATION.

WIND PRESSURE NOTES:

1. WIND PRESSURES SHOWN ARE DETERMINED PER IBC 2018 SECTION 1609, ASCE 7-16 CHAPTER 26, AND ASCE 7-16 CHAPTER 30 PART 1. ROOF WIND UPLIFT PRESSURES ARE GROSS (WEIGHT OF MATERIAL HAS NOT BEEN DEDUCTED). WIND PRESSURES GIVEN ARE ULTIMATE.
2. PRESSURES SHOWN ARE CALCULATED USING BUILDING EFFECTIVE AREA FOR WORST CASE.
3. EXTERIOR COMPONENTS AND CLADDING SHALL BE DESIGNED FOR WORST CASE WIND LOAD PRESSURES SHOWN. ALTERNATIVELY, WIND LOADS MAY BE DETERMINED DIRECTLY FROM THE PROVISIONS OF THE IBC 2018/ ASCE 7-16 SECTIONS NOTED ABOVE USING THE WIND LOAD CRITERIA IN THE GENERAL NOTES.
4. INWARD PRESSURES ACT TOWARD THE BUILDING (POSITIVE), OUTWARD PRESSURES ACT AS A SUCTION ON THE BUILDING SURFACE (NEGATIVE).

1 COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM - WALLS

SCALE: 3/4" = 1'-0"



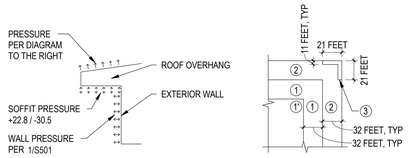
ROOF PRESSURES

1'	-20.9 PSF +9.3 PSF
1	-39.3 PSF +9.3 PSF
2	-47.8 PSF +9.3 PSF
3	-65.2 PSF +9.3 PSF

NOTES:
1. REFERENCE ASCE 7-16 FIGURE 30.3-2A
2. SEE **WIND PRESSURE NOTES** ON THIS SHEET FOR ADDITIONAL INFORMATION.

2 COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM - ROOFS

SCALE: 3/4" = 1'-0"



FRONT ROOF OVERHANG PRESSURES APPLIED TO TOP SURFACE

1'	-34.9 PSF
1	-34.9 PSF
2	-45.5 PSF
3	-59.3 PSF

NOTES:
1. REFERENCE ASCE 7-16 FIGURE 30.9-1 AND FIGURE 30.3-2A WITH ASSOCIATED NOTES
2. SEE **WIND PRESSURE NOTES** ON THIS SHEET FOR ADDITIONAL INFORMATION.

3 COMPONENTS AND CLADDING WIND PRESSURE DIAGRAM - FRONT ROOF OVERHANG

SCALE: 3/4" = 1'-0"

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PIERCE COLLEGE PUYALLUP NEW STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked by:	Checker

Revisions

#	Date	Description

LOAD DIAGRAMS

PRCNC20221036

S501

BUILDING PERMIT SET

ARCHITECTURAL ABBREVIATIONS

A	
A/C	AIR CONDITIONING
AB	ALUMINUM BASE, ANCHOR BOLT
ABV	ABOVE
ACC	ACCESS, ACCESSIBLE
ACI	AMERICAN CONCRETE INSTITUTE
ACOUS	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADD	ADDENDUM
ADD'T	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT
ADJST	ADJUSTABLE
ADMIN	ADMINISTRATIVE
AF	ACCESS FLOORING
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AMD	ACOUSTICAL METAL DECK
ANOD	ANODIZED
AP	ACOUSTICAL PANE
APLD	APPLIED
APPROX	APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURAL
ASB	ASBESTOS
ASPH	ASPHALT
ASSY	ASSEMBLY
ATD	AUTOMATIC TOWEL DISPENSE
ATTEN	ATTENUATION
AUTO	AUTOMATIC
AVG	AVERAGE
B	
BATT	BLANKET INSULATION
BCS	BABY CHANGING STATION
BD	BOARD
BDI	BOARD INSULATION
BEL	BELOW
BET	BETWEEN
BIT	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BOD	BOTTOM OF DECK
BOS	BOTTOM OF STEEL
BPL	BEARING PLATE
BR&S	BACKER ROD AND SEALANT
BRG	BEARING
BRK	BRICK
BSMT	BASEMENT
BTM	BOTTOM
BVL	BEVELED
C	
CAB	CABINET
CAP	CAPACITY
CB	CATCH BASIN
CBU	CEMENTITIOUS BACKER UNIT
CC	CUBICAL CURTAIN
CD	CONSTRUCTION DOCUMENTS, COUNTER DOOR
CDS	CASEWORK DESIGN SERIES
CEM	CEMENT
CER	CERAMIC
CFL	COUNTERFLASHING
CFM	CUBIC FEET PER MINUTE
CG	CORNER GUAR
CH	COAT HOO
CHAM	CHAMFER
CI	CAST IRON
CIP	CAST-IN-PLACE
CIR	CIRCLE
CIRC	CIRCUMFERENCE, CIRCULAR
CJ	CONTROL JOINT
CKT	CRICKET
CL	CENTERLINE
CLF	CHAINLINK FENCE
CLG	CEILING
CLN	CLEAN
CLO	CLOSET
CLR	CLEAR, CLEARANCE
CLRM	CLASSROOM
CLS	CLOSURE
cm	CENTIMETER
CMP	COMPOSITE METAL PANEL
CMT	CERAMIC MOSAIC TILE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COM	COMMUNICATION
COMB	COMBINATION
COMP	COMPOSITION, COMPOSITE
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CPTA	CARPET AREA RUG
CPTT	CARPET TILE
CR	COLD ROLLED
CRS	COURSE
CSG	CASING
CT	CERAMIC TILE
CTB	CERAMIC TILE BASE
CTR	COUNTER
CTSK	COUNTERSUNK
CU	CUBIC
CUST	CUSTODIAN
CW	COLD WATER, CURTAIN WALL
CWK	CASEWORK

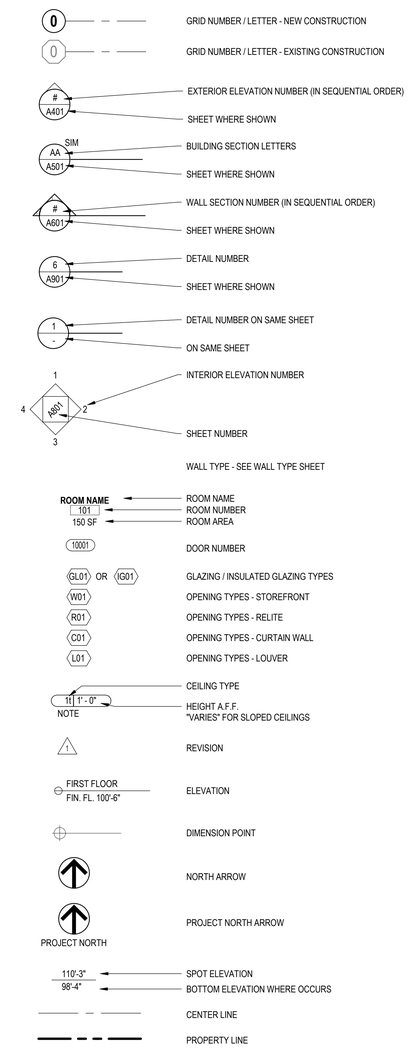
D	
D	DEEP, DEPTH
DBL	DOUBLE
DD	DESIGN DEVELOPMENT
DE	DRY ERASE WALLCOVERING
DEMO	DEMOLISH, DEMOLITION
DEP	DEPRESSED
DET	DETAIL
DF	DRINKING FOUNTAIN
DIAG	DIAGONAL
DIAM	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DL	DEAD LOAD
DMP	DAMPER
DMT	DEMOUNTABLE
DN	DOWN
DP	DAMPPROOFING
DR	DOOR
DS	DOWNSPOUT
DT	DRAIN TILE
DW	DRYWELL, DISH WASHER
DWG	DRAWING
DWL	DOWEL
DWR	DRAWER
E	
(E)	EXISTING
E	EAST
EA	EACH
EB	EXPANSION BOLT
EFS	EXTERIOR FINISH SYSTEM
EIFS	EXTERIOR INSULATED FINISH SYSTEM
EL	ELEVATION
ELAST	ELASTOMERIC
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENC	ENCLOSURE
ENT	ENTRANCE
EP	EPOXY PAINT
EQ	EQUAL
EQP	EQUIPMENT
ESC	ESCUTCHEON
EW	EACH WAY
EXCAV	EXCAVATE
EXH	EXHAUST
EXP	EXPANSION
EXT	EXTERIOR
F	
FA	FIRE ALARM OR FRESH AIR
FAB	FABRIC
FAF	FLUID APPLIED FLASHING
FAI	FRESH AIR INTAKE
FB	FACE BRICK
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FACTORY FINISH
FFE	FINISH FLOOR ELEVATION
FGL	FIBERGLASS
FH	FIRE HYDRANT
FHS	FIRE HOSE STATION
FIN	FINISH
FL	FLOWLINE
FLR	FLOOR
FLUR	FLUORESCENT
FLX	FLEXIBLE
FND	FOUNDATION
FO	FINISHED OPENING
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FIREPROOF, FLAGPOLE
FR	FRAMING
FRC	FIRE RETARDANT COATING
FRP	FIBERGLASS REINFORCED PANEL
FRPH	FIBERGLASS REINFORCED PHENOLIC PANEL
FSB	FREE STANDING BENCH
FSS	FOLDING SHOWER SEAT
FT	FOOT OR FEET
FTG	FOOTING
FUR	FURRING
FUS	FOLDING UTILITY SHELF
G	
GA	GAUGE, GAGE
GAL	GALLON
GALV	GALVANZIED
GB	GRAB BAR
GC	GENERAL CONTRACTOR, GROUND CONCRETE
GF	GROUND FACE
GI	GALVANIZED IRON
GL	GLASS OR GLAZING
GLB	GLUED/LAMINATED BEAM
GO	GLAZED OPENING
GP	GALVANIZED PIPE
GR	GRADE, GRADING
GSS	GALVANIZED SHEET STEEL
GT	GROUT, GLASS TILE
GVL	GRAVEL
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	
HB	HOSE BIB
HC	HOLLOW CORE, HANDICAP OR HANDICAPPED
HD	HEAVY DUTY OR HARD, HAND DRYER
HDBD	HARDBOARD
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HPC	HIGH PERFORMANCE COATING
HR	HOUR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING/VENTILATION/AIR CONDITIONING
HW	HOT WATER
HZ	HERTZ

I	
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IGU	INSULATED GLAZING UNIT
IMP	INSULATED METAL PANEL
INCAN	INCANDESCENT
INCL	INCLUDE
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INTG	INTEGRATED
J	
JB	JUNCTION BOX
JF	JOINT FILLER
JST	JOIST
JT	JOINT
K	
KB	KNOX BOX
KD	KNOCKED DOWN OR KILN DRIED
kg	KILOGRAM
KIT	KITCHEN
KO	KNOCKOUT
KPL	KICKPLATE
L	
L	LENGTH, LONG, ANGLE
L&P	LATH & PLASTER
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LB	LAG BOLT OR POUND
LBL	LABEL
LIB	LIBRARY
LIN	LINOLEUM
LIN	LINEAL, LINEAR
LKR	LOCKER
LL	LIVE LOAD
LMB	LIQUID MARKER BOARD
LMBP	LIQUID MARKER BOARD PAINT
LNDG	LANDING
LPT	LOW POINT
LT	LIGHT
LTL	LINTEL
LVR	LOUVER
LW	LIGHT WEIGHT
LWP	LINEAR WOOD PANEL
M	
m	METER
MAINT	MAINTENANCE
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MBR	MEMBRANE
MCT	SUSPENDED ACOUSTICAL METAL
MD	METAL DECK
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE, MOP HOLDER
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLD	MOLDING
mm	MILLIMETER
MMG	MAGNETIC MARKER GLASS
MMR	MANUFACTURED METAL ROOFING & SIDING
MO	MASONRY OPENING
MOD	MODULAR
MP	METAL PANEL
MPI	MASTER PAINTER'S INSTITUTE
MR	MOISTURE RESISTANT
MTD	MOUNTED
MTL	METAL
MULL	MULLION
MW	MICROWAVE
MWK	MILLWORK
N	
N	NORTH
N/A	NOT APPLICABLE
NAAWS	NORTH AMERICAN ARCHITECTURAL WOODWORKING STANDARDS
NB	NO BASE
NIC	NOT IN CONTACT
NO (#)	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O	
OA	OVERALL
OC	ON CENTER
OCD	OVERHEAD COILING DOOR
OCG	OVERHEAD COILING GRILLE
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFF	OFFICE
OFOI	OWNER FURNISHED OWNER INSTALLED
OFS	OVERFLOW SCUPPER
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE, OPERABLE PANEL PARTITION
OTA	OPEN TO ABOVE
OTS	OPEN TO STRUCTURE
OWJ	OPEN-WEB JOIST
OZ	OUNCE

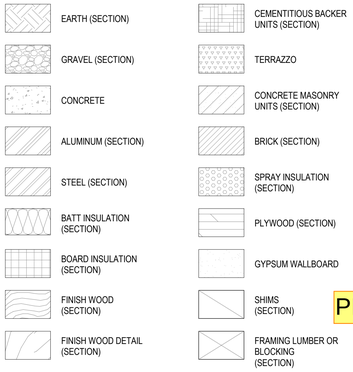
P	
P	PAINT
PAR	PARALLEL
PB	PEG BOARD
PC	PORTLAND CEMENT, PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PCP	PORTLAND CEMENT PLASTER
PDR	PAIR OF DOORS
PED	PEDESTAL
PER	PERIMETER
PERF	PERFORATED
PERP	PERPENDICULAR
PF	PLASTIC FILM
PFB	PREFABRICATED
PFN	PREFINISHED
PK	PARKING
PL	PLATE, PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLF	POUNDS PER LINEAL FOOT
PM	PERFORATED METAL
PNL	PANEL
POL	POLISHED
PP	POWER POLE
PR	PAIR, PHENOLIC RESIN
PROP	PROPERTY
PS	PROJECTION SCREEN, SEMI-GLOSS PAINT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
PT	POINT, PORCELAIN TILE
PTD	PAPER TOWEL DISPENSER
PTDR	PAPER TOWEL DISPENSER AND RECEPTABLE
PTN	PARTITION
PTR	PAPER TOWEL RECEPTACLE
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWD	PLYWOOD
Q	
QT	QUARRY TILE
QTB	QUARRY TILE BASE
QTY	QUANTITY
R	
R	RADIUS OR RISER
RA	RETURN AIR
RB	RESILIENT BASE
RBR	RUBBER
RBT	RABBET
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDWY	ROADWAY
REBAR	REINFORCING BAR
RECP	RECEPTACLE
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCE
REM	REMOVE
REQ	REQUIRE(D)
RES	RESILIENT
RET	RETURN
REV	REVISION, REVISED
RF	RESILIENT FLOORING
RFG	ROOFING
RFL	REFLECTIVE
RH	ROOF HATCH
RH	ROBE HOOK
RL	RAILING
RM	ROOM
RO	ROUGH OPENING
RS	ROLLER SHADES
RSP	RIGID ENGINEERED RESIN
RSTR	RUBBER STAIR TREADS AND RISERS
RTU	ROOF TOP UNIT
RWL	RAIN WATER LEADER
RWR	RECESSED WASTE RECEPTACLE
S	
S	SOUTH
SA	SOUND ABSORPTIVE
SAF	SELF ADHEARED FLASHING
SAN	SANITARY
SAP	SOUND ABSORBING PANELS
SAT	SUSPENDED ACOUSTICAL TILE
SAW	SUSPENDED ACOUSTICAL WOOD
SBLK	SPLASH BLOCK
SC	SOLID CORE, SEALED CONCRETE
SC&R	SHOWER CURTAIN AND ROD
SCD	SEAT COVER DISPENSER
SCH	SCHEDULE
SD	SOAP DISPENSER, SECTIONAL DOOR, SCHEMATIC DESIGN
SDS	SOLID SURFACING
SDT	STATIC DISSIPATIVE TILE
SECT	SECTION
SF	SQUARE FOOT, STOREFRONT
SFLR	SUBFLOOR
SGWB	SUSPENDED GWB
SH	SHELF
SHT	SHEET
SHTG	SHEATHING
SHWR	SHOWER
SIM	SIMILIAR
SJ	STEEL JOIST
SK	SINK
SL	SLOPE
SLD	SEALED
SLV	SLEEVE
SM	SHEET METAL
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SNT	SEALANT
SOG	SLAB ON GRADE
SP	SOUNDPROOF
SPC	SPACE
SPEC	SPECIFICATION(S)
SPK	SPEAKER
SQ	SQUARE
SS	STAINLESS STEEL

ST	STONE, STRUCTURAL TEE
STC	SOUND TRANSMISSION CLASS, STAINED CONCRETE
STD	STANDARD
STG	SEATING
STL	STEEL
STO	STORAGE
STRC	STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SYM	SYMMETRICAL
SYN	SYNTHETIC
SYS	SYSTEM
T	
T	TREAD
T&G	TONGUE & GROOVE
TB	TOWEL BAR
TC	TOILET COMPARTMENT
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPERED, TEMPORARY
THK	THICK, THICKNESS
THR	THRESHOLD
THRU	THROUGH
TKBD	TACKBOARD
TKS	TACKSTRIP
TOB	TOP OF BEAM
TOC	TOP OF CURB OR CONCRETE
TOF	TOP OF FOOTING
TOL	TOLERANCE
TOP	TOP OF PARAPET
TOS	TOP OF STEEL OR SLAB
TOW	TOP OF WALL
TP	TELEPHONE POLE
TPD	TOILET PAPER DISPENSER
TPG	TOPPING
TRANSL	TRANSLUCENT
TRANSP	TRANSPARENT
TSTAT	THERMOSTAT
TV	TELEVISION
TWB	TREATED WOOD BLOCKING
TWC	TACKABLE WALL COVERING
TYP	TYPICAL
TZ	TERRAZZO
U	
UC	UNDERCUT, UNDER COUNTER
UG	UNDERGROUND
UH	UNIT HEATER
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
V	
VAR	VARIABLE, VARIES, VARNISH
VCT	VINYL COMPOSITION TILE
VENT	VENTILATE, VENTILATION, VENTED
VERT	VERTICAL
VEST	VESTIBULE
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VJ	V-JOINT
VNR	VENEER
VOL	VOLUME
VR	VAPOR RETARDER
VRB	VENTILATED RUBBER BASE
W	
W	WATER, WIDTH OR WEST
W/	WITH
W/O	WITHOUT
WB	WOOD BASE, WINDOW BLINDS
WC	WATER CLOSET, WALL COVERING
WC-T	TACKABLE WALL COVERING
WD	WOOD
WDF	WOOD FLOORING
WDP	WOOD PANELING
WF	WIDE FLANGE
WG	WALL GUARD
WIN	WINDOW
WMP	WIRE MESH PARTITION
WOM	WALK OFF MAT
WP	WATERPROOF(ING)
WPT	WORKING POINT
WR	WATER RESISTANT, WASTE RECEPTACLE
WRC	WATER REPELLANT COATING
WS	WELD STUD
WSCT	WAINSCOT
WSTP	WATERSTOP
WWF	WELDED WIRE FABRIC
X	
XFMR	TRANSFORMER
Y	
YD	YARD
"	INCHES
#	NUMBER OR POUND
%	PERCENT
&	AND
'	FOOT
*	SEE NOTES
-	NONE
/	PER
@	AT
±	PLUS OR MINUS
Ø	DIAMETER
°	DEGREE

REFERENCE SYMBOLS



MATERIAL SYMBOLS



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9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

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PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

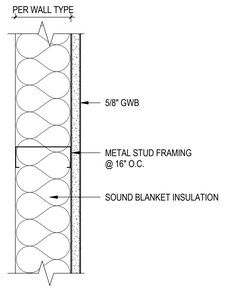
#	Date	Description

GENERAL ARCHITECTURAL NOTES

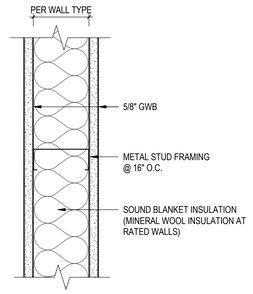
PRCNC20221036

A001

BUILDING PERMIT SET

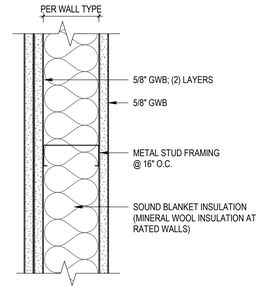


WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S2.01			
S4.01			
S6.01			
S8.01			



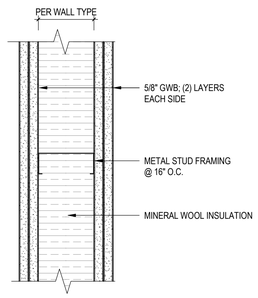
NOTE: RATINGS APPLY ONLY WHERE INDICATED IN PLAN; SEE LIFE SAFETY, FLOOR PLANS AND RCPS

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S4.02			
S6.02	1 HR	UL U419	
S8.02			
S12.02			



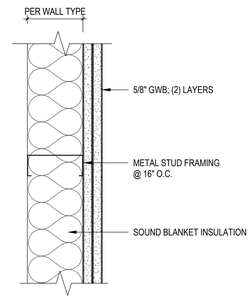
NOTE: RATINGS APPLY ONLY WHERE INDICATED IN PLAN; SEE LIFE SAFETY, FLOOR PLANS AND RCPS

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S4.03			
S6.03	1 HR	UL U419	
S8.03			
S10.03			
S12.03			

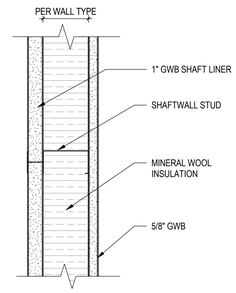


NOTE: RATINGS APPLY ONLY WHERE INDICATED IN PLAN; SEE LIFE SAFETY, FLOOR PLANS AND RCPS

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S6.04	2 HR	UL U419	

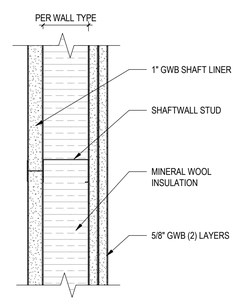


WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S4.05			
S6.05			



NOTE: RATINGS APPLY ONLY WHERE INDICATED IN PLAN; SEE LIFE SAFETY, FLOOR PLANS AND RCPS

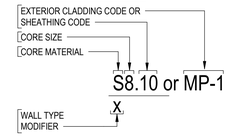
WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
H4.20	1 HR	UL U415	
H6.20	1 HR	UL U415	(UL AER-09038 FOR HORIZ.)



WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
H4.21	2 HR	UL U415	

WALL TYPE SYMBOL

GENERAL WALL TYPES SYMBOL



CORE SIZES:

STEEL STUD SIZE:
0 = 7/8"
1 = 1 1/2"
2 = 2 1/2"
4 = 3 5/8"
6 = 6"
8 = 8"
10 = 10"
12 = 12"

WOOD STUD:
2 = 1x2 NOMINAL
3 = 2x3 NOMINAL
4 = 2x4 NOMINAL
6 = 2x6 NOMINAL

CMU / CONC:
NUMBER INDICATES NOMINAL WIDTH

CORE MATERIAL:
S = STEEL STUD
H = SHAFTWALL STUD
W = WOOD STUD
M = CMU BLOCK
C = CONCRETE
E = EXISTING CORE

SHEATHING CODES:
00 = CORE ONLY
01-19 = GWB PARTITIONS
20-29 = SHAFT PARTITIONS
30-39 = PLYWOOD PARTITIONS
90-99 = PARAPET

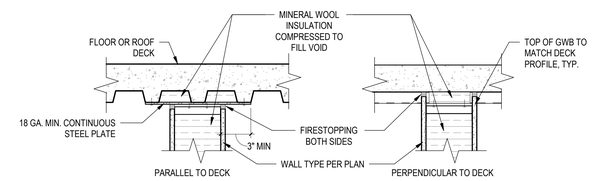
EXTERIOR CLADDING CODES:
MP = METAL WALL PANEL
CP = COMPOSITE METAL WALL PANEL
MV = MASONRY VENEER
PH = PHENOLIC
FC = FIBER CEMENT
CP = CEMENT PLASTER

WALL TYPE MODIFIERS:
n - NO SOUND BLANKETS OR ACOUSTIC SEALANT REQUIRED
p - PARTIAL HEIGHT; SEE TYPICAL INTERIOR PARTITION HEAD DETAILS FOR PARTIAL HEIGHT BRACING

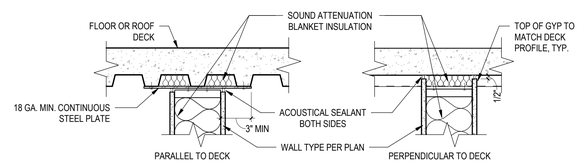
WALL TYPE GENERAL NOTES

1. ALL INTERIOR WALLS ARE ACOUSTIC PARTITIONS UNLESS INDICATED OTHERWISE BY WALL TYPE MODIFIER.
2. RATINGS INDICATED BY A WALL TYPE ON THIS SHEET ONLY OCCUR WHERE NOTED FLOOR PLANS, RCPS AND LIFE SAFETY PLANS
3. INTERIOR WALL TYPES DO NOT INCLUDE WALL FINISHES. SEE ELEVATIONS AND FINISH PLANS FOR WALL FINISH INFORMATION.
4. SEE FLOOR PLANS, RCPS AND LIFE SAFETY PLANS FOR FIRE RATED ASSEMBLY LOCATIONS
5. ALL FIRE RATED WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH TESTING AGENCY REQUIREMENTS. REFER TO SPECIFIC TEST REPORTS FOR REQUIRED COMPONENTS AND ASSEMBLY.
6. WALLS EXTEND TO THE UNDERSIDE OF DECK ABOVE UNLESS INDICATED OTHERWISE BY WALL TYPE MODIFIER. THIS INCLUDES ANY SHEATHING OR INSULATION ASSOCIATED WITH WALL TYPE. SEE TYPICAL INTERIOR PARTITION HEAD DETAILS.
7. PROVIDE TILE BACKER BOARD IN LIEU OF GWB WHERE TILE IS INDICATED. SEE ROOM FINISH PLANS AND INTERIOR ELEVATIONS.
8. PROVIDE SEALANT BELOW BOTTOM TRACKS OF EXTERIOR WALLS.
9. WALL TYPES ABOVE DOOR AND WINDOW OPENINGS TO BE SAME AS INDICATED AT ADJACENT WALL, UNO.
10. WHERE PARTITIONS ARE INDICATED TO BE BOTH FIRE-RATED AND ACOUSTICAL, FIRE-RATED DETAILS SHALL TAKE PRECEDENCE.
11. PROVIDE FOR STRUCTURAL BEAM, JOIST, AND BRIDGING PENETRATIONS THROUGH ACOUSTICAL AND FIRE-RATED PARTITIONS. CUT GWB AROUND ELEMENTS W/ 1/2" JOINT AND SEAL ACCORDINGLY W/ FIRE OR ACOUSTICAL SEALANT.
12. IDENTIFICATION MARK SHALL BE APPLIED TO ALL INSULATION MATERIALS AND INSULATION INSTALLED SUCH THAT THE MARK IS READILY OBSERVABLE DURING INSPECTION.
13. AT STEEL STUD WALLS, BLOCKING/BACKING IS REQUIRED AT THE FOLLOWING LOCATIONS:
    - A. WALL MOUNTED COUNTER BRACKETS
    - B. WALL MOUNTED ACCESSORIES AND EQUIPMENT
    - C. WALL MOUNTED DOORSTOPS
    - D. WALL MOUNTED DOOR HOLD OPEN DEVICES AND/OR CLOSERS
    - E. TOILET ROOM PARTITIONS AND ACCESSORIES
    - F. UPPER CASEWORK CABINETS AND BASE CASEWORK CABINETS AS REQUIRED PER NAAWS
    - G. WALL MOUNTED FLAT PANEL SCREENS SHOWN ON PLANS
    - H. WHITEBOARDS AND TACKBOARDS
    - I. SIGNS HEAVIER TWENTY POUNDS

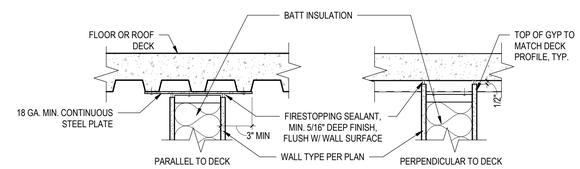
TYPICAL INTERIOR PARTITION HEAD DETAILS



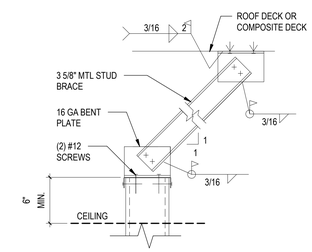
FIRE RATED HEAD DETAIL @ METAL STUDS



ACOUSTICAL HEAD DETAIL @ METAL STUDS



SMOKE PARTITION HEAD DETAIL @ METAL STUDS



PARTIAL HEIGHT PARTITION BRACING

BRACE @ 4' O.C.

1. PROVIDE FOR STRUCTURAL BEAM, JOIST, AND BRIDGING PENETRATIONS THROUGH ACOUSTICAL, SMOKE-, AND FIRE RATED PARTITIONS. CUT GWB AROUND ELEMENTS W/ 1/2" JOINT & SEAL ACCORDINGLY.
2. WHERE PARTITIONS ARE INDICATED TO BE BOTH FIRE-RATED & ACOUSTICAL, FIRE-RATING DETAILS SHALL TAKE PRECEDENCE
3. PROVIDE @ 4'-0" O.C. MAX. SPACING

integrus ARCHITECTURE
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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

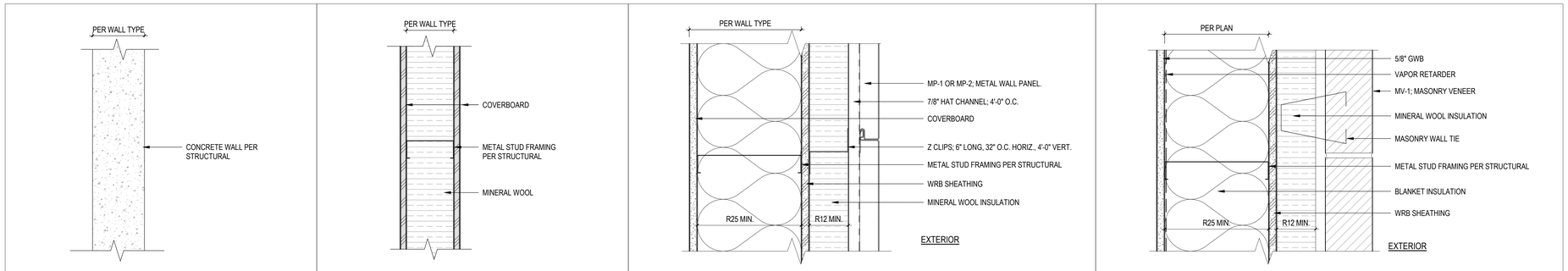
#	Date	Description

INTERIOR ASSEMBLIES

PRCNC20221036

A010

BUILDING PERMIT SET



WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
C8.00			
C12.00			
C16.00			
C24			

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S6.92			R21 MIN.
S8.92			R25 MIN.

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S6.MP-2			R21 MIN.
S8.MP-1			R25 MIN.
S8.MP-2			R25 MIN.

WALL TYPE	RATING	FIRE ASSEMBLY DESIGN	COMMENTS
S8.MV-1			

WALL TYPE GENERAL NOTES

1. ALL INTERIOR WALLS ARE ACOUSTIC PARTITIONS UNLESS INDICATED OTHERWISE BY WALL TYPE MODIFIER.
2. RATINGS INDICATED BY A WALL TYPE ON THIS SHEET ONLY OCCUR WHERE NOTED FLOOR PLANS, RCPS AND LIFE SAFETY PLANS
3. INTERIOR WALL TYPES DO NOT INCLUDE WALL FINISHES. SEE ELEVATIONS AND FINISH PLANS FOR WALL FINISH INFORMATION.
4. SEE FLOOR PLANS, RCPS AND LIFE SAFETY PLANS FOR FIRE RATED ASSEMBLY LOCATIONS
5. ALL FIRE RATED WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH TESTING AGENCY REQUIREMENTS. REFER TO SPECIFIC TEST REPORTS FOR REQUIRED COMPONENTS AND ASSEMBLY.
6. WALLS EXTEND TO THE UNDERSIDE OF DECK ABOVE UNLESS INDICATED OTHERWISE BY WALL TYPE MODIFIER. THIS INCLUDES ANY SHEATHING OR INSULATION ASSOCIATED WITH WALL TYPE. SEE TYPICAL INTERIOR PARTITION HEAD DETAILS.
7. PROVIDE TILE BACKER BOARD IN LIEU OF GWB WHERE TILE IS INDICATED. SEE ROOM FINISH PLANS AND INTERIOR ELEVATIONS.
8. PROVIDE SEALANT BELOW BOTTOM TRACKS OF EXTERIOR WALLS.
9. WALL TYPES ABOVE DOOR AND WINDOW OPENINGS TO BE SAME AS INDICATED AT ADJACENT WALL, UNO.
10. WHERE PARTITIONS ARE INDICATED TO BE BOTH FIRE-RATED AND ACOUSTICAL, FIRE-RATED DETAILS SHALL TAKE PRECEDENCE.
11. PROVIDE FOR STRUCTURAL BEAM, JOIST, AND BRIDGING PENETRATIONS THROUGH ACOUSTICAL AND FIRE-RATED PARTITIONS. CUT GWB AROUND ELEMENTS W/ 1/2" JOINT AND SEAL ACCORDINGLY W/ FIRE OR ACOUSTICAL SEALANT.
12. IDENTIFICATION MARK SHALL BE APPLIED TO ALL INSULATION MATERIALS AND INSULATION INSTALLED SUCH THAT THE MARK IS READILY OBSERVABLE DURING INSPECTION.
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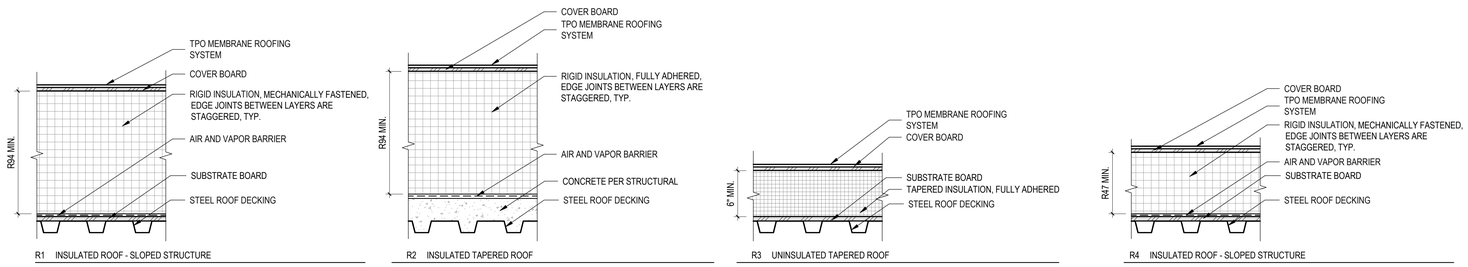
    - A. WALL MOUNTED COUNTER BRACKETS
    - B. WALL MOUNTED ACCESSORIES AND EQUIPMENT
    - C. WALL MOUNTED DOORSTOPS
    - D. WALL MOUNTED DOOR HOLD OPEN DEVICES AND/OR CLOSERS
    - E. TOILET ROOM PARTITIONS AND ACCESSORIES
    - F. UPPER CASEWORK CABINETS AND BASE CASEWORK CABINETS AS REQUIRED PER NAAWS
    - G. WALL MOUNTED FLAT PANEL SCREENS SHOWN ON PLANS
    - H. WHITEBOARDS AND TACKBOARDS
    - I. SIGNS HEAVIER TWENTY POUNDS



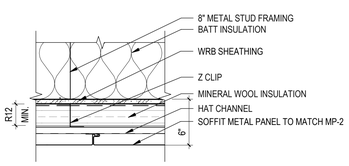
R1 INSULATED ROOF - SLOPED STRUCTURE

R2 INSULATED TAPERED ROOF

R3 UNINSULATED TAPERED ROOF

R4 INSULATED ROOF - SLOPED STRUCTURE

ROOF TYPES



S1 INSULATED MP-2 SOFFIT

EXTERIOR SOFFIT TYPES

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

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NEW STEM BUILDING
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Puyallup, WA 98374

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Checked By:	JL

Revisions

#	Date	Description

EXTERIOR ASSEMBLIES

PRCNC20221036

A011

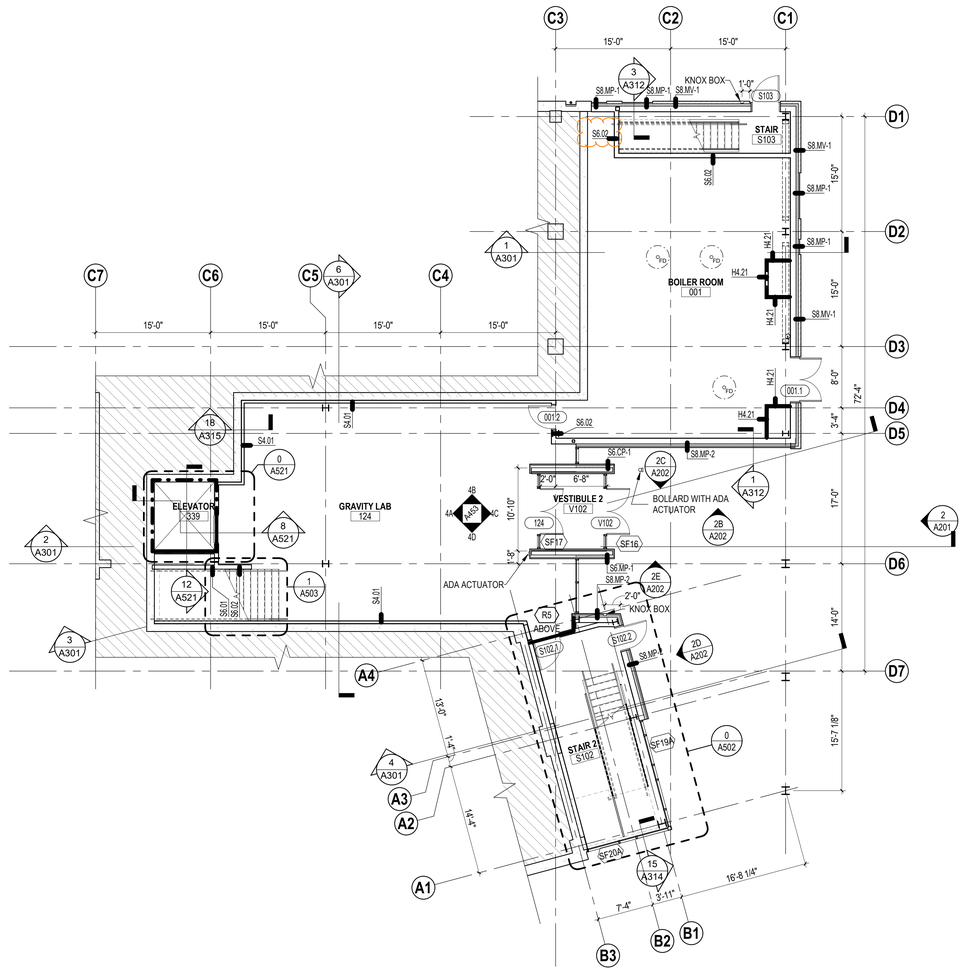
BUILDING PERMIT SET

ARCH GENERAL PLAN NOTES

1. SEE SHEET A010 FOR TYPICAL PARTITION HEAD DETAILS
2. REFER TO REFERENCED ENLARGED PLANS FOR ADDITIONAL FLOOR PLAN INFORMATION, i.e. PARTITION TYPES, ROOM NUMBERS, AND DOOR TAGS.
3. SEE STRUCTURAL FOR ALL RECESSED SLAB LOCATIONS TO RECEIVE FLOOR MATERIALS AS SCHEDULED ON FLOOR PATTERN AND FINISH SCHEDULE SHEETS.
4. PROJECT CLOSE OUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES.
5. SEE SHEET A410 FOR EQUIPMENT AND ACCESSORY SCHEDULE

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE



LEVEL 0 - FLOOR PLAN
SCALE: 1/8" = 1'-0"

integrus ARCHITECTURE
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9411 REGISTERED ARCHITECT
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LEVEL 0 - FLOOR PLAN

PRCNC20221036

A100

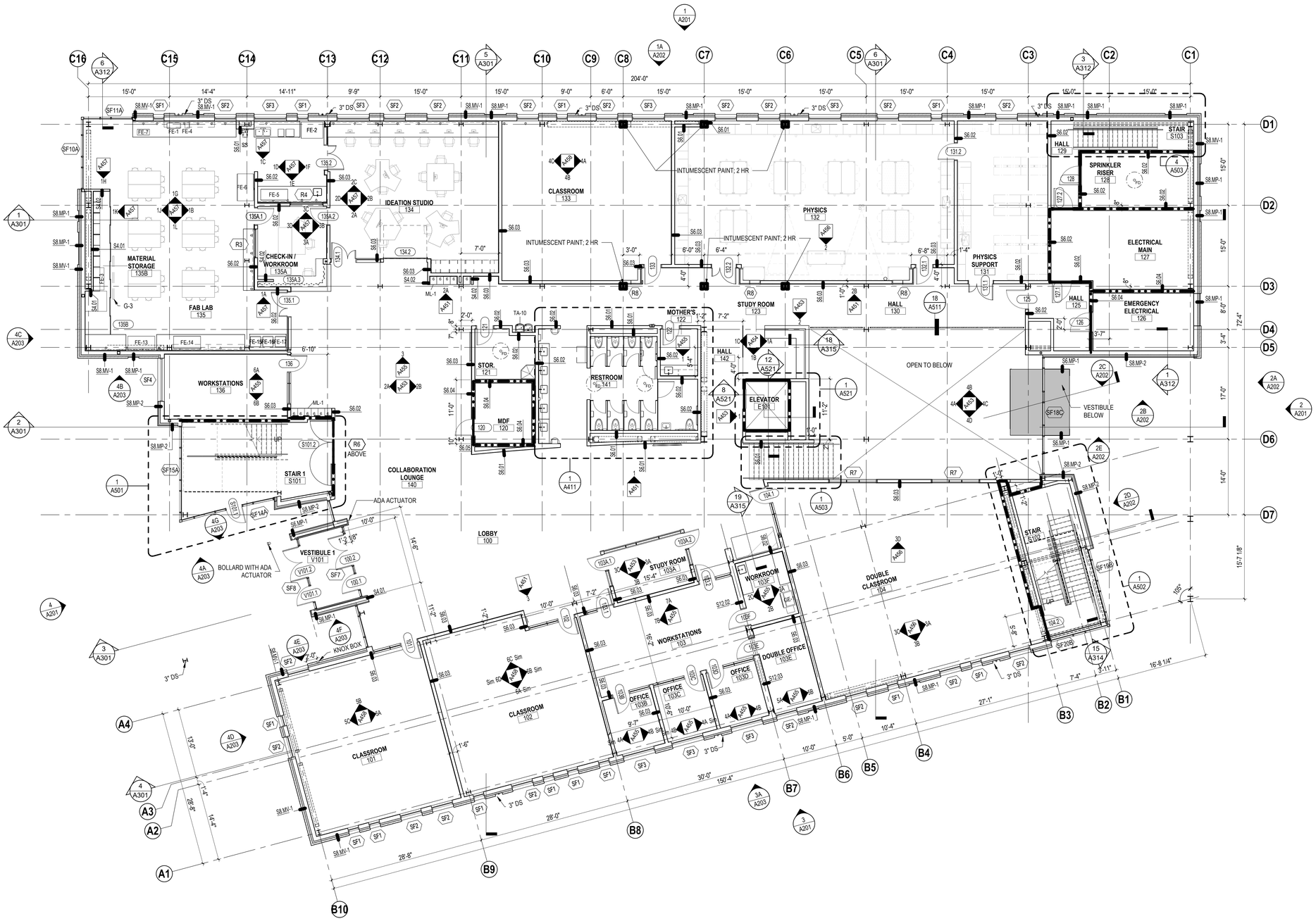
BUILDING PERMIT SET

ARCH GENERAL PLAN NOTES

1. SEE SHEET A010 FOR TYPICAL PARTITION HEAD DETAILS
2. REFER TO REFERENCED ENLARGED PLANS FOR ADDITIONAL FLOOR PLAN INFORMATION, i.e. PARTITION TYPES, ROOM NUMBERS, AND DOOR TAGS.
3. SEE STRUCTURAL FOR ALL RECESSED SLAB LOCATIONS TO RECEIVE FLOOR MATERIALS AS SCHEDULED ON FLOOR PATTERN AND FINISH SCHEDULE SHEETS.
4. PROJECT CLOSE OUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES.
5. SEE SHEET A410 FOR EQUIPMENT AND ACCESSORY SCHEDULE

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE



LEVEL 1 - FLOOR PLAN
SCALE: 1/8" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
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9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

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NEW STEM BUILDING
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LEVEL 1 - FLOOR PLAN

PRCNC20221036

A101

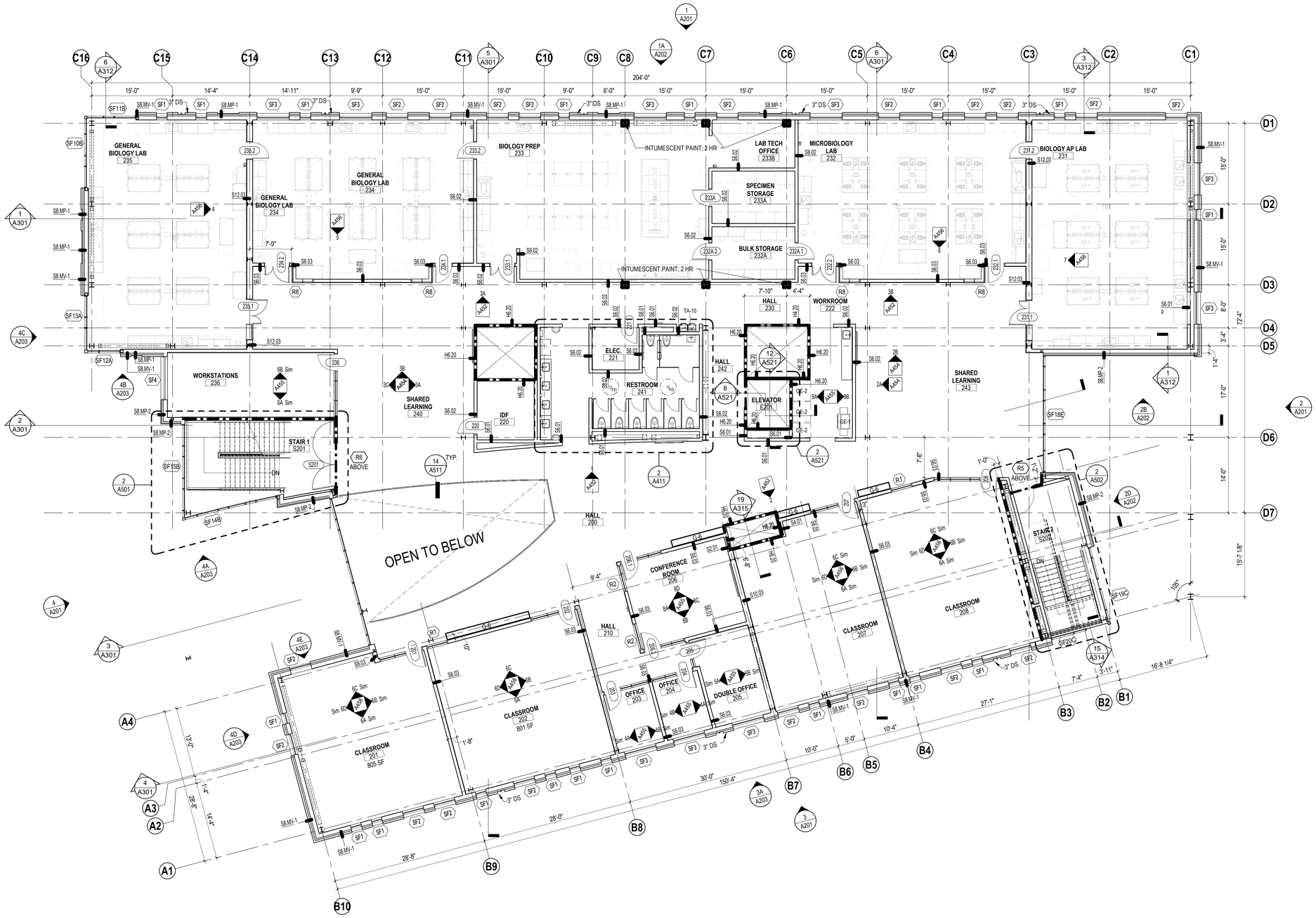
BUILDING PERMIT SET

ARCH GENERAL PLAN NOTES

1. SEE SHEET A010 FOR TYPICAL PARTITION HEAD DETAILS
2. REFER TO REFERENCED ENLARGED PLANS FOR ADDITIONAL FLOOR PLAN INFORMATION, i.e. PARTITION TYPES, ROOM NUMBERS, AND DOOR TAGS.
3. SEE STRUCTURAL FOR ALL RECESSED SLAB LOCATIONS TO RECEIVE FLOOR MATERIALS AS SCHEDULED ON FLOOR PATTERN AND FINISH SCHEDULE SHEETS.
4. PROJECT CLOSE OUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES.
5. SEE SHEET A410 FOR EQUIPMENT AND ACCESSORY SCHEDULE

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE



LEVEL 2 - FLOOR PLAN
SCALE: 1/8" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
TELEPHONE: (206)628-3137 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BRIAN JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
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1601 39th AVE SE
Puyallup, WA 98374

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Checked By:	JL

Revisions

#	Date	Description

LEVEL 2 - FLOOR PLAN

PRCNC20221036

A102

BUILDING PERMIT SET

ARCH GENERAL PLAN NOTES

1. SEE SHEET A010 FOR TYPICAL PARTITION HEAD DETAILS
2. REFER TO REFERENCED ENLARGED PLANS FOR ADDITIONAL FLOOR PLAN INFORMATION, i.e. PARTITION TYPES, ROOM NUMBERS, AND DOOR TAGS.
3. SEE STRUCTURAL FOR ALL RECESSED SLAB LOCATIONS TO RECEIVE FLOOR MATERIALS AS SCHEDULED ON FLOOR PATTERN AND FINISH SCHEDULE SHEETS.
4. PROJECT CLOSE OUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES.
5. SEE SHEET A410 FOR EQUIPMENT AND ACCESSORY SCHEDULE

LEVEL 3 - FLOOR PLAN
SCALE: 1/8" = 1'-0"

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

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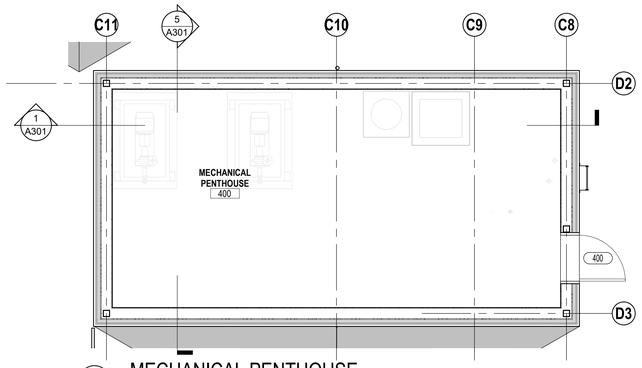
LEVEL 3 - FLOOR PLAN

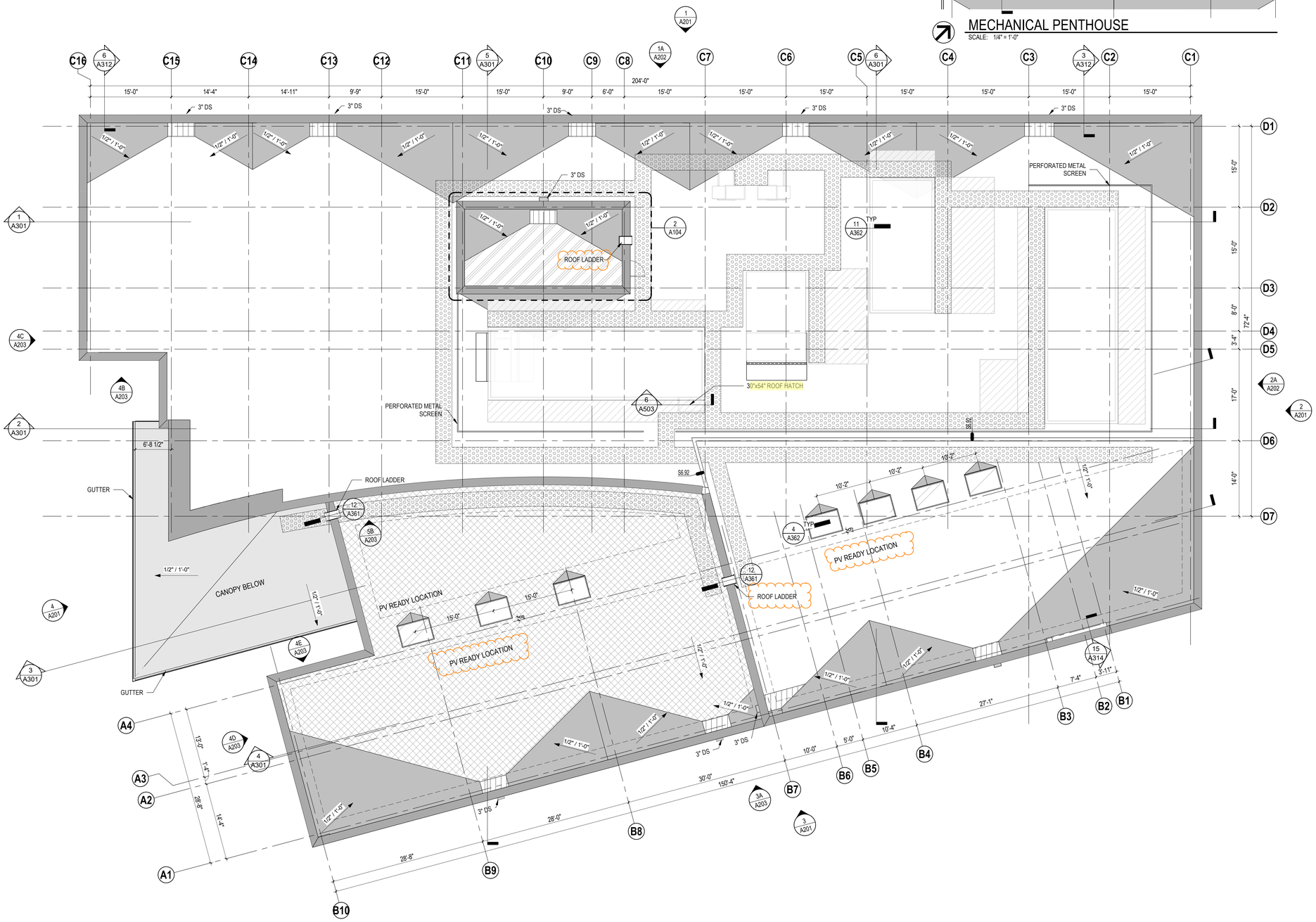
PRCNC20221036

A103

BUILDING PERMIT SET



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



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

ARCH ROOF NOTES

1. ROOFTOP EQUIPMENT SHOWN FOR REFERENCE AND COORDINATION ONLY - REFER TO MEP DRAWINGS.
2. SEE EXTERIOR ASSEMBLIES FOR ROOF TYPES.
3. FOR MECHANICAL CURB CONDITIONS SEE 7/A362 & 11/A362
4. ALL ROOFING IS TYPE R-1 UNLESS NOTED OTHERWISE.
5. CRICKETS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE LAYOUT PLAN FOR ARCHITECTS APPROVAL PRIOR TO INSTALLATION.
6. ROOF PENETRATIONS OF ANY KIND SHALL NOT BE LOCATED IN CRICKET VALLEYS.
7. IN ADDITION TO PENETRATIONS SHOWN ON ROOF PLAN, REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL LOCATIONS, TYPES, SIZES AND QUANTITIES. PROVIDE APPROPRIATE FLASHING REQUIRED.
8. PROVIDE SPLASH BLOCKS AT ALL DOWNSPOUTS PRELEASING WATER ON LOWER ROOFS. TYP.
9. FOR CONNECTION OF DOWNSPOUTS TO STORM DRAINAGE SYSTEM, SEE CIVIL DRAWINGS.
10. SEE EXTERIOR ELEVATIONS FOR ADDITIONAL ROOFING DETAILS AND ROOF PARAPET HEIGHTS.
11. MAINTAIN 1/4" PER FOOT MINIMUM SLOPE FOR ALL CRICKET VALLEYS.
12. SKYLIGHT THERMAL ASSEMBLY REQUIREMENTS: MAX U-FACTOR 0.43, MAX SHGC 0.35.
13. PROJECT CLOSE OUT DOCUMENTATION IS REQUIRED INCLUDING APPLICABLE CALCULATIONS, WSEC ENVELOPE COMPLIANCE REPORTS, AND FENESTRATION NFRC RATING CERTIFICATES

ROOF PLAN LEGEND

- R1
- R2
- R3
- R4
- GUTTER, SEE DETAILS FOR TYPE
- PIPE PENETRATIONS THROUGH ROOF
- EQUIP CURB w/ UPSLOPE CRICKET, MIN CRICKET SLOPE, 1/2" / 1'-0", MIN VALLEY SLOPE 1/4" / 1'-0"
- SKYLIGHT
- CRICKET, MIN CRICKET SLOPE, 1/2" / 1'-0", MIN CRICKET VALLEY SLOPE 1/4" / 1'-0"
- ROOF LADDER
- WALKWAY PADS
- ROOF SCUPPER, CONDUCTOR HEAD, & DS
- ROOF SCUPPER, RECESSED CONDUCTOR HEAD, & DS
- SPLASHBLOCK, TYP
- FALL PROTECTION ANCHOR POINT

integrus ARCHITECTURE
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TELEPHONE: (206)628-3137 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BECKY JEAN BARNHART
STATE OF WASHINGTON

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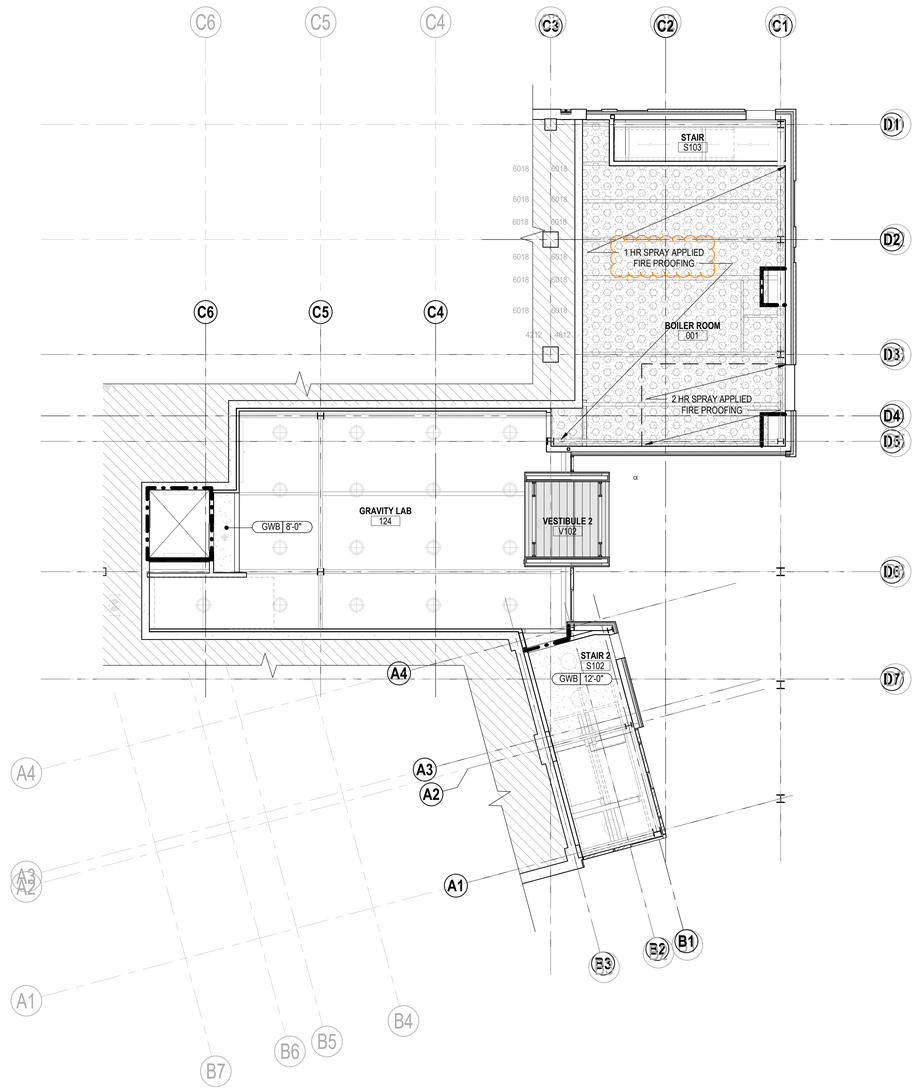
ROOF PLAN

PRCNC20221036

A104

BUILDING PERMIT SET



LEVEL 0 - REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN NOTES

1. DIMENSIONS SHOWN ARE TO FINISH FACE.
2. ACCESS DOORS SHALL BE PROVIDED WHERE ACCESS IS REQUIRED FOR OPERATION, INSPECTION AND MAINTENANCE OF CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, OR SIMILAR DEVICES. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR CONNECTIONS AND ROUTING ABOVE CEILING.
4. FOR CEILING CONDITIONS AT WINDOWS, ALSO SEE WINDOW HEAD DETAILS.

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE

REFLECTED CEILING PLAN MATERIAL & FINISH LEGEND

- GYPSUM BOARD CEILING (GWB)
- RATED CEILING - SEE WALL TYPE H6.20 ON A010
- ACOUSTICAL CEILING TILE (ACT-1)
- ACOUSTICAL CEILING CLOUD (ACT-2)
- ACOUSTICAL CEILING TILE (ACT-3)
- ACOUSTICAL CEILING TILE (ACT-4)
- ACOUSTICAL CEILING TILE (ACT-5)
- ACOUSTICAL CEILING BAFFLES (ACB-1)
- WOOD CAP (WD-1)
- SPRAY-ON FIRE PROOFING
- OTA — OPEN TO ABOVE
- OTS — OPEN TO STRUCTURE

REFLECTED CEILING PLAN LEGEND

- DOWNLIGHT
- RECESSED LIGHT FIXTURE
- PENDANT LIGHT
- SUSPENDED LIGHT FIXTURE
- SUSPENDED INDIRECT LIGHT FIXTURE
- RETURN AIR DIFFUSERS
- SUPPLY AIR DIFFUSERS
- SD — SMOKE DETECTOR
- OCCUPANCY SENSOR
- S — SPEAKER
- P — PHOTO CELL
- HEAT DETECTOR
- EXIT SIGN
- FIRE SPRINKLER HEAD
- F — FIRE ALARM
- CEILING HATCH

integrus ARCHITECTURE
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TELEPHONE: (206)628-3737 FAX: (206)628-3738

9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

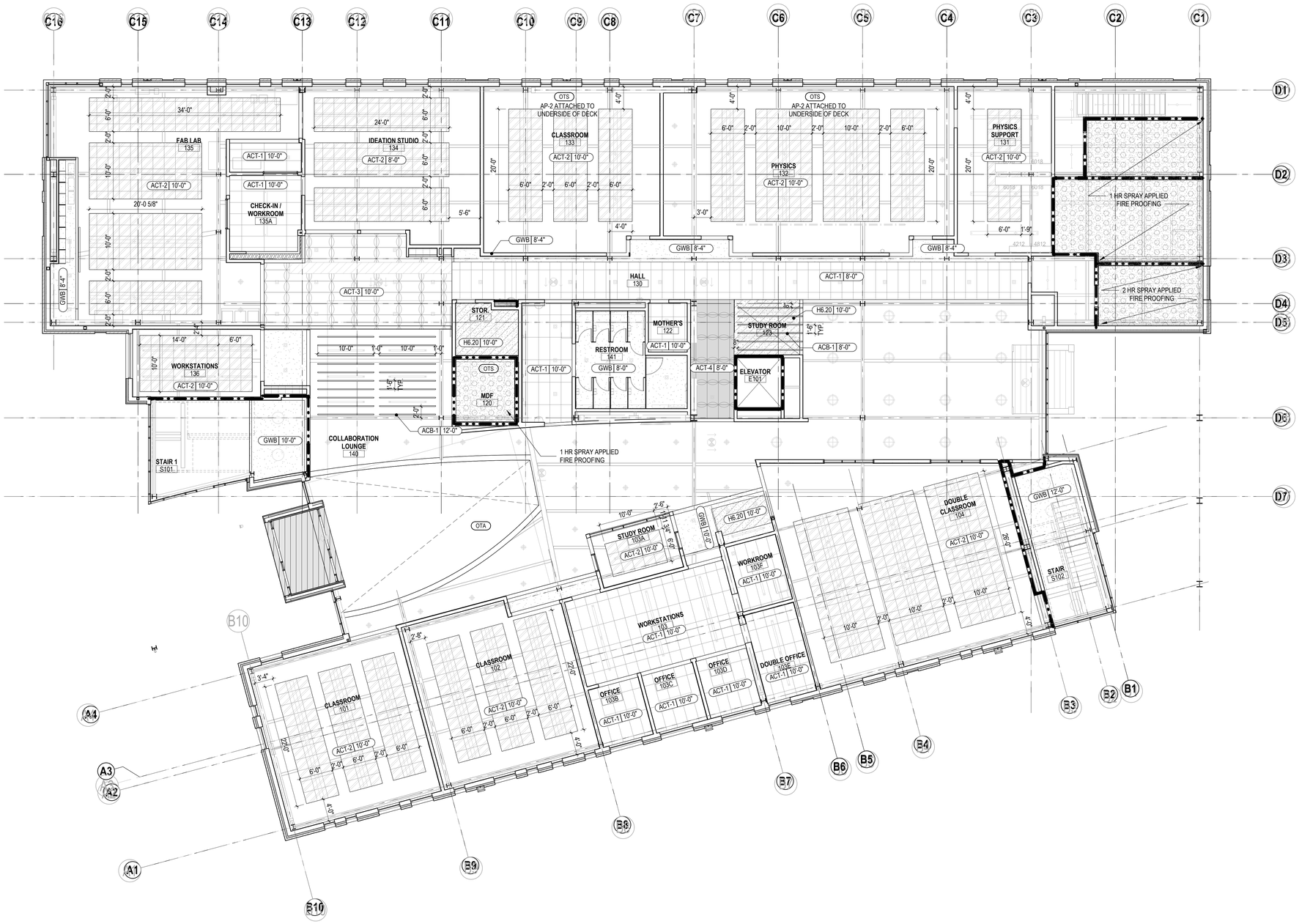
#	Date	Description

LEVEL 0 - REFLECTED CEILING PLAN

PRCNC20221036

A120

BUILDING PERMIT SET



LEVEL 1 - REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN NOTES

1. DIMENSIONS SHOWN ARE TO FINISH FACE.
2. ACCESS DOORS SHALL BE PROVIDED WHERE ACCESS IS REQUIRED FOR OPERATION, INSPECTION AND MAINTENANCE OF CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, OR SIMILAR DEVICES. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR CONNECTIONS AND ROUTING ABOVE CEILING.
4. FOR CEILING CONDITIONS AT WINDOWS, ALSO SEE WINDOW HEAD DETAILS.

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE

REFLECTED CEILING PLAN MATERIAL & FINISH LEGEND

- GYPSUM BOARD CEILING (GWB)
- RATED CEILING - SEE WALL TYPE H6.20 ON A010
- ACOUSTICAL CEILING TILE (ACT-1)
- ACOUSTICAL CEILING CLOUD (ACT-2)
- ACOUSTICAL CEILING TILE (ACT-3)
- ACOUSTICAL CEILING TILE (ACT-4)
- ACOUSTICAL CEILING TILE (ACT-5)
- ACOUSTICAL CEILING BAFFLES (ACB-1)
- WOOD CAP (WD-1)
- SPRAY-ON FIRE PROOFING
- OTA — OPEN TO ABOVE
- OTS — OPEN TO STRUCTURE

REFLECTED CEILING PLAN LEGEND

- DOWNLIGHT
- RECESSED LIGHT FIXTURE
- PENDANT LIGHT
- SUSPENDED LIGHT FIXTURE
- SUSPENDED INDIRECT LIGHT FIXTURE
- RETURN AIR DIFFUSERS
- SUPPLY AIR DIFFUSERS
- SD — SMOKE DETECTOR
- OCCUPANCY SENSOR
- S — SPEAKER
- P — PHOTO CELL
- HEAT DETECTOR
- EXIT SIGN
- FIRE SPRINKLER HEAD
- F — FIRE ALARM
- CEILING HATCH

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STATE OF WASHINGTON

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NEW STEM BUILDING
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Revisions

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LEVEL 1 - REFLECTED CEILING

PRCNC20221036

A121

BUILDING PERMIT SET

LEVEL 2 - REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN NOTES

1. DIMENSIONS SHOWN ARE TO FINISH FACE.
2. ACCESS DOORS SHALL BE PROVIDED WHERE ACCESS IS REQUIRED FOR OPERATION, INSPECTION AND MAINTENANCE OF CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, OR SIMILAR DEVICES. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR CONNECTIONS AND ROUTING ABOVE CEILING.
4. FOR CEILING CONDITIONS AT WINDOWS, ALSO SEE WINDOW HEAD DETAILS.

FIRE PROTECTION KEY

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- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE

REFLECTED CEILING PLAN MATERIAL & FINISH LEGEND

- GYPSUM BOARD CEILING (GWB)
- RATED CEILING - SEE WALL TYPE H6.20 ON A010
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- ACOUSTICAL CEILING CLOUD (ACT-2)
- ACOUSTICAL CEILING TILE (ACT-3)
- ACOUSTICAL CEILING TILE (ACT-4)
- ACOUSTICAL CEILING TILE (ACT-5)
- ACOUSTICAL CEILING BAFFLES (ACB-1)
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REFLECTED CEILING PLAN LEGEND

- DOWNLIGHT
- RECESSED LIGHT FIXTURE
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- SUSPENDED INDIRECT LIGHT FIXTURE
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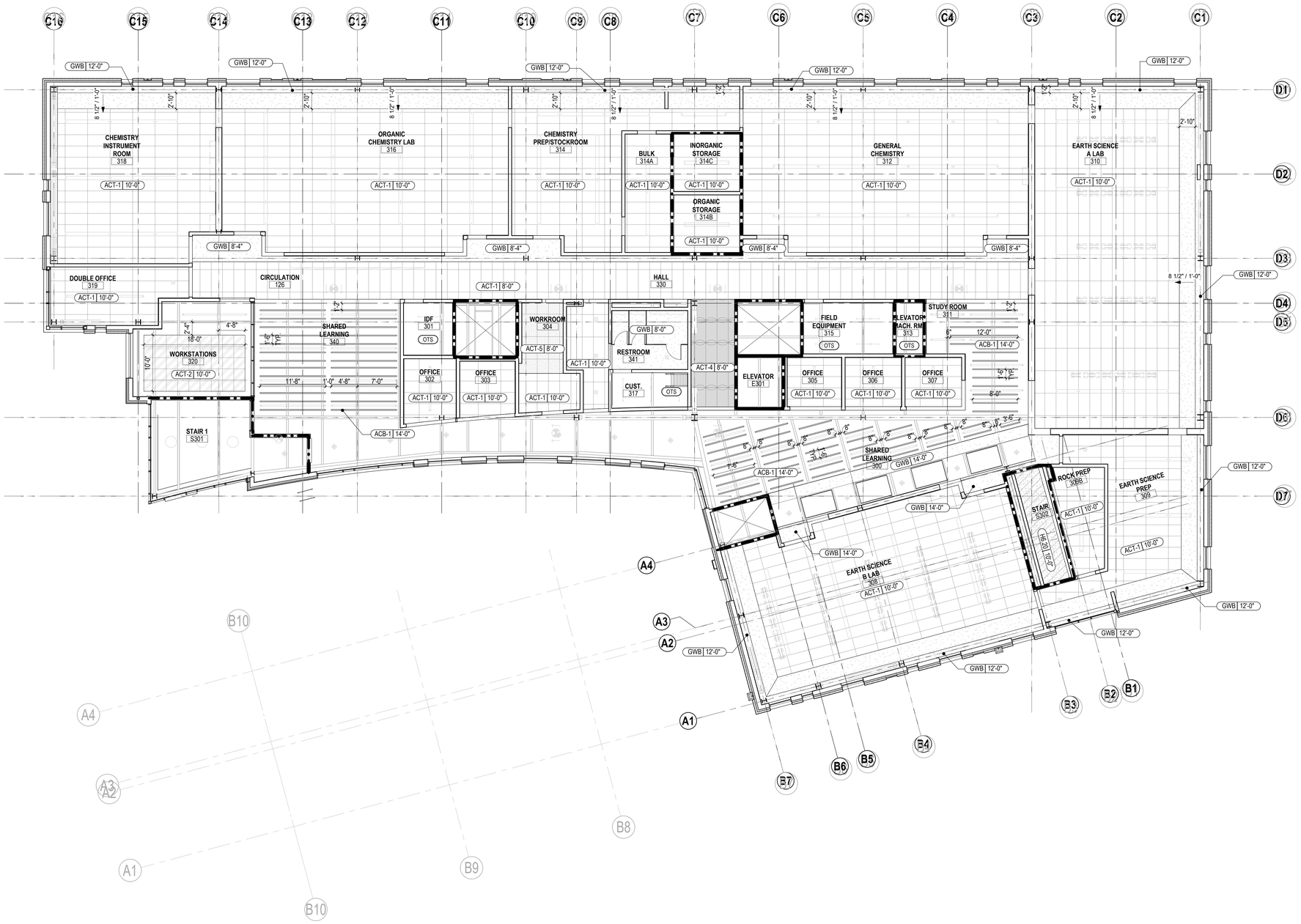
LEVEL 2 - REFLECTED CEILING PLAN

PRCNC20221036

A122

BUILDING PERMIT SET



LEVEL 3 - REFLECTED CEILING PLAN

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

REFLECTED CEILING PLAN NOTES

1. DIMENSIONS SHOWN ARE TO FINISH FACE.
2. ACCESS DOORS SHALL BE PROVIDED WHERE ACCESS IS REQUIRED FOR OPERATION, INSPECTION AND MAINTENANCE OF CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, OR SIMILAR DEVICES. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION.
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR CONNECTIONS AND ROUTING ABOVE CEILING.
4. FOR CEILING CONDITIONS AT WINDOWS, ALSO SEE WINDOW HEAD DETAILS.

FIRE PROTECTION KEY

- 1 HOUR FIRE WALL
- 2 HOUR FIRE WALL
- CONSTRUCTION CAPABLE TO WITHSTAND THE PASSAGE OF SMOKE

REFLECTED CEILING PLAN MATERIAL & FINISH LEGEND

- GYPSUM BOARD CEILING (GWB)
- RATED CEILING - SEE WALL TYPE H6.20 ON A010
- ACOUSTICAL CEILING TILE (ACT-1)
- ACOUSTICAL CEILING CLOUD (ACT-2)
- ACOUSTICAL CEILING TILE (ACT-3)
- ACOUSTICAL CEILING TILE (ACT-4)
- ACOUSTICAL CEILING TILE (ACT-5)
- ACOUSTICAL CEILING BAFFLES (ACB-1)
- WOOD CAP (WD-1)
- SPRAY-ON FIRE PROOFING
- OTA — OPEN TO ABOVE
- OTS — OPEN TO STRUCTURE

REFLECTED CEILING PLAN LEGEND

- DOWNLIGHT
- RECESSED LIGHT FIXTURE
- PENDANT LIGHT
- SUSPENDED LIGHT FIXTURE
- SUSPENDED INDIRECT LIGHT FIXTURE
- RETURN AIR DIFFUSERS
- SUPPLY AIR DIFFUSERS
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- P — PHOTO CELL
- HEAT DETECTOR
- EXIT SIGN
- FIRE SPRINKLER HEAD
- F — FIRE ALARM
- CEILING HATCH

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STATE OF WASHINGTON

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Revisions

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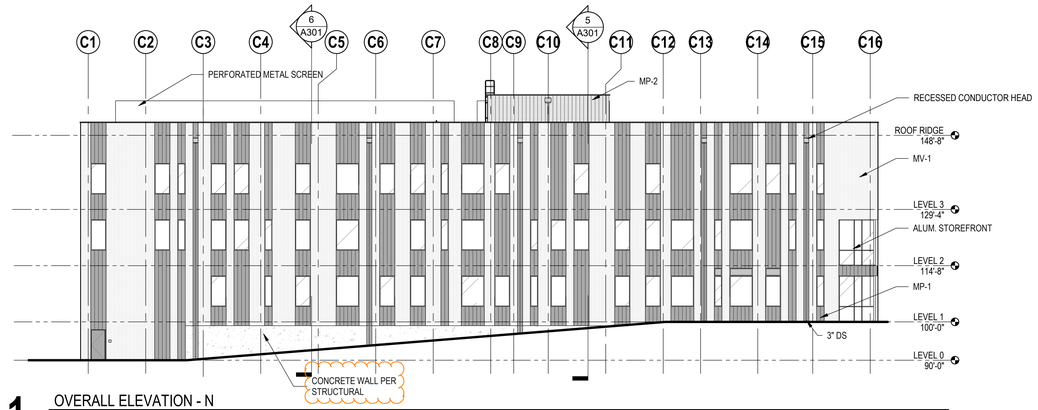
LEVEL 3 - REFLECTED CEILING PLAN

PRCNC20221036

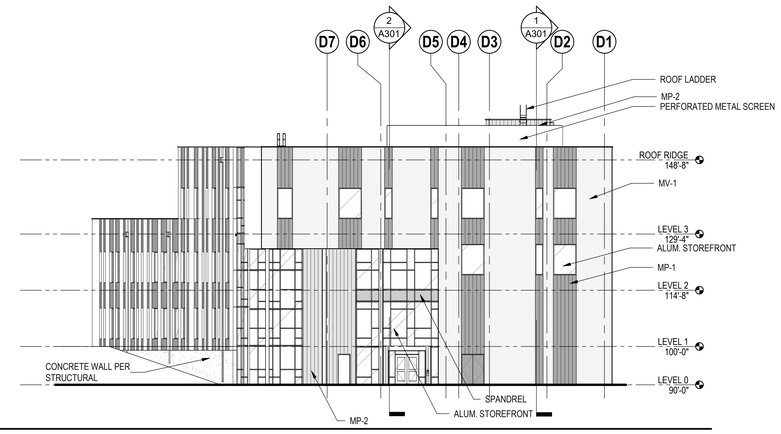
A123

BUILDING PERMIT SET



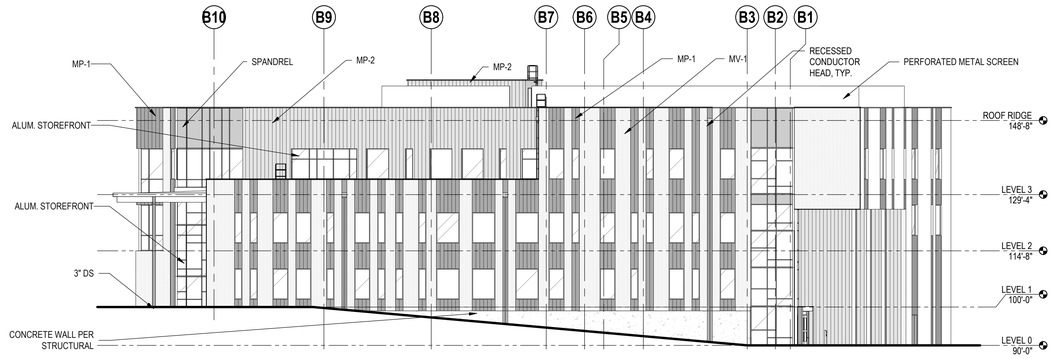
1 OVERALL ELEVATION - N

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



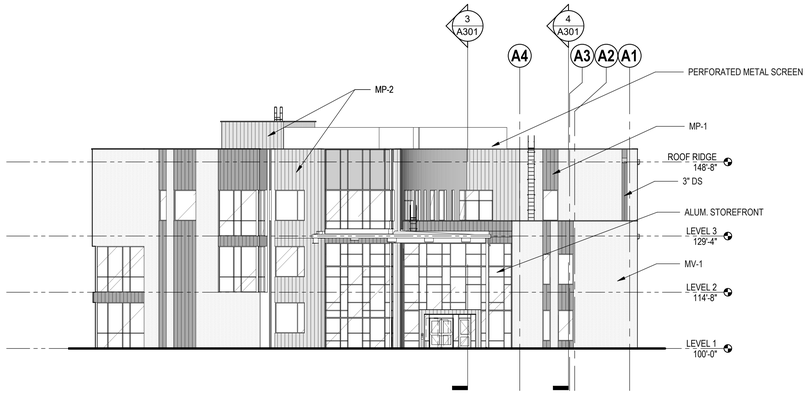
2 OVERALL ELEVATION - E

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



3 OVERALL ELEVATION - S

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



4 OVERALL ELEVATION - W

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

ARCH ELEVATION NOTES

1. REFER TO WINDOW SCHEDULE AND FRAME TYPE ELEVATIONS FOR WINDOW SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
2. REFER TO LOUVER SCHEDULE AND TYPE ELEVATIONS FOR LOUVER SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
3. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR FOUNDATION AND SUBGRADE INSULATION.
4. SEE CIVIL AND LANDSCAPE FOR EXTERIOR GRADE CONDITIONS.
5. MEP SHOWN FOR REFERENCE ONLY.

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

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Revisions

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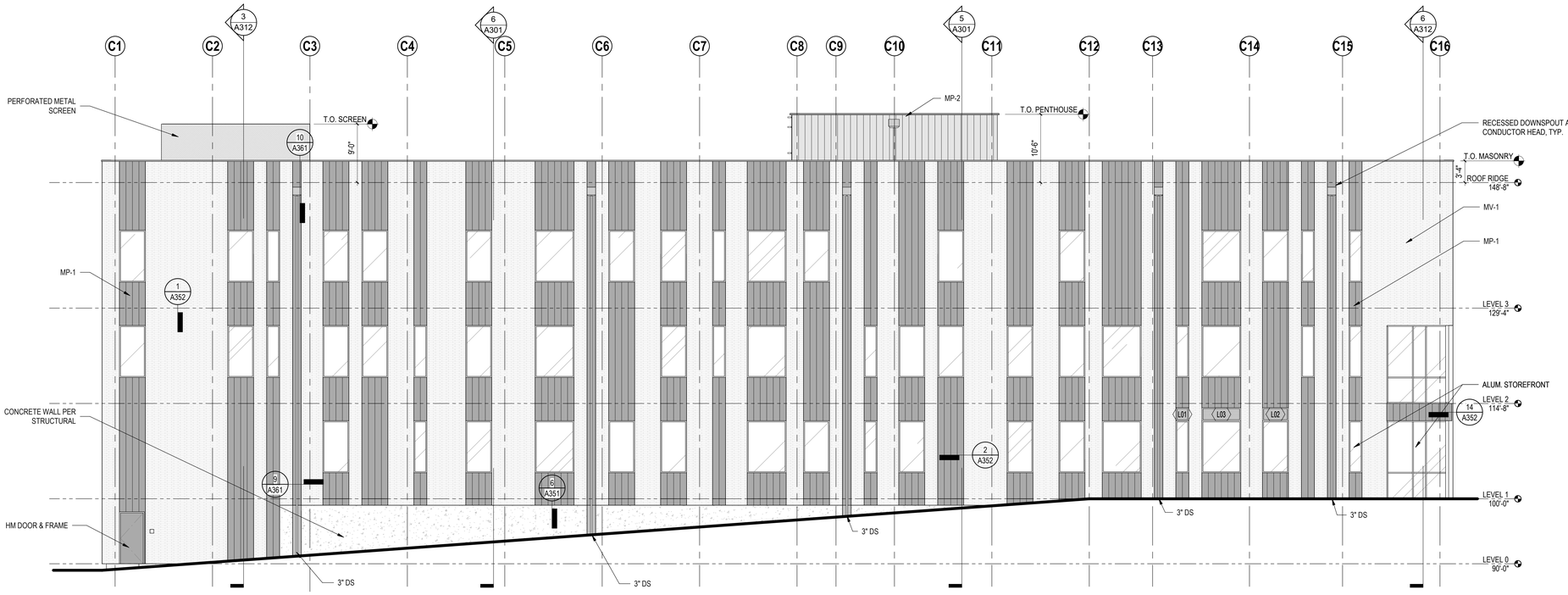
EXTERIOR ELEVATIONS - OVERALL

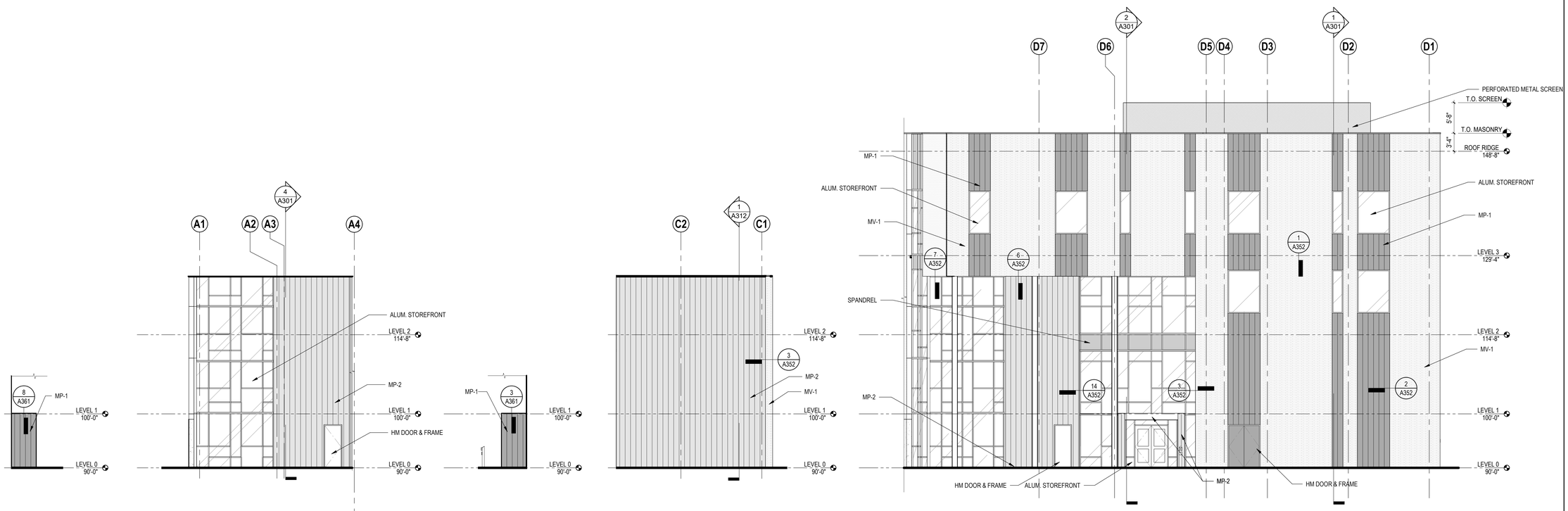
PRCNC20221036

A201

BUILDING PERMIT SET



1A EXTERIOR ELEVATION - N
SCALE: 1/8" = 1'-0"



2E EAST - ENTRY NORTH 2
SCALE: 1/8" = 1'-0"

2D EAST - ENTRY EAST
SCALE: 1/8" = 1'-0"

2C EAST - ENTRY SOUTH
SCALE: 1/8" = 1'-0"

2B EAST - ENTRY NORTH 1
SCALE: 1/8" = 1'-0"

2A EXTERIOR ELEVATION - E
SCALE: 1/8" = 1'-0"

ARCH ELEVATION NOTES

1. REFER TO WINDOW SCHEDULE AND FRAME TYPE ELEVATIONS FOR WINDOW SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
2. REFER TO LOUVER SCHEDULE AND TYPE ELEVATIONS FOR LOUVER SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
3. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR FOUNDATION AND SUBGRADE INSULATION.
4. SEE CIVIL AND LANDSCAPE FOR EXTERIOR GRADE CONDITIONS.
5. MEP SHOWN FOR REFERENCE ONLY.

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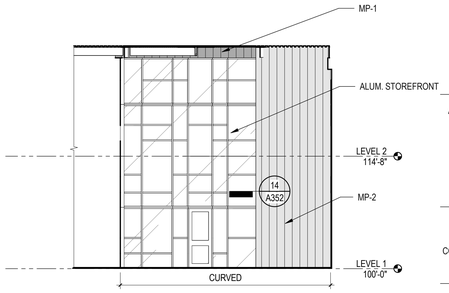
EXTERIOR ELEVATIONS

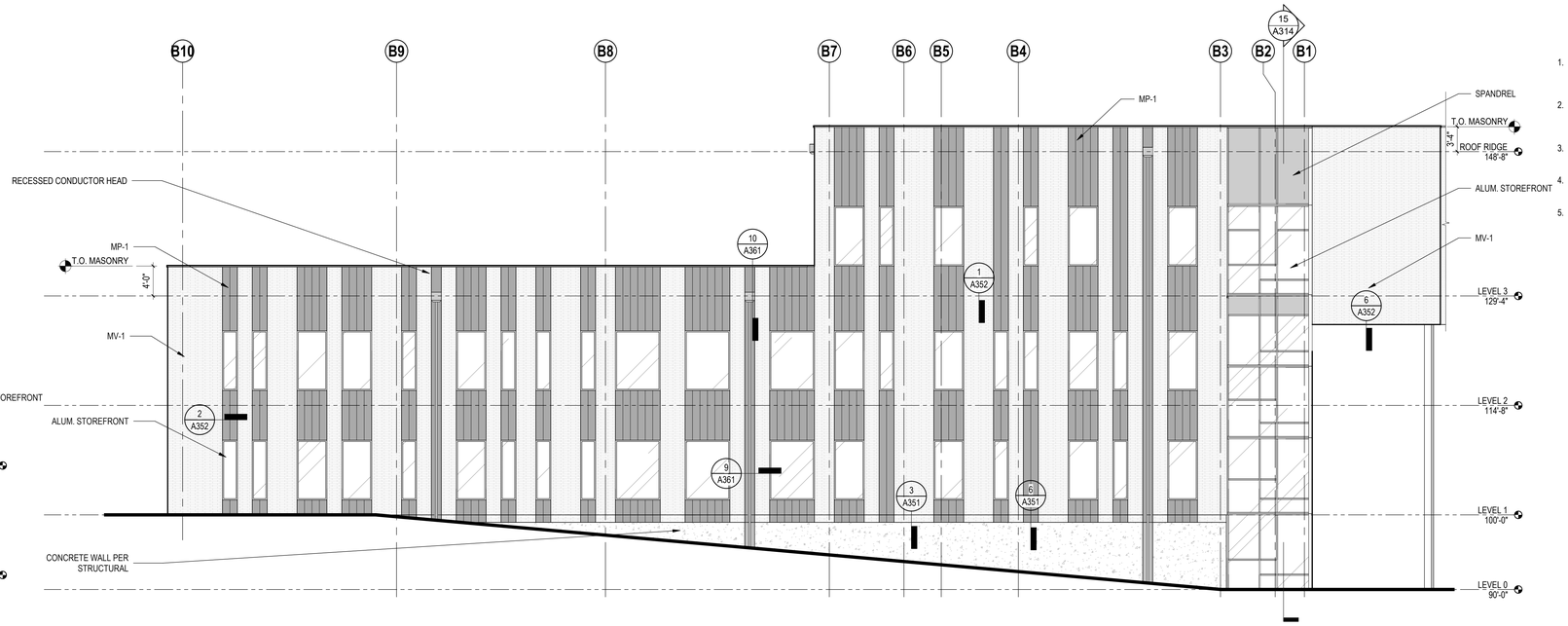
PRCNC20221036

A202

BUILDING PERMIT SET



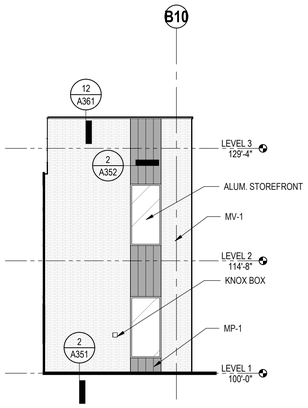
4A WEST - ENTRY NORTH 1
SCALE: 1/8" = 1'-0"



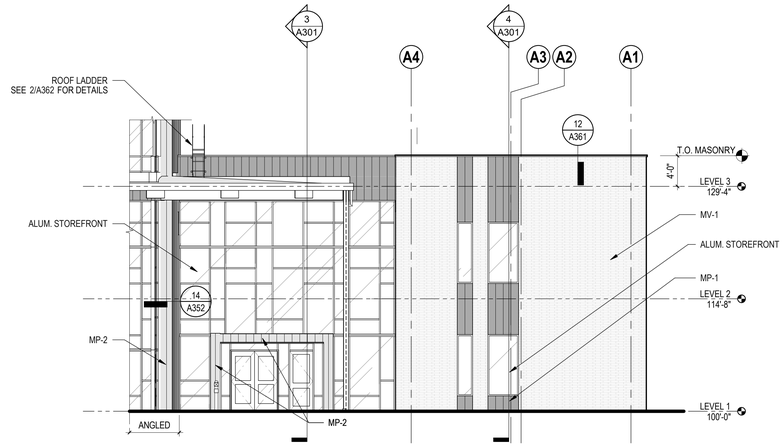
3A EXTERIOR ELEVATION - S
SCALE: 1/8" = 1'-0"

ARCH ELEVATION NOTES

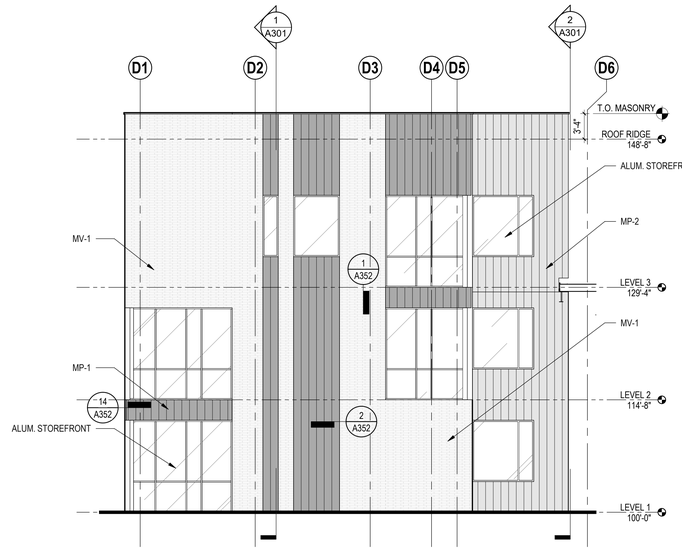
1. REFER TO WINDOW SCHEDULE AND FRAME TYPE ELEVATIONS FOR WINDOW SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
2. REFER TO LOUVER SCHEDULE AND TYPE ELEVATIONS FOR LOUVER SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
3. REFER TO STRUCTURAL AND CIVIL DRAWINGS FOR FOUNDATION AND SUBGRADE INSULATION.
4. SEE CIVIL AND LANDSCAPE FOR EXTERIOR GRADE CONDITIONS.
5. MEP SHOWN FOR REFERENCE ONLY.



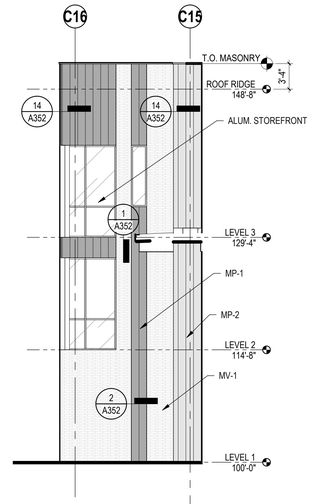
4E WEST - ENTRY SOUTH
SCALE: 1/8" = 1'-0"



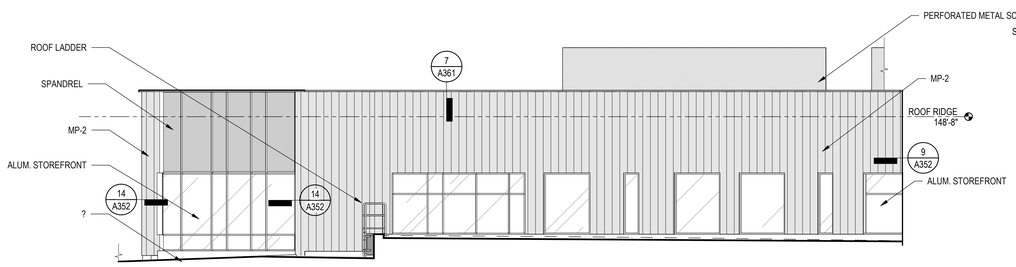
4D EXTERIOR ELEVATION - W2
SCALE: 1/8" = 1'-0"



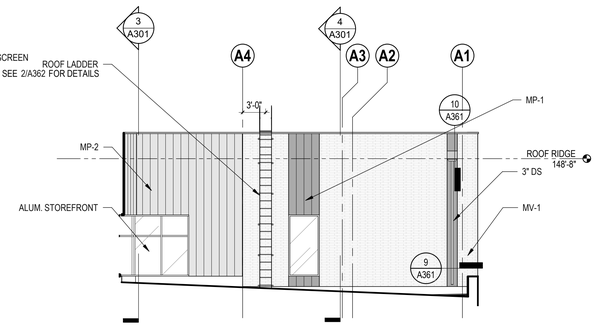
4C EXTERIOR ELEVATION - W
SCALE: 1/8" = 1'-0"



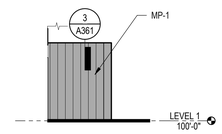
4B WEST - ENTRY NORTH 2
SCALE: 1/8" = 1'-0"



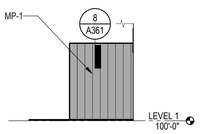
5B EXTERIOR ELEVATION - N2
SCALE: 1/8" = 1'-0"



5A EXTERIOR ELEVATION - W3
SCALE: 1/8" = 1'-0"



4G WEST - ENTRY SOUTH 2
SCALE: 1/8" = 1'-0"



4F WEST - ENTRY NORTH 3
SCALE: 1/8" = 1'-0"

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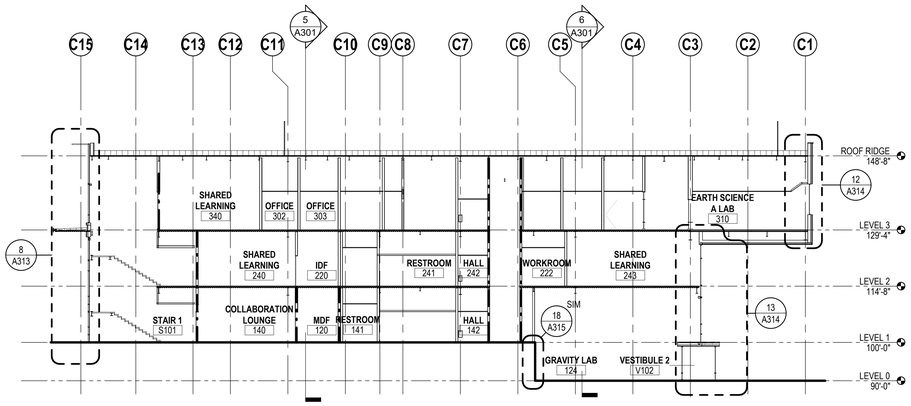
EXTERIOR ELEVATIONS

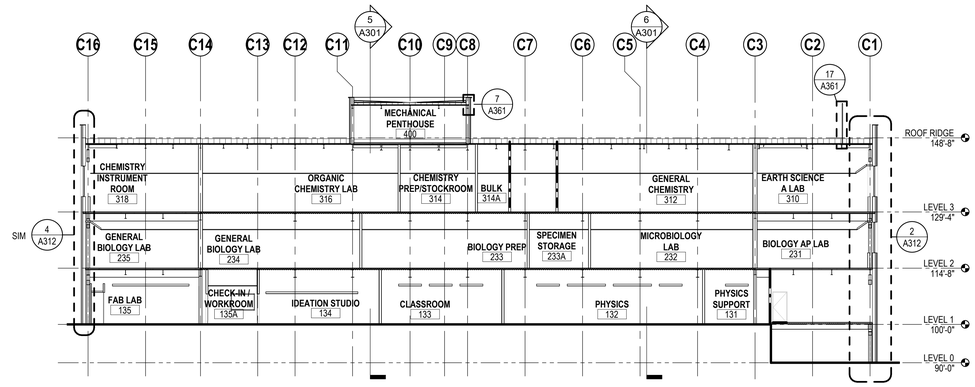
PRCNC20221036

A203

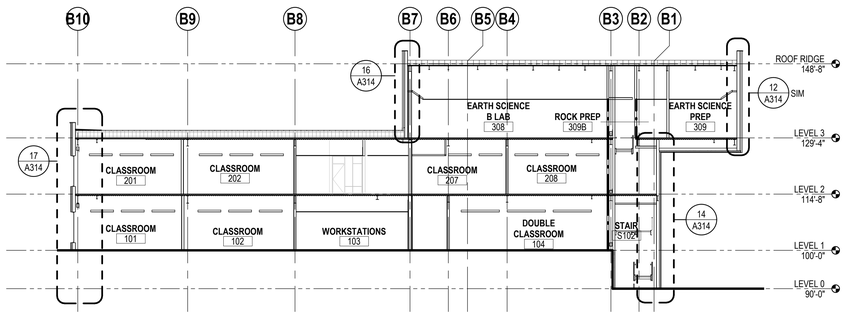
BUILDING PERMIT SET



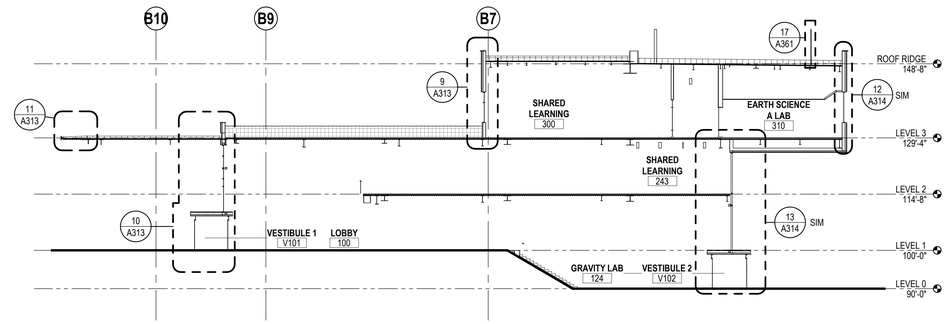
2 BUILDING SECTION - EW 2
SCALE: 1/16" = 1'-0"



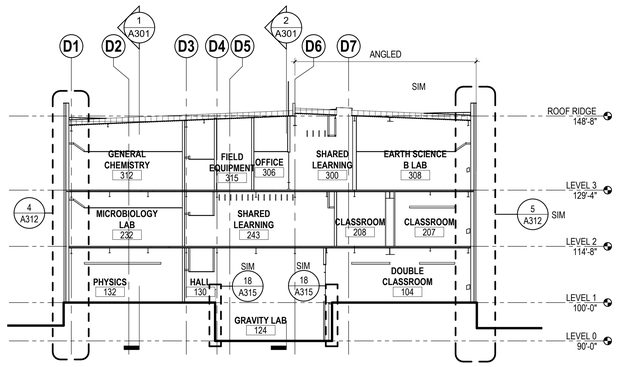
1 BUILDING SECTION - E/W 1
SCALE: 1/16" = 1'-0"



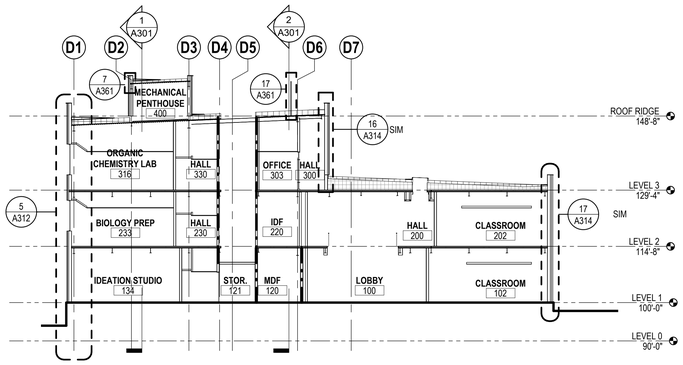
4 BUILDING SECTION - E/W 4
SCALE: 1/16" = 1'-0"



3 BUILDING SECTION - E/W 3
SCALE: 1/16" = 1'-0"



6 BUILDING SECTION - N/S 2
SCALE: 1/16" = 1'-0"



5 BUILDING SECTION - N/S 1
SCALE: 1/16" = 1'-0"

ARCH SECTION NOTES

1. REFER TO WINDOW SCHEDULE AND FRAME TYPE ELEVATIONS FOR WINDOW SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
2. REFER TO LOUVER SCHEDULE AND TYPE ELEVATIONS FOR LOUVER SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
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4. SEE CIVIL AND LANDSCAPE FOR EXTERIOR GRADE CONDITIONS.
5. MEP SHOWN FOR REFERENCE ONLY.

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9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

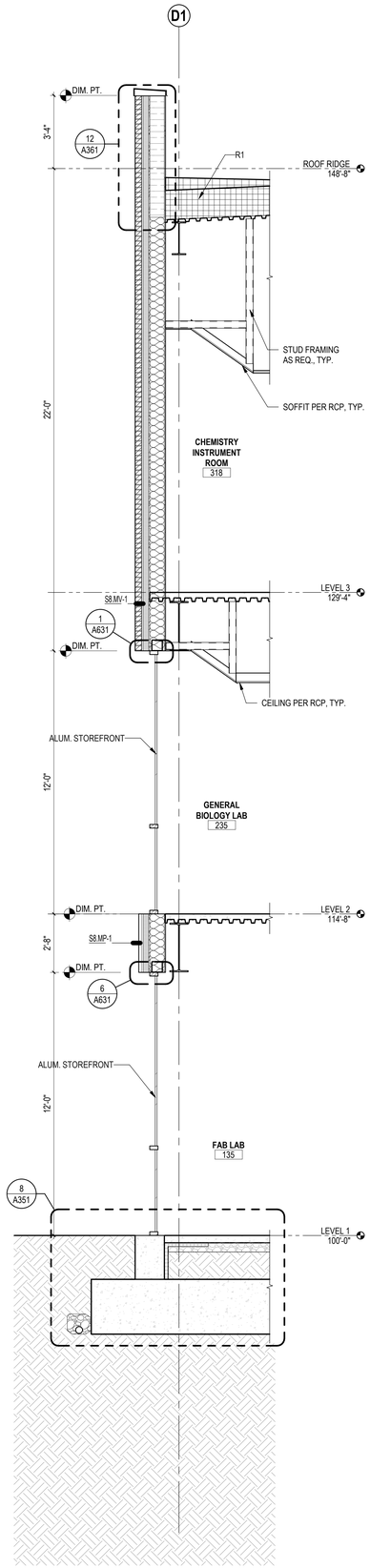
#	Date	Description

BUILDING SECTIONS

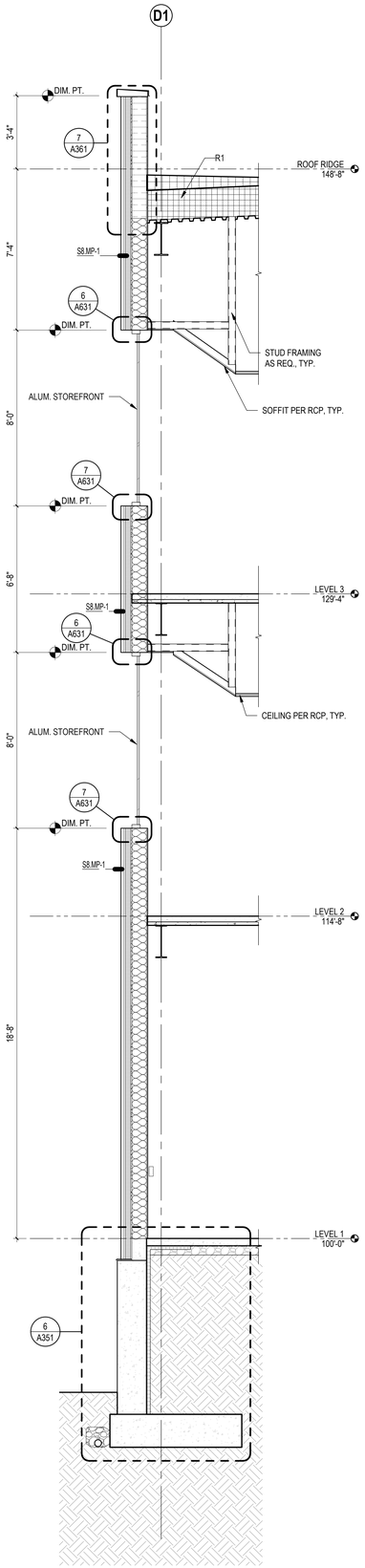
PRCNC20221036

A301

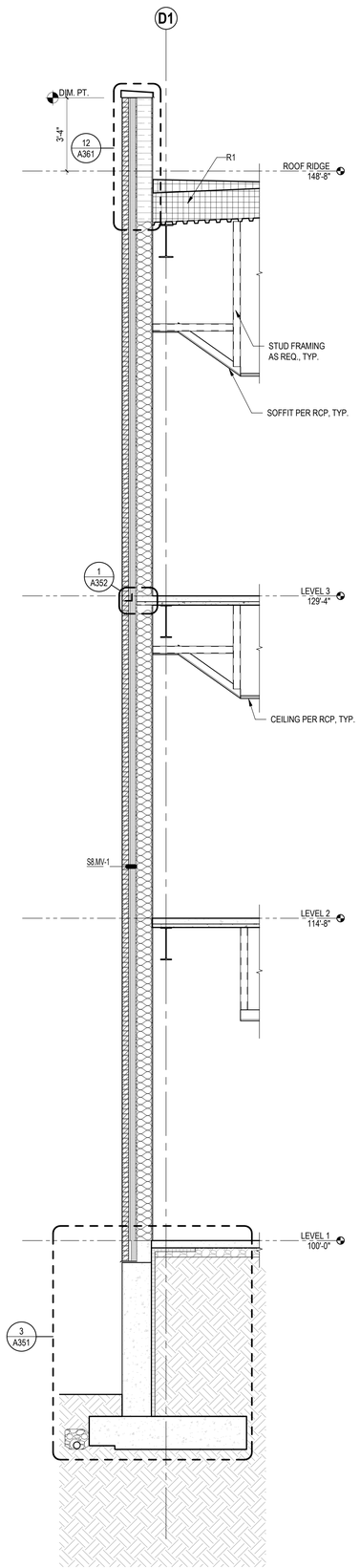
BUILDING PERMIT SET



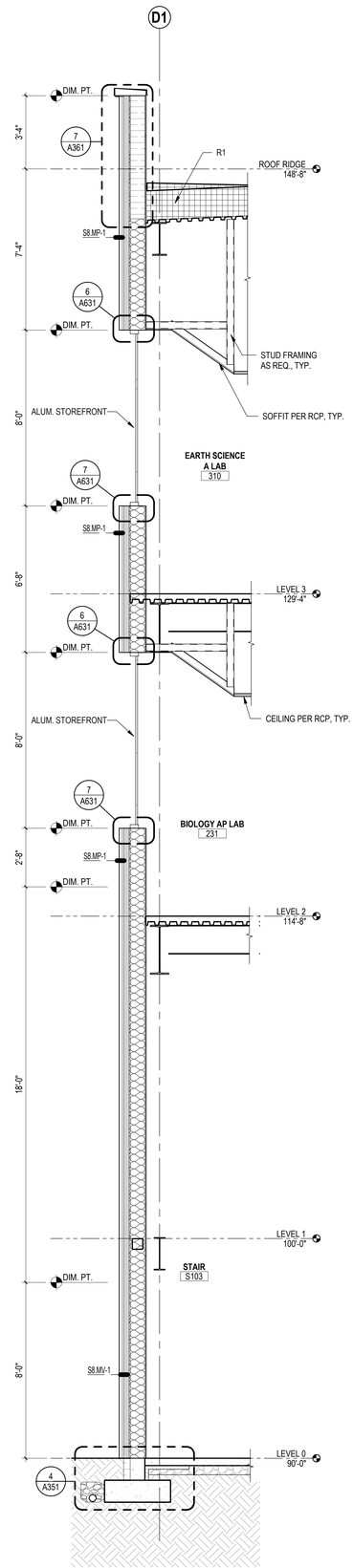
6 FAB LAB NORTH WALL
SCALE: 3/8" = 1'-0"



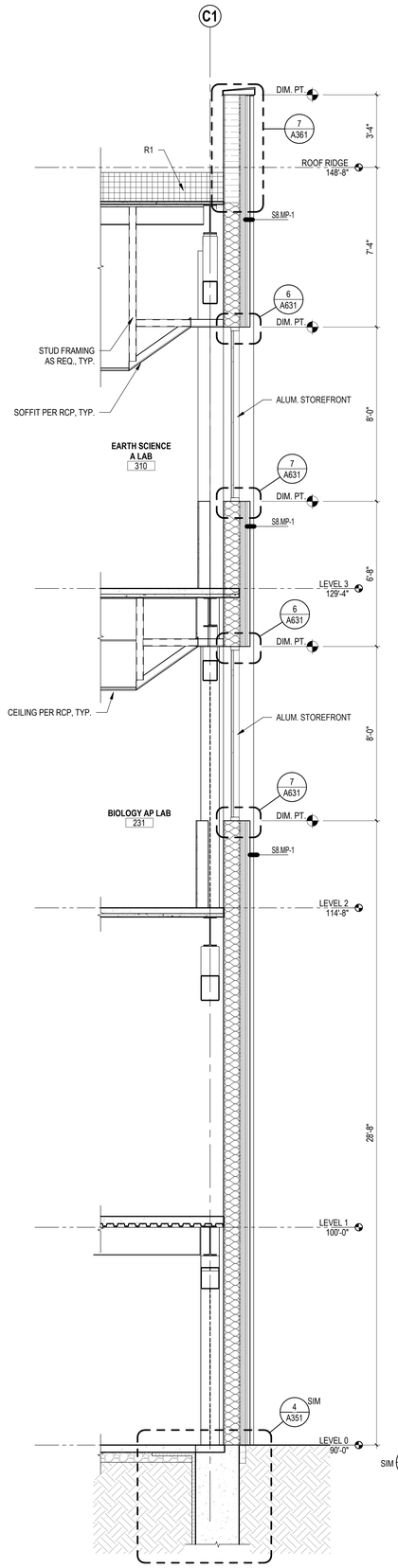
5 TYPICAL 3-STORY WALL SECTION AT SF
SCALE: 3/8" = 1'-0"



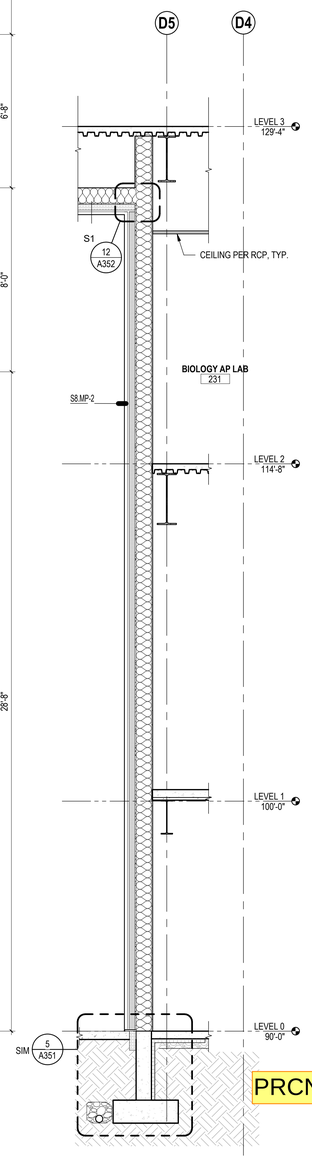
4 TYPICAL WALL SECTION AT MV-1
SCALE: 3/8" = 1'-0"



3 ELEC. MAIN NORTH WALL
SCALE: 3/8" = 1'-0"



2 EMERGENCY ELEC SOUTH WALL
SCALE: 3/8" = 1'-0"



1 SPRINKLER RISER SOUTH WALL
SCALE: 3/8" = 1'-0"

ARCH SECTION NOTES

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9411 REGISTERED ARCHITECT
BRIAN JOHN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

#	Date	Description

WALL SECTIONS

PRCNC20221036

A312

BUILDING PERMIT SET

ARCH SECTION NOTES

1. REFER TO WINDOW SCHEDULE AND FRAME TYPE ELEVATIONS FOR WINDOW SIZES AND DIMENSIONS RELATIVE TO FLOOR LEVELS.
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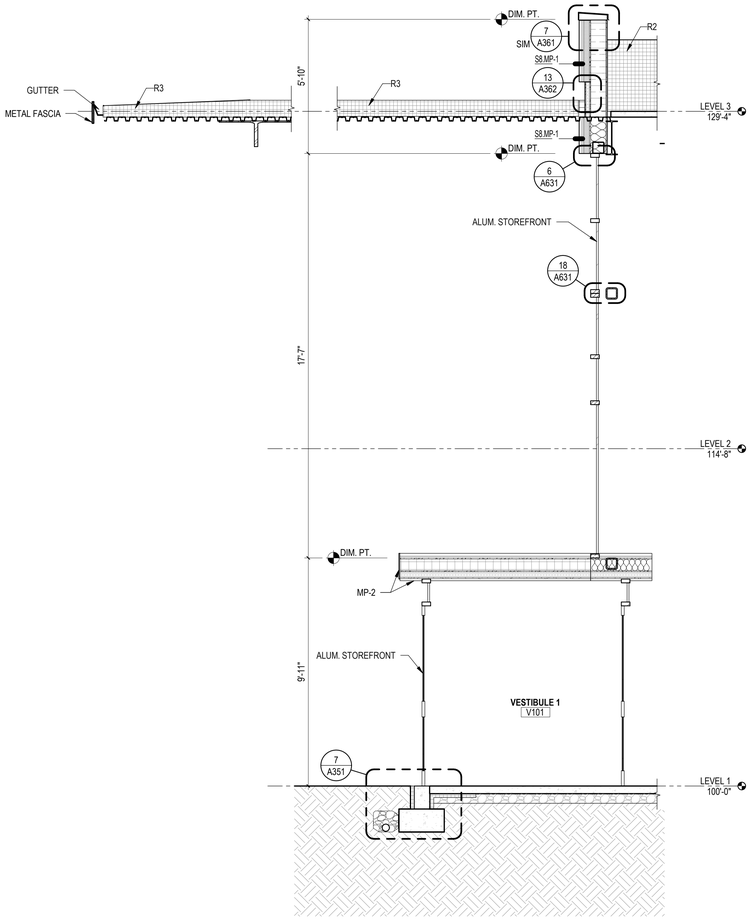
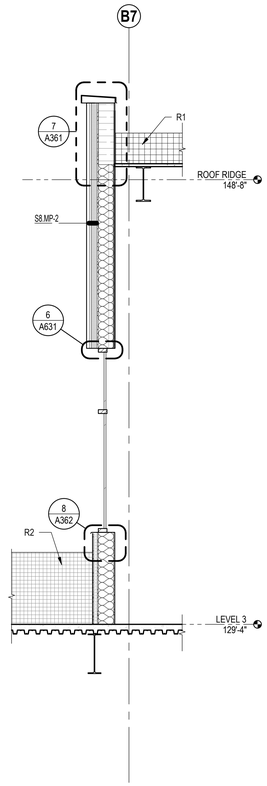
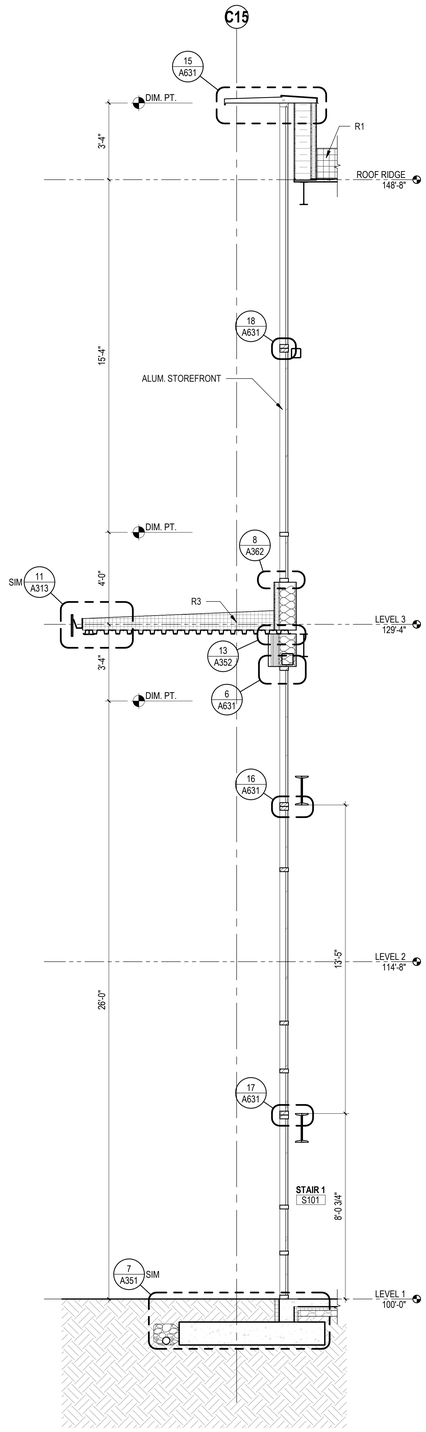


11 TYPICAL ENTRY ROOF EDGE
SCALE: 3/8" = 1'-0"



10 VESTIBULE 1 WEST WALL
SCALE: 3/8" = 1'-0"



9 TYP. WALL SECTION @ 3RD FLR ROOF
SCALE: 3/8" = 1'-0"

8 STAIR 1 WEST WALL
SCALE: 3/8" = 1'-0"

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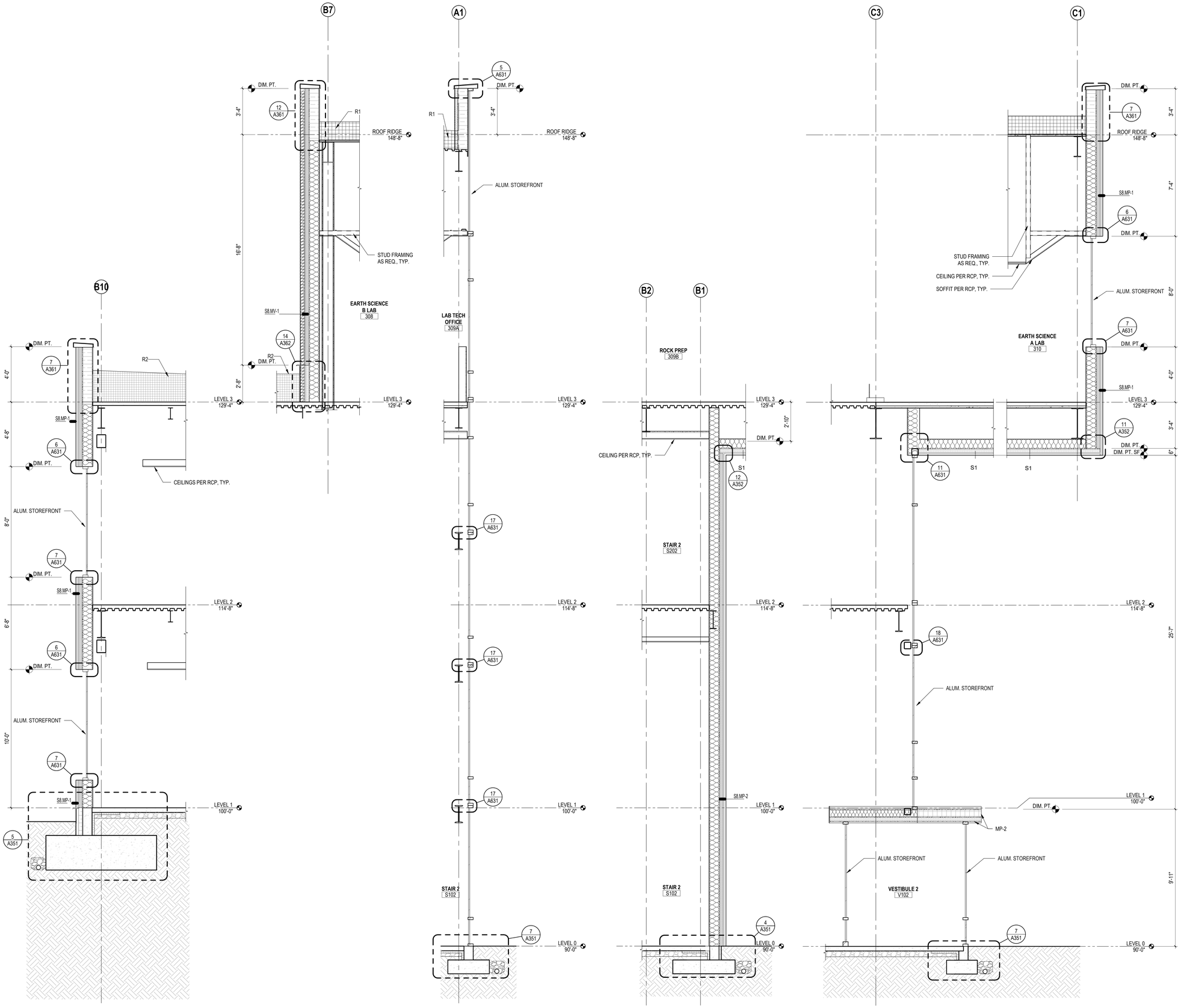
WALL SECTIONS

PRCNC20221036

A313

BUILDING PERMIT SET



17 TYPICAL 2 STORY WALL SECTION @ SF
SCALE: 3/8" = 1'-0"

16 EARTH SCIENCE B WW
SCALE: 3/8" = 1'-0"

15 STAIR 2 SOUTH WALL
SCALE: 3/8" = 1'-0"

14 STAIR 2 EAST WALL
SCALE: 3/8" = 1'-0"

13 VESTIBULE 2 EAST WALL
SCALE: 3/8" = 1'-0"

12 EARTH SCIENCE A EW
SCALE: 3/8" = 1'-0"

ARCH SECTION NOTES

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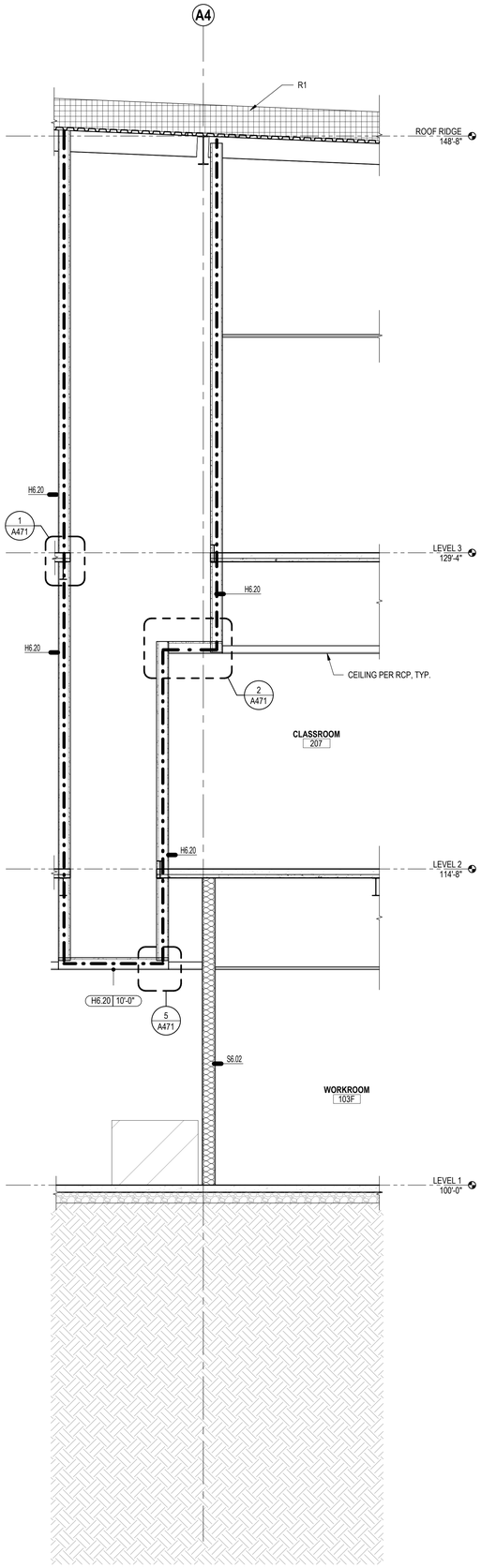
WALL SECTIONS

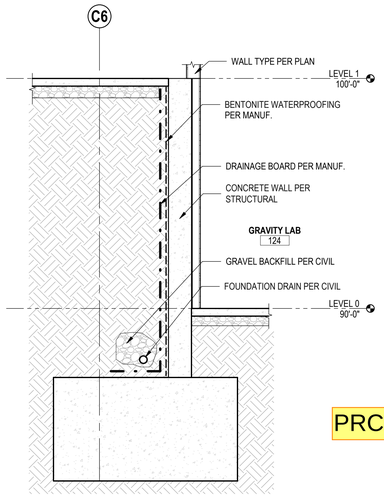
PRCNC20221036

A314

BUILDING PERMIT SET



19 CLASSROOM CHASE
SCALE: 3/8" = 1'-0"



18 TYPICAL WALL SECTION @ GRAVITY LAB
SCALE: 3/8" = 1'-0"

ARCH SECTION NOTES

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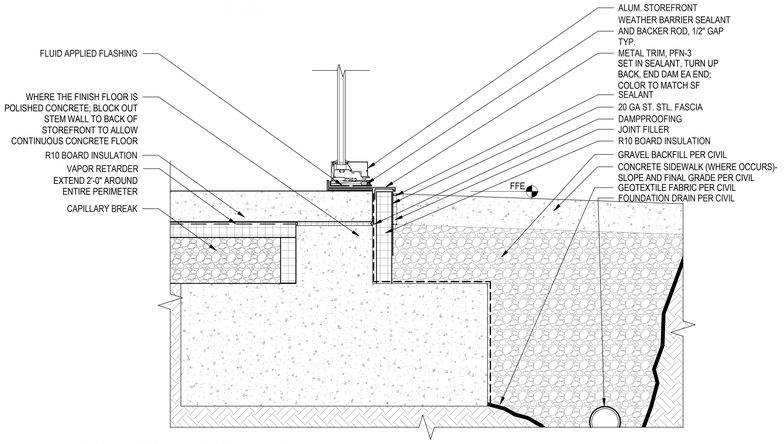
WALL SECTIONS

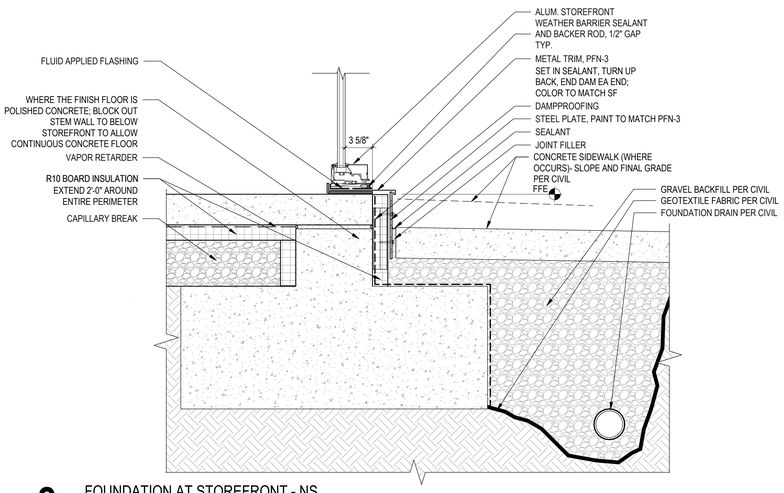
PRCNC20221036

A315

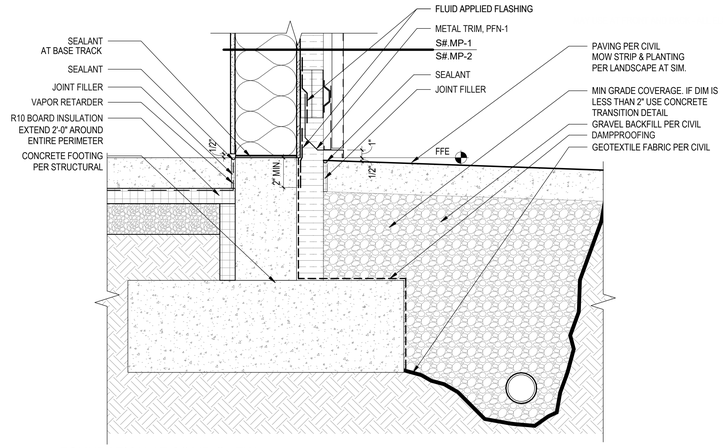
BUILDING PERMIT SET



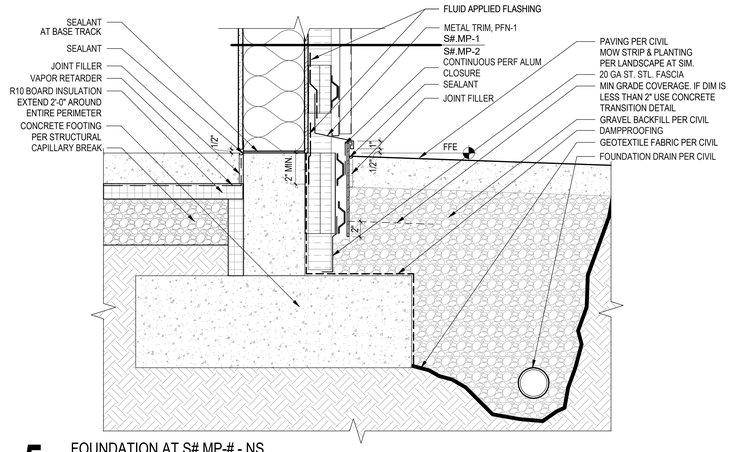
7 FOUNDATION AT STOREFRONT - EW
SCALE: 1 1/2" = 1'-0"



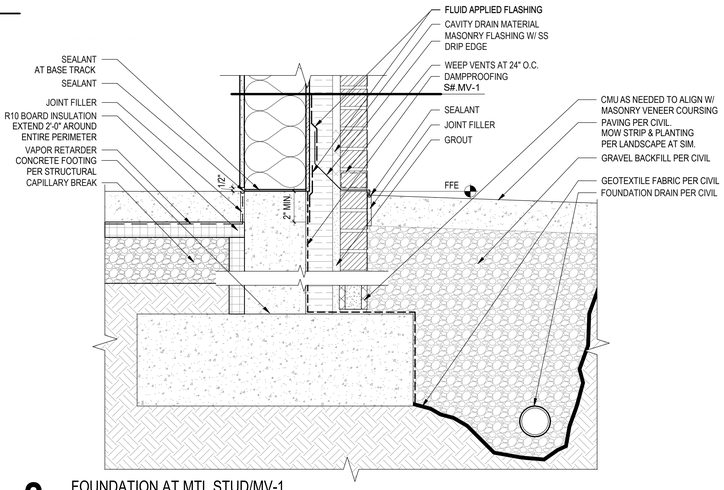
8 FOUNDATION AT STOREFRONT - NS
SCALE: 1 1/2" = 1'-0"



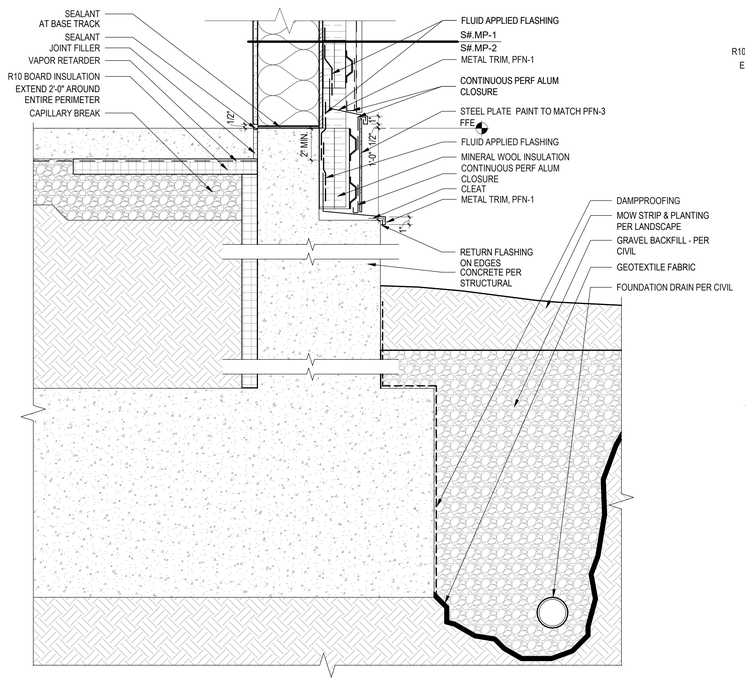
4 FOUNDATION AT S#.MP-# - EW
SCALE: 1 1/2" = 1'-0"



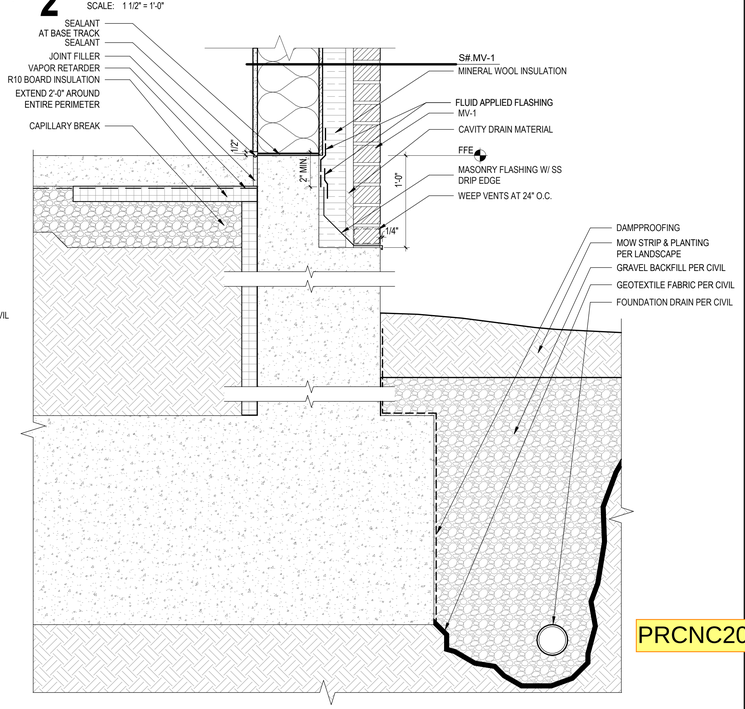
5 FOUNDATION AT S#.MP-# - NS
SCALE: 1 1/2" = 1'-0"



2 FOUNDATION AT MTL STUD/MV-1
SCALE: 1 1/2" = 1'-0"



6 FOUNDATION AT S#.MP-# AT CONCRETE TRANSITION
SCALE: 1 1/2" = 1'-0"



3 FOUNDATION AT S#.MV-1 AT CONCRETE TRANSITION
SCALE: 1 1/2" = 1'-0"

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Revisions

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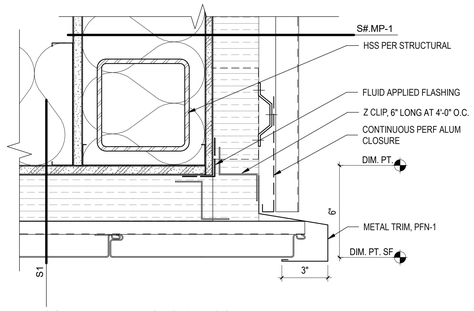
DETAILS - FOUNDATION

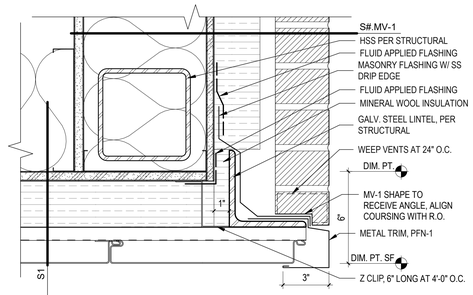
PRCNC20221036

A351

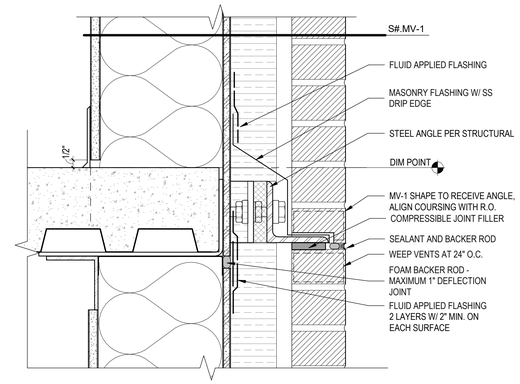
BUILDING PERMIT SET



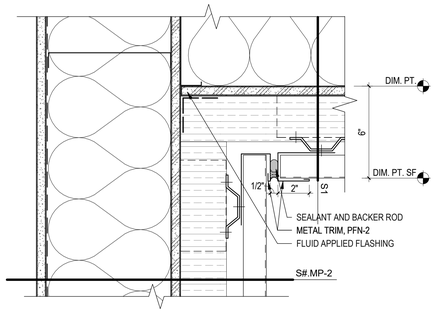
11 SOFFIT AT MP-1 OUSTIDE CORNER
SCALE: 3" = 1'-0"



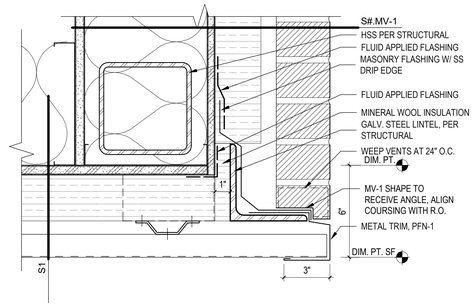
6 SOFFIT AT MV-1 OUSTIDE CORNER EAST
SCALE: 3" = 1'-0"



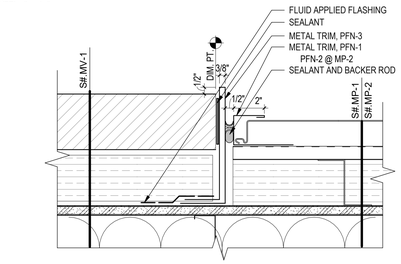
1 MASONRY VENEER SHELF ANGLE AT LEVEL 3
SCALE: 3" = 1'-0"



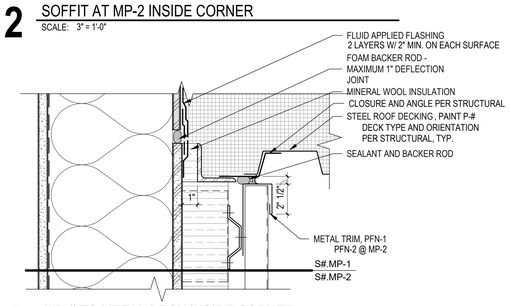
12 SOFFIT AT MP-2 INSIDE CORNER
SCALE: 3" = 1'-0"



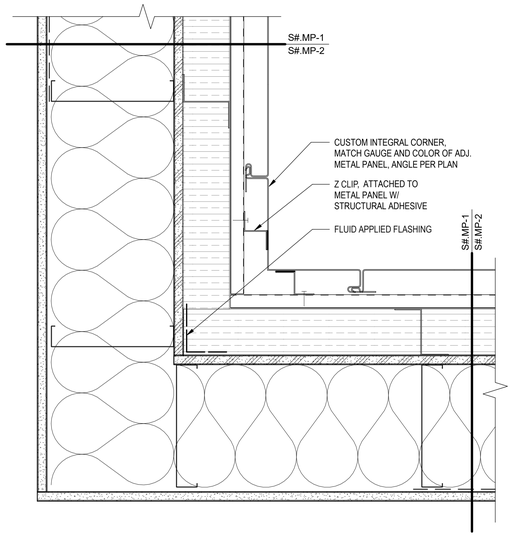
7 SOFFIT AT MV-1 OUSTIDE CORNER SOUTH
SCALE: 3" = 1'-0"



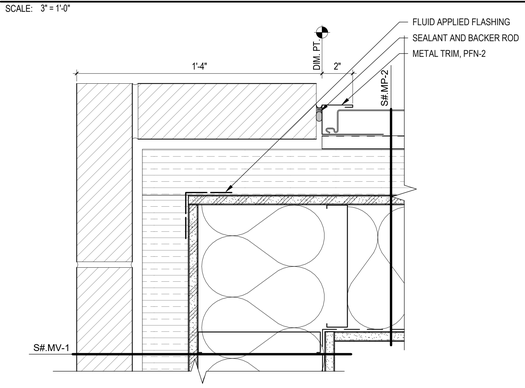
2 MV-1 TO MP-#
SCALE: 3" = 1'-0"



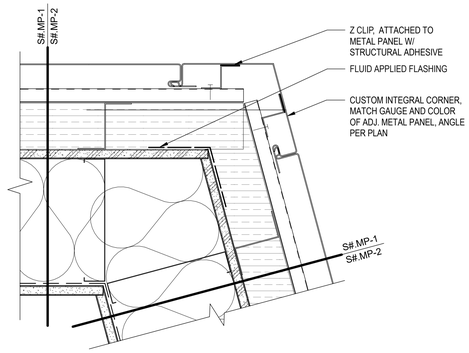
13 MP-# TO METAL DECK INSIDE CORNER
SCALE: 3" = 1'-0"



9 MP-# TO MP-# AT INSIDE CORNERS
SCALE: 3" = 1'-0"



3 MV-1 TO MP-2 AT CORNER
SCALE: 3" = 1'-0"



14 MP-# TO MP-# OUTSIDE CORNERS
SCALE: 3" = 1'-0"

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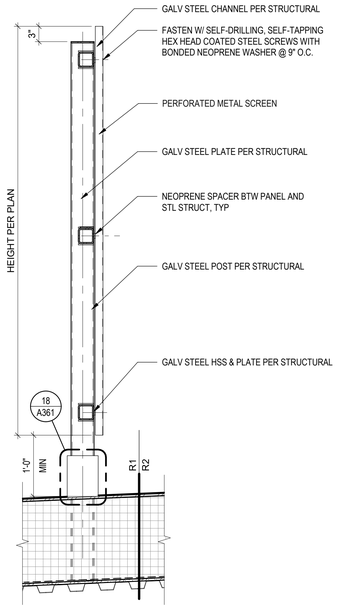
DETAILS - EXTERIOR WALLS

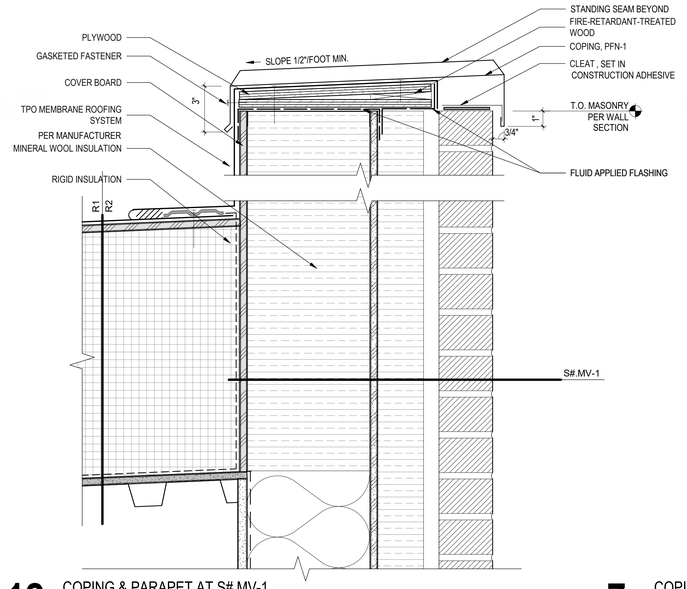
PRCNC20221036

A352

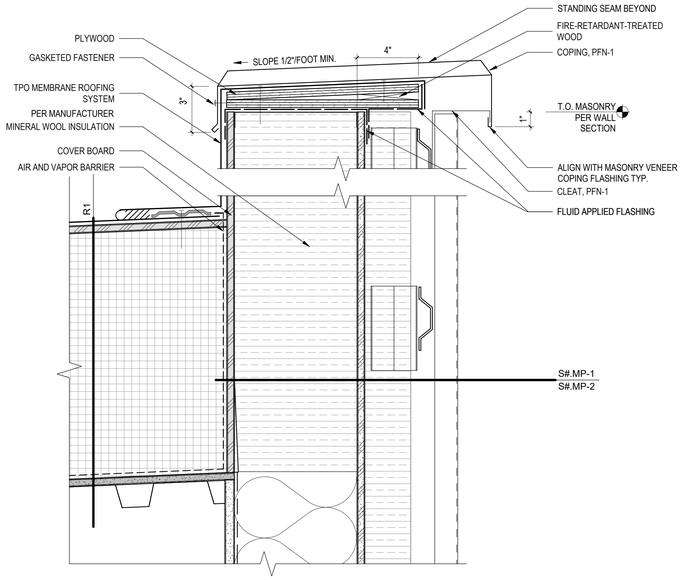
BUILDING PERMIT SET



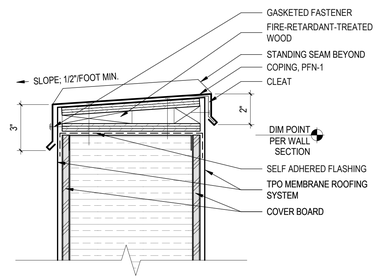
17 MECHANICAL SCREEN SECTION
SCALE: 1" = 1'-0"



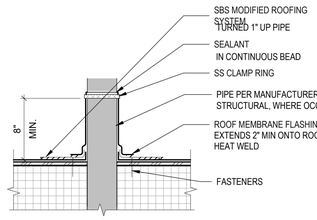
12 COPING & PARAPET AT S#.MV-1
SCALE: 3" = 1'-0"



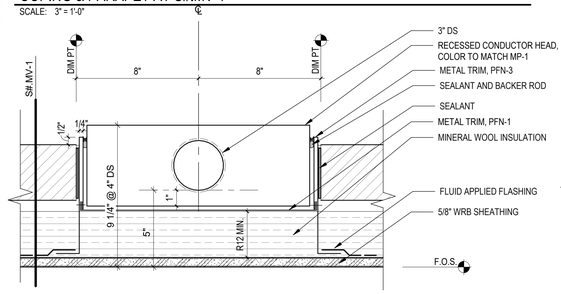
7 COPING & PARAPET AT S#.MP-#
SCALE: 3" = 1'-0"



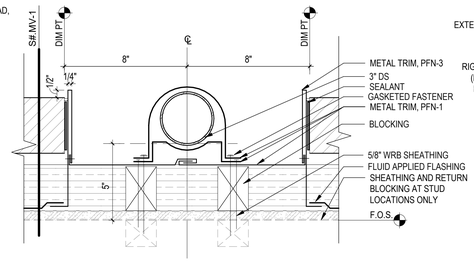
2 TRANSITION PARAPET
SCALE: 3" = 1'-0"



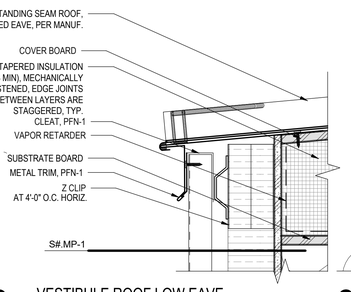
18 PIPE PENETRATION DETAIL
SCALE: 1 1/2" = 1'-0"



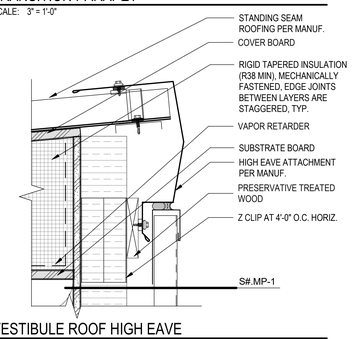
13 CONDUCTOR HEAD RECESSED
SCALE: 3" = 1'-0"



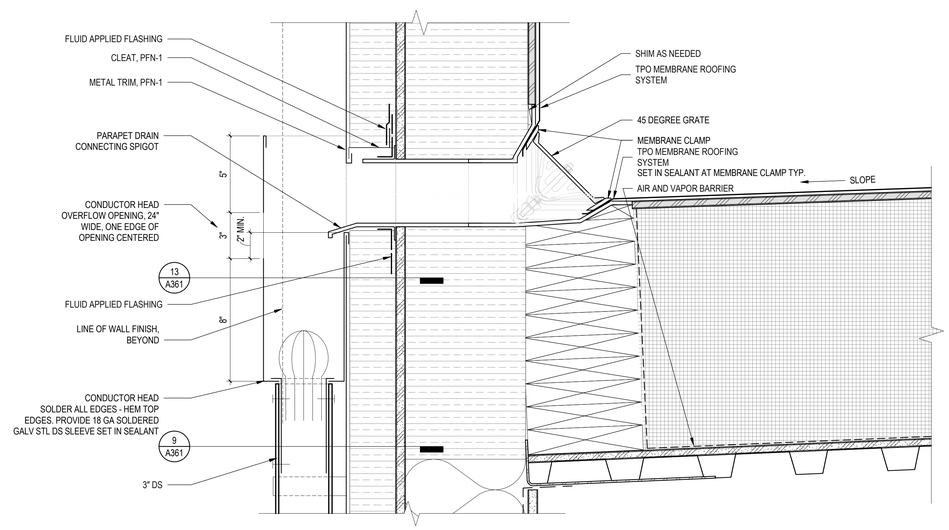
9 DOWNSPOUT PLAN AT MASONRY VENEER
SCALE: 3" = 1'-0"



8 VESTIBULE ROOF LOW EAVE
SCALE: 3" = 1'-0"



3 VESTIBULE ROOF HIGH EAVE
SCALE: 3" = 1'-0"



10 CONDUCTOR HEAD AT SCUPPER DRAIN
SCALE: 3" = 1'-0"

integrus ARCHITECTURE
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9411 REGISTERED ARCHITECT
BRIAN JOHAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

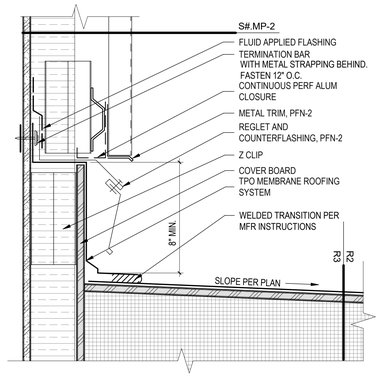
#	Date	Description

DETAILS - ROOF

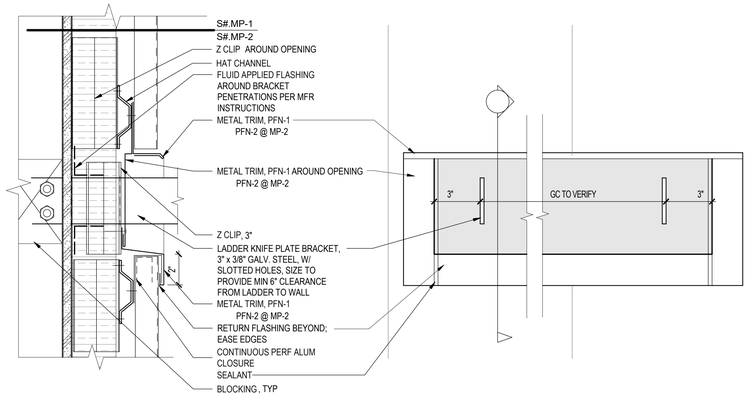
PRCNC20221036

A361

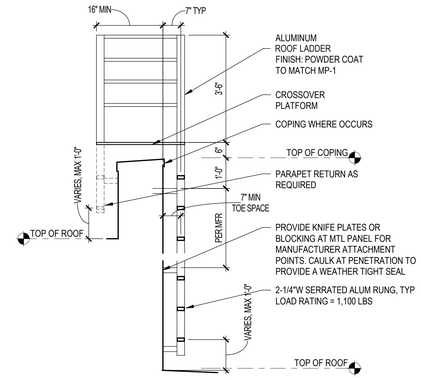
BUILDING PERMIT SET



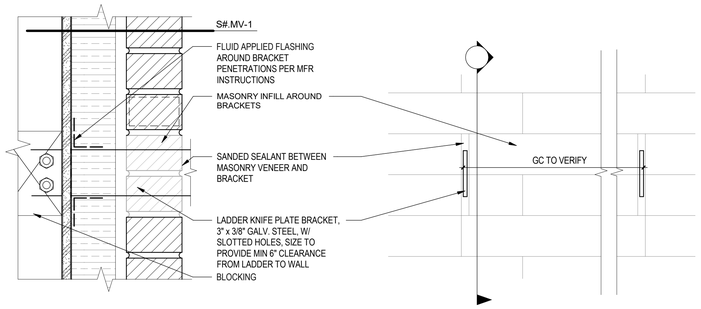
13 S#.MP-# TO ROOF
SCALE: 3" = 1'-0"



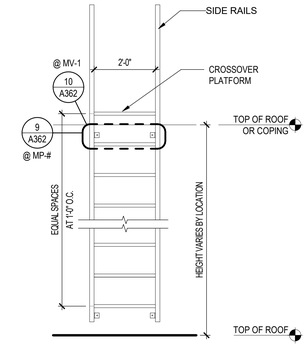
9 ROOF LADDER ATTACHMENT
SCALE: 3" = 1'-0"



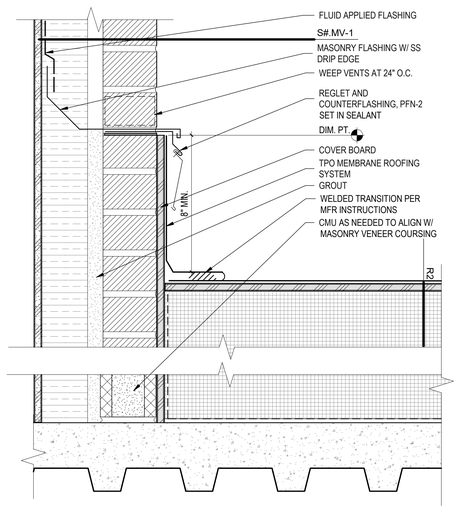
1 ROOF LADDER SECTION AT PARAPET
SCALE: 1/2" = 1'-0"



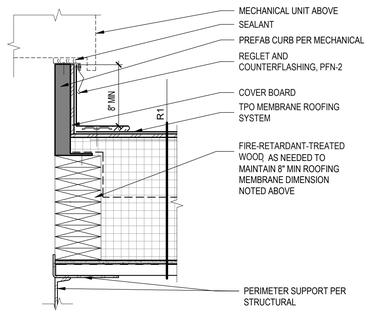
10 ROOF LADDER MV ATTACHMENT
SCALE: 3" = 1'-0"



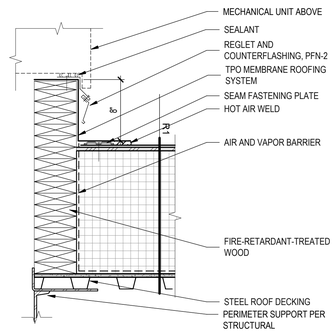
2 ROOF LADDER ELEVATION
SCALE: 1/2" = 1'-0"



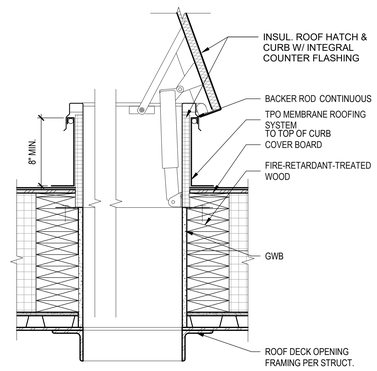
14 S#.MV-1 TO ROOF
SCALE: 3" = 1'-0"



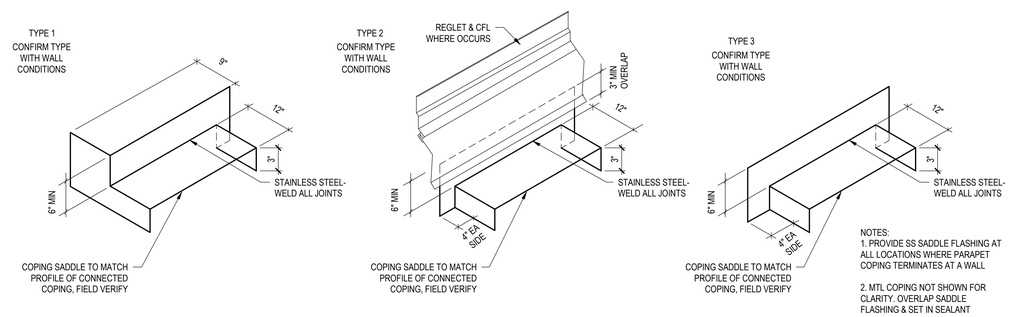
11 MECHANICAL PREFAB CURB
SCALE: 1 1/2" = 1'-0"



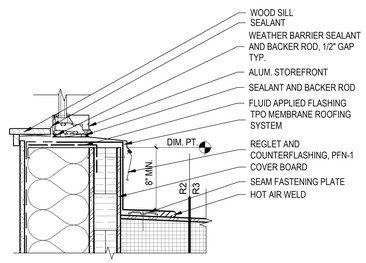
7 TYPICAL MECHANICAL CURB
SCALE: 1 1/2" = 1'-0"



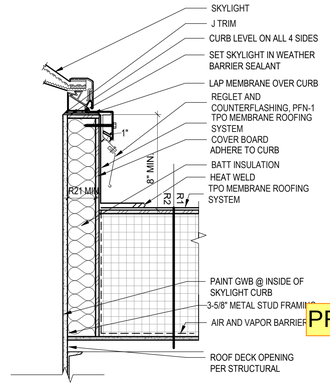
3 TYP. ROOF HATCH (MTL. DECK)
SCALE: 1 1/2" = 1'-0"



20 TYPICAL SADDLE FLASHING @ ALL PARAPET TO WALL INTERSECTIONS
SCALE: 1 1/2" = 1'-0"



8 SF AT ROOF
SCALE: 1 1/2" = 1'-0"



4 SKYLIGHT CURB
SCALE: 1 1/2" = 1'-0"

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Date:	06/30/22
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Checked By:	JL

Revisions

#	Date	Description

DETAILS - ROOF

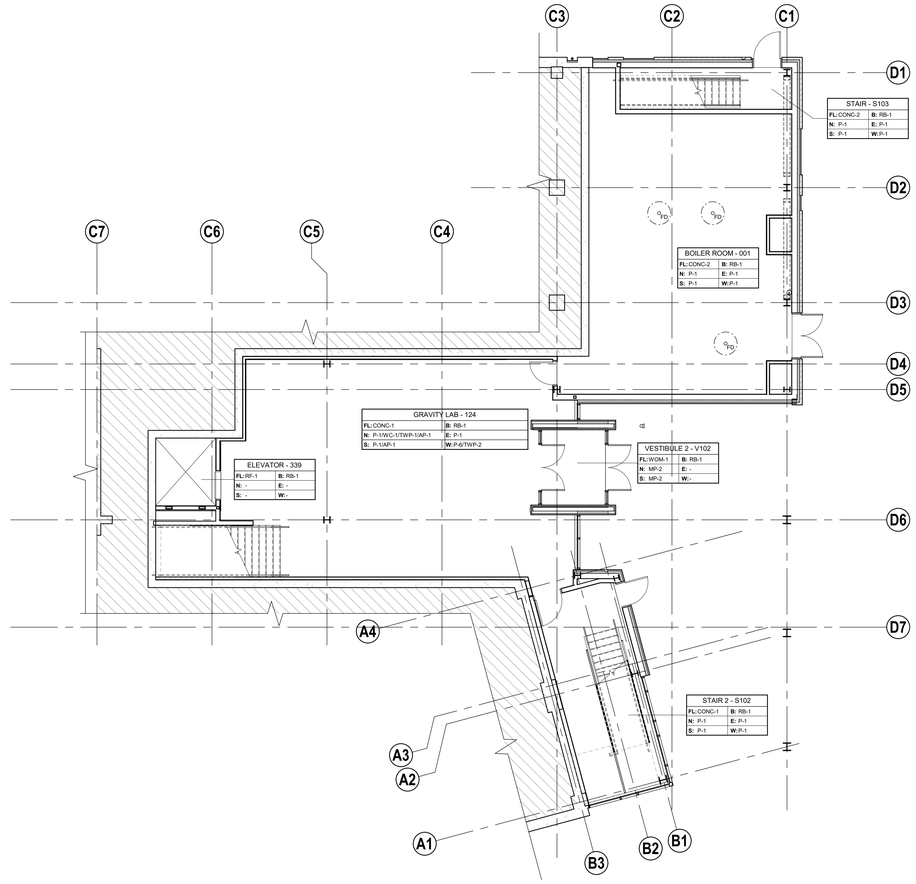
PRCNC20221036

A362

BUILDING PERMIT SET

FINISH & COLOR SCHEDULE

CODE	CATEGORY	DESCRIPTION	MANUFACTURER	MFGR. REFERENCE NUMBER	COLOR	NOTES
FLOORS						
CONC-1	033500	POLISHED CONCRETE	PER SPECIFICATION	PER SPECIFICATION	-	-
CONC-2	033500	SEALED CONCRETE	PER SPECIFICATION	PER SPECIFICATION	-	-
CONC-3	033500	SEALED CONCRETE	PER SPECIFICATION	PER SPECIFICATION	-	-
CPTT-1	096813	CARPET TILE	SHAW	TBD	TBD	
PT-1	093000	PORCELAIN TILE	MOSA	GLOBAL COLLECTION / GLOBALGRIP, 12" X 12"	75620V SMALL SPECKLED GREY	
RF-1	096500	RUBBER FLOORING	NORA	NORAMENT KIVO	5367 TITANIUM	
WOM-1	124813	WALK-OFF MAT W/ CARPET INSERT				
BASE						
PTB-1	093000	PORCELAIN TILE BASE	MOSA	GLOBAL COLLECTION / GLOBALGRIP, TRIM COVE BASE	75620P SMALL SPECKLED GREY	
RB-1	096500	RUBBER BASE	ROPPE	PINNACLE RUBBER BASE, STANDARD TOE	LIGHT GRAY 195	
WALLS						
AP-1	098400	ABSORPTIVE PANEL	FSORB	4' X 8', 1" THICK	WHITE FS-100	
AP-2	098400	ABSORPTIVE PANEL	FSORB	4' X 8', 1" THICK	GREY FS-160	APPLIED TO THE UNDERSIDE OF DECK WHERE INDICATED IN REFLECTED CEILING PLANS
AWP-1	062000	ACOUSTIC WOOD PANELING	ASI ARCHITECTURAL	AUDITION WOOD PANEL	BEECH VENEER	
CT-1	093000	CERAMIC TILE	CROSSVILLE	SWATCHES 3" x 12"	BRILLIANT DEDUCTION SPRUCE	-
FRP-1	068316	FIBERGLASS REINFORCED PANEL	CRANE COMPOSITES	VARIETEX	1277 CLEAR WATER - LINEN TEXTURE	-
P-1	099000	PAINT	SHERWIN WILLIAMS	SW 9623	SNOWBELT	
P-2	099000	PAINT	BENJAMIN MOORE	2121-20	STEEL WOOL	
P-3	099000	PAINT				**BLACK**
P-4	099000	PAINT	PER SPECIFICATION	PER SPECIFICATION	MATCH MP-1	
P-5	099000	PAINT	PER SPECIFICATION	PER SPECIFICATION	MATCH MP-2	
P-6	099000	PAINT	SHERWIN WILLIAMS	SW 7586	STOLEN KISS	**MAROON**
P-7	099000	PAINT				**ELEVATOR HALL + WORKROOM**
P-8	099000	PAINT				**RESTROOM**
P-9	099000	PAINT				**SUBTLE COLOR**
PLAM-1	064100	PLASTIC LAMINATE	WILSONART	10776-60	KENSINGTON MAPLE	
PLAM-2	064100	PLASTIC LAMINATE	WILSONART	5013K-60	MUSHROOM	
PLAM-3	064100	PLASTIC LAMINATE	WILSONART	VIRTUAL DESIGN LIBRARY Y0355-60	BLUEBERRY TAFFY	**WORKROOM CABINETS**
PLWD-1	062000	PLYWOOD PANELING	PER SPECIFICATION	PER SPECIFICATION	-	
TWP-1	097200	TACKABLE ACOUSTIC WALL PANEL	MAHARAM	TEK-WALL SLATE 300097	007 ROADSIDE	WRAPPED AROUND AVL SYSTEMS ACOUSTECH M-SERIES TACKABLE ACOUSTICAL PANELS
TWP-2	097200	TACKABLE ACOUSTIC WALL PANEL	MAHARAM	MESSENGER 458640	069 CHERRY	WRAPPED AROUND AVL SYSTEMS ACOUSTECH M-SERIES TACKABLE ACOUSTICAL PANELS
WC-1	097200	WRITABLE WALL COVERING	KOROSEAL	WALLTALKERS KORO-RITE	KR60-00 WHITE	-
WC-2	097200	WRITABLE WALL COVERING	KOROSEAL	WALLTALKERS PROJECT-RITE	PE60-00 WHITE	-
CEILING						
ACB-1	095123	SUSPENDED ACOUSTICAL BAFFLES	CERTAINTEED	TAVOLA TALL BAFFLES, 2" x 18"	1011 P AVIATION WHITE	-
ACT-1	095123	SUSPENDED ACOUSTICAL TILE	ARMSTRONG	ULTIMA HIGH RECYCLED CONTENT, 24" x 48"	WHITE	-
ACT-2	095123	SUSPENDED ACOUSTICAL CLOUD	ARMSTRONG	ULTIMA HIGH RECYCLED CONTENT, 24" x 24"	WHITE	-
ACT-3	095123	SUSPENDED ACOUSTICAL TILE	ARMSTRONG	LYRA PLANT BASED, 24" x 48"	TBD	**MATCH FAB LAB**
ACT-4	095123	SUSPENDED ACOUSTICAL TILE	ARMSTRONG	LYRA PLANT BASED, 24" x 48"	TBD	**ELEVATOR HALL**
ACT-5	095123	SUSPENDED ACOUSTICAL TILE	ARMSTRONG	LYRA PLANT BASED, 24" x 48"	TBD	**WORKROOM**
MISC						
RS-1	122413	ROLLER SHADE				
SDS-1	064100	SOLID SURFACE	CORIAN	SOLID SURFACE	ARTISTA GRAY	-
WD-1	062000	SOLID WOOD				



1 LEVEL 0 - FINISH PLAN
SCALE: 1/8" = 1'-0"

INTERIOR GENERAL NOTES

1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
5. ALL FINISHES AND RUBBER BASE TO EXTEND UNDER ALL MOVEABLE CASEWORK AND EQUIPMENT.
6. ALL FLOORING / COLOR TRANSITIONS, WHERE REQUIRED SHALL BE CENTERED UNDER DOOR, U.N.O.
7. UNLESS INDICATED ON FINISH PLANS, VERIFY CARPET INSTALL DIRECTION WITH ARCHITECT PRIOR TO ORDERING MATERIAL AND INSTALLATION.
8. FOR ALL WALL MOUNTED ITEMS NOT SHOWN ON INTERIOR ELEVATIONS, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
9. DEVICES, EQUIPMENT & FIXTURES SHOWN FOR LOCATION COORDINATION. REFER TO MECHANICAL, ELECTRICAL & TELECOM DRAWINGS FOR SYSTEM DESIGN & DETAIL.
10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

INT FINISH PLAN LEGEND

ROOM NAME - ROOM #	
FL: FLOORING	**B:** BASE
N: NORTH WALL FINISH	**E:** EAST WALL FINISH
S: SOUTH WALL FINISH	**W:** WEST WALL FINISH

CG — CORNER GUARD LOCATION

CPTT / SC — FINISH FLOOR TRANSITION

FLOOR FINISH DIRECTION

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117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
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9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

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Checked By:	JL

Revisions

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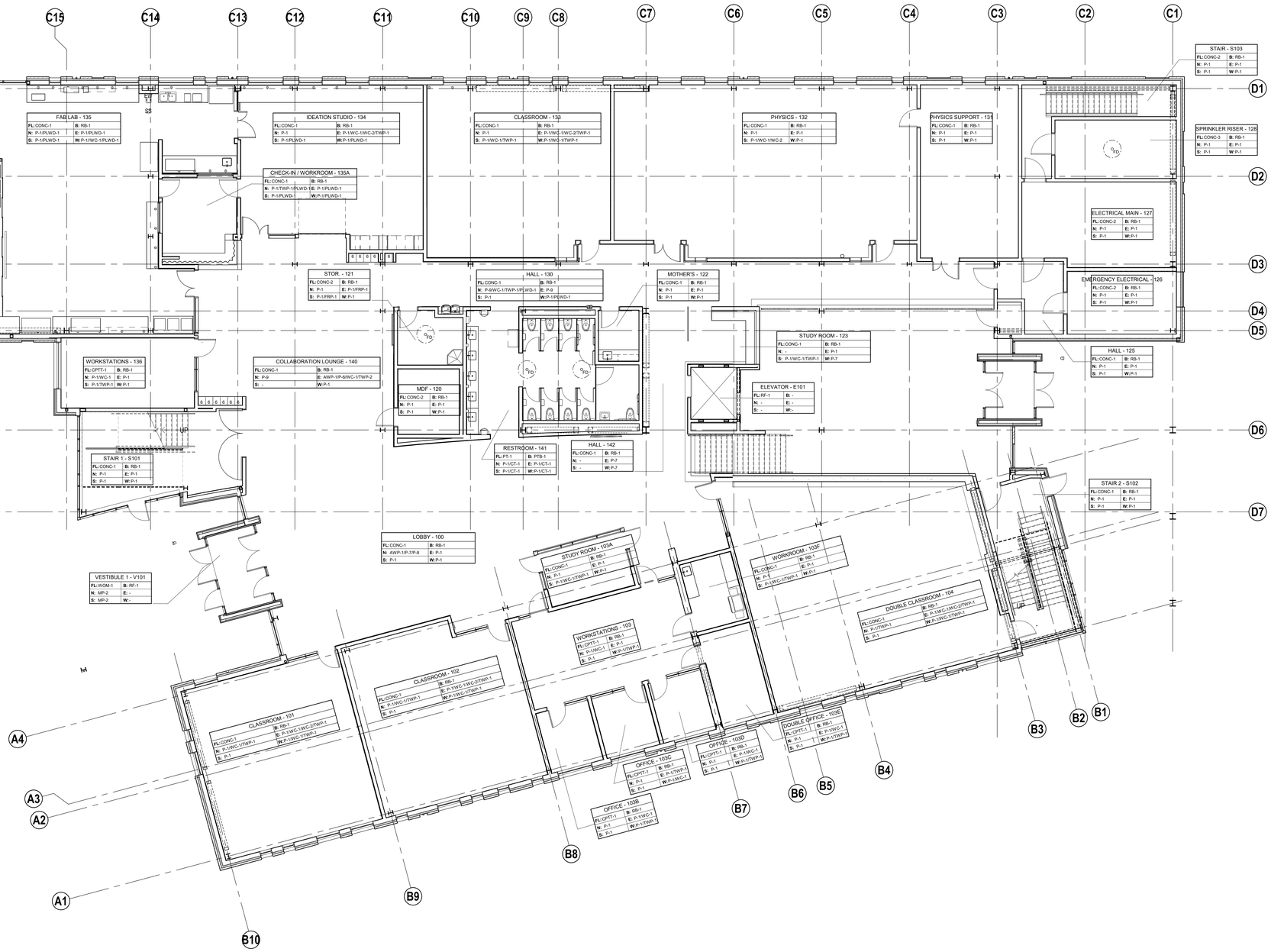
FINISH & COLOR SCHEDULE, FINISH PLAN

PRCNC20221036

A400

BUILDING PERMIT SET



LEVEL 1 - FINISH PLAN
SCALE: 1/8" = 1'-0"

INTERIOR GENERAL NOTES

1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
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3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
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10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

INT FINISH PLAN LEGEND

ROOM NAME - ROOM #	
FL: FLOORING	B: BASE
N: NORTH WALL FINISH	E: EAST WALL FINISH
S: SOUTH WALL FINISH	W: WEST WALL FINISH

CG — CORNER GUARD LOCATION

CPTT / SC — FINISH FLOOR TRANSITION

FLOOR FINISH DIRECTION

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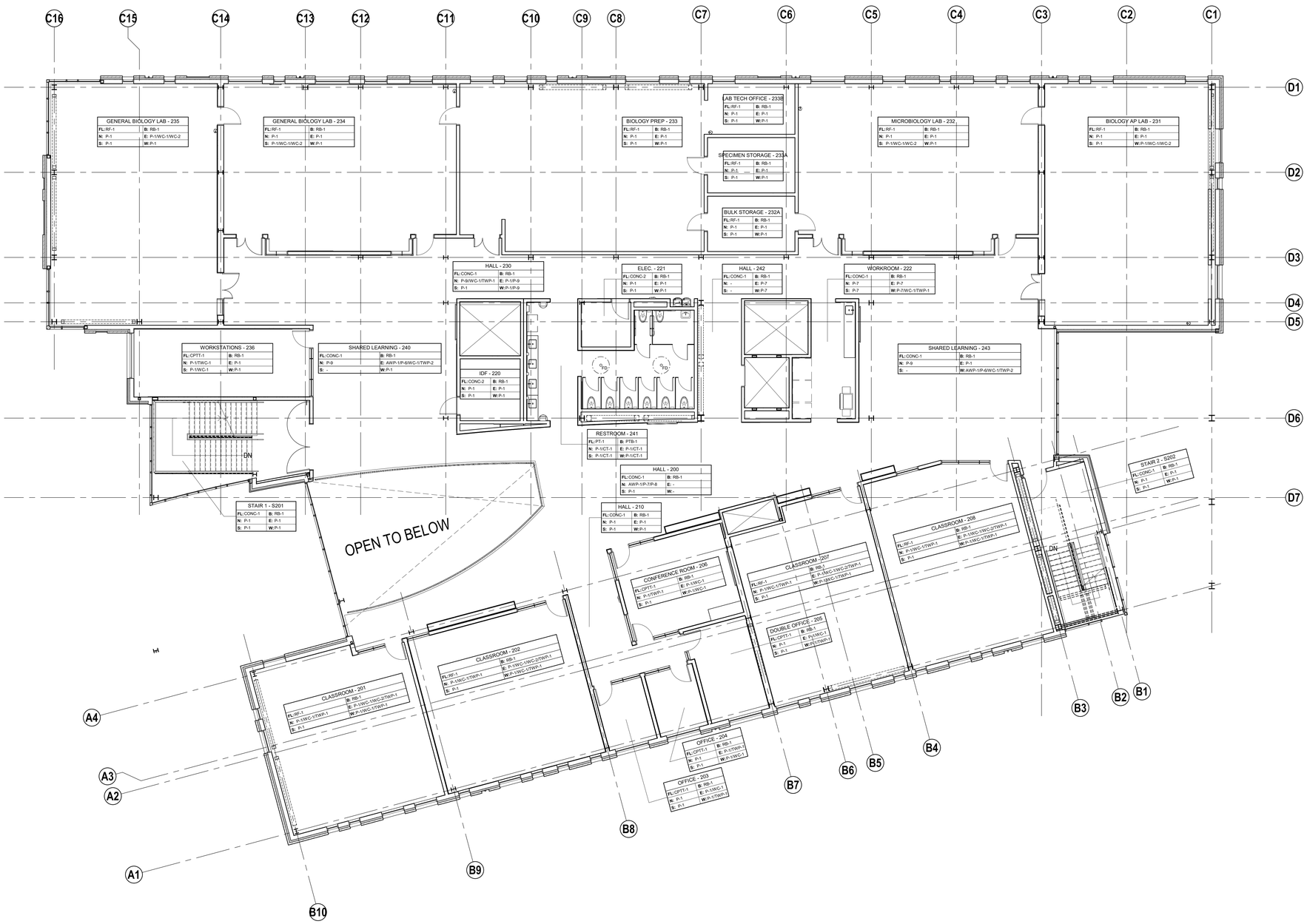
LEVEL 1 - FINISH PLANS

PRCNC20221036

A401

BUILDING PERMIT SET



LEVEL 2 - FINISH PLAN

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

INTERIOR GENERAL NOTES

1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
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6. ALL FLOORING / COLOR TRANSITIONS, WHERE REQUIRED SHALL BE CENTERED UNDER DOOR, U.N.O.
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8. FOR ALL WALL MOUNTED ITEMS NOT SHOWN ON INTERIOR ELEVATIONS, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
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10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

INT FINISH PLAN LEGEND

ROOM NAME - ROOM #	
FL: FLOORING	B: BASE
N: NORTH WALL FINISH	E: EAST WALL FINISH
S: SOUTH WALL FINISH	W: WEST WALL FINISH

CG — CORNER GUARD LOCATION

CPTT / SC — FINISH FLOOR TRANSITION

FLOOR FINISH DIRECTION

integrus ARCHITECTURE
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Revisions

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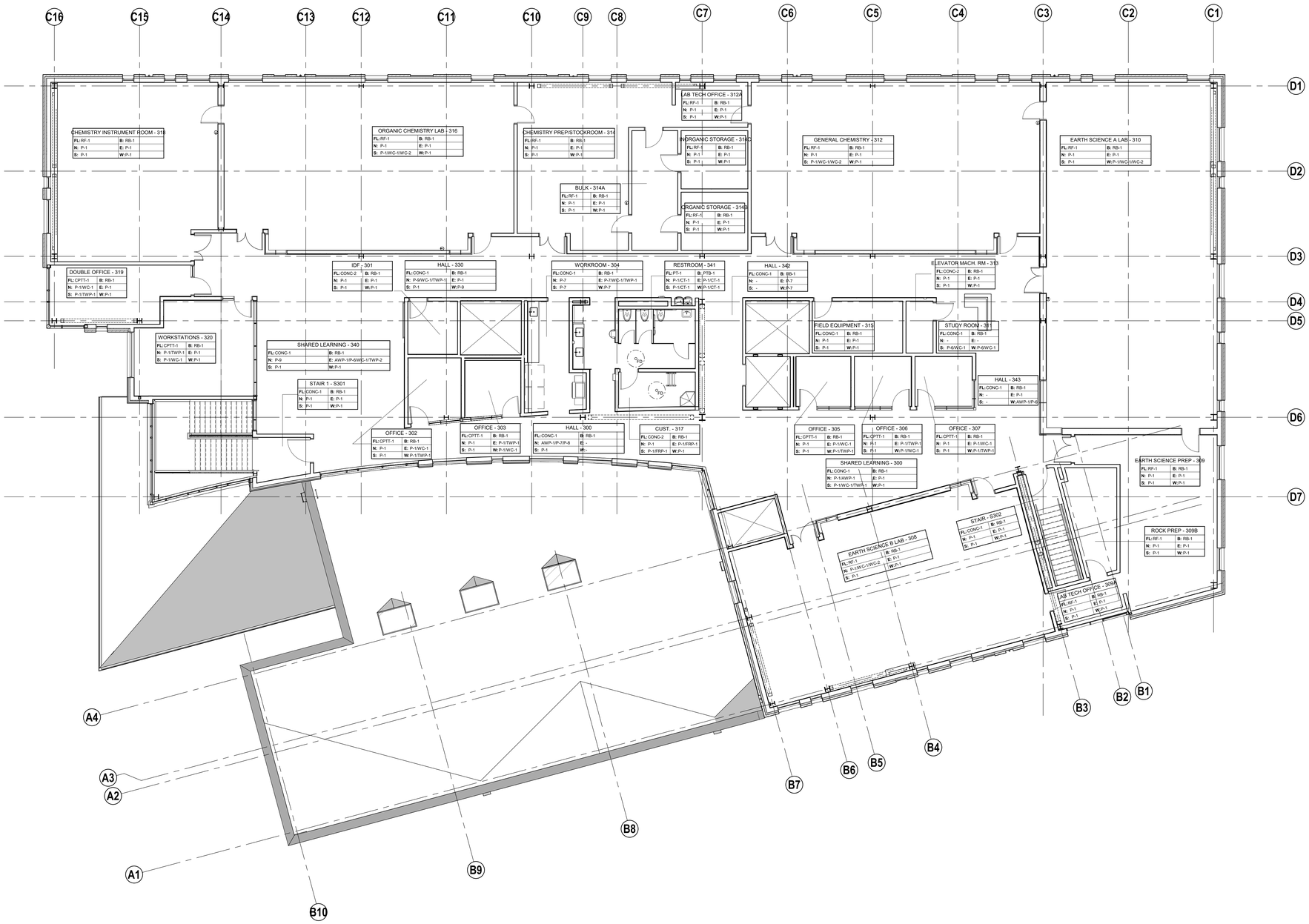
LEVEL 2 - FINISH PLANS

PRCNC20221036

A402

BUILDING PERMIT SET



LEVEL 3 - FINISH PLAN
SCALE: 1/8" = 1'-0"

INTERIOR GENERAL NOTES

1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
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8. FOR ALL WALL MOUNTED ITEMS NOT SHOWN ON INTERIOR ELEVATIONS, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
9. DEVICES, EQUIPMENT & FIXTURES SHOWN FOR LOCATION COORDINATION. REFER TO MECHANICAL, ELECTRICAL & TELECOM DRAWINGS FOR SYSTEM DESIGN & DETAIL.
10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

INT FINISH PLAN LEGEND

ROOM NAME - ROOM #	
FL: FLOORING	B: BASE
N: NORTH WALL FINISH	E: EAST WALL FINISH
S: SOUTH WALL FINISH	W: WEST WALL FINISH

CG — CORNER GUARD LOCATION

CPTT SC — FINISH FLOOR TRANSITION

FLOOR FINISH DIRECTION

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA. 98104
TELEPHONE: (206)628-3137 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BECK JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

#	Date	Description

LEVEL 3 - FINISH PLANS

PRCNC20221036

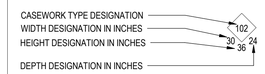
A403

BUILDING PERMIT SET

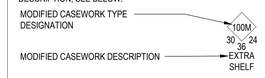
EQUIPMENT AND ACCESSORY SCHEDULE				
NUMBER	DESCRIPTION	RESPONSIBILITY	MECH	ELEC
			No	No
FE-1	DIE CUTTER	OFOI	No	Yes
FE-2	DYEING VAT	OFCI	Yes	No
FE-3	FIRE CABINET	OFOI	No	No
FE-4	HEAT PRESS	OFOI	No	Yes
FE-5	PAINT BOOTH	OFCI	Yes	Yes
FE-6	SUBLIMATION PRINTER	OFOI	No	Yes
FE-7	INDUSTRIAL SEWING MACHINE	OFOI	No	Yes
FE-8	SEWING MACHINE	OFOI	No	Yes
FE-9	CNC KNITTING MACHINE	OFOI	No	Yes
FE-10	EMBROIDERY MACHINE	OFOI	No	Yes
FE-11	THROWING WHEEL	OFOI	No	Yes
FE-12	CLAY RECYCLER	OFOI	No	Yes
FE-13	LASER CUTTER - STAND ALONE	OFCI	Yes	Yes
FE-14	LASER CUTTER - TABLE TOP	OFCI	Yes	Yes
FE-15	MID SIZE 3D PRINTER	OFOI	No	Yes
FE-16	SLS PRINTER	OFOI	No	Yes
FE-17	LARGE 3D PRINTER	OFOI	No	Yes
FE-18	CLAY 3D PRINTER	OFOI	No	Yes
FE-19	3B PRINTER	OFOI	No	Yes
FE-20	3D SCANNER	OFOI	No	Yes
GE-1	COPIER	OFOI	No	Yes
GE-2	VENDING MACHINE	OFOI	No	Yes
ML-1	METAL LOCKERS	CFCI	No	No
MS-1	BRACKET WIRE SHELVING	CFCI	No	No
MS-2	BRACKET WIRE SHELVING	CFCI	No	No
MS-3	BRACKET WIRE SHELVING	CFCI	No	No
TA-1	GRAB BAR	CFCI	No	No
TA-2	CHANGING STATION	OFCI	No	No
TA-3	FEMININE HYGINE DISPENSER	OFCI	No	No
TA-4	TOILET PAPER DISPENSER	OFCI	No	No
TA-5	PAPER TOWEL DISPENSER	OFCI	No	No
TA-6	SOAP DISPENSER	OFCI	No	No
TA-7	TRASH CAN	OFOI	No	No
TA-8	SEAT COVER DISPENSER	OFCI	No	No
TA-9	SANITARY NAPKIN RECEPTACLE	OFCI	No	No
TA-10	DRINKING FOUNTAIN	CFCI	Yes	Yes
VD-1	VISUAL DISPLAY	OFOI	No	Yes
VD-2	VISUAL DISPLAY	OFOI	No	Yes

NAAWS (CDS) CASEWORK TYPE SYMBOL

(STANDARDS BASED ON NORTH AMERICAN ARCHITECTURAL WOODWORK STANDARDS)



CASEWORK TYPE MODIFIERS ARE INDICATED IN THE NUMBER AND A DESCRIPTION; SEE BELOW.

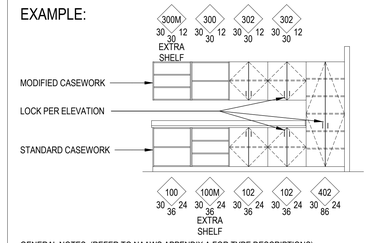


CUSTOM CASEWORK IS INDICATED IN THE TYPE NUMBER FIELD AND ACCOMPANIED WITH DETAILS SHOWN ON ELEVATIONS; SEE BELOW.

THE **CDS IS SUBDIVIDED AS FOLLOWS**:

BASE CABINETS W/O DRAWERS	100 SERIES
BASE CABINETS W/ DRAWERS	200 SERIES
WALL-HUNG CABINETS	300 SERIES
TALL STORAGE CABINETS	400 SERIES
TALL WARDROBE CABINETS	500 SERIES
LIBRARY CABINETS	600 SERIES
MOVABLE CABINETS	700 SERIES

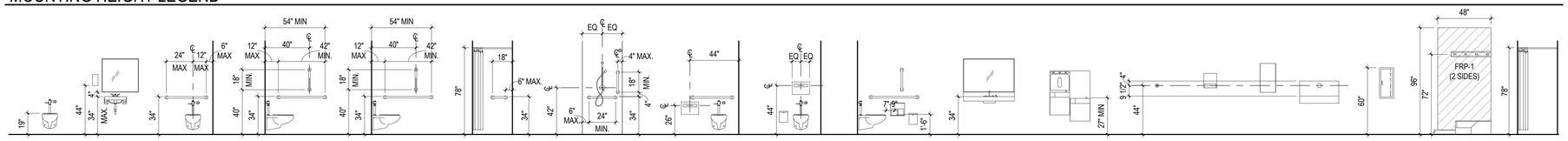
EXAMPLE:



GENERAL NOTES: (REFER TO NAAWS APPENDIX A FOR TYPE DESCRIPTIONS)

1. 100 OR 200 SERIES CABINETS MAY BE CONVERTED INTO MOVEABLE CABINETS BY PREFIXING A"7"TO THE NUMBER. (EXAMPLE: 7-102-36"x30"x18 [7-102-914 mm x 762 mm x 457 mm]).
2. MOVEABLE CABINETS SHALL BE EQUIPPED WITH ADEQUATE APPROVED CASTERS FOR THE INTENDED LOAD CAPACITY.
3. CDS #'s 728, 729, 735, 736, 737, 738, AND 739 REQUIRE METAL ANGLE REINFORCED CORNERS.
4. CARTS AND ROLLING TALL STORAGE CABINETS WITH DOORS, LACKING ANY HORIZONTAL; AND/OR VERTICAL STABILIZING DIVIDERS, REQUIRE A DIAPHRAGM BOTTOM; SPECIFICALLY CDS #'s 702, 712, 716, 722, 743,744, 746, 747, 750, AND 751.
5. WARDROBE CABINETS (500 SERIES) WITH DOORS REQUIRE A FRAMED MIRROR ON ONE DOOR, AND CABINETS # 533 AND 534 REQUIRE A PAPER ROLLER/CUTTER AND SLIDE-OUT TILTING PAPER SHELVES.
6. CART STORAGE CABINETS ARE REQUIRED TO HAVE HARDWOOD SIDE GUIDES, SPECIFICALLY CDS #'s 160, 161, AND 162.
7. CERAMICS DRYING CABINETS ARE REQUIRED TO HAVE GALVANIZED METAL FRAME SHELVES WITH WIRE MESH, SPECIFICALLY CDS #'s 198 199, AND 459.
8. FILE DRAWERS REQUIRE FULL-EXTENSION SLIDES AND A FILE-HANGING SYSTEM, SPECIFICALLY CDS #'s 223, 224, 230, 231, 240, 242, 253, 255, 531, 532, AND 533.
9. WARDROBE CABINETS ARE REQUIRED TO HAVE A SHELF, POLE, AND FRAMED MIRROR WHEN CLOSED WITH HINGED DOORS, SPECIFICALLY, CDS #'s 501, 511, 512, 522, 530, 531, 532, AND 552.

MOUNTING HEIGHT LEGEND



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TELEPHONE: (206)628-3737 FAX: (206)628-3138

9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
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Checked By:	JL

Revisions

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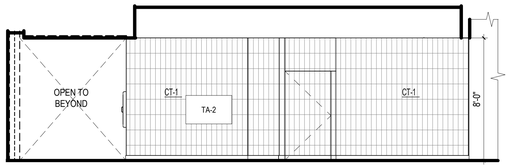
GENERAL INTERIOR NOTES, SCHEDULES & LEGENDS

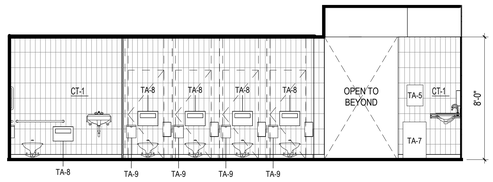
PRCNC20221036

A410

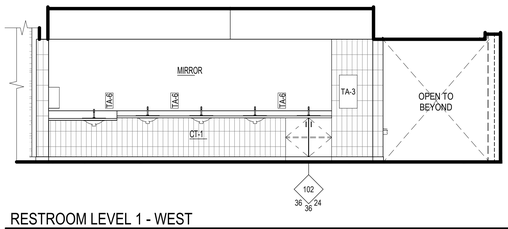
BUILDING PERMIT SET



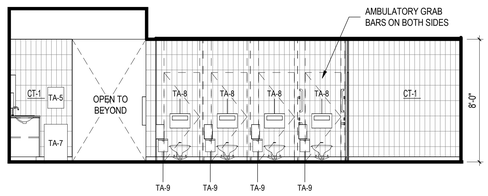
1B RESTROOM LEVEL 1 - EAST
SCALE: 1/4" = 1'-0"



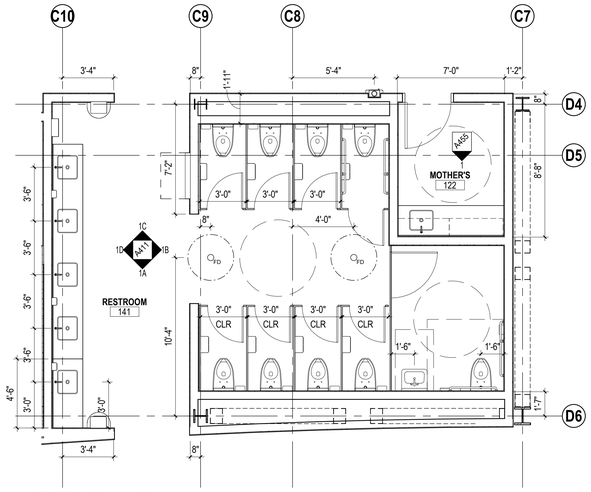
1A RESTROOM LEVEL 1 - SOUTH
SCALE: 1/4" = 1'-0"



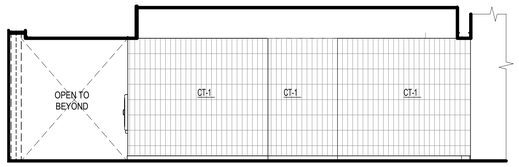
1D RESTROOM LEVEL 1 - WEST
SCALE: 1/4" = 1'-0"



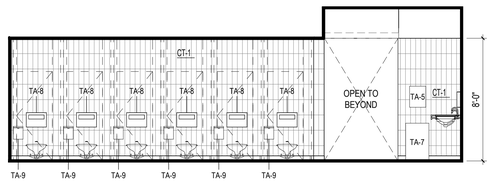
1C RESTROOM LEVEL 1 - NORTH
SCALE: 1/4" = 1'-0"



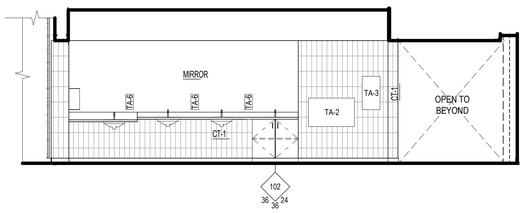
1 RESTROOM 141- PLAN
SCALE: 1/4" = 1'-0"



2B RESTROOM LEVEL 2 - EAST
SCALE: 1/4" = 1'-0"

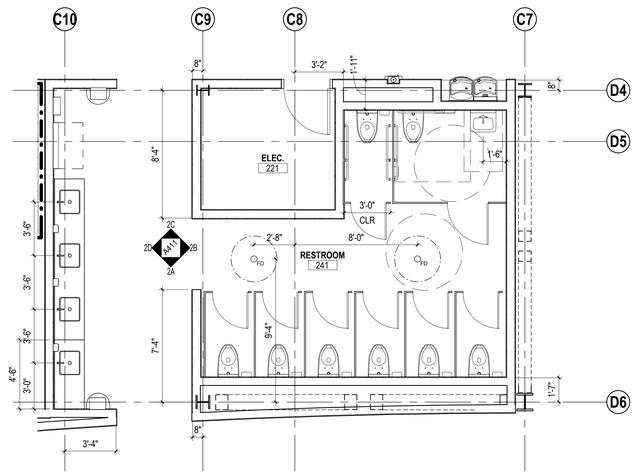


2A RESTROOM LEVEL 2 - SOUTH
SCALE: 1/4" = 1'-0"



2D RESTROOM LEVEL 2 - WEST
SCALE: 1/4" = 1'-0"

2C RESTROOM LEVEL 2 - NORTH
SCALE: 1/4" = 1'-0"



2 RESTROOM 241 - PLAN
SCALE: 1/4" = 1'-0"

INTERIOR GENERAL NOTES

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2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
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    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

RESTROOMS GENERAL NOTES

1. ONE (1) TOILET PAPER DISPENSER (TA-10) AND SANITARY NAPKIN RECEPTACLE (TA-9) IN EACH TOILET STALL IN ALL TOILET ROOMS.
2. REFER TO PLUMBING DRAWINGS FOR FLOOR DRAIN (FD) LOCATIONS AT EACH TOILET AND SHOWER ROOM. CONFIRM EACH FD WITH ARCHITECT.
3. PROVIDE BACKING SUPPORT AT ALL GRAB BARS PER MANUFACTURER'S RECOMMENDATION.
4. FOR ANY WALL MOUNTED ITEM NOT SHOWN ON ELEVATIONS COORDINATE LOCATION WITH ARCHITECT PRIOR TO
5. INSTALLATION.
6. BLOCKING FOR CHANGING TABLES.

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
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Drawn By:	SP
Checked By:	JL

Revisions

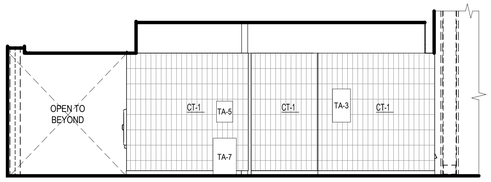
#	Date	Description

ENLARGED FLOOR PLANS W/ ELEVATIONS

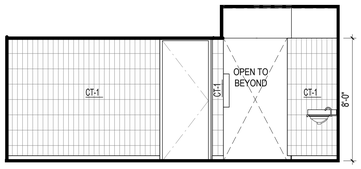
PRCNC20221036

A411

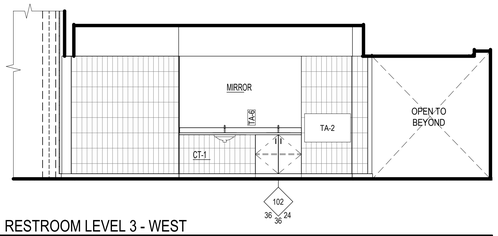
BUILDING PERMIT SET



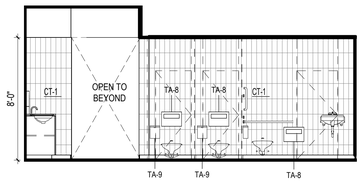
1B RESTROOM LEVEL 3 - EAST
SCALE: 1/4" = 1'-0"



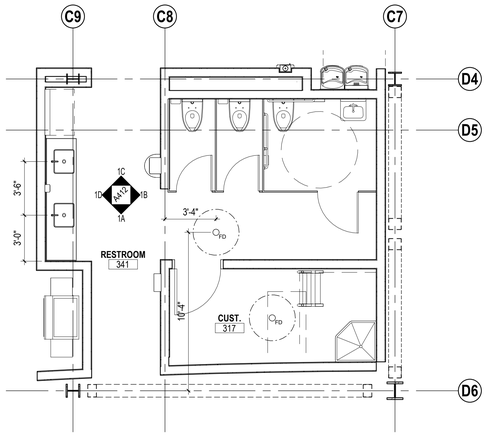
1A RESTROOM LEVEL 3 - SOUTH
SCALE: 1/4" = 1'-0"



1D RESTROOM LEVEL 3 - WEST
SCALE: 1/4" = 1'-0"



1C RESTROOM LEVEL 3 - NORTH
SCALE: 1/4" = 1'-0"



1 RESTROOM 341 - PLAN
SCALE: 1/4" = 1'-0"

INTERIOR GENERAL NOTES

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3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
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Revisions

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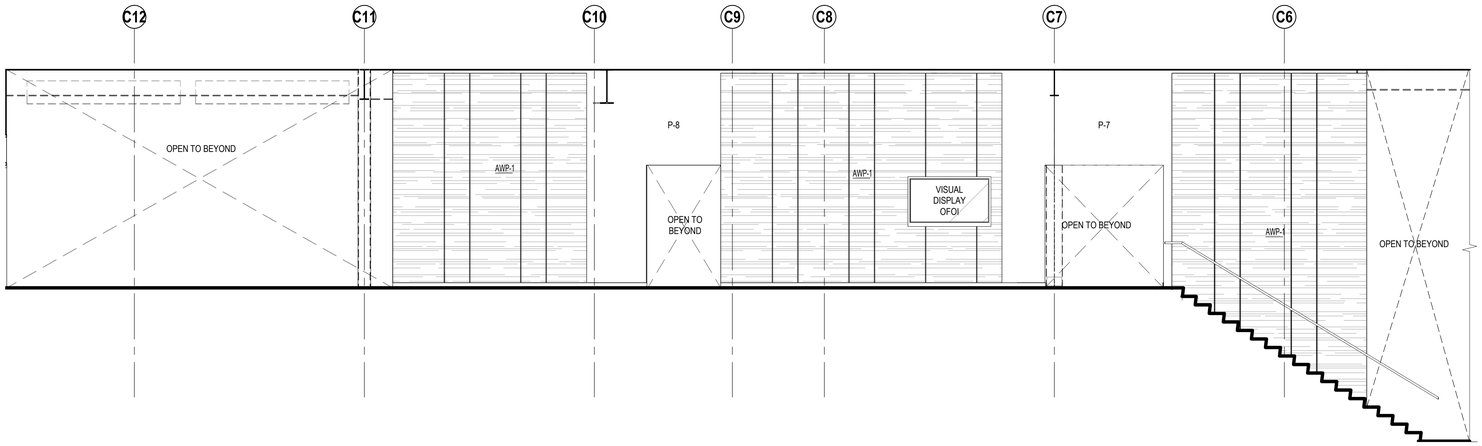
ENLARGED FLOOR PLANS W/ ELEVATIONS

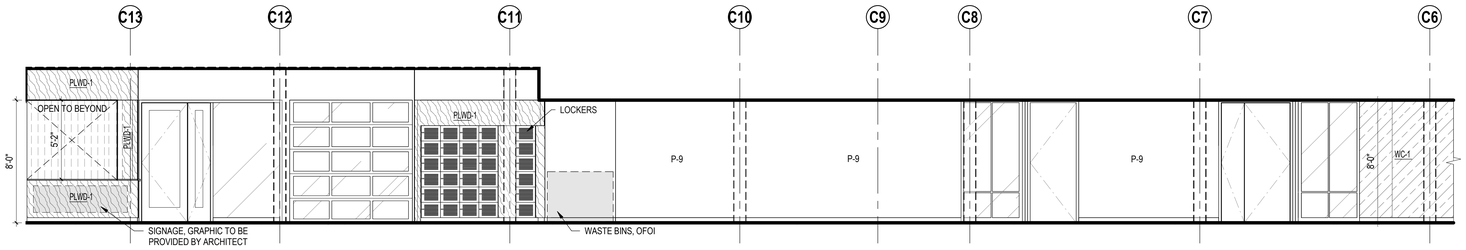
PRCNC20221036

A412

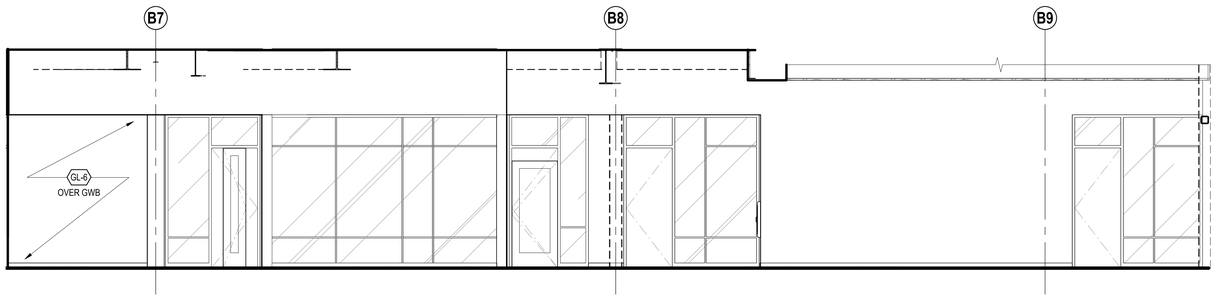
BUILDING PERMIT SET



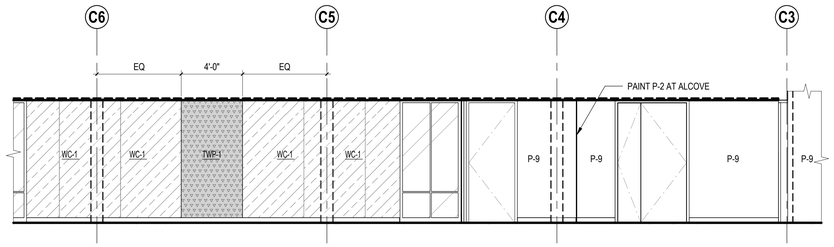
1 CORE LEVEL 1 - NORTH
SCALE: 1/4" = 1'-0"



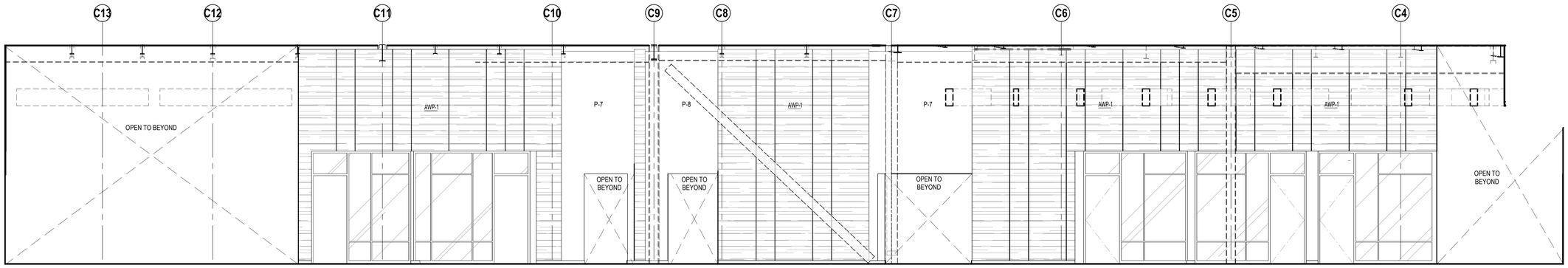
2A LAB CORRIDOR LEVEL 1 - NORTH 1
SCALE: 1/4" = 1'-0"



3 CLASSROOM CORRIDOR LEVEL 1 - SOUTH
SCALE: 1/4" = 1'-0"



2B LAB CORRIDOR LEVEL 1 - NORTH 2
SCALE: 1/4" = 1'-0"



4 CORE LEVEL 3 - NORTH
SCALE: 1/4" = 1'-0"

INTERIOR GENERAL NOTES

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9. DEVICES, EQUIPMENT & FIXTURES SHOWN FOR LOCATION COORDINATION. REFER TO MECHANICAL, ELECTRICAL & TELECOM DRAWINGS FOR SYSTEM DESIGN & DETAIL.
10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

integrus ARCHITECTURE
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TELEPHONE: (206)628-3737 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

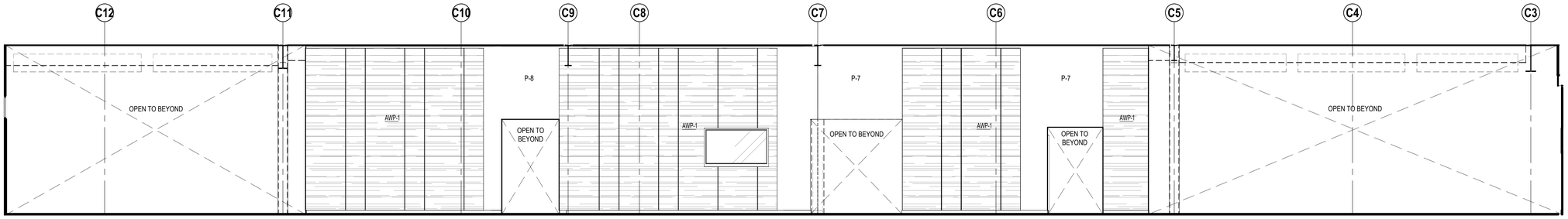
#	Date	Description

INTERIOR ELEVATIONS

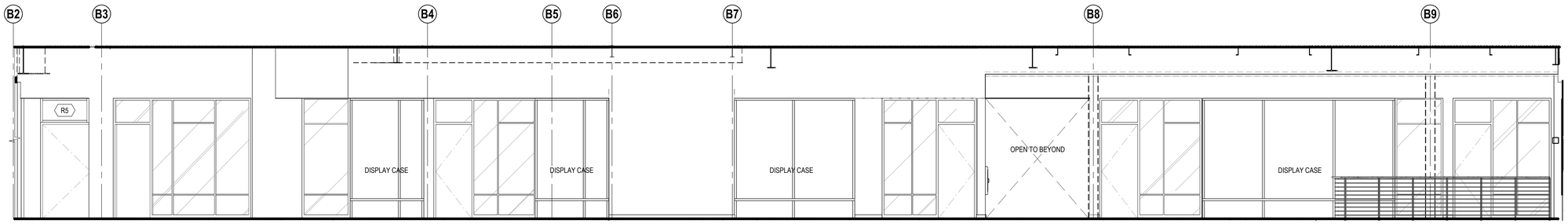
PRCNC20221036

A451

BUILDING PERMIT SET



1 CORE LEVEL 2 - NORTH
SCALE: 1/4" = 1'-0"



2 CLASSROOM CORRIDOR LEVEL 2 - SOUTH
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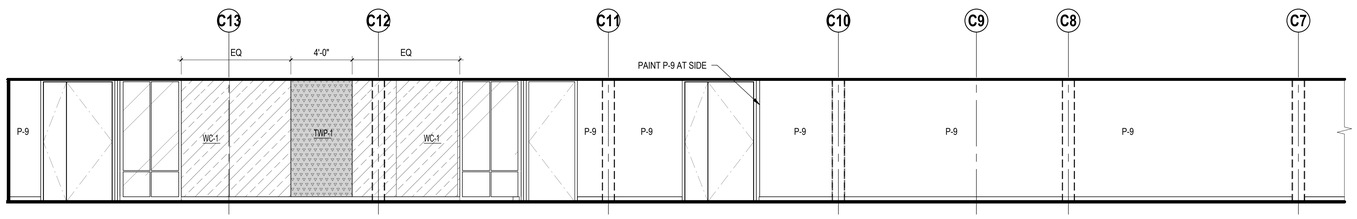
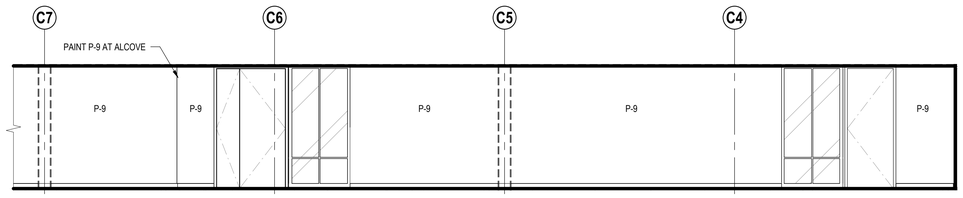
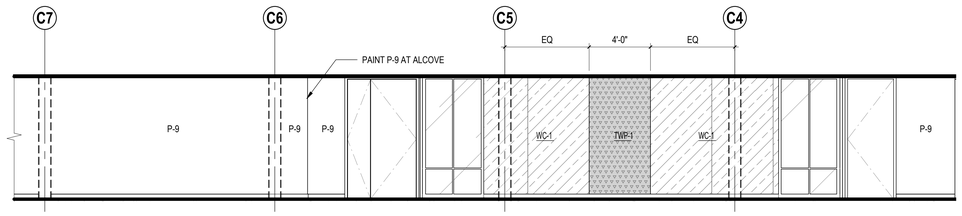


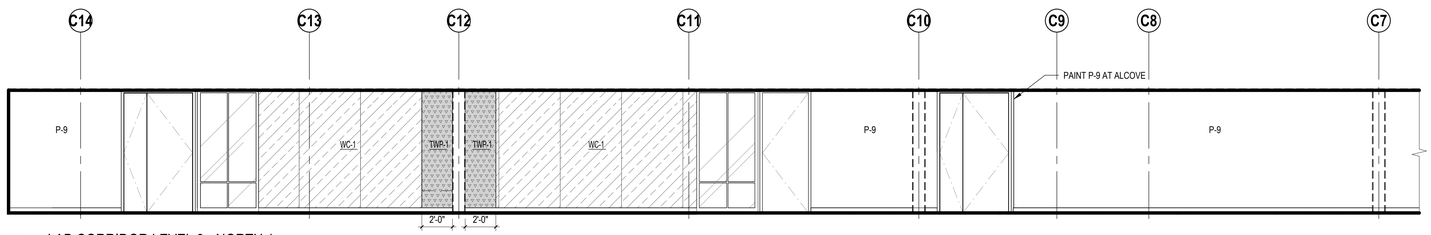
3A LAB CORRIDOR LEVEL 2 - NORTH 1
SCALE: 1/4" = 1'-0"



4A LAB CORRIDOR LEVEL 3 - NORTH 2
SCALE: 1/4" = 1'-0"



3B LAB CORRIDOR LEVEL 2 - NORTH 2
SCALE: 1/4" = 1'-0"



4B LAB CORRIDOR LEVEL 3 - NORTH 1
SCALE: 1/4" = 1'-0"

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3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
5. ALL FINISHES AND RUBBER BASE TO EXTEND UNDER ALL MOVEABLE CASEWORK AND EQUIPMENT.
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Checked By:	JL

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INTERIOR ELEVATIONS

PRCNC20221036

A452

BUILDING PERMIT SET

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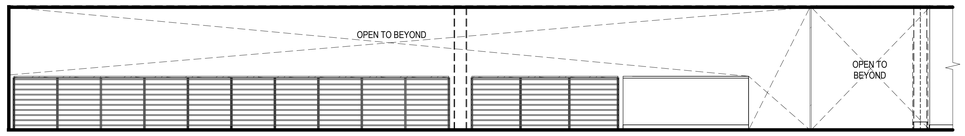
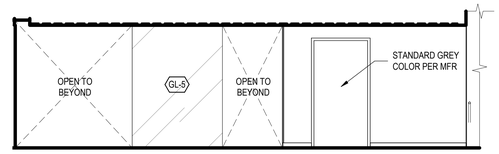
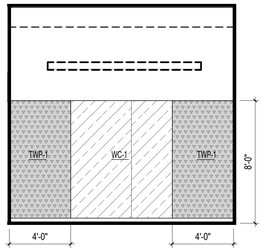


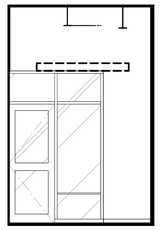
2 HALL 130 - SOUTH
SCALE: 1/4" = 1'-0"



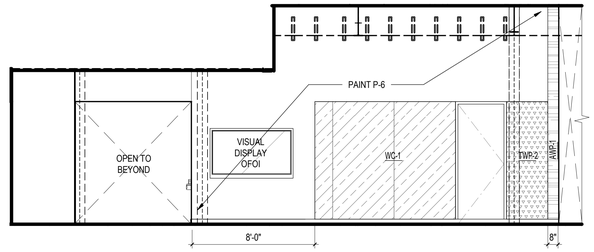
1 HALL 142 - EAST
SCALE: 1/4" = 1'-0"



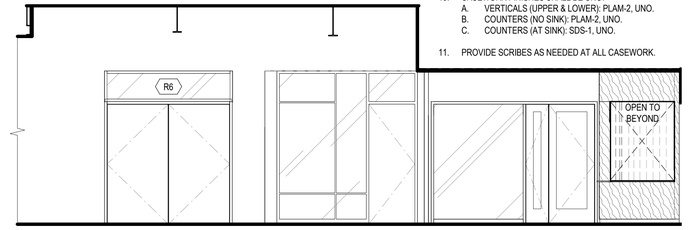
3B STUDY ROOM 103A - SOUTH
SCALE: 1/4" = 1'-0"



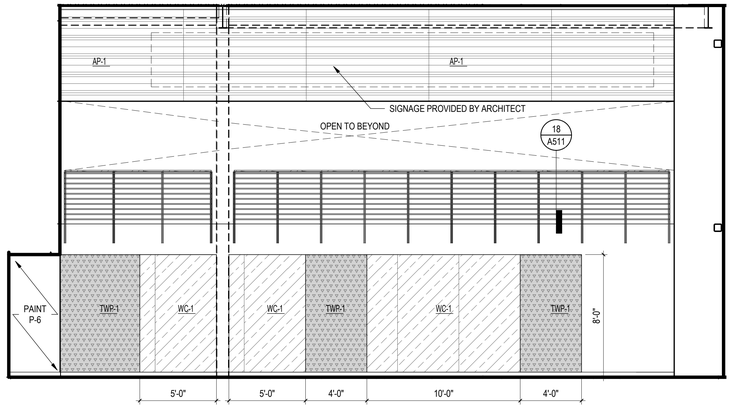
3A STUDY ROOM 103A - EAST
SCALE: 1/4" = 1'-0"



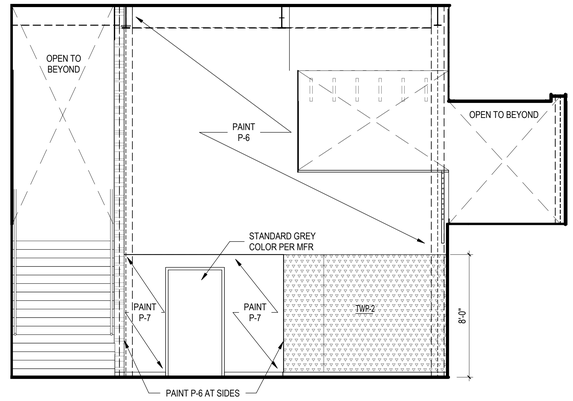
2B COLLABORATION LOUNGE - EAST
SCALE: 1/4" = 1'-0"



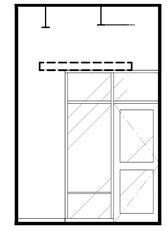
2A COLLABORATION LOUNGE - WEST
SCALE: 1/4" = 1'-0"



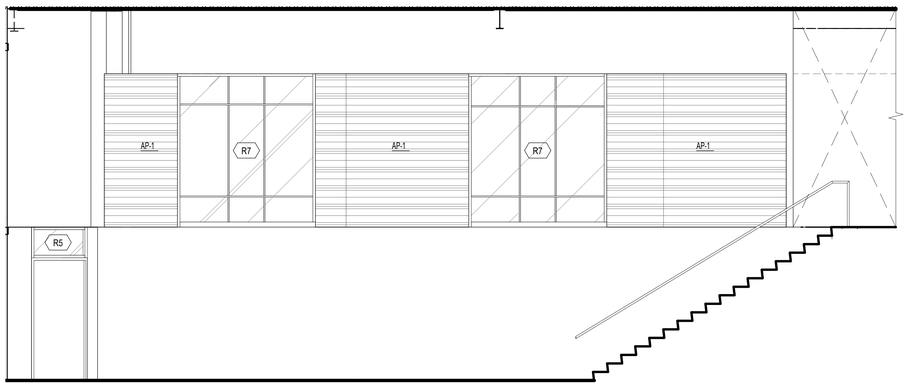
4B GRAVITY LAB - NORTH
SCALE: 1/4" = 1'-0"



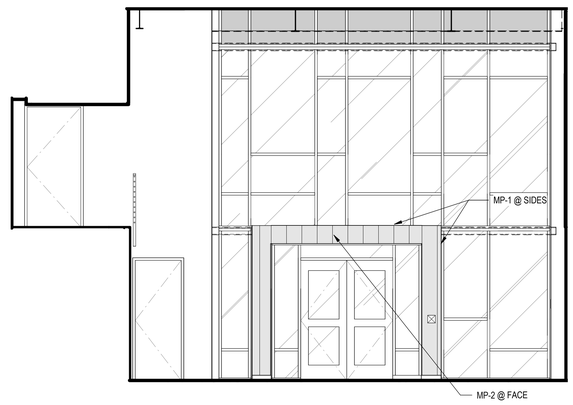
4A GRAVITY LAB - WEST
SCALE: 1/4" = 1'-0"



3C STUDY ROOM 103A - WEST
SCALE: 1/4" = 1'-0"



4D GRAVITY LAB - SOUTH
SCALE: 1/4" = 1'-0"



4C GRAVITY LAB - EAST
SCALE: 1/4" = 1'-0"

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Revisions

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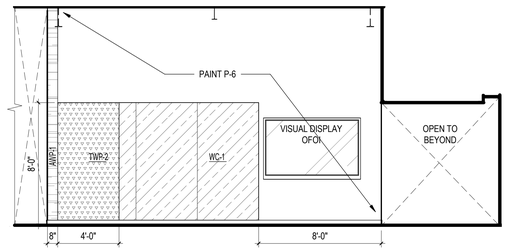
INTERIOR ELEVATIONS

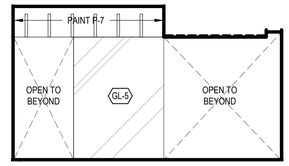
PRCNC20221036

A453

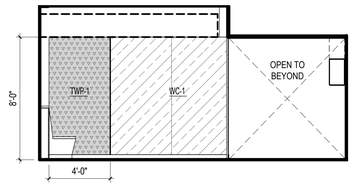
BUILDING PERMIT SET



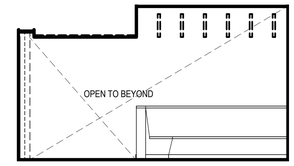
2A SHARED LEARNING 243 - WEST
SCALE: 1/4" = 1'-0"



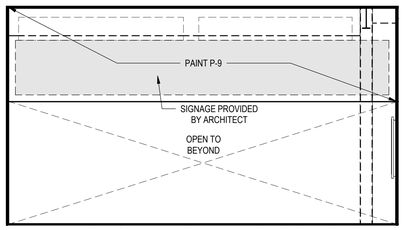
1C STUDY ROOM 123 - WEST
SCALE: 1/4" = 1'-0"



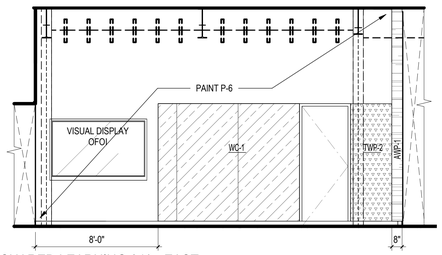
1B STUDY ROOM 123 - SOUTH
SCALE: 1/4" = 1'-0"



1A STUDY ROOM 123 - EAST
SCALE: 1/4" = 1'-0"



3B SHARED LEARNING 240 SOFFIT - NORTH
SCALE: 1/4" = 1'-0"



3A SHARED LEARNING 240 - EAST
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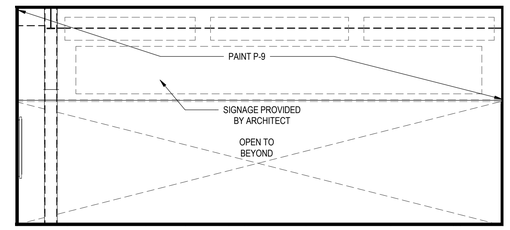
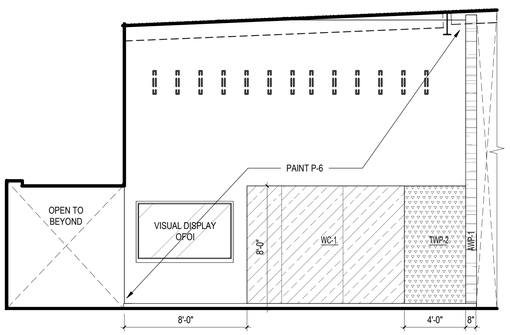
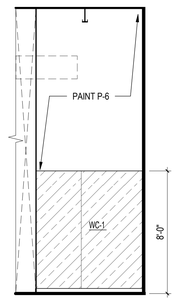


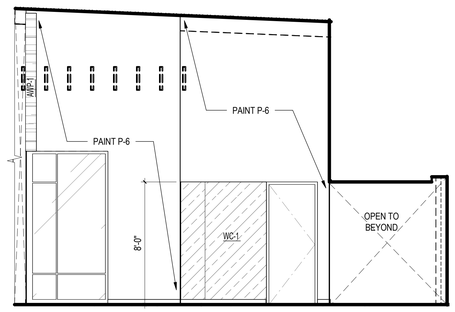
2B SHARED LEARNING 243 SOFFIT - NORTH
SCALE: 1/4" = 1'-0"



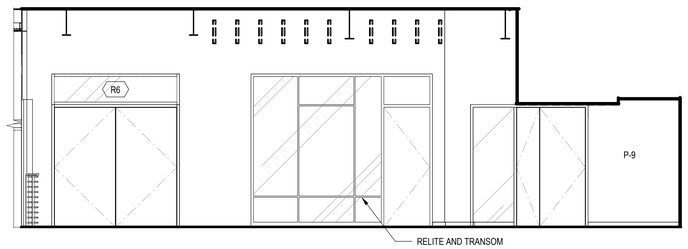
5A SHARED LEARNING 340 - EAST
SCALE: 1/4" = 1'-0"



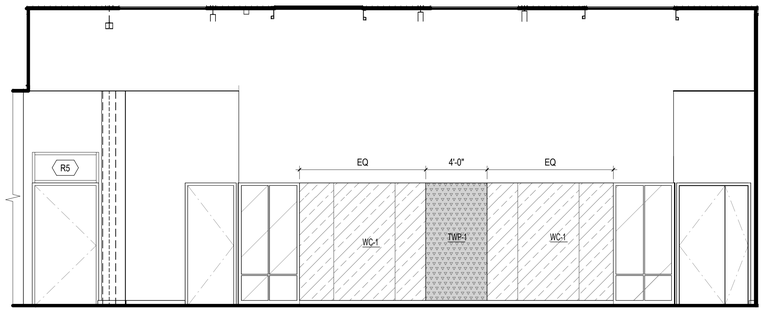
4B STUDY ROOM 311 - SOUTH
SCALE: 1/4" = 1'-0"



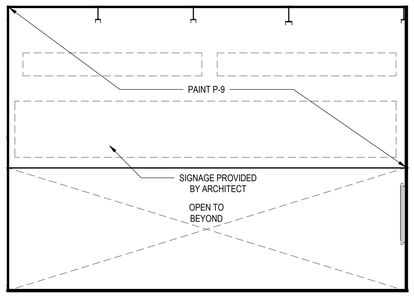
4A STUDY ROOM 311 - WEST
SCALE: 1/4" = 1'-0"



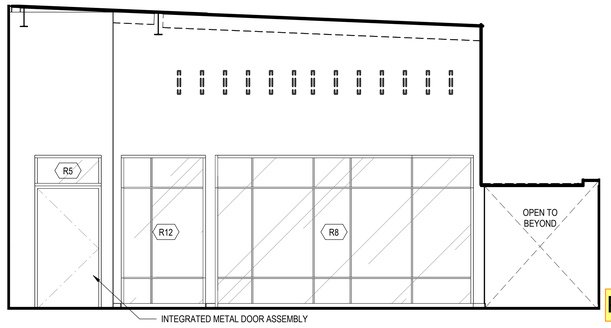
3C SHARED LEARNING 240 - WEST
SCALE: 1/4" = 1'-0"



6 SHARED LEARNING 300 - SOUTH
SCALE: 1/4" = 1'-0"



5C SHARED LEARNING 340 SOFFIT - NORTH
SCALE: 1/4" = 1'-0"



5B SHARED LEARNING 340 - WEST
SCALE: 1/4" = 1'-0"

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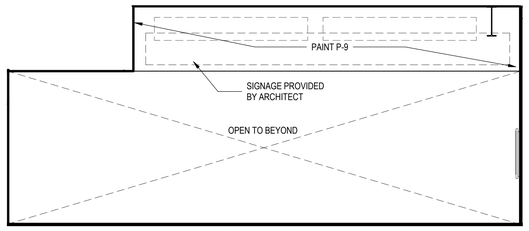
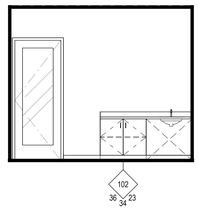
A454

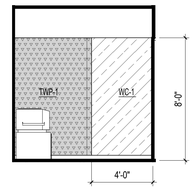
BUILDING PERMIT SET



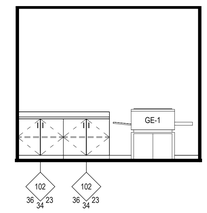
3 COLLABORATION LOUNGE SOFFIT - NORTH
SCALE: 1/4" = 1'-0"



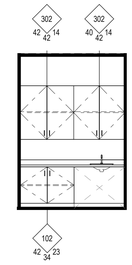
2C WORKROOM 103F - WEST
SCALE: 1/4" = 1'-0"



2B WORKROOM 103F - SOUTH
SCALE: 1/4" = 1'-0"



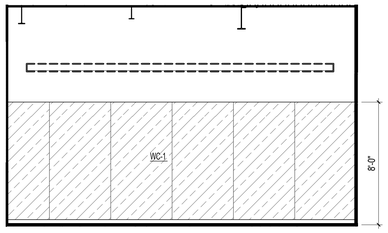
2A WORKROOM 103F - EAST
SCALE: 1/4" = 1'-0"



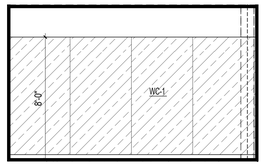
1 MOTHER'S ROOM - SOUTH
SCALE: 1/4" = 1'-0"

INTERIOR GENERAL NOTES

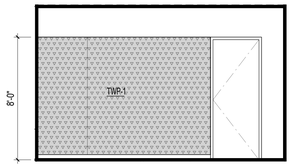
1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
5. ALL FINISHES AND RUBBER BASE TO EXTEND UNDER ALL MOVEABLE CASEWORK AND EQUIPMENT.
6. ALL FLOORING / COLOR TRANSITIONS, WHERE REQUIRED SHALL BE CENTERED UNDER DOOR, U.N.O.
7. UNLESS INDICATED ON FINISH PLANS, VERIFY CARPET INSTALL DIRECTION WITH ARCHITECT PRIOR TO ORDERING MATERIAL AND INSTALLATION.
8. FOR ALL WALL MOUNTED ITEMS NOT SHOWN ON INTERIOR ELEVATIONS, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
9. DEVICES, EQUIPMENT & FIXTURES SHOWN FOR LOCATION COORDINATION. REFER TO MECHANICAL, ELECTRICAL & TELECOM DRAWINGS FOR SYSTEM DESIGN & DETAIL.
10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.



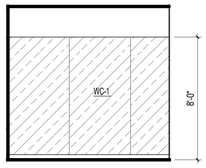
6A WORKSTATIONS 136 - NORTH
SCALE: 1/4" = 1'-0"



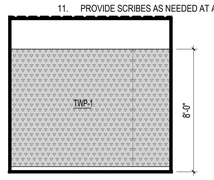
5B DOUBLE OFFICE 103E - EAST
SCALE: 1/4" = 1'-0"



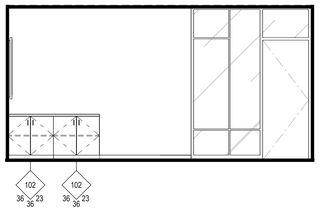
5A DOUBLE OFFICE 103E - WEST
SCALE: 1/4" = 1'-0"



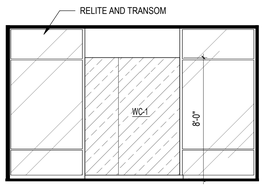
4B OFFICE - EAST
SCALE: 1/4" = 1'-0"



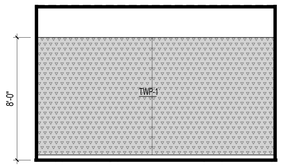
4A OFFICE - WEST
SCALE: 1/4" = 1'-0"



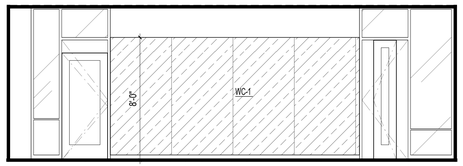
8B CONFERENCE ROOM - SOUTH
SCALE: 1/4" = 1'-0"



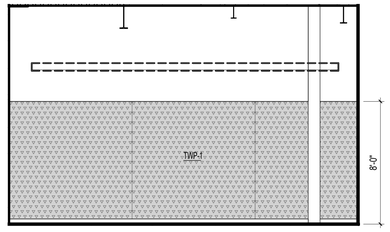
8A CONFERENCE ROOM - WEST
SCALE: 1/4" = 1'-0"



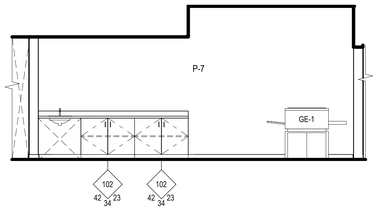
7B WORKSTATIONS 103 - WEST
SCALE: 1/4" = 1'-0"



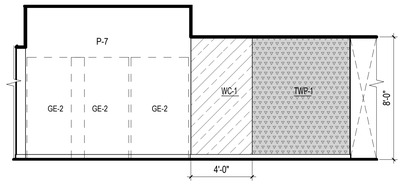
7A WORKSTATIONS 103 - NORTH
SCALE: 1/4" = 1'-0"



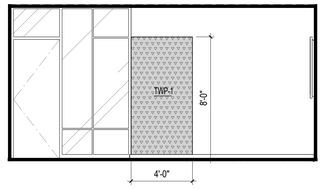
6B WORKSTATIONS 136 - SOUTH
SCALE: 1/4" = 1'-0"



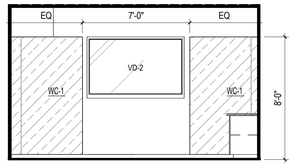
9B WORKROOM 222 - EAST
SCALE: 1/4" = 1'-0"



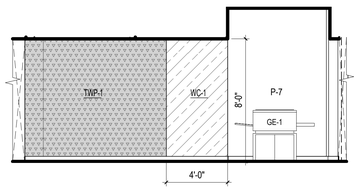
9A WORKROOM 222 - WEST
SCALE: 1/4" = 1'-0"



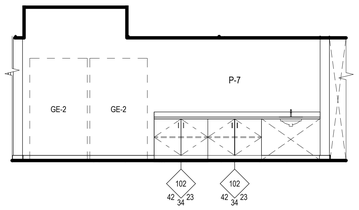
8D CONFERENCE ROOM - NORTH
SCALE: 1/4" = 1'-0"



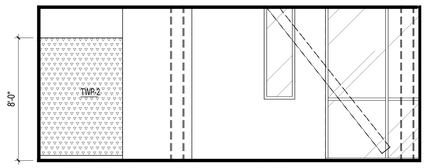
8C CONFERENCE ROOM - EAST
SCALE: 1/4" = 1'-0"



11B WORKROOM LEVEL 3 - EAST
SCALE: 1/4" = 1'-0"



11A WORKROOM LEVEL 3 - WEST
SCALE: 1/4" = 1'-0"



10B DOUBLE OFFICE 319 - SOUTH
SCALE: 1/4" = 1'-0"

10A DOUBLE OFFICE 319 - NORTH
SCALE: 1/4" = 1'-0"

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117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
TELEPHONE: (206)628-3737 FAX: (206)628-3138

9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

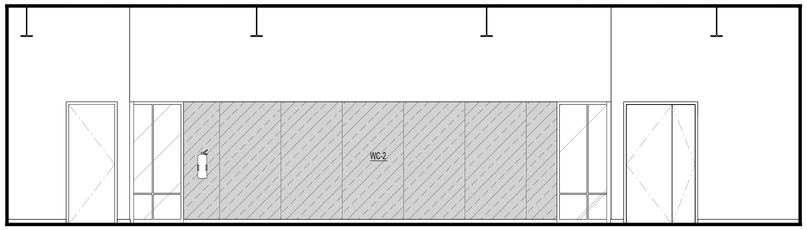
#	Date	Description

INTERIOR ELEVATIONS

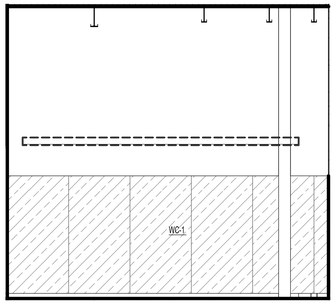
PRCNC20221036

A455

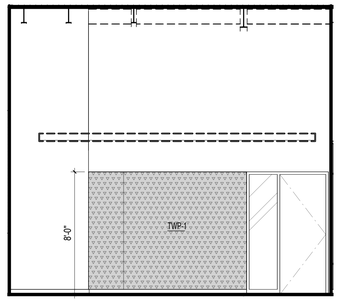
BUILDING PERMIT SET



2 PHYSICS 132 - SOUTH
SCALE: 1/4" = 1'-0"



1B WORKSTATION 320 - SOUTH
SCALE: 1/4" = 1'-0"



1A WORKSTATION 320 - NORTH
SCALE: 1/4" = 1'-0"

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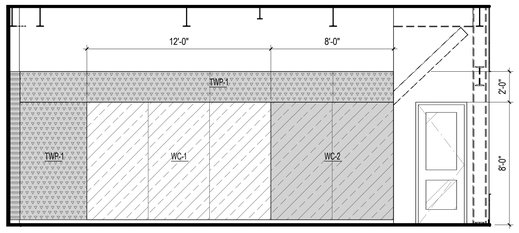
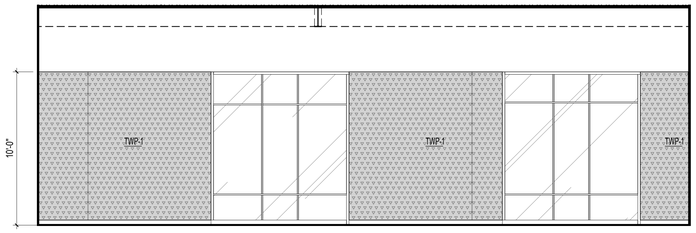
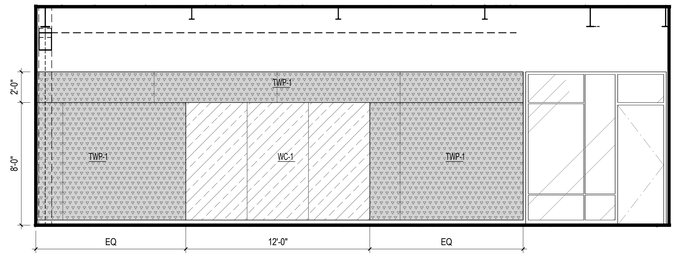


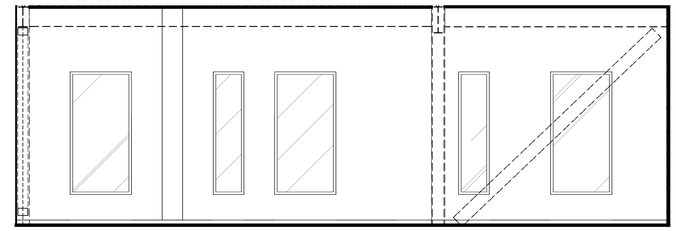
3A DOUBLE CLASSROOM - EAST
SCALE: 1/4" = 1'-0"



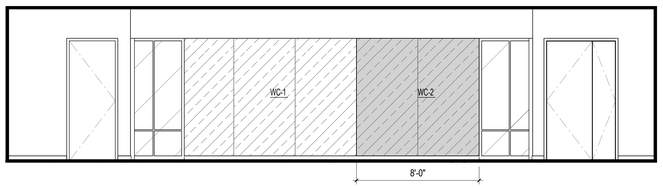
3D DOUBLE CLASSROOM - NORTH
SCALE: 1/4" = 1'-0"



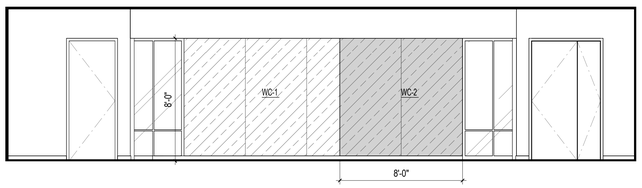
3C DOUBLE CLASSROOM - WEST
SCALE: 1/4" = 1'-0"



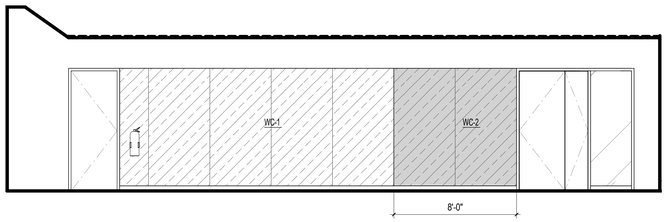
3B DOUBLE CLASSROOM - SOUTH
SCALE: 1/4" = 1'-0"



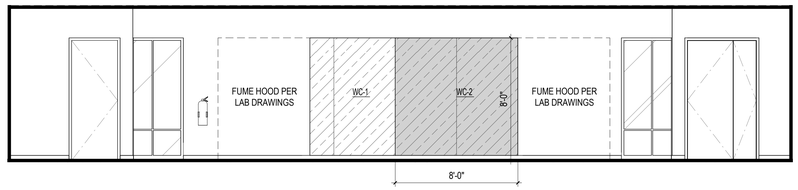
6 MICROBIOLOGY LAB 232 - SOUTH
SCALE: 1/4" = 1'-0"



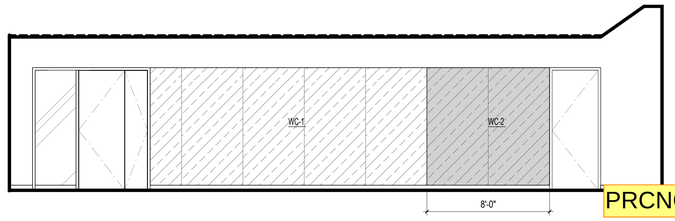
5 GENERAL BIOLOGY LAB 234 - SOUTH
SCALE: 1/4" = 1'-0"



4 GENERAL BIOLOGY LAB 235 - EAST
SCALE: 1/4" = 1'-0"



8 ORGANIC CHEMISTRY LAB 316 - SOUTH
SCALE: 1/4" = 1'-0"



7 BIOOLOGY AP LAB - WEST
SCALE: 1/4" = 1'-0"

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

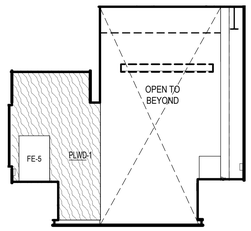
#	Date	Description

INTERIOR ELEVATIONS

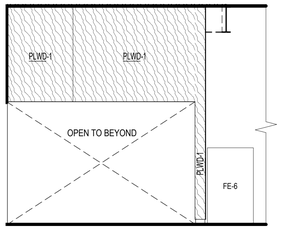
PRCNC20221036

A456

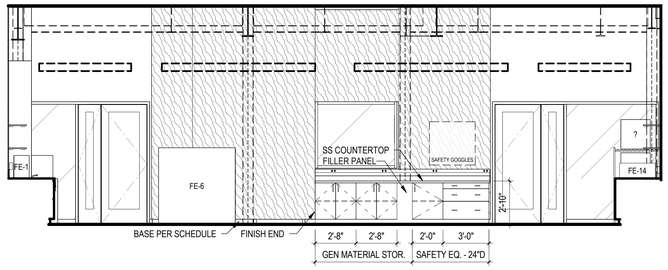
BUILDING PERMIT SET



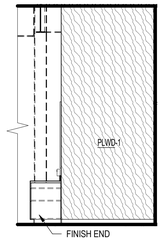
1D PAINT ZONE - WEST
SCALE: 1/4" = 1'-0"



1C FAB WET ZONE S
SCALE: 1/4" = 1'-0"



1B FAB LAB - EAST
SCALE: 1/4" = 1'-0"



1A FAB ENTRY N
SCALE: 1/4" = 1'-0"

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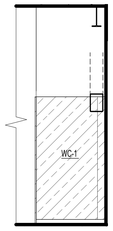
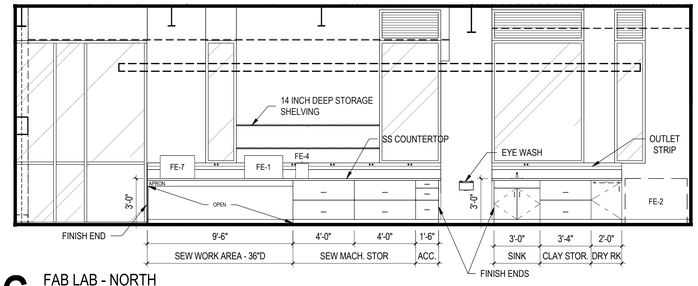
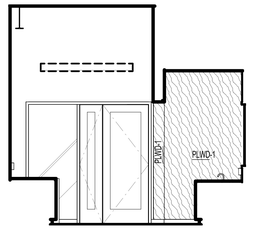


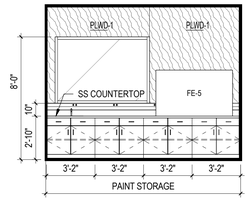
1H FAB LAB - S2
SCALE: 1/4" = 1'-0"



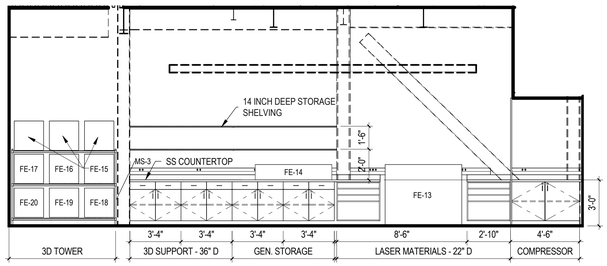
1G FAB LAB - NORTH
SCALE: 1/4" = 1'-0"



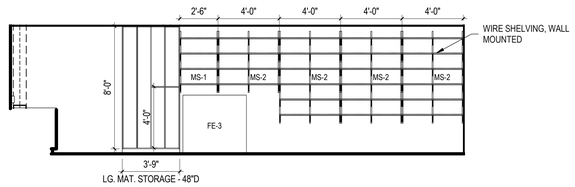
1F PAINT ZONE - EAST
SCALE: 1/4" = 1'-0"



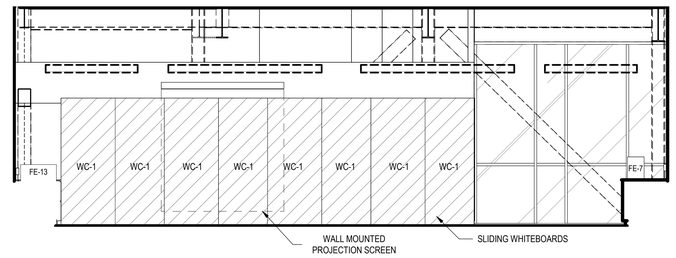
1E PAINT ZONE - SOUTH
SCALE: 1/4" = 1'-0"



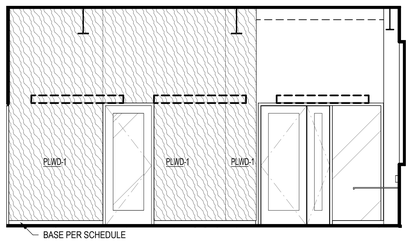
1L FAB LAB - SOUTH 1
SCALE: 1/4" = 1'-0"



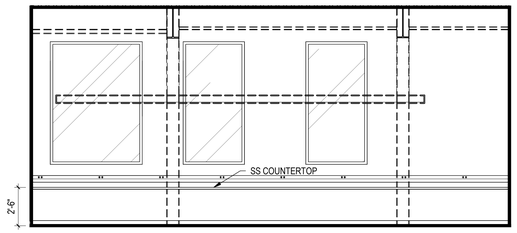
1K MATERIAL STORAGE - WEST
SCALE: 1/4" = 1'-0"



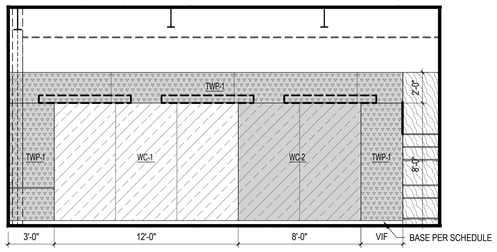
1J FAB LAB - WEST
SCALE: 1/4" = 1'-0"



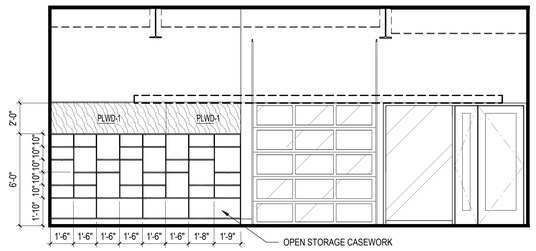
2D IDEATION STUDIO - WEST
SCALE: 1/4" = 1'-0"



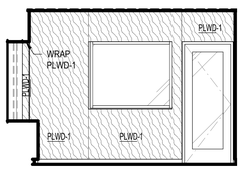
2C IDEATION STUDIO - NORTH
SCALE: 1/4" = 1'-0"



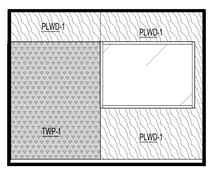
2B IDEATION STUDIO - EAST
SCALE: 1/4" = 1'-0"



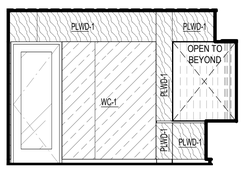
2A IDEATION STUDIO - SOUTH
SCALE: 1/4" = 1'-0"



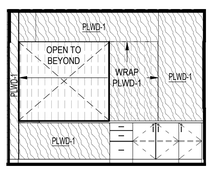
3D CHECK-IN/WORKROOM - WEST
SCALE: 1/4" = 1'-0"



3C CHECK-IN/WORKROOM - NORTH
SCALE: 1/4" = 1'-0"



3B CHECK-IN/WORKROOM - EAST
SCALE: 1/4" = 1'-0"



3A CHECK-IN/WORKROOM - SOUTH
SCALE: 1/4" = 1'-0"

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	SP
Checked By:	JL

Revisions

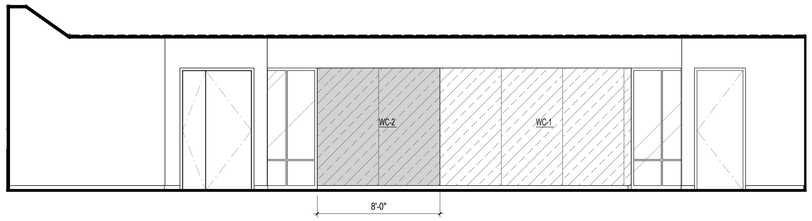
#	Date	Description

INTERIOR ELEVATIONS

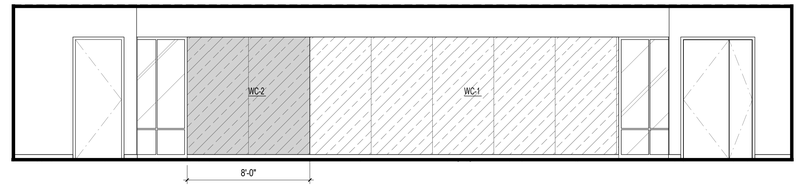
PRCNC20221036

A457

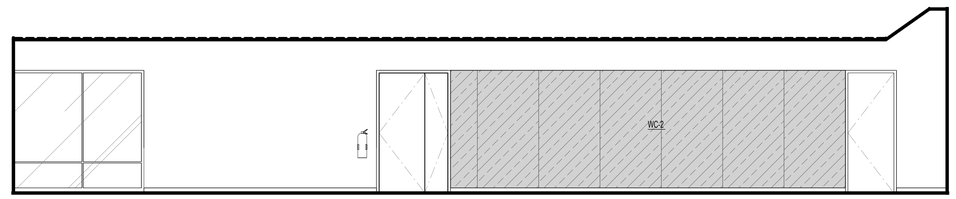
BUILDING PERMIT SET



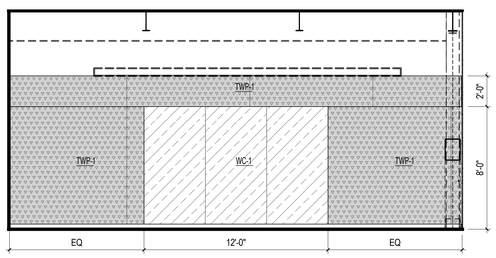
2 EARTH SCIENCE B LAB - NORTH
SCALE: 1/4" = 1'-0"



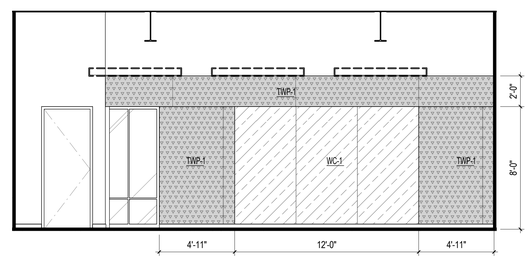
1 GENERAL CHEMISTRY 312 - SOUTH
SCALE: 1/4" = 1'-0"



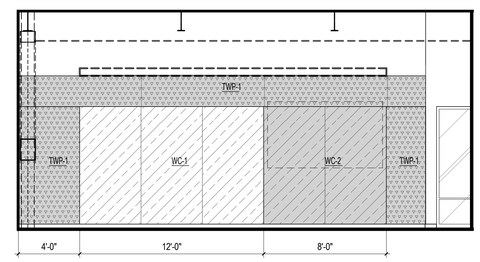
3 EARTH SCIENCE A LAB - WEST
SCALE: 1/4" = 1'-0"



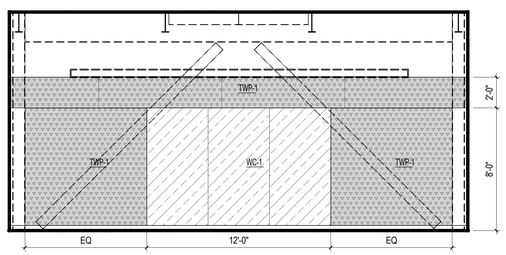
4C CLASSROOM 133 - WEST
SCALE: 1/4" = 1'-0"



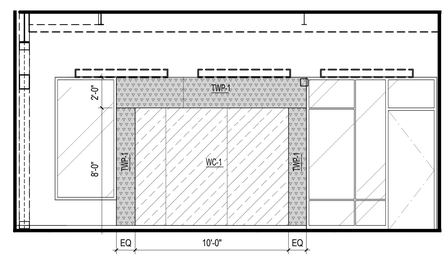
4B CLASSROOM 133 - SOUTH
SCALE: 1/4" = 1'-0"



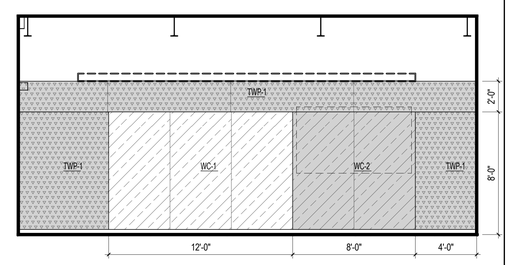
4A CLASSROOM 133 - EAST
SCALE: 1/4" = 1'-0"



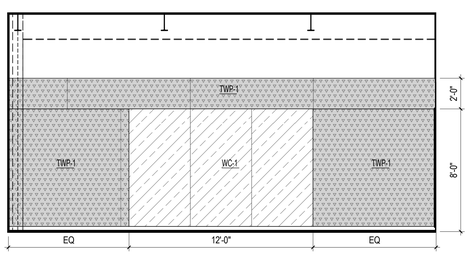
5C CLASSROOM 101 - WEST
SCALE: 1/4" = 1'-0"



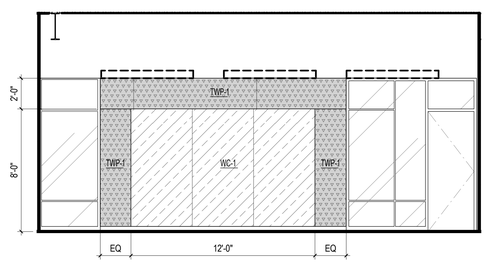
5B CLASSROOM 101 - NORTH
SCALE: 1/4" = 1'-0"



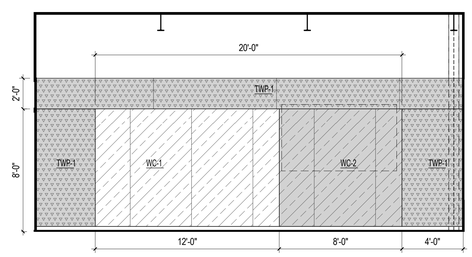
5A CLASSROOM 101 - EAST
SCALE: 1/4" = 1'-0"



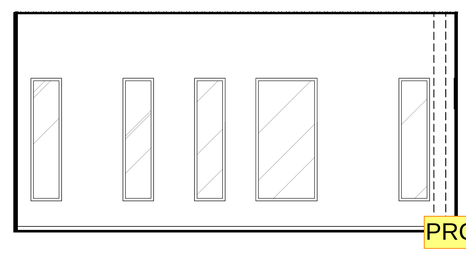
6D TYPICAL CLASSROOM - 1
SCALE: 1/4" = 1'-0"



6C TYPICAL CLASSROOM - 2
SCALE: 1/4" = 1'-0"



6B TYPICAL CLASSROOM - 3
SCALE: 1/4" = 1'-0"



6A TYPICAL CLASSROOM - 4
SCALE: 1/4" = 1'-0"

INTERIOR GENERAL NOTES

1. REFER TO SHEET A400 FOR MATERIAL ABBREVIATIONS.
2. FOR CEILING ELEVATION AND FINISH INFORMATION REFER TO REFLECTED CEILING PLANS.
3. REFER TO A410 FOR TYPICAL MOUNTING HEIGHTS LEGEND, EQUIPMENT AND ACCESSORY SCHEDULE AND CASEWORK LEGEND.
4. INSTALL WALL BASE ON ALL WALLS.
5. ALL FINISHES AND RUBBER BASE TO EXTEND UNDER ALL MOVEABLE CASEWORK AND EQUIPMENT.
6. ALL FLOORING / COLOR TRANSITIONS, WHERE REQUIRED SHALL BE CENTERED UNDER DOOR, U.N.O.
7. UNLESS INDICATED ON FINISH PLANS, VERIFY CARPET INSTALL DIRECTION WITH ARCHITECT PRIOR TO ORDERING MATERIAL AND INSTALLATION.
8. FOR ALL WALL MOUNTED ITEMS NOT SHOWN ON INTERIOR ELEVATIONS, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
9. DEVICES, EQUIPMENT & FIXTURES SHOWN FOR LOCATION COORDINATION. REFER TO MECHANICAL, ELECTRICAL & TELECOM DRAWINGS FOR SYSTEM DESIGN & DETAIL.
10. CASEWORK FINISHES SHALL BE UNO:
    A. VERTICALS (UPPER & LOWER): PLAM-2, UNO.
    B. COUNTERS (NO SINK): PLAM-2, UNO.
    C. COUNTERS (AT SINK): SDS-1, UNO.
11. PROVIDE SCRIBES AS NEEDED AT ALL CASEWORK.

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BRIAN JAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
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Puyallup, WA 98374

Date:	06/30/22
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Drawn By:	SP
Checked By:	JL

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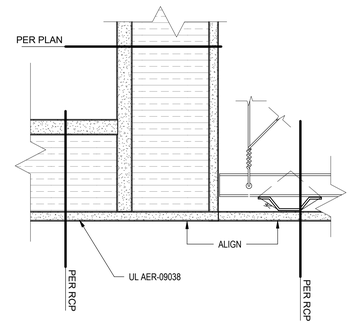
INTERIOR ELEVATIONS

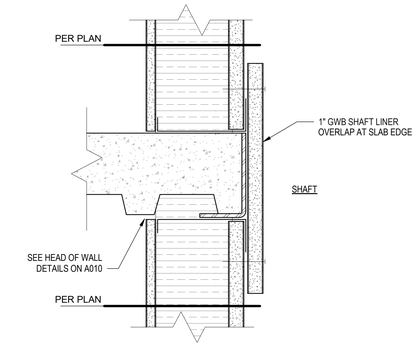
PRCNC20221036

A458

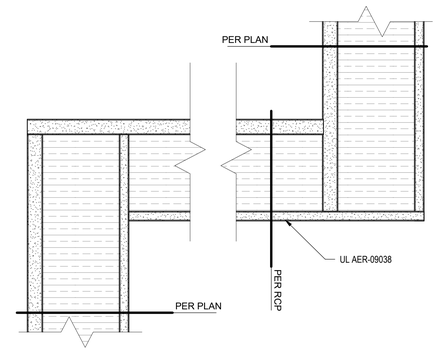
BUILDING PERMIT SET



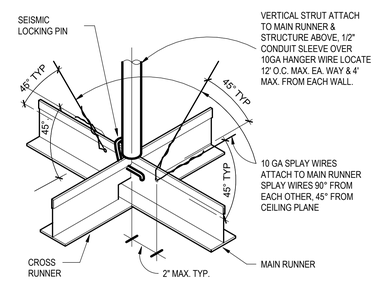
5 BOTTOM OF SHAFT
SCALE: 3" = 1'-0"



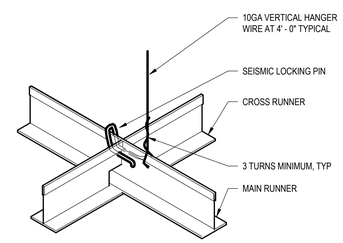
1 SHAFT WALL AT FLOOR SLAB
SCALE: 3" = 1'-0"



2 SHAFT JOG
SCALE: 3" = 1'-0"



3 SEISMIC BRACING AT ACT CEILING
SCALE: 1 1/2" = 1'-0"



4 SEISMIC LOCKING PIN AT ACT CEILING
SCALE: 1 1/2" = 1'-0"

PRCNC20221036

BUILDING PERMIT SET

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9411 REGISTERED ARCHITECT BRIAN JOHN BARNHART STATE OF WASHINGTON

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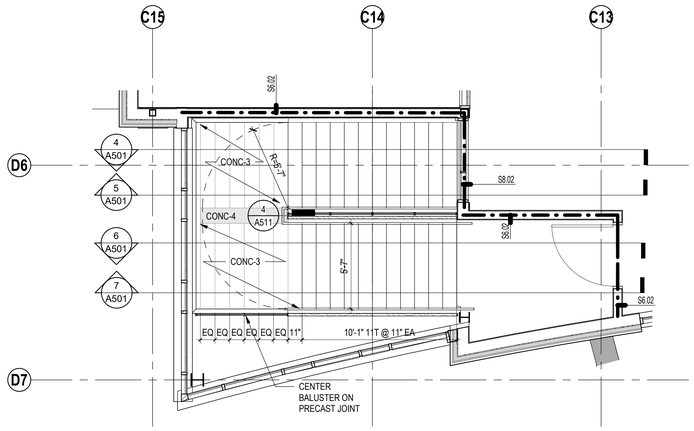
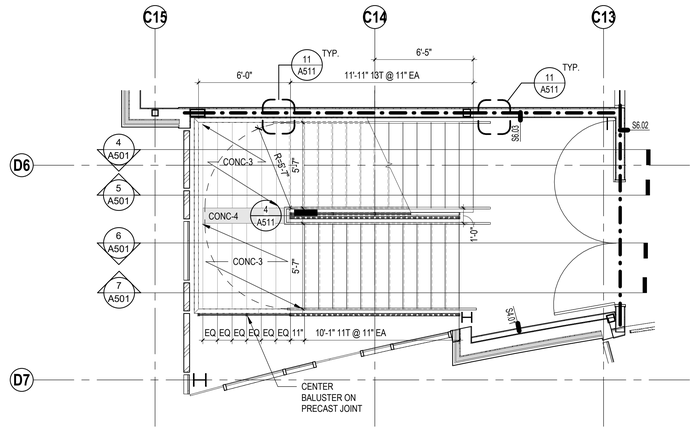
DETAILS - INTERIOR FLOOR/ WALL

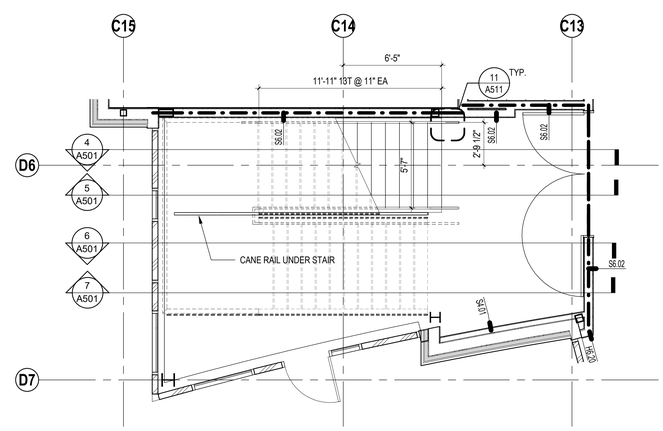
A471



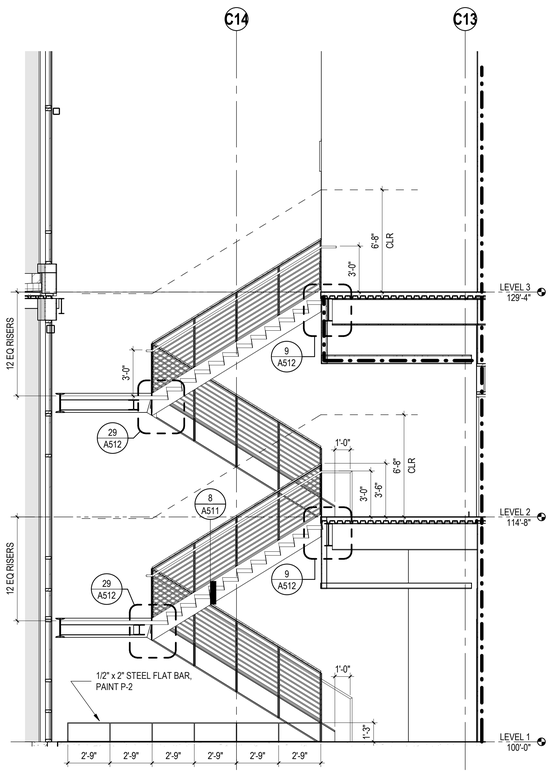
3 STAIR 1 - PLAN - LEVEL 3
SCALE: 1/4" = 1'-0"



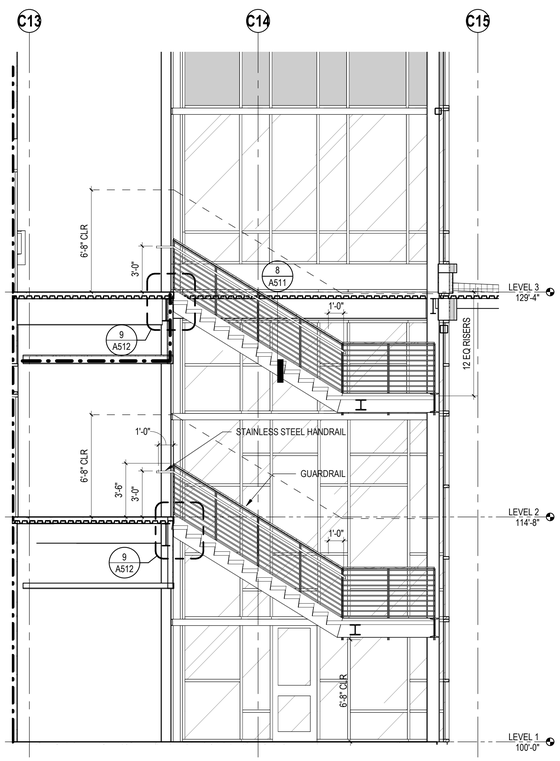
2 STAIR 1 - PLAN - LEVEL 2
SCALE: 1/4" = 1'-0"



1 STAIR 1 - PLAN - LEVEL 1
SCALE: 1/4" = 1'-0"



7 STAIR 1 - SECTION 4
SCALE: 1/4" = 1'-0"



6 STAIR 1 - SECTION 3
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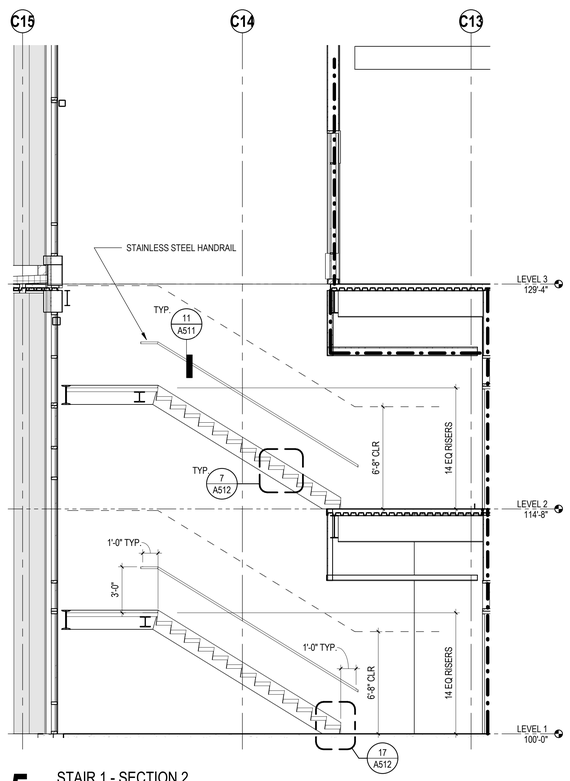

5 STAIR 1 - SECTION 2
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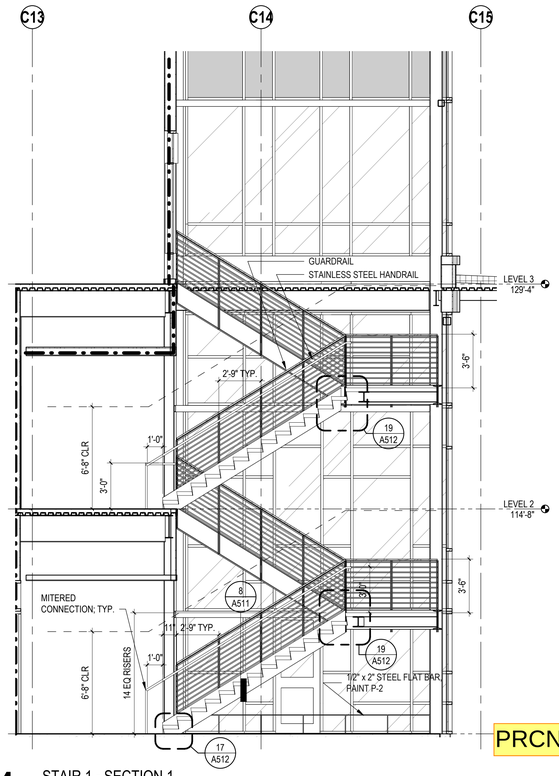

4 STAIR 1 - SECTION 1
SCALE: 1/4" = 1'-0"

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Revisions

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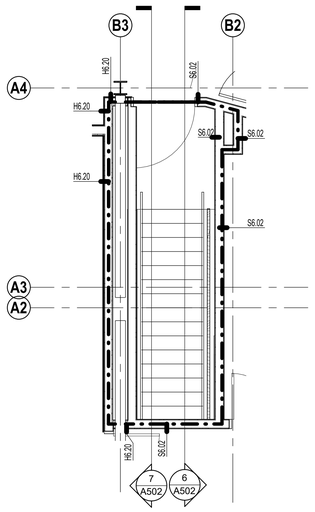
STAIR - PLANS AND SECTIONS

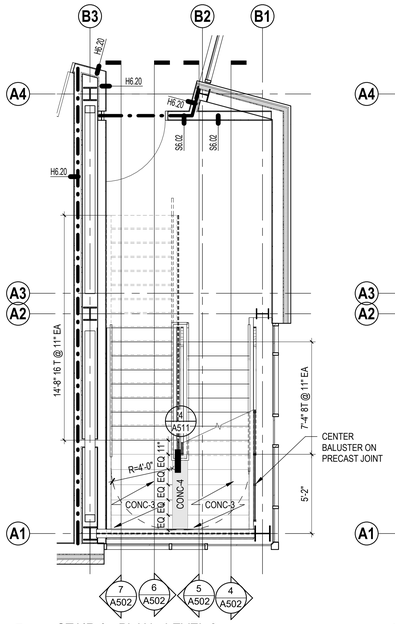
PRCNC20221036

A501

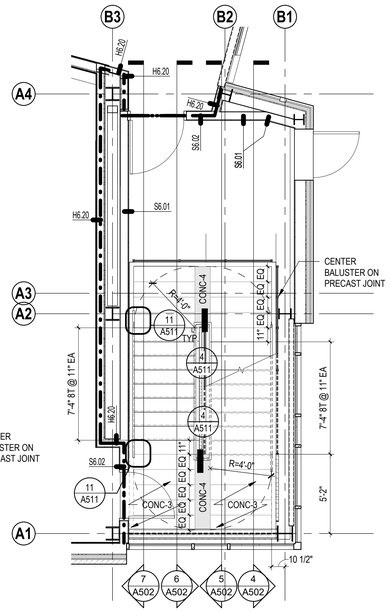
BUILDING PERMIT SET



3 STAIR 2 - PLAN - LEVEL 3
SCALE: 1/4" = 1'-0"



2 STAIR 2 - PLAN - LEVEL 2
SCALE: 1/4" = 1'-0"



1 STAIR 2 - PLAN - LEVEL 1
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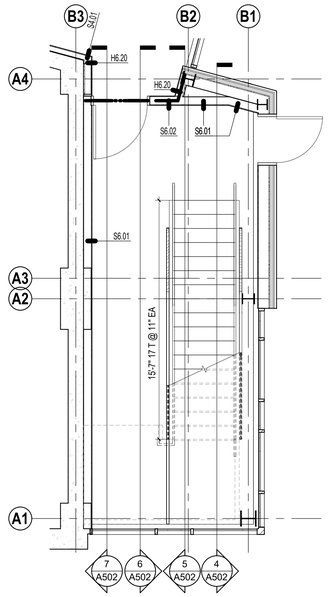
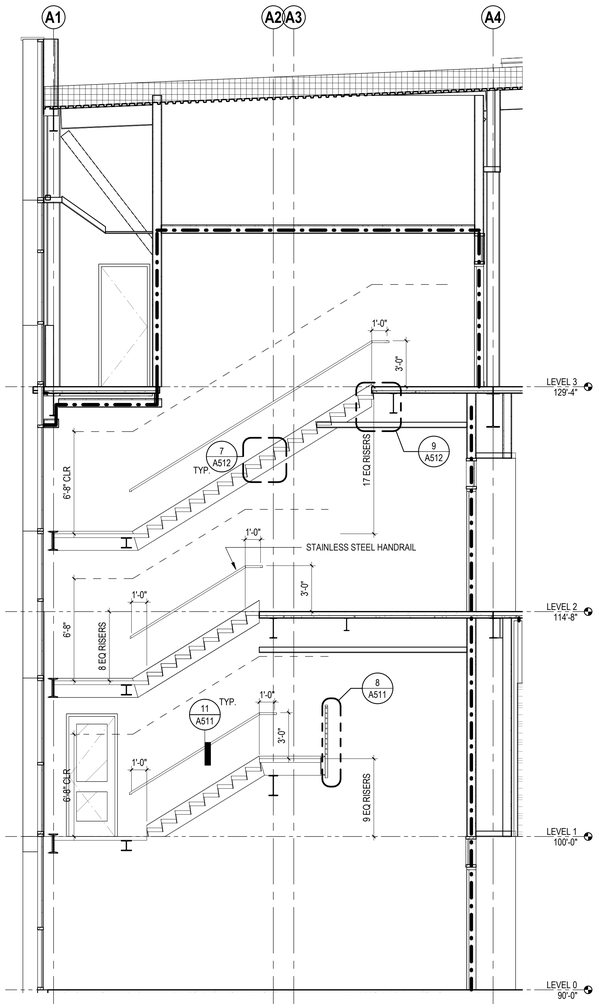


0 STAIR 2 - PLAN - LEVEL 0
SCALE: 1/4" = 1'-0"



7 STAIR 2 - SECTION 4
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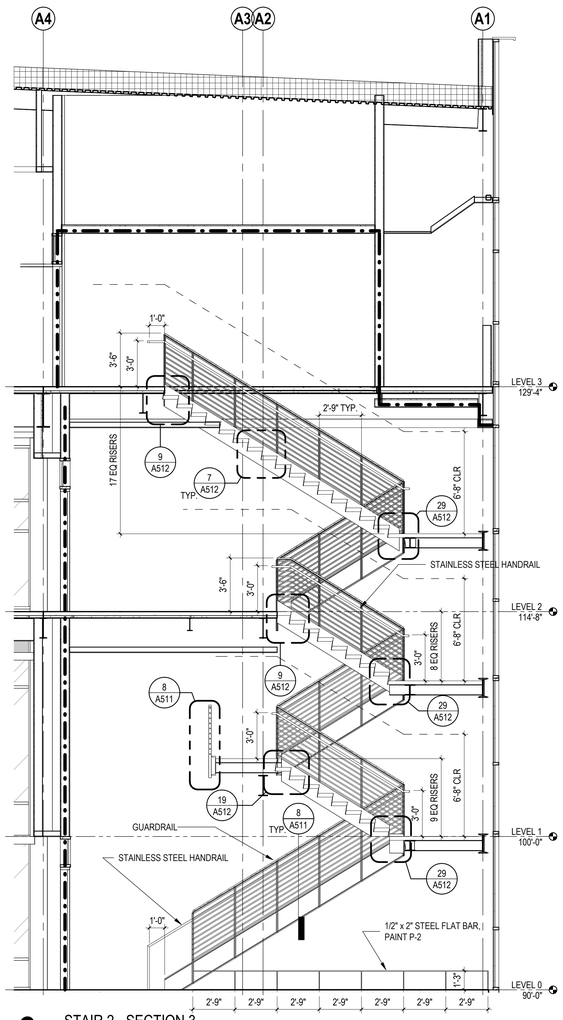

6 STAIR 2 - SECTION 3
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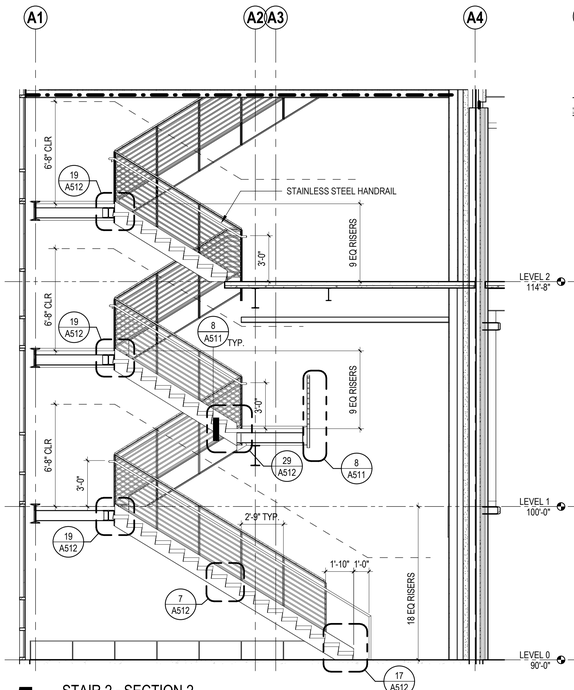
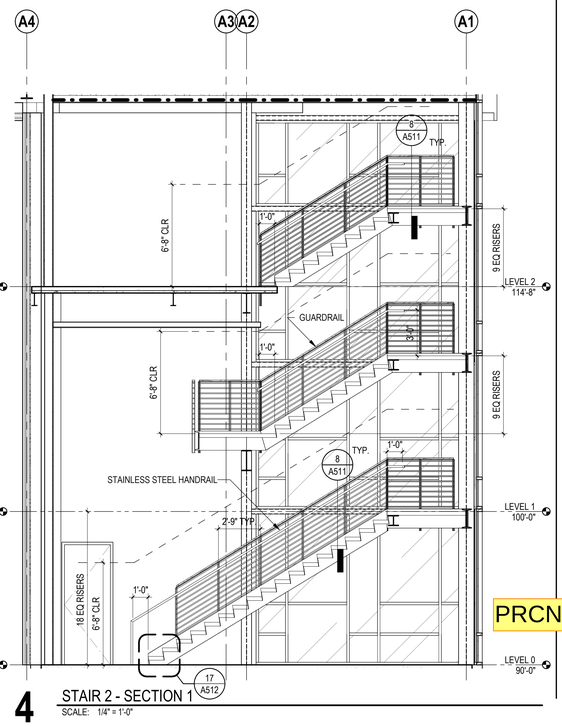


5 STAIR 2 - SECTION 2
SCALE: 1/4" = 1'-0"



4 STAIR 2 - SECTION 1
SCALE: 1/4" = 1'-0"

BUILDING PERMIT SET

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9411 REGISTERED ARCHITECT
BECK-JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	JL
Checked By:	JL

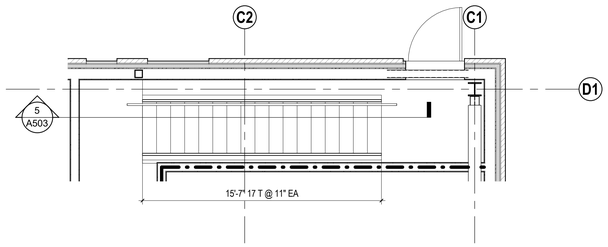
Revisions

#	Date	Description

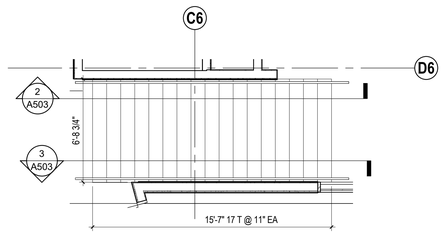
STAIR - PLANS AND SECTIONS

PRCNC20221036

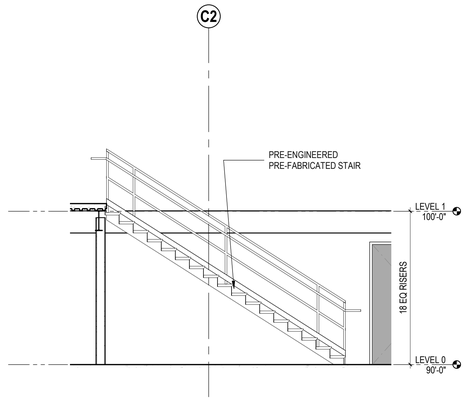
A502



4 MECHANICAL MEZZANINE STAIR - PLAN
SCALE: 1/4" = 1'-0"



1 LOBBY STAIR - PLAN
SCALE: 1/4" = 1'-0"



5 MECHANICAL MEZZANINE STAIR - SECTION
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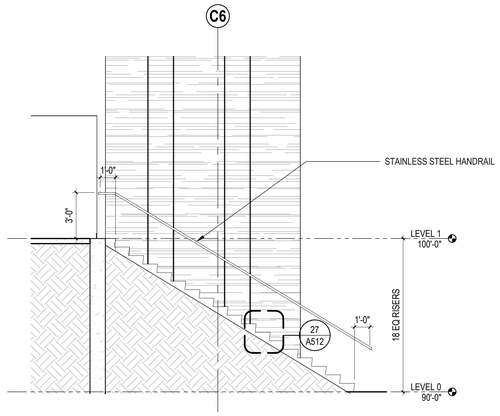

2 LOBBY STAIR - SECTION 1
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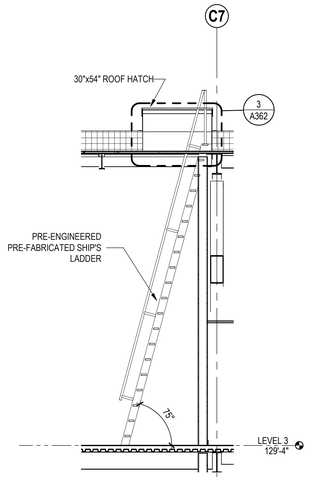

6 ROOF ACCESS SHIPS LADDER - SECTION
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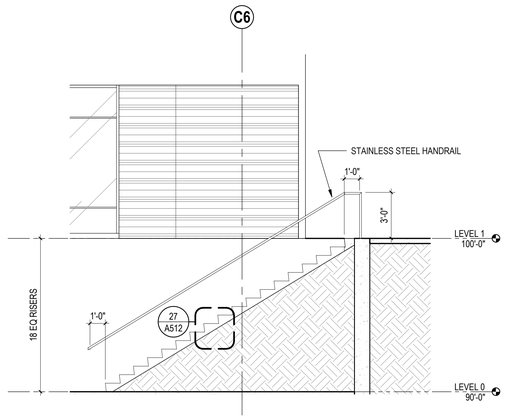

3 LOBBY STAIR - SECTION 2
SCALE: 1/4" = 1'-0"

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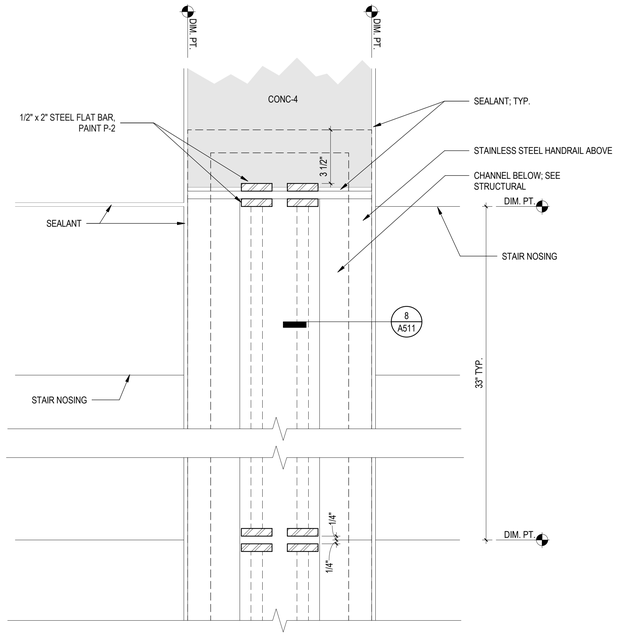
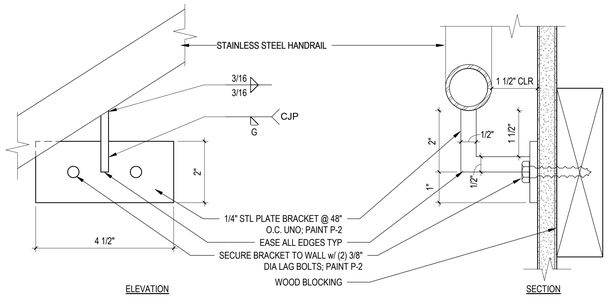
A503

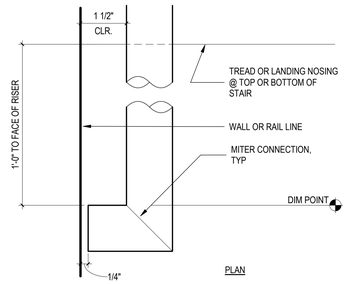
BUILDING PERMIT SET

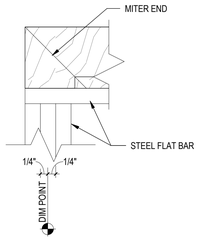


20 GUARDRAIL AT SWITCHBACK
SCALE: 3" = 1'-0"

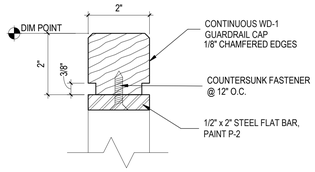


11 HANDRAIL
SCALE: 6" = 1'-0"



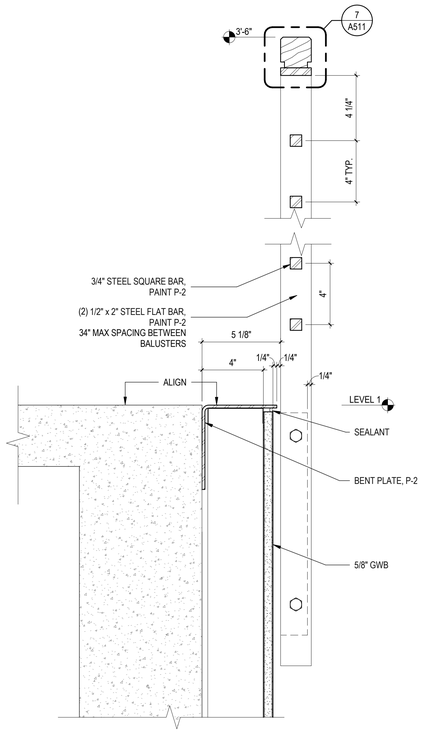


ELEVATION AT TERMINATION

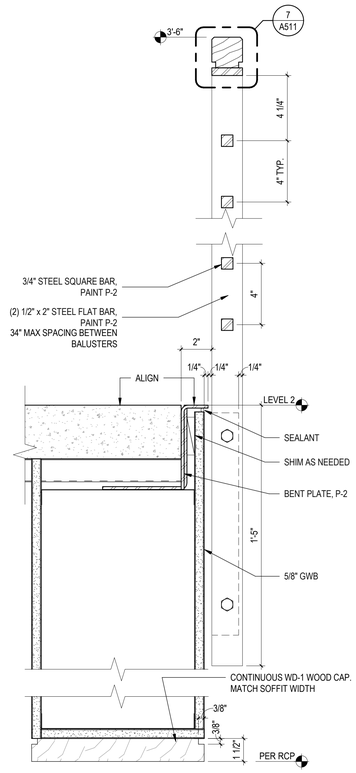


SECTION

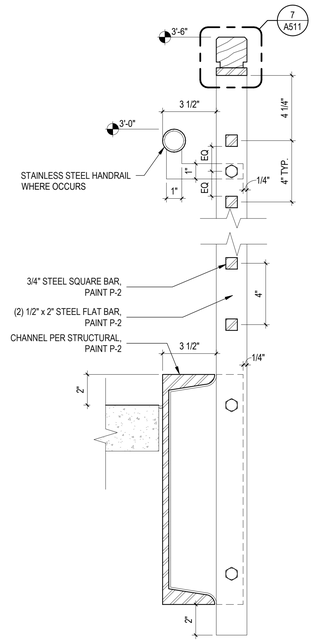
7 GUARDRAIL CAP
SCALE: 6" = 1'-0"



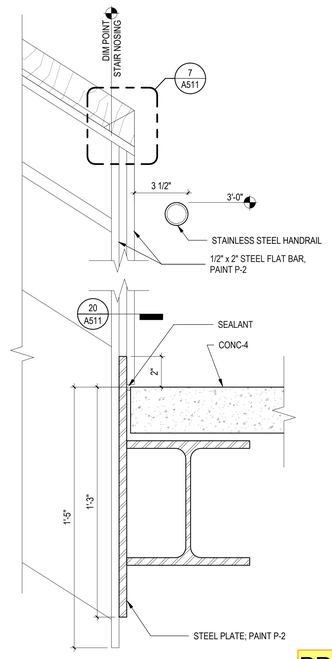
18 GUARDRAIL AT GRAVITY LAB
SCALE: 3" = 1'-0"



14 GUARDRAIL AT OPENING
SCALE: 3" = 1'-0"



8 GUARDRAIL AND HANDRAIL
SCALE: 3" = 1'-0"



4 STRINGER AT SWITCHBACK
SCALE: 3" = 1'-0"

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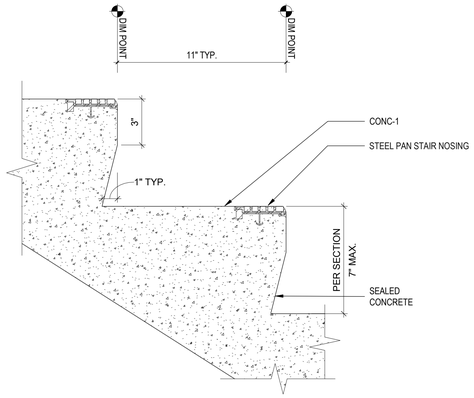
STAIR - DETAILS

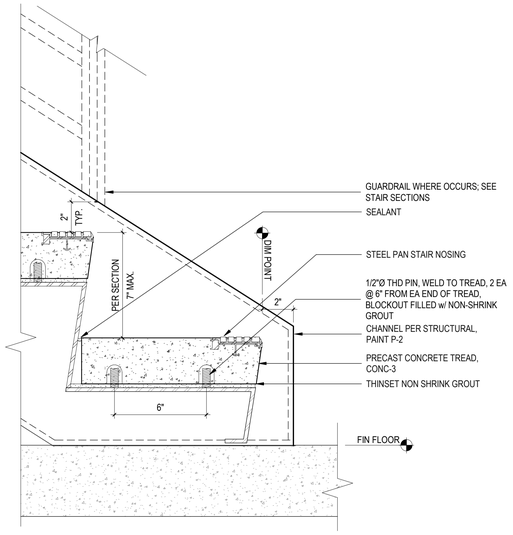
PRCNC20221036

A511

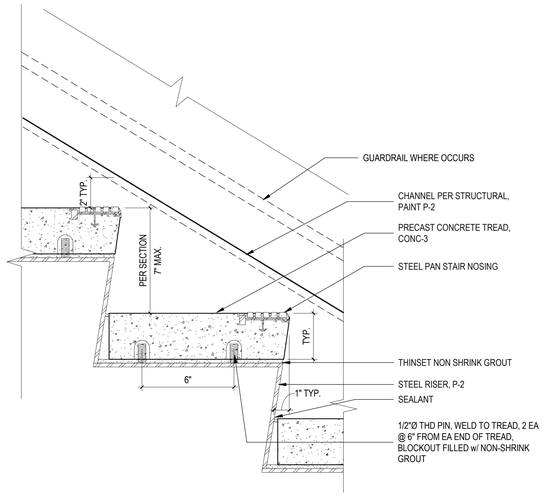
BUILDING PERMIT SET



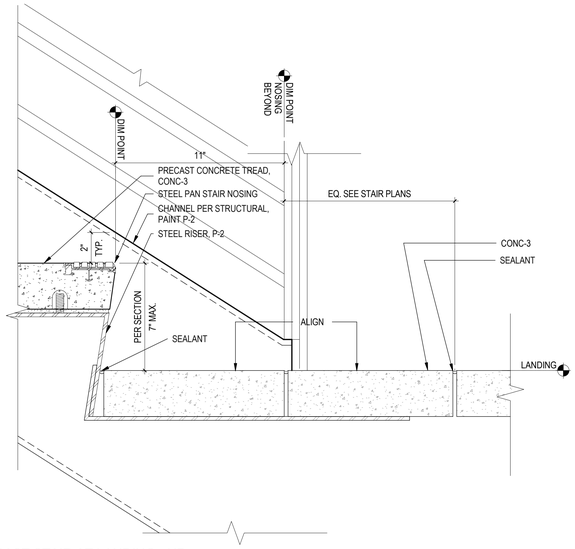
27 CAST IN PLACE STAIR
SCALE: 3" = 1'-0"



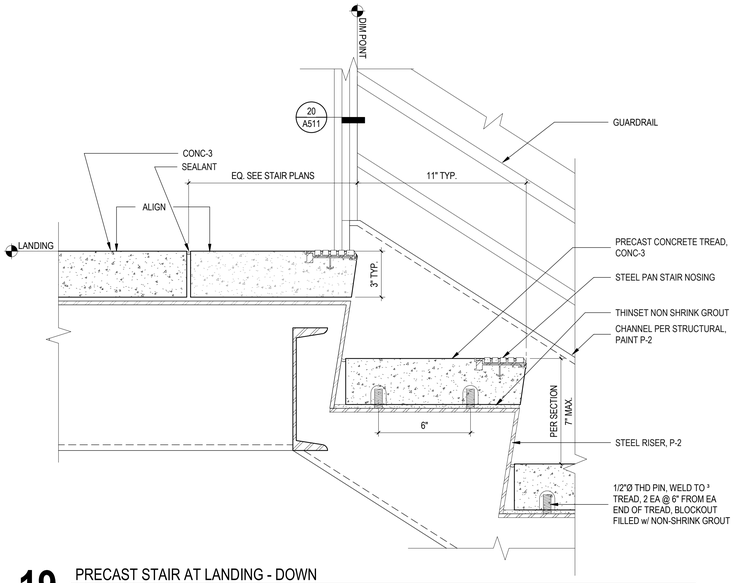
17 PRECAST STAIR BOTTOM TREAD
SCALE: 3" = 1'-0"



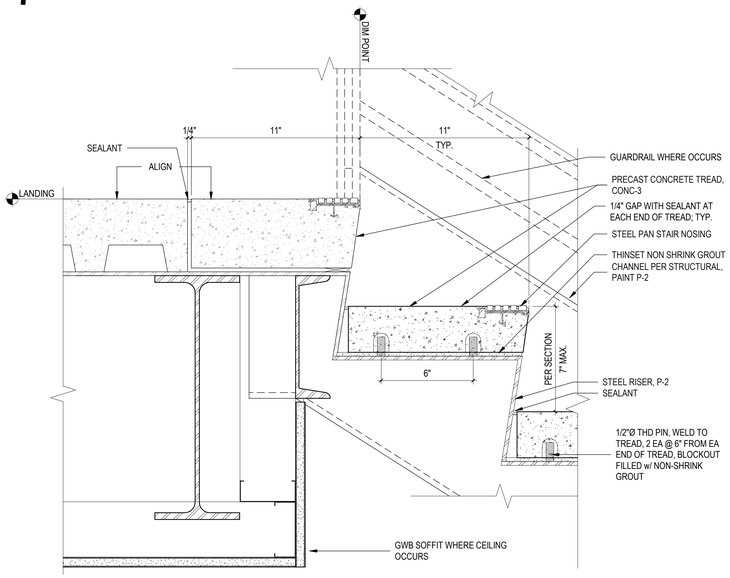
7 PRECAST STAIR TREAD
SCALE: 3" = 1'-0"



29 PRECAST STAIR AT LANDING - UP
SCALE: 3" = 1'-0"



19 PRECAST STAIR AT LANDING - DOWN
SCALE: 3" = 1'-0"



9 PRECAST STAIR AT FLOOR
SCALE: 3" = 1'-0"

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STATE OF WASHINGTON

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Date:	06/30/22
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Drawn By:	Author
Checked By:	Checker

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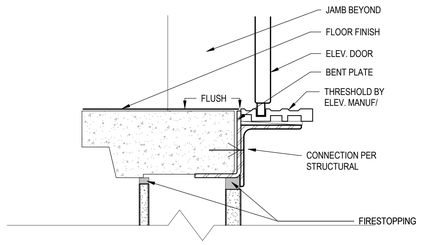
STAIR - DETAILS

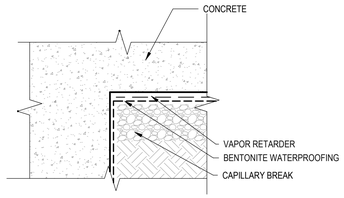
PRCNC20221036

A512

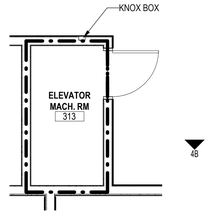
BUILDING PERMIT SET



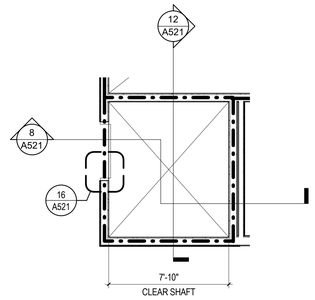
17 ELEVATOR DOOR SILL AT UPPER FLOORS
SCALE: 3" = 1'-0"



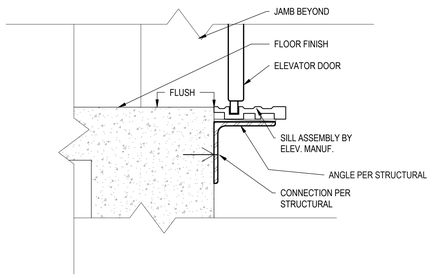
9 ELEVATOR PIT WATERPROOFING
SCALE: 3" = 1'-0"



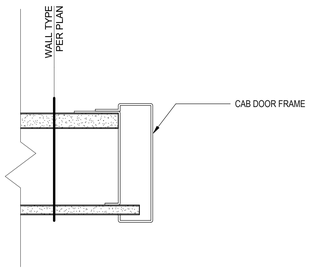
4 ELEVATOR MACHINE ROOM PLAN
SCALE: 1/4" = 1'-0"



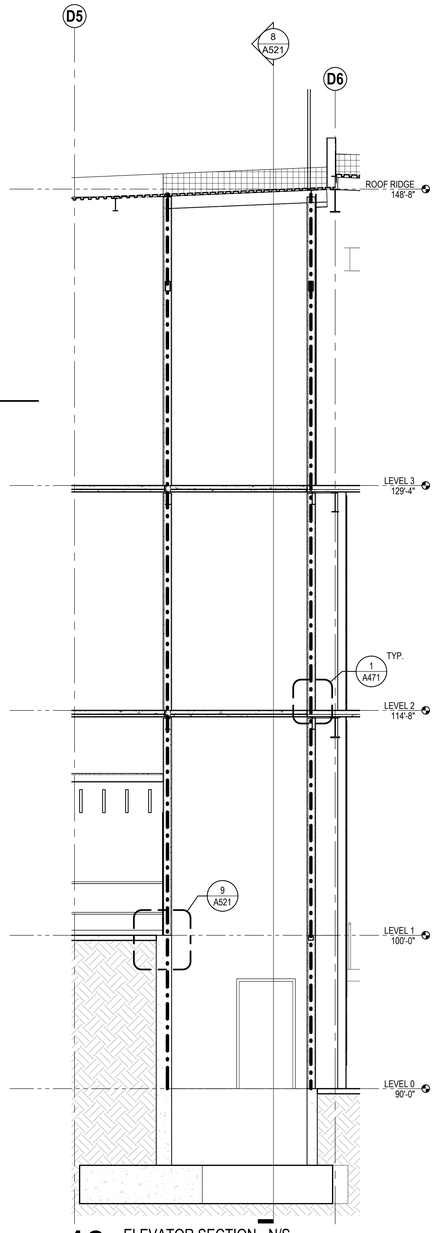
3 ELEVATOR PLAN - LEVEL 3
SCALE: 1/4" = 1'-0"



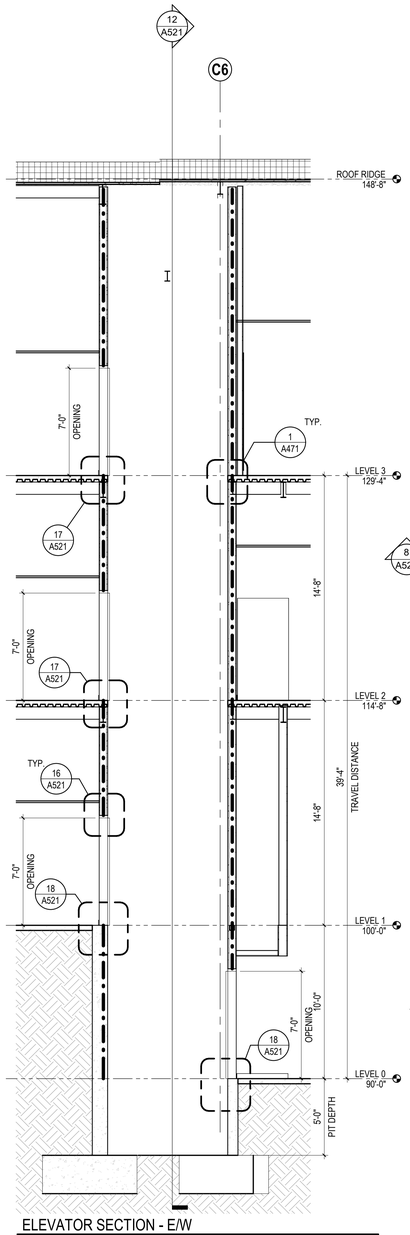
18 ELEVATOR DOOR SILL AT CONCRETE STEM WALL
SCALE: 3" = 1'-0"



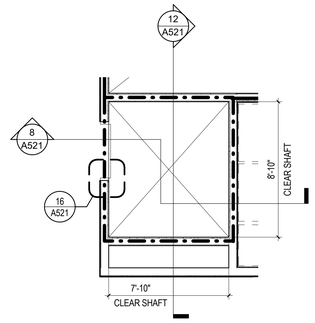
16 ELEVATOR DOOR JAMB
SCALE: 3" = 1'-0"



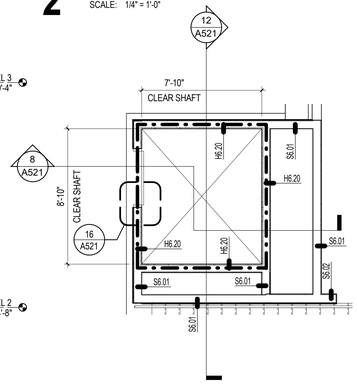
12 ELEVATOR SECTION - N/S
SCALE: 1/4" = 1'-0"



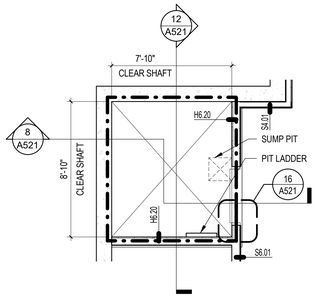
8 ELEVATOR SECTION - E/W
SCALE: 1/4" = 1'-0"



2 ELEVATOR PLAN - LEVEL 2
SCALE: 1/4" = 1'-0"

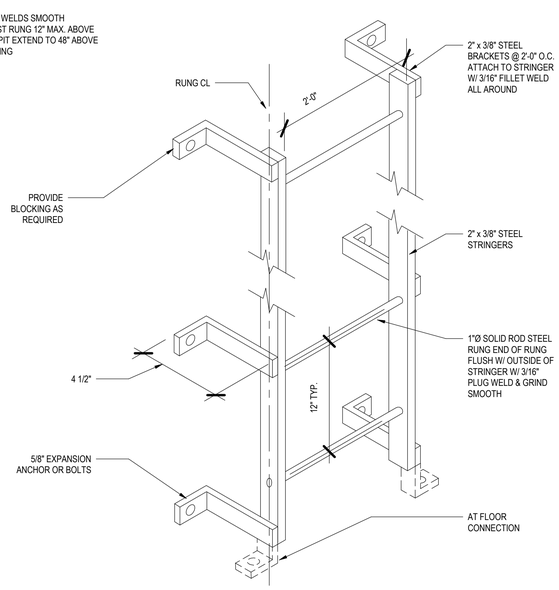


1 ELEVATOR PLAN - LEVEL 1
SCALE: 1/4" = 1'-0"



0 ELEVATOR PLAN - LEVEL 0
SCALE: 1/4" = 1'-0"

NOTE:
1. GRIND ALL WELDS SMOOTH
2. BEGIN FIRST RUNG 12" MAX. ABOVE FLOOR & AT PIT EXTEND TO 48" ABOVE UPPER LANDING



20 ELEVATOR PIT LADDER
SCALE: 3" = 1'-0"

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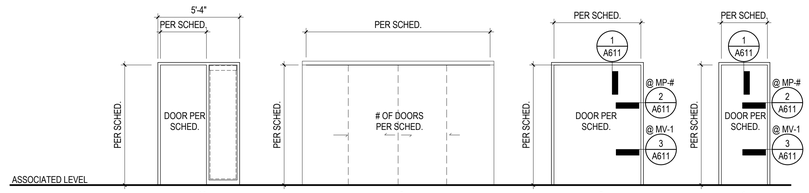
ELEVATOR

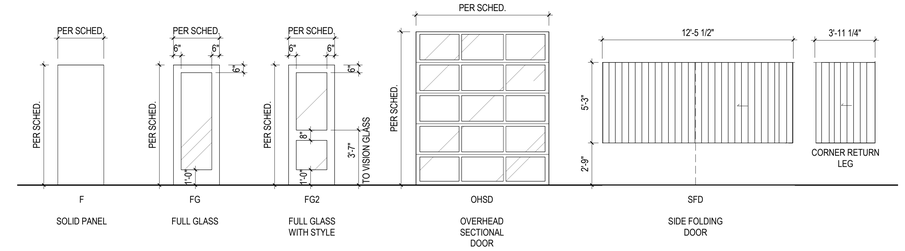
PRCNC20221036

A521

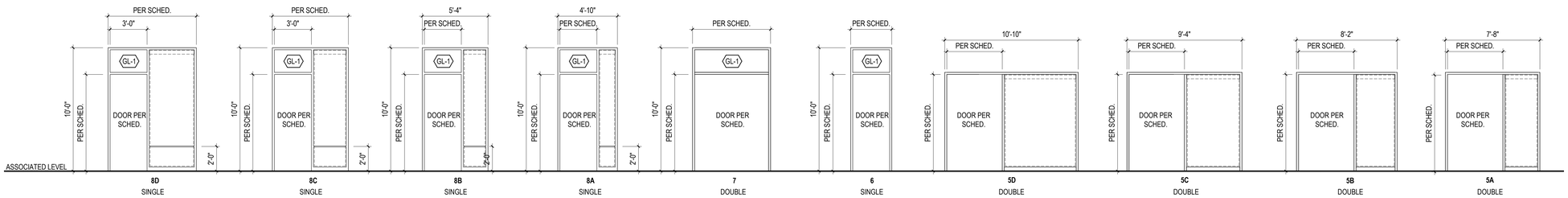
BUILDING PERMIT SET

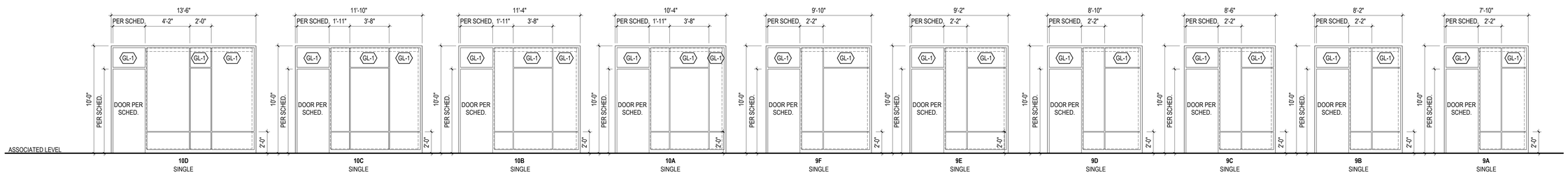


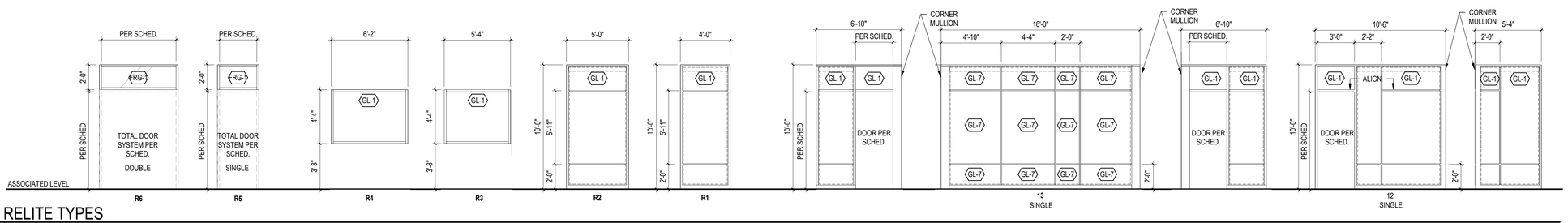
DOOR FRAME TYPES



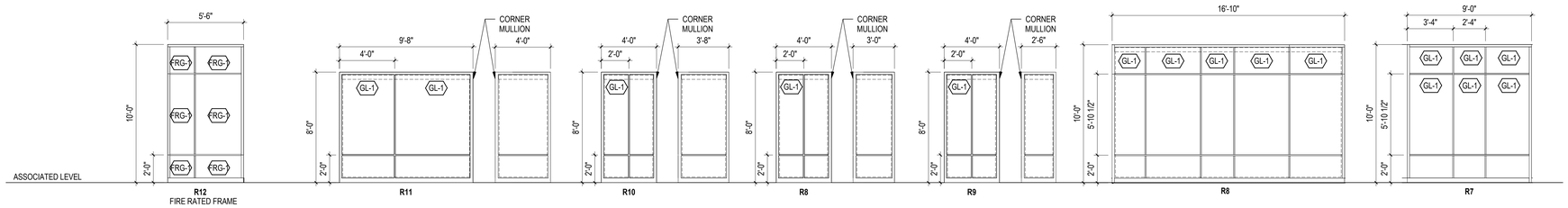
DOOR TYPES







RELITE TYPES



RELITE TYPES CONT.

GEN. WINDOW/ DOOR NOTES

1. REFER TO REFLECTED CEILING PLANS FOR LOCATIONS AND TYPE OF WINDOW SHADES AND BLINDS.
2. SEE DOOR SCHEDULE FOR DOOR GLAZING AND DOOR DETAIL LOCATIONS.
3. ALL ALUMINUM STOREFRONT TO RECEIVE GLAZING TYPE IG-2 UNO. HOLLOW METAL RELITES TO RECEIVE GLAZING TYPE GL-2 UNO.
4. VERIFY DOOR FRAME TYPE, PANEL, HARDWARE, & DIMENSIONS WITH MANUFACTURER.
5. IN ADDITION TO DETAILS REFERENCED ON SCHEDULES & TYPES, SEE FLASHING DETAILS & CONDUIT ROUTING ALTERNATIVES.
6. REFER TO FINISH & COLOR SCHEDULE ON GEN A.601 FOR DOOR FINISHES.
7. DOOR DETAILS NOT REFERENCED ON WINDOW FRAME ELEVATIONS. REFER TO DOOR SCHEDULE FOR REFERENCED DETAILS.
8. FOR CLADDING INFORMATION REFER TO DOOR, WINDOW DETAILS AND EXTERIOR ELEVATIONS.
10. DIMENSIONS TO OUTSIDE OF FRAME AND CENTERLINE OF MULLIONS, UNO.
11. 2" HM DOOR FRAMES AND PERIMETER RELITE FRAMES, 1" HM MULLIONS (4" DEEP) WITHIN PERIMETER, 4" HM FRAMES AT SILL, TYP UNO.
12. FENESTRATION PRODUCTS SHALL BE LABELED WITH NFRC U-FACTOR, SHGC, VT AND LEAKAGE RATING.
13. MAXIMUM U-VALUE OF 0.40 AT OPERABLE FENESTRATION; 0.38 AT FIXED FENESTRATION; 0.60 FOR GLAZING DOORS; 0.37 FOR OPAQUE DOORS: U-FACTOR AS DETERMINED, CERTIFIED, AND LABELED IN CONFORMANCE TO NFRC 100 BY INDEPENDENT AGENCY LICENSED BY NFRC. EXCEED WASHINGTON STAT ENERGY CODE PER C406.10 ENHANCED ENVELOPE PERFORMANCE.

SINGLE PANE GLASS

- GL-1 CLEAR HEAT STRENGTHEND 1/4"
- GL-2 CLEAR TEMPERED 1/4"
- GL-3 NON VISION (SPANDREL) 1/4"
- GL-4 CLEAR TEMPERED LAMINATED 1/4"
- GL-5 COLORED ACID ETCHED GLASS
- GL-6 CLEAR SINGLE-SIDED ACID ETCHED GLASS
- GL-7 CLEAR DOUBLE-SIDED ACID ETCHED GLASS

FIRE RATED GLASS

- FRG 60 MIN RATING

DOUBLE PANE INSULATED GLASS

- IG-1 HEAT STRENGTHENED / HEAT STRENGTHENED
- IG-2 TEMPERED / TEMPERED
- IG-3 TEMPERED / NON VISION (SPANDREL)

integrus ARCHITECTURE
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TELEPHONE: (206)624-3737 FAX: (206)624-3138

9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

#	Date	Description

DOOR, FRAME, & RELITE TYPES

PRCNC20221036

A600

BUILDING PERMIT SET

DOOR SCHEDULE

DOOR NUMBER	DOOR							FRAME								
												DETAIL (SEE SHEET A611 UNO)			FIRE RATING	REMARKS
	TYPE	PANEL 1 WIDTH	PANEL 2 WIDTH	HEIGHT	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	GLAZING	HEAD	JAMB	SILL		
001.1	F	2'-10"	2'-10"	7'-10"	HM	P-4	--	2	HM	P-4	--	1	3	4		1
001.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					1
100.1	FG2	3'-0"		7'-10"	AL	P-3	IG-2	SF7	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	--		1, 2
100.2	FG2	3'-0"	3'-0"	7'-10"	AL	P-3	IG-2	SF7	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	--		1, 2
101	F	3'-0"		7'-10"	WD	FF	--	9C	HM	P-2	GL-1 / GL-2					
102	F	3'-0"		7'-10"	WD	FF	--	9D	HM	P-2	GL-1 / GL-2					
103.1	FG	3'-0"	0"	7'-10"	WD	FF	GL-2	8B	HM	P-2	GL-1 / GL-2					
103.2	FG	3'-0"		7'-10"	WD	FF	GL-2	8C	HM	P-2	G-1 / G-2					
103A.1	FG	3'-0"		7'-10"	WD	FF	GL-2	13	HM	P-2	GL-1 / GL-2					
103A.2	FG	3'-0"		7'-10"	WD	FF	GL-2	13	HM	P-2	GL-1 / GL-2					
103B	F	3'-0"		7'-10"	WD	FF	--	8D	HM	P-2	GL-1 / GL-2					
103C	F	3'-0"		7'-10"	WD	FF	--	9E	HM	P-2	GL-1 / GL-2					
103D	F	3'-0"		7'-10"	WD	FF	--	9E	HM	P-2	GL-1 / GL-2					
103E	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
103F	FG	3'-0"		7'-10"	WD	FF	GL-2	1	HM	P-2	--					
104.1	F	3'-0"		7'-10"	WD	FF	--	9E	HM	P-2	GL-1 / GL-2					1
104.2	FG2	3'-0"		7'-10"	HM	P-2	GL-2	1	HM	P-2	--				1 HR	1
120	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--				1.5 HR	
121	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
122	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
124	FG2	3'-0"		7'-10"	AL	P-3	IG-2	SF17	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	--		1, 2
125	F	3'-6"		7'-10"	WD	FF	--	1	HM	P-2	--					1
126	F	3'-6"		7'-10"	HM	P-2	--	1	HM	P-2	--				1.5 HR	
127.1	F	3'-6"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1
127.2	F	3'-6"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1
128	F	3'-6"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	
131.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
131.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
132.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
132.2	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
133	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
134.1	FG	3'-0"	1'-6"	7'-10"	WD	FF	GL-2	5C	HM	P-2	GL-2					
134.2		8'-0"		8'-0"	PER MANUF.	FF	GL-2		PER MANUF.	PER MANUF	--					8
135.1	FG	3'-0"	1'-6"	7'-10"	WD	FF	GL-2	5D	HM	P-2	GL-2					
135.2	FG	3'-0"	1'-6"	7'-10"	WD	FF	GL-2	5B	HM	P-2	GL-2					
135A.1	FG	3'-0"		7'-10"	WD	FF	GL-2	1	HM	P-2	--					
135A.2	FG	3'-0"		7'-10"	WD	FF	GL-2	1	HM	P-2	--					
135A.3		3'-0"		5'-3"	PER MANUF.	FF	GL-2		PER MANUF.	PER MANUF.	--					6
135B		26'-11 3/8"		8'-4"	PER MANUF.	FF.	--		PER MANUF	PER MANUF.	--					7
136	F	3'-0"		7'-10"	WD	FF	--	9E	HM	P-2	GL-1 / GL-2					
201	F	3'-0"		7'-10"	WD	FF	--	9B	HM	P-2	GL-1 / GL-2					
202	F	3'-0"		7'-10"	WD	FF	--	9C	HM	P-2	GL-1 / GL-2					
203	F	3'-0"		7'-10"	WD	FF	--	9C	HM	P-2	GL-1 / GL-2					
204	F	3'-0"		7'-10"	WD	FF	--	9A	HM	P-2	GL-1 / GL-2					
205	F	3'-0"		7'-10"	WD	FF	--	8A	HM	P-2	GL-1 / GL-2					
206.1	F	3'-0"		7'-10"	WD	FF	--	9A	HM	P-2	GL-1 / GL-2					
206.2	F	3'-0"		7'-10"	WD	FF	--	9A	HM	P-2	GL-1 / GL-2					
207	F	3'-0"		7'-10"	WD	FF	--	9C	HM	P-2	GL-1 / GL-2					
208	F	3'-0"		7'-10"	WD	FF	--	10C	HM	P-2	GL-1 / GL-2					
220	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
221	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
231.1	F	1'-6"	3'-0"	7'-10"	WD	FF	--	5A	HM	P-2	GL-2					
231.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
232.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
232.2	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
232A.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
232A.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
233.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
233.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
233A	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
234.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
234.2	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
235.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	5A	HM	P-2	--					
235.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
236	F	3'-0"		7'-10"	WD	FF	--	10C	HM	P-2	GL-1 / GL-2					
301	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
302	F	3'-0"		7'-10"	WD	FF	--	9D	HM	P-2	GL-1 / GL-2					
303	F	3'-0"		7'-10"	WD	FF	--	10A	HM	P-2	GL-1 / GL-2					
305	F	3'-0"		7'-10"	WD	FF	--	9E	HM	P-2	GL-1 / GL-2					
306	F	3'-0"		7'-10"	WD	FF	--	9F	HM	P-2	--					
307	F	3'-0"		7'-10"	WD	FF	--	12	HM	P-2	GL-1 / GL-2					
308.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
308.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
309.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
309.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
309A	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
309B	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
310.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
310.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
312.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
312.2	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
312A	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
313	F	3'-0"		7'-10"	HM	P-2	--	1	HM	P-5	--				1 HR	
314.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
314.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
314A.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
314A.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
314B	F	3'-0"		7'-10"	HM	P-2	--	1	HM	P-5	--				1 HR	
314C	F	3'-0"		7'-10"	HM	P-2	--	1	HM	P-5	--				1 HR	
315	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
316.1	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
316.2	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
317	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
318.1	F	3'-0"	1'-6"	7'-10"	WD	FF	--	2	HM	P-2	--					
318.2	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-2	--					
319	F	3'-0"		7'-10"	WD	FF	--	4A	HM	P-2	GL-2					
320	F	3'-0"		7'-10"	WD	FF	--	4A	HM	P-2	GL-2					
400	F	3'-0"		7'-10"	WD	FF	--	1	HM	P-5	--					
S101.1	FG2	3'-0"		7'-10"	AL	P-3	IG-2	SF14A	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	8		1
S101.2	F	4'-0"		7'-10"	HM	P-2	--	2	HM	P-2	--				1 HR	1, 4, 5
S102.1	F	3'-6"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1, 4, 5
S102.2	F	3'-0"		7'-10"	HM	P-5	IG-2	SF7	HM	P-5	--	1	2	4		1
S103	F	3'-6"		7'-10"	HM	P-4	--	1	HM	P-4	--	1	3	4		1
S201	F	4'-0"		7'-10"	HM	P-2	--	2	HM	P-2	--				1 HR	1 ,4, 5
S301	F	4'-0"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1, 4, 5
S302	F	4'-0"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1 ,4 5
S353	F	4'-0"		7'-10"	HM	P-2	--	1	HM	P-2	--				1 HR	1, 4, 5
V101.1	FG2	3'-0"		7'-10"	AL	P-3	IG-2	SF8	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	8		1
V101.2	FG2	3'-0"	3'-0"	7'-10"	AL	P-3	IG-2	SF17	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	8		1, 2
V102	FG2	3'-0"	3'-0"	7'-10"	AL	P-3	IG-2	SF16	AL	P-3	IG-1 / IG-2	PER MANUF	PER MANUF	8		1, 2

DOOR CODED NOTES

1. PANIC HARDWARE
2. ADA PUSH BUTTON
3. NOT USED
4. FIRE RATED GLAZING RELITE ABOVE
5. INTEGRATED DOOR ASSEMBLY
6. SIDE FOLDING ACCORDIAN DOOR
7. 8 PANEL 2 TRACK SLIDDING WB SYSTEM
8. OVERHEAD SECTIONAL DOOR (OHSD)

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9411 REGISTERED ARCHITECT
BECKY JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

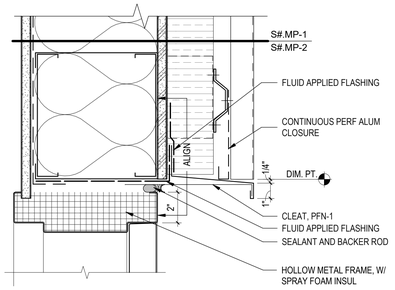
#	Date	Description

DOOR AND FRAME SCHEDULE

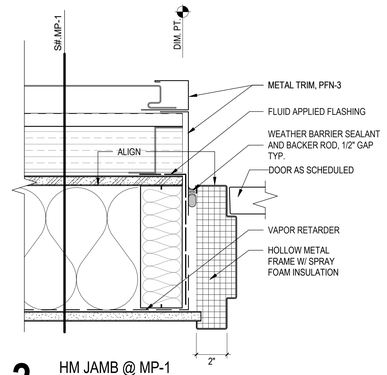
PRCNC20221036

A601

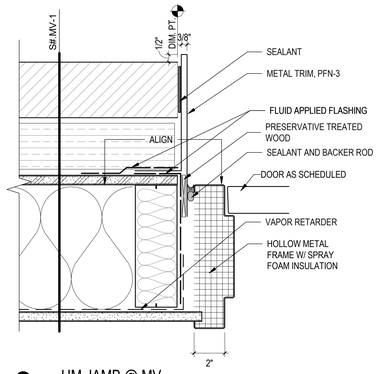
BUILDING PERMIT SET



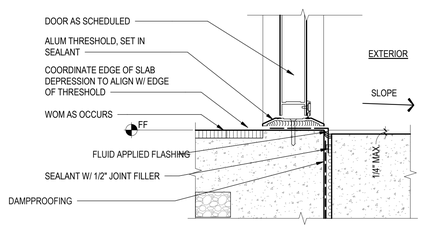
1 HM HEAD @ MP-#
SCALE: 3" = 1'-0"



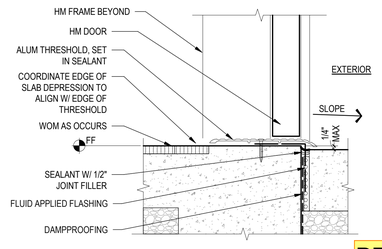
2 HM JAMB @ MP-1
SCALE: 3" = 1'-0"



3 HM JAMB @ MV
SCALE: 3" = 1'-0"



8 SF AT THRESHOLD
SCALE: 3" = 1'-0"



4 HM DOOR THRESHOLD
SCALE: 3" = 1'-0"

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9411
REGISTERED ARCHITECT
BRIAN JEAN BARNHART
STATE OF WASHINGTON

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	SW

Revisions

#	Date	Description

DETAILS - EXTERIOR DOOR

PRCNC20221036

A611

BUILDING PERMIT SET

SINGLE PANE GLASS

- GL-1 CLEAR HEAT STRENGTHEND 1/4"
- GL-2 CLEAR TEMPERED 1/4"
- GL-3 NON VISION (SPANDREL) 1/4"
- GL-4 CLEAR TEMPERED LAMINATED 1/4"
- GL-5 COLORED ACID ETCHED GLASS
- GL-6 CLEAR SINGLE-SIDED ACID ETCHED GLASS
- GL-7 CLEAR DOUBLE-SIDED ACID ETCHED GLASS

FIRE RATED GLASS

- FRG-1 60 MIN RATING

DOUBLE PANE INSULATED GLASS

- IG-1 HEAT STRENGTHENED / HEAT STRENGTHENED
- IG-2 TEMPERED / TEMPERED
- IG-3 TEMPERED / NON VISION (SPANDREL)

GEN. WINDOW/ DOOR NOTES

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2. SEE DOOR SCHEDULE FOR DOOR GLAZING AND DOOR DETAIL LOCATIONS.
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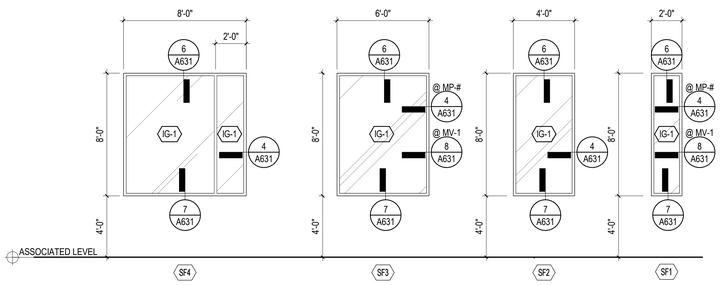
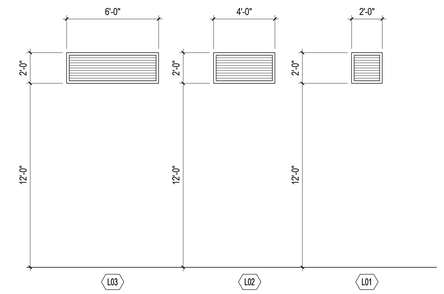
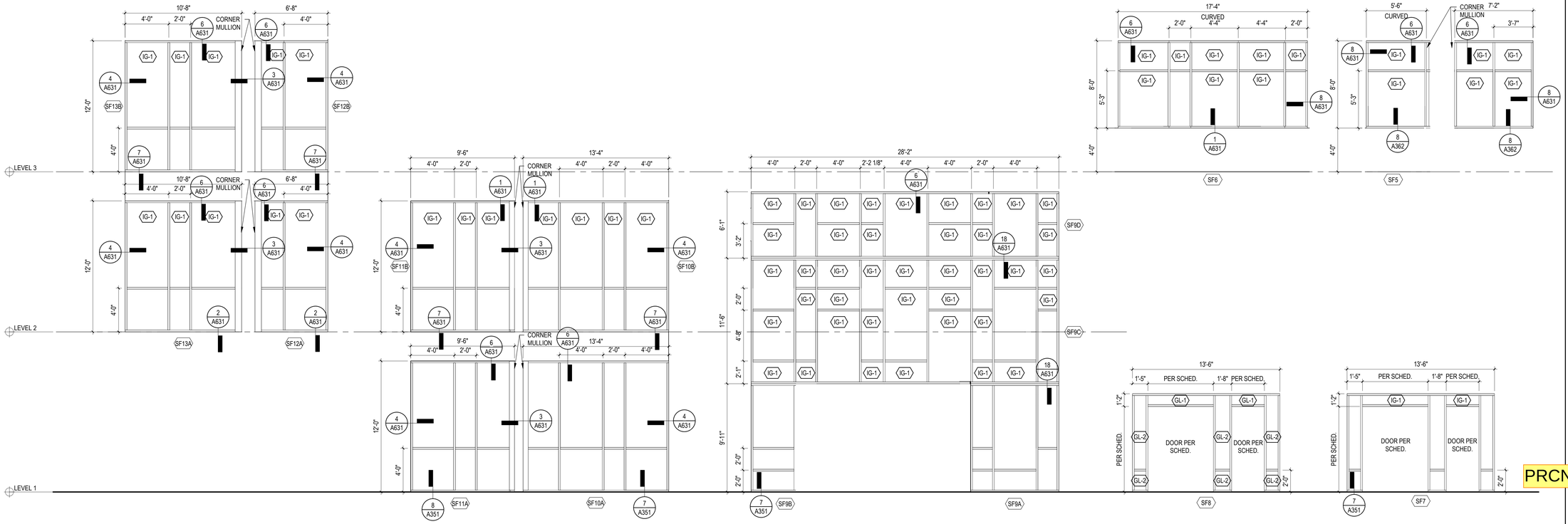


STOREFRONT TYPES



LOUVER TYPES



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PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	BCT
Checked By:	JL

Revisions

#	Date	Description

STOREFRONT & LOUVER TYPES

PRCNC20221036

A621

BUILDING PERMIT SET

SINGLE PANE GLASS

- GL-1 CLEAR HEAT STRENGTHEND 1/4"
- GL-2 CLEAR TEMPERED 1/4"
- GL-3 NON VISION (SPANDREL) 1/4"
- GL-4 CLEAR TEMPERED LAMINATED 1/4"
- GL-5 COLORED ACID ETCHED GLASS
- GL-6 CLEAR SINGLE-SIDED ACID ETCHED GLASS
- GL-7 CLEAR DOUBLE-SIDED ACID ETCHED GLASS

FIRE RATED GLASS

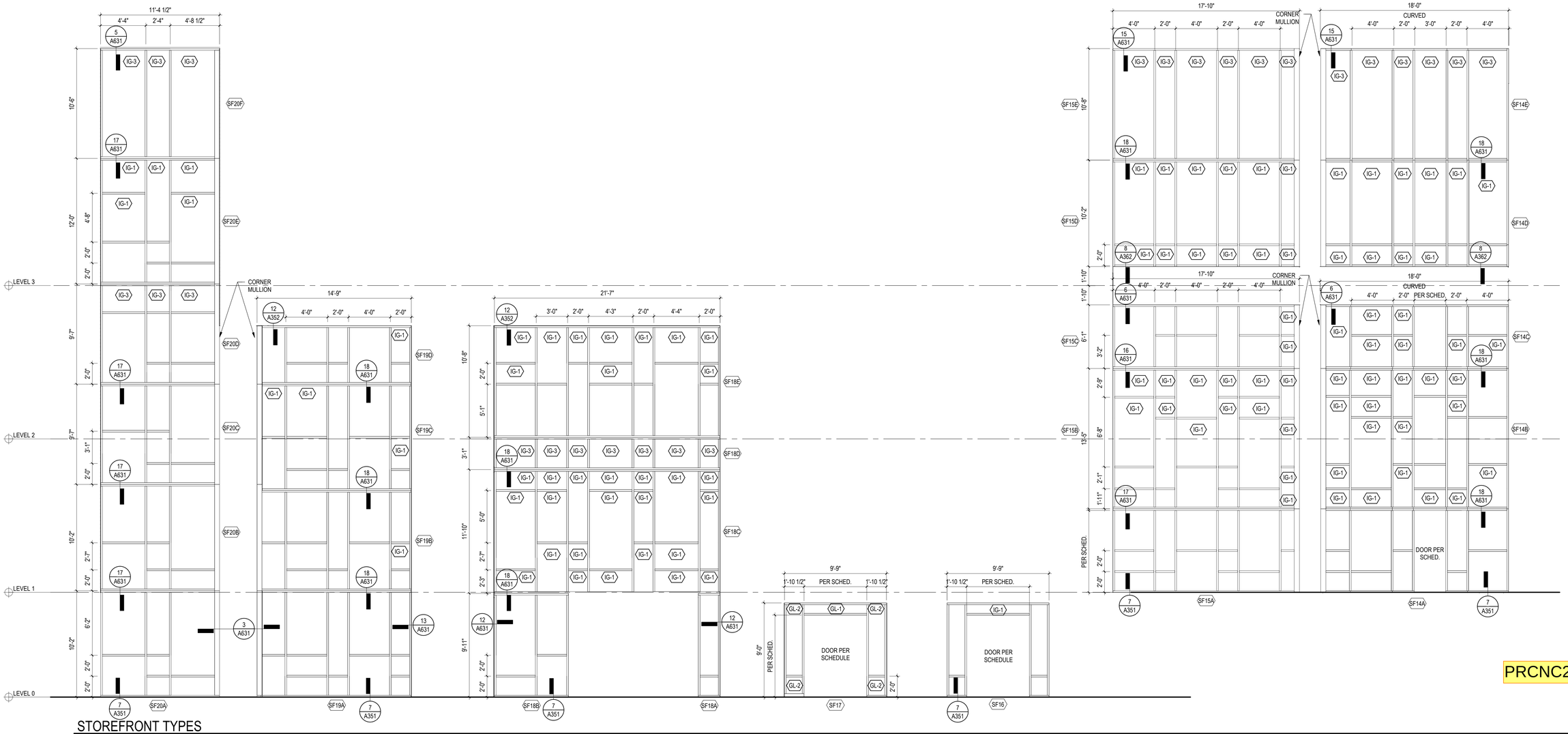
- FRG 60 MIN RATING

DOUBLE PANE INSULATED GLASS

- IG-1 HEAT STRENGTHENED / HEAT STRENGTHENED
- IG-2 TEMPERED / TEMPERED
- IG-3 TEMPERED / NON VISION (SPANDREL)

GEN. WINDOW/ DOOR NOTES

1. REFER TO REFLECTED CEILING PLANS FOR LOCATIONS AND TYPE OF WINDOW SHADES AND BLINDS.
2. SEE DOOR SCHEDULE FOR DOOR GLAZING AND DOOR DETAIL LOCATIONS.
3. ALL ALUMINUM STOREFRONT TO RECEIVE GLAZING TYPE IG-2 UNO. HOLLOW METAL RELITES TO RECEIVE GLAZING TYPE GL-2 UNO.
4. VERIFY DOOR FRAME TYPE, PANEL, HARDWARE, & DIMENSIONS WITH MANUFACTURER.
5. IN ADDITION TO DETAILS REFERENCED ON SCHEDULES & TYPES, SEE FLASHING DETAILS & CONDUIT ROUTING ALTERNATIVES.
6. REFER TO FINISH & COLOR SCHEDULE ON GEN A.601 FOR DOOR FINISHES.
7. DOOR DETAILS NOT REFERENCED ON WINDOW FRAME ELEVATIONS. REFER TO DOOR SCHEDULE FOR REFERENCED DETAILS.
8. FOR CLADDING INFORMATION REFER TO DOOR, WINDOW DETAILS AND EXTERIOR ELEVATIONS.
10. DIMENSIONS TO OUTSIDE OF FRAME AND CENTERLINE OF MULLIONS, UNO.
11. 2" HM DOOR FRAMES AND PERIMETER RELITE FRAMES, 1" HM MULLIONS (4" DEEP) WITHIN PERIMETER, 4" HM FRAMES AT SILL, TYP UNO.
12. FENESTRATION PRODUCTS SHALL BE LABELED WITH NFRC U-FACTOR, SHGC, VT AND LEAKAGE RATING.
13. MAXIMUM U-VALUE OF 0.40 AT OPERABLE FENESTRATION; 0.38 AT FIXED FENESTRATION; 0.60 FOR GLAZING DOORS; 0.37 FOR OPAQUE DOORS: U-FACTOR AS DETERMINED, CERTIFIED, AND LABELED IN CONFORMANCE TO NFRC 100 BY INDEPENDENT AGENCY LICENSED BY NFRC. EXCEED WASHINGTON STAT ENERGY CODE PER C406.10 ENHANCED ENVELOPE PERFORMANCE.



STOREFRONT TYPES

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9411 REGISTERED ARCHITECT
BRIAN JAN BARNHART
STATE OF WASHINGTON

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STOREFRONT TYPES

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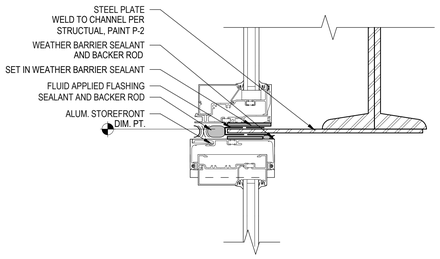
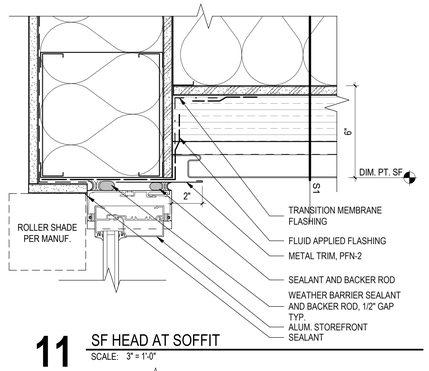
A622

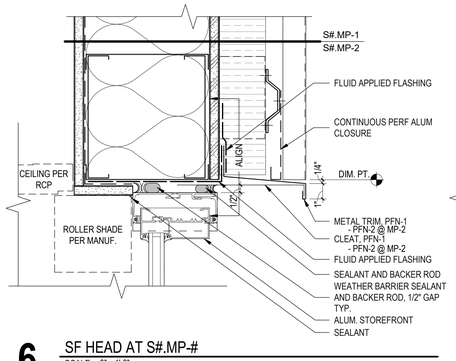
BUILDING PERMIT SET



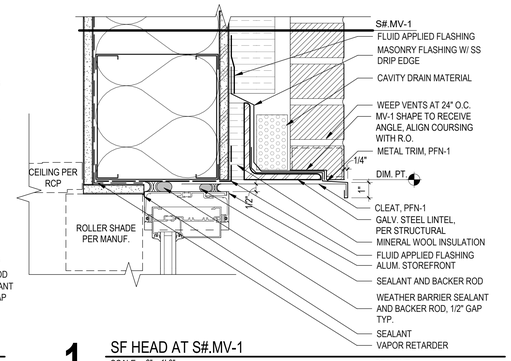
16 SF INTERMEDIATE AT B.O. CHANNEL
SCALE: 3" = 1'-0"



11 SF HEAD AT SOFFIT
SCALE: 3" = 1'-0"



6 SF HEAD AT S#.MP-#
SCALE: 3" = 1'-0"



1 SF HEAD AT S#.MV-1
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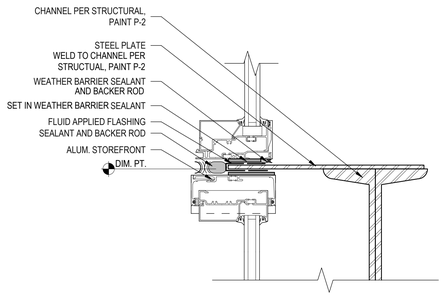

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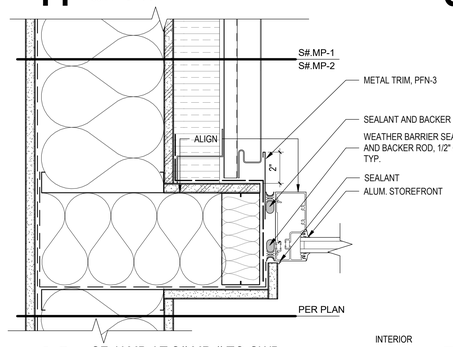
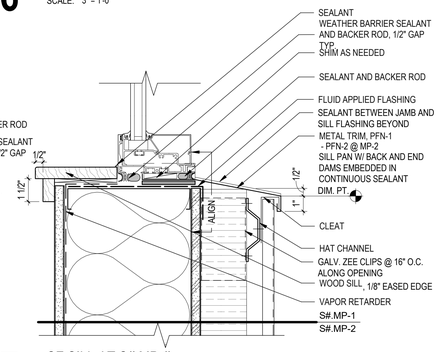
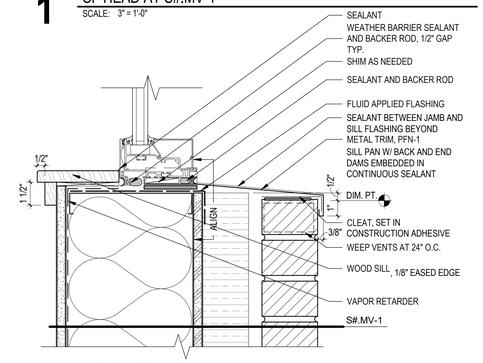
SCALE: 3" = 1'-0"



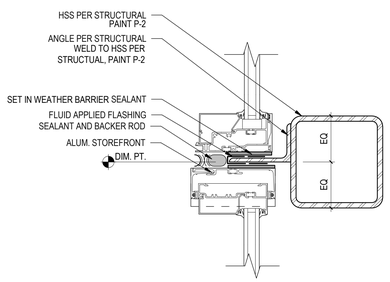
12 SF JAMB AT S#.MP-# TO GWB
SCALE: 3" = 1'-0"



7 SF SILL AT S#.MP-#
SCALE: 3" = 1'-0"



2 SF SILL AT S#.MV-1
SCALE: 3" = 1'-0"



18 SF INTERMEDIATE AT HSS
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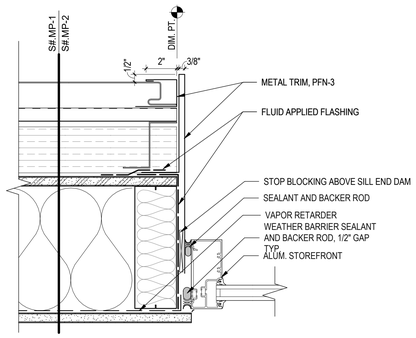
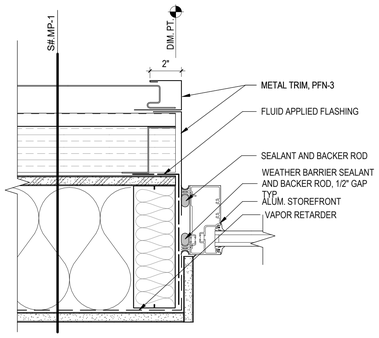
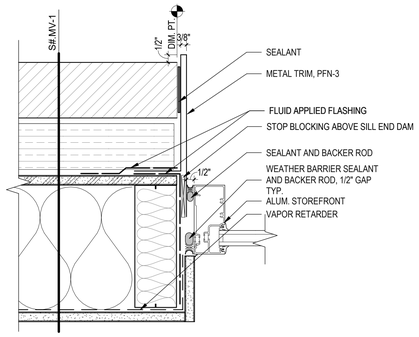


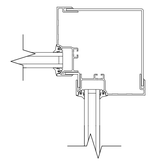
13 SF JAMB AT S#.MP-# AT STAIR
SCALE: 3" = 1'-0"



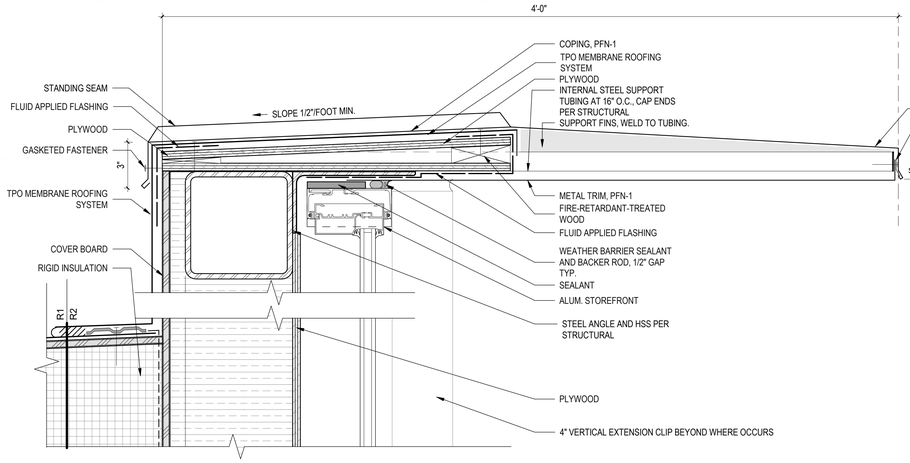
8 SF JAMB AT S#.MP-#
SCALE: 3" = 1'-0"



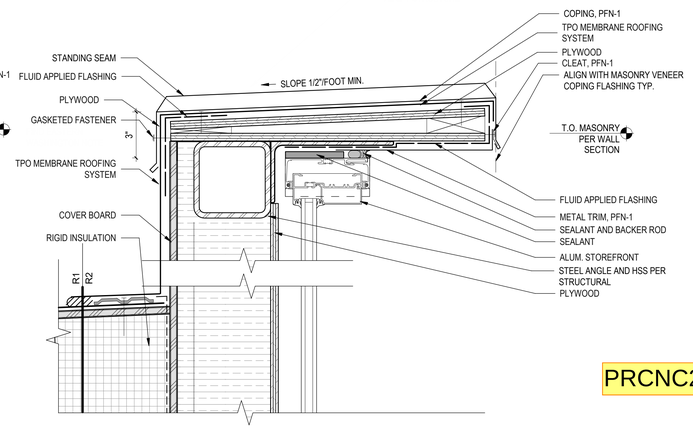
4 SF JAMB AT S#.MV -1
SCALE: 3" = 1'-0"



3 SF TO SF EXTERIOR CORNER
SCALE: 3" = 1'-0"



15 SF PARAPET HEAD AT WEST STAIR
SCALE: 3" = 1'-0"



5 SF PARAPET HEAD AT EAST STAIR
SCALE: 3" = 1'-0"

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9411 REGISTERED ARCHITECT BRIAN JAN BARNHART STATE OF WASHINGTON

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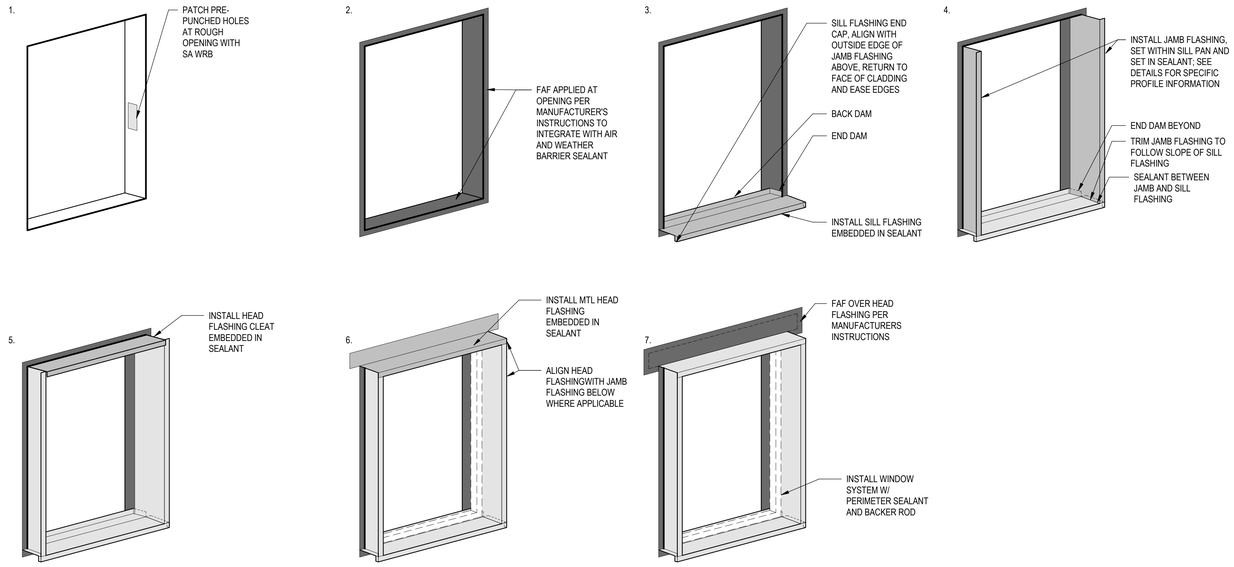
DETAILS - LOUVER AND WINDOW

PRCNC20221036

A631

BUILDING PERMIT SET



17 R.O. SEQUENCING CONFIGURATION AND GENERAL NOTES
SCALE: 1/2" = 1'-0"

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DETAILS - LOUVER AND WINDOW

PRCNC20221036

A632

BUILDING PERMIT SET

GENERAL NOTES

1. ALL WALL BENCHTOPS AND MOVABLE TABLES SHALL BE 30" DEEP INCLUDING WALL BENCH BACK SPLASH (UNLESS OTHERWISE NOTED).
2. ALL ISLAND/PENINSULA BENCHTOPS SHALL BE 60" DEEP (UNLESS OTHERWISE NOTED).
3. ALL BENCHES AND TABLES SHALL BE 36" HIGH (UNLESS OTHERWISE NOTED).
4. ALL BENCH/TABLE TOPS TO BE 1" THICK EPOXY RESIN (UNLESS OTHERWISE NOTED).
5. ALL BACK AND SIDE SPLASHES TO BE 3/4" THICK AND 4" HIGH, PIPEDROP CURBS TO BE 3/4" THICK AND 5" HIGH (UNLESS OTHERWISE NOTED).
6. PROVIDE SIDESPLASHES AT ALL BENCH TOPS AGAINST FUME HOODS AND/OR ADJACENT WALLS.
7. OVERALL LENGTH OF BENCHTOPS SHALL BE DETERMINED BY CASEWORK SIZES AND DIMENSIONS AS INDICATED ON PLANS. TOPS SHALL OVERHANG 3/4" AT EACH END AND 1" FROM FRONT OF BASE CABINETS AND TABLES. WHEN OVERALL DIMENSIONS ARE GIVEN, 3/4" OVERHANG IS NOT INCLUDED.
8. ALL CASEWORK, FUME HOODS AND ANY OTHER FURNISHINGS WITH EXPOSED-TO-VIEW BACKS AND SIDES SHALL BE FINISHED.
9. INSTALL CLOSURE PANELS BETWEEN BACK OF HOODS AND WALLS AT EXPOSED ENDS AND BETWEEN BASE CABINETS AND/OR HOODS THAT ARE SET BACK TO BACK. FOR BASE CABINETS, PROVIDE EXTENDED ENDS AT THESE LOCATIONS.
10. ALL PENETRATIONS THROUGH BENCHTOP SHALL BE SEALED WITH SEALANT.
11. BACKS OF COUNTERTOPS AND SPLASHES AGAINST WALLS SHALL BE SEALED TO THE WALL WITH SEALANT.
12. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
13. ARCHITECT OR OWNER'S REPRESENTATIVE WILL SELECT COLORS FOR ALL COMPONENTS OF PROJECT INDICATED ON THESE DRAWINGS. COLOR SELECTION WILL BE FROM THE CASEWORK MANUFACTURER'S STANDARD COLOR LINE U.O.N.
14. FREE STANDING SHELVING AND CASEWORK LESS THAN 18" DEEP SHALL BE SECURED TO PREVENT TIPPING. SUBMIT SHOP DRAWINGS OF ATTACHMENT PRIOR TO INSTALLATION.
15. SAFETY SHOWER/EYEWASH UNITS SHALL COMPLY WITH ANSI STANDARDS FOR USABILITY BY THE PHYSICALLY DISABLED. SAFETY SHOWER/EYEWASH UNITS SHALL BE FURNISHED UNDER DIVISION 11 FOR INSTALLATION UNDER DIVISION 22.
16. FOR LABORATORY SERVICE FITTING TYPES, LOCATIONS AND ORDER, SEE LABORATORY FURNISHINGS DRAWINGS. THESE FITTINGS SHALL BE PROVIDED UNDER DIVISION 11, FOR INSTALLATION UNDER DIVISION 22 U.O.N. REFER TO DETAILS AND SPECIFICATIONS FOR ACTUAL FITTINGS.
17. AT ALL TALL FREESTANDING VENTED, CORROSIVE, OR SOLVENT STORAGE CABINETS, VENT PIPING WILL BE PROVIDED AND INSTALLED FROM THE CABINET POINT OF CONNECTION TO THE EXHAUST DUCT SYSTEM PER DIVISION 23.
18. WHERE NO FUME HOOD OCCURS ADJACENT TO UNDER COUNTER CORROSIVE STORAGE OR SOLVENT STORAGE CABINETS, ROUTE VENT PIPE (IN PIPE CHASE) UP NEAREST PIPE DROP ENCLOSURE TO EXHAUST DUCT SYSTEM FOR CONNECTION UNDER DIVISION 23.
19. WHERE FUME HOOD OCCURS ADJACENT TO UNDER COUNTER CORROSIVE STORAGE CABINETS, ROUTE VENT PIPE (IN PIPE CHASE) TO FUME HOOD AND EXTEND 4" ABOVE FUME HOOD WORK SURFACE BEHIND BAFFLE.
20. SNORKEL EXHAUST EQUIPMENT SHOWN ON THESE DRAWINGS SHALL BE PROVIDED UNDER DIVISION 11. DIVISION 23 SHALL PROVIDE DUCTWORK ROUTING AND MAKE FINAL CONNECTION TO SNORKEL EQUIPMENT.
21. LOCATION OF EQUIPMENT, SUCH AS FUME HOODS, OVERHEAD SERVICE CARRIERS, BRACES OR ANY OTHER ITEMS THAT MAY INTERFERE WITH LIGHTING, STRUCTURAL OR MECHANICAL SYSTEMS, SHALL BE CAREFULLY COORDINATED. NOTIFY OWNER'S REPRESENTATIVE OF DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.
22. UNLESS OTHERWISE NOTED, ALL MISCELLANEOUS CHANNELS, BRACKETS AND FITTINGS INDICATED ON ALL LABORATORY FURNISHINGS DRAWINGS SHALL BE SUPPLIED, INSTALLED AND PAINTED UNDER DIVISION 11.
23. CONTRACTOR SHALL EXAMINE ALL LABORATORY FURNISHINGS PLANS AND COORDINATE WITH REFLECTED CEILING PLANS FOR PROPER CEILING HEIGHTS & PIPE DROP ENCLOSURE HEIGHTS AND LOCATIONS.
24. OVERHEAD SERVICE CARRIERS, HEAVY DUTY UNISTRUT AND OTHER STRUCTURALLY ANCHORED AND SUSPENDED DEVICES WHICH REQUIRE COORDINATION WITH OTHER TRADES SHALL BE THE RESPONSIBILITY OF THIS DIVISION (UNLESS OTHERWISE NOTED). ADDITIONAL FRAMING MAY BE REQUIRED TO ACCOMMODATE ANCHORAGE AROUND DUCTWORK OR OTHER OBSTRUCTIONS.
25. ALL BULLETIN BOARDS, MARKER BOARDS, CHALKBOARDS, PROJECTION SCREENS, COAT RACKS AND FIRE EXTINGUISHERS ARE INDICATED ON THE "LF" DRAWINGS FOR COORDINATION ONLY.
26. ELECTRICAL DEVICES SHALL BE PROVIDED UNDER DIVISION 26. ELECTRICAL DEVICES SHOWN ON THE "LF" DRAWINGS ARE FOR THE LOCATION OF CASEWORK CUTOUTS. DEVICES SHOWN AT CONTROLLED ENVIRONMENTAL ROOMS, FUME HOODS AND LAMINAR FLOW HOODS SHALL BE PROVIDED BY THE EQUIPMENT SUPPLIER.
27. ALL WALL MOUNTED RACEWAYS SHALL BE MOUNTED 42" A.F.F. TO THE BOTTOM OF THE RACEWAY U.O.N.
28. INTEGRAL OR TOP SET BASE UNDER DIVISION 9. REFER TO ARCHITECTURAL FINISH DRAWINGS AND SPECIFICATIONS.
29. MOBILE WORKSTATION UNITS (MWS) & ELECTRONICS BENCH UNITS (EB) SHALL BE FACTORY PRE-WIRED TO PLUG WHIPS AS SHOWN ON THE DRAWINGS.

TYPICAL ABBREVIATIONS

(NOTE: NOT ALL ABBREVIATIONS SHOWN ARE USED. REFER TO FLOOR PLANS FOR ACTUAL ABBREVIATION TYPES.)

ADA	AMERICAN DISABILITIES ACT
A.F.F.	ABOVE FINISHED FLOOR
ARCH	ARCHITECTURAL DOCUMENTS
CFM	CUBIC FEET/MINUTE
CENT	CENTRIFUGE
CLG.	CEILING
CLR.	CLEARANCE
DIA	DIAMETER
DIV.	DIVISION
EQUIP	EQUIPMENT
FZR	FREEZER
GA.	GAUGE
G.C.	GENERAL CONTRACTOR
G.W.	GLASSWARE WASHER
H.D.	HEAVY DUTY
INC	INCUBATOR
MAX.	MAXIMUM
MIN.	MINIMUM
MTD.	MOUNTED
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OFOI	OWNER FURNISHED, OWNER INSTALLED
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
O.H.	OVERHEAD
OHSC	OVERHEAD SERVICE CARRIER
PH	PHASE
REF	REFRIGERATOR
SIM.	SIMILAR
SPEC	SPECIFICATIONS
ST.STL.	STAINLESS STEEL
TEMP	TEMPERATURE
TYP.	TYPICAL
UC	UNDER COUNTER
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF

LABORATORY SERVICE ABBREVIATIONS

Ar	ARGON
CA	COMPRESSED LAB AIR (100 PSIG)
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CO2	CARBON DIOXIDE
CW	POTABLE COLD WATER
DI	DEIONIZED WATER
DH	DRENCH HOSE
EW	EYEWASH
He	HELIUM
HW	POTABLE HOT WATER
ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
LA	LABORATORY AIR (15 PSIG)
LG	LABORATORY GAS
LV	LABORATORY VACUUM
LPS	LOW PRESSURE STEAM
MPS	MEDIUM PRESSURE STEAM
N2	NITROGEN GAS
PCWS	PROCESS COOLING WATER SUPPLY
PCWR	PROCESS COOLING WATER RETURN
PW	PURIFIED WATER
RO	REVERSE OSMOSIS WATER
SG	SPECIAL GAS
SS	SAFETY SHOWER
(HB)	HOSE BIBB
(IR)	INFRA-RED
__(V)	SERVICE VALVE - PROVIDED UNDER DIV. 22
__(VB)	VALVE BOX - PROVIDED UNDER DIV. 22

LABORATORY SYMBOLS LEGEND

	SYMBOL LEGEND	DESCRIPTION	DETAIL
1		PIPE DROP ENCLOSURE (4 LF303) (5 LF303)	6 LF303
2		DRYING RACK	8 LF303
3		ADJUSTABLE WALL SHELVES (3 TIERS U.O.N.)	1 LF304
4		ADJUSTABLE ISLAND BENCH SHELVING (3 TIERS U.O.N.)	2 LF304
5		CYLINDER RESTRAINT	6 LF305
6A		SNORKEL FUME EXHAUST - SEE EXHAUST SCHEDULE	5 LF301
6B		SNORKEL EXHAUST - ATOMIC ABSORPTION - SEE EXHAUST SCHEDULE	6 LF301
7		OVERHEAD SERVICE CARRIER	9 LF304
8	SS EW	SAFETY SHOWER WITH EYEWASH UNIT	1 LF401
9		HEAVY DUTY ADJUSTABLE ISLAND SHELVES (5 TIERS U.O.N.)	3 LF304
10A		GROMMET	8 LF304
10B		BENCHTOP SLEEVE	8 LF301
12		OVERHEAD UNISTRUT CEILING MOUNTED CHANNEL	4 LF305
13		PROJECTION SCREEN & CEILING MOUNTED PROJECTOR (SEE ARCHITECTURAL DOCUMENTS, SHOWN FOR COORDINATION ONLY)	
14		MARKER BOARD (SEE ARCHITECTURAL DOCUMENTS, SHOWN FOR COORDINATION ONLY)	
15		HEAVY DUTY ADJUSTABLE SHELVES: WALL MOUNTED - (5 TIER U.O.N.)	4 LF304
16	WCxx	WALL CABINET - SEE CASEWORK MENU	
17	TAxx	TALL STORAGE CABINET - SEE CASEWORK MENU	
18	MT	MOVABLE TABLE - SEE CASEWORK MENU	
19		SINGLE SIDED HEAVY DUTY ADJUSTABLE ISLAND SHELVES (5 TIERS U.O.N.)	SIM. 3 LF304
20		SEDIMENT TRAP - (BY DIV. 22, SHOWN FOR COORDINATION ONLY)	
21		FIXED REAGENT SHELVES - (1 TIER U.O.N.)	5 LF304
		LEG POST UNDER BENCH/TABLE TOP	
	6'CFH	CHEMICAL FUME HOOD - SEE EXHAUST SCHEDULE	2 LF301
	6'ACFH +34"	ADA CHEMICAL FUME HOOD - SEE EXHAUST SCHEDULE	1 LF301
	EQUIP SPACE	OWNER FURNISHED, OWNER INSTALLED EQUIPMENT	
	FS	FLOOR SINK (SHOWN FOR COORDINATION ONLY)	
		EPOXY RESIN SINK - SEE SINK SCHEDULE	
		CUP SINK - SEE SINK SCHEDULE	
		STAINLESS STEEL SCULLERY SINK - SEE SINK SCHEDULE	8 LF305
		ADA COMPLIANT AREA	
	U.C. GLASS WSHR	UNDERCOUNTER GLASSWARE WASHER	

LABORATORY BENCHTOP SCHEDULE

E EPOXY RESIN BENCHTOP S STAINLESS STEEL BENCHTOP P PLASTIC LAMINATE BENCHTOP

+30", +34", +36" INDICATES BENCHTOP HEIGHT ABOVE FINISHED FLOOR

NOTE:

FOR BENCHTOP TRANSITION HEIGHT REFER TO DETAILS: 9 LF303

DETAIL SYMBOLS LEGEND

DETAIL NUMBER / SHEET NUMBER

SECTION NUMBER / SHEET NUMBER

ELEVATION NUMBER / SHEET NUMBER

LABORATORY ELECTRICAL GENERAL NOTES

1. NOTES AND SYMBOLS SHOWN ON THESE DRAWINGS INDICATING LIGHTING EQUIPMENT AND REQUIREMENTS FOR LABS AND LAB SUPPORT AREAS, INCLUDING DARK ROOM SAFELIGHTS, 'IN-USE' WARNING LIGHTS, DIMMABLE LIGHTING, TASK LIGHTING AND ALL SPECIAL LIGHTING REQUIREMENTS ARE INTENDED TO PROVIDE COORDINATION INFORMATION FOR USE BY THE ARCHITECT AND BUILDING ELECTRICAL ENGINEER, TO BE IMPLEMENTED INTO THE RESPECTIVE DISCIPLINE'S DESIGN DOCUMENTS. THIS INFORMATION WILL NOT APPEAR IN THE LABORATORY FURNISHINGS CONSTRUCTION DOCUMENTS. ALL LIGHTING (EXCEPT LIGHTING FIXTURES IN FUME HOODS AND ENVIRONMENTAL ROOMS) SHALL APPEAR ON THE BUILDING ELECTRICAL DRAWINGS AND SPECIFICATIONS.
2. ALL FUME HOOD INTERNAL LIGHTING FIXTURES, ELECTRICAL DEVICES, SWITCHES, RECEPTACLES AND OTHER COMPONENTS SHALL BE PROVIDED, INSTALLED AND FACTORY PRE-WIRED TO A JUNCTION BOX AT AN ACCESSIBLE LOCATION AT THE TOP OF THE HOOD ASSEMBLY UNDER DIVISION 11 FUME HOOD MANUFACTURER.
3. PROVIDE A FLUSH MOUNTED WALL J-BOX CONNECTION AT +96"- FOR CONNECTION TO FUME HOOD UNDER DIVISION 26
4. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE, LAB AND LAB SUPPORT BRANCH CIRCUIT PANELS SHOULD BE A MINIMUM BUS RATING OF 225 AMPS, 42 POLES, AND SHALL INCLUDE A MAIN CIRCUIT BREAKER OF MIN. 150 AMP RATING. PANEL FEEDER CONDUIT SHALL BE SIZED FOR 225 AMP CONDUCTORS. PANEL FEEDER CONDUCTORS SHALL BE MIN. 150 AMP RATING (225 AMP PREFERRED).
5. STANDBY POWER (SB) INDICATED ON THE LAB DRAWINGS IS OPTIONAL STANDBY POWER (N.E.C. ART. 702), AND IS NOT INTENDED NOR PROVIDED AS A PART OF THE LIFE-SAFETY OR LEGALLY REQUIRED EMERGENCY POWER SYSTEM (N.E.C. ART. 700, 701). IT IS RECOMMENDED THAT STANDBY POWER BE SERVED FROM A SEPARATE STANDBY DISTRIBUTION SYSTEM, INCLUDING SEPARATE AUTOMATIC TRANSFER SWITCH(ES).
6. AT TELEPHONE AND DATA OUTLET LOCATIONS INDICATED ON THE LAB DRAWINGS, DIVISION 26 SHALL PROVIDE ALL SURFACE MOUNTED RACEWAYS, OUTLET BOXES AND CONDUITS WITH PULL-WIRES TO THE NEAREST CABLE TRAY (USUALLY IN ACCESSIBLE CEILING CORRIDOR AREA), OR DIRECTLY TO THE NEAREST TEL/DATA EQUIPMENT ROOM. EXACT CONDUIT QUANTITIES, SIZES AND ROUTING TO BE DETERMINED BY TEL/DATA SYSTEM DESIGNER.
7. BIOLOGICAL SAFETY CABINETS AND LAMINAR FLOW HOODS SHALL BE FACTORY PROVIDED WITH 120 VOLT CORD AND PLUG ASSEMBLY. PROVIDE 120 VOLT RECEPTACLE AT LOCATION COORDINATED WITH EQUIPMENT REQUIREMENTS.
8. BENCHTOP ELECTRICAL PEDESTALS SHALL BE RAISED 1" TO 2" TO ACCOMMODATE AC ADAPTERS AT BOTTOM PLUG.

ELECTRICAL SYMBOLS

- 120V, 1PH, 20A SINGLE RECEPTACLE/SWITCH
- 120V, 1PH, 20A DUPLEX RECEPTACLE
- 208V, 1PH, 30A RECEPTACLE U.O.N.
- 208V, 3PH, 30A RECEPTACLE U.O.N.
- SPECIAL POWER RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- PEDESTAL BOX
- SURFACE RACEWAY
- FLOOR RECESSED DUPLEX RECEPTACLE
- FLOOR RECESSED DATA BOX
- FLOOR RECESSED TELEPHONE/DATA BOX
- CEILING MTD. DUPLEX RECEPTACLE
- CEILING MTD. DATA BOX
- CEILING MTD. TELEPHONE/DATA BOX
- # DATA OUTLET (#=QTY OF JACKS @ DEVICE. IF NO # THEN 1 JACK)
- TELEPHONE/DATA OUTLET
- TELEPHONE OUTLET
- EXTERNAL DISCONNECT
- J JUNCTION BOX
- ELECTRICAL PANEL
- $ SINGLE POLE SWITCH
- INSTRUMENT GROUND
- PLUG-IN BUS DUCT
- WP WEATHERPROOF OUTLET
- SB STANDBY POWER
- LIGHT FIXTURE
- W WARNING LIGHT
- S SAFE LIGHT
- XFMR TRANSFORMER
- EP EXPLOSION PROOF OUTLET
- TL TWIST LOCK
- D DEDICATED CIRCUIT
- EMERGENCY BUTTON

LABORATORY PLUMBING & MECHANICAL GENERAL NOTES

1. ALL LABORATORY SERVICE FITTINGS AND SINKS INCLUDING TAILPIECES SHALL BE PROVIDED UNDER DIVISION 11 FOR INSTALLATION AND CONNECTION UNDER DIVISION 22. SINK TRAPS ARE PROVIDED UNDER DIVISION 22.
2. ALL SERVICE FITTINGS AT FUME HOODS SHALL BE PRE-PIPED TO 6" ABOVE THE FUME HOOD UNDER DIVISION 11. 'P' TRAP AND WASTE PIPING FOR CUPSINKS AT FUME HOODS SHALL BE PROVIDED UNDER DIVISION 22.
3. AT CONTROLLED TEMPERATURE ROOM COMPRESSORS DIVISION 23 SHALL PROVIDE CHILLED WATER AND CONNECTION TO COMPRESSOR. ALL OTHER PIPING REQUIRED SHALL BE PROVIDED UNDER DIVISION 22. (WATER COOLING UNITS ONLY)
4. AT FUME HOODS REQUIRING VAV CONTROLS, BLOCKOUTS WILL BE FACTORY PREPARED BY THE MANUFACTURER FOR CONTROLS AND ALARMS PROVIDED UNDER DIVISION 23.
5. AT ALL VENTED TALL FLAMMABLE STORAGE CABINETS SHOWN ON THESE DRAWINGS DIVISION 23 SHALL PROVIDE ALL VENT PIPING, OF SIZE INDICATED ON THE LABORATORY FURNISHINGS DRAWINGS, FROM THE CABINET TO THE FUME EXHAUST DUCT SYSTEM ABOVE THE CEILING UNDER DIVISION 23.
6. AT ALL SOLVENT STORAGE CABINETS BELOW BENCHTOPS AND/OR FUME HOODS VENT PIPING WILL BE PROVIDED TO 6" ABOVE THE PIPE DROP ENCLOSURE AND/OR FUME HOOD BY DIVISION 11 FOR CONTINUOUS AND HARD CONNECTION TO THE EXHAUST DUCT SYSTEM ABOVE THE CEILING UNDER DIVISION 23.
7. DETAILS FOR MANIFOLDING OF GAS CYLINDERS SHALL BE SHOWN ON THE LABORATORY PLUMBING CONSTRUCTION DRAWINGS.
8. FLOOR DRAINS AND FLOOR SINKS SHOWN ON THESE DRAWINGS ARE REQUIRED FOR LABORATORY EQUIPMENT ONLY AND ARE SHOWN TO PROVIDE COORDINATION INFORMATION FOR THE MECHANICAL ENGINEER. FLOOR DRAINS AND FLOOR SINKS WILL NOT APPEAR ON THE LABORATORY FURNISHING CONSTRUCTION DRAWINGS, THESE SHALL BE PROVIDED UNDER DIVISION 22.
9. SAFETY SHOWER/EYEWASH UNITS AND DRENCH HOSES SHOWN ON THESE DRAWINGS WILL BE PROVIDED UNDER DIVISION 11. TEMPERED POTABLE WATER, PIPING, AND CONNECTION TO THESE UNITS SHALL BE UNDER DIVISION 22.
10. EMERGENCY GAS SHUT-OFF VALVES SHALL BE LOCATED INSIDE THE LABORATORY UNDER DIVISION 22. COORDINATE LOCATION WITH OTHER TRADES.

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NEW STEM BUILDING
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Revisions

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LAB FURNISHINGS GENERAL NOTES

PRCNC20221036

LF001

BUILDING PERMIT SET

EXHAUST EQUIPMENT SCHEDULES

CHEMICAL FUME HOODS

DRAWING REFERENCE	HOOD SIZE AND TYPE	TYPE OF SASH	TYPE OF SILL	NUMBER OF VERTICAL SASHES	NOMINAL VERTICAL SASH HEIGHT	HORIZONTAL SASH CONFIGURATION		DESIGN OPERATING CONDITIONS			MAXIMUM OPERATING CONDITIONS			MINIMUM VAV AIR FLOW (NOTE 1)	MAX HOOD STATIC PRESSURE DROP	EXHAUST CONNECTION BY MECHANICAL (NOTE 2)	REMARKS	DETAIL
								SASH OPENING	FACE VELOCITY	AIRFLOW	SASH OPENING	FACE VELOCITY	AIRFLOW					
					INCH	NUMBER OF SASHES	NUMBER OF TRACKS	INCH	FPM	CFM	INCH	FPM	CFM	CFM	INCH OF WATER	INCH DIAMETER		
4' ACFH	4' ADA CHEMICAL FUME HOOD	VERTICAL	AIRFOIL	1	30	-	-	18	80	400	28.5	60	480	200	0.25	10		1 LF301
6' CFH	6' CHEMICAL FUME HOOD	VERTICAL	AIRFOIL	1	30	-	-	18	80	640	28.5	60	780	300	0.25	12		2 LF301
6' ACFH	6' ADA CHEMICAL FUME HOOD	VERTICAL	AIRFOIL	1	30	-	-	18	80	640	28.5	60	780	300	0.25	12		1 LF301

NOTES:
1. MINIMUM VARIABLE AIR VOLUME (VAV) EXHAUST AIRFLOW CORRESPONDS TO 25" DEEP WORK SURFACE. FOR EXTENDED DEPTHS, APPLY AIRFLOW CORRECTION PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE EXHAUST DUCT TRANSITION PIECE TO TRANSITION FROM FUME HOOD COLLAR SIZE TO SCHEDULED EXHAUST CONNECTION SIZE.

OTHER EXHAUST EQUIPMENT

DRAWING REFERENCE	EQUIPMENT	EXHAUST AIR FLOW	STATIC PRESSURE	EXHAUST DUCT CONNECTION SIZE	REMARKS	DETAIL
		CFM	INCH OF WATER	INCH		
6A	SNORKEL EXHAUST	60	0.5	4	BASED ON MOVEX MODEL TERFU METS-1500-75 SNORKEL.	5 LF301
6B	SNORKEL EXHAUST - ATOMIC ABSORPTION	200	0.5	5	BASED ON MOVEX MODEL MEX-AA 316L STAINLESS STEEL SNORKEL WITH 10" Ø HOOD.	6 LF301
VP	VACUUM PUMP CABINET	100	0.2	6	DEDICATED CABINET EXHAUST DUCT VENT TO ROOM EXHAUST SYSTEM.	7 LF301

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LAB FURNISHINGS SCHEDULES

PRCNC20221036

LF002

BUILDING PERMIT SET

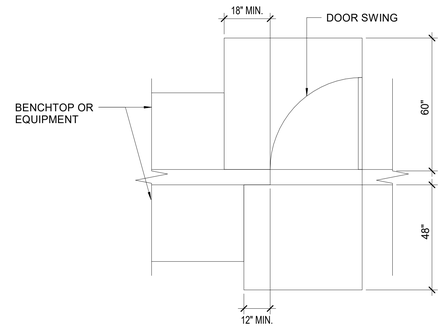
LABORATORY SERVICE FITTING SCHEDULE

ABBREV.	FITTING TYPE	MOUNTING	NOTES	DETAIL
DH(ICW)	DRENCH HOSE	DECK	AT LABORATORY SINK (FED FROM INDUSTRIAL COLD WATER)	2/LF401
PW	PURIFIED WATER	DECK (ADA)	AT ADA LABORATORY SINK (PROVIDE WRIST BLADE HANDLE)	3/LF401
PW(VB)	PURIFIED WATER (SHUT-OFF VALVE BOX)	WALL	SHUT-OFF VALVE BOX AT UC WASHER UNDER DIVISION 22	
EW	EYEWASH SWIVEL	DECK	AT LABORATORY SINK	4/LF401
ICW	INDUSTRIAL COLD WATER	DECK	AT LABORATORY SINK / CUP SINK	5/LF401
		HOOD	REMOTE AT FUME HOOD CUP SINK	6/LF401
		HOOD (ADA)	REMOTE AT FUME HOOD CUP SINK (PROVIDE BALL VALVE LEVER HANDLES AT ADA HOODS)	6/LF401
ICW(V)	INDUSTRIAL COLD WATER (VALVE)	WALL	SHUT-OFF VALVE AT LAB EQUIPMENT UNDER DIVISION 22	
ICW(VB)	INDUSTRIAL COLD WATER (VALVE BOX)	WALL	SHUT-OFF VALVE BOX AT ICE MACHINE UNDER DIVISION 22	
IHW/ICW(VB)	INDUSTRIAL COLD WATER/ INDUSTRIAL HOT WATER (SHUT-OFF VALVE BOX)	WALL	SHUT-OFF VALVE BOX AT UC WASHER UNDER DIVISION 22	
IHW(V)	INDUSTRIAL HOT WATER (VALVE)	WALL	SHUT-OFF VALVE AT LAB EQUIPMENT UNDER DIVISION 22	
IHWICW	INDUSTRIAL HOT WATER/ INDUSTRIAL COLD WATER	DECK	AT LABORATORY SINK	7/LF401
		DECK (ADA)	AT LABORATORY SINK (PROVIDE WRIST BLADE HANDLE)	7/LF401
		PANEL	AT SCULLERY SINK	8/LF401
		PANEL	AT SCULLERY SINK (PRE-RINSE SPRAY)	9/LF401
LG	LABORATORY GAS	DECK	AT WALL BENCH	1/LF402
		HOOD	REMOTE	2/LF402
		HOOD (ADA)	REMOTE (PROVIDE BALL VALVE LEVER HANDLES AT ADA HOODS)	2/LF402
LV	LABORATORY VACUUM	DECK	AT WALL BENCH	1/LF402
		HOOD	REMOTE	2/LF402
		HOOD (ADA)	REMOTE (PROVIDE BALL VALVE LEVER HANDLES AT ADA HOODS)	2/LF402
SS/EW	SAFETY SHOWER/ EYEWASH UNIT	WALL	BOWL AND SKIRT	1/LF401

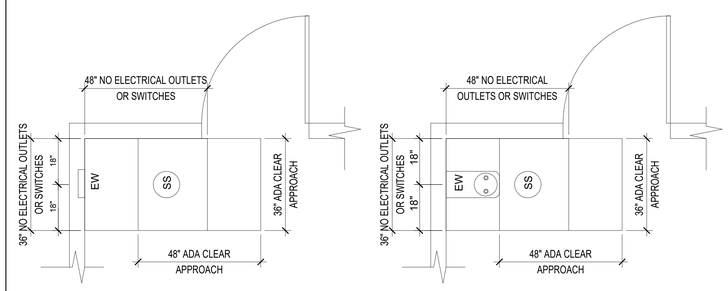
NOTES:

1. FOR INDUSTRIAL WATER 'DO NOT DRINK' SIGN AT FAUCETS, REFER TO DETAIL: 3/LF402
2. FOR FIXTURE SPACING REFER TO DETAILS: 3/LF306 4/LF306 5/LF306 6/LF306 7/LF306
3. FOR FIXTURE SPACING AT OVERHEAD SERVICE CARRIERS AND WALL MOUNTED LOCATIONS REFER TO WALL BENCH FIXTURE SPACING DETAIL: 5/LF306
4. SERVICE ABBREVIATION _(V) REFERS TO SERVICE VALVE- PROVIDED UNDER DIVISION 22.
5. SERVICE ABBREVIATION _(VB) REFERS TO SERVICE VALVE BOX- PROVIDED UNDER DIVISION 22.

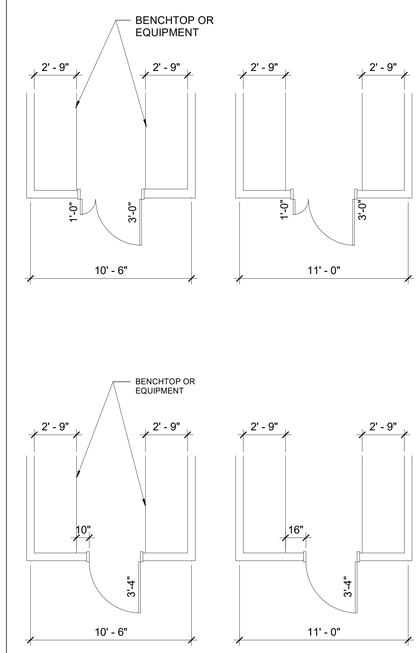
INTERIOR DOOR CLEARANCES (ADA COMPLIANT)



ELECTRICAL AND ADA APPROACH CLEARANCES AT SS/EW



INTERIOR DOOR CLEARANCES



LABORATORY SINK SCHEDULE

SINK NUMBER	DESCRIPTION	OUTLET	WIDTH x DEPTH x HEIGHT (INSIDE DIMENSIONS)	SINK OUTLET SIZE	REMARKS	DETAIL
SK1	EPOXY RESIN	SIDE	21.5" x 15.5" x 11"	1-1/2"	DROP-IN	7/LF305
SK2	EPOXY RESIN	SIDE	28" x 15" x 12"	1-1/2"	DROP-IN	7/LF305
SK3	EPOXY RESIN	CORNER	25" x 15" x 4.8"	1-1/2"	REQUIRES ADA FITTINGS	7/LF305
SK4	EPOXY RESIN	SIDE	12" x 12" x 10"	1-1/2"	DROP-IN	7/LF305
SK7	STAINLESS STEEL	CENTER	(2) 24" x 24" x 12" BOWLS	1-1/2"	@ SCULLERY SINK (LENGTHS MAY VARY, REFER TO LF-PLANS)	8/LF305
SK8	STAINLESS STEEL	CENTER	(2) 30" x 24" x 18" BOWLS	1-1/2"	@ SCULLERY SINK (LENGTHS MAY VARY, REFER TO LF-PLANS)	SIM. 8/LF305
CS1	EPOXY RESIN	CENTER	3" x 6"	1-1/2"	OVAL, TYPICAL @ FUME HOOD W/ RAISED LIP 1/LF306	2/LF306
CS2	EPOXY RESIN	CENTER	6" x 14"	1-1/2"	RECTANGULAR	1/LF306

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LAB FURNISHINGS FITTING SCHEDULE

PRCNC20221036

LF003

BUILDING PERMIT SET

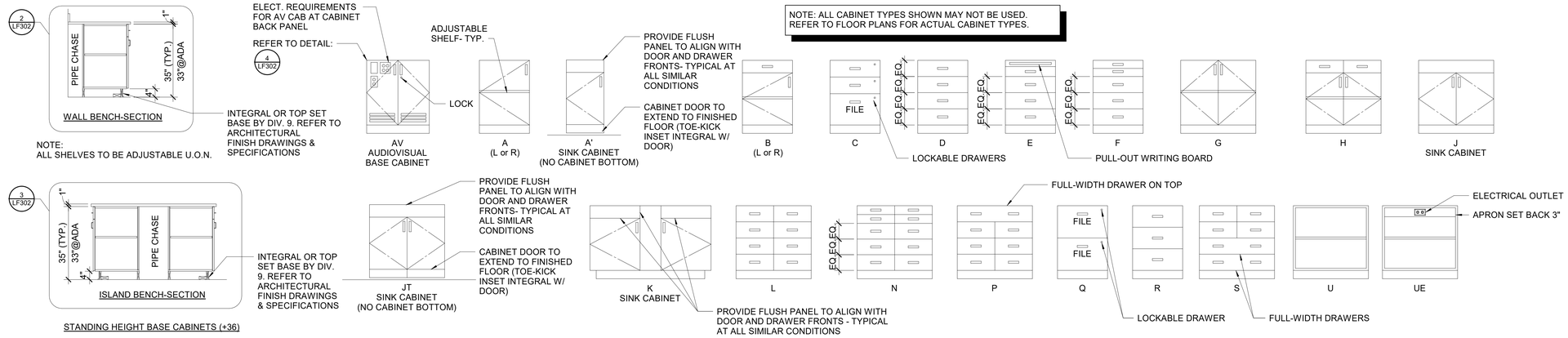
CASEWORK LEGEND & NOTES

D24	BASE CABINET TYPE WIDTH (INCHES - TYPICAL)
D24C/G	BASE CABINET TYPE WIDTH ON CASTERS OR GLIDES IN LIEU OF INTEGRAL TOE BASE
A24L	BASE CABINET TYPE WIDTH DOOR HINGE ON LEFT SIDE
A24R	BASE CABINET TYPE WIDTH DOOR HINGE ON RIGHT SIDE
G36S	BASE CABINET TYPE WIDTH SHALLOW
LD24	SITTING HEIGHT AT BASE CABINET & KO BASE CABINET TYPE WIDTH
KO24	KNEE OPENING WIDTH
KOX24	KNEE OPENING KNEE OPENING TYPE (SEE KNEE OPENINGS SECTION) WIDTH (X = A, D, OR E)
MT60X	MOVABLE TABLE WIDTH (NOTE: 30"/33" DEPTH ASSUMED PER GENERAL NOTES) MOVABLE TABLE TYPE (C) ON CASTERS & (D) W/ DRAWER (X = C AND/ OR D)
MT6024	MOVABLE TABLE WIDTH DEPTH
WA36	WALL-HUNG CABINET WALL CABINET DOOR TYPE WIDTH
TC48	TALL STORAGE CABINET TALL CABINET DOOR TYPE WIDTH
TAV48	DESIGNATES VENTED CABINET WITH 2"Ø CONNECTION
FP	FILLER PANEL
*	DESIGNATES KEY LOCKABLE CASEWORK
**	DESIGNATES PADLOCK HASP

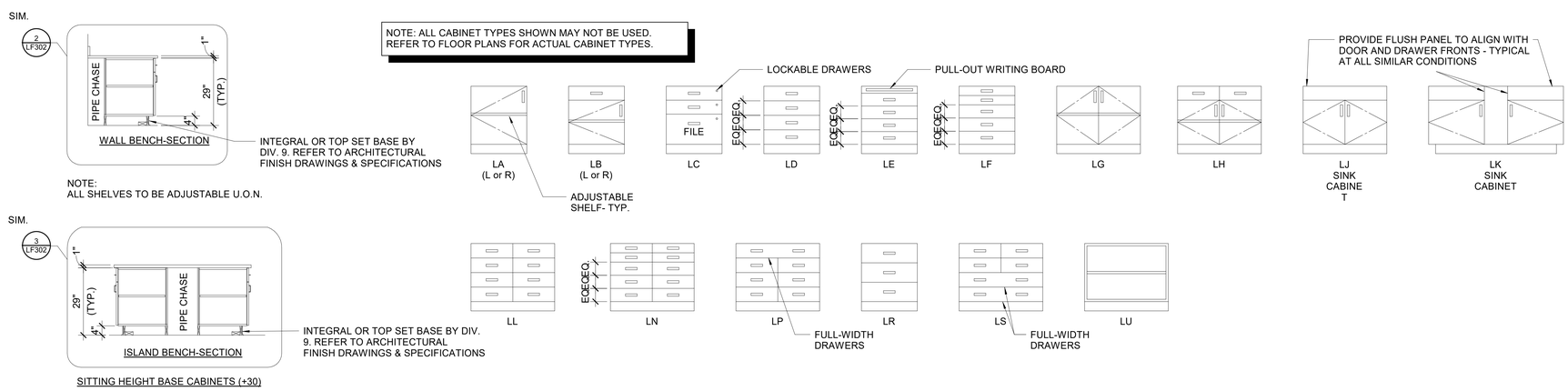
NOTES:

1. FOR CABINET BACKING HEIGHTS REFER TO: (5 / LF302)
2. FOR SHELVING AND CYLINDER RESTRAINT BACKING HEIGHTS REFER TO: (6 / LF302)

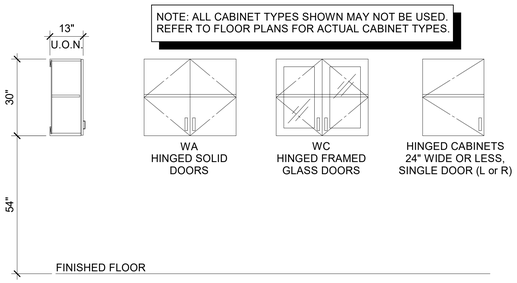
STANDING HEIGHT BASE CABINETS (WOOD - U.O.N.)



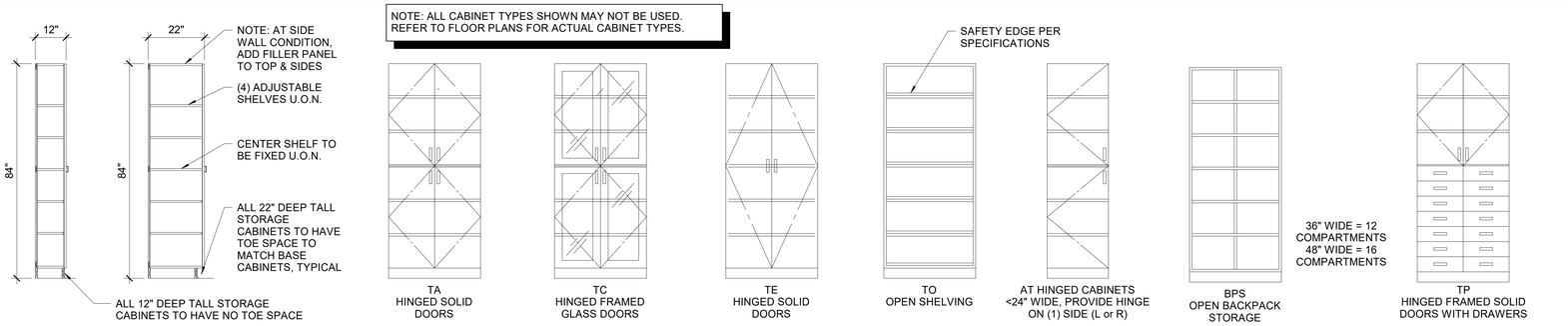
STANDING HEIGHT BASE CABINETS (WOOD - U.O.N.)



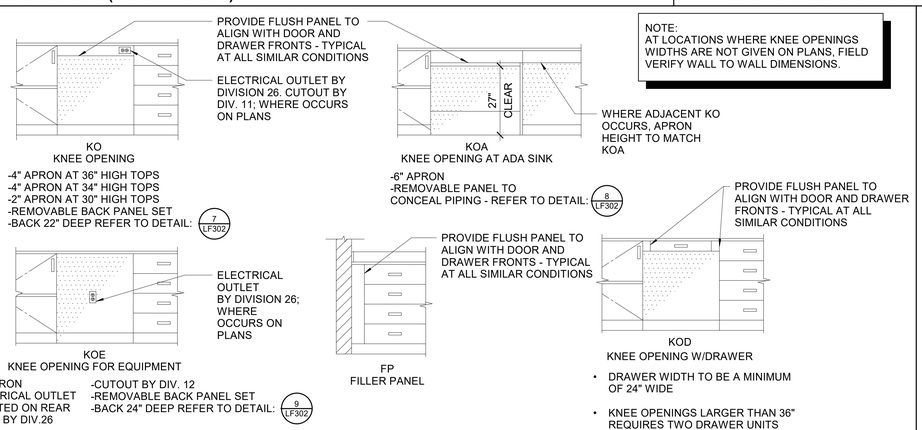
SITTING HEIGHT BASE CABINETS (WOOD - U.O.N)



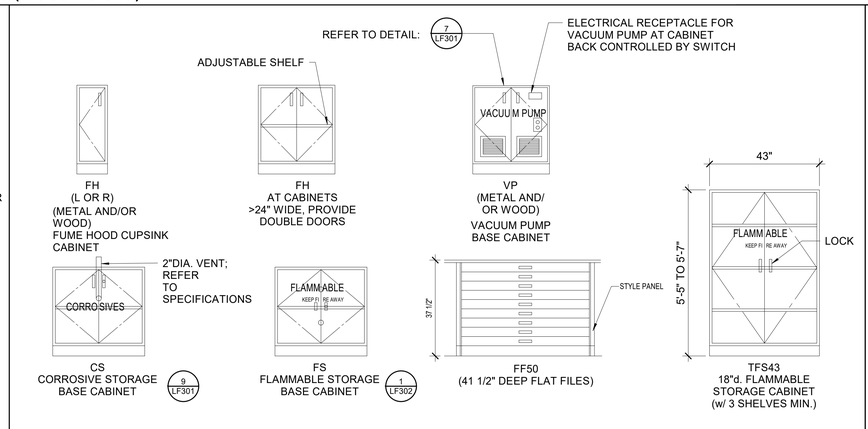
WALL CABINETS (WOOD - U.O.N.)



TALL STORAGE CABINETS (WOOD - U.O.N.)

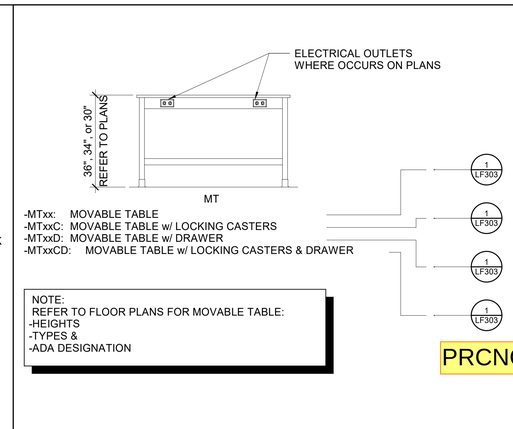


KNEE OPENINGS (WOOD - U.O.N.)



CONFIRM VENTING REQUIRED AT FLAMMABLE STORAGE CABINETS. ☐ REQUIRED ☐ NOT REQUIRED DATE CONFIRMED:

SPECIAL CABINETS (METAL - U.O.N.)



MOVABLE TABLES (METAL OR WOOD - U.O.N.)

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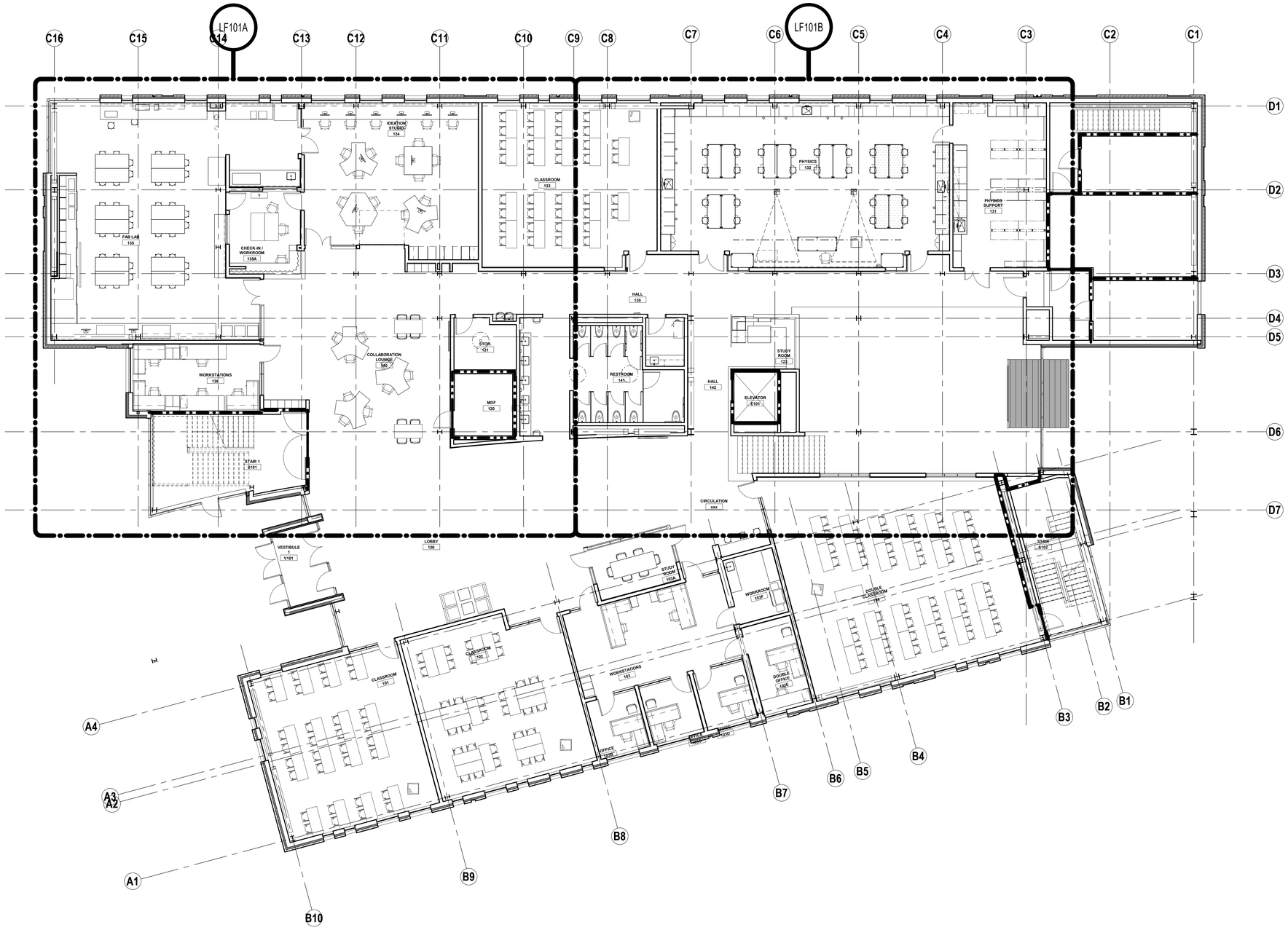
LAB FURNISHINGS
CASEWORK MENU

PRCNC20221036

LF004



1 LEVEL 1 - OVERALL FLOOR PLAN
1/8" = 1'-0"

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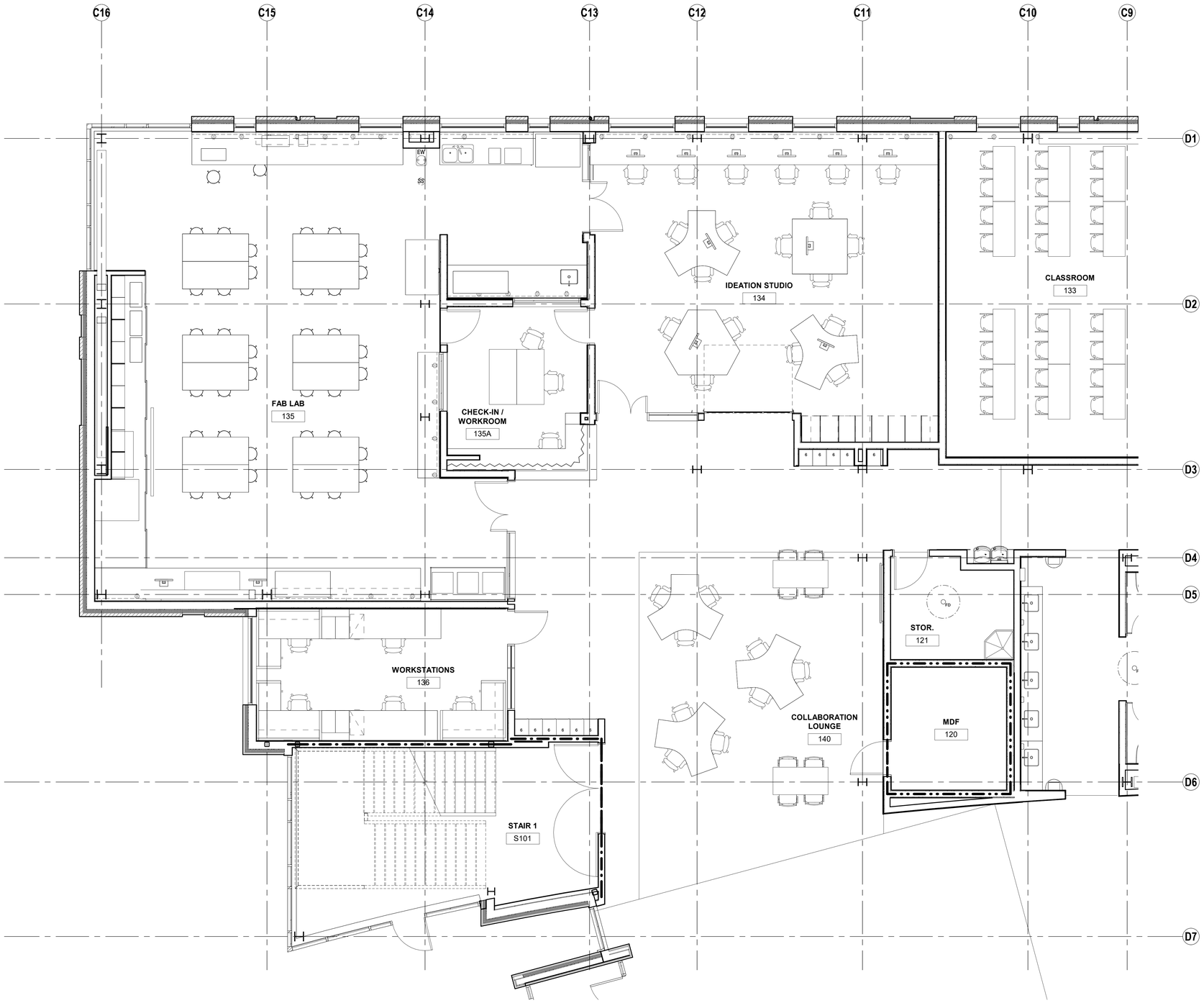
LAB FURNISHINGS
LEVEL 1 - OVERALL
FLOOR PLAN

PRCNC20221036

LF101

BUILDING PERMIT SET



1 LEVEL 1 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

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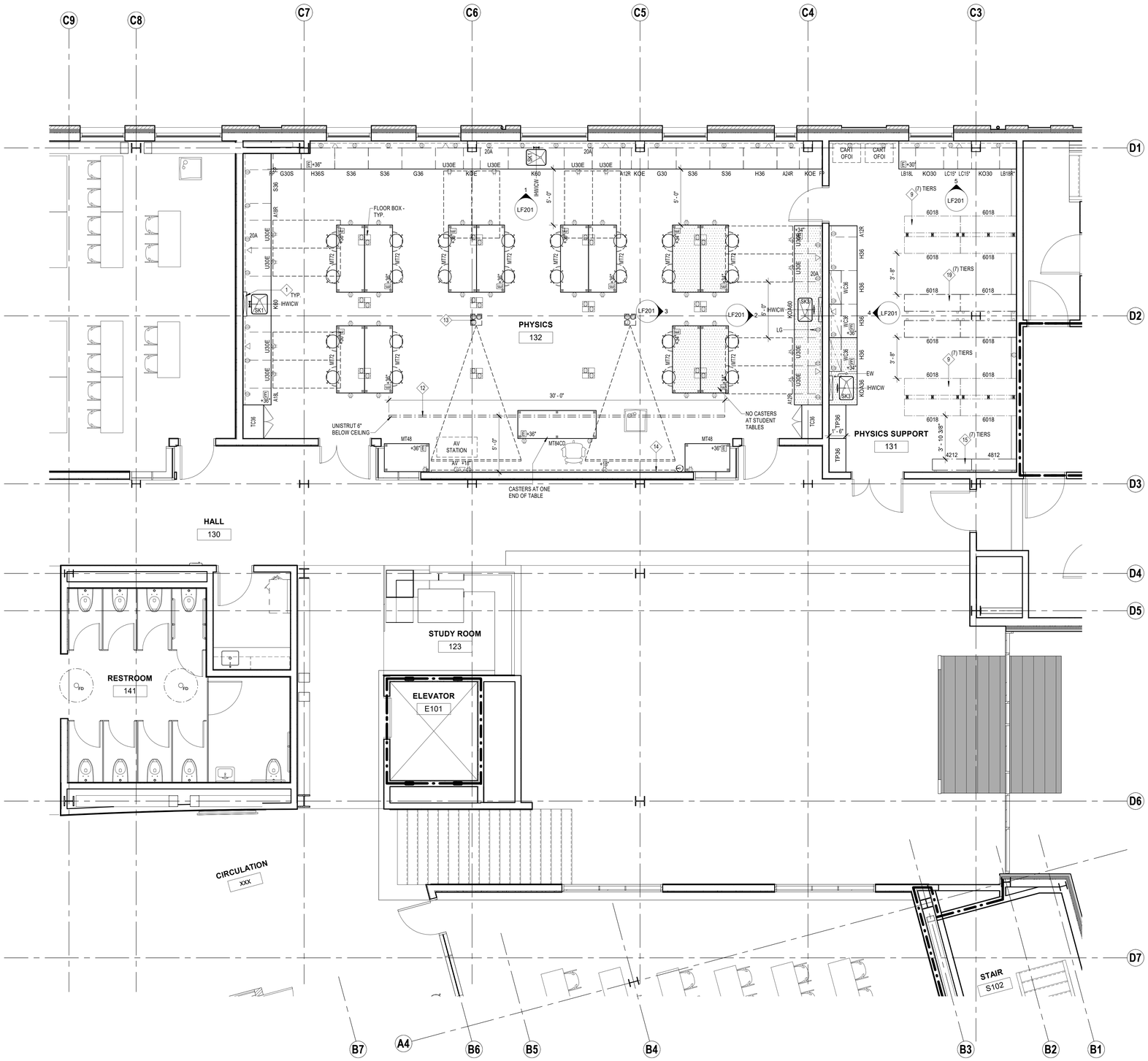
LAB FURNISHINGS
LEVEL 1 - PARTIAL
FLOOR PLAN

PRCNC20221036

LF101A

BUILDING PERMIT SET



1 LEVEL 1 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE

117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
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FAX 619 - 294 - 4901

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	RI
Checked By:	JL

Revisions

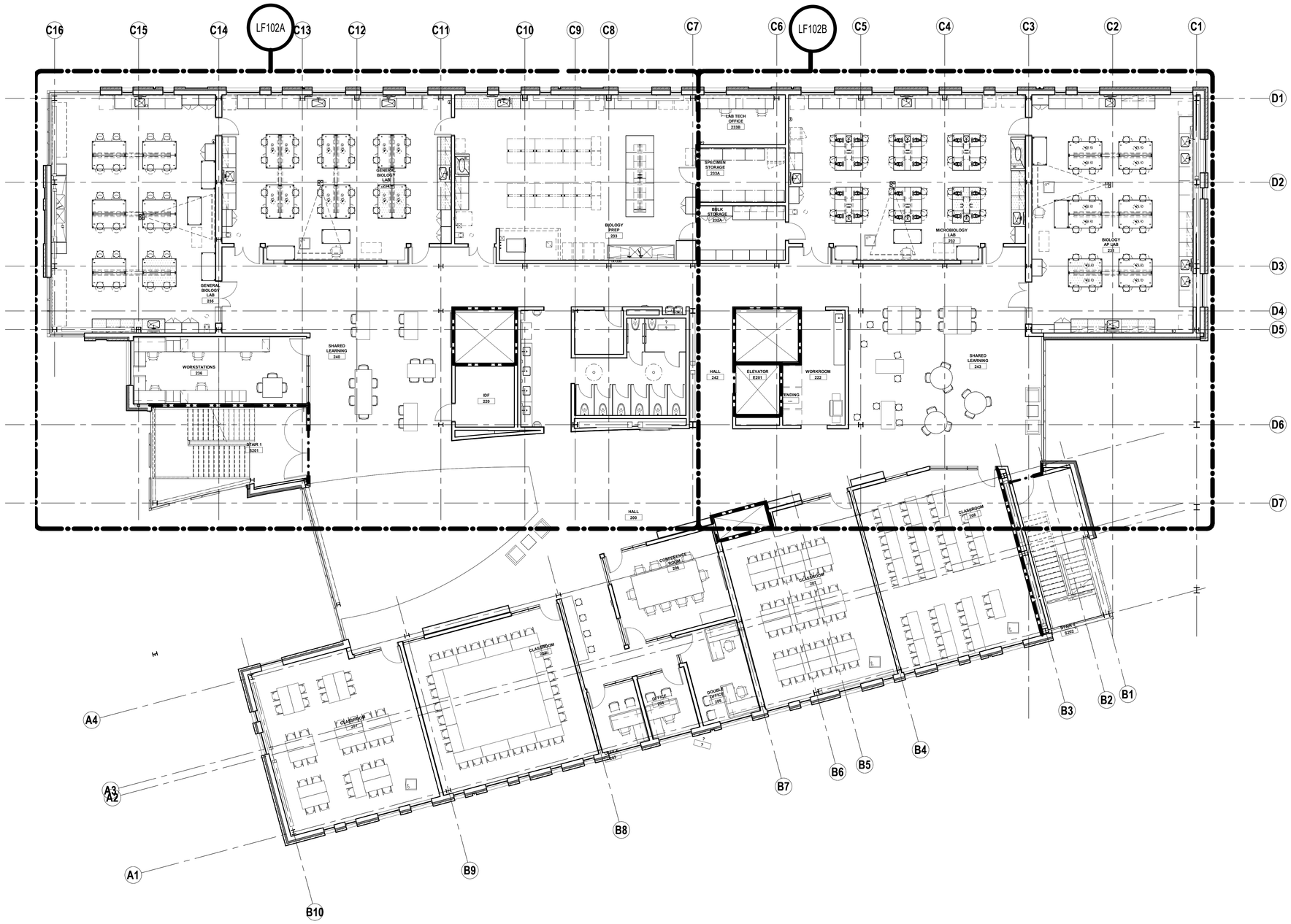
#	Date	Description

LAB FURNISHINGS
LEVEL 1 - PARTIAL

PRCNC20221036

LF101B

BUILDING PERMIT SET



2 LEVEL 2 - OVERALL FLOOR PLAN
1/8" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA. 98104
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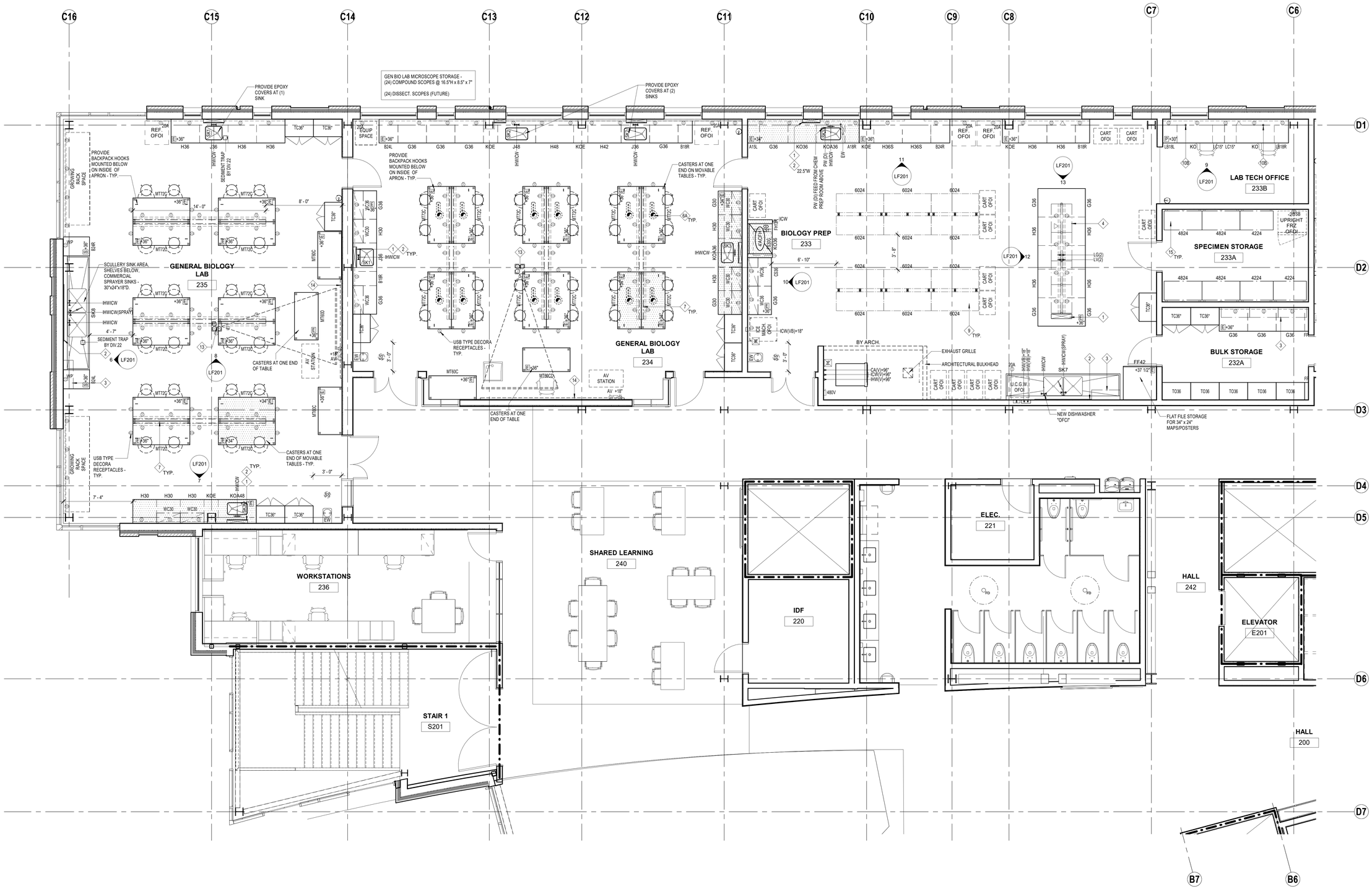
LAB FURNISHINGS
LEVEL 2 - OVERALL

PRCNC20221036

LF102

BUILDING PERMIT SET



1 LEVEL 2 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE

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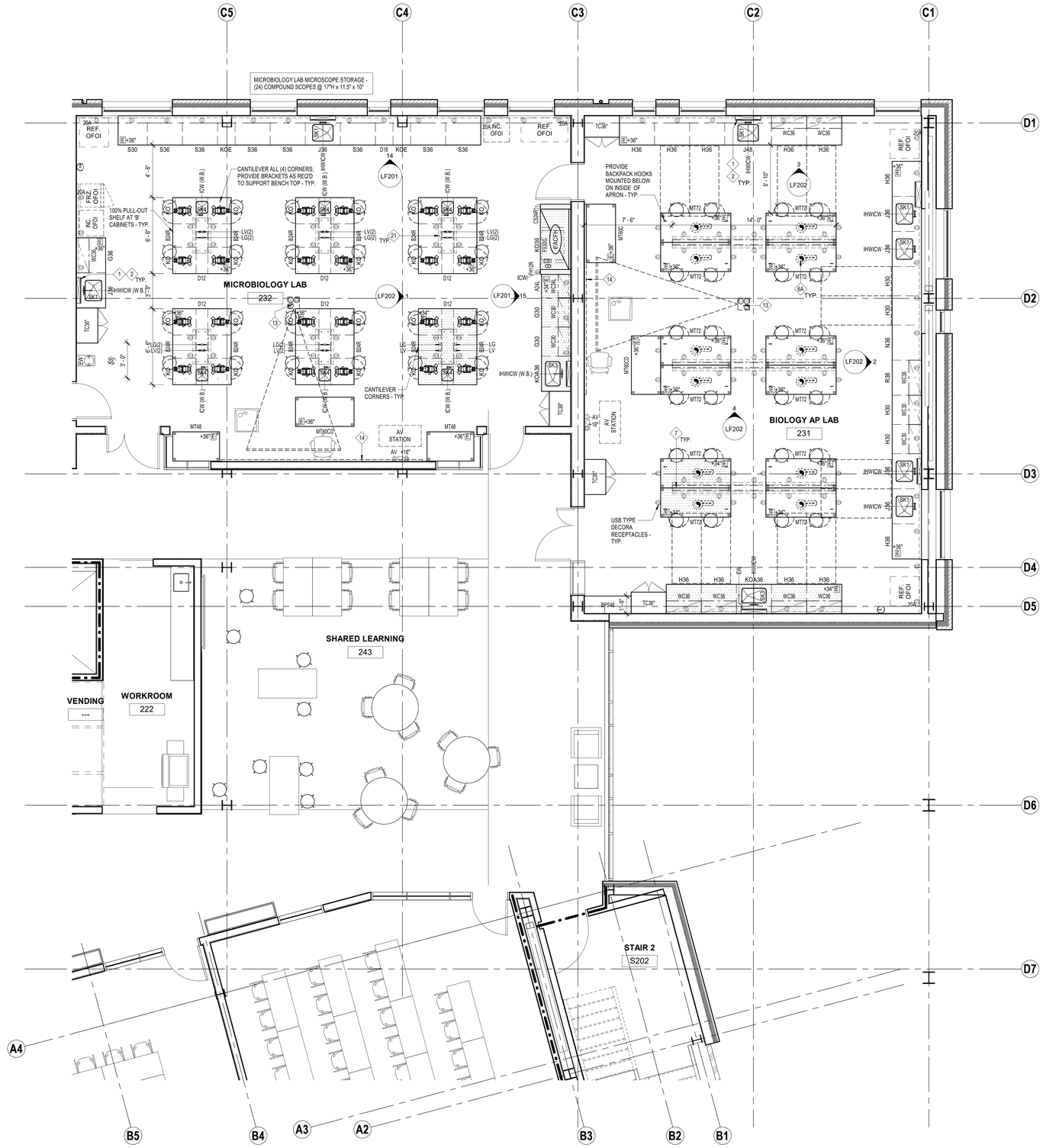
LAB FURNISHINGS
LEVEL 2 - PARTIAL

PRCNC20221036

LF102A

BUILDING PERMIT SET



1 LEVEL 2 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE
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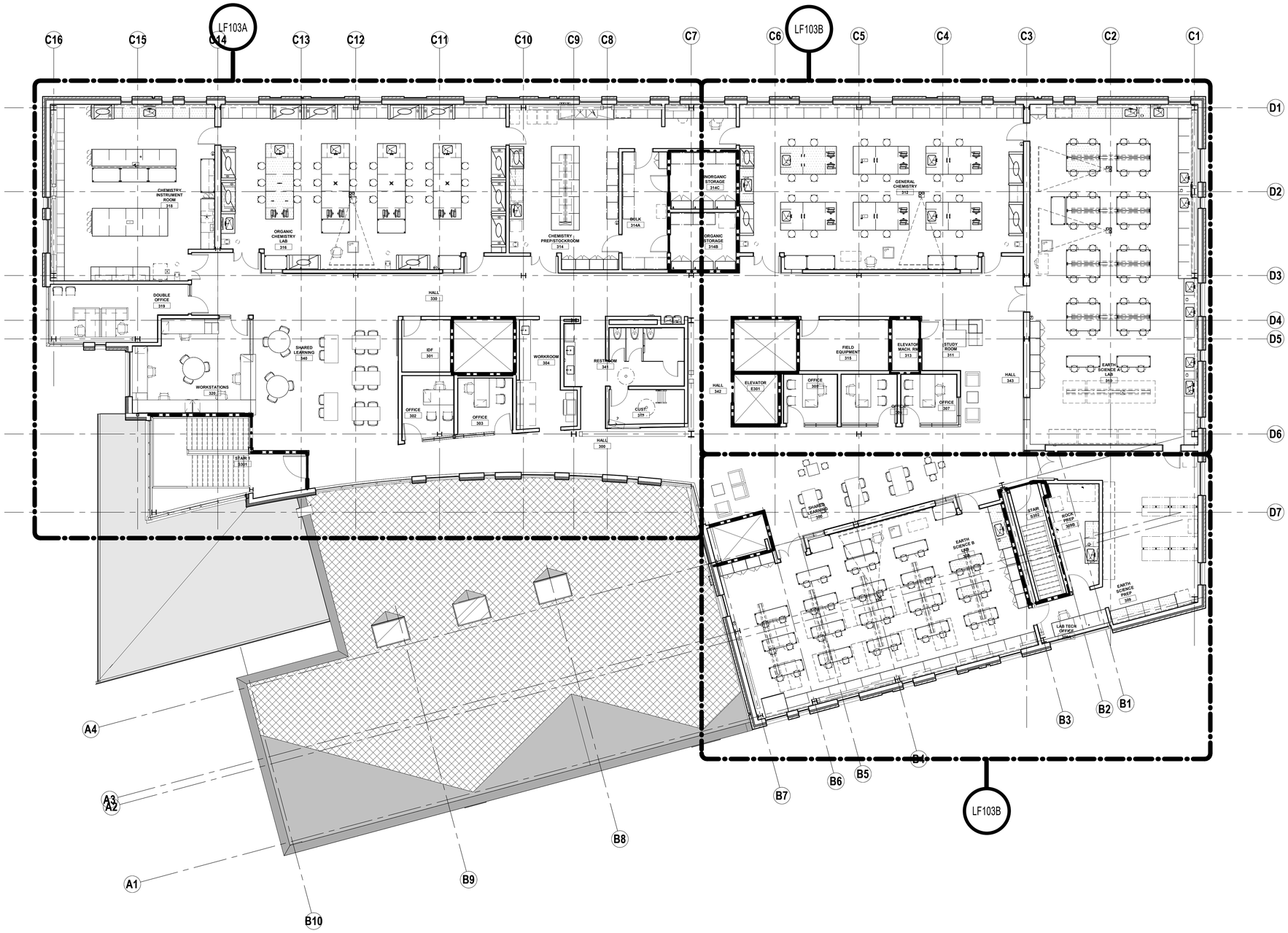
LAB FURNISHINGS
LEVEL 2 - PARTIAL

PRCNC20221036

LF102B

BUILDING PERMIT SET



1 LEVEL 3 - OVERALL FLOOR PLAN
1/8" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
TELEPHONE: (206)624-7537 FAX: (206)624-3158

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Puyallup, WA 98374

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Revisions

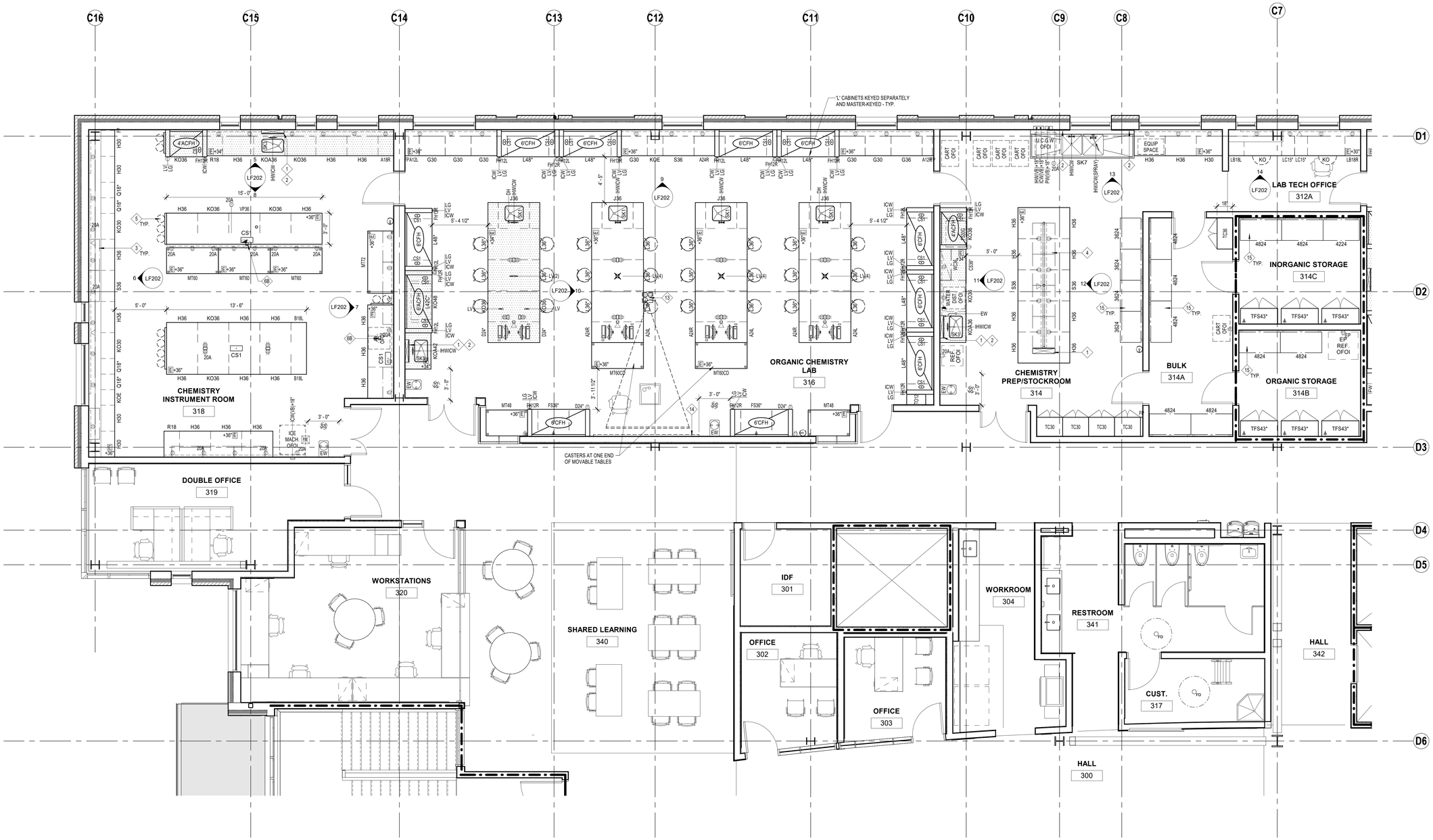
#	Date	Description

LAB FURNISHINGS
LEVEL 3 - OVERALL
FLOOR PLAN

PRCNC20221036

LF103

BUILDING PERMIT SET



1 LEVEL 3 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
TELEPHONE: (206)628-3137 FAX: (206)628-3138

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Revisions

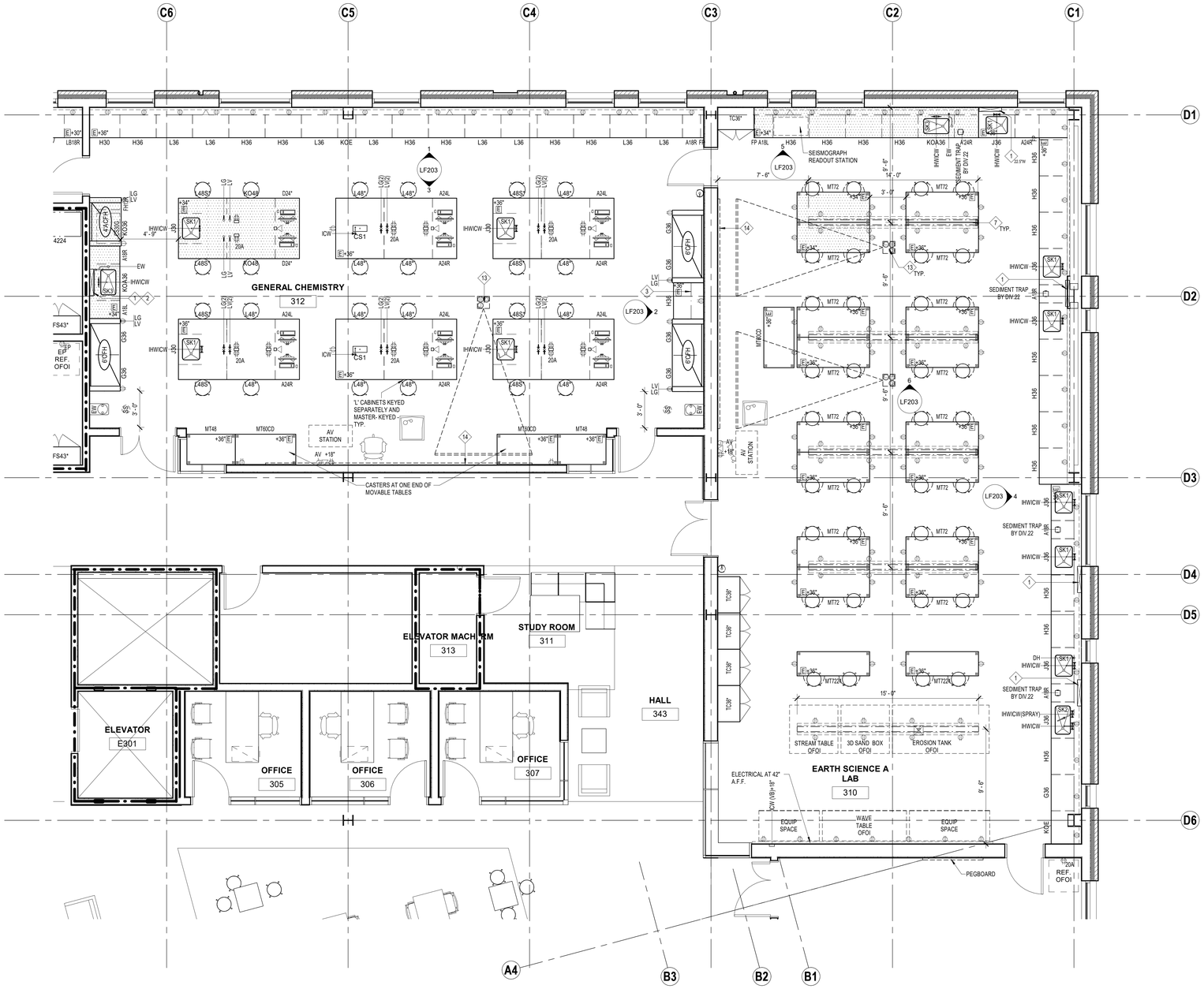
#	Date	Description

LAB FURNISHINGS
LEVEL 3 - PARTIAL
FLOOR PLAN

PRCNC20221036

LF103A

BUILDING PERMIT SET



1 LEVEL 3 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA 98104
TELEPHONE (206)626-3737 FAX (206)626-3138

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Revisions

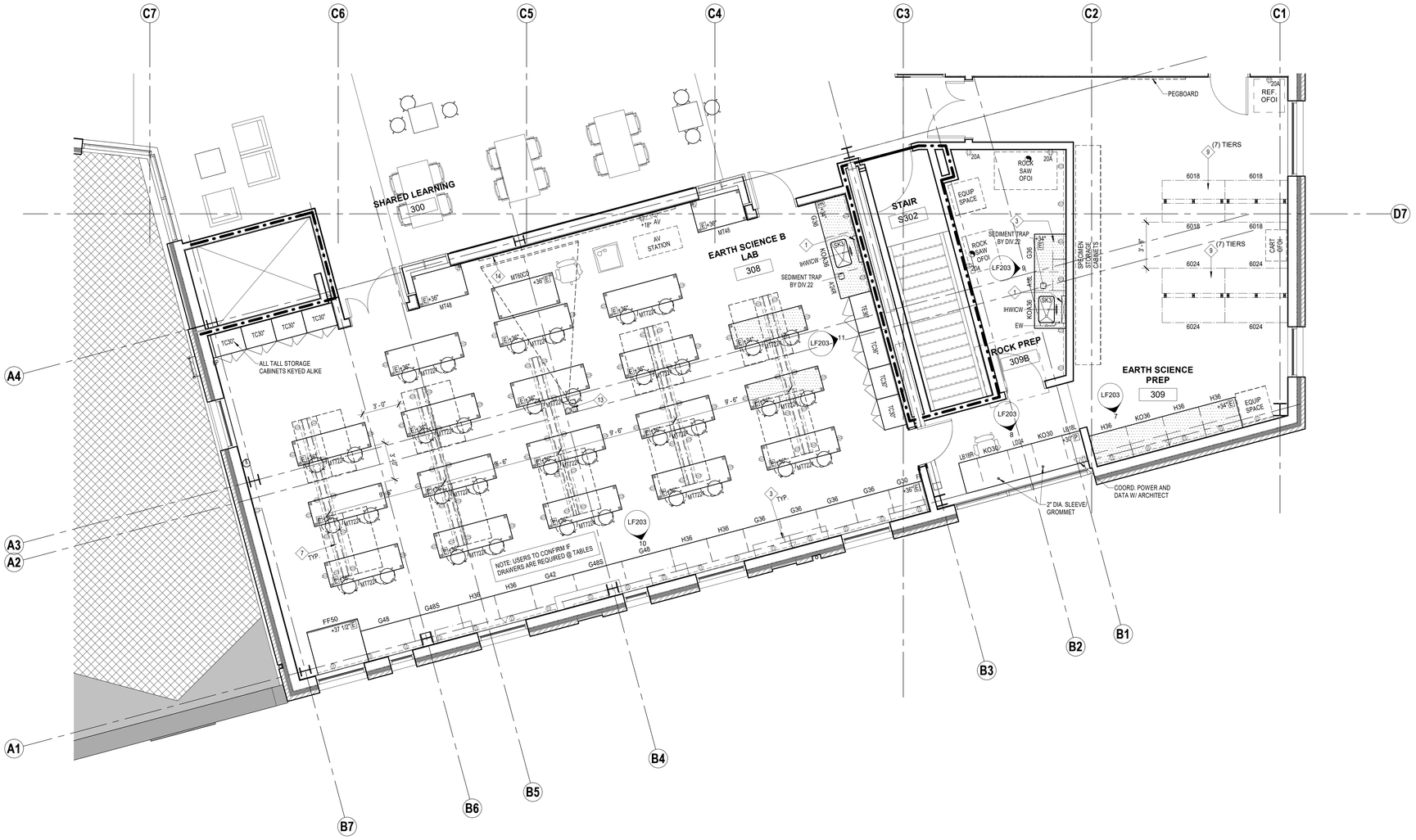
#	Date	Description

LAB FURNISHINGS
LEVEL 3 - PARTIAL
FLOOR PLAN

PRCNC20221036

LF103B

BUILDING PERMIT SET



1 LEVEL 3 - PARTIAL FLOOR PLAN
1/4" = 1'-0"

integrus ARCHITECTURE
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Revisions

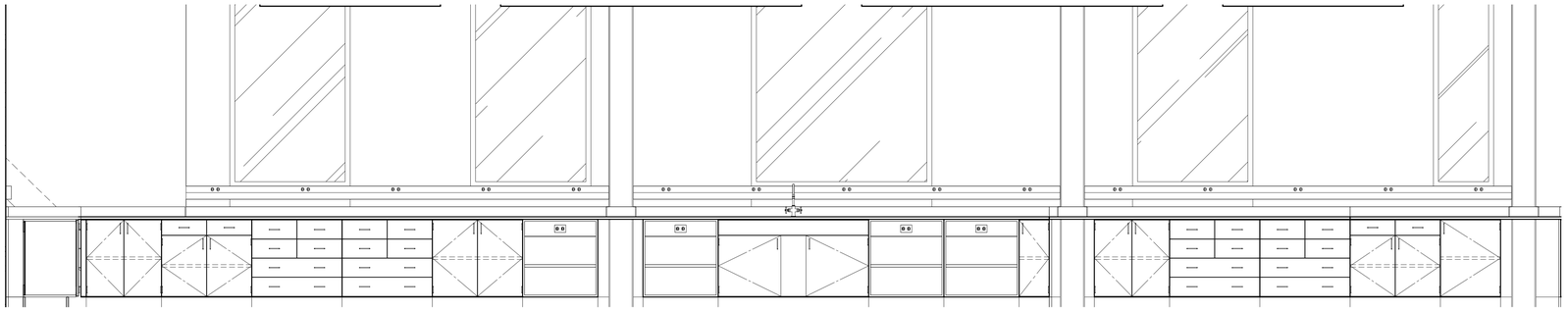
#	Date	Description

LAB FURNISHINGS
LEVEL 3 - PARTIAL
FLOOR PLAN

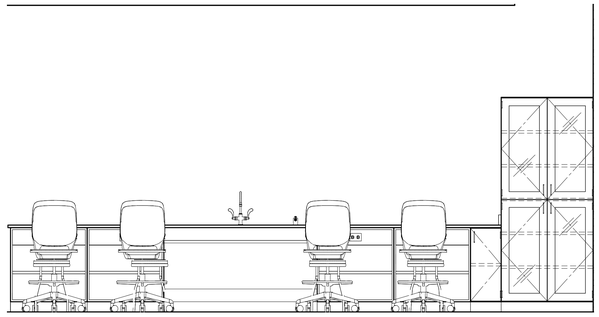
PRCNC20221036

LF103C

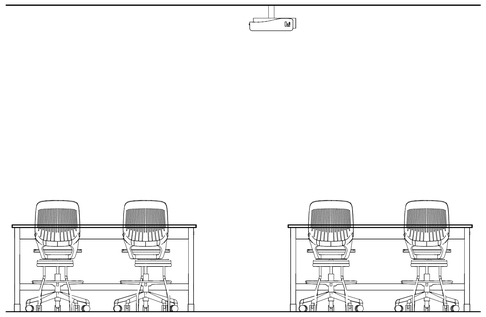
BUILDING PERMIT SET



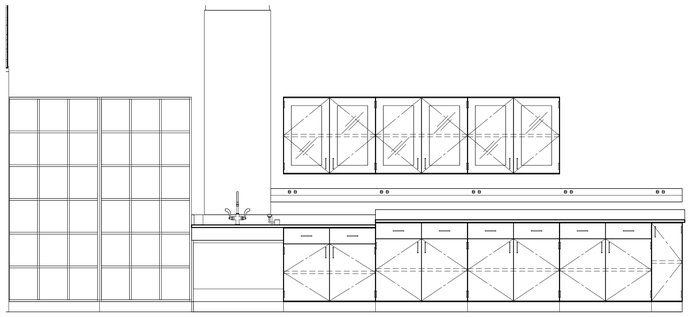
1 PHYSICS 132 - ELEV. 1
1/2" = 1'-0"



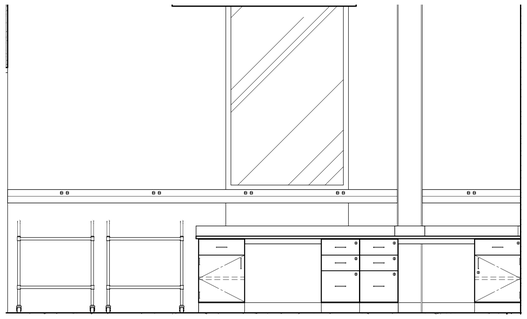
2 PHYSICS 132 - ELEV. 2
1/2" = 1'-0"



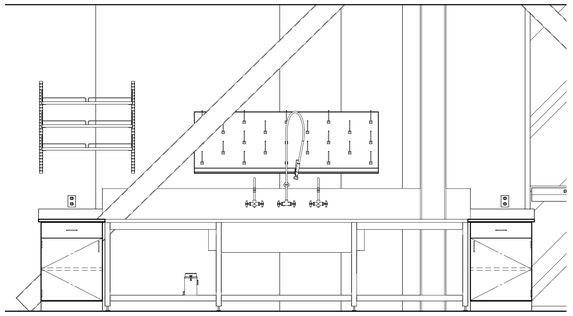
3 PHYSICS 132 - ELEV. 3
1/2" = 1'-0"



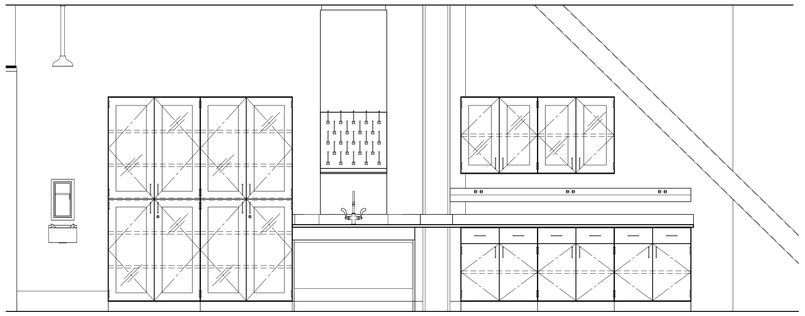
4 PHYSICS SUPPORT 131 - ELEV. 4
1/2" = 1'-0"



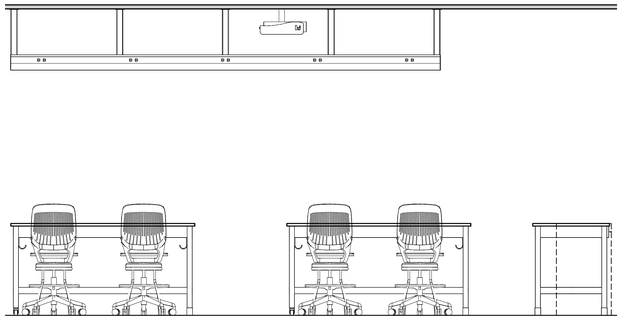
5 PHYSICS SUPPORT 131 ELEV. 5
1/2" = 1'-0"



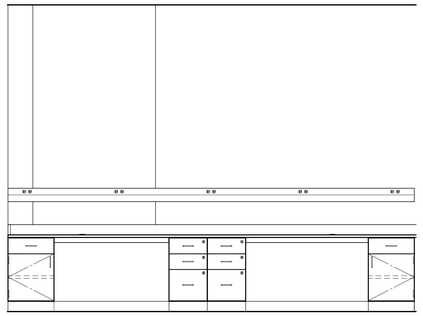
6 GENERAL BIOLOGY LAB 235 - ELEV. 6
1/2" = 1'-0"



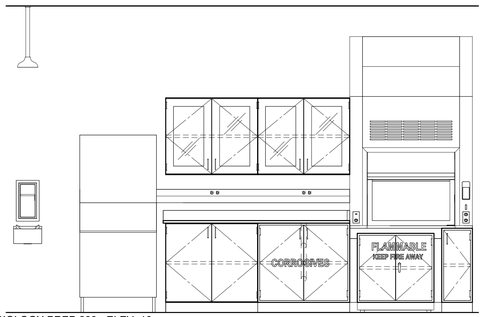
7 GENERAL BIOLOGY LAB 235 - ELEV. 7
1/2" = 1'-0"



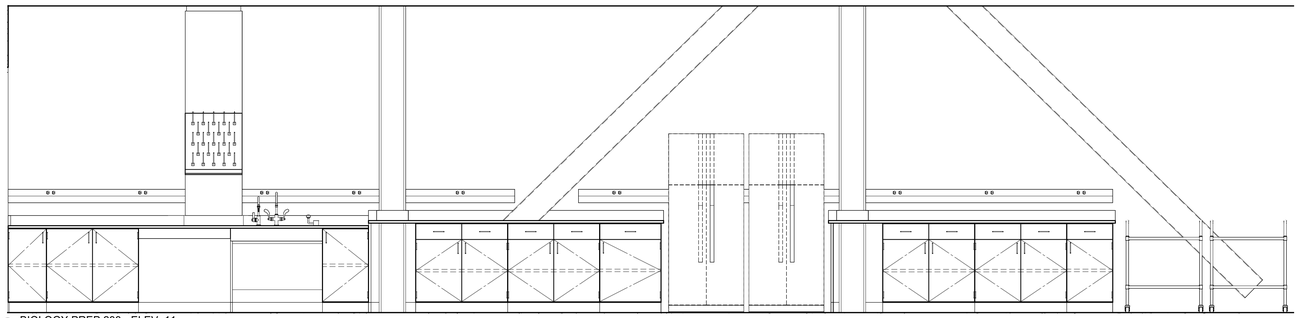
8 GENERAL BIOLOGY LAB 235 - ELEV. 8
1/2" = 1'-0"



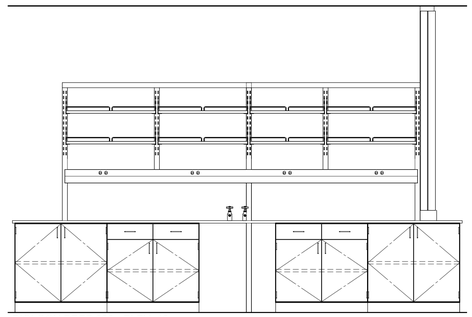
9 LAB TECH OFFICE 233B - ELEV. 9
1/2" = 1'-0"



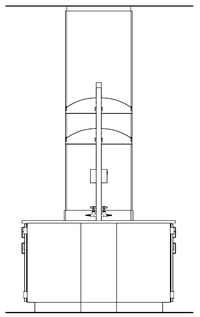
10 BIOLOGY PREP 233 - ELEV. 10
1/2" = 1'-0"



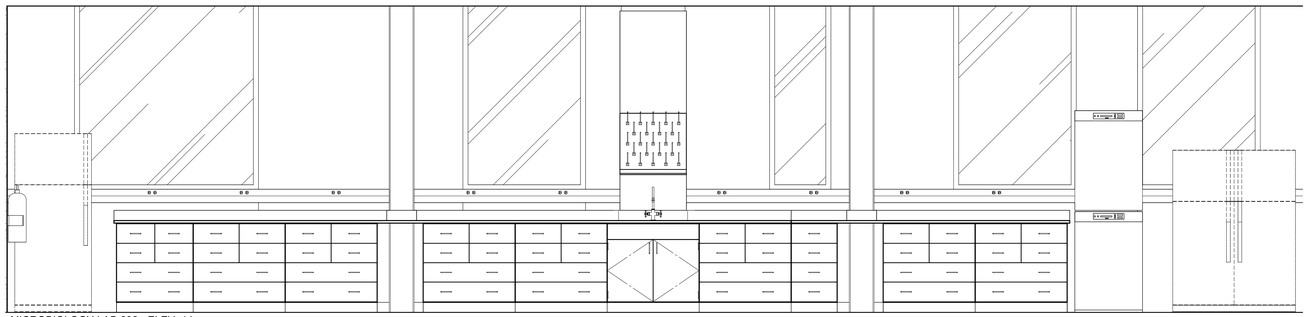
11 BIOLOGY PREP 233 - ELEV. 11
1/2" = 1'-0"



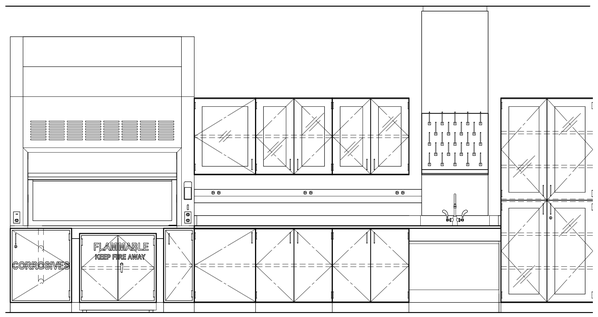
12 BIOLOGY PREP 233 - ELEV. 12
1/2" = 1'-0"



13 BIOLOGY PREP 233 - ELEV. 13
1/2" = 1'-0"



14 MICROBIOLOGY LAB 232 - ELEV. 14
1/2" = 1'-0"



15 MICROBIOLOGY LAB 232 - ELEV. 15
1/2" = 1'-0"

BUILDING PERMIT SET

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Drawn By:	GC
Checked By:	JL

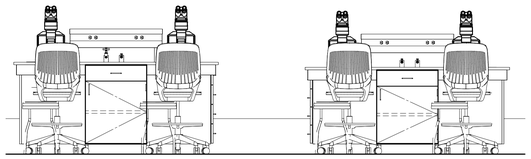
Revisions

#	Date	Description

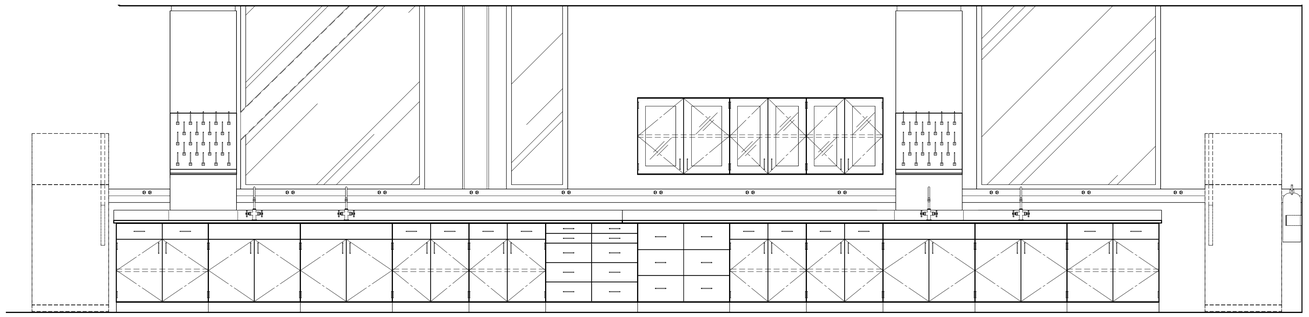
LAB FURNISHINGS
ELEVATIONS

PRCNC20221036

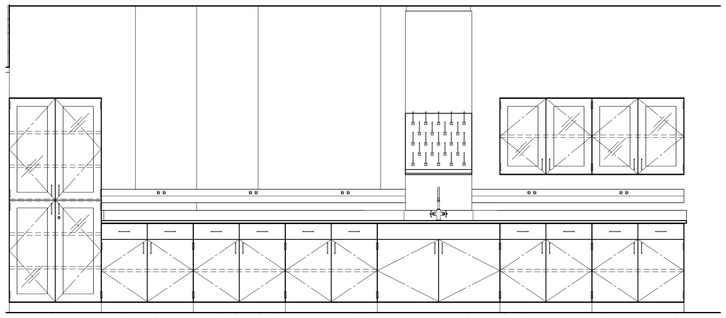
LF201



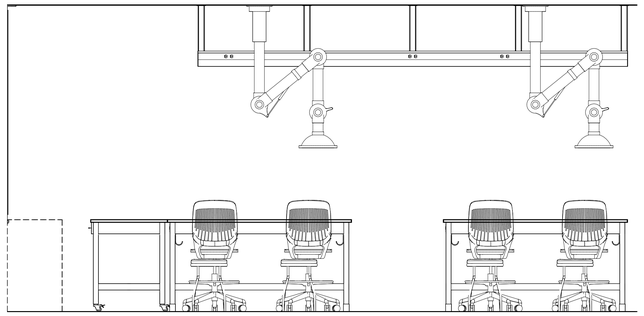
1 MICROBIOLOGY LAB 232 - ELEV. 1
1/2" = 1'-0"



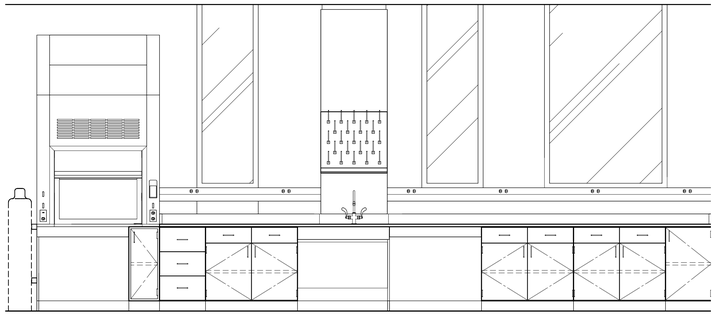
2 BIOLOGY AP LAB 231 - ELEV. 2
1/2" = 1'-0"



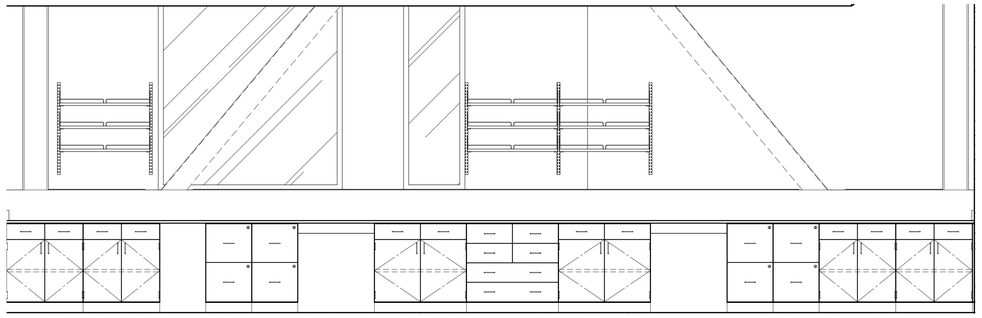
3 BIOLOGY AP LAB 231 - ELEV. 3
1/2" = 1'-0"



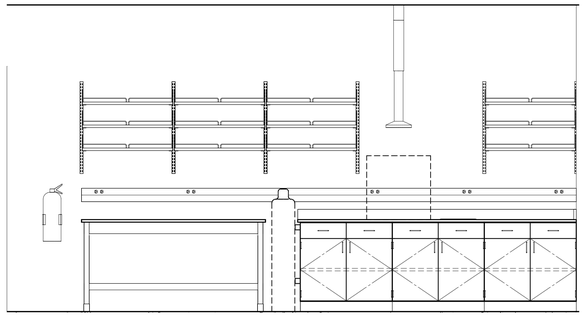
4 BIOLOGY AP LAB 231 - ELEV. 4
1/2" = 1'-0"



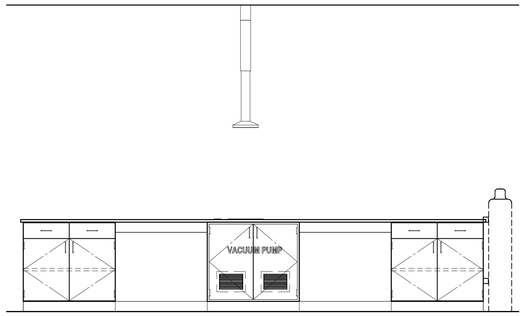
5 CHEMISTRY INSTRUMENT ROOM 318 - ELEV. 5
1/2" = 1'-0"



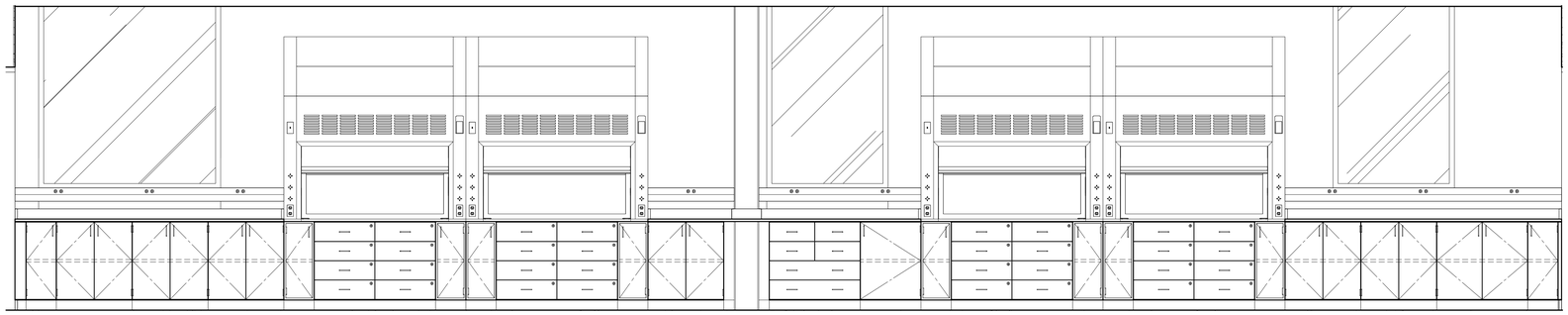
6 CHEMISTRY INSTRUMENT ROOM 318 - ELEV. 6
1/2" = 1'-0"



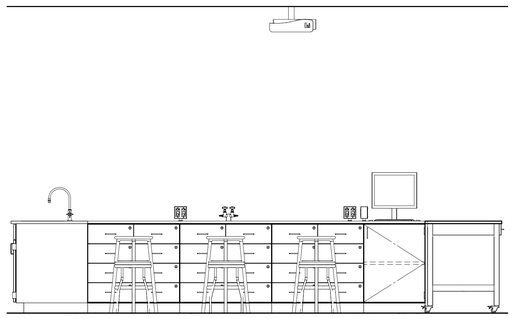
7 CHEMISTRY INSTRUMENT ROOM 318 - ELEV. 7
1/2" = 1'-0"



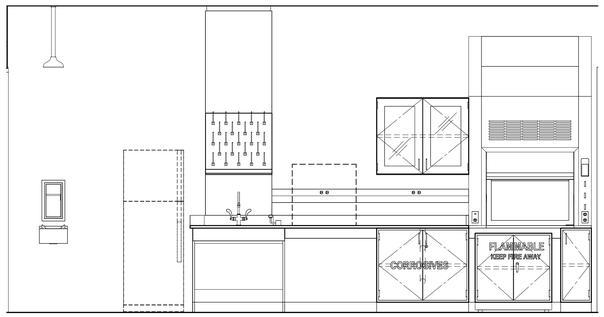
8 CHEMISTRY INSTRUMENT ROOM 318 - ELEV. 8
1/2" = 1'-0"



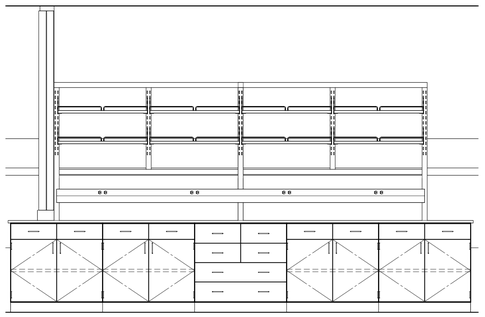
9 ORGANIC CHEMISTRY LAB 316 - ELEV. 9
1/2" = 1'-0"



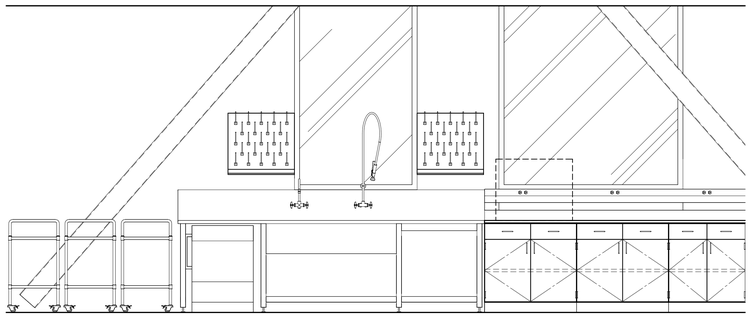
10 ORGANIC CHEMISTRY LAB 316 - ELEV. 10
1/2" = 1'-0"



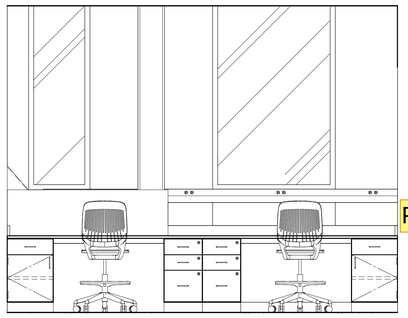
11 CHEMISTRY PREP/STOCKROOM 314 - ELEV. 11
1/2" = 1'-0"



12 CHEMISTRY PREP/STOCKROOM 314 - ELEV. 12
1/2" = 1'-0"



13 CHEMISTRY PREP/STOCKROOM 314 - ELEV. 13
1/2" = 1'-0"



14 LAB TECH OFFICE 312A - ELEV. 14
1/2" = 1'-0"

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FAX 619 - 294 - 4901

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	GC
Checked By:	JL

Revisions

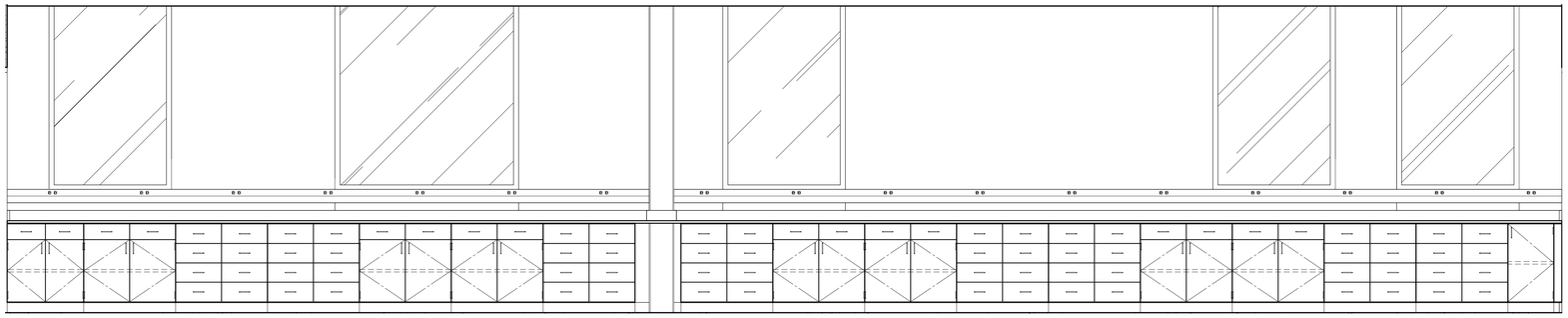
#	Date	Description

LAB FURNISHINGS
ELEVATIONS

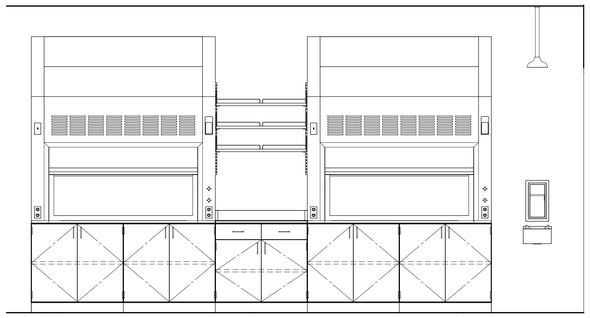
PRCNC20221036

LF202

BUILDING PERMIT SET



1 GENERAL CHEMSITRY 312 - ELEV. 1
1/2" = 1'-0"



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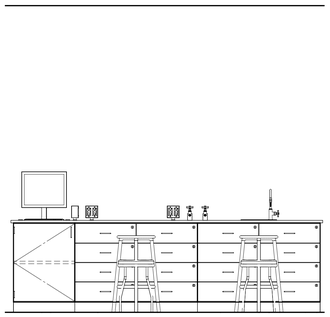
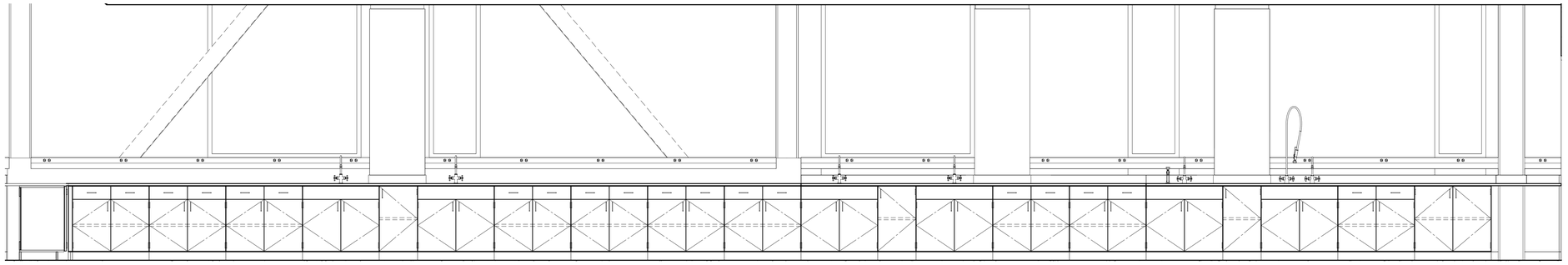
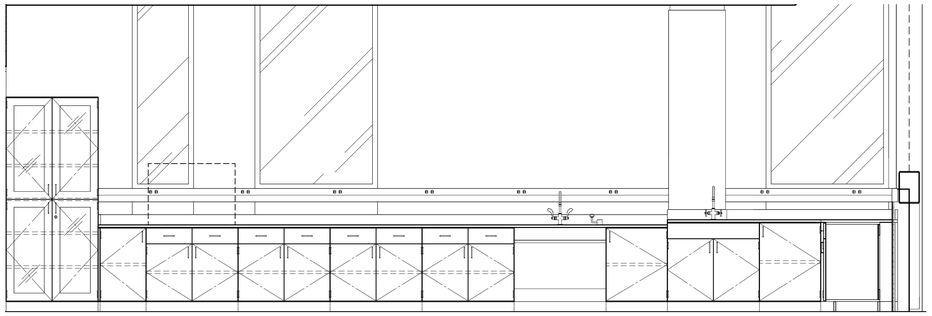


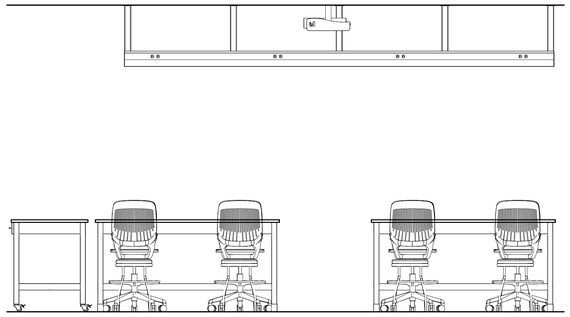
3 GENERAL CHEMISTRY 312 - ELEV. 3
1/2" = 1'-0"



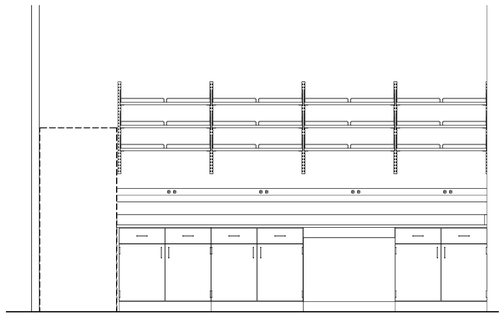
4 EARTH SCIENCE A LAB 310 - ELEV. 4
1/2" = 1'-0"



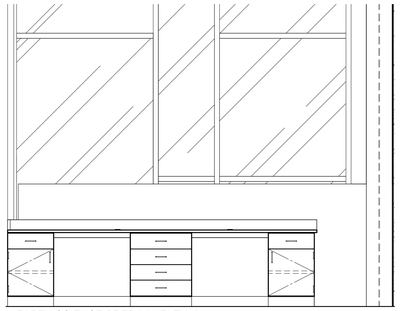
5 EARTH SCIENCE A LAB 310 - ELEV. 5
1/2" = 1'-0"



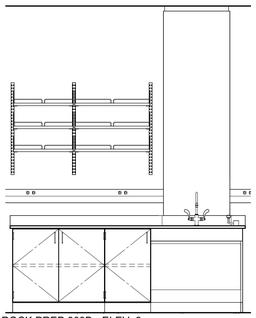
6 EARTH SCIENCE A LAB 310 - ELEV. 6
1/2" = 1'-0"



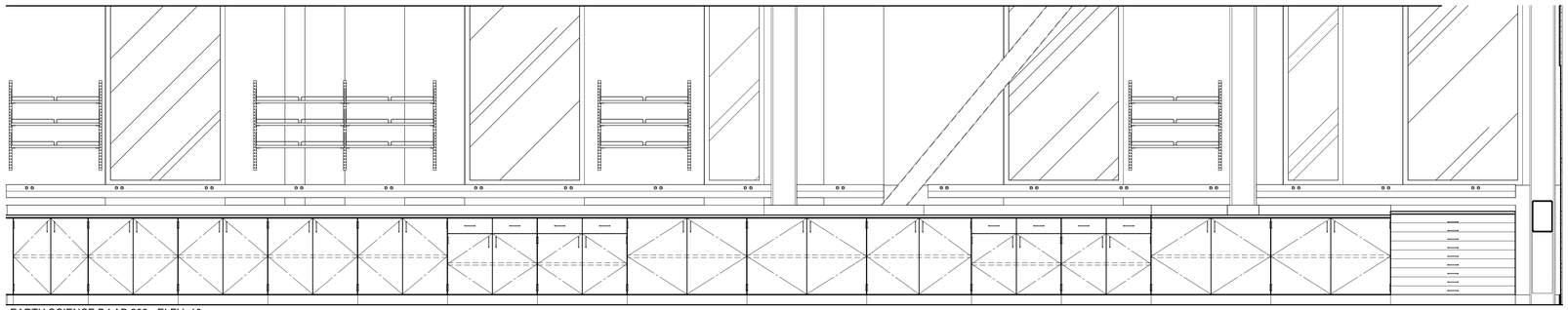
7 EARTH SCIENCE PREP 309 - ELEV. 7
1/2" = 1'-0"



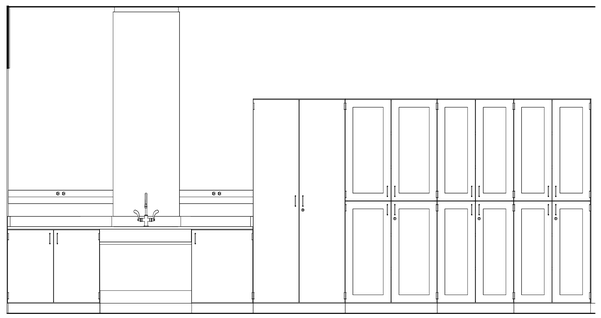
8 EARTH SCIENCE PREP 30 - ELEV. 8
1/2" = 1'-0"



9 ROCK PREP 309B - ELEV. 9
1/2" = 1'-0"



10 EARTH SCIENCE B LAB 308 - ELEV. 10
1/2" = 1'-0"



11 EARTH SCIENCE B LAB 308 - ELEV. 11
1/2" = 1'-0"

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NEW STEM BUILDING
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Checked By:	JL

Revisions

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LAB FURNISHINGS
ELEVATIONS

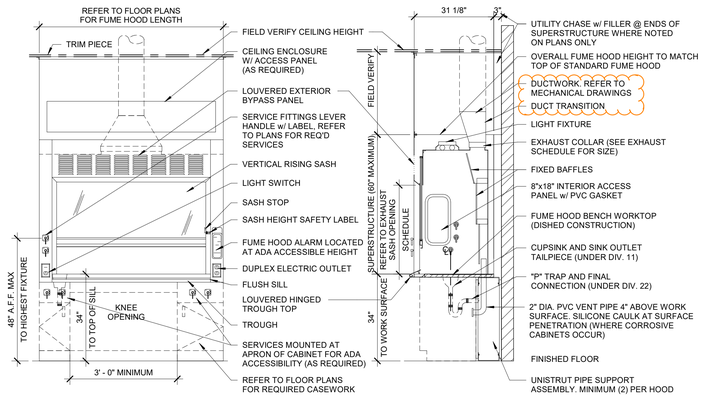
PRCNC20221036

LF203

BUILDING PERMIT SET

NOTES:
1. FOR FUME HOOD PRE-PIPING REFER TO DETAIL 3/LF301
2. FOR FUME HOOD SAFETY LABEL REFER TO DETAIL 4/LF301
3. WATER FITTING REQUIRED TO ALIGN WITH CENTER OF CUP SINK. COORDINATE WITH FUME HOOD AND BENCHTOP MANUFACTURER.

NOTES:
1. CUPSINK LOCATION VARIES. REFER TO LABORATORY FURNISHINGS PLANS FOR PLACEMENT.

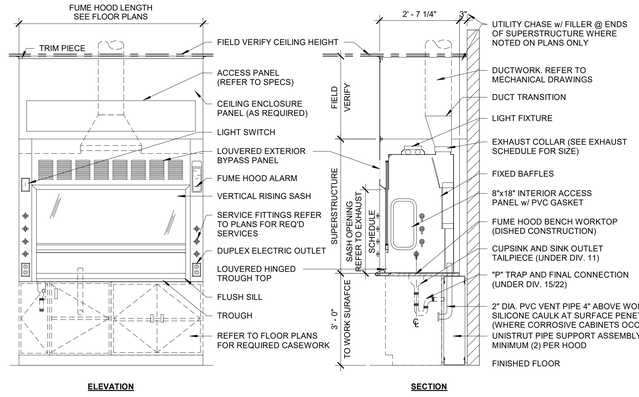


FUME HOOD - FLUSH SILL - (ADA)

1/2" = 1'-0" (1)

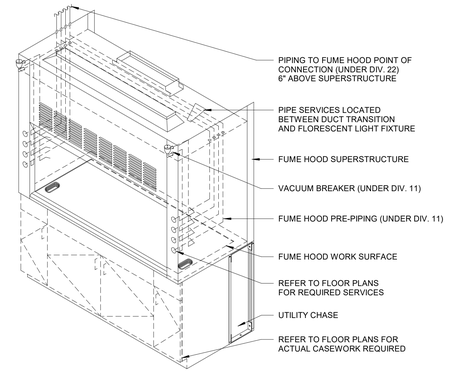
NOTES:
1. FOR FUME HOOD PRE-PIPING REFER TO DETAIL 3/LF301
2. FOR FUME HOOD SAFETY LABEL REFER TO DETAIL 4/LF301
3. WATER FITTING REQUIRED TO ALIGN WITH CENTER OF CUP SINK. COORDINATE WITH FUME HOOD AND BENCHTOP MANUFACTURER.

NOTES:
1. CUPSINK LOCATION VARIES. REFER TO LABORATORY FURNISHINGS PLANS FOR PLACEMENT.



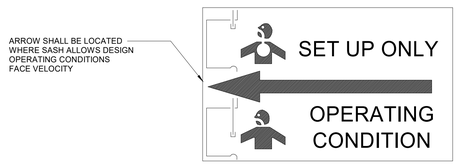
FUME HOOD - FLUSH SILL - VERTICAL SASH - (TYP.)

1/2" = 1'-0" (2)



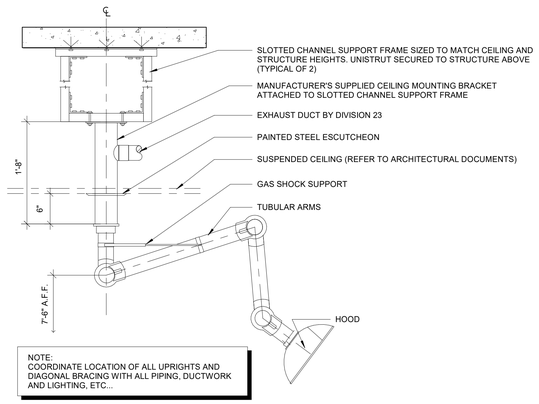
FUME HOOD - PRE-PIPING - VACUUM BREAKER

1/2" = 1'-0" (3)



FUME HOOD - SAFETY LABEL

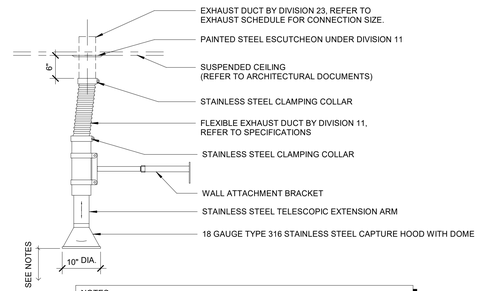
1/2" = 1'-0" (4)



NOTE:
COORDINATE LOCATION OF ALL UPRIGHTS AND DIAGONAL BRACING WITH ALL PIPING, DUCTWORK AND LIGHTING, ETC...

SNORKEL - CEILING MOUNTED

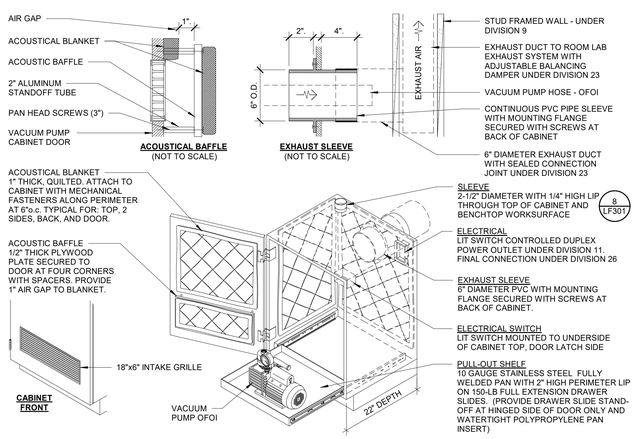
1" = 1'-0" (5)



NOTES:
- COORDINATE HEIGHT OF SNORKEL WITH INSTALLED EQUIPMENT. FOR INSTALLATIONS WITHOUT EQUIPMENT IDENTIFIED, PROVIDE SNORKEL 20" ABOVE TABLE SURFACE (FULLY EXTENDED) OR 56" ABOVE FINISHED FLOOR.

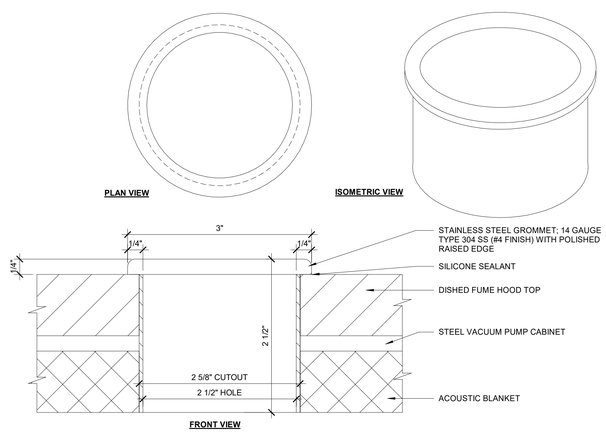
SNORKEL - STAINLESS STEEL

3/4" = 1'-0" (6)



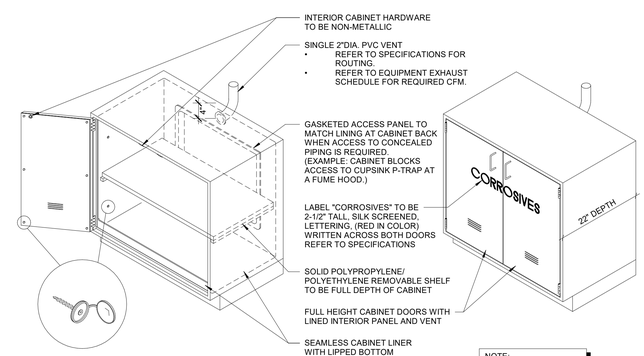
VACUUM PUMP CABINET

3/4" = 1'-0" (7)



SLEEVE - AT VACUUM PUMP

12" = 1'-0" (8)



NOTE:
CABINET INTERIOR TO HAVE NO EXPOSED METAL.

CORROSIVES STORAGE CABINET

3/4" = 1'-0" (9)

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
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1601 39th AVE SE
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Checked By:	JL

Revisions

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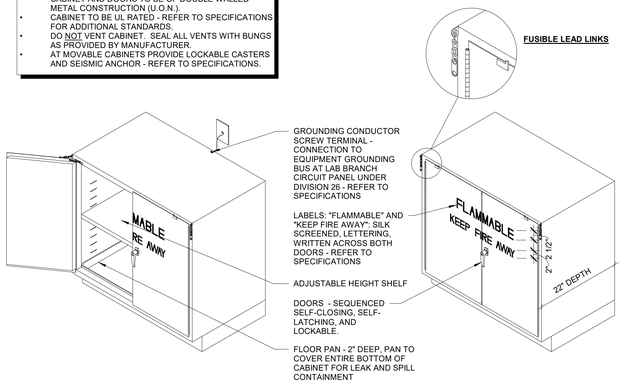
LAB FURNISHINGS DETAILS

PRCNC20221036

LF301

BUILDING PERMIT SET

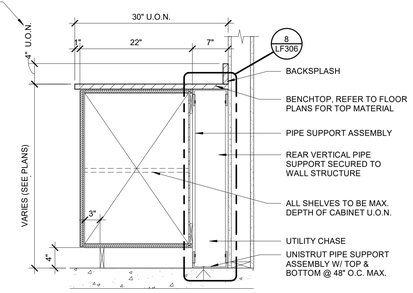
NOTES:
- CABINET AND DOORS TO BE OF DOUBLE WALLED METAL CONSTRUCTION (U.O.N.).
- CABINET TO BE UL RATED - REFER TO SPECIFICATIONS FOR ADDITIONAL STANDARDS.
- DO NOT VENT CABINET. SEAL ALL VENTS WITH BUNGS AS PROVIDED BY MANUFACTURER.
- AT MOVABLE CABINETS PROVIDE LOCKABLE CASTERS AND SEISMIC ANCHOR - REFER TO SPECIFICATIONS.



SOLVENTS STORAGE CABINET — 3/4" = 1'-0" — 1

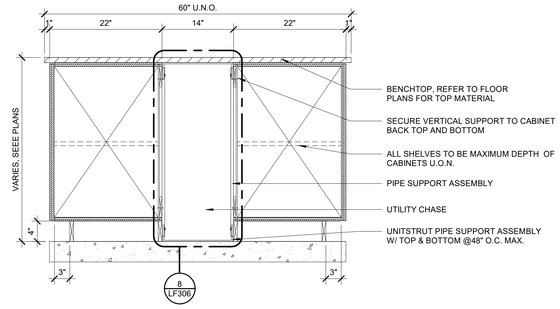
NOTE:
BACKSPLASH HEIGHT VARIES AT BENCH TOP TRANSITIONS.

FOR BENCHTOP TRANSITION REFER TO DETAIL: 9 / LF303

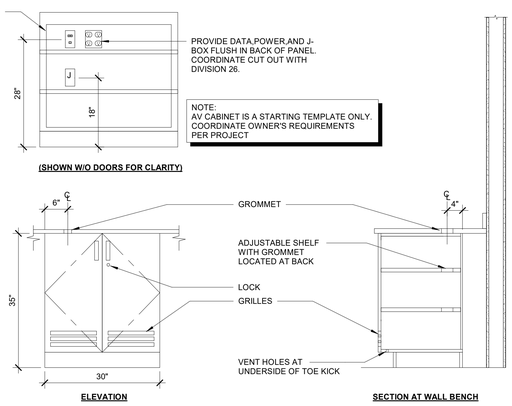


SECTION

CONVENTIONAL CASEWORK - WALL BENCH — 1" = 1'-0" — 2

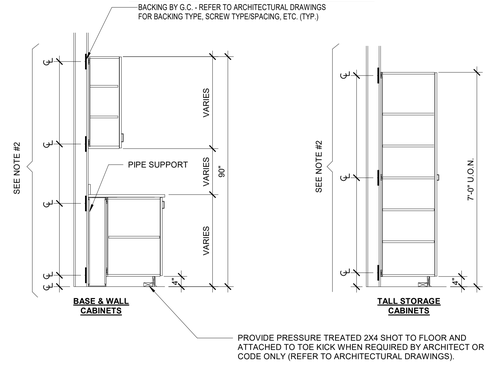


CONVENTIONAL CASEWORK - ISLAND BENCH — 1" = 1'-0" — 3



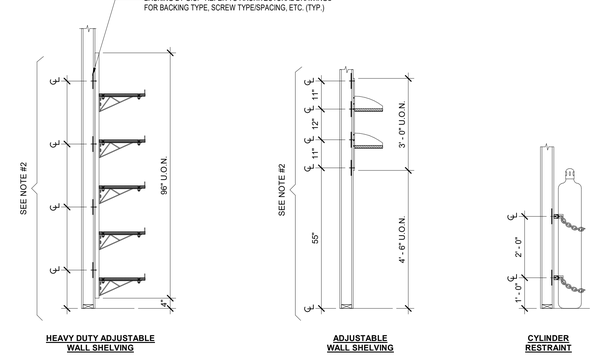
AUDIOVISUAL BASE CABINET — 3/4" = 1'-0" — 4

BACKING / ANCHORAGE NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR ANCHORAGE REQUIREMENTS.
2. BACKING HEIGHTS TO BE SUBMITTED BY CASEWORK SUPPLIER FOR COORDINATION WITH OTHER TRADES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES & SUBMIT ALTERNATE ANCHORAGE METHODS FOR CMU, BLOCK WALL, ETC.

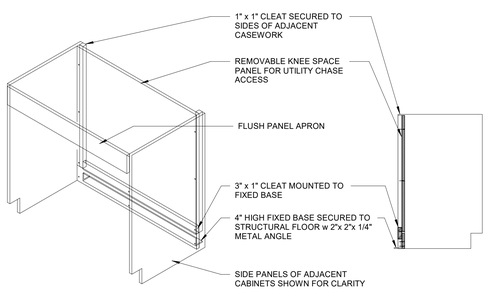


BACKING HEIGHTS - CABINET — 1/2" = 1'-0" — 5

BACKING NOTE:
1. SEE ARCHITETURAL DRAWINGS FOR ANCHORAGE REQUIREMENTS.
2. BACKING HEIGHTS TO BE SUBMITTED BY CASEWORK CONTRACTOR FOR COORDINATION WITH OTHER TRADES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR WALL TYPES.

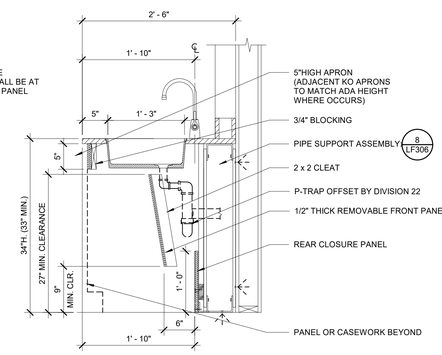


BACKING HEIGHTS - SHELVING AND CYLINDER RESTRAINTS — 1/2" = 1'-0" — 6

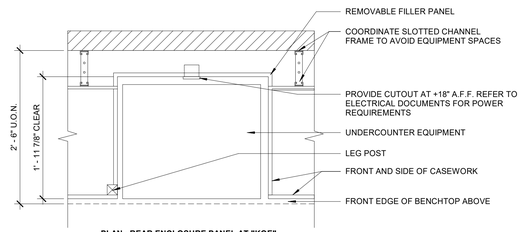


KNEE OPENING - REAR PANEL — 3/4" = 1'-0" — 7

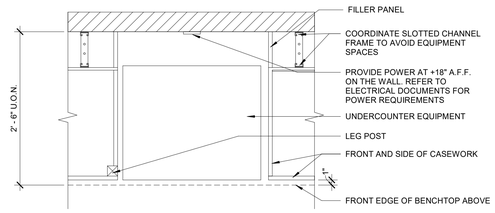
NOTE:
THE ONLY VISIBLE ATTACHMENT SHALL BE AT THE REMOVABLE PANEL



KNEE OPENING - AT ADA SINK — 1" = 1'-0" — 8



PLAN - REAR ENCLOSURE PANEL AT "KOE"



PLAN - NO ENCLOSURE PANEL AT "KOE"

PLAN - NO ENCLOSURE PANEL AT "KOO"
(SAME AS KOE WITH NO ELECTRICAL OUTLET)

KNEE OPENING - AT EQUIPMENT — 1" = 1'-0" — 9

BUILDING PERMIT SET

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Revisions

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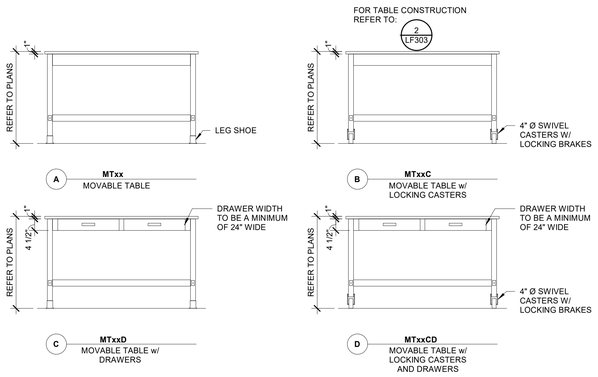
LAB FURNISHINGS DETAILS

PRCNC20221036

LF302



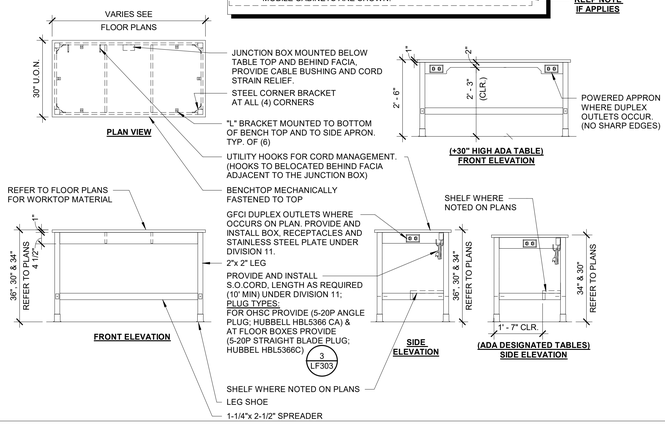
MOVABLE TABLE - TYPES

1/2" = 1'-0" (1)

NOTE: MTxx SHOWN

NOTES:
1. CONNECT RECEPTACLES BELOW TABLE TOP (BEHIND TABLE APRONS) USING APPROVED WIRING METHODS. SECURE CABLE TO UNDERSIDE OF TABLE USING 1-HOLE STRAPS. STRAPS SHALL BE LOCATED AS PER NEC REQUIREMENTS AT A MINIMUM OF EVERY 12" AND AT LEAST (1) BETWEEN BOXES.
2. THERE SHALL BE ONLY (1) CORD PER TABLE.
3. ADA HEIGHT SHALL NOT EXCEED +34" HIGH.
4. DO NOT PROVIDE LOWER CROSS RAIL AT LOCATIONS WHERE MOBILE CABINETS ARE SHOWN.

KEEP NOTE IF APPLIES



MOVABLE TABLE

1/2" = 1'-0" (2)

HBL5366CA

By Hubbell Wiring Device-Kellems
Catalog ID: HBL5366CA

By Hubbell Wiring Device-Kellems

Catalog ID: HBL5366CA

Straight Blade Devices, Male Plug, Insulgrip Heavy Duty, Industrial/Commercial Grade, Angled, 2-Pole 3-Wire Grounding, 20A 125V, 5-20P, Black and White, Single Pack.

- 8-Position angled plug
- Low profile
- Roomy wiring chamber provides ample space for wiring

Weatherproof Boot

PLUG TYPE:
FOR OVERHEAD SERVICE CARRIER (OHSC) PROVIDE (5-20P ANGLE PLUG; HUBBELL HBL5366 CA)

HBL5366C

By Hubbell Wiring Device-Kellems
Catalog ID: HBL5366C

By Hubbell Wiring Device-Kellems

Catalog ID: HBL5366C

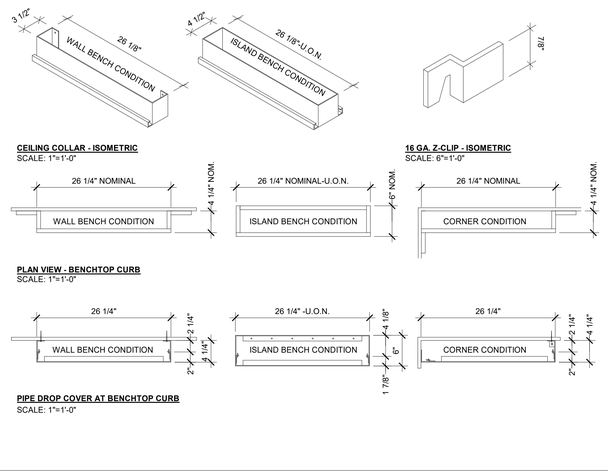
Straight Blade Devices, Male Plug, Insulgrip Heavy Duty, Industrial/Commercial Grade, Straight, 2-Pole 3- Wire Grounding, 20A 125V, 5-20P, Black and White, Single Pack.

- Ribbed nylon housing is impact and chemical resistant
- VARI-SIZE adjustable cord clamp
- Fast lead assembly screws
- Beveled housing prevents snagging

PLUG TYPE:
FOR FLOOR BOXES PROVIDE (5-20P STRAIGHT BLADE PLUG; HUBBEL HBL5366C)

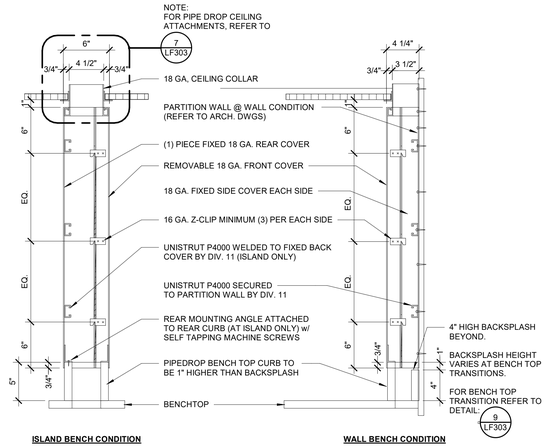
MOVABLE TABLE - PLUG TYPES

1/2" = 1'-0" (3)



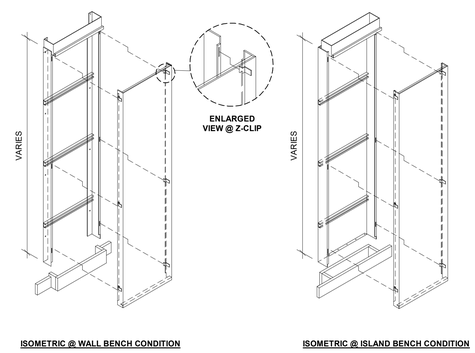
PIPE DROP - DETAILS

1" = 1'-0" (4)



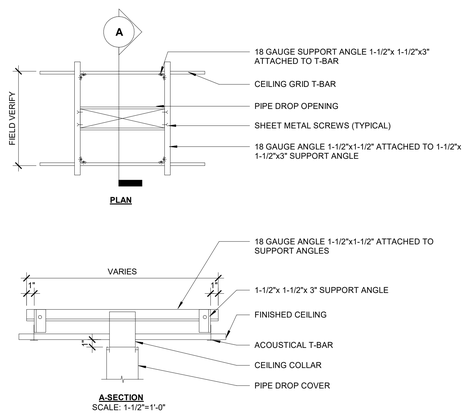
PIPE DROP - SECTIONS

1 1/2" = 1'-0" (5)



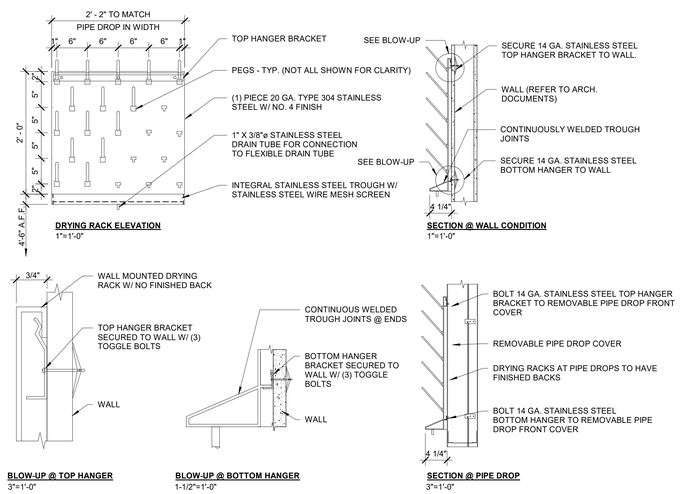
PIPE DROP - ENCLOSURE ASSEMBLY

1/2" = 1'-0" (6)



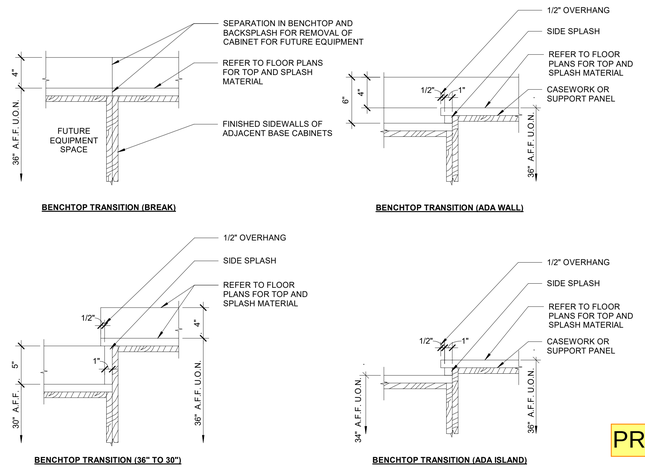
PIPE DROP - CEILING ATTACHMENT AT ISLAND BENCH

3/4" = 1'-0" (7)



DRYING RACK - STAINLESS STEEL

1" = 1'-0" (8)



BENCHTOP TRANSITIONS

1 1/2" = 1'-0" (9)

BUILDING PERMIT SET

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	GC
Checked By:	JL

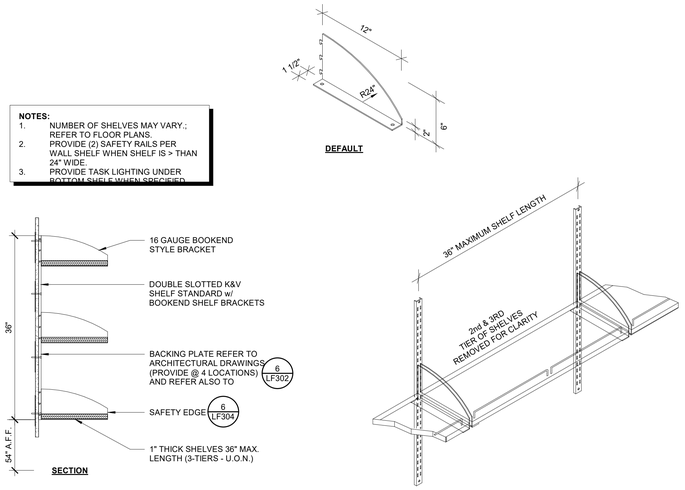
Revisions

#	Date	Description

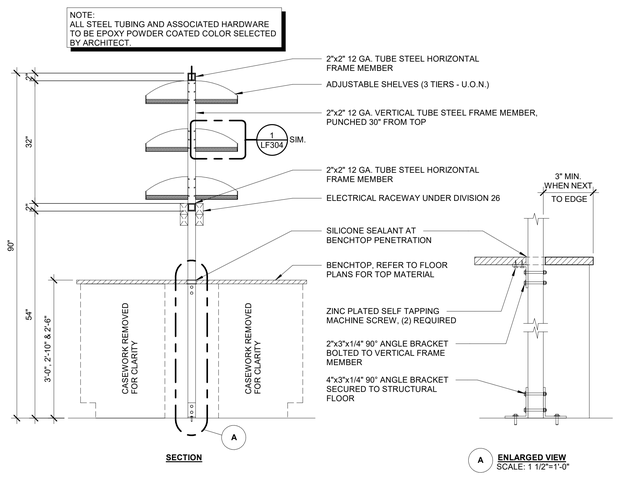
LAB FURNISHINGS DETAILS

PRCNC20221036

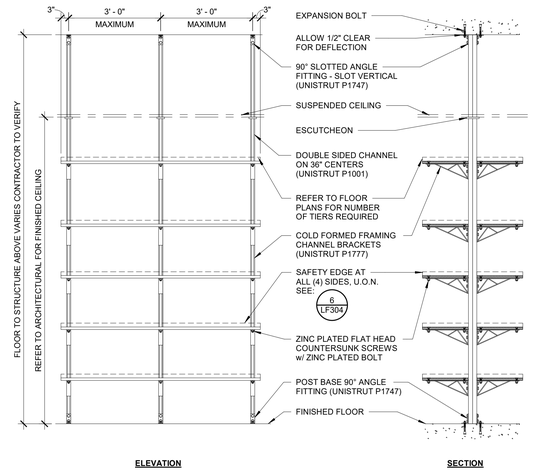
LF303



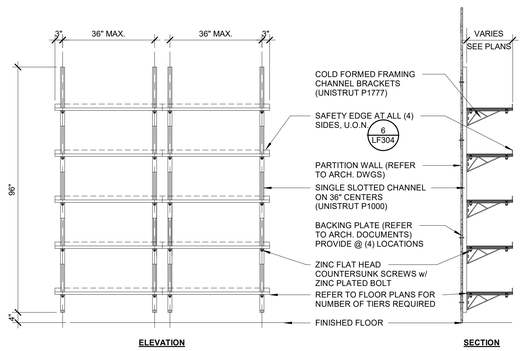
ADJUSTABLE WALL SHELVES (2 OR 3-TIER) — 1" = 1'-0" — 1



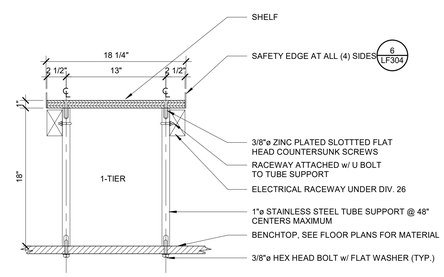
ADJUSTABLE ISLAND SHELVES (3-TIER) - SECTION — 3/4" = 1'-0" — 2



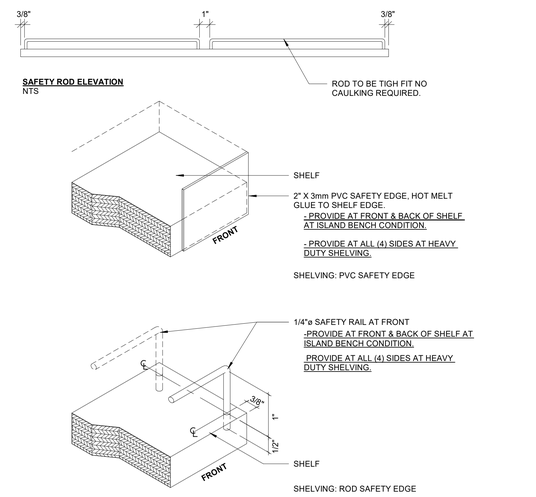
ADJUSTABLE ISLAND SHELVES (5-TIERS U.O.N.) - HEAVY DUTY — 1/2" = 1'-0" — 3



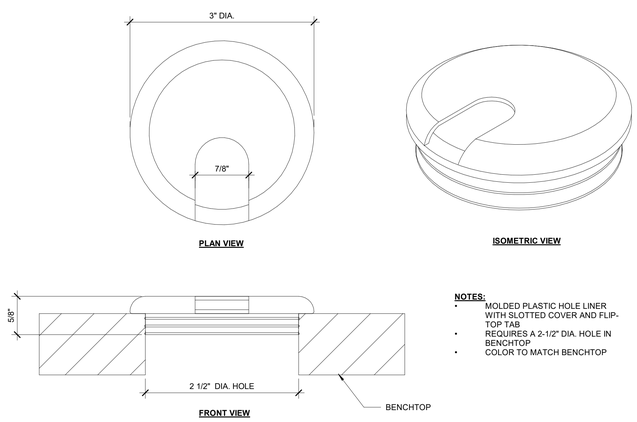
ADJUSTABLE WALL SHELVES (5-TIER U.O.N.) - HEAVY DUTY — 1/2" = 1'-0" — 4



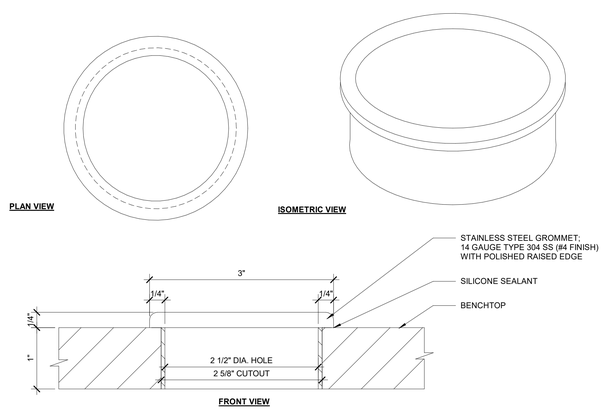
FIXED REAGENT SHELVES - (1 TIER U.O.N.) — 1 1/2" = 1'-0" — 5



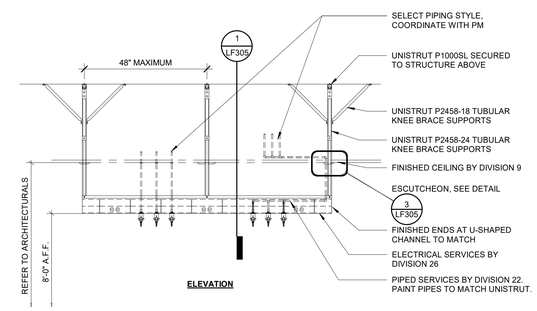
SAFETY EDGES — 6" = 1'-0" — 6



GROMMET - AT BENCHTOP LOCATION — 12" = 1'-0" — 7



SLEEVE - AT BENCHTOP LOCATION — 12" = 1'-0" — 8



OVERHEAD SERVICE CARRIER - ELEVATION — 1/2" = 1'-0" — 9

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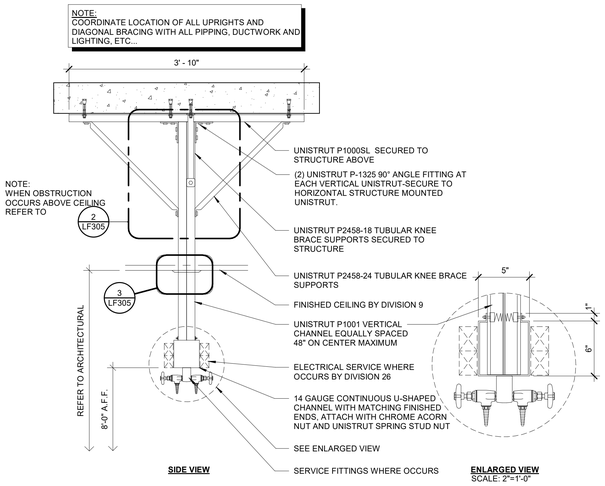
LAB FURNISHINGS DETAILS

PRCNC20221036

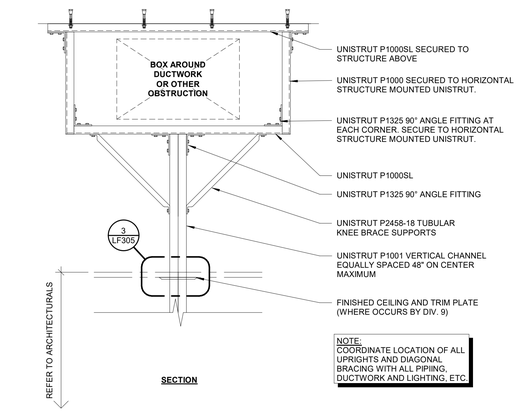
LF304

BUILDING PERMIT SET



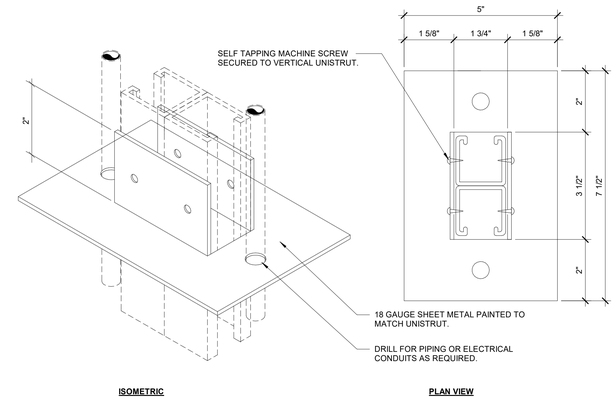
OVERHEAD SERVICE CARRIER - SECTION

1" = 1'-0" (1)



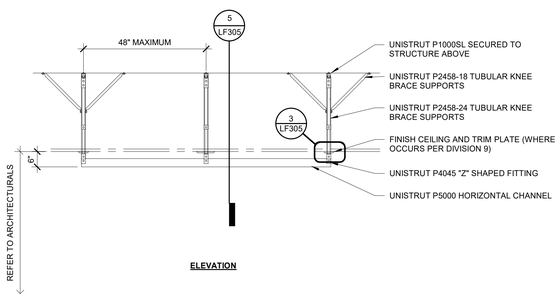
OVERHEAD SERVICE CARRIER - SUPPORT OBSTRUCTION

1" = 1'-0" (2)



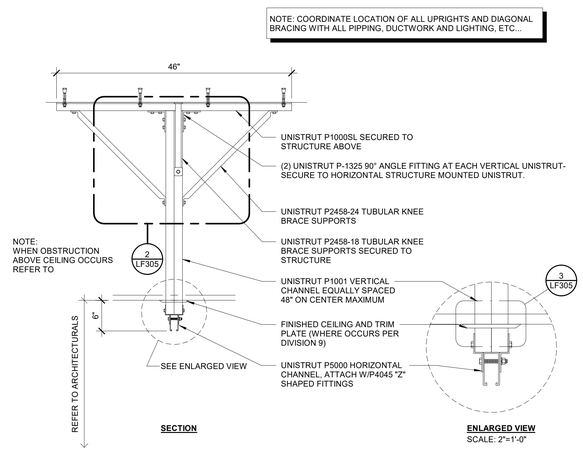
ESCUTCHEON

6" = 1'-0" (3)



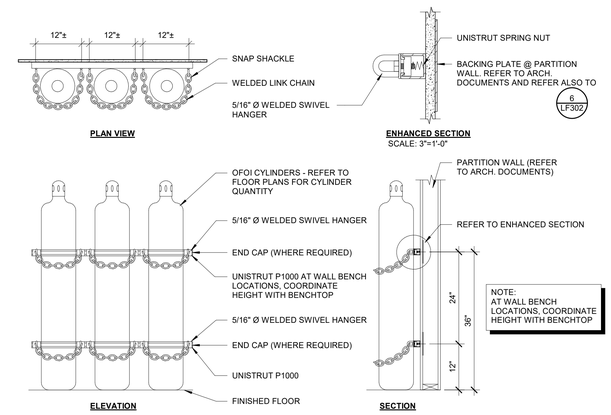
OVERHEAD UNISTRUT - ELEVATION

1/2" = 1'-0" (4)



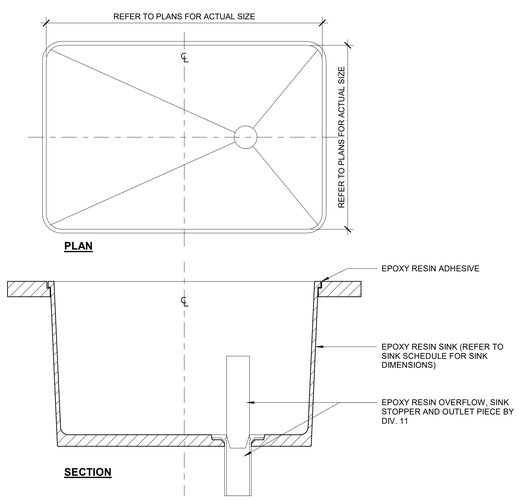
OVERHEAD UNISTRUT - SECTION

1" = 1'-0" (5)



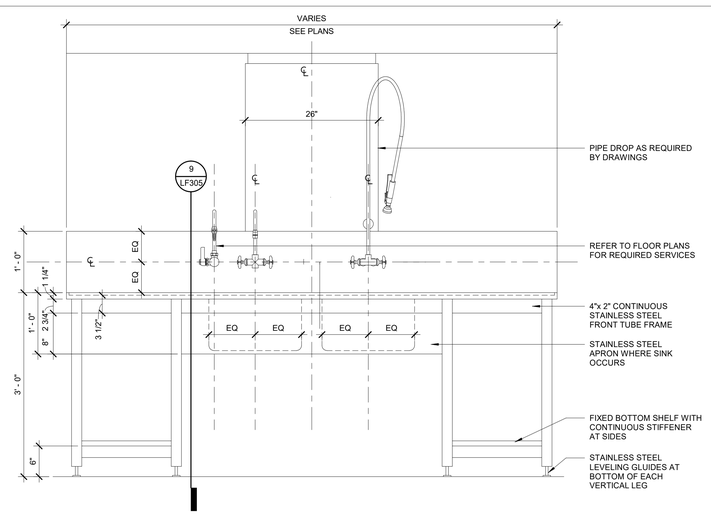
CYLINDER RESTRAINT

3/4" = 1'-0" (6)



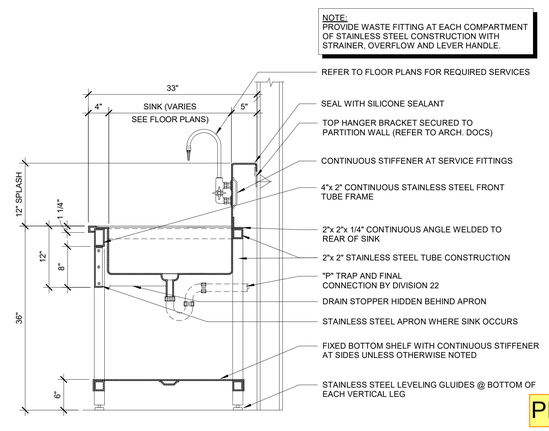
SINK - EPOXY DROP-IN

3" = 1'-0" (7)



SINK - SCULLERY ELEVATION

1" = 1'-0" (8)



SINK - SCULLERY SECTION

1" = 1'-0" (9)

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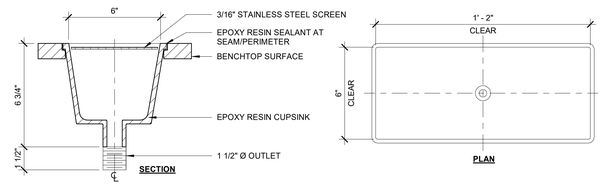
LAB FURNISHINGS DETAILS

PRCNC20221036

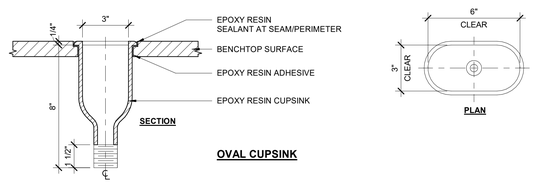
LF305

BUILDING PERMIT SET

NOTE:
WATER FITTING TO BE CENTERED WITH CUPSINK.
REFER TO PLANS FOR ACTUAL SIZE AND LOCATION



RECTANGULAR CUPSINK

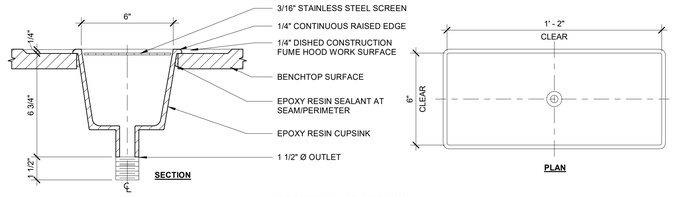


OVAL CUPSINK

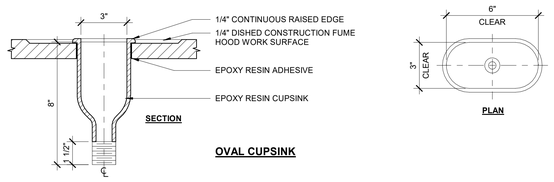
SINK - CUPSINK @ BENCHTOP

3" = 1'-0" (1)

NOTE:
WATER FITTING TO BE CENTERED WITH CUPSINK.
REFER TO PLANS FOR ACTUAL SIZE AND LOCATION



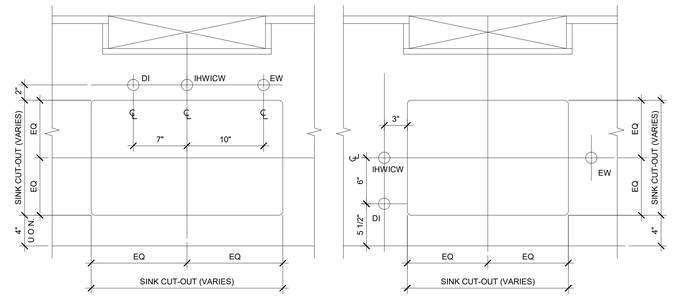
RECTANGULAR CUPSINK



OVAL CUPSINK

SINK - CUPSINK RAISED LIP @ FUME HOOD

3" = 1'-0" (2)



PLAN - FITTINGS AT BACK

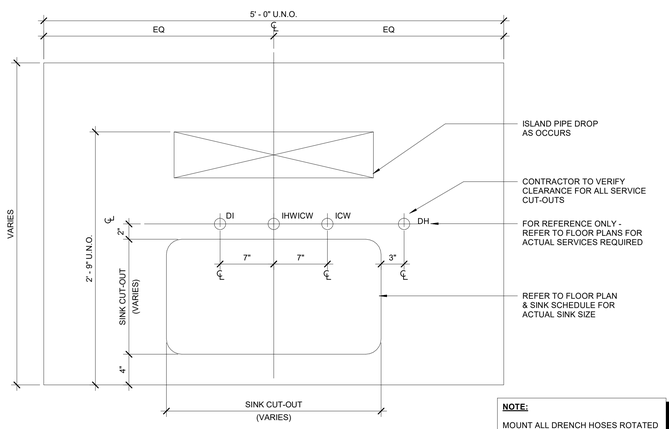
PLAN - FITTINGS AT SIDE

NOTE:

1. FIXTURE SPACING REPRESENT TYPICAL CONFIGURATIONS. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
2. CONTRACTOR TO VERIFY CLERANCES FOR ALL SERVICE CUT-OUTS.
3. REFER TO PLANS AND SINK SCHEDULE FOR SINK TYPES AND SIZES.
4. PIPE DROP CUT-OUTS AS OCCURS ON PLANS.

FIXTURE SPACING - SINK AT WALL BENCH

1 1/2" = 1'-0" (3)



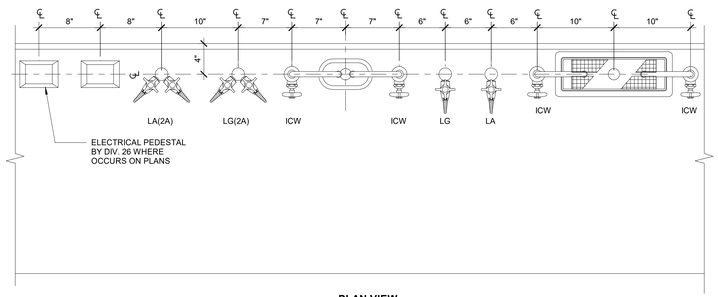
PLAN VIEW

NOTE:

MOUNT ALL DRENCH HOSES ROTATED AT A 45° ANGLE TOWARDS SINK.

FIXTURE SPACING - SINK AT ISLAND BENCH

1 1/2" = 1'-0" (4)



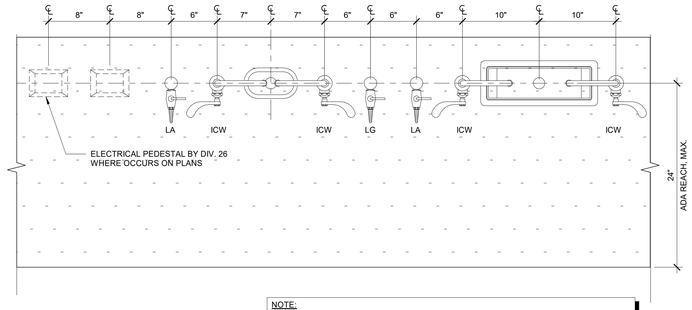
PLAN VIEW

NOTE:

1. FIXTURE SPACING REPRESENT TYPICAL CONFIGURATIONS. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
2. CONTRACTOR TO VERIFY CLERANCES FOR ALL SERVICE CUT-OUTS.
3. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
4. REFER TO PLANS AND SINK SCHEDULE FOR SINK TYPES AND SIZES.
5. APPLY TYPICAL FIXTURE SPACING @ OHSC & WALL CONDITIONS WHERE OCCURS ON LF PLANS.

FIXTURE SPACING - BENCH WALL

1 1/2" = 1'-0" (5)



PLAN VIEW

NOTE:

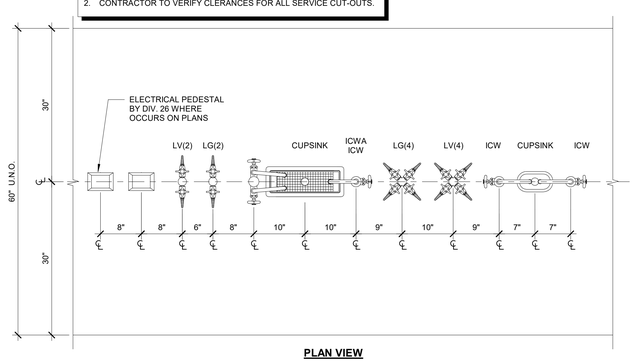
1. FIXTURE SPACING REPRESENT TYPICAL CONFIGURATIONS. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
2. CONTRACTOR TO VERIFY CLERANCES FOR ALL SERVICE CUT-OUTS.
3. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
4. REFER TO PLANS AND SINK SCHEDULE FOR SINK TYPES AND SIZES.
5. PIPE DROP CUT-OUTS AS OCCURS ON PLANS.
6. ALL FIXTURES @ ADA CUP SINKS TO HAVE ADA COMPLIANT WRIST BLADE HANDLES.
7. TOP OF WORK SURFACE NOT TO EXCEED 34" ABOVE FINISHED FLOOR.

FIXTURE SPACING - BENCH WALL (ADA)

1 1/2" = 1'-0" (6)

NOTE:

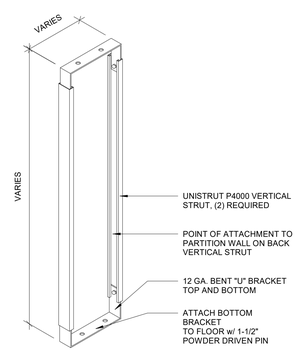
1. FIXTURE SPACING REPRESENT TYPICAL CONFIGURATIONS. REFER TO FLOOR PLANS FOR ACTUAL SERVICES REQUIRED.
2. CONTRACTOR TO VERIFY CLERANCES FOR ALL SERVICE CUT-OUTS.



PLAN VIEW

FIXTURE SPACING - BENCH ISLAND

1" = 1'-0" (7)



UNISTRUT PIPE SUPPORT ASSEMBLY

1 1/2" = 1'-0" (8)

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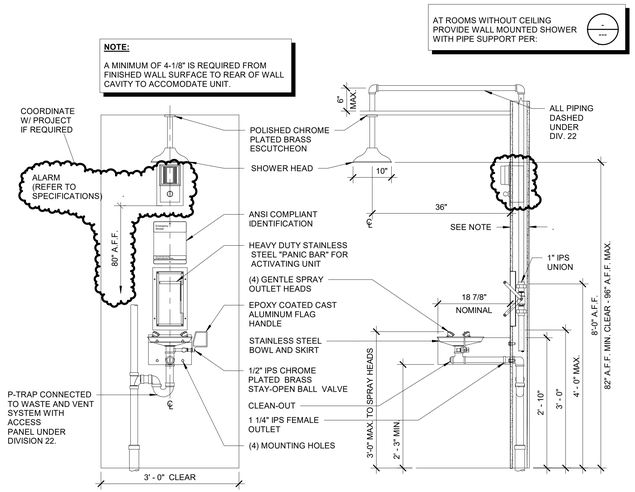
LAB FURNISHINGS DETAILS

PRCNC20221036

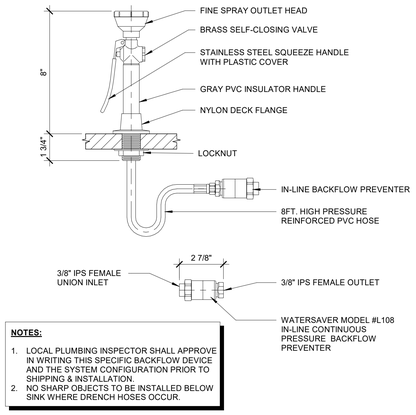
LF306

BUILDING PERMIT SET



SSEW - SHOWER/EYEWASH BOWL AND SKIRT (TYP.)

3/4" = 1'-0" (1)

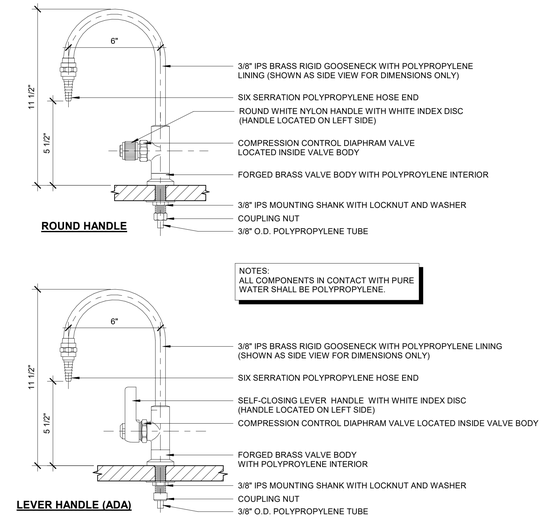


NOTES:

1. LOCAL PLUMBING INSPECTOR SHALL APPROVE IN WRITING THIS SPECIFIC BACKFLOW DEVICE AND THE SYSTEM CONFIGURATION PRIOR TO SHIPPING & INSTALLATION.
2. NO SHARP OBJECTS TO BE INSTALLED BELOW SINK WHERE DRENCH HOSES OCCUR.

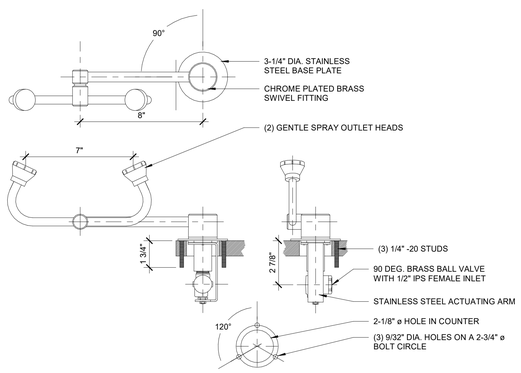
DH(ICW) - DECK

3" = 1'-0" (2)



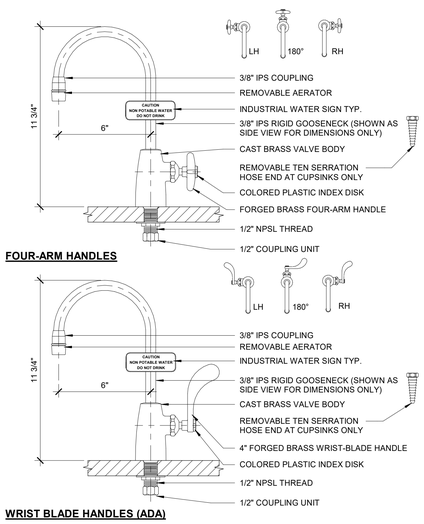
PW - DECK

3" = 1'-0" (3)



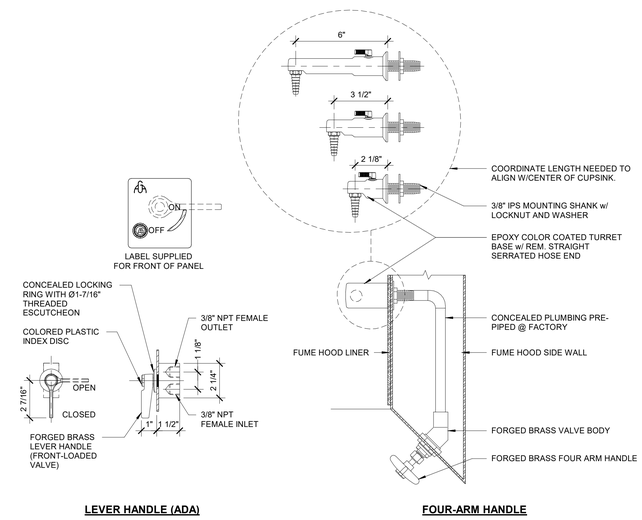
EW/DH - DECK - SWIVEL

3" = 1'-0" (4)



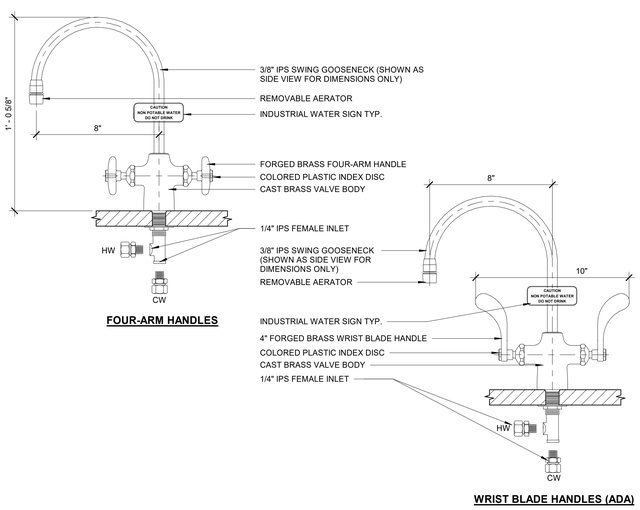
ICW - DECK

3" = 1'-0" (5)



ICW - HOOD

3" = 1'-0" (6)



IHWICW - DECK

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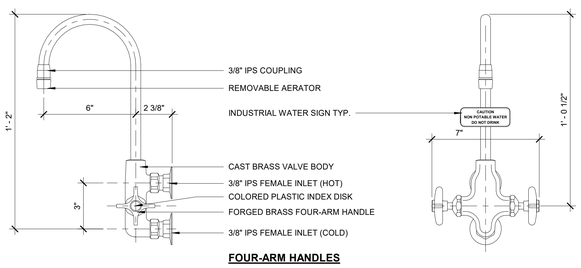
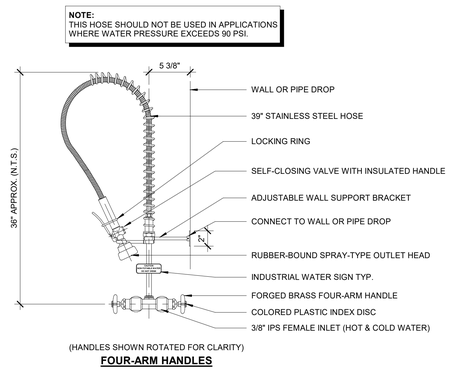


IHWICW - PANEL

3" = 1'-0" (8)



IHWICW (SPRAY) - PANEL

1 1/2" = 1'-0" (9)

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	GC
Checked By:	JL

Revisions

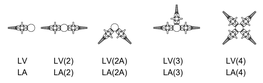
#	Date	Description
1	Date 1	Revision 1

LAB FURNISHINGS
FITTING DETAILS

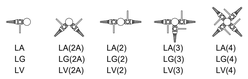
PRCNC20221036

LF401

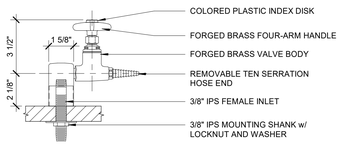
BUILDING PERMIT SET



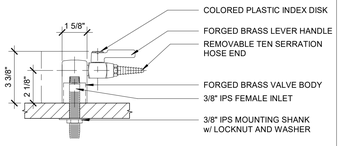
POSSIBLE CONFIGURATIONS



POSSIBLE CONFIGURATIONS



FOUR-ARM HANDLE



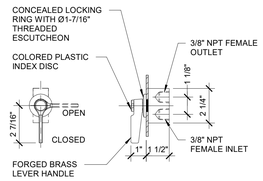
LEVER HANDLE

NOTE:
PROVIDE LEVER HANDLE AT ALL LG (LAB GAS) FITTINGS - U.O.N.

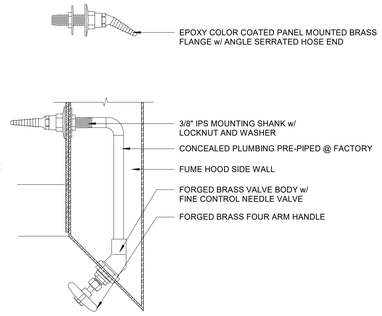
LG, LA & LV - DECK

3" = 1'-0" (1)

LABEL SUPPLIED FOR FRONT OF PANEL



LEVER HANDLE (ADA)

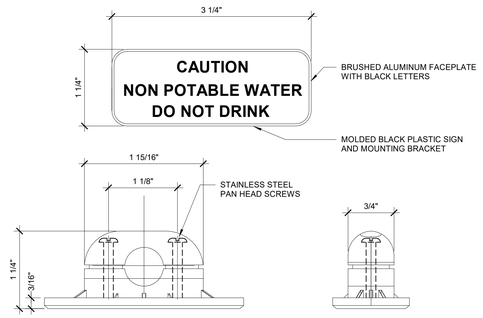


FOUR-ARM HANDLE

NOTE:
PROVIDE LEVER HANDLE AT ALL LG (LAB GAS) FITTINGS - U.O.N.

LG, LA & LV - HOOD

3" = 1'-0" (2)



INDUSTRIAL WATER SIGN

1 : 1 (3)

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LAB FURNISHINGS
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LF402

BUILDING PERMIT SET

STANDARD ABBREVIATIONS

AD	AREA DRAIN	IE	INVERT ELEVATION
ADA	AMERICANS WITH DISABILITIES ACT	IN	INCH, INCHES
AF	AIRFOIL	INSUL	INSULATION
AFF	ABOVE FINISHED FLOOR	IPS	IRON PIPE SIZE
AHP	APPARATUS HOUSING PLENUM	ISO	ISOMETRIC
AL	ALUMINUM	ISOL	ISOLATOR, ISOLATION
ALT	ALTERNATIVE	JP	JOCKEY PUMP
AP	ACCESS PANEL	KW	KILOWATT
APD	AIR PRSSURE DROP	KWH	KILOWATT HOUR
APPROX	APPROXIMATELY	L	LENGTH
ARCH	ARCHITECT, ARCHITECTURAL	LAT	LEAVING AIR TEMP
AS	AUTOMATIC SPRINKLER	LAV	LAVATORY
AUTO	AUTOMATIC	LB	POUND
BDD	BACKDRAFT DAMPER	LDB	LEAVING DRY BULB
BFF	BELOW FINISHED FLOOR	LF	LINEAR FEET
BHP	BREAK HORESPOWER	LFT	LEAVING FLUID TEMPERATURE
BI	BACKWARD INCLINED	LVG	LEAVING
BLDG	BUILDING	LWB	LEAVING WET BULB
BOP	BOTTOM OF PIPE	LWT	LEAVING WATER TEMPERATURE
BOS	BOTTOM OF STRUCTURE	MAX	MAXIMUM
BSMT	BASEMENT	MBH	THOUSAND BTU PER HOUR
BTU	BRITISH THERMAL UNIT	MCA	MINIMUM CIRCUIT AMPACITY
BTUH	BRITISH THERMAL UNITS PER HOUR	MECH	MECHANICAL
BTV	BUTTERFLY VALVE	MERV	MINIMUM EFFICIENCY REPORTING VALUE
BV	BALANCING VALVE	MFR	MANUFACTURER
CALC	CALCULATION	MIN	MINIMUM
CB	CATCH BASIN	MISC	MISCELLANEOUS
CFH	CUBIC FEET PER HOUR	MOCP	MAXIMUM OVERCURRENT PROTECTION
CFM	CUBIC FEET PER MINUTE	MS	MOP SINK
CFS	CUBIC FEET PER SECOND	MTD	MOUNTED
CI	CAST IRON	NC	NORMALLY CLOSED
CL	CENTERLINE	NIC	NOT IN CONTRACT
CLG	CEILING OR COOLING	NO	NORMALLY OPEN
CO	CLEANOUT	NPS	NOMINAL PIPE SIZE
CONC	CONCRETE	NRS	NON-RISING STEM
CONN	CONNECT, CONNECTION	NTS	NOT TO SCALE
CONT	CONTINUED, CONTINUATION	OAT	OUTSIDE AIR TEMPERATURE
CP	CIRCULATING PUMP	OC	ON CENTER DISTANCE
CTG	CLEANOUT TO GRADE	OD	OVERFLOW DRAIN
CV	CHECK VALVE	OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
DB	DRY BULB	OSA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	PD	PLANTER DRAIN
DEFL	DEFLECTION	PI/FT	PITCH PER FOOT
DF	DRINKING FOUNTAIN	PG	PRESSURE GAUGE
DFU	DRAINAGE FIXTURE UNIT	PH	PHASE
DI	DEIONIZED	PIV	POST INDICATING VALVE
DIA	DIAMETER	PP	POLYPROPYLENE
DIP	DUCTILE IRON PIPE	PRV	PRESSURE REDUCING VALVE
DN	DOWN (PENETRATES FLOOR)	PS	PRESSURE SWITCH
DP	DEW POINT	PSI	POUNDS PER SQUARE INCH
DR	DRAIN	PSIG	POUNDS PER SQUARE INCH (GAUGE)
DV	DRAIN VALVE	PVC	POLYVINYL CHLORIDE
DROP	DROP (WITHIN FLOOR)	PVS	PVC COATED STEEL
DWDI	DOUBLE WIDTH DOUBLE INLET	R, RAD	RADIUS
DWG	DRAWING	RA	RELIEF AIR
(E), EXIST	EXISTING	RD	ROOF DRAIN
EAT	ENTERING AIR TEMPERATURE	RET	RETURN AIR
EC	EXTENDED COVERAGE	REV	REVISION
ECM	ELECTRONICALLY COMMUTATED MOTOR	RH	RELATIVE HUMIDITY
EDB	ENTERING DRY BULB	RISE	RISE (WITHIN FLOOR)
EEW	EMERGENCY EYE WASH	RM	ROOF MANIFOLD
EFF	EFFICIENCY	RN	RISER NIPPLE
EFT	ENTERING FLUID TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
ELEC	ELECTRIC, ELECTRICAL	S	SINK
ELEV	ELEVATION	SA	SUPPLY AIR
ENGR	ENGINEER	SB	SWAY BRACE
EQ	EQUAL	SCFM	STANDARD CUBIC FEET PER MINUTE
EQUIP	EQUIPMENT	SD	SHOWER DRAIN (PLUMBING)
ES	EMERGENCY SHOWER	SD	SMOKE DAMPER (MECHANICAL)
ESP	EXTERNAL STATIC PRESSURE	SE	SEWAGE EJECTOR
ET	EXPANSION TANK	SECT	SECTION
EWB	ENTERING WET BULB	SENS	SENSIBLE
EWC	ELECTRIC WATER COOLER	SF	SQUARE FOOT, SQUARE FEET
EWH	ELECTRIC WATER HEATER	SH	SHOWER
EWT	ENTERING WATER TEMPERATURE	SIM	SIMILAR
EX	EXTRACTOR	SOV	SHUTOFF VALVE
EXP	EXPANSION	SP	STATIC PRESSURE
EXH	EXHAUST OR EXHAUST AIR	SPEC	SPECIFICATION
F	DEGREES FAHRENHEIT	SQ	SQUARE
FC	FORWARD CURVED	SQ IN	SQUARE INCH, SQUARE INCHES
FCO	FLOOR CLEANOUT	SS	STAINLESS STEEL (ALL)
FD	FIRE DAMPER (MECHANICAL)	SSP	STANDARD SPRAY PENDENT
FD	FLOOR DRAIN (PLUMBING)	SSU	STANDARD SPRAY UPRIGHT
FDC	FIRE DEPARTMENT CONNECTION	STL	STEEL
FFE	FINISHED FLOOR ELEVATION	STRUCT	STRUCTURE, STRUCTURAL
FIG	FIGURE	SWP	SINGLE WALL PLENUM
FL	FLOOR	SWSI	SINGLE WIDTH SINGLE INLET
FLA	FULL LOAD AMPACITY	TD	TRENCH DRAIN
FLEX	FLEXIBLE	TDH	TOTAL DISCHARGE HEAD
FP	FIRE PUMP	TDL	TOTAL DEVELOPED LENGTH
FPD	FLUID PRESSURE DROP	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TMV	THERMOSTATIC MIXING VALVE
FPS	FEET PER SECOND	TOP	TOP OF PIPE
FS	FLOOR SINK	TP	TRAP PRIMER VALVE
FSD	FIRE SMOKE DAMPER	TS	TAMPER SWITCH
FT	FEET/FOOT	TSP	TOTAL STATIC PRESSURE
FTR	FINNED TUBE RADIATOR	TYP	TYPICAL
FLT	FLUSH TANK	U	URINAL
FU	FIXTURE UNIT	UG	UNDERGROUND
FV	FLUSH VALVE	UP	UP (PENETRATES FLOOR SLAB)
(F)	FUTURE	UON	UNLESS OTHERWISE NOTED
G	GRADE	V	VOLTS
GA	GAGE/GAUGE	VB	VACUUM BREAKER
GAL	GALLON	VD	VOLUME DAMPER
GALV	GALVANIZED	VEL	VELOCITY
GLY	GLYCOL	VERT	VERTICAL
GH	GROUND HYDRANT	VFD	VARIABLE FREQUENCY DRIVE
GPH	GALLONS PER HOUR	VTR	VENT THROUGH ROOF
GPM	GALLONS PER MINUTE	W	WIDTH
GV	GATE VALVE	WB	WET BULB
H	HEIGHT	WC	WATER CLOSET
HB	HOSE BIBB	WCO	WALL CLEANOUT
HD	HUB DRAIN	WFU	WATER FIXTURE UNITS
HORIZ	HORIZONTAL	WG	WATER GAUGE
HP	HORSEPOWER	WH	WALL HYDRANT
HR	HOUR	WHA	WATER HAMMER ARRESTOR
HSW	HORIZONTAL SIDE WALL	WPD	WATER PRESSURE DROP
HT	HEAT TRACE	WTD	WATER TEMPERATURE DROP
HTG	HEATING	WTR	WATER TEMPERATURE RISE
HV	HOSE VALVE	W/	WITH
HVC	HOSE VALVE CABINET	W/O	WITHOUT
ID	INSIDE DIAMETER, INSIDE DIMENSION		

FIRE PROTECTION PIPING

— — — —	WS	WATER SERVICE
	WPS	WET-PIPE SPRINKLER
	DPS	DRY PIPE SPRINKLER
	PA	PREACTION SPRINKLER
	DS	DELUGE SPRINKLER
	FDC	FIRE DEPARTMENT CONNECTION
	CA	CLEAN AGENT
	WMH	WATER MIST HYBRID
	WSP	WET STANDPIPE
	DSP	DRY STANDPIPE
	CSP	COMBINED STANDPIPE
	AFS	ANTIFREEZE SOLUTION

SYMBOLS

A	ACCESS PANEL	#	NUMBERED NOTE
	POINT OF CONNECTION	X	REMOVE EXISTING
E	EXISTING TO REMAIN	K	CAP EXISTING / CAP FOR FUTURE
B	BELOW GRADE / FLOOR	R	RELOCATE EXISTING
1	REVISION NUMBER	F	FUTURE

XX-XXX
- UNIT NUMBER
- FLOOR UNIT IS LOCATED ON
- EQUIPMENT TYPE

EQUIPMENT

XXXX-XX-XXXXX
- UNIT NUMBER
- FLOOR UNIT IS LOCATED ON
- EQUIPMENT TYPE

X / XXX.XX
- DETAIL NUMBER
- SHEET NUMBER

DETAIL CALLOUT

MISC. FITTINGS & SYMBOLS

- DIRECTION OF FLOW
- DIRECTION OF SLOPE
- PIPE SLEEVE
- REDUCER
- ANCHOR
- ELBOW (90 DEGREE)
- ELBOW (45 DEGREE)
- PIPING CONNECTIONS
- TEE
- JOINT OR COUPLING POINT
- UNION
- FLANGED CONNECTION
- CAP
- PLUG OR BLIND FLANGE
- RISER
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- FLEXIBLE HOSE CONNECTOR
- MC — MECHANICAL COUPLING
- HEAT TRACE
- FLEX DROP
- THRUST BLOCK
- PIPE CONTINUATION

DEMOLITION LEGEND

- REMOVE EXISTING PIPE
- REMOVE EXISTING EQUIPMENT

NEW, EXISTING, & FUTURE WORK

EXISTING PIPING	NEW PIPING	FUTURE PIPING
EXISTING EQUIPMENT	NEW EQUIPMENT	FUTURE EQUIPMENT
EXISTING EQUIPMENT CLEARANCES	NEW EQUIPMENT CLEARANCES	FUTURE EQUIPMENT CLEARANCES

GENERAL NOTES:

A. THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

MISC. VALVES & COCKS

- DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)
- REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA)
- SUPERVISED BUTTERFLY VALVE
- SUPERVISED OS&Y GATE VALVE
- SUPERVISED POST INDICATOR GATE VALVE
- SUPERVISED NRS GATE VALVE
- CHECK VALVE
- ALARM CHECK VALVE
- ACTUATED CONTROL VALVE
- DRY PIPE VALVE
- DRY PIPE VALVE WITH QUICK OPENING DEVICE
- PREACTION VALVE
- DELUGE VALVE
- PRESSURE REGULATING VALVE
- PRESSURE RELEASING VALVE
- WET RISER
- DRY RISER
- PREACTION RISER
- NITROGEN-FILLED DRY RISER
- NITROGEN-FILLED PREACTION RISER
- FREESTANDING FIRE DEPARTMENT CONNECTION
- WALL-MOUNT FIRE DEPARTMENT CONNECTION
- PENDENT SPRINKLER
- SIDEWALL SPRINKLER
- UPRIGHT SPRINKLER
- UPRIGHT SPRINKLER WITH GUARD
- WINDOW SPRINKLER
- DRY PENDENT SPRINKLER
- DRY HORIZONTAL SIDEWALL SPRINKLER
- OPEN SPRINKLER
- OPEN SPRINKLER WITH SPRING
- SPRAY NOZZLE
- CLEAN AGENT SPRAY NOZZLE
- STANDPIPE HOSE VALVE (PLAN)
- STANDPIPE HOSE VALVE (SECTION)
- STANDPIPE HOSE VALVE WITH CABINET (PLAN)
- STANDPIPE HOSE VALVE WITH CABINET (SECTION)
- STANDPIPE ROOF MANIFOLD
- TEST AND DRAIN VALVE
- FREESTANDING TEST HEADER
- WALL-MOUNT TEST HEADER
- AUTOMATIC AIR VENT
- FOUR-WAY BRACE
- LATERAL BRACE
- LONGITUDINAL BRACE
- PIPE HANGER
- FLOW METER

WF	WATERFLOW SWITCH
HT	HIGH TEMPERATURE SWITCH
LS	LEVEL SWITCH
LT	LOW TEMPERATURE SWITCH
PS	PRESSURE SWITCH
S	VALVE SUPERVISORY SWITCH
AS	AIR SUPERVISORY SWITCH
WS	WATERFLOW PRESSURE ALARM SWITCH
S	SOLENOID VALVE

FIRE PROTECTION SCOPE NOTES

A. THE FIRE PROTECTION SYSTEM IS DESIGN/BUILD BY THE FIRE PROTECTION CONTRACTOR. THE FIRE PROTECTION DOCUMENTS INCLUDED ARE PROVIDED TO ESTABLISH A BASIS OF DESIGN AND PERFORMANCE CRITERIA FOR THE FIRE PROTECTION CONTRACTOR.
B. FULL DESIGN OF THE FIRE PROTECTION SYSTEM INCLUDING COORDINATED SHOP DRAWINGS AND HYDRAULIC CALCULATIONS IS THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.
C. FINAL DESIGN DOCUMENTS ARE A DEFERRED SUBMITTAL AND WILL BE SUNMITTED BY THE CONTRACTOR FOR PERMIT REVIEW.
D. SPRINKLER HEAD LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY.
E. LOCATION OF STANDPIPES, MAINS, AND RISER EQUIPMENT WILL BE SIZED AND COORDIANTED BASE ON PRELIMINARY INFORMATION. THE SIZES MAY CHANGE AS THE DESIGN PROGRESSES.
F. SITE PLAN INFORMATION WILL BE SHOWN FOR REFERENCE ONLY.

FIRE PROTECTION GENERAL NOTES

A. THE CONTRACTOR FOR THIS DIVISION OF WORKS IS REQUIRED TO READ THE REPORTS, SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND IS RESPONSIBLE FOR THE COORDINATION OF THIS WORK AND THE WORK ALL SUBCONTRACTORS. IT IS CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SUBCONTRACTORS WITH A COMPLETE SET OF BID DRAWINGS.
B. THE INFORMATION ON THESE PLANS IS SHOWN TO PROVIDE SCOPE FOR THE DESIGN BUILD FIRE PROTECTION CONTRACTOR. FIRE PROTECTION CONTRACTOR IS TO HYDRAULICALLY CALCULATE THE MOST REMOTE/MOST DEMANDING DESIGN AREA.
C. SPRINKLER HEADS SHALL BE COORDINATED WITH THE LIGHTING FIXTURES AND MECHANICAL DIFFUSERS. SPRINKLER HEAD AND FRAME ALIGNMENT IS REQUIRED IN ALL AREAS. ALL SPRINKLER HEADS ARE TO BE LOCATED AT THE CENTER OF THE CEILING TILE. PRIOR TO INSTALLATION SPRINKLER FINAL FINISH IS SUBJECT TO ARCHITECT'S APPROVAL. MISMATCHED POSITIONING OF SPRINKLER HEADS WILL NOT BE AN ACCEPTABLE STANDARD TO THE BUILDING.
D. SPRINKLER PIPING LAYOUT MUST BE COORDINATED WITH ALL OTHER TRADES.
E. SPRINKLERS SHALL ONLY BE PAINTED BY THE SPRINKLER MANUFACTURER.
F. WHERE SPRINKLERS HAVE HAD PAINT APPLIED BY OTHER THAN THE SPRINKLER MANUFACTURER, THEY SHALL BE REPLACED WITH NEW LISTED SPRINKLERS OF THE SAME CHARACTERISTICS, INCLUDING ORIFICE SIZE, THERMAL RESPONSE, AND WATER DISTRIBUTION.
G. ESCUTCHEONS SHALL BE PART OF A LISTED SPRINKLER ASSEMBLY.
H. COVER PLATES USED WITH CONCEALED SPRINKLERS SHALL BE PART OF THE LISTED SPRINKLER ASSEMBLY.
I. DURING CONSTRUCTION FOR THE TEMPORARY CONDITION OF PROTECTING NEWLY INSTALLED SPRINKLERS IN AREAS WHERE THE CEILINGS, ROOMS, OR FIXTURES WILL BE PAINTED AN ORANGE PROTECTIVE CUP THAT PROTECTS THE GLASS BULB FROM DAMAGE FOR ALL SPRINKLERS SHALL COME FROM THE FACTORY.
J. THE CONDITION OF ALL SPRINKLERS MUST BE CONFIRMED AFTER CEILINGS ARE INSTALLED AND ROOMS AND CEILINGS ARE PAINTED. ALSO REMOVE PLASTIC PROTECTIVE COVERS PROVIDED BY THE MANUFACTURERS TO PROTECT SPRINKLER HEADS DURING CONSTRUCTION. USE OF ANY PROTECTIVE COVERING IS EXPRESSLY PROHIBITED.
K. AUTOMATIC SPRINKLER SYSTEMS WILL BE PROVIDED THROUGHOUT ALL PORTIONS OF THE PROJECTS DESIGNED IN ACCORDANCE WITH THE NFPA 13, 2016.
L. CONCEALED SPACES OF EXPOSED COMBUSTIBLE CONSTRUCTIONS SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY SECTIONS 8.15.1.2.1 (INCLUDING ANNEX A.8.15.1.2, A.8.15.1.2.6 & A.8.15.1.2.11) THROUGH 8.15.1.2.16 (INCLUDING ANNEX A.8.15.1.2.16) AND SECTION 8.15.6 OF THE NFPA 13, 2013, SECTION 8.15.1 (CONCEALED SPACES)
M. WET-PIPE HYDRAULICALLY CALCULATED AUTOMATIC SPRINKLER SYSTEM WILL BE PROVIDED THROUGHOUT HEATED AREAS OF THE PROJECT. DRY-PIPE WILL BE PROVIDED IN AREAS SUBJECT TO FREEZING TEMPERATURES.
N. HANGERS, BRACING, AND RESTRAINT OF SYSTEM PIPING SHALL BE INSTALLED PER 2013 NFPA 13 CHAPTER 9 AND "PROTECTION OF PIPING AGAINST DAMAGE WHERE SUBJECT TO EARTHQUAKE" (2013 NFPA 13, SECTION 9.3).
O. PROVIDE ON THE PLAN THE MINIMUM RATE OF WATER APPLICATION (DENSITY), THE DESIGN AREA OF WATER APPLICATION, SPRINKLER DEMAND, AND THE WATER REQUIRED FOR HOSE STREAMS.
P. PROVIDE ON THE PLAN THE TOTAL QUANTITY OF WATER AND THE PRESSURE REQUIRED
Q. NOTED AT A COMMON REFERENCE POINT FOR EACH SYSTEM

FIRE PROTECTION DESIGN NOTES

A. HIGH RISE: NO
B. CONSTRUCTION TYPE: TYPE IIIB, FULLY SPRINKLERED.
C. OCCUPANCY GROUPS:
   - GROUP E (EDUCATIONAL)
   - GROUP B (BUSINESS)
   - GROUP S-1 (CHEMICAL STORAGE CONTROL AREAS)
D. FIRE SERVICE: ONE (1) 6" FIRE WATER MAIN INTO BUILDING.
E. WET AUTOMATIC SPRINKLER SYSTEM WILL BE PROVIDED IN CONDITIONED AREAS.
F. PREACTION SYSTEM WILL BE PROVIDED IN MPOE ROOM.
G. STANDPIPES REQUIRED THROUGHOUT BUILDING. HOSE VALVE OUTLETS TO BE LOCATED IN MAIN LANDINGS OR AS INDICATED BY THE AHJ.
H. SPRINKLER DENSITIES:
   a. OFFICES, CLASSROOMS AND COMMON AREAS TO BE CONSIDERED LIGHT HAZARD.
   b. MECHANICAL, ELECTRICAL ROOMS AND LABS TO BE CONSIDERED ORDINARY HAZARD GROUP I.
   c. MISCELLANEOUS STORAGE, CHEMICAL AND WASTE STORAGE ROOMS (CONTROL AREAS) TO BE CONSIDERED ORDINARY HAZARD GROUP II.
I. ELECTRICAL ROOMS, SKYLIGHTS AND EXTERIOR PROTECTION: INSTALL STANDARD RESPONSE, 200 DEG F UPRIGHT (OPEN CEILINGS) OR PENDENT SPRINKLER HEAD WILL BE INSTALLED.
J. PROVIDE HEADGUARDS FOR SPRINKLERS UNDER STAIRWAYS AND WHERE MECHANICAL DAMAGE MAY OCCUR.
K. ELEVATOR MACHINE ROOMS AND ELEVATOR HOISTWAYS: SPRINKLERS ARE NOT REQUIRED FOR MECHANICAL ELEVATORS.
L. VERTICAL OPENINGS: VERTICAL OPENINGS WILL BE PROTECTED AS REQUIRED BY 2013 NFPA 13, OPENINGS THAT ARE LARGER THAN 1,000 SQUARE FEET NOT BE PROTECTED, AS ALLOWED BY 8.15.4.4 "LARGE OPENINGS" OF 2013 NFPA 13.
M. INSTALL SPRINKLER PROTECTION UNDER ANY FIXED OBJECT MORE THAN 4FT WIDE IN IT'S HORIZONTAL DIMENSION, BENEATH OF WHICH COMBUSTIBLE CONSTRUCTION OR A COMBUSTIBLE OCCUPANCY IS LOCATED.

FIRE PROTECTION DESIGN CRITERIA

NFPA 13 SHALL BE USED FOR THE LOCATION, SIZING, & INSTALLATION OF PIPING & SPRINKLER SYSTEMS UNLESS **LOCAL FIRE MARSHAL OR OWNER'S INSURANCE UNDERWRITER REQUIREMENTS ARE MORE STRINGENT.**

FIRE PROTECTION SPRINKLER DESIGN CRITERIA: (NFPA)

PROVIDE THE FOLLOWING HAZARD CLASSIFICATIONS AND DENSITIES PER CURRENT NFPA 13 & CFC STANDARDS:
- LIGHT HAZARD OCCUPANCIES: 0.10 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR EDUCATIONAL OFFICES, SEATING AREAS, AND PUBLIC AREAS.
- ORDINARY HAZARD OCCUPANCIES GROUP 1: 0.15 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR ELECTRICAL AND MECHANICAL ROOMS, LABS.
- ORDINARY HAZARD OCCUPANCIES GROUP 2: 0.20 GPM/FT2 DENSITY AT MOST REMOTE 1500 SQUARE FEET FOR STORAGE, CHEMICAL STORAGE CONTROL AREAS.

WATER SERVICE PRESSURE BASIS OF DESIGN:

COORDINATION HAS BEEN DONE TO DETERMINE FIRE SERVICE WATER PRESSURE USED TO DEVELOP THE FIRE SPRINKLER SYSTEM DESIGN INFORMATION INCLUDED HEREIN.
THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN CURRENT FLOW TEST INFORMATION PRIOR TO STARTING THE DESIGN OF THE FIRE SPRINKLER SYSTEM.

DESIGN CUSHION:

PROVIDE AN EXCESS OF 10 PSI ADDITIONAL PRESSURE REQUIREMENTS INCORPORATED INTO THE DESIGN OVER SPECIFIED PRESSURE REQUIREMENTS.
REFER TO DRAWINGS FOR ZONE TYPES, CALLOUTS AND ADDITIONAL SCOPE ITEMS.

FIRE PROTECTION SHEET LIST

SHEET #	SHEET NAME
FP001	SYMBOLS, LEGENDS AND ABBREVIATIONS - FIRE PROTECTION
FP002	EQUIPMENT SCHEDULE - FIRE PROTECTION
FP010	SITE PLANS - FIRE PROTECTION
FP100	LEVEL 0 - FLOOR PLAN - FIRE PROTECTION
FP101	LEVEL 1 - FLOOR PLAN - FIRE PROTECTION
FP102	LEVEL 2 - FLOOR PLAN - FIRE PROTECTION
FP103	LEVEL 3 - FLOOR PLAN - FIRE PROTECTION
FP104	ROOF PLAN - FIRE PROTECTION
FP601	DETAILS - FIRE PROTECTION
FP701	DIAGRAMS - FIRE PROTECTION
Grand total: 10	

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

SYMBOLS, LEGENDS AND ABBREVIATIONS - FIRE PROTECTION

FP001

BACKFLOW DEVICE SCHEDULE (FOR REFERENCE ONLY)

TAG NUMBER	LOCATION	SERVICE	DESCRIPTION	MANUFACTURER & MODEL	ELECTRICAL MOTOR HP	ELECTRICAL VOLT/ PHASE	NOTES
DCDA-01	EXTERIOR IN VAULT	FIRE PROTECTION	6" SUPERVISED DOUBLE CHECK DETECTOR ASSEMBLY WITH TAMPER SWITCH AND P.I.V.	WATTS, AMES OR EQ	N/A	N/A	1,2

NOTE:
1. CONTRACTOR TO VERIFY ALL EQUIPMENT SELECTIONS.
2. SEE PLANS BY CIVIL FOR LOCATION.

FIRE PROTECTION EQUIPMENT SCHEDULE

TAG NUMBER	LOCATION	SERVICE	DESCRIPTION	MANUFACTURER & MODEL	ELECTRICAL MOTOR HP	ELECTRICAL VOLT/ PHASE	NOTES
FPC-01	FIRE PUMP ROOM	FIRE PROTECTION	FIRE PUMP CONTROLLER	EATON OR EQ	TBD	TBD	1,2
JPC-01	FIRE PUMP ROOM	FIRE PROTECTION	JOCKEY PUMP CONTROLLER	EATON OR EQ	TBD	TBD	1,2
AC-01	FIRE PUMP ROOM	FIRE PROTECTION	JOCKEY PUMP CONTROLLER	EATON OR EQ	TBD	TBD	1,2

NOTE:
1. CONTRACTOR TO VERIFY ALL EQUIPMENT SELECTIONS.
2. UNIT ON EMERGENCY POWER.

FIRE PUMP SCHEDULE

TAG NUMBER	DESCRIPTION	LOCATION	SERVICE	TYPE	FLOW (GPM)	BOOST (PSI)	ELECTRICAL POWER.. (HP)	ELECTRICAL VOLT/ PHASE	MANUFACTURER & MODEL	NOTES
FP-01	FIRE PUMP	FIRE PUMP ROOM	FIRE PROTECTION	INLINE	TBD	TBD	TBD	TBD	TBD	1,2
JP-01	JOCKEY PUMP	FIRE PUMP ROOM	FIRE PROTECTION	JOCKEY	TBD	TBD	TBD	TBD	TBD	1,2

NOTES:
1. UNIT ON EMERGENCY POWER.
2. CONTRACTOR TO VERIFY ALL EQUIPMENT SELECTIONS.

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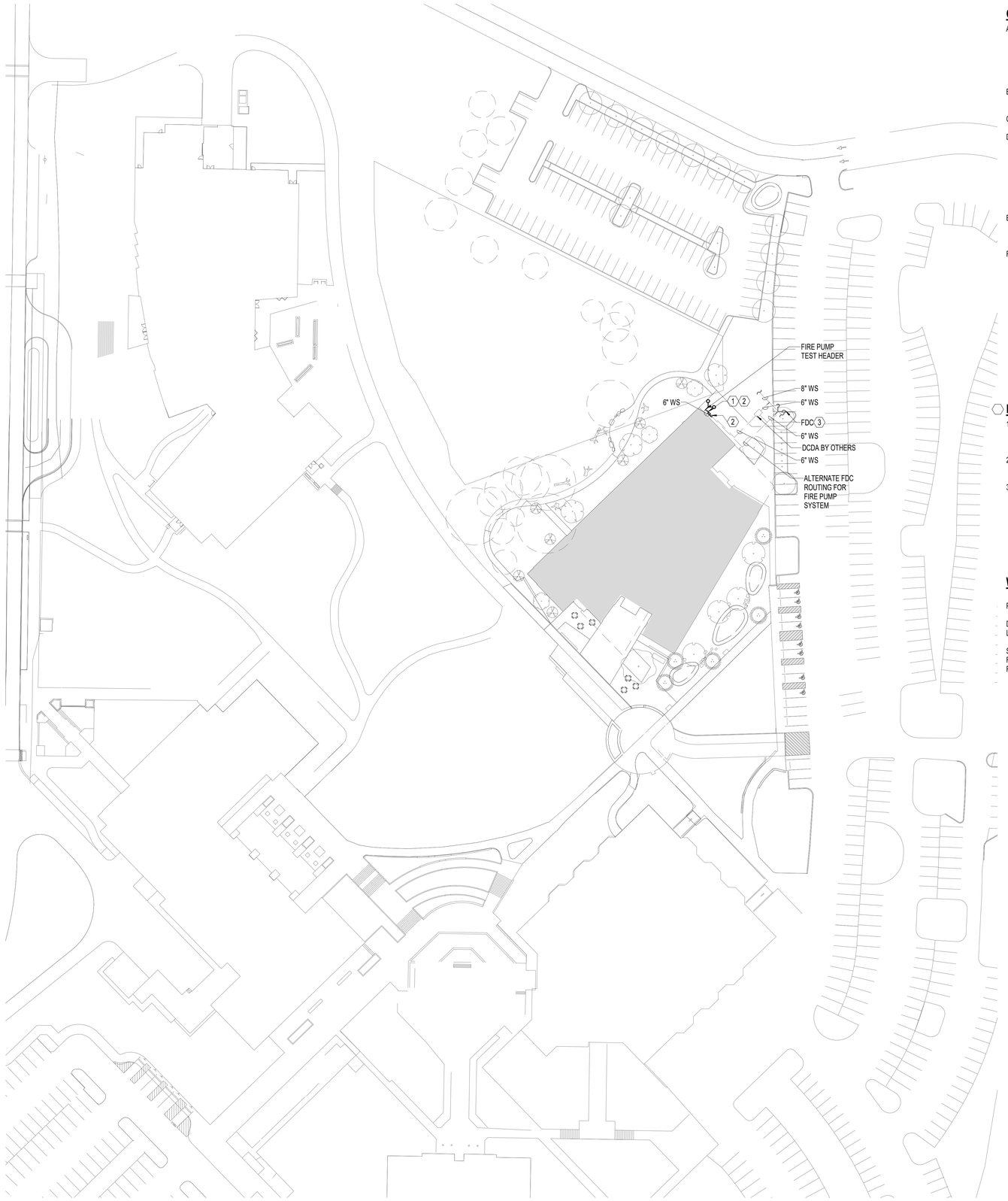
EQUIPMENT SCHEDULE - FIRE PROTECTION

FP002



1 SITE PLAN - FIRE PROTECTION
1" = 40'-0"

GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED SHALL BE DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).

NOTES:

1. UNDERGROUND 6" FIRE SERVICE CONTINUES TO DCDA/FDC COMBINATION VAULT. SEE UPDATED CIVIL DRAWINGS FOR EXACT LOCATION.
2. SPRINKLER CONTRACTOR TO START 5 FT OUTSIDE FROM RISER ROOM.
3. SEE CIVIL PLANS FOR EXACT FDC LOCATION.

WATER SUPPLY INFOMRATION:

PERFORMED BY:	PUYALLUP UITILITIES COMPUTER MODEL
DATE:	02-11-2022
LOCATION:	PIERCE COLLEGE CENTER BLDG @ HYDRANT #SE682 OFF EX. 8" MAIN
STATIC:	64 PSI
RESIDUAL:	20 PSI
FLOW:	1,950 GPM

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SITE PLANS - FIRE PROTECTION

FP010

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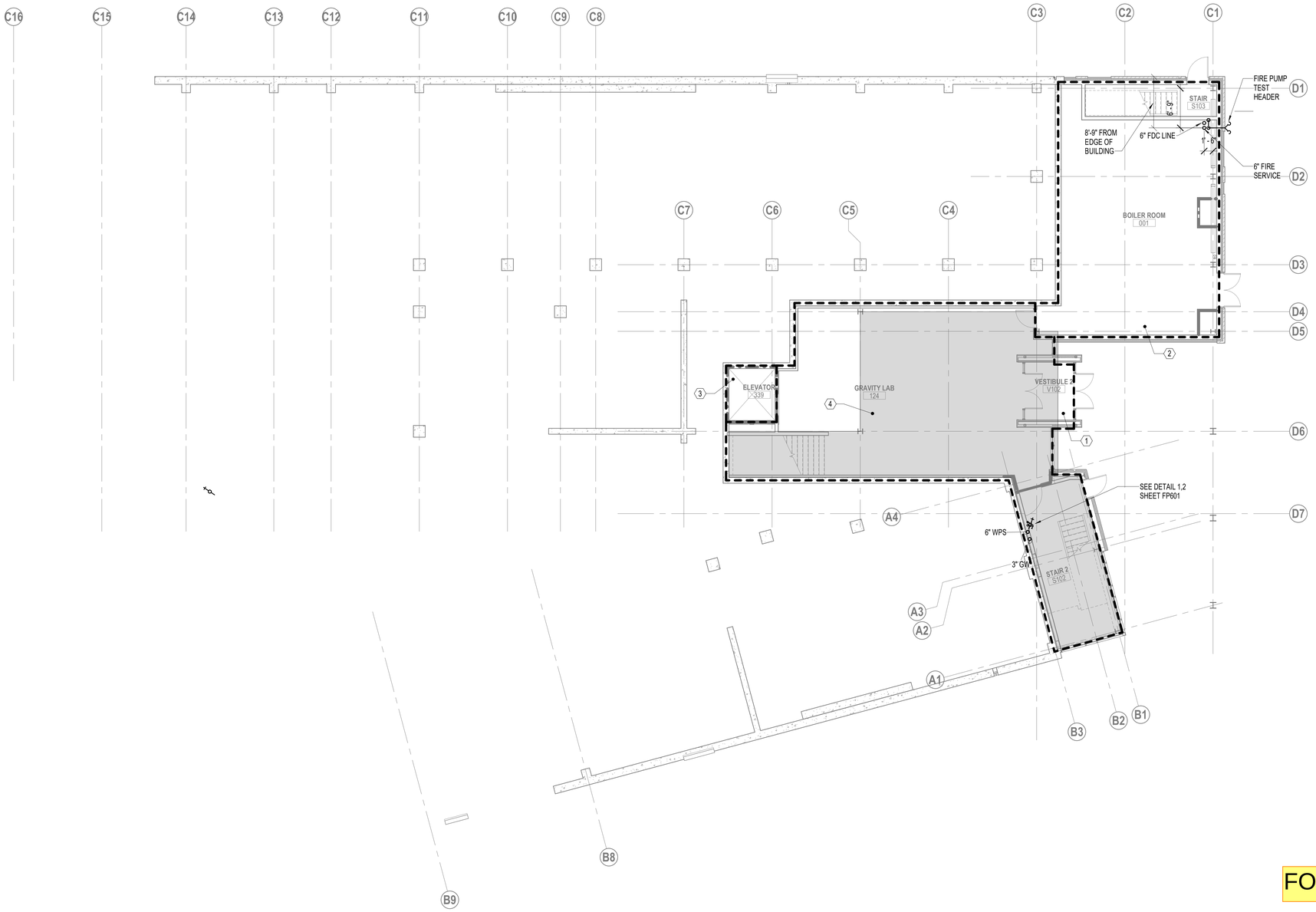
GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED AND DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).

NOTES:

1. LIGHT HAZARD
2. ORDINARY HAZARD GROUP 1
3. NO SPRINKLERS REQUIRED
4. CLT DECKING IN SHADED REGION. PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW CEILINGS/OBSTRUCTIONS. SPACE SPRINKLERS A MAXIMUM 168 SQFT IN LIGHT HAZARD OCCUPANCIES.



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1 LEVEL 0 - FLOOR PLAN - FIRE PROTECTION
1/8" = 1'-0"

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LEVEL 0 - FLOOR PLAN - FIRE PROTECTION

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FP100

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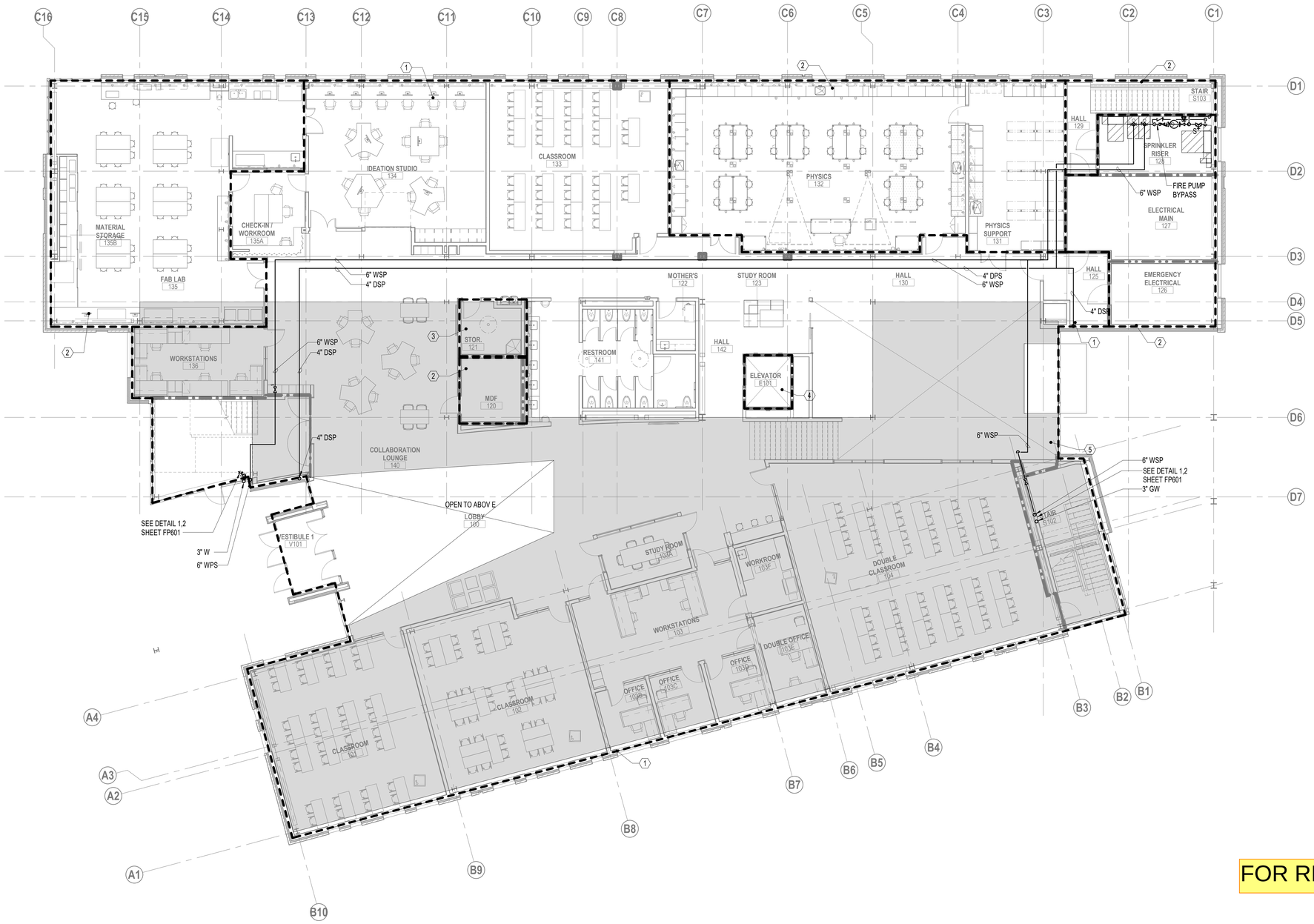
GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED AND DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).

NOTES:

1. LIGHT HAZARD
2. ORDINARY HAZARD GROUP 1
3. ORDINARY HAZARD GROUP 2
4. NO SPRINKLERS REQUIRED
5. CLT DECKING IN SHADED REGION. PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW CEILINGS/OBSTRUCTIONS. SPACE SPRINKLERS A MAXIMUM 168 SQFT IN LIGHT HAZARD OCCUPANCIES.



1 LEVEL 1 - FLOOR PLAN - FIRE PROTECTION
1/8" = 1'-0"

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LEVEL 1 - FLOOR PLAN - FIRE PROTECTION

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FP101

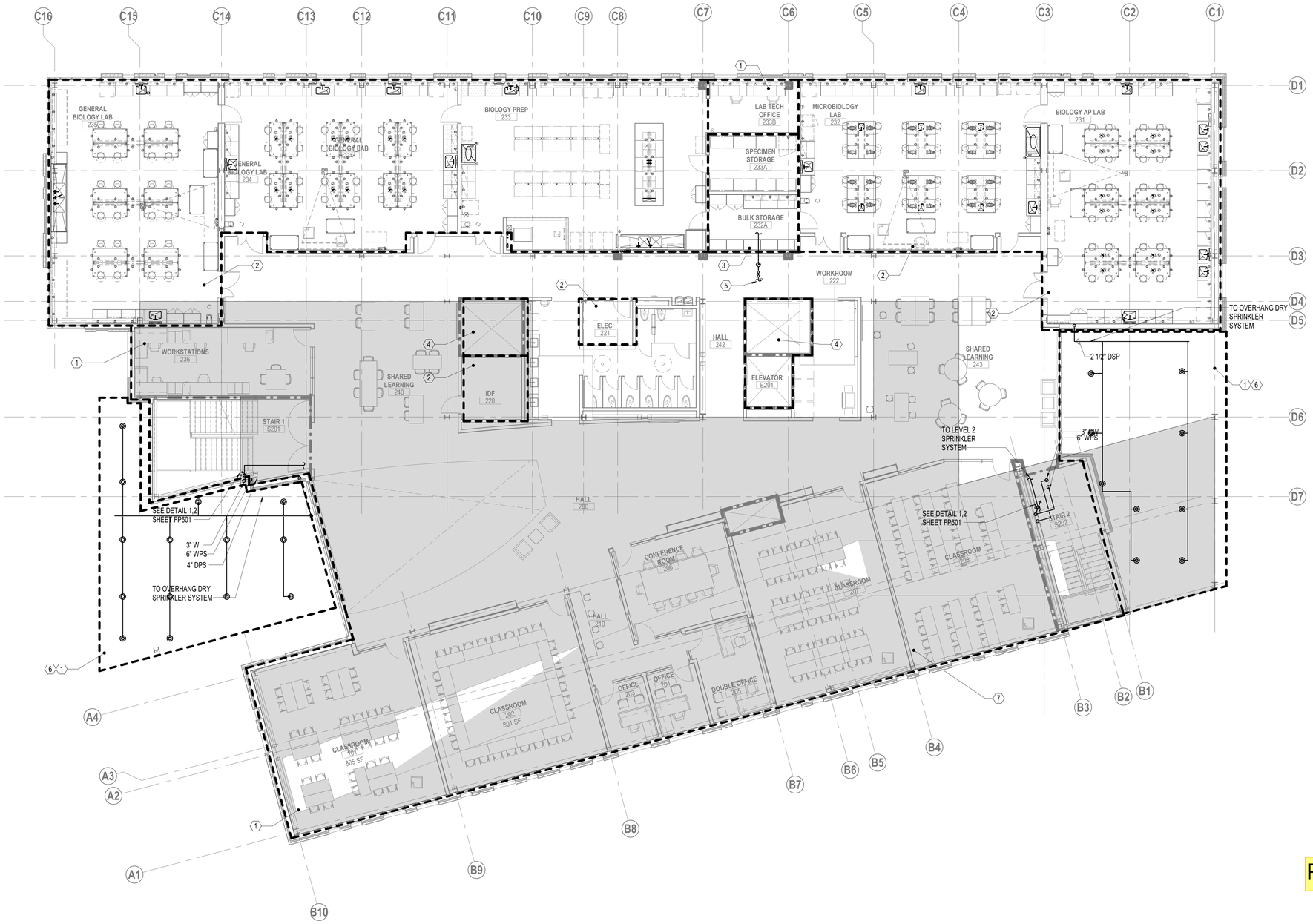
FOR REFERENCE ONLY

GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED AND DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).

NOTES:

1. LIGHT HAZARD
2. ORDINARY HAZARD GROUP 1
3. ORDINARY HAZARD GROUP 2
4. NO SPRINKLERS REQUIRED
5. PROVIDE SHUT OFF VALVE AND FLOW SWITCH FOR SEPARATE SMOKE ZONES/ CONTROL AREAS
6. DRY SPRINKLER SYSTEM ZONE
7. CLT DECKING IN SHADED REGION. PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW CEILINGS/OBSTRUCTIONS. SPACE SPRINKLERS A MAXIMUM 168 SQFT IN LIGHT HAZARD OCCUPANCIES.



1 LEVEL 2 - FLOOR PLAN - FIRE PROTECTION2
1/8" = 1'-0"

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LEVEL 2 - FLOOR PLAN - FIRE PROTECTION

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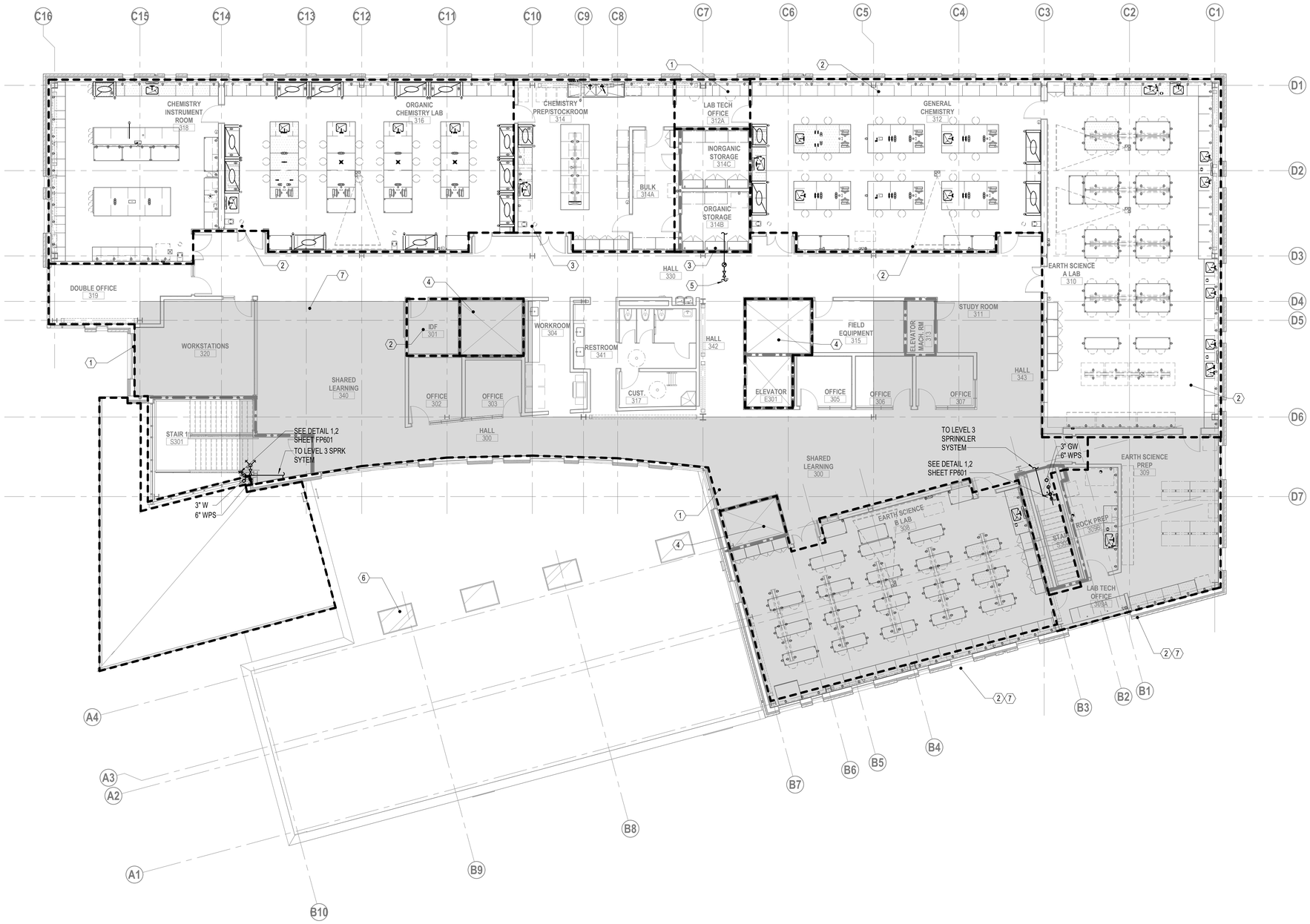
FP102

FOR REFERENCE ONLY

GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED AND DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).



1 LEVEL 2 - FLOOR PLAN - FIRE PROTECTION
1/8" = 1'-0"

NOTES:

1. LIGHT HAZARD
2. ORDINARY HAZARD GROUP 1
3. ORDINARY HAZARD GROUP 2
4. NO SPRINKLERS REQUIRED
5. PROVIDE SHUT OFF VALVE AND FLOW SWITCH FOR SEPARATE SMOKE ZONES/ CONTROL AREAS
6. PROVIDE STANDARD SPRAY UPRIGHTS IN CEILING POCKET/SKYLIGHT
7. CLT DECKING IN SHADED REGION. PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW CEILINGS/OBSTRUCTIONS. SPACE SPRINKLERS A MAXIMUM 168 SQFT IN LIGHT HAZARD OCCUPANCIES.

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LEVEL 3 - FLOOR PLAN - FIRE PROTECTION

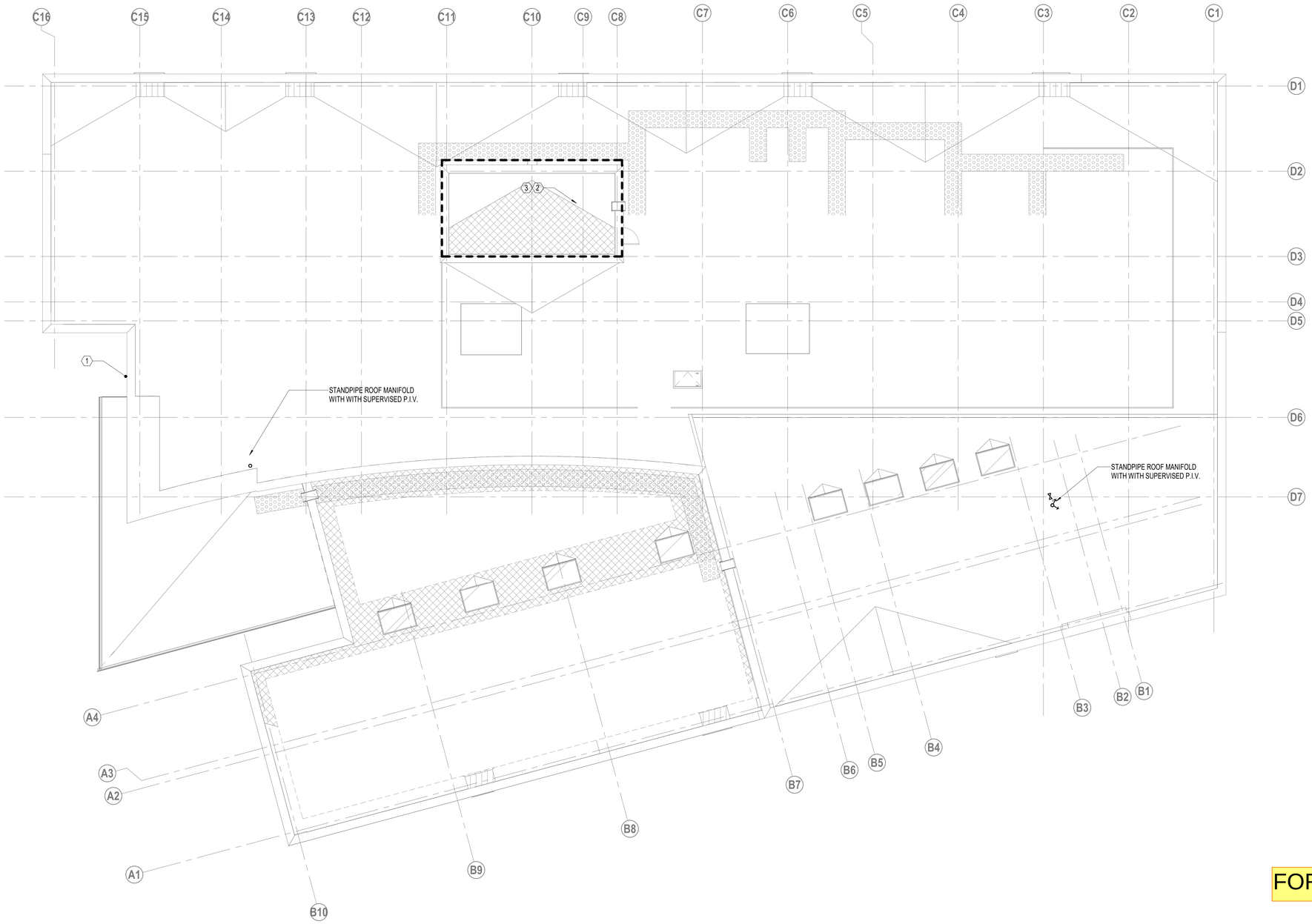
PRCNC20221036

FP103

FOR REFERENCE ONLY

GENERAL NOTES:

A. STANDPIPE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE LOCAL FIRE AHJ. ANY STANDPIPE SYSTEM THAT IS APPROVED AND DESIGNED PER 2013 NFPA 14, 2015 IFC, OR ANY TYPE OF FIRE PROTECTION DESIGN THAT MODIFIES THOSE CODES AND STANDARDS ARE STILL SUBJECT TO APPROVAL BY THE LOCAL FIRE AHJ.
B. PROVIDE TOTAL COVERAGE PER NFPA 13 AND CITY OF PUYALLUP FIRE PROTECTION DISTRICT STANDARDS.
C. SPRINKLER ZONE SIZE NOT TO EXCEED 52,000 SQUARE FEET.
D. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL AND COMPONENTS REQUIRED TO SUPPORT PIPE, EQUIPMENT, AND ELECTRCIAL/CONTROL PANELS RELATED TO FIRE PROTECTION EQUIPMENT. PROVIDE FLOOR SUPPORT COMPONENTS, HANGERS AND SEISMIC RESTRAINTS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHIM TO LEVEL ALL EQUIPMENT AS REQUIRED.
E. SEISMIC BRACING OF EQUIPMENT AND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIRMENTS OF THE CITY OF BELLEVUE 2015 IFC AMENDMENTS.
F. REFER TO CIVIL DRAWINGS FOR EXACT LOCATIONS OF UTILITY CONNECTION(S).



1 ROOF PLAN - FIRE PROTECTION
1/8" = 1'-0"

NOTES:

1. OPEN TO SKY
2. ORDINARY HAZARD GROUP 1
3. PROVIDE SPRINKLER COVERAGE FROM LEVEL 3 SYSTEM BELOW

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ROOF PLAN - FIRE PROTECTION

FP104

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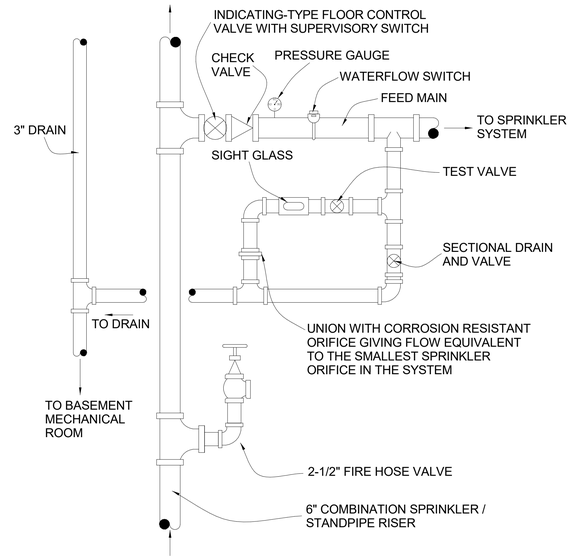
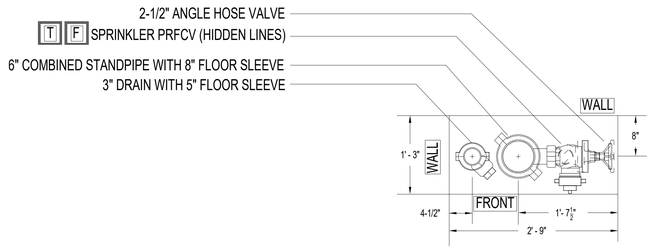
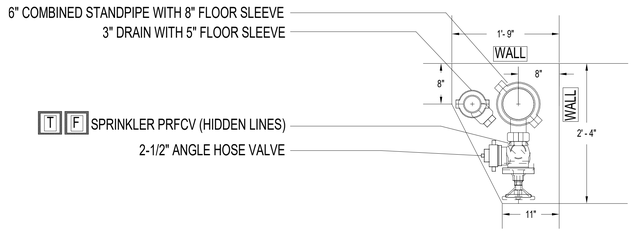


1 FLOOR CONTROL VALVE DETAIL - FIRE PROTECTION
NONE





2 STANDPIPE FOOTPRINT - FIRE PROTECTION
NONE

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DETAILS - FIRE PROTECTION

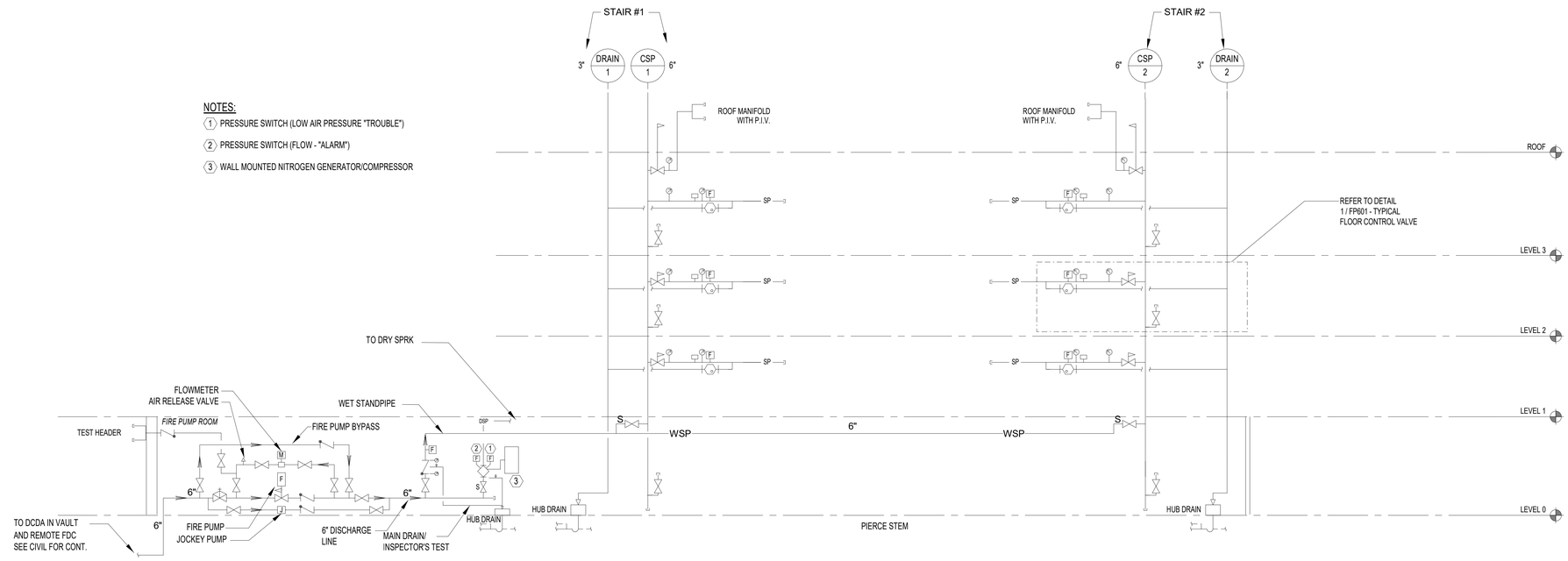
PRCNC20221036

FP601

FOR REFERENCE ONLY

NOTES:

1. PRESSURE SWITCH (LOW AIR PRESSURE "TROUBLE")
2. PRESSURE SWITCH (FLOW - "ALARM")
3. WALL MOUNTED NITROGEN GENERATOR/COMPRESSOR



1 PRELIMINARY RISER DIAGRAM - FIRE PROTECTION
NONE

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DIAGRAMS - FIRE PROTECTION

PRCNC20221036

FP701

FOR REFERENCE ONLY

PIERCE COLLEGE STEM

GENERAL

- EXISTING MECHANICAL TO BE REMOVED
- EXISTING MECHANICAL TO REMAIN
- MATCHLINE OR PROPERTY LINE
- ENLARGED PLAN BOUNDARY
- 1 / M1.01 — DETAIL/PLAN IDENTIFIER
- A / M1.01 — SECTION IDENTIFIER
- A / M1.01 — ELEVATION IDENTIFIER
- 1 — REVISION CALLOUT
- 1 — KEYED NOTE TAG
- 1 — CODED NOTE
- AHU–01 — MECHANICAL EQUIPMENT TAG
- INVERT ELEVATION OR POC

CONTROLS (PLAN VIEW)

- T / TU–XX — THERMOSTAT OR TEMPERATURE SENSOR
- S G — SENSOR: SHOWN WITH GUARD (TYPICAL ALL SENSORS)
- S — HUMIDISTAT OR HUMIDITY SENSOR
- CO — CARBON MONOXIDE SENSOR
- CO2 — CARBON DIOXIDE SENSOR
- IAQ — INDOOR AIR QUALITY SENSOR
- $X — SWITCH BY MECHANICAL

ELECTRICAL PROVISIONS FOR MECHANICAL WORK

- LOCATION OF STARTER, DISCONNECT & CONTROLS
- VFD — VARIABLE FREQUENCY DRIVE
- HT HT — HEAT TRACE BETWEEN SYMBOLS OR END OF RUN

ACCESS

- ACCESS DOOR (SPECIFIED OR AS SHOWN ON DWGS)
- MECHANICAL ACCESS (SPECIFIED OR AS SHOWN ON DWGS)

PIPING

- PIPE ELBOW UP OR PIPE TEE UP AND DOWN
- PIPE ELBOW DOWN
- PIPE TEE UP
- PIPE TEE DOWN
- PIPE RISE
- PIPE CAP
- PIPE PLUG
- FLOW DIRECTION
- PIPE BREAK
- C — CONDENSATE DRAIN

STORM DRAINAGE PIPING SYSTEM

- ROOF DRAIN
- OVERFLOW ROOF DRAIN
- RL — RAIN LEADER
- ORL — OVERFLOW RAIN LEADER

SOIL AND WASTE WATER PIPING SYSTEM

- SANITARY SEWER/WASTE UNDERGROUND
- SANITARY SEWER/WASTE ABOVE GROUND
- VENT PIPING
- X" VTR — VENT THRU ROOF (INCLUDE SIZE)
- FLOOR DRAIN/FUNNEL FLOOR DRAIN
- WCO — CLEANOUT – FREE STANDING WALL MOUNTED
- FCO — CLEANOUT – FLUSH WITH FLOOR
- AW — ACID WASTE

DOMESTIC WATER PIPING SYSTEM

- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- DOMESTIC HOT WATER CIRCULATION
- NPCW — NON POTABLE COLD WATER
- NPHW — NON POTABLE HOT WATER
- NPHWC — NON POTABLE HOT WATER CIRCULATION
- TP — TRAP PRIMER WATER
- WATER METER
- BASKET STRAINER
- HOSE BIBB/WALL HYDRANT
- TRAP PRIMER BOX

VALVES

- VALVE: GATE, BALL, BUTTERFLY (REFER TO SPECIFICATIONS)
- GLOBE VALVE
- S — SOLENOID VALVE
- CHECK VALVE
- BALANCING VALVE

PIPING SPECIALTIES

- UNION
- FLANGE
- FLEX CONNECTOR
- THERMAL/SEISMIC FLEXIBLE LOOP
- EJ — THERMAL EXPANSION JOINT

NATURAL GAS PIPING SYSTEM

- G — LOW PRESSURE NATURAL GAS PIPING
- MPG — MEDIUM PRESSURE NATURAL GAS PIPING
- GAS COCK
- PRESSURE REGULATOR
- PRESSURE REGULATOR WITH VENT
- SEISMIC GAS SHUT–OFF
- GAS PRESSURE REDUCING VALVE WITH VENT

GENERAL NOTES

1. COORDINATE MECHANICAL WORK WITH THAT OF OTHER TRADES. REFER TO CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, ELECTRICAL, STRUCTURAL, FIRE PROTECTION, FIRE ALARM, SECURITY, CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.
2. MAINTAIN CODE REQUIRED AND MANUFACTURERS' MINIMUM MAINTENANCE CLEARANCES AND AS NOTED ON THE DRAWINGS. SYSTEMS INSTALLED FOUND TO BE IN CONFLICT WITH THIS REQUIREMENT WILL BE MOVED AT CONTRACTOR'S EXPENSE TO ENSURE COMPLIANCE.
3. ACCESS CLEARANCES FOR MAINTENANCE AND REPLACEMENT: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE LOCATIONS OF MECHANICAL WORK AND WORK OF OTHER TRADES TO PROVIDE ACCESS CLEARANCES FOR SERVICE AND MAINTENANCE.

PIPING NOTES

1. PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
2. PROVIDE AN INSULATED COPPER TRACER WIRE OR OTHER APPROVED CONDUCTOR ADJACENT TO UNDERGROUND NONMETALLIC (PLASTIC) PIPING. ACCESS SHALL BE PROVIDED TO THE TRACER WIRE OR THE TRACER WIRE SHALL TERMINATE ABOVE GROUND AT EACH END OF THE PIPING. THE TRACER WIRE SHALL NOT BE LESS THAN NO. 18 AWG AND THE INSULATION TYPE SHALL BE SUITABLE FOR BURIAL.
3. PROVIDE 12" LONG, ½" WIDE FLUORESCENT ORANGE TAPE AT CONCEALED VALVE LOCATIONS.

STERILIZATION AND FLUSHING OF WATER PIPING

1. AFTER COMPLETION OF WATER PIPING INSTALLATION, BUT PRIOR TO CONNECTION TO EXISTING MAINS, FLUSH SYSTEM WITH CLEAN WATER. TAKE SAMPLE OF WATER FROM SYSTEM TO DETERMINE COMPLIANCE WITH HEALTH DEPARTMENT STANDARDS. OBTAIN NECESSARY TESTS FROM GOVERNING HEALTH DEPARTMENT. IF SAMPLE IS NOT IN COMPLIANCE, PERFORM STERILIZATION.
2. STERILIZE FOR 8 HOUR CONTACT TIME WITH 50 PARTS PER MILLION CHLORINE CONCENTRATION. OPEN VALVES SEVERAL TIMES. FOLLOW BY FLUSHING WITH CLEAN WATER UNTIL RESIDUAL CHLORINE IS LESS THAN 0.2 PARTS PER MILLION.
3. AFTER FLUSHING AND STERILIZATION ARE COMPLETE, CONDUCT TESTS TO DETERMINE COMPLIANCE WITH HEALTH DEPARTMENT STANDARDS FOR STERILIZATION RESULTS. IF PIPE SYSTEM IS FOUND TO BE CONTAMINATED, CORRECT DEFECTS AND PERFORM ADDITIONAL FLUSHING AND STERILIZATION UNTIL SATISFACTORY RESULTS ARE OBTAINED.
4. SUBMIT WRITTEN CERTIFICATION OF FLUSHING AND STERILIZATION BY LOCAL AHJ.

Sheet List Table

Sheet Number	Sheet Title
P0.01	ABBREVIATIONS, NOTES, AND LEGEND
P0.02	PLUMBING SCHEDULE 1
P0.03	PLUMBING SCHEDULE 2
P0.04	PLUMBING SCHEDULE 3
P1.00	LEVEL 0 UNDERGROUND PLUMBING PLAN
P1.01	LEVEL 0 FLOOR PLAN & LEVEL 1 UNDERGROUND PLUMBING PLAN
P1.02	LEVEL 1 PLUMBING PLAN
P1.03	LEVEL 2 PLUMBING PLAN
P1.04	LEVEL 3 PLUMBING PLAN
P1.05	ROOF PLUMBING PLAN
P3.01	SANITARY RISER
P3.02	WATER RISER
P3.03	GAS & VACUUM RISER
P3.04	WATER 3D RISER
P3.05	SANITARY 3D RISER
P4.01	PLUMBING DETAILS 1
P4.02	PLUMBING DETAILS 2

PLUMBING NOTES

1. INVERT ELEVATIONS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR SHALL COORDINATE AND CONFIRM LOCATIONS PRIOR TO STARTING WORK.
2. SEE TYPICAL PLUMBING DETAILS ON SHEET M5.0.
3. SLOPE WASTE PIPING AT ¼" PER FOOT UNLESS OTHERWISE NOTED.
4. SEE ARCHITECTURAL DRAWINGS INCLUDING INTERIOR ELEVATIONS FOR PLUMBING FIXTURE LOCATIONS AND REQUIRED MOUNTING HEIGHTS. THIS INCLUDES FLOOR DRAINS, ROOF DRAINS AND OWNER FURNISHED ITEMS.
5. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING CONSTRUCTION INCLUDING FLOOR SYSTEMS AND SLAB CONDITIONS.
6. FOR PIPE SIZES TO INDIVIDUAL FIXTURES SEE PLUMBING FIXTURE SCHEDULE.
7. PROVIDE CLEANOUTS BELOW EACH SINK.
8. PROVIDE ACCESS PANEL AT ISOLATION VALVES WHERE LOCATED ABOVE HARD LID CEILINGS OR IN WALLS. SHUT OFF VALVE LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND NEED TO BE COORDINATED SO THEY ARE INSTALLED IN ACCESSIBLE LOCATIONS.
9. PROVIDE ACCESS PANEL FOR WATER HAMMER ARRESTORS AND TRAP PRIMER PANELS.
10. FLOOR DRAINS, FLOOR SINKS AND TRAPS SHALL BE SERVED FROM THE NEAREST ELECTRONIC TRAP PRIMER.
11. ROUTE MAIN HOT WATER LINES SHOWN DOWN IN WALLS TO WITHIN 24" OF LAVATORIES OR HAND WASHING SINKS.
12. PIPING INSTALLED ON EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR, "WARM" SIDE OF THE INSULATION SYSTEM.

ABBREVIATIONS

Ø	DIAMETER, PHASE
A	AIR, AMPS
AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AC	AIR CONDITIONER
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
AF	AIRFOIL
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AG	ABOVE GROUND
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINED (DUCT)
AP	ACCESS PANEL
ARCH	ARCHITECT
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR–CONDITIONING ENGINEERS, INC.
ATM	ATMOSPHERE
B	BOILER
BDD	BACK DRAFT DAMPER
BF	BELOW FLOOR
BHP	BRAKE HORSE POWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALL VALVE
C	CONDENSATE PIPING
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER, CONDENSATE
DRAIN	
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CH	CABINET HEATER
CKV	CHECK VALVE
CLG	CEILING, COOLING
CO	CLEANOUT
CO2	CO2 SENSOR
COND	CONDENSER, CONDENSATE
CONN	CONNECTOR
CONT	CONTINUE, CONTROL
COP	COEFFICIENT OF PERFORMANCE
C.	TK COMPRESSION TANK
CU	CONDENSING UNIT, CUBIC
CV	CONSTANT VOLUME
CW	COLD WATER PIPING
D	DRAIN
DB	DRY BULB (TEMPERATURE)
dB	DECIBEL
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DEG	DEGREE
DEMO	DEMOLITION
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DWGS	DRAWINGS
(E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC
EQUIV	EQUIVALENT
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EVAP	EVAPORATOR, EVAPORATIVE
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMP
EXH	EXHAUST
EXT	EXTERIOR, EXTERNAL
F	FAHRENHEIT, FIRE MAIN PIPING
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER, FLOOR DRAIN, DRY SPRINKLER ROUTING
FDC	FIRE DEPARTMENT CONNECTION
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
F/S	FIRE/SMOKE DAMPER
FT	FEET, FIN TUBE
FV	FACE VELOCITY
FW	FILTERED WATER PIPING
G	GAS
GA	GAGE
GAL	GALLONS
GALV	GALVANIZED
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRILLES, REGISTERS, AND DIFFUSERS
GV	GATE VALVE, GLOBE VALVE
IAQ	INDOOR AIR QUALITY
IE	INVERT ELEVATION
IN.	INCH
IN.WG	INCHES WATER COLUMN
kW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUND
LD	LINEAR DIFFUSER
LR	LINEAR RETURN
LVR	LOUVER
LWR	LOW WALL RETURN
MAT	MIXED AIR TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
N	NEW
NA	NOT APPLICABLE
NC	NORMALLY CLOSED, NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN, NITROUS OXIDE
IN.	NUMBER
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OC	ON CENTER
OD	OUTSIDE DIMENSION OR DIAMETER
ORD	OVERFLOW ROOF DRAIN
ORL	OVERFLOW RAIN LEADER
OSA	OUTDOOR SUPPLY AIR
P	PUMP, PRESSURE, PLUMBING FIXTURE
PD	PRESSURE DROP, PUMPED DRAIN
PH	PHASE
PIV	POST INDICATOR VALVE
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAGE
QTY	QUANTITY
R	RELOCATED
RA	RETURN AIR, RELIEF AIR
RD	ROOF DRAIN
REG	REGISTER
REF	REFERENCE, RETURN/EXHAUST FAN
RG	RETURN GRILLE
RI&C	ROUGH IN AND CONNECT
RL	RAIN LEADER
RLA	RATED LOAD AMPS
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
S	SENSOR
SA	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SENS	SENSIBLE
SF	SUPPLY FAN, SQUARE FOOT
SG	SUPPLY GRILLE, SIGHT GLASS WITH MOISTURE INDICATOR
SIM	SIMILAR
SL	REFRIGERANT SUCTION LINE OR SOUND LINED (CLEAR INSIDE DIMENSION)
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.
SOV	SHUTOFF VALVE
SP	STATIC PRESSURE
SS	STAINLESS STEEL, SANITARY SEWER
T	THERMOSTAT
TCV	TEMPERATURE CONTROL VALVE
TD	TRENCH DRAIN, TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TOF	TOP OF FOOTING
TRAP	STEAM TRAP
TSP	TOTAL STATIC PRESSURE
TU	TERMINAL UNIT
TW	TEMPERED WATER
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
V	VENT PIPING, VOLT
VA	VALVE
VAV	VARIABLE AIR VOLUME
VCD	VOLUME CONTROL DEVICE
VD	VOLUME DAMPER
VEL	VELOCITY
VENT	VENTILATION, VENTILATOR
VFD	VARIABLE FREQUENCY DRIVE
VOLT	VOLTAGE
VTR	VENT THRU ROOF
W	WASTE, WATT, WIDE, WATER
W/	WITH
WB	WET BULB (TEMPERATURE)
WC	WATER CLOSET, WATER COLUMN
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WATER HEATER, WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WM	WATER METER
WSEC	WASHINGTON STATE ENERGY CODE
WSFU	WATER SUPPLY FIXTURE UNIT
WT	WEIGHT

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

integrus ARCHITECTURE
117 SOUTH MAIN STREET, SUITE 100, SEATTLE, WA. 98104
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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	Terry Potvin
Checked By:	Linda Burman

Revisions

#	Date	Description

ABBREVIATIONS, NOTES, AND LEGEND

PRCNC20221036

P0.01

BUILDING PERMIT SET

WATER HEATER SIZING CALCULATION

FIXTURE	HW FLOW RATE (GPH)	QUANTITY	TOTAL FLOW RATE (GPH)
LAVATORIES (LV-1)	15	11	165
LAVATORIES (LV-2)	15	3	45
MOP SINK (MS-1)	20	3	60
EMERGENCY SHOWER (ESH-1)	150	11	300
EMERGENCY EYEWASH (EEW-1)	45	23	45
EMERGENCY EYEWASH (EEW-2)	45	3	45
EMERGENCY EYEWASH (EEW-3)	45	1	45
*water heater sized for partial usage			
TOTAL HW FLOW RATE (GPH)			705
DEMAND FACTOR			0.4
STORAGE FACTOR			1
PROBABLE DEMAND			282
REQUIRED STORAGE (GAL)			705
HOT WATER AVAILABLE REQUIRED (GAL)			846

NONPOTABLE WATER HEATER SIZING CALCULATION

FIXTURE	HW FLOW RATE (GPH)	QUANTITY	TOTAL FLOW RATE (GPH)
LAB SINK (SK-1) SMALL SINK	5	25	125
LAB SINK (SK-2) LARGER SINK	5	2	10
LAB SINK (SK-3) TWO COMP SINK	5	14	70
LAB SINK (SK-4) CUP SINK	2	6	12
LAB SINK (SK-7) SCULLERY SINK	5	2	10
LAB SINK (SK-8) SCULLERY SINK	5	1	5
CUP SINK (CS-1)	5	5	25
LAB SINK (SS-1)	5	3	15
LAB SINK (SS-2)	5	1	5
LAB SINK (SS-3)	5	1	5
TOTAL HW FLOW RATE (GPH)			282
DEMAND FACTOR			0.4
STORAGE FACTOR			1
PROBABLE DEMAND			112.8
REQUIRED STORAGE (GAL)			282
HOT WATER AVAILABLE REQUIRED (GAL)			338.4

BACKFLOW DEVICE SCHEDULE

MARK	MANUFACTURER / MODEL NO.	LOCATION	DESCRIPTION
RPBA-1	REDUCED PRESSURE PRINCIPAL ASSEMBLY WATTS 957, 3"	SPRINKLER RISER	3" FOR DOMESTIC WATER
RPBA-2	REDUCED PRESSURE PRINCIPAL ASSEMBLY WATTS 957, 3"	SPRINKLER RISER	3" FOR DOMESTIC WATER
RPBA-3	REDUCED PRESSURE PRINCIPAL ASSEMBLY WATTS 009QT 3/4" LEAD FREE	SPRINKLER RISER	ICE MACHINE
RPBA-4	REDUCED PRESSURE PRINCIPAL ASSEMBLY WATTS 957, 2"	SPRINKLER RISER	2" IRRIGATION
RPBA-5	REDUCED PRESSURE PRINCIPAL ASSEMBLY WATTS 957, 1-1/2"	SPRINKLER RISER	1-1/2" NON POTABLE HOT WATER

STORM DRAIN SCHEDULE

FIXTURE TAG	FIXTURE DESCRIPTION	FIXTURE SPECIFICATIONS	NOTES
OS-1	OVERFLOW SPOUT	WADE	

PLUMBING PUMP SCHEDULE

MARK	LOCATION	SYSTEM SERVED	MANUFACTURER / MODEL NO.	PUMP			MOTOR		NOTES
				TYPE	FLOW (GPM)	HEAD (FT)	HP/W	V/PH	
CP-1	WATER HEATER	GWH-1	BELL & GOSSETT, ECOCIRC XL 110-180	DOMESTIC CIRCULATOR	10	57	3 HP	460/3	CONTROL PUMP W/ AQUASTATSET FOR 125
CP-2	WATER HEATER	GWH-2	BELL & GOSSETT, ECOCIRC XL 95-160	NON POTABLE CIRCULATOR	5	43	2 HP	208/3	CONTROL PUMP W/ AQUASTATSET FOR 125
SP-1	MECH RM.	BOILER ROOM FLOOR DRAINS	PENTAIR SP-50	SUBMERSIBLE SEWAGE EJECTOR	15	16	1/2 HP EA	208/1	EXPLOSION PROOF, DUPLEX UNIT,LEAD/LAG CONTROL PANEL, HIGH WATER ALARM AND BASIN TO FIT
SP-2	ELEV PIT	ELEVATOR PIT	STANCOR OIL MINDER OM50JR SE	SUMP PUMP	50	22	1/2	208/1	WITH OIL MINDER OIL SENSOR, FLOATS, CONTROL PANEL AND ALARM

NOTES:
1- PROVIDE WITH BRONZE BODY CONSTRUCTION

WATER HEATER SCHEDULE

MARK	AREA SERVED	MANUFACTURER / MODEL NO.	BTU/HR	GALLONS (GAL)	ENTERING WATER TEMP	STORED WATER TEMP	1ST HOUR DELIVERY	EFFICIENCY	ELEC AMPS	V / PH.	WATER RUNOUT (IN)	DIMENSION HxD (INxIN)	OPERATING WEIGHT (LBS)	NOTES
WH-1	POTABLE	BTH-500 Mxi	499,000	83	50	140	723	98%		120/1	see plans	75-3/4X 33.12	1850	
WH-2	NONPOTABLE	BTH-199 Mxi	199,000	70	50	130	364	98%		120/1	see plans	76X27.75	1356	
NOTES:	1. ASME RATED 2. HOT WATER LINES TO HAVE MIXING VALVES TO BRING TEMPERATURE DOWN TO 125°F 3. WATER HEATERS SHALL BE ENERGY STAR 4. PROVIDE WITH BACNET CONTROL PANEL TO INTERFACE WITH BUILDING ENERGY MANAGEMENT SYSTEM.													

PLUMBING FIXTURE SCHEDULE

FIXTURE TAG	FIXTURE DESCRIPTION	FIXTURE SPECIFICATIONS	NOTES
WC-1	WATER CLOSET WATER SENSE CERTIFIED	TOILET: AMERICAN STANDARD A2257101020 OR SLOAN ST2459A VITREOUS CHINA FLUSH VALVE: SLOAN ROYAL 111 ESS-1.28-OR-HW, MOTION SENSOR, 1.28 GPF SEAT: BEMIS 1955SSCT000 CARRIER: WADE 311-NL4/-NR4 , 330-ND4, SINGLE OR DOUBLE, HORIZONTAL OR VERTICAL DEPENDING ON PLANS SHOWN	WALL MOUNTED FLUSHOMETER, VITREOUS CHINA, HIGH EFFICIENCY, LOW CONSUMPTION 1.28 GPF, ELONGATED BOWL, TOP SPUD, COLOR WHITE. HARD WIRED FOR ELECTRICAL. FLUSH VALVE POLISHED CHROME.
WC-2	WATER CLOSET ADA WATER SENSE CERTIFIED	TOILET: AMERICAN STANDARD A2257101020 OR SLOAN ST2459A VITREOUS CHINA FLUSH VALVE: SLOAN ROYAL 111 ESS-1.28-OR-HW, MOTION SENSOR, 1.28 GPF SEAT: BEMIS 1955SSCT000 CARRIER: WADE 311-NL4/-NR4 , 330-ND4, SINGLE OR DOUBLE, HORIZONTAL OR VERTICAL DEPENDING ON PLANS SHOWN	WALL MOUNTED FLUSHOMETER, VITREOUS CHINA, HIGH EFFICIENCY, LOW CONSUMPTION 1.28 GPF, ELONGATED BOWL, TOP SPUD, COLOR WHITE. HARD WIRED FOR ELECTRICAL. FLUSH VALVE POLISHED CHROME.
LV-1	LAVATORY WATER SENSE CERTIFIED	SINK: AMERICAN STANDARD, OVALYN UNDER COUNTER MOUNTED SINK - 0496.221 UNGLAZED RIM FAUCET: SLOAN 3335186 , SLOAN MODEL EAR-200-PLG-ITM-CP 0.35 GPM TRAP: McGUIRE B8902C, CAST IRON BODY, CHROME FINISH ANGLE STOP: BRASSCRAFT KTSCR19 TRANSFORMER: CHICAGO 243260001 TEMPERING VALVE: POWERS LFE480-10 P.O. PLUG: McGUIRE 155A, OPEN GRID, POLISHED CHROME	FAUCET, CHICAGO 116111AB4, 0.35 GPM, VANDAL PROOF, DUAL SUPPLY FOR HOT AND COLD WATER, ELECTRONIC WITH DUAL BEAM INFRARED SENSOR. COUNTER MOUNTED VITREOUS CHINA, FRONT OVERFLOW SINGLE FAUCET CENTER HOLE, COLOR WHITE, PROVIDE WITH PROFLO TRAP COVER FOR ADA COMPLIANCE. HARD WIRED FOR ELECTRICAL.
LV-2	LAVATORY ADA WATER SENSE CERTIFIED	SINK: AMERICAN STANDARD, OVALYN UNDER COUNTER MOUNTED SINK - 0496.221 UNGLAZED RIM FAUCET: SLOAN 3335186 , SLOAN MODEL EAR-200-PLG-ITM-CP 0.35 GPM TRAP: McGUIRE B8902C, CAST IRON BODY, CHROME FINISH ANGLE STOP: BRASSCRAFT KTSCR19 TRANSFORMER: CHICAGO 243260001 TEMPERING VALVE: POWERS LFE480-10 P.O. PLUG: McGUIRE 155A, OPEN GRID, POLISHED CHROME	FAUCET, CHICAGO 116111AB4, 0.35 GPM, VANDAL PROOF, DUAL SUPPLY FOR HOT AND COLD WATER, ELECTRONIC WITH DUAL BEAM INFRARED SENSOR. COUNTER MOUNTED VITREOUS CHINA, FRONT OVERFLOW SINGLE FAUCET CENTER HOLE, COLOR WHITE, PROVIDE WITH PROFLO TRAP COVER FOR ADA COMPLIANCE. HARD WIRED FOR ELECTRICAL.
MS-1	MOP SINK WATER SENSE CERTIFIED	SINK: KOHLER WHITBY SERVICE SINK K-6710-0, 27"x27"x8" FAUCET: ZURN Z843M1-RC WITH VACUUM BREAKER	WALL MOUNTED, 8" FIXED CENTERS CONCEALED HOT AND COLD WATER WITH INTEGRAL STOPS, PAIL HOOK, 3/4" THREADED HOSE SPOUT, TOP REINFORCING BAR
FD-1	FLOOR DRAIN	DRAIN: WADE 1100 SERIES, MODEL 1100-A5-1-ARC, DRAIN BODY WITH 5" BODY: TWO PIECE DURA-COATED CAST IRON BODY, DOUBLE DRAINAGE FLANGE, REVERSIBLE FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET STRAINER: 5 INCH ADJUSTABLE ROUND NICKEL BRONZE	
FD-2	FLOOR DRAIN		
FS-1	FLOOR SINK	DRAIN: SILVERWIND FS/RFS 400 SERIES, 8" SQUARE, 6" SUMP DEPTH TOP: 8 INCH SQUARE CAST IRON HALF GRATE BODY: 6 INCH DEEP, CAST IRON ENAMELED SEDIMENT BASKET, DOME STRAINER	DOME BOTTOM STRAINER, FLANGE AND FLASHING CLAMP
HB-1	HOSE BIBB	WOODFORD B67 POLISHED CHROME ANTI SIPHON, VACUUM BREAKER PROTECTED WALL FAUCETS, ENCLOSED FLUSH MOUNTED WALL BOX, 3/4" INLET.	
BF-1	DRINKING FOUNTAIN BOTTLE FILLER	FOUNTAIN: ELKAY LZWS-EDFP217K OR APPROVED EQUAL P TRAP: McGUIRE M8912C ANGLE STOP: BRASSCRAFT KTSCR19	DUAL LEVEL WITH INTEGRAL BOTTLE FILLING STATION, 1.1 GPM, FULLY ASSEMBLED FRONT PUSH BUTTON, STAINLESS STEEL BACK PANEL, 120V/1PH

WATER METER SCHEDULE

MARK	LOCATION	SYSTEM SERVED	MANUFACTURER / MODEL NO.	SIZE	DDC CONTOLS	POWER	PANEL
M	WATER ROOM	DOMESTIC COLD WATER	ONICON FT - 3100	3"	RS485 BACnet	24 VAC / VDC	ONICON D-100
M	WATER ROOM	DOMESTIC HOT WATER	ONICON F - 4600	2"	RS485 BACnet	20 - 28V AC/DC, 5 VA MAX	ONICON D-100
M	WATER ROOM	NON POTABLE HOT WATER	ONICON F - 4600	1-1/2"	RS485 BACnet	20 - 28V AC/DC, 5 VA MAX	ONICON D-100
M	WATER ROOM	IRRIGATION	XYLEM accuMAG	2"	DDC	BATTERY 1/15 Hz	NONE
NOTE: NSF / ANSI STANDARD 61, AWWA STANDARD C701.							

VACUUM PUMP SCHEDULE

MARK	LOCATION	MODEL NUMBER	HP	CAPACITY @19" HG (2)		PACKAGE BTU/HR (3)	NOISE LEVEL (4)	SYSTEM FLA	RECEIVER SIZE (GALLONS)	L (INCHES)	WEIGHT (POUNDS)
				PUMP (SCFM)	SYSTEM (SCFM)			460 V(C)			
VP-1	ROOFTOP PENTHOUSE	75LV-22-052 (C)	5	38	76	25440	82	12	80	53	1525

1) NORMAL OPERATING CONDITION AT MAXIMUM AMBIENT OF 105 F. CONSULT FACTORY FOR HIGHER AMBIENT CONDITIONS
2) CAPACITIES ARE SHOWN WITH ALL PUMPS RUNNING
3) PACKAGE BTU/HR ARE SHOWN WITH ALL PUMPS RUNNING
4) NOISE LEVELS ARE SHOWN IN dB(A) AND REFLECT ALL PUMPS RUNNING

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	Terry Potvin
Checked By:	Linda Burman

Revisions

#	Date	Description

PLUMBING SCHEDULE 1

PRCNC20221036

P0.02

BUILDING PERMIT SET

MIXING VALVE SCHEDULE

GENERAL		BASIS OF DESIGN: ACORN. BRADLEY ACCEPTABLE ALTERNATE				SPECIFICATIONS							
TAG #	SERVICE	TYPE	MANUFACTURER	MODEL NUMBER	ASSE LISTED	LOCATION	FLOW THROUGH VALVE	MINIMUM FLOW REQ'D	PRESSURE DROP @DESIGN FLOW	CONNECTION SIZE (INCHES)	NSF 61 CERTIFIED (POTABLE SYSTEM)	LEAD FREE	OUTLET TEMP SETPOINT
TMV-1	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-2	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-3	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-4	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-5	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-6	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-7	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-8	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-9	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-10	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-11	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-12	DOM HW GWH-2	THERMOSTATIC	ACORN	SFMV-17-5	YES	WATER ROOM	225 GPM	75 GPM	5 PSI	2 INCH	YES	YES	125 DEG F.
TMV-13	DOM HW GWH-1	THERMOSTATIC	ACORN	SFMV-17-5	YES	WATER ROOM	225 GPM	75 GPM	5 PSI	2 INCH	YES	YES	125 DEG F.
TMV-1A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-2A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-3A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-4A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-5A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-6A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-7A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-8A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-9A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-10A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.
TMV-11A	DOM HW	THERMOSTATIC	ACORN	SFMV-17-2-RC	YES	LAB AREAS	45 GPM	15 GPM	5 PSI	3/4 INCH	YES	YES	125 DEG F.

DOMESTIC WATER EXPANSION TANK SCHEDULE

MARK	LOCATION	SYSTEM SERVED	MANUFACTURER / MODEL NO.	TANK VOLUME (GAL)	ACCEPTANCE FACTOR	SYSTEM CONN. (IN)	PHYSICAL		NOTES
							SIZE (DIAxL) (INxIN)	WEIGHT (LBS)	
ET-1	RISER ROOM	WTR HTR	AMTROL STC-12C-DD	6.4	0.5	3/4	12X18	76	
ET-2	RISER ROOM	WTR HTR	AMTROL STC-12C-DD	6.4	0.5	3/4	12X18	76	

NOTE: EXPANSION TANK SHALL BE DELIVERED TO THE SITE PRE-CHARGED TO OPERATING PRESSURE. CONTRACTOR SHALL COORDINATE PRIOR TO ORDERING. PROVIDE SEISMIC BRACING AND ASME RATINGS.

APPROVED MISC PIPE MATERIALS

SERVICE	LOCATION	SIZE	MATERIAL	JOINTS	NOTES
COMPRESSED AIR	ABOVEGRADE	2" & SMALLER	SCHEDULE 40 A53B ERW	MEGAPRESS	
CONDENSATE	ABOVEGRADE	2" & SMALLER	TYPE M COPPER	VIEGA PROPRESS	

NOTES:

APPROVED PIPE MATERIALS FOR DRAIN, WASTE, VENT PIPE AND FITTINGS

MATERIAL	UNDERGOUND DRAIN, WASTE, VENT PIPE AND FITTINGS	ABOVEGROUND DRAIN, WASTE, VENT PIPE AND FITTINGS	BUILDING SEWER PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
CAST IRON NO-HUB	X	X	-	STANDARD COUPLINGS	ASME B16.3

APPROVED PIPE MATERIALS FOR BUILDING SUPPLY AND WATER DISTRIBUTION PIPING AND FITTINGS

SERVICE	LOCATION	SIZE	MATERIAL	JOINTS	NOTES
DOMESTIC WATER	BELOWGRADE	4" AND SMALLER	TYPE K COPPER	BRAZED	NSF-61
	ABOVEGRADE	2" & SMALLER	TYPE L COPPER	VIEGA PROPRESS	NSF-61
		2'-1/2" & LARGER	SCHEDULE 10 STAINLESS STEEL	VICATULIC GROOVED	NSF-61
				COMBINATION VIC GROOVE x WELDED	NSF-61
NON-POTABLE WATER	ABOVEGRADE	2" & SMALLER	TYPE L COPPER	VIEGA PROPRESS	NSF-61
		2'-1/2" & LARGER	SCHEDULE 10 STAINLESS STEEL	VICATULIC GROOVED	NSF-61
				COMBINATION VIC GROOVE x WELDED	NSF-61

NOTES:

PIPING SYSTEMS INSULATION SCHEDULE

TYPE OF PIPE	INSTALLATION LOCATION	INSULATION TYPE	PIPE SIZE (INCH)	INSULATION THICKNESS (INCH)	NOTES
COLD PLUMBING PIPING	INSIDE BUILDING ENVELOPE	FIBERGLASS	ALL SIZES	1" THICK	1
	OUTSIDE BUILDING ENVELOPE AND BURIED LESS THAN 3'-0" BELOW GRADE	ELASTOMERIC	ALL SIZES	MULTIPLE LAYERS FOR 1-1/2" TOTAL THICKNESS	1,3
	IN TRENCHES AND UTILIDORS	CELLULAR GLASS	ALL SIZES	1" THICK	2
HOT PLUMBING PIPING	INSIDE BUILDING ENVELOPE	FIBERGLASS	1-1/4 INCH AND SMALLER	1" THICK	
			1-1/2 INCH AND LARGER	1-1/2" THICK	1
	OUTSIDE BUILDING ENVELOPE AND BURIED	ELASTOMERIC	ALL SIZES	1-1/2" THICK	1
	IN TRENCHES AND UTILIDORS	CELLULAR GLASS	ALL SIZES	1-1/2" THICK	1,3

NOTES:

1-INCLUDE POLYETHYLENE TUBING.

2-INCLUDE MULTI-PLY LAMINATE JACKET.

3-INCLUDE FACTORY APPLIED WEATHER PROOF JACKET OR MANUFACTURER RECOMMENDED COATING.

WATER AND WASTE SYSTEMS LOAD CALCULATIONS

KIND OF FIXTURE	NUMBER OF FIXTURES	WATER SOURCE FIXTURE UNITS	TOTAL WFUS	HWFUS	WASTE DRAINGE UNITS PER FIXTURE	TOTAL DRAINAGE UNITS DFUS
POTABLE WATER FIXTURES						
WATER CLOSET (WC-1)	17	2.5	42.5	-	4	68
WATER CLOSET (WC-2)	3	2.5	7.5	-	4	12
LAVATORY (LV-1)	11	1	11	8.25	1	11
LAVATORY (LV-2)	3	1	3	2.25	1	3
MOP SINK (MS-1)	2	3	6	4.5	3	6
EMERGENCY SHOWERS (ESH-1)	11	4	44	33	2	22
EMERGENCY EYEWASH (EEW-1)	23	1.5	34.5	25.875	2	46
EMERGENCY EYEWASH (EEW-2)	3	1.5	4.5	3.375	2	6
EMERGENCY EYEWASH (EEW-3)	1	1.5	1.5	1.125	2	2
BOTTLE FILLER (BF-1)	3	0.5	1.5	1.125	0.5	1.5
HOSE BIBB (HB-1)	4	1	4	-	-	-
	POTABLE SUBTOTALS		160	79.5	-	177.5
NONPOTABLE WATER FIXTURES						
LAB SINK (SS-1) STAINLESS STEEL	3	2	6	4.5	2	6
LAB SINK (SS-2) STAINLESS STEEL	1	2	2	1.5	2	2
LAB SINK (SS-3) STAINLESS STEEL	1	2	2	1.5	2	2
LAB SINK (SK-1) SMALL SINK	25	2	50	37.5	2	50
LAB SINK (SK-2) LARGER SINK	2	2	4	3	2	4
LAB SINK (SK-3) TWO COMP SINK	14	2	28	21	2	28
LAB SINK (SK-4) CUP SINK	6	2	12	9	2	12
LAB SINK (SK-7) SCULLERY SINK	2	2	4	3	2	4
LAB SINK (SK-8) SCULLERY SINK	1	2	2	1.5	2	2
LAB SINK (CS-1) CUP SINK	5	2	10	7.5	2	10
	NONPOTABLE SUBTOTALS		92	69	-	120
SANITARY FIXTURES						
FLOOR SINK (FS-1)	8	-	-	-	2	16
FLOOR DRAIN (FD-1)	7	-	-	-	2	14
FLOOR DRAIN (FD-2)	11	-	-	-	2	22
	SANITARY SUBTOTAL		-	-	-	52
	SYSTEM TOTALS		252	148.5	-	349.5
	METER-FIXTURE MAX. LENGTH (FT)		450	TOTAL WSFU = 400.5		
	SUPPLY LINE PRESSURE (PSI)		76			

SUPPLY LINE SIZING	WATER PIPE SIZE (IN)	3	PRESSURE AVAILABLE		MINIMUM ALLOWABLE		MAXIMUM HEIGHT	
	METER SIZE (IN)	3	64		30		45	
	FRICTION LOSS	14.65	FRICTION LOSS PER 100 FEET		3.26		PSI	
WATER LINE SIZING	**MAXIMUM LOAD OF WATER PIPE BASED ON 3.26 PSI DROP OVER 450 FEET & MAX 8 FPS**							
	SIZE OF PIPE	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
	MAXIMUM GPM	2	5	11	18	30	60	130	180
	MAXIMUM WFU	1	2	4	8	10	80	400	800
	BASED ON COPPER TUBING TYPE M, L, K								

PLUMBING FIXTURE ROUGH-IN SCHEDULE

MARK	FIXTURE TYPE	WASTE (IN)	VENT (IN)	CW (IN)	HW (IN)	NPCW (IN)	NPHW (IN)	NOTES
WC-1	WATER CLOSET	4"	2"	1-1/4"	-	-	-	-
WC-2	WATER CLOSET - ADA	4"	2"	1-1/4"	-	-	-	1
LV-1	LAVATORY - COUNTER	1-1/2"	1-1/2"	1/2"	1/2"	-	-	-
LV-2	LAVATORY - WALL HUNG	1-1/2"	1-1/2"	1/2"	1/2"	-	-	1
BF-1	BOTTLE FILLER	1-1/4"	1-1/4"	1/2"	-	-	-	1
MS-1	MOP SINK	3"	2"	3/4"	3/4"	-	-	-
EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-
EEW-2	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-
EEW-3	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-
ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	-	-	-
FS-1	FLOOR SINK	2"	2"	-	-	-	-	3
FD-1	FLOOR DRAIN	2"	2"	-	-	-	-	3
FD-2	FLOOR DRAIN	4"	2"	-	-	-	-	3
VTR	VENT THRU ROOF	-	-	-	-	-	-	5
NONPOTABLE WATER FIXTURES								
SK-1	LAB SINK	2"	1-1/2"	-	-	1/2"	1/2"	-
SK-2	LAB SINK	2"	1-1/2"	-	-	1/2"	1/2"	-
SK-3	LAB SINK	2"	1-1/2"	-	-	1/2"	1/2"	-
SK-4	LAB SINK	1-1/2"	1-1/2"	-	-	1/2"	1/2"	-
SK-7	SCULLERY SINK	2"	2"	-	-	3/4"	3/4"	-
SK-8	SCULLERY SINK	2"	2"	-	-	3/4"	3/4"	-
ST-1	SOIL TRAP	2"	1-1/2"	-	-	-	-	-
SS-1	STAINLESS STEEL - SINGLE	2"	1-1/2"	1/2"	1/2"	-	-	-
SS-2	STAINLESS STEEL - DOUBLE	2"	1-1/2"	-	-	1/2"	1/2"	-
SS-3	STAINLESS STEEL - COUNTER	2"	1-1/2"	-	-	1/2"	1/2"	-
CS-1	CUP SINK - COUNTER MOUNTED	1-1/2"	1-1/2"	-	-	1/2"	-	-
FH-1	FUME HOOD - CUP SINK	1-1/2"	1-1/2"	-	-	1/2"	-	-

GENERAL NOTES	
A	PIPE SIZES LISTED MAY BE DIFFERENT THAN THE ACTUAL FIXTURE CONNECTION. PROVIDE BRANCH PIPE OF LISTED SIZE AND PIPE FITTINGS AND OFFSETS AS REQUIRED FOR COMPLETE INSTALLATION
B	PROVIDE FINAL CONNECTIONS TO ALL FIXTURES
C	PROVIDE WALL CLEANOUTS FOR ALL SINKS AND WATER CLOSETS
D	ALL NON POTABLE FIXUTURES RAN ON THEIR OWN SYSTEM

NOTES	
1	ADA COMPLIANT WHERE INDICATED ON THE ARCHITECTURAL DRAWINGS. MOUNTING HEIGHT AS INDICATED ON ARCHITECTURAL DRAWINGS.
2	PROVIDE TRAP PRIMER ASSEMBLY SERVE ADJACENT DRAINS. PROVIDE WITH SHUTOFF VALVE.
3	CW CONNECTION VIA TRAP PRIMER.
4	CLEANOUTS ARE TO BE INSTALLED EVERY 100 FEET.
5	SIZE AS NOTED ON DRAWINGS. WHERE APPLICABLE, VENT SIZE SHALL BE AS NOTED ON THE DRAWING, 1-1/2", HALF SIZE OF WASTE OR WHICHEVER IS LARGER.

PRCNC20221036

BUILDING PERMIT SET

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	Terry Potvin
Checked By:	Linda Burman

Revisions

#	Date	Description

PLUMBING SCHEDULE 2

P0.03

LAB EQUIPMENT PLUMBING REQUIREMENTS SCHEDULE

ROOM	FLOOR	LOCATION	MARK	FIXTURE OR EQUIPMENT	NPCW	NPHW	CW (IN)	HW (IN)	WASTE	VENT	DILUTION TRAP	GAS	VAC	AIR	FLOOR DRAIN/SINK	DRAIN	NOTES
125	LEVEL 0	SPRINKLER RISER	FS-1	FLOOR SINK	-	-	-	-	2"	2"	-	-	-	-	2"FS-1	-	(3) 2"FS-1
125	LEVEL 0	SPRINKLER RISER	FD-1	FLOOR DRAIN	-	-	-	-	2"	2"	-	-	-	-	2"FD-1	-	(1) 2"FD-1
125	LEVEL 0	SPRINKLER RISER	-	STANDPIPE	-	-	-	-	6"	3"	-	-	-	-	-	-	
121	LEVEL 1	JANITOR ROOM	EEW-3	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV
131	LEVEL 1	PHYSICS SUPPORT	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	
131	LEVEL 1	PHYSICS SUPPORT	EEW-2	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV
132	LEVEL 1	PHYSICS	SK-1, SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(2) SK-1, (1) SK-3
135	LEVEL 1	FAB LAB	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	
135	LEVEL 1	FAB LAB	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-5A
135	LEVEL 1	FAB LAB	SS-2	STAINLESS STEEL SINK - DOUBLE	1/2"	1/2"	-	-	2"	2"							
135	LEVEL 1	FAB LAB	SS-3	STAINLESS STEEL SINK	1/2"	1/2"	-	-	2"	2"							
135	LEVEL 1	FAB LAB	EEW-2	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-5
231	LEVEL 2	BIOLOGY AP LAB	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(5) SK-1
231	LEVEL 2	BIOLOGY AP LAB	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
232	LEVEL 2	MICROBIOLOGY LAB	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(2) SK-1
232	LEVEL 2	MICROBIOLOGY LAB	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
232	LEVEL 2	MICROBIOLOGY LAB	SK-4	LAB SINK	1/2"	-	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(6) SK-4
232	LEVEL 2	MICROBIOLOGY LAB	GT-1 & 2	GAS TURRET	-	-	-	-	-	-	-	1/2"	-	-	-	-	(2) GT-1, (5) GT-2, GAS VALVE WITH EMERGENCY SHUTOFF
232	LEVEL 2	MICROBIOLOGY LAB	VT-1 & 2	VACUUM TURRET	-	-	-	-	-	-	-	-	1/2"	-	-	-	(2) VT-1, (5) VT-2
232	LEVEL 2	MICROBIOLOGY LAB	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-4A
232	LEVEL 2	MICROBIOLOGY LAB	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-4
233	LEVEL 2	BIOLOGY PREP	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
233	LEVEL 2	BIOLOGY PREP	SK-7	SCULLERY SINK - 2 COMP SINK	1/2"	1/2"	-	-	2"	2"	-	-	-	-	-	-	(1) SK-7
233	LEVEL 2	BIOLOGY PREP	-	FUME HOOD - CUP SINK	1/2"	-	-	-	1-1/2"	1-1/2"	-	-	-	-	-	-	
233	LEVEL 2	BIOLOGY PREP	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-3A
233	LEVEL 2	BIOLOGY PREP	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-3
233	LEVEL 2	BIOLOGY PREP		ICE MACHINE	1/2"	-	-	-	2"	2"	-	-	-	-	2"FS-1	-	RPBA-3
233	LEVEL 2	BIOLOGY PREP		STERILIZER	1/2"	1/2"	-	-	2"	2"	-	-	-	-	2"FS-1	-	
233	LEVEL 2	BILOGY PREP	EEW-2	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV
234	LEVEL 2	GENERAL BIOLOGY	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
234	LEVEL 2	GENERAL BIOLOGY	SK-2	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(2) SK-2
234	LEVEL 2	GENERAL BIOLOGY	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
234	LEVEL 2	GENERAL BIOLOGY	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-2A
234	LEVEL 2	GENERAL BIOLOGY	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-2
235	LEVEL 2	GENERAL BIOLOGY	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
235	LEVEL 2	GENERAL BIOLOGY	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3, (1)ST-1 SOLIDS TRAP
235	LEVEL 2	GENERAL BIOLOGY	SK-8	SCULLERY SINK - 2 COMP SINK	1/2"	1/2"	-	-	2"	2"	-	-	-	-	-	-	(1) SK-7
235	LEVEL 2	GENERAL BIOLOGY	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-1A
235	LEVEL 2	GENERAL BIOLOGY	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-1
308	LEVEL 3	EARTH SCIENCE B LAB	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3, (1)ST-1 SOLIDS TRAP
309B	LEVEL 3	ROCK PREP	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
309B	LEVEL 3	ROCK PREP	ST-1	SOILDS TRAP	-	-	-	-	2"	2"	-	-	-	-	-	-	(1)ST-1 SOLIDS TRAP
309B	LEVEL 3	ROCK PREP	EEW-2	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV
310	LEVEL 3	EARTH SCIENCE A LAB	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(7) SK-1
310	LEVEL 3	EARTH SCIENCE A LAB	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
310	LEVEL 3	EARTH SCIENCE A LAB	ST-1	SOILDS TRAP	-	-	-	-	2"	2"	-	-	-	-	-	-	(1)ST-1 SOLIDS TRAP
312	LEVEL 3	GENERAL CHEMISTRY	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(5) SK-1
312	LEVEL 3	GENERAL CHEMISTRY	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
312	LEVEL 3	GENERAL CHEMISTRY	CS-1	CUP SINK - COUNTER MOUNTED	1/2"	-	-	-	1-1/2"	1-1/2"	-	-	-	-	-	-	(6) CS-1
312	LEVEL 3	GENERAL CHEMISTRY	GT-1 & 2	GAS TURRET	-	-	-	-	-	-	-	1/2"	-	-	-	-	(2) GT-1, (5) GT-2, GAS VALVE WITH EMERGENCY SHUTOFF
312	LEVEL 3	GENERAL CHEMISTRY	VT-1 & 2	VACUUM TURRET	-	-	-	-	-	-	-	1/2"	1/2"	-	-	-	(2) VT-1, (5) VT-2
312	LEVEL 3	GENERAL CHEMISTRY	FH-1	FUME HOOD	1/2"	-	-	-	1-1/2"	1-1/2"	-		1/2"				(4)FH-1
312	LEVEL 3	GENERAL CHEMISTRY	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-10A
312	LEVEL 3	GENERAL CHEMISTRY	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-10
312	LEVEL 3	GENERAL CHEMISTRY	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-11A
312	LEVEL 3	GENERAL CHEMISTRY	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-11
314	LEVEL 3	CHEMISTRY PREP/STOCKROOM	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
314	LEVEL 3	CHEMISTRY PREP/STOCKROOM	SK-7	SKULLERY SINK - 2 COMP SINK	1/2"	1/2"	-	-	2"	2"	-	-	-	-	-	-	(1) SK-7
314	LEVEL 3	CHEMISTRY PREP/STOCKROOM	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-9A
314	LEVEL 3	CHEMISTRY PREP/STOCKROOM	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-9
316	LEVEL 3	ORGANIC CHEMISTRY LAB	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(3) SK-1
316	LEVEL 3	ORGANIC CHEMISTRY LAB	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(2) SK-3
316	LEVEL 3	ORGANIC CHEMISTRY LAB	FH-1	FUME HOOD	1/2"	-	-	-	1-1/2"	1-1/2"	-	1/2"	1/2"				(2)FH-1, 1 CUP SINK
316	LEVEL 3	ORGANIC CHEMISTRY LAB	FH-1	FUME HOOD	1/2"	-	-	-	1-1/2"	1-1/2"	-	1/2"	1/2"				(9)FH-1, 2 CUP SINKS
316	LEVEL 3	ORGANIC CHEMISTRY LAB	VT-2 & 4	VACUUM TURRET	-	-	-	-	-	-	-	1/2"	1/2"	-	-	-	(2) VT-1, (1) VT-2, (2) VT-4
316	LEVEL 3	ORGANIC CHEMISTRY LAB	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-7A
316	LEVEL 3	ORGANIC CHEMISTRY LAB	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-7
316	LEVEL 3	ORGANIC CHEMISTRY LAB	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-8A
316	LEVEL 3	ORGANIC CHEMISTRY LAB	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-8
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM	SK-1	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-1
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM	SK-3	LAB SINK	1/2"	1/2"	-	-	2"	2"	YES 2 GALLON	-	-	-	-	-	(1) SK-3
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM	FH-1	FUME HOOD	1/2"	-	-	-	1-1/2"	1-1/2"	-	1/2"	-				(1)FH-1, 1 CUP SINK
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM		ICE MACHINE	1/2"	-	-	-	2"	2"	-	-	-	-	2"FS-1	-	RPBA-3
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM	EEW-1	EMERGENCY EYEWASH	-	-	1/2"	1/2"	-	-	-	-	-	-	-	-	TMV-6A
318	LEVEL 3	CHEMISTRY INSTRUMENT ROOM	ESH-1	EMERGENCY SHOWER	-	-	1-1/2"	1-1/2"	4"	2"	-	-	-	-	4"FD-1	-	TMV-6

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	Terry Potvin
Checked By:	Linda Burman

Revisions

#	Date	Description

PLUMBING
SCHEDULE 3

PRCNC20221036

P0.04

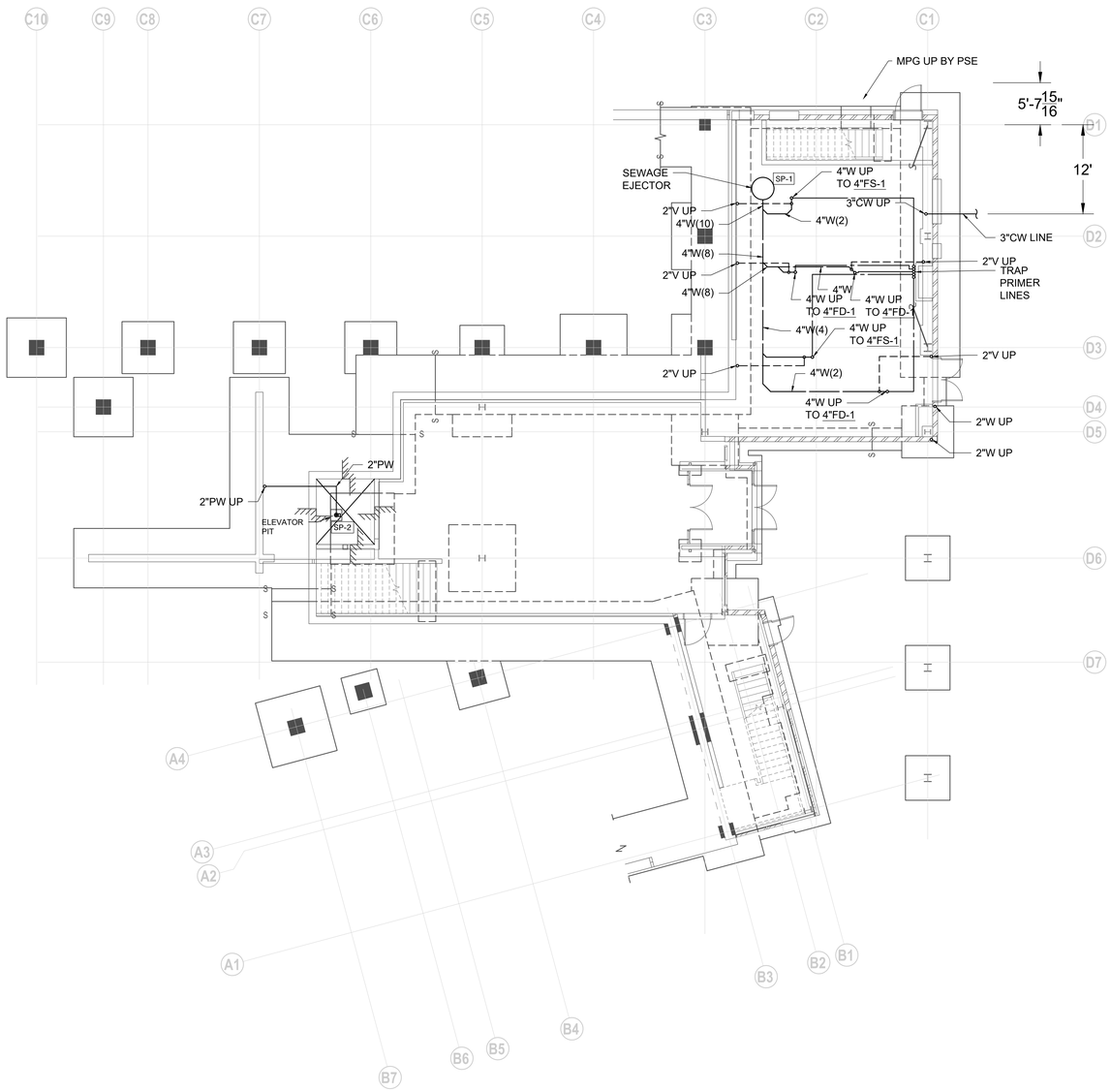
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1



LEVEL 0 UNDERGROUND PLUMBING PLAN

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

PRCNC20221036

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LEVEL 0
UNDERGROUND
PLUMBING PLAN

P1.00

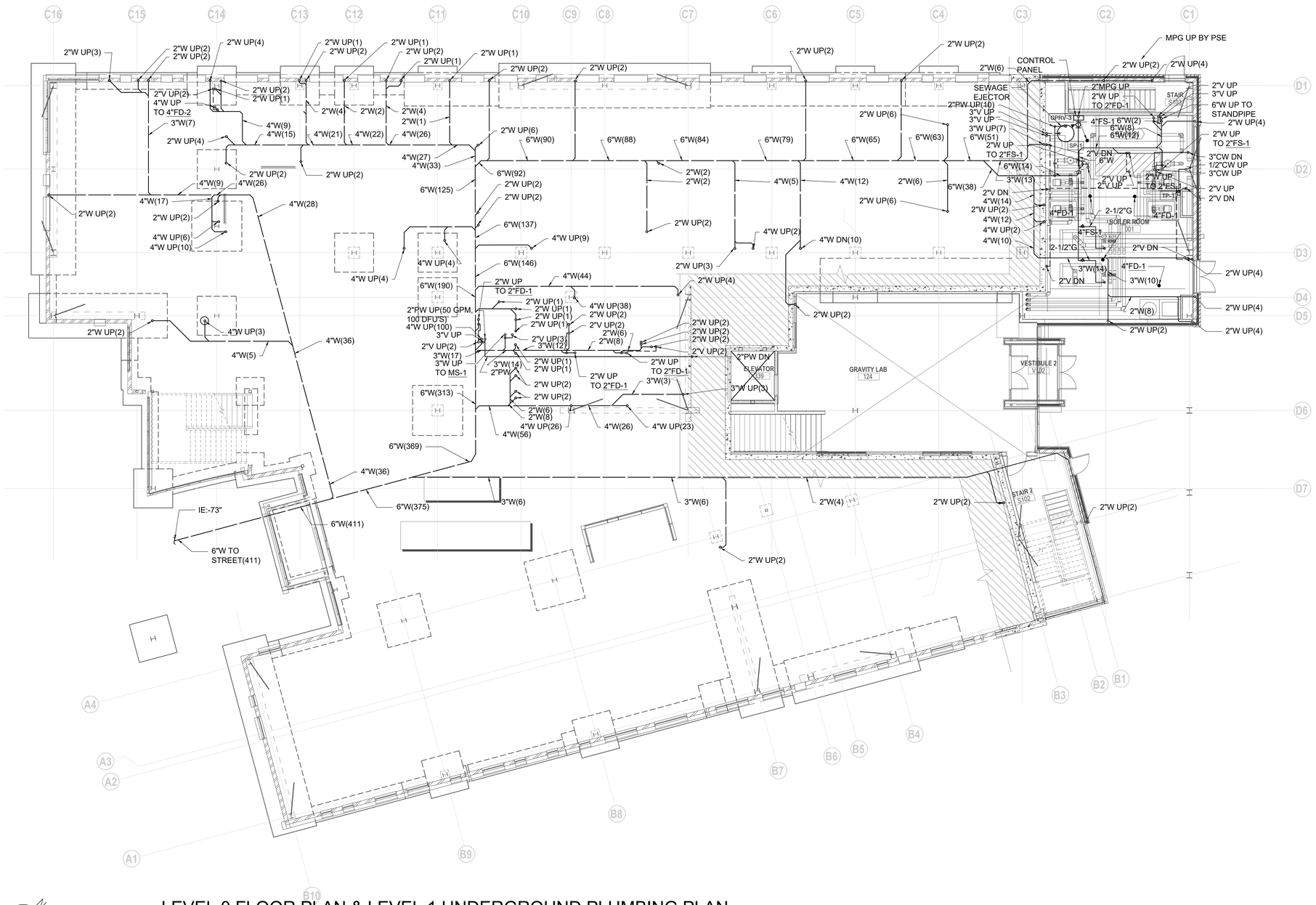
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1



LEVEL 0 FLOOR PLAN & LEVEL 1 UNDERGROUND PLUMBING PLAN

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

PRCNC20221036

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LEVEL 0 FLOOR PLAN & LEVEL 1 UNDERGROUND PLUMBING PLAN

P1.01

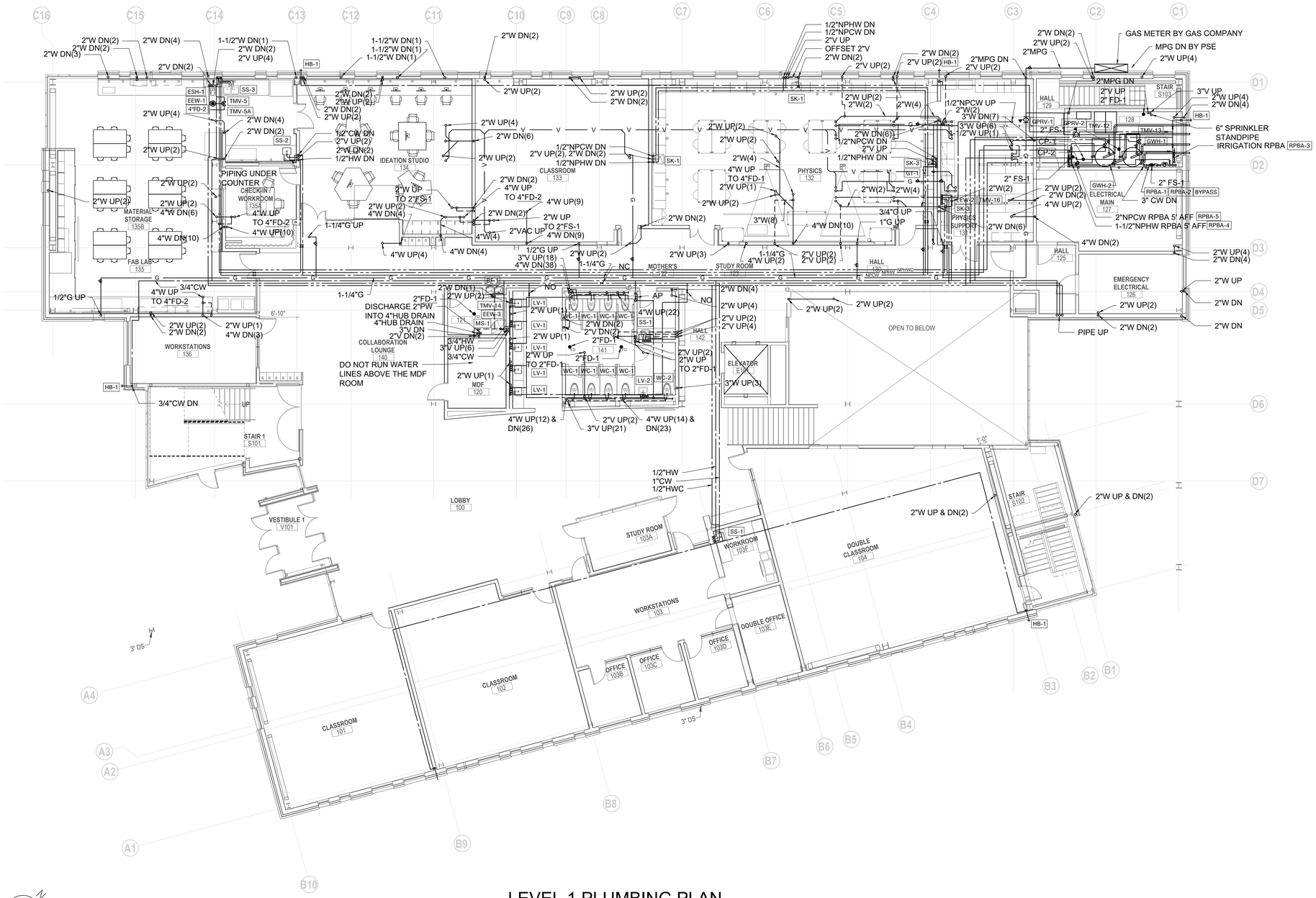
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1. FUME HOOD: PROVIDE 1-1/2"W DN, 1-1/2"V UP, 1/2"NPCW DN. PROVIDE DILUTION TRAP.
2. CUP SINK: PROVIDE 1-1/4"W DN, 1-1/4"V UP, PROVIDE DILUTION TRAP.
3. SK-1: PROVIDE 2"W DN, 2"V UP, 1/2"NPCW DN, 1/2"NPHW DN. PROVIDE DILUTION TRAP.
4. SK-1(ISLAND): PROVIDE 2"W DN, 2" ISLAND VENT, 1/2"NPCW DN, 1/2"NPHW DN. PROVIDE DILUTION TRAP.
5. RACK 2"W, 1/2"NPCW,1/2"NPHW ALONG BACK WALL BEHIND CABINETS. KEEP 2"V HIGH AS POSSIBLE.
6. NOT USED
7. VACCUM CONNECTION TO FUME HOOD.



LEVEL 1 PLUMBING PLAN

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

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Revisions

#	Date	Description

LEVEL 1
PLUMBING PLAN

P1.02

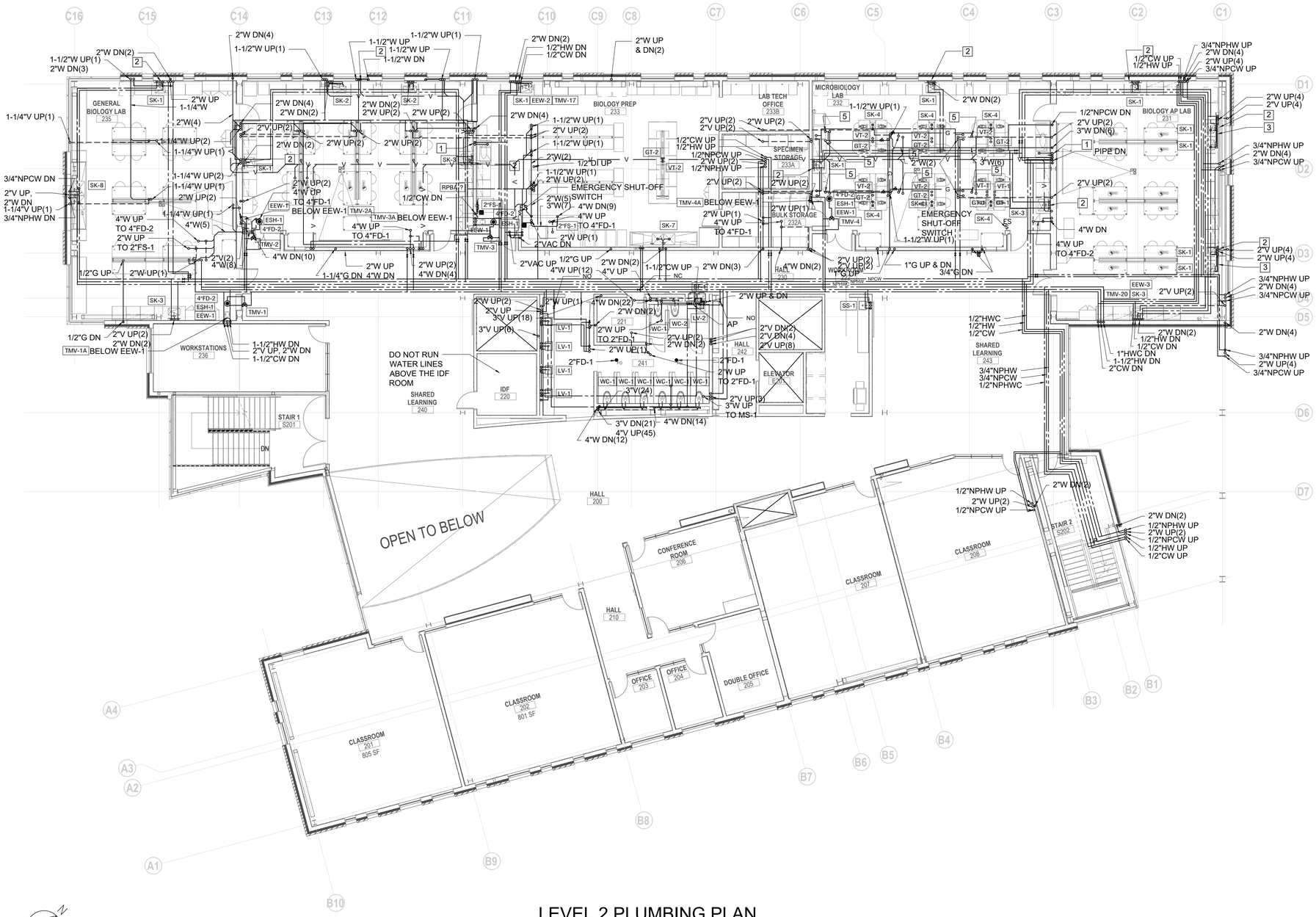
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1. FUME HOOD: PROVIDE 1-1/2"W DN, 1-1/2"V UP, 1/2"NPCW DN. PROVIDE DILUTION TRAP.
2. SK-1: PROVIDE 2"W DN, 2"V UP, 1/2"NPCW DN, 1/2"NPHW DN. PROVIDE DILUTION TRAP.
3. RACK 2"W, 1/2"NPCW,1/2"NPHW ALONG BACK WALL BEHIND CABINETS. KEEP 2"V HIGH AS POSSIBLE.
4. NOT USED
5. 1/2"G UP TO GAS TURRET ABOVE.



LEVEL 2 PLUMBING PLAN

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

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Revisions

#	Date	Description

LEVEL 2
PLUMBING PLAN

P1.03

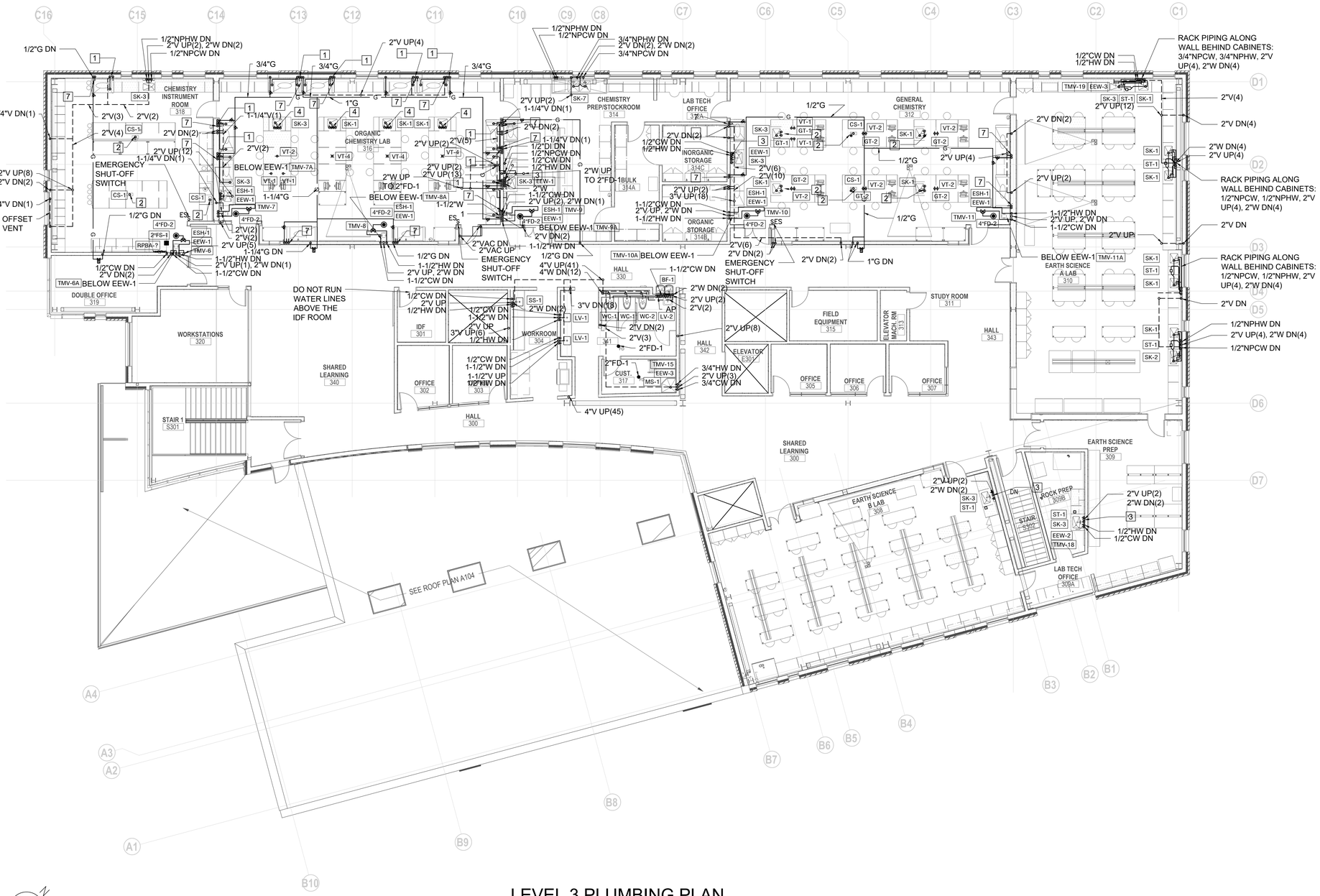
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1. FUME HOOD: PROVIDE 1-1/2"W DN, 1-1/2"V UP, 1/2"NPCW DN. PROVIDE DILUTION TRAP.
2. CUP SINK: PROVIDE 1-1/4"W DN, 1-1/4"V UP, PROVIDE DILUTION TRAP.
3. SK-1: PROVIDE 2"W DN, 2"V UP, 1/2"NPCW DN, 1/2"NPHW DN. PROVIDE DILUTION TRAP.
4. SK-1(ISLAND): PROVIDE 2"W DN, 2" ISLAND VENT, 1/2"NPCW DN, 1/2"NPHW DN. PROVIDE DILUTION TRAP.
5. RACK 2"W, 1/2"NPCW,1/2"NPHW ALONG BACK WALL BEHIND CABINETS. KEEP 2"V HIGH AS POSSIBLE.
6. NOT USED
7. VACCUM CONNECTION TO FUME HOOD.



LEVEL 3 PLUMBING PLAN

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

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Revisions

#	Date	Description

LEVEL 3
PLUMBING PLAN

P1.04

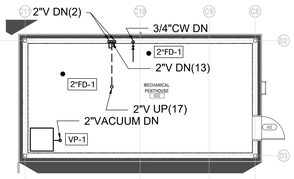
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

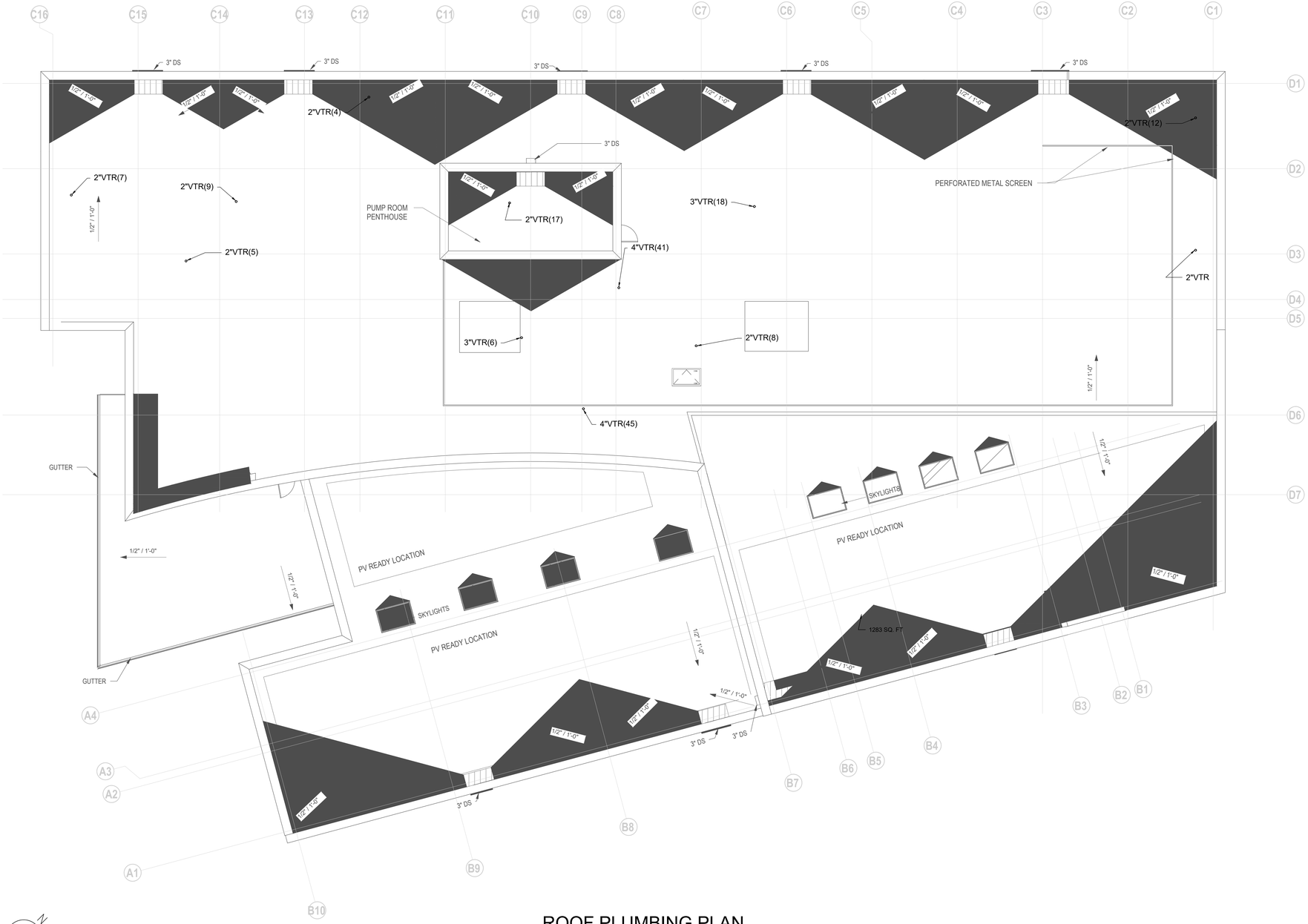
PLAN NOTES

1



PENTHOUSE PUMP ROOM

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



ROOF PLUMBING PLAN

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

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ROOF PLUMBING PLAN

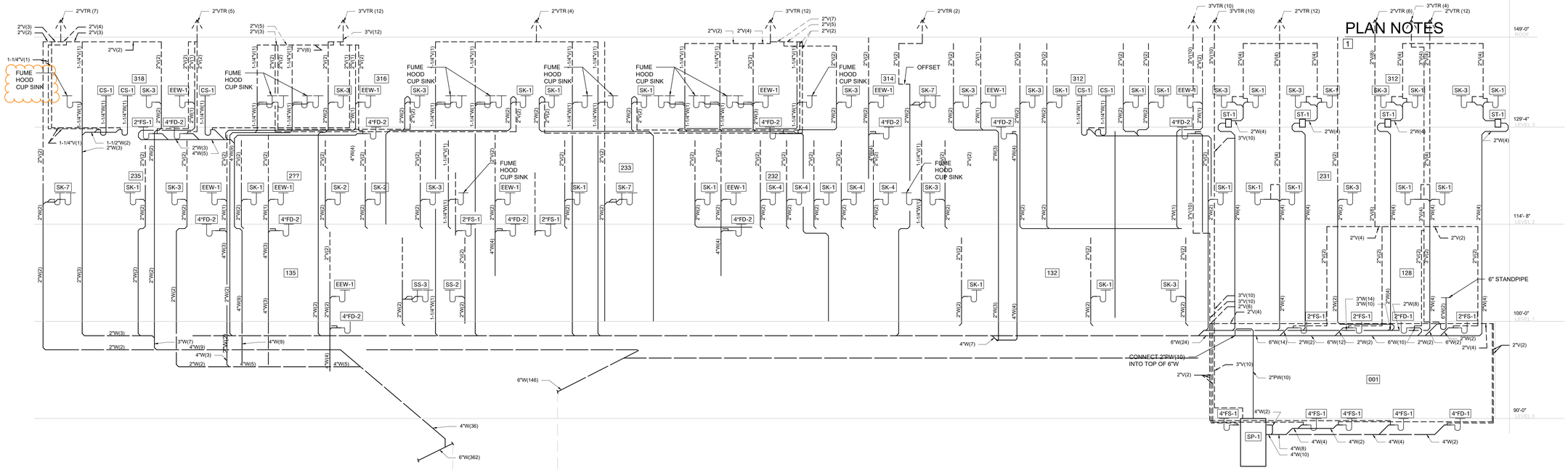
P1.05

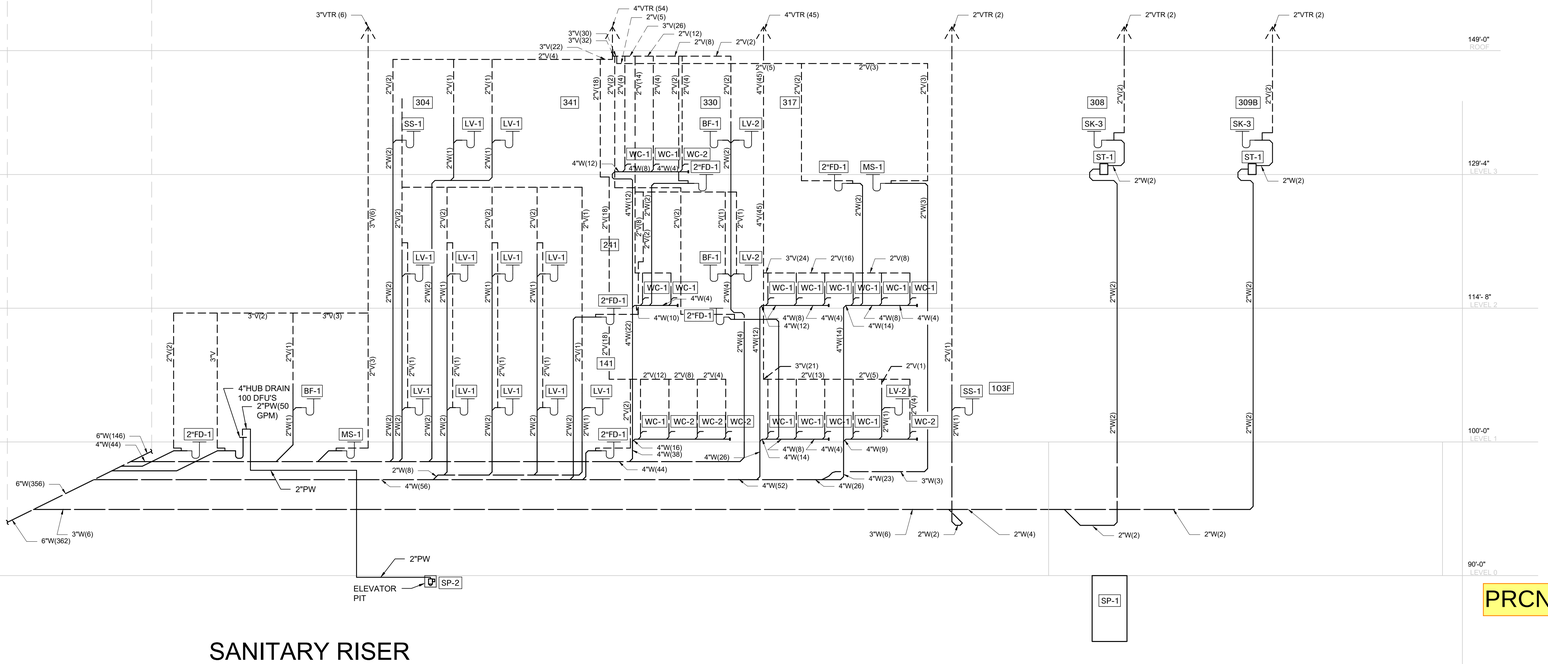
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES





SANITARY RISER

Scale: NONE

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Revisions

#	Date	Description

SANITARY RISER

PRCNC20221036

P3.01

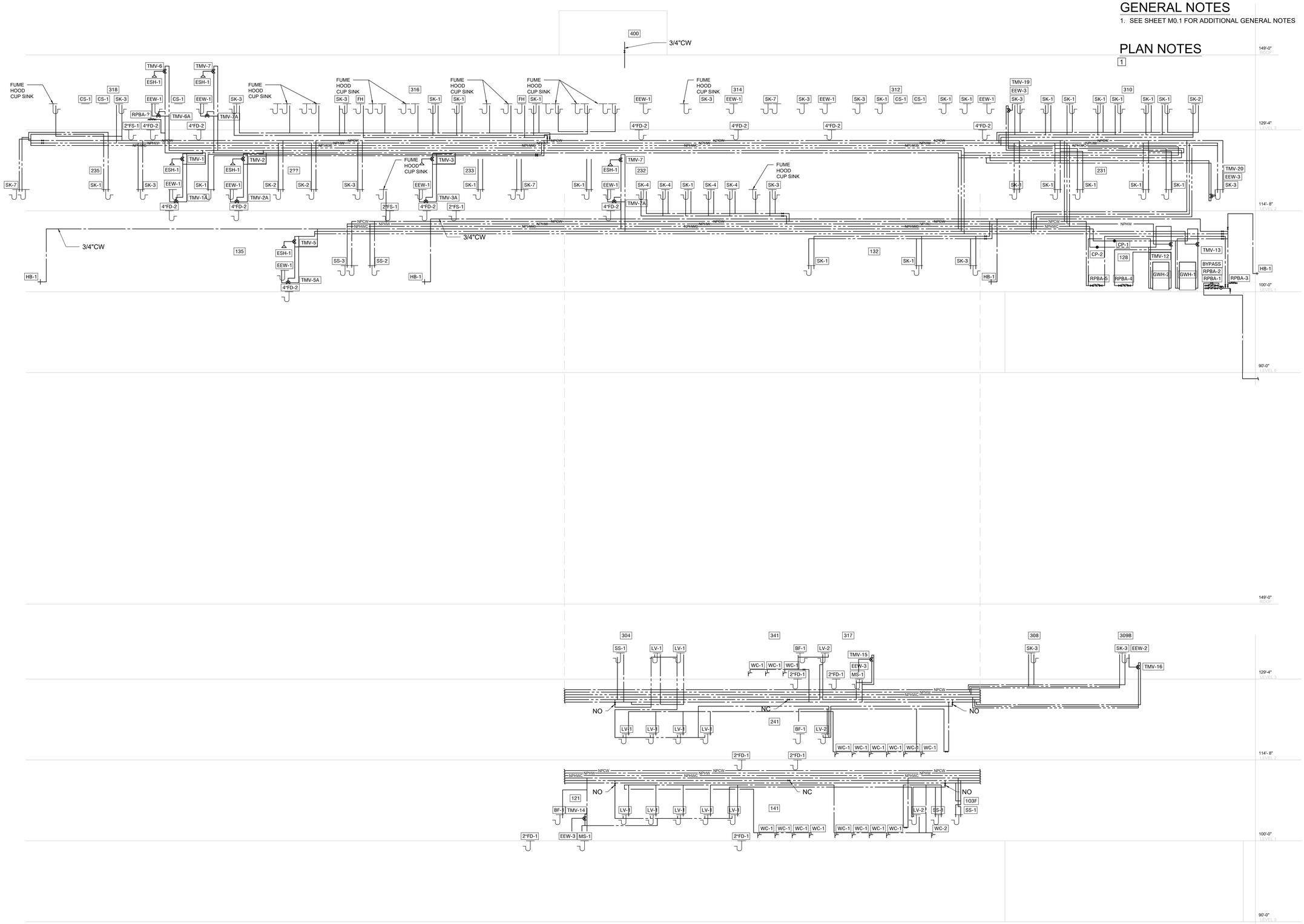
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1



WATER RISER

Scale: NONE

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PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/2022
Job No.:	22135.00
Drawn By:	Terry Potvin
Checked By:	Linda Burman

Revisions

#	Date	Description

WATER RISER

PRCNC20221036

P3.02

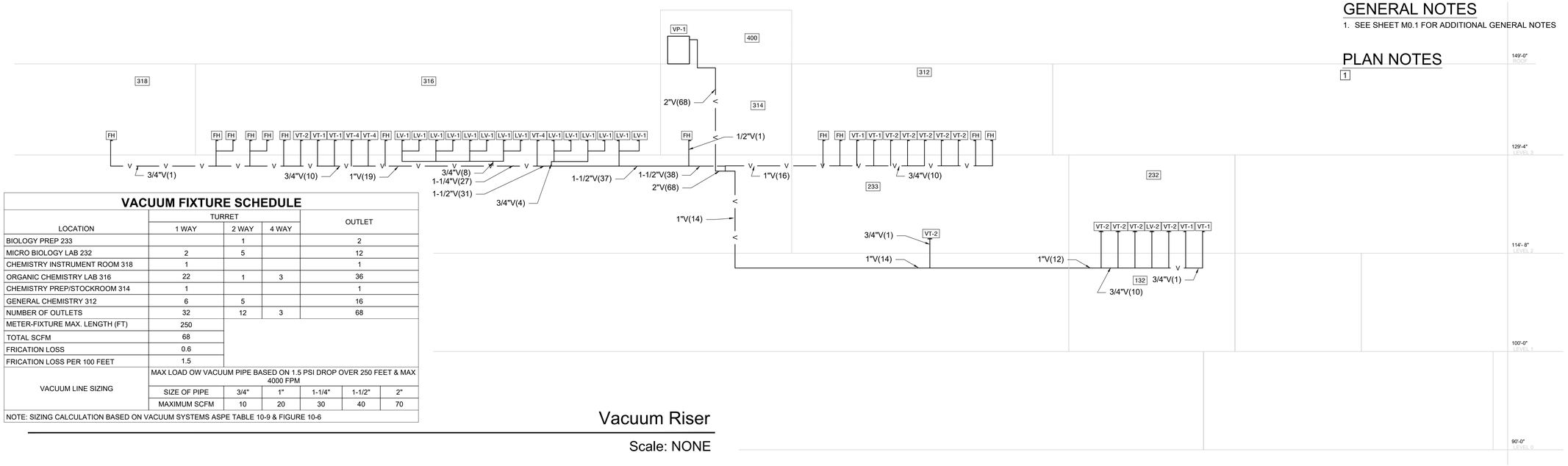
BUILDING PERMIT SET

GENERAL NOTES

1. SEE SHEET M0.1 FOR ADDITIONAL GENERAL NOTES

PLAN NOTES

1



VACUUM FIXTURE SCHEDULE

LOCATION	TURRET 1 WAY	TURRET 2 WAY	TURRET 4 WAY	OUTLET
BIOLOGY PREP 233		1		2
MICRO BIOLOGY LAB 232	2	5		12
CHEMISTRY INSTRUMENT ROOM 318	1			1
ORGANIC CHEMISTRY LAB 316	22	1	3	36
CHEMISTRY PREP/STOCKROOM 314	1			1
GENERAL CHEMISTRY 312	6	5		16
NUMBER OF OUTLETS	32	12	3	68
METER-FIXTURE MAX. LENGTH (FT)	250			
TOTAL SCFM	68			
FRICATION LOSS	0.6			
FRICATION LOSS PER 100 FEET	1.5			

VACUUM LINE SIZING						
	MAX LOAD OW VACUUM PIPE BASED ON 1.5 PSI DROP OVER 250 FEET & MAX 4000 FPM					
	SIZE OF PIPE	3/4"	1"	1-1/4"	1-1/2"	2"
	MAXIMUM SCFM	10	20	30	40	70

NOTE: SIZING CALCULATION BASED ON VACUUM SYSTEMS ASPE TABLE 10-9 & FIGURE 10-6

Vacuum Riser

Scale: NONE

NATURAL GAS EQUIPMENT TABLE

ITEM	QUANTITY	BTUH	TOTAL(BTUH)	TOTAL(CFH)
WATER HEATER-1	1	499,000	499,000	499
WATER HEATER-2	1	199,000	199,000	199
BOILER-1	1	2,500,000	2,500,000	2,500
BOILER-2	1	2,500,000	2,500,000	2,500
GAS TURRET	30	4,000	120,000	120
FUME HOOD	28	5,000	140,000	140
TOTAL			5,958,000	5,958

NATURAL GAS REGULATOR SCHEDULE

UNIT	DESCRIPTION	LOCATION	MAKE/MODEL	INLET PIPE SIZE	LOAD (CFH)	INLET PRESSURE	OUTLET PRESSURE
GPRV-1	REDUCED PRESSURE TO BUILDING	131	MAXITROL	2"	257	2 PSI	7" W.C
GPRV-2	REDUCED PRESSURE TO WATER HEATERS	128	MAXITROL	2"	698	2 PSI	7" W.C
GPRV-3	REDUCED PRESSURE TO BOILERS	001	MAXITROL	2"	5000	2 PSI	7" W.C

GAS SIZING CHART

PIPE SIZE	CFH
1/2"	462
3/4"	934
1"	1,710
1-1/4"	3,510
1-1/2"	5,260
2"	10,100
2-1/2"	16,100
3"	28,500

NOTE: BASED ON LONGEST LENGTH - 100' TABLE 402:2:4 UPC & IFGC, NATURAL GAS 2 PSI

GAS SIZING CHART

PIPE SIZE	CFH
1/2"	23
3/4"	49
1"	92
1-1/4"	189
1-1/2"	283
2"	546
2-1/2"	870
3"	1,540

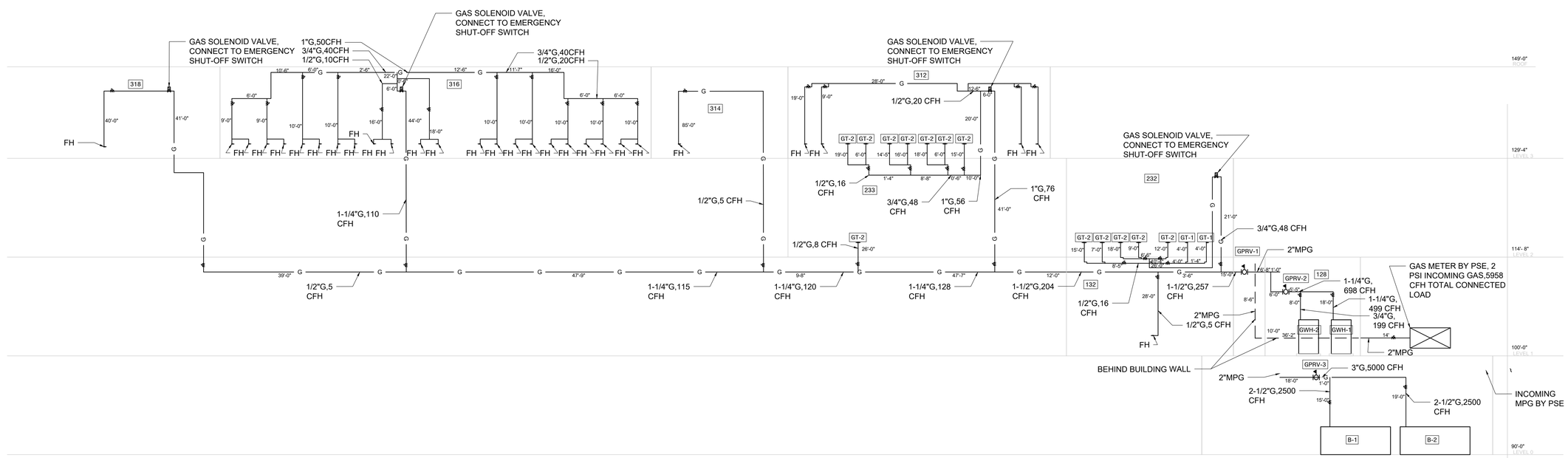
NOTE: BASED ON LONGEST LENGTH - 400' TABLE 402:2:4 UPC & IFGC, NATURAL GAS LESS THAN 2 PSI

GAS SIZING CHART

PIPE SIZE	CFH
1/2"	95
3/4"	199
1"	374
1-1/4"	768
1-1/2"	1,150
2"	2,220
2-1/2"	3,530
3"	6,250

NOTE: BASED ON LONGEST LENGTH - 30' TABLE 402:2:4 UPC & IFGC, NATURAL GAS LESS THAN 2 PSI

SEE 2018 TABLE 402.4(2) OF IFGC



Gas Riser

Scale: NONE

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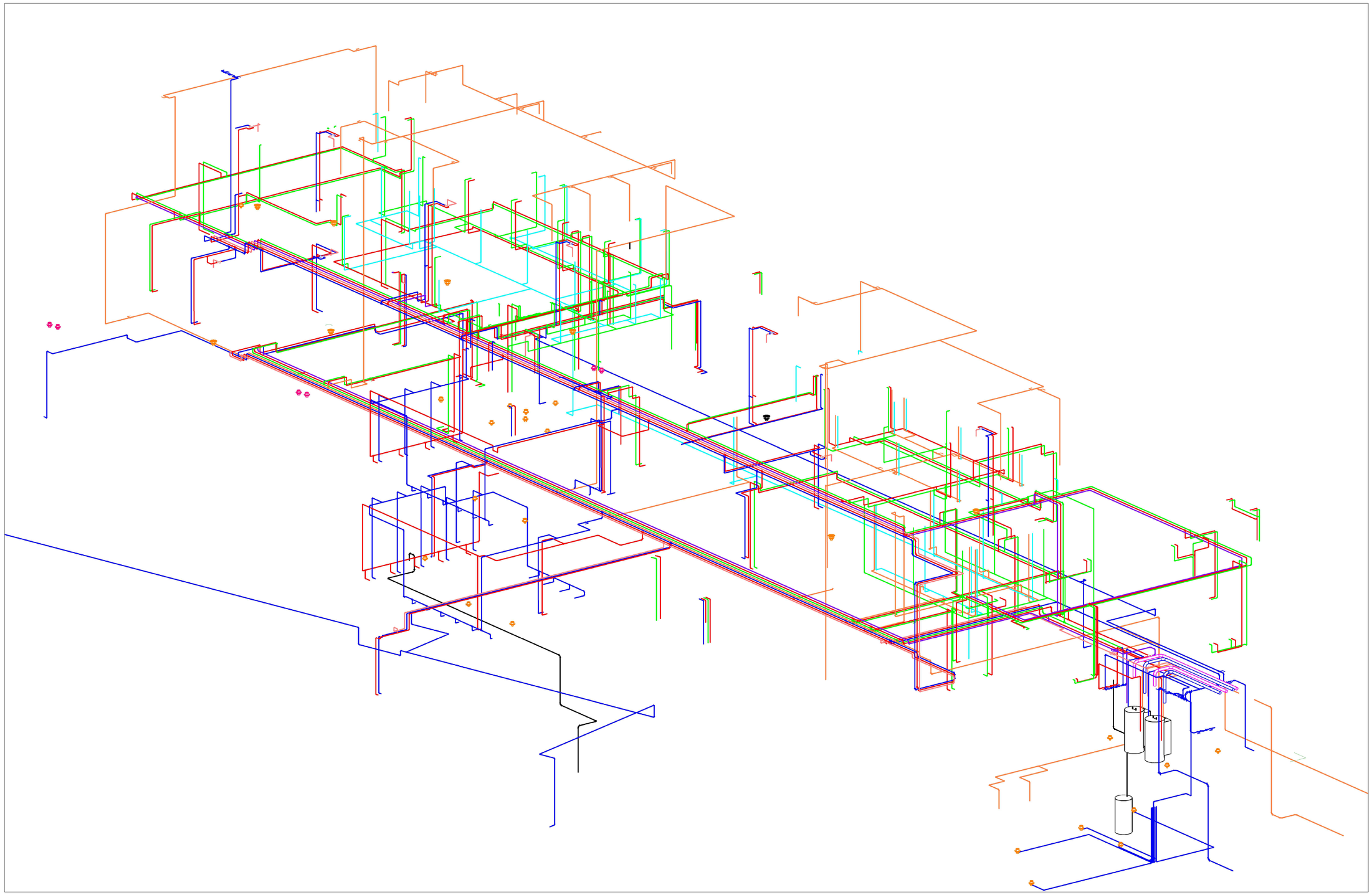
GAS & VACUUM RISER

PRCNC20221036

P3.03

BUILDING PERMIT SET



PRCNC20221036

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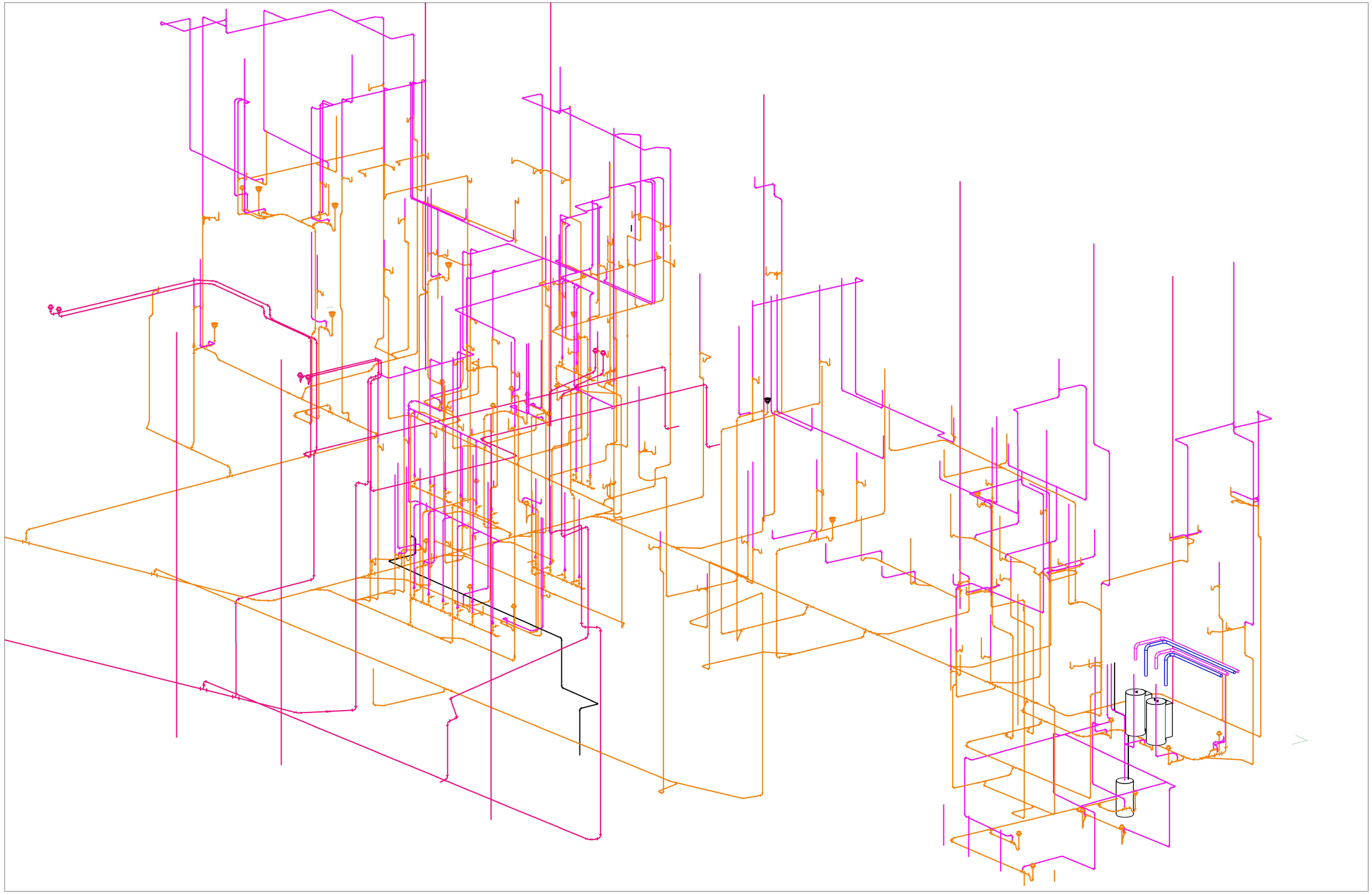
WATER 3D RISER

P3.04

BUILDING PERMIT SET



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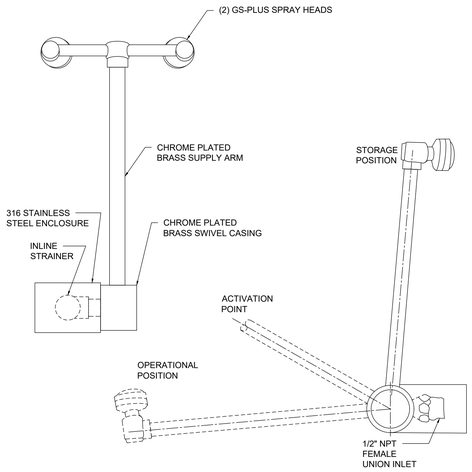
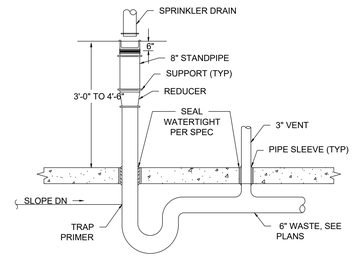
SANITARY 3D RISER

P3.05

BUILDING PERMIT SET

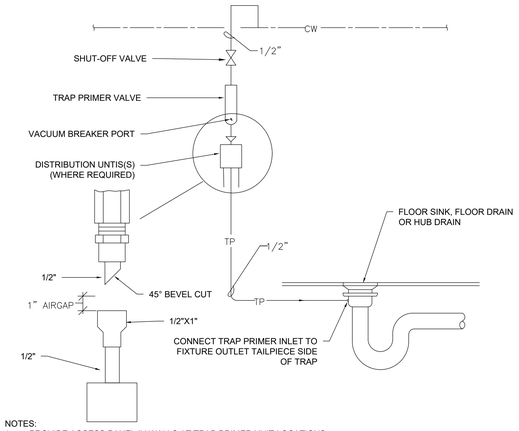


1 EMERGENCY EYE WASH STATION SCALE NTS



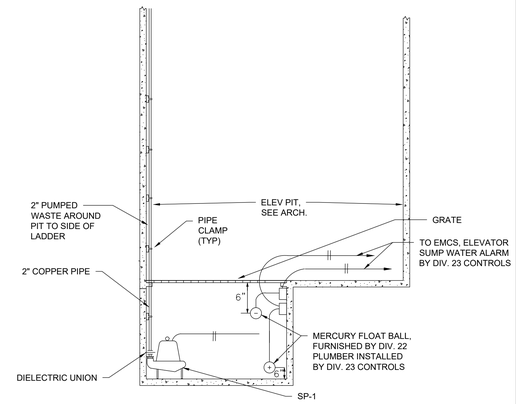
NOTES:
PROVIDE FIRESTOPPING WHERE FLOOR IS RATED BY ARCHITECTURAL PLAN.

2 SPRINKLER TEST/DRAIN RECEPTOR SCALE NTS

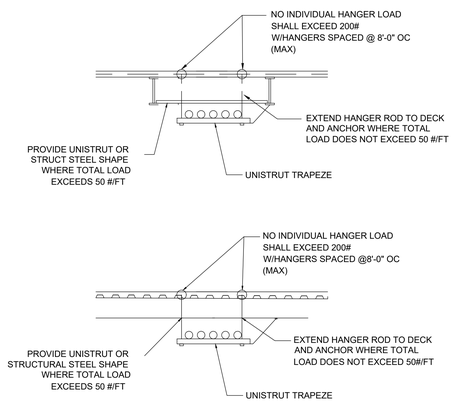


NOTES:
1. PROVIDE ACCESS PANEL IN WALLS AT TRAP PRIMER UNIT LOCATIONS.
2. TRAP PRIMER VALVE SHALL BE MOUNTED ONE FOOT ABOVE THE FINISHED FLOOR FOR EVERY 20 FEET OF PRIMER LINE.
3. INSTALL TRAP PRIMER PIPING AND UNIT PER MANUFACTURER'S RECOMMENDATIONS, PIPING MUST SLOPE TO POINT OF CONNECTION TO DRAIN WITHOUT TRAPS IN PIPING.

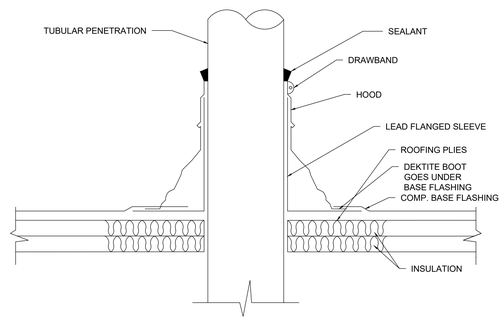
3 TRAP PRIMER INSTALLATION SCALE NTS



4 ELEVATOR SUMP WATER CONTROL DETAIL SCALE NTS

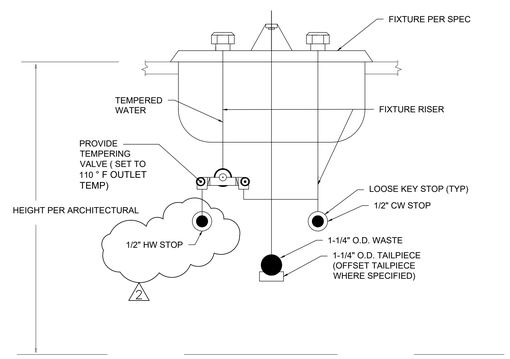


5 PIPING TRAPEZE SCALE NTS

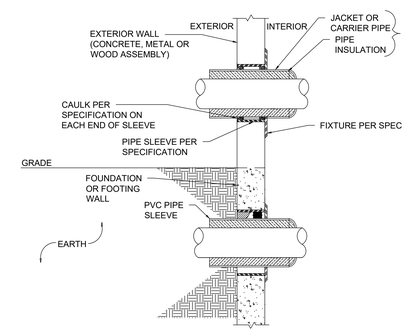


NOTES:
1. REFER TO ARCHITECTURAL ROOF DETAILS AND TO DIV. 07 FOR PLUMBING PENETRATIONS THROUGH THE ROOF.

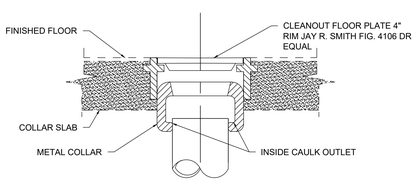
6 ROOF PENETRATION SCALE NTS



7 LOCAL MIXING VALVE SCALE NTS

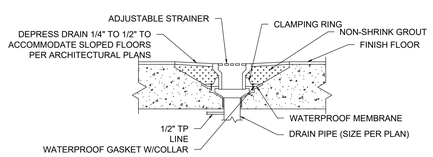


8 PIPE THROUGH EXTERIOR THROUGH FOUNDATION WALL SCALE NTS

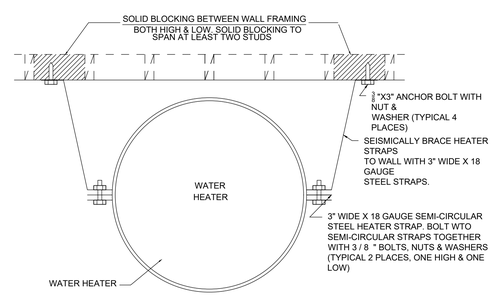


NOTES:
SHALL BE INSTALLED IN SUCH A MANNER THAT THE TOP COVER SHALL BE FLUSH WITH THE SURFACE OF THE FINISHED FLOOR.

9 INTERIOR CLEANOUT SCALE NTS

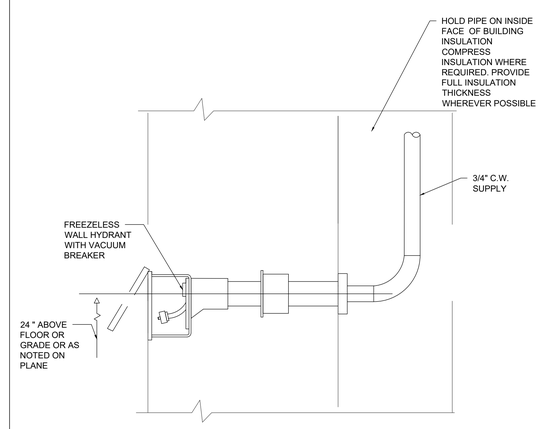


10 FLOOR DRAIN IN CONCRETE FLOOR SCALE NTS



NOTES:
LOCATE UPPER STRAP WITHIN UPPER 1/3 AND LOCATE LOWER STRAP WITHIN LOWER 1/3 OF TANK BUT ABOVE CONTROLS

11 SEISMIC BRACING DETAIL-WATER HEATER SCALE NTS



12 TYPICAL FREEZE PROOF WALL HYDRANT SCALE NTS

PRCNC20221036

BUILDING PERMIT SET

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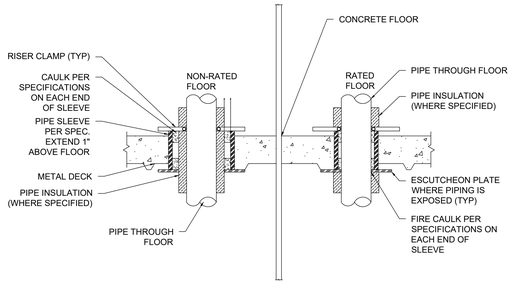
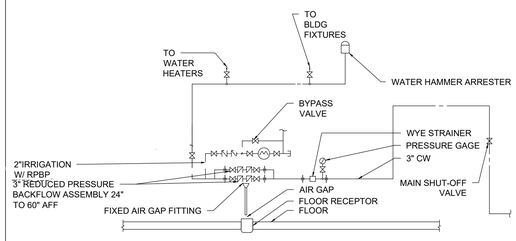
PLUMBING DETAILS 1

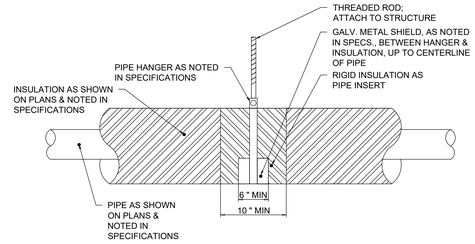
P4.01



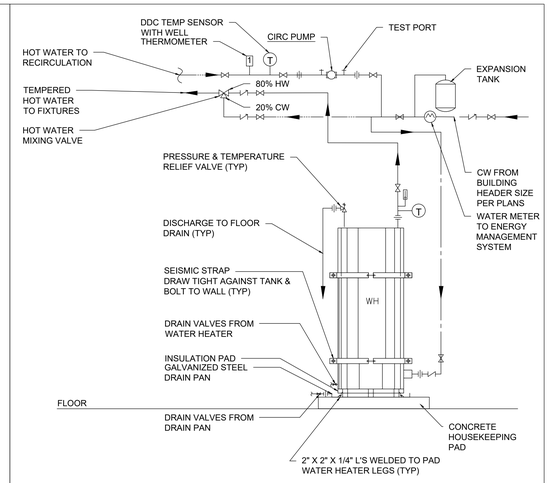
1 PIPE SLEEVE THROUGH CONCRETE FLOOR SCALE NTS



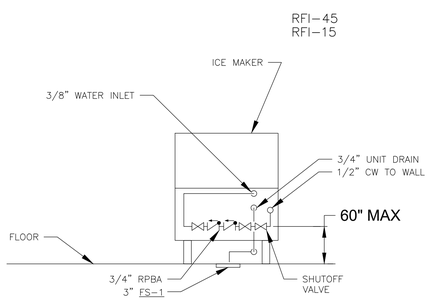
2 COLD WATER HEADER (POTABLE & NON-POTABLE) SCALE NTS



3 INSULATED PIPE HANGER SCALE NTS



4 WATER HEATER (POTABLE & NON-POTABLE) SCALE NTS



5 ICE MAKER CONNECTIONS SCALE NTS

PRCNC20221036

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PLUMBING DETAILS 2

P4.02

BUILDING PERMIT SET

MECHANICAL SHEET LIST

SHEET #	SHEET NAME
M001	SYMBOLS, LEGENDS AND ABBREVIATIONS - MECHANICAL
M002	EQUIPMENT SCHEDULE - MECHANICAL
M003	EQUIPMENT SCHEDULES - MECHANICAL
M004	EQUIPMENT SCHEDULES - MECHANICAL
M005	EQUIPMENT SCHEDULES - MECHANICAL
M006	EQUIPMENT SCHEDULES - MECHANICAL
M007	EQUIPMENT SCHEDULES - MECHANICAL
M008	EQUIPMENT SCHEDULES - MECHANICAL
M009	EQUIPMENT SCHEDULES - MECHANICAL
M010	SITE PLANS - MECHANICAL
M100	LEVEL 0 - FLOOR PLAN - MECHANICAL ZONING
M101	LEVEL 1 - FLOOR PLAN - MECHANICAL ZONING
M102A	LEVEL 2 - FLOOR PLAN - MECHANICAL ZONING
M103A	LEVEL 3 - FLOOR PLAN - MECHANICAL ZONING
M200	LEVEL 0 - FLOOR PLAN - MECHANICAL
M201	LEVEL 1 - FLOOR PLAN - MECHANICAL
M202	LEVEL 2 - FLOOR PLAN - MECHANICAL
M203	LEVEL 3 - FLOOR PLAN - MECHANICAL
M204	ROOF PLAN - MECHANICAL
M300	LEVEL 0 - FLOOR PLAN - MECHANICAL PIPING
M301	LEVEL 1 - FLOOR PLAN - MECHANICAL PIPING
M302	LEVEL 2 - FLOOR PLAN - MECHANICAL PIPING
M303	LEVEL 3 - FLOOR PLAN - MECHANICAL PIPING
M304	ROOF PLAN - MECHANICAL PIPING
M401	ENLARGED PLAN - MECHANICAL
M601	DETAILS - MECHANICAL
M602	DETAILS - MECHANICAL
M701	FLOW DIAGRAMS - MECHANICAL
M702	FLOW DIAGRAMS - MECHANICAL
M703	FLOW DIAGRAMS - MECHANICAL
M801	CONTROL DIAGRAMS - MECHANICAL
M802	CONTROL DIAGRAMS - MECHANICAL
M803	CONTROL DIAGRAMS - MECHANICAL
Grand total: 33	

GENERAL NOTES:

A. CONFORM WORK TO THE MOST RECENTLY ADOPTED STATE CODES, AS WELL AS APPLICABLE CITY, COUNTY, STATE, AND FEDERAL CODES, REGULATIONS, AND AMENDMENTS.

B. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR PERMITS, LICENSES, INSPECTIONS, AND INSPECTION CERTIFICATES REQUIRED IN ACCORDANCE WITH THE PROVISIONS OF THE CONTRACT DOCUMENTS.

C. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS, BENDS, OR ELBOWS NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. COORDINATE WITH OTHER TRADES AND PROVIDE NECESSARY FITTINGS FOR A COMPLETE AND OPERATIONAL SYSTEM.

D. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

E. PROVIDE COMPLETE SUBMITTAL PACKAGE FOR REVIEW BY ARCHITECTURAL AND ENGINEERING TEAM PRIOR TO PURCHASE AND INSTALLATION.

F. EQUIPMENT INDICATED ON DRAWINGS ARE THE BASIS OF DESIGN. WHERE EQUIPMENT PROVIDED DIFFERS FROM BASIS OF DESIGN IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADDITIONAL ELECTRICAL, STRUCTURAL, MECHANICAL, OR ARCHITECTURAL REQUIREMENTS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.

G. FURNISH AND PROCURE MATERIALS OR EQUIPMENT INDICATED TO BE “FURNISHED BY OTHERS” FROM SOURCES SPECIFIED BY THE CONTRACT DOCUMENTS.

H. COVER AND PROTECT EQUIPMENT AND MATERIAL ON THE JOB SITE FROM WATER, DIRT, DUST, AND DAMAGE PRIOR TO INSTALLATION.

I. COORDINATE LOCATIONS OF EQUIPMENT, ROUTING, AND ELEVATIONS WITH OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION. RESOLVE CONFLICTS THAT OCCUR DURING CONSTRUCTION PRIOR TO INSTALLATION.

J. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF INSTALLATION STANDARDS AND CONSTRUCTION CONDITIONS. FIELD VERIFY DIMENSIONS AND EXISTING CONDITIONS PRIOR TO SHOP FABRICATION AND FIELD INSTALLATION. NOTIFY ARCHITECT OF DISCREPANCIES IDENTIFIED BETWEEN EXISTING CONDITIONS AND THE CONSTRUCTION DRAWINGS.

K. VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE FINAL EQUIPMENT LOCATIONS WITH OTHER TRADES TO ALLOW FOR REQUIRED CLEARANCES.

L. PROVIDE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCES FOR ELECTRICAL PANELS AND EQUIPMENT IN ACCORDANCE WITH THE ELECTRICAL CODE. ROUTING PIPING OVER ELECTRICAL PANELS IS NOT ALLOWED.

M. INSTALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS. NOTIFY ARCHITECT OF CONFLICTS IDENTIFIED BETWEEN MANUFACTURERS DOCUMENTATION AND THE CONTRACT DOCUMENTS.

N. PROVIDE SUPPORTS AND MOUNTING REQUIRED FOR INSTALLATION OF SYSTEM INCLUDING BUT NOT LIMITED TO EQUIPMENT, DISTRIBUTION, AND ACCESSORIES. SUPPORT TO STRUCTURE PER CODE AND MANUFACTURERS REQUIREMENTS. COORDINATE WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

O. PROVIDE SEISMIC RESTRAINT OF SYSTEMS AND EQUIPMENT AS REQUIRED BY ASCE-7 AND INTERNATIONAL BUILDING CODE AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

P. PROVIDE FIRE STOPPING FOR PENETRATIONS THRU FIRE RATED ASSEMBLIES AS REQUIRED BY THE APPLICABLE BUILDING CODE. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF RATED ASSEMBLIES.

Q. PROVIDE PLENUM RATED HVAC, PLUMBING, INSULATION, WIRING, CONTROLS, ETC. MEETING CODE FLAME/SMOKE REQUIREMENTS WITHIN PLENUMS.

R. PROVIDE ACCESS PANELS FOR ACCESS TO SENSORS, VALVES, AND ACCESSORIES LOCATED WITHIN WALLS AND HARD LID CEILINGS. COORDINATE PANELS AND LOCATIONS WITH ARCHITECT.

S. APPLIANCES AND EQUIPMENT ABOVE HARD LID CEILINGS: PROVIDE CEILING ACCESS PANEL NOT LESS THAN 24-INCHES WIDE AND LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE IN THE SPACE.

T. APPLIANCES AND EQUIPMENT ABOVE ACCESSIBLE CEILINGS: PROVIDE CEILING ACCESS PANEL NOT LESS THAN 24-INCHES BY 24-INCHES TO ALLOW FOR READY ACCESS FOR INSPECTION, SERVICE, AND REPAIR WITHOUT REMOVING PERMANENT CONSTRUCTION. THE APPLIANCE MAY BE REMOVED OR REPLACED BY REMOVING THE CEILING OR WALL ASSEMBLIES AS LONG AS THEY ARE NOT PERMANENT CONSTRUCTION.

U. MAINTAIN A CURRENT MARK-UP OF THE DRAWINGS SHOWING DEVIATIONS FROM ORIGINAL SET INCLUDING RFI, ASI, CHANGE ORDERS, ETC. SUBMIT MARK UP FOR AS-BUILT DOCUMENTATION IN ACCORDANCE WITH THE PROJECT REQUIREMENTS.

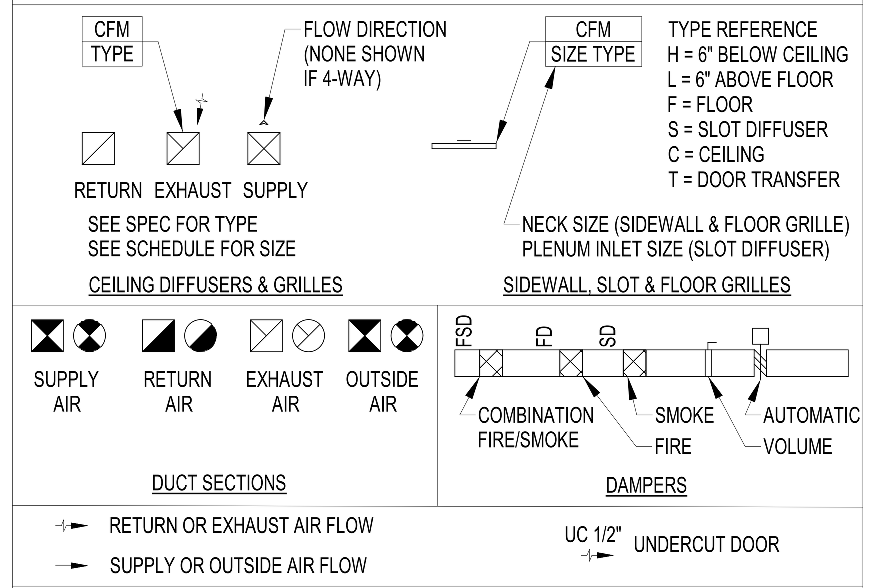
V. CLOSE OUT DOCUMENTATION TO INCLUDE: RECORD DOCUMENTS, O&M MANUALS, WSEC COMPLIANCE REPORTS, AND CALCULATIONS.

STANDARD ABBREVIATIONS

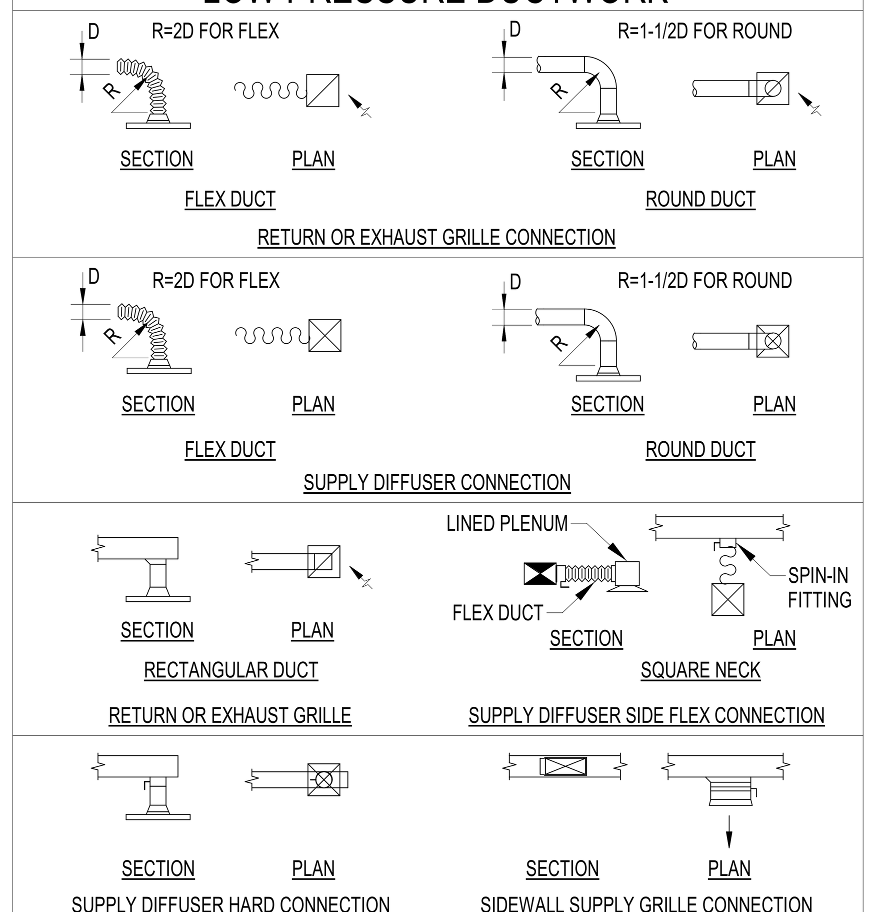
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
AF	AIRFOIL
AFF	ABOVE FINISHED FLOOR
AHP	APPARATUS HOUSING PLENUM
AL	ALUMINUM
ALT	ALTERNATIVE
AP	ACCESS PANEL
APD	AIR PRSSURE DROP
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
AS	AUTOMATIC SPRINKLER
AUTO	AUTOMATIC
BDD	BACKDRAFT DAMPER
BFF	BELOW FINISHED FLOOR
BHP	BREAK HORESPOWER
BI	BACKWARD INCLINED
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BTV	BUTTERFLY VALVE
BV	BALANCING VALVE
CALC	CALCULATION
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CL	CENTERLINE
CLG	CEILING OR COOLING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONT	CONTINUED, CONTINUATION
CP	CIRCULATING PUMP
CTG	CLEANOUT TO GRADE
CV	CHECK VALVE
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEFL	DEFLECTION
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DI	DEIONIZED
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DN	DOWN (PENETRATES FLOOR)
DP	DEW POINT
DR	DRAIN
DV	DRAIN VALVE
DROP	DROP (WITHIN FLOOR)
DWDI	DOUBLE WIDTH DOUBLE INLET
DWG	DRAWING
(E), EXIST	EXISTING
EAT	ENTERING AIR TEMPERATURE
EC	EXTENDED COVERAGE
ECM	ELECTRONICALLY COMMUTATED MOTOR
EDB	ENTERING DRY BULB
EEW	EMERGENCY EYE WASH
EFF	EFFICIENCY
EFT	ENTERING FLUID TEMPERATURE
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATION
ENGR	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWB	ENTERING WET BULB
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXTRACTOR
EXP	EXPANSION
EXH	EXHAUST OR EXHAUST AIR
F	DEGREES FAHRENHEIT
FC	FORWARD CURVED
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER (MECHANICAL)
FD	FLOOR DRAIN (PLUMBING)
FDC	FIRE DEPARTMENT CONNECTION
FFE	FINISHED FLOOR ELEVATION
FIG	FIGURE
FL	FLOOR
FLA	FULL LOAD AMPACITY
FLEX	FLEXIBLE
FP	FIRE PUMP
FPD	FLUID PRESSURE DROP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FSD	FIRE SMOKE DAMPER
FT	FEET/FOOT
FTR	FINNED TUBE RADIATOR
FLT	FLUSH TANK
FU	FIXTURE UNIT
FV	FLUSH VALVE
(F)	FUTURE
G	GRADE
GA	GAGE/GAUGE
GAL	GALLON
GALV	GALVANIZED
GLY	GLYCOL
GH	GROUND HYDRANT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
H	HEIGHT
HB	HOSE BIBB
HD	HUB DRAIN
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HSW	HORIZONTAL SIDE WALL
HT	HEAT TRACE
HTG	HEATING
HV	HOSE VALVE
HVC	HOSE VALVE CABINET
ID	INSIDE DIAMETER, INSIDE DIMENSION

IE	INVERT ELEVATION
IN	INCH, INCHES
INSUL	INSULATION
IPS	IRON PIPE SIZE
ISO	ISOMETRIC
ISOL	ISOLATOR, ISOLATION
JP	JOCKEY PUMP
KW	KILOWATT
KWH	KILOWATT HOUR
L	LENGTH
LAT	LEAVING AIR TEMP
LAV	LAVATORY
LB	POUND
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LFT	LEAVING FLUID TEMPERATURE
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MECH	MECHANICAL
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MS	MOP SINK
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
NRS	NON-RISING STEM
NTS	NOT TO SCALE
OAT	OUTSIDE AIR TEMPERATURE
OC	ON CENTER DISTANCE
OD	OVERFLOW DRAIN
OS&Y	OUTSIDE SCREW & YOKE GATE VALVE
OSA	OUTSIDE AIR
PD	PLANTER DRAIN
P/FT	PITCH PER FOOT
PG	PRESSURE GAUGE
PH	PHASE
PIV	POST INDICATING VALVE
PP	POLYPROPYLENE
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
PVC	POLYVINYL CHLORIDE
PVS	PVC COATED STEEL
R, RAD	RADIUS
RA	RELIEF AIR
RD	ROOF DRAIN
RET	RETURN AIR
REV	REVISION
RH	RELATIVE HUMIDITY
RISE	RISE (WITHIN FLOOR)
RM	ROOF MANIFOLD
RN	RISER NIPPLE
RPM	REVOLUTIONS PER MINUTE
S	SINK
SA	SUPPLY AIR
SB	SWAY BRACE
SCFM	STANDARD CUBIC FEET PER MINUTE
SD	SHOWER DRAIN (PLUMBING)
SD	SMOKE DAMPER (MECHANICAL)
SE	SEWAGE EJECTOR
SECT	SECTION
SENS	SENSIBLE
SF	SQUARE FOOT, SQUARE FEET
SH	SHOWER
SIM	SIMILAR
SOV	SHUTOFF VALVE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH, SQUARE INCHES
SS	STAINLESS STEEL (ALL)
SSP	STANDARD SPRAY PENDENT
SSU	STANDARD SPRAY UPRIGHT
STL	STEEL
STRUCT	STRUCTURE, STRUCTURAL
SWP	SINGLE WALL PLENUM
SWSI	SINGLE WIDTH SINGLE INLET
TD	TRENCH DRAIN
TDH	TOTAL DISCHARGE HEAD
TDL	TOTAL DEVELOPED LENGTH
TEMP	TEMPERATURE
TMV	THERMOSTATIC MIXING VALVE
TOP	TOP OF PIPE
TP	TRAP PRIMER VALVE
TS	TAMPER SWITCH
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
U	URINAL
UG	UNDERGROUND
UP	UP (PENETRATES FLOOR SLAB)
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WIDTH
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WFU	WATER FIXTURE UNITS
WG	WATER GAUGE
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WPD	WATER PRESSURE DROP
WTD	WATER TEMPERATURE DROP
WTR	WATER TEMPERATURE RISE
W/	WITH
W/O	WITHOUT

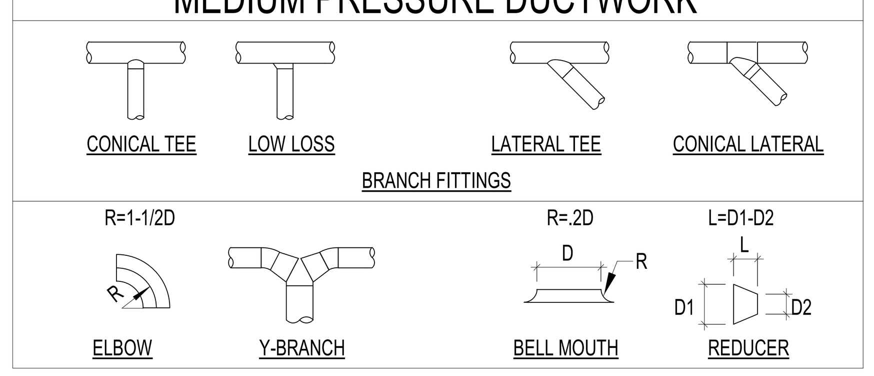
DUCT LEGEND



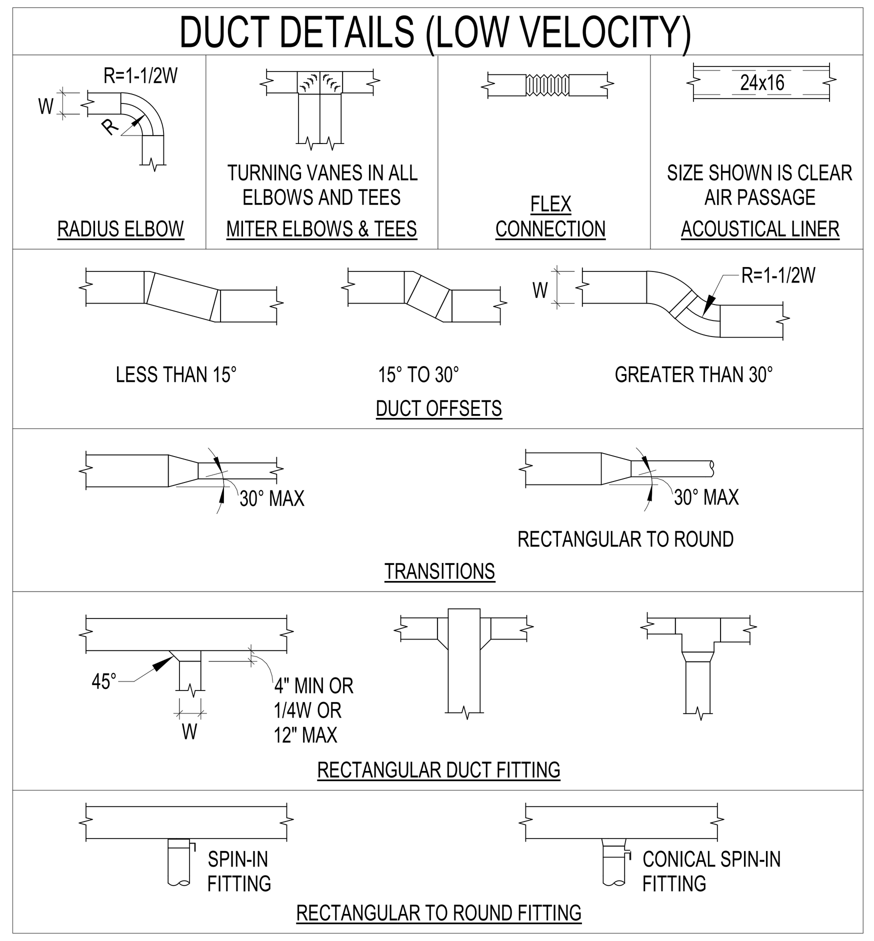
LOW PRESSURE DUCTWORK



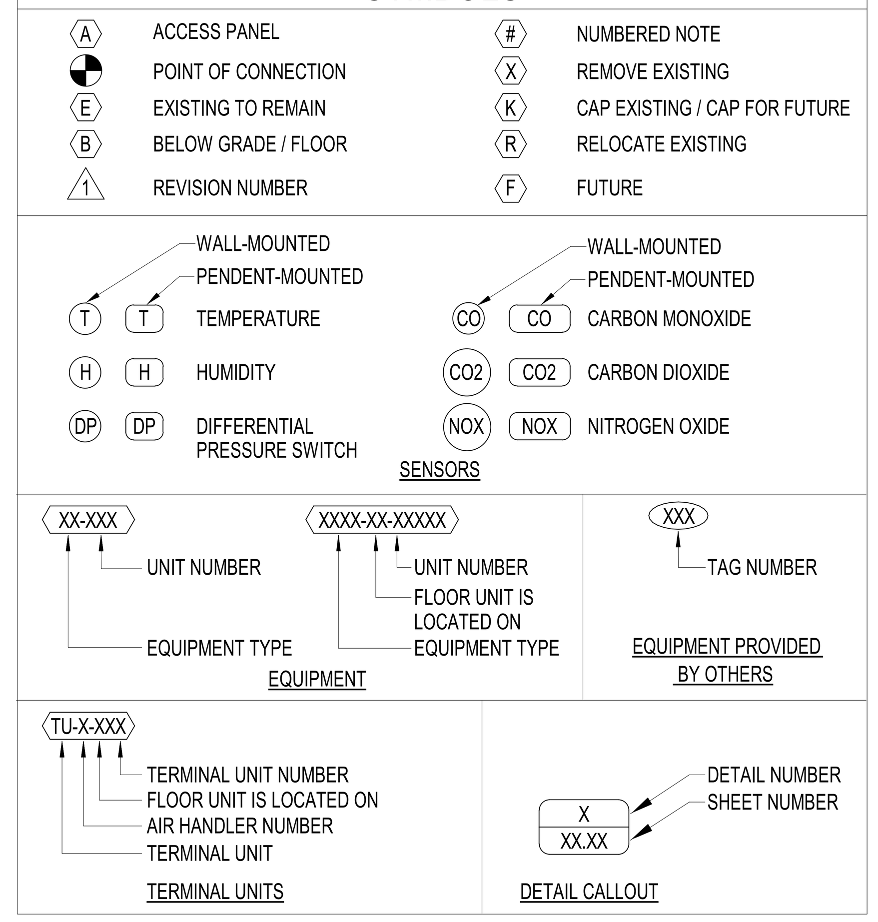
MEDIUM PRESSURE DUCTWORK



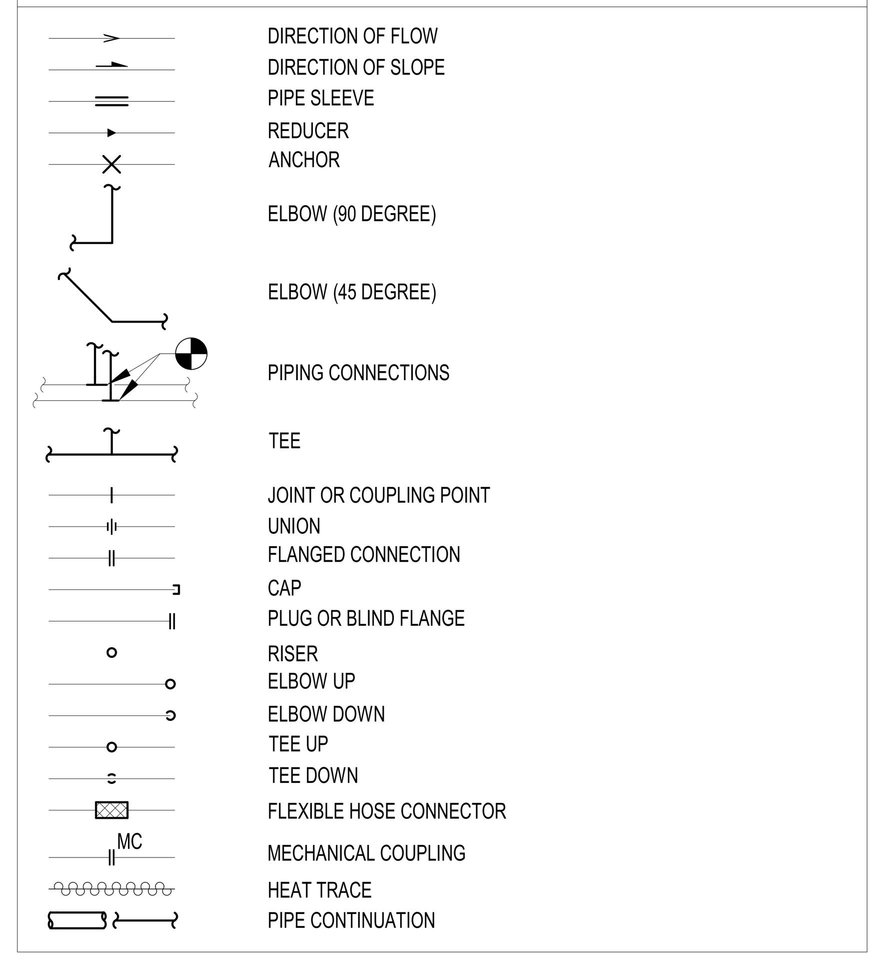
DUCT DETAILS (LOW VELOCITY)



SYMBOLS



MISC. FITTINGS & SYMBOLS



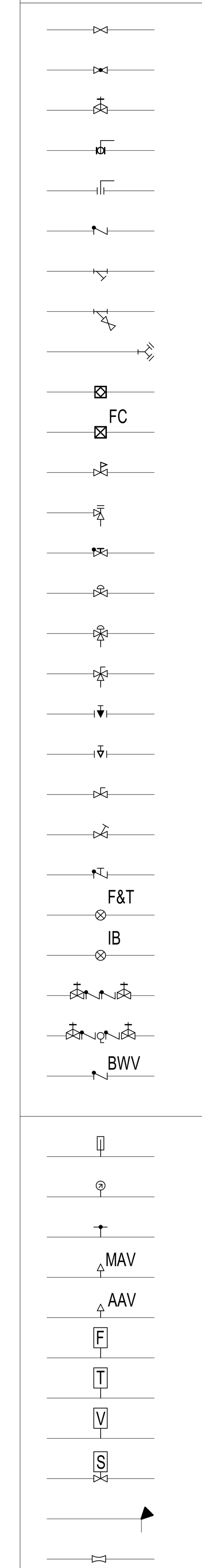
HVAC PIPING

———	D	DRAIN (CONDENSATE/INDIRECT)
———	PC	PUMPED CONDENSATE
———	CHWS	CHILLED WATER SUPPLY
- - - -	CHWR	CHILLED WATER RETURN
———	SCHWS	SECONDARY CHILLED WATER SUPPLY
- - - -	SCHWR	SECONDARY CHILLED WATER RETURN
———	HWS	HEATING WATER SUPPLY
- - - -	HWR	HEATING WATER RETURN
———	SHWS	SECONDARY HEATING WATER SUPPLY
- - - -	SHWR	SECONDARY HEATING WATER RETURN
———	HTWS	HIGH TEMP HOT WATER SUPPLY
- - - -	HTWR	HIGH TEMP HOT WATER RETURN
———	HRWS	HEAT RECOVERY WATER SUPPLY
- - - -	HRWR	HEAT RECOVERY WATER RETURN
———	GLS	GLYCOL SUPPLY
- - - -	GLR	GLYCOL RETURN
———	RL	REFRIGERANT LIQUID
- - - -	RS	REFRIGERANT SUCTION

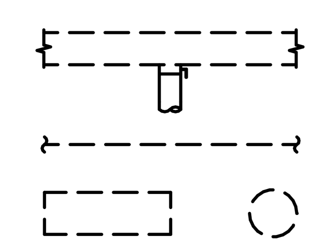
GENERAL NOTES:

A. THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

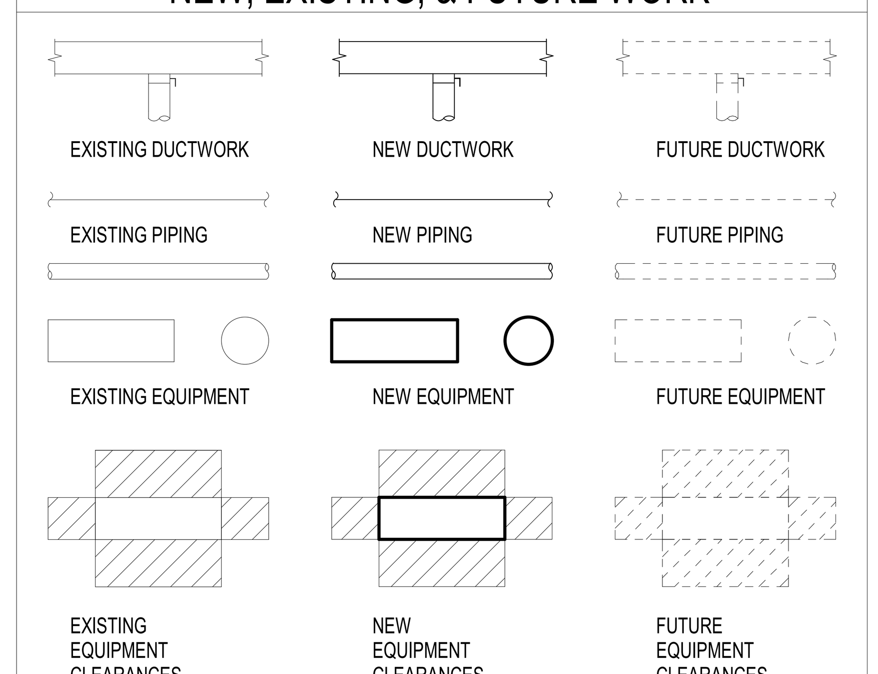
MISC. VALVES & COCKS



DEMOLITION LEGEND



NEW, EXISTING, & FUTURE WORK



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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

SYMBOLS, LEGENDS AND ABBREVIATIONS - MECHANICAL

M001

DESIGN CONDITIONS - MCCHORD AFB, WA

SPACE	WINTER		SUMMER	
	TEMPERATURE	HUMIDITY	TEMPERATURE	HUMIDITY
OUTDOOR	20.5˚ F DB	11.8˚ F DP / 10.2 HR / 26.2 ˚ F MCDB	86.3˚ F DB / 65.2˚ F MCWB	61.3˚ F DP / 82.1 HR / 69.8˚ F MCDB
INDOOR	70˚ F ± 2˚ F DB	50% RH MAX, NO MINIMUM	75˚ F ± 2˚ F DB	50% RH MAX, NO MINIMUM

GENERAL NOTES:

A. OUTDOOR CONDITIONS BASED ON ASHRAE FUNDAMENTALS 2017 99.6% AND 0.4% DATA.

AIR HANDLING UNIT SCHEDULE - GENERAL INFORMATION

TAG	LOCATION	SERVICE	MIXING BOX MAX OSA (CFM)	MIXING BOX CODE MIN OSA (CFM)	MIXING BOX MIN OSA (CFM)	MIXING BOX LOW MIN OSA (CFM)	LEAVING AIR DESIGN CONDITIONS AHU LAT SUMMER (°F DB/WB)	AHU LAT WINTER (°F)	SUPPLY AIRFLOW (CFM)	RETURN AIRFLOW (CFM)	SYSTEM BHP MAXIMUM ALLOWABLE (BHP)	DESIGN SYSTEM (BHP)	FILTERS PRE RATING (MERV)	PRE CLEAN PD (IN WG)	POST RATING (MERV)	POST CLEAN PD (IN WG)	WHEEL - 2 LOCATIONS RATING (MERV)	WHEEL CLEAN PD (IN WG)	ELECTRICAL - SINGLE POINT CONNECTION VOLT/ PHASE	MCA (A)	MOCP (A)	SCCR (kA)	GEN. POWER (Y/N)	APPROXIMATE OPERATING WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
AHU-1	ROOF	LABORATORY SUPPLY	-	-	-	-	55/54.5	70	22,000	-	47.39	47.38	8	0.10	14	0.36	-	-	460/3	41.98	50	100	Y	15,000	DAIKIN SKYLINE	1, 3
AHU-2	ROOF	LABORATORY EXHAUST	-	-	-	-	-	-	-	24,100			8	0.11	-	-	-	-	-	-	-	-	-	9,000	DAIKIN SKYLINE	
AHU-3	ROOF	CLASSROOMS - SOUTH SHAFT	31,000	13,950			52.5/51.7	70	31,000	29,600	48.49	48.44	8	0.11	14	0.39	8	0.11	460/3	91.5	100	100	N	25,000	DAIKIN SKYLINE	2, 3, 4, 6
AHU-4	ROOF	CLASSROOMS - WEST SHAFT	20,000	9,000			55/54.5	70	20,000	19,300	33.67	26.78	8	0.10	14	0.36	8	0.11	460/3	64.8	70	100	N	22,000	DAIKIN SKYLINE	2, 3, 5, 7

GENERAL NOTES:

A. PROVIDE AN INSULATED ROOF CURB.
B. PROVIDE 2-INCH SPRING ISOLATION CURB FOR ALL AIR HANDLING UNITS WHERE FANS ARE NOT INTERNALLY ISOLATED.
C. MINIMUM OSA CALCULATED BASED ON CODE AND ASHRAE STANDARD 62.
D. HEATING COILS BASED ON MAXIMUM FACE VELOCITY OF 350 FPM
E. COOLING COILS BASED ON MAXIMUM FACE VELOCITY OF 300 FPM
F. HEAT RECOVERY SECTION EFFECTIVENESS IS BASED ON AHRI 1060.
G. PROVIDE DUCT SMOKE DETECTOR. INTERLOCK DETECTOR WITH ELECTRICAL SERVICE TO DE-ENERGIZE UNIT UPON DETECTION OF SMOKE.
H. FAN ENERGY INDEX (FEI) BASED ON MANUFACTURERS' CERTIFIED DATA, RATIO OF THE ELECTRIC INPUT POWER OF A REFERENCE FAN TO THE ELECTRIC INPUT POWER OF THE ACTUAL FAN, AS CALCULATED PER AMCA 208.
I. ARRANGE UNIT FOR SINGLE POINT POWER CONNECTION W/ DISCONNECT SWITCH. PROVIDE A SEPARATE, DEDICATED 120V CONNECTION FOR RECEPTACLE(S) AND LIGHTS.
J. DOUBLE WALL 24 GAUGE GALVANIZED STEEL CONSTRUCTION. MINIMUM OF R-13 FOAM INJECTED INSULATION.
K. DAMPERS HAVE CLASS I RATING WITH A MAXIMUM LEAKAGE RATE OF 4 CFM/SQ FT AT 1 INCH WG WHEN TESTED IN ACCORDANCE WITH AMCA 500D AND ARE LABELED BY AN AGENCY FOR SUCH PURPOSE IN COMPLIANCE WITH 2018 WSEC C403.7.8.3.
L. PROVIDE OPPOSED BLADE DAMPERS IN ALL LOCATIONS.
M. PROVIDE AN EXTRA FILTER SET TO OWNER PRIOR TO OCCUPANCY.
O. PROVIDE BLANK OFF PLATES FOR ALL FANS.
P. PROVIDE EXTERNAL DUCT MOUNTED SILENCERS, AS REQUIRED BY ACOUSTICAL CONSULTANT, ON ALL SUPPLY AND RETURN DUCT CONNECTIONS.
Q. SYSTEM MAXIMUM ALLOWABLE BREAK HORSEPOWER IS THE TOTAL OPERATING BHP OF ALL MOTORS WITHIN AN AIR HANDLING SYSTEM, INCLUDING SUPPLY FANS, (LABORATORY) EXHAUST FANS AND ENTHALPY WHEEL MOTORS.
R. CONFIRM THAT FANS CAN ACCOMMODATE AN ADDITIONAL 0.5-INCH PER MERV-8 FILTER AND 1-INCH PER MERV-14 FILTER OF DIRTY FILTER LOADING WITHOUT OVERLOADING THE SELECTED FAN MOTORS.

NOTES:

1. HYDRONIC RUN AROUND LOOP HEAT RECOVERY COIL LEAVING AIR TEMPERATURE MEETS THE REQUIREMENTS OF WSEC C403.7.7.2.
2. ENTHALPY RECOVERY MEETS THE REQUIREMENTS OF 2018 WSEC C403.7.6.
3. SIZE COOLING COIL TO ACHIEVE AIR HANDLING UNIT LEAVING AIR CONDITIONS SCHEDULED IN "LEAVING AIR DESIGN CONDITIONS - AHU LAT SUMMER" COLUMN OF THIS SCHEDULE.
4. HYDRONIC COIL CONNECTION PIPING TO DROP INTERNAL TO AHU CASING AND ROOF CURB.
5. PROVIDE EXTERNAL INSULATED PIPE CHASE FOR HYDRONIC COIL CONNECTION PIPING.
6. 48-INCH BY 96-INCH BOTTOM OPENING FOR SUPPLY AND RETURN DUCT CONNECTIONS.
7. 38-INCH BY 76-INCH BOTTOM OPENING FOR SUPPLY AND RETURN DUCT CONNECTIONS.
8. NOT USED
9. NOT USED.

AIR HANDLING UNIT SCHEDULE (CONTINUED) - ACOUSTICS

RETURN FAN ARRAY ACOUSTIC PERFORMANCE

TAG	RADIATED SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	DISCHARGE SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	RETURN SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ
AHU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-3	70	77	71	65	61	49	46	51	80	87	89	86	83	77	76	75	77	82	83	79	73	71	71	71
AHU-4	66	77	63	59	55	44	46	51	76	87	81	80	77	72	71	69	73	82	78	73	69	66	66	64

SUPPLY FAN ARRAY ACOUSTIC PERFORMANCE

TAG	RADIATED SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	DISCHARGE SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	RETURN SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ
AHU-1	81	91	76	69	68	55	46	51	91	101	94	90	90	83	78	75	81	87	87	84	79	77	75	71
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-3	81	91	76	69	68	55	46	51	91	101	94	90	90	83	78	75	81	87	87	84	79	77	75	71
AHU-4	78	88	73	66	65	52	46	51	88	98	91	87	87	80	75	72	78	84	84	81	76	74	72	68

AIR HANDLING UNIT SCHEDULE (CONTINUED) - COILS

TAG	HYDRONIC HEATING COIL (0% PROPYLENE GLYCOL) AIRFLOW (CFM)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)	APD (IN. WG.)	WPD (FT. WG.)	HYDRONIC COOLING COIL (20% PROPYLENE GLYCOL) AIRFLOW (CFM)	EAT (°F DB/WB)	LAT (°F DB/WB)	EWT (°F)	LWT (°F)	FLOW (GPM)	APD (IN. WG.)	WPD (FT. WG.)	HYDRONIC RUN AROUND LOOP COIL (20% PROPYLENE GLYCOL) AIRFLOW (CFM)	EAT (°F DB/WB)	LAT (°F DB/WB)	EWT (°F)	LWT (°F)	FLOW (GPM)	APD (IN. WG.)	WPD (FT. WG.)
AHU-1	22,000	19	70	115	95	-	-	-	22,000	86/67	-	44	56	-	-	-	22,000	19	44	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24,100	70	45	-	-	-	-	-
AHU-3	15,500	24	79.1	115	91.4	79.2	0.05	4.6	31,000	79.4/66.0	52.5/51.7	44	52	292.3	0.34	13.2	-	-	-	-	-	-	-	-
AHU-4	10,000	24	70.3	115	94.9	50.3	0.04	1.2	20,000	79.4/66.0	54.7/54.2	42	53.8	123.9	0.38	7.0	-	-	-	-	-	-	-	-

AIR HANDLING UNIT SCHEDULE (CONTINUED) - DAMPERS

TAG	OUTDOOR AIR INTAKE DAMPER DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD	OUTDOOR AIR INTAKE DAMPER - ECONOMIZER BYPASS DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD	RETURN AIR DAMPER DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD
AHU-1	120 X 68	22,000	EXTERIOR	YES	-	-	-	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-
AHU-3	46 X 108	31,000	EXTERIOR	YES	37 X 111	31,000	INTERIOR	N/A	27 X 112	17,050	INTERIOR	N/A
AHU-4	38 X 90	20,000	EXTERIOR	YES	27 X 91	20,000	INTERIOR	N/A	27 X 91	11,700	INTERIOR	N/A

TAG	EXHAUST AIR DAMPER - ECONOMIZER MODE DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD	EXHAUST AIR DAMPER DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD	EXHAUST FAN CONNECTION DAMPER (TYP. 2) DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD	BYPASS DAMPER DIMENSIONS (IN)	AIRFLOW (CFM)	LOCATION	PACKAGED HOOD
AHU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	42 X 98	22,000	EXTERIOR	NO - FIELD DUCT	42 X 50	10,000	EXTERIOR	NO - FIELD DUCT
AHU-3	46 X 108	29,600	EXTERIOR	YES	27 X 111	12550	EXTERIOR	NO - FIELD FAB	-	-	-	-	-	-	-	-
AHU-4	38 X 90	19,300	EXTERIOR	YES	24 X 96	8300	EXTERIOR	YES - LOUVER	-	-	-	-	-	-	-	-

AIR HANDLING UNIT SCHEDULE (CONTINUED) - FANS

SUPPLY FAN

TAG	TOTAL AIRFLOW (CFM)	FAN QUANTITY (#)	FAN AIRFLOW (CFM)	TSP (IN WG)	ESP (IN WG)	DUTY SPEED (RPM)	MAX SPEED (RPM)	FAN ENERGY INDEX	MOTOR QUANTITY	POWER (BHP)	RATING (HP)	VOLT/ PHASE	SPEED CONTROL	SCCR (kA)
AHU-1	22,000	4	5,500	4.28	3.0	1,875	2,225	1.36	4	5.32	9.40	460/3	ECM	100
AHU-2	-	-	-	-	-	-		-	-	-	-	-	-	-
AHU-3	31,000	6	5,167	4.74	2.19	1,920	2,225	1.32	6	5.50	9.40	460/3	ECM	100
AHU-4	20,000	4	5,000	4.05	2.3	1,799	2,225	1.38	4	4.55	9.40	460/3	ECM	100

RETURN/EXHAUST FAN

TAG	TOTAL AIRFLOW (CFM)	FAN QUANTITY (#)	FAN AIRFLOW (CFM)	TSP (IN WG)	ESP (IN WG)	DUTY SPEED (RPM)	MAX SPEED (RPM)	FAN ENERGY INDEX	MOTOR QUANTITY	POWER (BHP)	RATING (HP)	VOLT/ PHASE	SPEED CONTROL	SCCR (KAIC)
AHU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-3	29,600	4	7,400	2.23	1.0	1,552	1,750	1.42	4	3.86	6.71	460/3	ECM	100
AHU-4	19,300	3	6,433	1.94	1.0	1,389	1,750	1.56	3	2.86	6.71	460/3	ECM	100

FAN SCHEDULE

TAG	LOCATION	SERVICE	TYPE	DRIVE	FAN AIRFLOW MAX (CFM)	AIRFLOW MIN (CFM)	TSP (IN WG)	DUTY SPEED (RPM)	MAX SPEED (RPM)	FAN ENERGY INDEX	DISCHARGE VELOCITY (FPM)	ELECTRICAL VOLT/ PHASE	POWER (BHP)	RATING (HP)	MOTOR (RPM)	VFD (Y/N)	VFD SCCR (KAIC)	GEN. POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL
EF1	ROOF	LAB EXHAUST	CENTRIFUGAL	DIRECT	22,000	11,000	5.41	1,238	1,424	1.34	3,399	460/3	26.11	40	1,760	Y	65	Y	2,500	VEKTOR-CH
EF-2	ROOF	LAB EXHAUST	CENTRIFUGAL	DIRECT	22,000	11,000	5.41	1,238	1,424	1.34	3,399	460/3	26.11	40	1,760	Y	65	Y	2,500	VEKTOR-CH

GENERAL NOTES:

A. FAN ENERGY INDEX (FEI) BASED ON MANUFACTURERS' CERTIFIED DATA, RATIO OF THE ELECTRIC INPUT POWER OF A REFERENCE FAN TO THE ELECTRIC INPUT POWER OF THE ACTUAL FAN, AS CALCULATED PER AMCA 208.
B. FANS ARE CONFIGURED FOR FULL N+1 REDUNDANCY.
C. VFD'S TO BE MOUNTED IN ROOFTOP MECHANICAL ROOM. PROVIDE LOCAL DISCONNECT ON ROOF.
D. PROVIDE STACK FROM FAN DISCHARGE SUCH THAT THE DISCHARGE IS A MINIMUM OF 10 FEET ABOVE THE ROOF SURFACE PER ANSI-Z9.5.
E. WIND CONSULTANT TO PERFORM ANALYSIS IN CONSTRUCTION DOCUMENT PHASE AND TO VERIFY THAT FAN SELECTION MEETS PLUME HEIGHT REQUIREMENTS.
F. PROVIDE SILENCER ON FAN DISCHARGE NOZZLE.
G. PROVIDE SHAFT GROUNDING RINGS AND 2-INCH SPRING ISOLATOR SUPPORTS.
H. PROVIDE

FAN SCHEDULE (CONTINUED) - ACOUSTICS

TAG	INLET SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	OUTLET SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	ATTENUATED OUTLET SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ
EF-1	92	98	100	89	85	83	77	74	90	94	99	92	90	88	83	77	90	94	99	92	90	88	83	77
EF-2	92	98	100	89	85	83	77	74	90	94	99	92	90	88	83	77	90	94	99	92	90	88	83	77

AIR HANDLING UNIT SCHEDULE (CONTINUED) - ENTHALPY RECOVERY

ENTHALPY WHEEL

TAG	AIRFLOWS (CFM) SUPPLY	RETURN	PURGE	MOTOR (HP)	ENTHALPY RECOVERY WINTER (%)	SUMMER (%)	PRESSURE DROP SUPPLY (IN. WG.)	EXHAUST (IN. WG.)	WINTER AIR CONDITIONS (°F DB) OUTDOOR AIR	SUPPLY AIR	RETURN AIR	EXHAUST AIR	SUMMER AIR CONDITIONS (°F DB/WB) OUTDOOR AIR	SUPPLY AIR	RETURN AIR	EXHAUST AIR
AHU-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AHU-3	13,950	12,550	298	1	66.2%	69.4%	0.92	0.82	19	40.4	70	34.7	86/67	79.4/66.3	75/66	82.4/66.8
AHU-4	9,000	8,300	298	1	78.3%	75.6%	0.60	0.54	19	53.4	70	30.9	86/67	78.5/66.2	75/66	83.2/66.9

FIRE SMOKE DAMPERS

TAG	LOCATION	SERVICE	SYSTEM	STAT TEMP (°F)	INITIATING DEVICE	ELECTRICAL VOLT/ PHASE	CONN. QTY (#)	DIMENSIONS WIDTH (IN)	HEIGHT (IN)	MANUFACTURER & MODEL	NOTES
FSD-01-01	LEVEL 1	LEVEL 1 - RETURN	AHU-3	165		120/1	1	56	20	RUSKIN	
FSD-01-02	LEVEL 1	LEVEL 1 - CLASS SUPPLY	AHU-3	165		120/1	1	38	26	RUSKIN	
FSD-01-03	LEVEL 1	LEVEL 1 - RETURN	AHU-4	165		120/1	1	24	10	RUSKIN	
FSD-01-04	LEVEL 1	LEVEL 1 - CLASS SUPPLY	AHU-4	165		120/1	1	28	20	RUSKIN	
FSD-01-05	LEVEL 1	LEVEL 1 - RETURN	AHU-4	165		120/1	1	28	20	RUSKIN	
FSD-01-06	LEVEL 1	LEVEL 1 - RESTROOM EXH	AHU-2	165		120/2	1	12	12	RUSKIN	
FSD-02-01	LEVEL 2	LEVEL 2 - RETURN	AHU-4	165		120/1	1	16	14	RUSKIN	
FSD-02-02	LEVEL 2	LEVEL 2 - CLASS SUPPLY	AHU-4	165		120/1	1	16	12	RUSKIN	
FSD-02-03	LEVEL 2	LEVEL 2 - RETURN	AHU-3	165		120/1	1	56	26	RUSKIN	
FSD-02-04	LEVEL 2	LEVEL 2 - CLASS SUPPLY	AHU-3	165		120/1	1	38	28	RUSKIN	
FSD-02-05	LEVEL 2	LEVEL 2 - LAB SUPPLY	AHU-1	165		120/1	1	28	16	RUSKIN	
FSD-02-06	LEVEL 2	LEVEL 2 - RESTROOM EXH	AHU-402	165		120/1	1	12	12	RUSKIN	
FSD-03-01	LEVEL 3	LEVEL 3 - CLASS SUPPLY	AHU-4	165		120/1	1	30	16	RUSKIN	
FSD-03-02	LEVEL 3	LEVEL 3 - RETURN	AHU-4	165		120/1	1	52	30	RUSKIN	
FSD-03-03	LEVEL 3	LEVEL 3 - RETURN	AHU-3	165		120/1	1	56	40	RUSKIN	
FSD-03-04	LEVEL 3	LEVEL 3 - CLASS SUPPLY	AHU-3	165		120/1	1	38	48	RUSKIN	
FSD-03-05	LEVEL 3	LEVEL 3 - LAB SUPPLY	AHU-1	165		120/1	1	30	26	RUSKIN	
FSD-03-06	LEVEL 3	LEVEL 3 - RESTROOM EXH	AHU-2	165		120/1	1	12	12	RUSKIN	

GENERAL NOTES:

A. INCLUDE 20% ADDITIONAL DAMPERS FOR PRICING.
B. PROVIDE WITH REMOTE DAMPER BLADE POSITION INDICATOR
C. INITIATING DEVICES: DUCT SMOKE DETECTOR (DD), AREA SMOKE DETECTOR (AD) OR FIRE ALARM SYSTEM (FA)
D. ALL FIRE SMOKE DAMPERS ON A SINGLE SYSTEM CLOSE ON DETECTION OF SMOKE AND SHUTDOWN OF THE AIR MOVING SYSTEMS.
E. PROVIDE ADD ALT PRICING FOR ADDITIONAL DAMPERS FOR JANITOR CLOSET EXHAUST TO MEET LEED ENHANCED INDOOR AIR QUALITY CREDIT.

NOTES:

1. NONE

PRCNC20221036

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
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Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULE - MECHANICAL

M002

BUILDING PERMIT SET

LAB EXHAUST AIR VALVE SCHEDULE

TAG	LOCATION	INLET (IN)	MAX CFM	GRILLES QUANTITY	GRILLES TYPE	MANUFACTURER & MODEL	NOTES
TU-2-201	235 GENERAL BIOLOGY LAB	VVR	2880			PRICE RVDQ	1
TU-2-202	234 GENERAL BIOLOGY LAB	VVR	1870			PRICE RVDQ	1
TU-2-203	233 BIOLOGY PREP	VVR	410			ANTEC VV	3
TU-2-204	233 BIOLOGY PREP	VVR	1080			PRICE RVDQ	1
TU-2-205	232A & 233A STORAGE	VVR	290			PRICE RVDQ	1
TU-2-206	232 MICROBIOLOGY LAB	VVR	1255			PRICE RVDQ	1
TU-2-207	232 MICROBIOLOGY LAB	VVR	410			ANTEC VV	3
TU-2-208	231 BIOLOGY AP LAB	VVR	380			PRICE RVDQ	1
TU-2-209	231 BIOLOGY AP LAB	VVR	510			ANTEC VV	2
TU-2-210	231 BIOLOGY AP LAB	VVR	510			ANTEC VV	2
TU-2-301	318 CHEMISTRY INSTRUMENT ROOM	VVR	410			ANTEC VV	3
TU-2-302	318 CHEMISTRY INSTRUMENT ROOM	VVR	170			ANTEC VV	2
TU-2-303	318 CHEMISTRY INSTRUMENT ROOM	VVR	640			PRICE RVDQ	1
TU-2-304	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-305	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-306	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-307	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-308	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-309	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-310	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-311	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-312	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-313	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-314	316 ORGANIC CHEMISTRY LAB	VVR	660			ANTEC VV	3
TU-2-315	314 CHEMISTRY PRE/STOCKROOM	VVR	410			ANTEC VV	3
TU-2-316	314 CHEMISTRY PRE/STOCKROOM	VVR	560			PRICE RVDQ	1
TU-2-317	314A BULK	VVR	150			PRICE RVDQ	1
TU-2-318	312 GENERAL CHEMISTRY	VVR	410			ANTEC VV	3
TU-2-319	312 GENERAL CHEMISTRY	VVR	660			ANTEC VV	3
TU-2-320	312 GENERAL CHEMISTRY	VVR	660			ANTEC VV	3
TU-2-321	312 GENERAL CHEMISTRY	VVR	660			ANTEC VV	3
TU-2-322	314B & 314C STORAGE	VVR	335			PRICE RVDQ	1

GENERAL NOTES:
A. PRICE 20% MORE EQUIPMENT THAN SHOWN ON SCHEDULE.
B. AIR PRESSURE DROP THROUGH TERMINAL UNIT TO BE NO GREATER THAN 0.75 IN.WG.
C. REFER TO LABORATORY PLAN DRAWINGS FOR REQUIREMENTS FOR CONNECTING TO SNORKELS AND FUME HOODS.
NOTES:
1. VALVE SERVES GENERAL ROOM EXHAUST.
2. VALVE SERVES SNORKEL EQUIPMENT.
3. VALVE SERVES FUME HOOD.

LAB SUPPLY AIR VALVE SCHEDULE

TAG	SERVICE	PRIMARY AIR TYPE	INLET (IN)	MAX CFM	HEATING CFM	DIFFUSERS QUANTITY	DIFFUSERS TYPE	MANUFACTURER & MODEL	NOTES
SAV-101	GRAVITY LAB	VV	14	2000	1000	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-102	IDEATION STUDIO	VV	14	2075	1037.5	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-103	FAB LAB	VV	14	2075	1037.5	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-104	CLASSROOM	VV	14	1900	950	6	C-1	PHOENIX VANTAGE CELERIS	
SAV-105	PHYSICS	VV	12	1310	655	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-106	PHYSICS	VV	12	1310	655	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-107	PHSYICS SUPPORT	VV	8	1000	500	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-108	CORRIDOR	VV	8	400	200	1	H-1	PHOENIX VANTAGE CELERIS	
SAV-201	GENERAL BIOLOGY LAB	VV	14	2220	1110	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-202	GENERAL BIOLOGY LAB	VV	14	1890	945	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-203	BIOLOGY PREP	VV	12	1200	600	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-204	LAB TECH OFFICE	CV	8	280	140	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-205	SPECIMEN STORAGE	VV	8	170	85	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-206	BULK STORAGE	VV	8	120	60	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-207	MICROBIOLOGY LAB	VV	14	1890	945	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-208	BIOLOGY AP LAB	VV	10	1950	975	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-301	CHEMISTRY INSTRUMENT ROOM	VV	8	970	485	4	C-1	PHOENIX VANTAGE CELERIS	
SAV-302	ORGANIC CHEMISTRY LAB	VV	14	1820	910	2	C-3	PHOENIX VANTAGE CELERIS	
SAV-303	ORGANIC CHEMISTRY LAB	VV	14	1820	910	2	C-3	PHOENIX VANTAGE CELERIS	
SAV-304	ORGANIC CHEMISTRY LAB	VV	14	1820	910	2	C-3	PHOENIX VANTAGE CELERIS	
SAV-305	ORGANIC CHEMISTRY LAB	VV	14	1820	910	2	C-3	PHOENIX VANTAGE CELERIS	
SAV-306	CHEMISTRY PREP/STOCKROOM	VV	10	780	390	2	C-1	PHOENIX VANTAGE CELERIS	
SAV-307	BULK STORAGE	CV	8	170	85	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-308	LAB TECH OFFICE	CV	8	230	115	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-309	INORGANIC STORAGE	VV	8	160	80	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-310	ORGANIC STORAGE	VV	8	160	80	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-311	GENERAL CHEMISTRY	VV	14	2390	1195	6	C-3	PHOENIX VANTAGE CELERIS	
SAV-312	FIELD EQUIPMENT	VV	8	110	55	1	C-1	PHOENIX VANTAGE CELERIS	
SAV-313	EARTH SCIENCE A LAB	VV	12	1420	710	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-314	EARTH SCIENCE A LAB	VV	12	1420	710	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-315	EARTH SCIENCE PREP	VV	10	950	475	4	C-1	PHOENIX VANTAGE CELERIS	
SAV-316	EARTH SCIENCE B LAB	VV	12	1420	710	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-317	EARTH SCIENCE B LAB	VV	12	1420	710	4	C-3	PHOENIX VANTAGE CELERIS	
SAV-318	ROCK PREP	VV	8	170	85	1	C-3	PHOENIX VANTAGE CELERIS	
SAV-319	LAB TECH OFFICE	CV	8	230	115	1	C-1	PHOENIX VANTAGE CELERIS	

GENERAL NOTES:
A. PRICE 20% MORE EQUIPMENT THAN SHOWN ON SCHEDULE.
B. PROVIDE A DUCT HEATING COIL FOR EVERY SUPPLY AIR VALVE. REFER TO DUCT COIL SCHEDULE FOR SIZING.
C. PRIMARY AIR TEMPERATURE 55°F (SUMMER), 65°F (WINTER).
D. AIR PRESSURE DROP THROUGH TERMINAL UNIT TO BE NO GREATER THAN 0.75 IN.WG.
E. ANTICIPATED QUANTITY OF DIFFUSERS REQUIRED FOR EACH SUPPLY LAB VALVE ZONE PROVIDED FOR PRICING. REFER TO DIFFUSER SCHEDULE.
F. PROVIDE PHOENX ROOM-LEVEL CONTROLLER FOR ENTIRE SYSTEM.
NOTES:
1. NONE.
KEY:
VV = VARIABLE VOLUME AIR VALVE
CV = CONSTANT VOLUME AIR VALVE

TERMINAL UNIT SCHEDULE

TAG	SERVICE	TYPE	PRIMARY AIR INLET (IN)	MAX CFM	HEATING CFM	MIN CFM	LOW MIN CFM	UNOCCUPIED CFM	HYDRONIC COIL MBH	GPM	MANUFACTURER & MODEL
TU-3-100	100 LOBBY	VVR	14	1600	550	550	440	-	17.8	2.4	PRICE SDVQ
TU-3-101	101 CLASSROOM	VVR	14	1505	1030	1030	440	-	33.4	4.5	PRICE SDVQ
TU-3-102	102 CLASSROOM	VVR	14	1435	975	975	440	-	31.6	4.3	PRICE SDVQ
TU-3-103	103 WORKSTATIONS	VVR	6	240	130	130	70	-	2.1	0.5	PRICE SDVQ
TU-3-104	103A STUDY ROOM	VVR	6	295	115	115	70	-	1.9	0.5	PRICE SDVQ
TU-3-105	103B OFFICE	VVR	12	1020	310	310	310	-	8.9	1.2	PRICE SDVQ
TU-3-106	104 DOUBLE CLASSROOM	VVR	14	1480	1095	1095	440	-	35.5	4.8	PRICE SDVQ
TU-3-107	1/2 gravity	VVR	14	1350	585	585	440	-	19.0	2.6	PRICE SDVQ
TU-3-108	1/2 gravity	VVR	14	1350	585	585	440	-	19.0	2.6	PRICE SDVQ
TU-4-100	136 WORKSTATIONS	VVR	8	510	140	140	140	-	4.5	0.6	PRICE SDVQ
TU-4-101	1/2 fab lab	VVR	14	1465	675	675	440	-	21.9	3.0	PRICE SDVQ
TU-4-102	1/2 fab lab	VVR	14	1465	675	675	440	-	21.9	3.0	PRICE SDVQ
TU-4-103	134 IDEATION STUDIO	VVR	14	1350	705	705	440	-	22.8	3.1	PRICE SDVQ
TU-4-104	133 CLASSROOM	VVR	14	1400	1150	1150	440	-	37.3	5.0	PRICE SDVQ
TU-4-105	132 PHYSICS	VVR	16	1935	1045	1045	670	-	33.9	4.6	PRICE SDVQ
TU-4-106	131 PHYSICS SUPPORT	VVR	8	425	140	140	140	-	4.5	0.6	PRICE SDVQ
TU-4-107	140 COLLABORATION LOUNGE	VVR	10	840	460	460	230	-	14.9	2.0	PRICE SDVQ
TU-4-108	135A CHECK IN/WORKROOM	VVR	6	200	70	70	70	-	1.1	0.5	PRICE SDVQ
TU-4-109	122 MOTHERS	VVR	10	670	275	275	230	-	4.5	0.6	PRICE SDVQ
TU-1-201	235 GENERAL BIOLOGY LAB	VVR	14	1440	945	945	945	440	45.8	6.2	PRICE SDVQ
TU-1-202	235 GENERAL BIOLOGY LAB	VVR	14	1440	945	945	945	440	45.8	6.2	PRICE SDVQ
TU-1-203	234 GENERAL BIOLOGY LAB	VVR	16	1880	1260	1260	1260	670	59.9	8.1	PRICE SDVQ
TU-1-204	233 BIOLOGY PREP	VVR	14	1590	1200	1200	1200	440	47.3	6.4	PRICE SDVQ
TU-1-205	232A & 233A STORAGE	VVR	6	290	290	290	290	70	8.9	1.2	PRICE SDVQ
TU-1-206	232 MICROBIOLOGY LAB	VVR	14	1645	1260	1260	1260	440	61.4	8.3	PRICE SDVQ
TU-1-207	231 BIOLOGY AP LAB	VVR	14	1400	1270	1270	1270	440	56.9	7.7	PRICE SDVQ
TU-3-200	100 LOBBY - DOUBLE HIGH AREA	VVR	16	2085	670	670	670	-	35.6	4.8	PRICE SDVQ
TU-3-201	201 CLASSROOM	VVR	14	1590	1170	1170	440	-	37.9	5.1	PRICE SDVQ
TU-3-202	202 CLASSROOM	VVR	14	1505	925	925	440	-	30.0	4.1	PRICE SDVQ
TU-3-203	203 OFFICE	VVR	10	780	230	230	230	-	7.5	1.0	PRICE SDVQ
TU-3-204	207 CLASSROOM	VVR	14	1555	1110	1110	440	-	36.0	4.9	PRICE SDVQ
TU-3-205	208 CLASSROOM	VVR	14	1370	1125	1125	440	-	36.5	4.9	PRICE SDVQ
TU-3-206	206 CONFERENCE ROOM	VVR	8	595	175	175	140	-	3.1	0.5	PRICE SDVQ
TU-3-207	200 HALL	VVR	10	730	315	285	230	-	10.2	1.4	PRICE SDVQ
TU-3-208	243 SHARED LEARNING	VVR	12	1105	810	810	310	-	26.2	3.5	PRICE SDVQ
TU-4-201	236 WORKSTATIONS	VVR	8	520	145	145	140	-	4.7	0.6	PRICE SDVQ
TU-4-202	240 SHARED LEARNING	VVR	10	675	630	630	230	-	20.4	2.8	PRICE SDV
TU-4-203	233B LAB TECH OFFICE	VVR	6	165	85	70	70	-	2.9	0.4	PRICE SDV
TU-4-204	230 HALL	VVR	6	380	265	265	70	-	4.3	0.6	PRICE SDV
TU-1-301	318 CHEMISTRY INSTRUMENT ROOM	VVR	12	1220	970	970	970	310	31.1	4.2	PRICE SDVQ
TU-1-302	316 ORGANIC CHEMISTRY LAB	VVR	16	1820	670	670	670	670	58.4	7.9	PRICE SDVQ
TU-1-303	316 ORGANIC CHEMISTRY LAB	VVR	16	1820	670	670	670	670	58.4	7.9	PRICE SDVQ
TU-1-304	316 ORGANIC CHEMISTRY LAB	VVR	16	1820	670	670	670	670	58.4	7.9	PRICE SDVQ
TU-1-305	316 ORGANIC CHEMISTRY LAB	VVR	16	1820	670	670	670	670	58.4	7.9	PRICE SDVQ
TU-1-306	314 CHEMISTRY PRE/STOCKROOM	VVR	10	970	630	630	630	230	20.7	2.8	PRICE SDVQ
TU-1-307	314A BULK	VVR	6	150	150	150	150	70	4.4	0.6	PRICE SDVQ
TU-1-308	314B & 314C STORAGE	VVR	6	335	335	335	335	70	10.4	1.4	PRICE SDVQ
TU-1-309	312 GENERAL CHEMISTRY	VVR	12	1200	760	760	760	310	38.5	5.2	PRICE SDVQ
TU-1-310	312 GENERAL CHEMISTRY	VVR	12	1200	760	760	760	310	38.5	5.2	PRICE SDVQ
TU-3-301	300 SHARED LEARNING	VVR	12	1010	700	700	310	-	22.7	3.1	PRICE SDVQ
TU-3-302	1/2 EARTH SCI B	VVR	14	1330	650	650	440	-	21.1	2.8	PRICE SDVQ
TU-3-303	1/2 EARTH SCI B	VVR	14	1330	650	650	440	-	21.1	2.8	PRICE SDVQ
TU-3-304	309A LAB TECH OFFICE	VVR	8	555	175	140	140	-	5.7	0.8	PRICE SDVQ
TU-3-305	309 EARTH SCIENCE PREP	VVR	8	610	305	140	140	-	13.7	1.9	PRICE SDVQ
TU-3-306	1/2 EARTH SCI A	VVR	14	1320	710	710	440	-	23.0	3.1	PRICE SDVQ
TU-3-307	1/2 EARTH SCI A	VVR	14	1320	710	710	440	-	23.0	3.1	PRICE SDVQ
TU-3-308	309B ROCK PREP	VVR	6	310	70	70	70	-	1.4	0.5	PRICE SDVQ
TU-4-301	300 HALL	VVR	16	1960	860	440	670	-	27.9	3.8	PRICE SDVQ
TU-4-302	340 SHARED LEARNING	VVR	10	685	685	685	230	-	22.2	3.0	PRICE SDVQ
TU-4-303	320 WORKSTATIONS	VVR	8	565	165	140	140	-	5.3	0.7	PRICE SDVQ
TU-4-304	319 DOUBLE OFFICE	VVR	10	870	315	230	230	-	10.2	1.4	PRICE SDVQ
TU-4-305	312A LAB TECH OFFICE	VVR	6	210	105	70	70	-	3.7	0.5	PRICE SDVQ
TU-4-306	302 OFFICE	VVR	8	465	150	150	140	-	2.4	0.5	PRICE SDVQ
TU-4-307	305 OFFICE	VVR	6	270	160	160	70	-	2.6	0.5	PRICE SDVQ
TU-4-308	330 HALL	VVR	10	645	345	345	230	-	6.5	0.9	PRICE SDVQ

GENERAL NOTES:
A. PRIMARY AIR TEMPERATURE 55°F (SUMMER), 65°F (WINTER).
B. AIR PRESSURE DROP THROUGH TERMINAL UNIT TO BE NO GREATER THAN 0.20 IN.WG. WITHOUT COIL OR 0.60 IN.WG. WITH COIL.
C. PROVIDE ECM MOTOR.
D. REFER TO M3XX SERIES FOR THERMOSTAT, CO2 AND OCCUPANCY SENSOR LOCATIONS. INCLUDE ADDITIONAL 20% SENSORS FOR PRICING.
E. PROVIDE MASS LOADED VINYL WRAP FOR ALL FAN POWERED SERIES BOXES.
F. PROVIDE SILENCER ON RETURN AND DISCHARGE OF ALL FAN POWERED SERIES BOXES.
G. PROVIDE ADD ALT PRICING FOR ADDITIONAL 3 FPS AND 3 VV ZONES TO MEET LEED THEMAL COMFORT CREDIT.
KEY:
VVR = VARIABLE AIR VOLUME TERMINAL UNIT WITH REHEAT

DIFFUSERS AND GRILLES

TAG	TYPE	DESCRIPTION	AIRFLOW RANGE MIN (CFM)	AIRFLOW RANGE MAX (CFM)	INLET SIZE (IN)	FACE SIZE T-BAR (IN)	MAX NC	THROW (FT)	MANUFACTURER & MODEL	NOTES
C-1	CEILING SUPPLY DIFFUSER	RADIAL THROW PLAQUE DIFFUSER	0	98	6	24x24	15	2-3-5	PRICE SPD	
			99	175	8	24x24	15	2-4-7		
			176	273	10	24x24	15	3-5-9		
			274	393	12	24x24	15	4-6-11		
			394	519	14	24x24	18	5-7-13		
C-2	CEILING RETURN/ EXHAUST GRILLE	PERFORATED FACE, STEEL, ROUND OR RECTANGULAR DUCT CONNECTION	0	98	6	12x12	-	-	PRICE PDDR	
			99	175	8	24x24	-	-		
			176	273	10	24x24	-	-		
			274	393	12	24x24	-	-		
			394	519	14	24x24	-	-		
			520	782	15x15	24x24	-	-		
			783	1,125	18x18	24x24	-	-		
			1,126	1,681	22x22	24x24	17	-		
C-3	CEILING TRANSFER RETURN GRILLE	PERFORATED FACE, RECTANGULAR DUCT CONNECTION	0	133	8x8	24x24	-	-	PRICE PDDR	
			134	208	10x10	24x24	-	-		
			209	300	12x12	24x24	-	-		
			301	469	15x15	24x24	-	-		
			470	675	18x18	24x24	-	-		
			1,009	1,008	22x22	24x24	-	-		
			901	2,018	46x22	24x48				
C-4	CEILING SUPPLY DIFFUSER	RADIAL FLOW, LOW VELOCITY, HIGH VOLUME	0	910	16	24x48	-	-	PRICE RFD	
H-1	SIDEWALL SUPPLY	45 DEG DEFLECTION, 1/2" BLADE SPACING	0	125	6x6	-	16	5-7-10	PRICE 500 SERIES	
			126	250	12x6	-	16	7-10-14		
			251	333	12x8	-	16	7-11-16		
			334	500	12x12	-	16	9-14-20		
			501	750	18x12	-	18	11-16-24		
			751	1050	24x14	-	16	13-19-29		
H-2	SIDEWALL RETURN/ EXHAUST GRILLE	45 DEG DEFLECTION, 1/2" BLADE SPACING	0	250	12X6	-	16	-	PRICE 500 SERIES	
			251	1900	30x14	-	-	-		
H-3	SIDEWALL TRANSFER GRILLE	45 DEG DEFLECTION, 1/2" BLADE SPACING	0	208	10x10	-	-	-	PRICE 500 SERIES	
			209	300	12x12	-	-	-		
			301	530	18x14	-	-	-		
			531	675	18x18	-	-	-		
			676	750	26x14	-	-	-		
			751	875	30x14	-	-	-		
			876	1400	48x14	-	-	-		
			1401	1500	36x20	-	-	-		
			1501	2018	46x22	-	-	-		

GENERAL NOTES:
A. NOISE CRITERIA (NC) BASED ON ROOM ABSORPTION OF 10 dB, MEASURED PER ANSI/ASHRAE STANDARD 70.
B. THROW VALUES GIVEN FOR TERMINAL VELOCITIES 150, 100, AND 50 FPM FOR ISOTHERMAL CONDITIONS.
C. ADJUST THROW DIRECTION AND QUANTITY PRIOR TO AIR BALANCING.
NOTES:
1. NONE.

UNIT HEATER SCHEDULE

TAG	LOCATION	TYPE	HYDRONIC COIL CAPACITY (MBH)	CAPACITY (MBH/LF)	FLOW (GPM)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
UH-101	SPRINLER RISER 122	HYDRONIC - WALL RECESSED	18	-				
UH-102	STAIR 245	HYDRONIC - WALL RECESSED	18	-				
UH-103	STAIR S101	HYDRONIC - WALL RECESSED	18	-				
UH-105	MECH PENTHOUSE	HYDRONIC - WALL RECESSED	18	-				
UH-106	MECH PENTHOUSE	HYDRONIC - WALL RECESSED	18	-				
UH-107	LOBBY	HYDRONIC - PEDESTAL	-	0.34			VULCAN VC145	1

GENERAL NOTES:
A. HYDRONIC HEATING CAPACITY BASED ON EWT/LWT = 110/98°F
B. UNIT MOUNTED THERMOSTAT; SET TO 50 °F
NOTES:
1. PROVIDE FOR ENTIRE LENGTH OF LOBBY EXERIOR PERIMETER.

FUME HOOD SCHEDULE

TAG	HOOD SIZE AND TYPE	DESIGN AIRFLOW (CFM)	MAX AIRFLOW (CFM)	MIN VAV AIRFLOW (CFM)	MAX HOOD SP (IN WC)	EXHAUST CONNECTION (IN)
4' CFH	4' CHEMICAL FUME HOOD	400	480	200	0.25	10
4' ACFH	4' ADA CHEMICAL FUME HOOD	400	480	200	0.25	10
6' CFH	6' CHEMICAL FUME HOOD	640	780	300	0.25	12
6' ACFH	6' ADA CHEMICAL FUME HOOD	640	780	300	0.25	12
6' FVH	6' FULL VIEW CHEMICAL FUME HOOD	680	960	300	0.50	12
6' FMH	4' FLOOR MOUNTED FUME HOOD	1,400	1,400	520	0.50	12

GENERAL NOTES:
A. REFER TO LAB DRAWING SCHEDULES FOR SPECIFICATIONS AND QUANTITIES.

FAN COIL SCHEDULE

TAG	LOCATION	SERVICE	AIRFLOW (CFM)	FILTER (MERV)	HYDRONIC COOLING COIL (30% PG) EAT (°F DB/WB)	LAT (°F DB/WB)	EWT (°F)	MIN WTD (°F)	ELECTRICAL MOTOR QUANTITY (#)	MOTOR (HP)	VOLT/ PHASE	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL
FCU-201	231 BIOLOGY AP LAB	231 BIOLOGY AP LAB	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-202	232 MICROBIOLOGY LAB	232 MICROBIOLOGY LAB	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-203	233 BIOLOGY PREP	233 BIOLOGY PREP	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-204	234 GENERAL BIOLOGY LAB	234 GENERAL BIOLOGY LAB	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-205	235 GENERAL BIOLOGY LAB	235 GENERAL BIOLOGY LAB	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-206	235 GENERAL BIOLOGY LAB	235 GENERAL BIOLOGY LAB	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ
FCU-301	318 CHEMISTRY INSTRUMENT ROOM	319 CHEMISTRY INSTRUMENT ROOM	600	8	75/62.5	55/54	44	12	2	1/4	277/1	300	PRICE FCHGQ

GENERAL NOTES:
A. PROVIDE CONDENSATE OVERFLOW SENSOR IN DRAIN PAN TO AUTOMATICALLY SHUT DOWN UNIT.
B. PROVIDE SECONDARY DRAIN PAN AND PIPE SEPARATELY FROM PRIMARY DRAIN PAN.
C. PROIDE FANS WITH EC MOTORS.
D. PROVIDE CONDENSATE PUMP: LITTLE GIANT EC-400, 120 VOLTS, 1 PHASE, 0.24 AMPS, 20 WATTS. ROUTE CONDENSATE DRAIN VIA 3/4 INCH COPPER HEADER, SLOPED AT 1/8 INCH PER FOOT TO JANITOR ROOM MOP SINK OR MECHANICAL ROOM FLOOR DRAIN.
E. PROVIDED FOR PROCESS COOLING AND TO MINIMIZE AIR CHANGE IN LABORATORIES WHEN AIRFLOW IS DRIVEN BY INTERIOR LOADS.

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

PRCNC20221036

M003

BUILDING PERMIT SET

AIR COOLED CHILLER SCHEDULE

TAG	LOCATION	SERVICE	CAPACITY (TONS)	DESIGN CONDITIONS: GLYCOL (%)	FLOW (GPM) MAX	FLOW (GPM) DESIGN	FLOW (GPM) MIN	TEMPERATURE (°F) EWT	TEMPERATURE (°F) LWT	PRESSURE DROP (FT WG) MAX	PRESSURE DROP (FT WG) DESIGN	PRESSURE DROP (FT WG) MIN	COMPRESSORS: QTY (#)	TYPE	RLA EACH (A)	VFD (Y/N)	FANS: QTY. (#)	FLA EACH (A)	VFD (Y/N)	DESIGN EFFICIENCY: AMBIENT TEMP (°F DB/WB)	FULL LOAD (EER)	IPLV (EER)	RATED AHRI EFFICIENCY: FULL LOAD (EER)	IPLV (EER)	CODE EFFICIENCY: WSEC C403.3.2(7) - PATH B: FULL LOAD (EER)	IPLV (EER)	REFRIGERANT: TYPE	CHARGE (LBS)	ELECTRICAL: VOLT/ PHASE	MCA (A)	MOCP (A)	SCCR (kA)	GEN. POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL
CH-1	GRADE	CHILLED WATER	300	20	876.6	620.6	220	54	42	33.9	17.1	2.8	2	SCREW	223 & 190	Y	18	3.3	Y	87/67	11.00	18.24	11.01	18.24	≥ 9.7	≥ 16.1	R-134A	388	460/3	537	700	65	N	20,000	DAIKIN AWV 016B

GENERAL NOTES:

A. DESIGN EFFICIENCIES ARE AT DESIGN CONDITIONS LISTED IN THE SCHEDULE.

B. RATED EFFICIENCIES ARE AT ARI STANDARD CONDITIONS.

C. PROVIDE SPRING ISOLATORS.

D. CODE AHRI EFFICIENCY REQUIREMENTS PROVIDED FOR REFERENCE.

E. SINGLE POINT CONNECTION POWERS ON BOARD CONTROLLER.

F. PROVIDE DUAL BASKET STRAINER AT CHILLER INLET WITH MESH SIZE MEETING MANUFACTURER REQUIREMENTS.

AIR COOLED CHILLER SCHEDULE (CONTINUED)

TAG	ACOUSTIC PERFORMANCE AT FULL LOAD CONDITIONS: SOUND POWER (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	SOUND PRESSURE AT 30 FT (DB) 63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ
CH-1	102	98	95	100	99.0	93.0	85	75	75	71.0	68.0	73.0	72	66	58	48

PUMP SCHEDULE

TAG	LOCATION	SERVICE	TYPE	PUMP STAGING	GLYCOL (%)	PERFORMANCE: FLOW MAX (GPM)	FLOW MIN (GPM)	HEAD PRESSURE DESIGN (FT WG)	HEAD PRESSURE SHUT-OFF (FT WG)	IMPELLER FULL (IN)	IMPELLER TRIM (IN)	EFFICIENCY DUTY (%)	EFFICIENCY PLEV (%)	ELECTRICAL: VOLT/ PHASE	MOTOR TYPE	POWER (BHP)	RATING (HP)	DUTY (RPM)	SPEED (RPM)	SPEED CONTROL	SCCR (A)	GEN POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL
HWP-1	MECHANICAL ROOM	HEATING WATER	BASE MOUNT END SUCTION	PS	0	480	100	120	167	13.5	13.125	75.0	73.0	460/3		23.2	30	1678	1800	VFD	65	Y	1,500	B&G E-1510
HWP-2	MECHANICAL ROOM	HEATING WATER	BASE MOUNT END SUCTION	PS	0	480	100	120	167	13.5	13.125	75.0	73.0	460/3		23.2	30	1678	1800	VFD	65	Y	1,500	B&G E-1510
CHWP-1	MECHANICAL ROOM	CHILLED WATER	BASE MOUNT END SUCTION	PS	20	636	170	120	134	13.5	12.375	78.7	73.6	460/3		24.2	40	1604	1800	VFD	65	N	1,500	B&G E-1510
CHWP-2	MECHANICAL ROOM	CHILLED WATER	BASE MOUNT END SUCTION	PS	20	636	170	120	134	13.5	12.375	78.7	73.6	460/3		24.2	40	1604	1800	VFD	65	N	1,500	B&G E-1510
HRP-1	MECHANICAL PENTHOUSE	LABORATORY HEAT RECOVERY	BASE MOUNT END SUCTION	PS	20	150	35	50	58.9	9.5	8.5	74.0	70.3	460/3		2.55	5	1524	1800	VFD	65	Y	100	B&G E-1510
HRP-2	MECHANICAL PENTHOUSE	LABORATORY HEAT RECOVERY	BASE MOUNT END SUCTION	PS	20	150	35	50	58.9	9.5	8.5	74.0	70.3	460/3		2.55	5	1524	1800	VFD	65	Y	500	B&G E-1510

GENERAL NOTES:

A. PROVIDE TEFC TYPE MOTORS WHERE SCHEDULED AND WHERE PUMP IS LOCATED WITHIN THE AIRSTREAM.

B. PUMP SIZING BASED ON OPERATING POINT.

KEY:

PL = PARALLEL, LEAD-LAG: INDIVIDUAL PUMP CAPACITY IS SUCH THAT BOTH PUMPS OPERATE TO PROVIDE DESIGN FLOW.

PS = PARALLEL, STANDBY: INDIVIDUAL PUMP CAPACITY IS SUCH THAT ONE PUMP IS FULLY REDUNDANT.

S = STANDALONE: PUMP IS SIZED TO PROVIDE DESIGN FLOW; NO REDUNDANCY PROVIDED.

GLYCOL MIXING TANK

TAG	LOCATION	SERVICE	TANK VOLUME (GAL)	ELECTRICAL VOLT/ PHASE	GEN. POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL
GT-1	LEVEL 0 MECH ROOM	CHILLED WATER	50	120/1	NO	550	J.L. WINGERT
GT-2	MECH PENTHOUSE	HEAT RECOVERY WATER	50	120/1	NO	550	J.L. WINGERT

GENERAL NOTES:

A. PROVIDE SEISMIC RESTRAINTS.

AIR SEPARATOR SCHEDULE

TAG	LOCATION	SERVICE	TYPE	INLET SIZE (IN)	MANUFACTURER & MODEL
AS-1	MECH PENTHOUSE	CHILLED WATER	AIR/DIRT	6	SPIROVENT VDN
AS-2	MECH PENTHOUSE	HEATING WATER	AIR/DIRT	6	SPIROVENT VDN
AS-3	MECH PENTHOUSE	HEATING WATER	AIR/DIRT	3	SPIROVENT VDN

SPLIT SYSTEM SCHEDULE

TAG	LOCATION	SERVICE	TYPE	COOLING CAPACITY: TOTAL (MBH)	COOLING CAPACITY: EAT (°F DB)	HEATING CAPACITY: TOTAL (MBH)	HEATING CAPACITY: EAT (°F)	MIN EFFICIENCY: EER	MIN EFFICIENCY: SEER	COP AT 17°F	REFRIGERANT TYPE	ELECTRICAL: VOLT/ PHASE	MCA (A)	MOCP (A)	SCCR (KAIC)	GEN. POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
ACCU-R101 / AC-101	ROOF/LEVEL 1	MDF 153	WALL-MOUNT	12	95	-	-	12.0	20.8	-	R410A	208/1	11	28	5	Y	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R102 / AC-102	ROOF/LEVEL 1	ELECTRICAL MAIN 123	WALL-MOUNT	36	95	-	-	10.8	18.8	-	R410A	208/1	25	31	5	N	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R103 / AC-103	ROOF/LEVEL 1	EMERGENCY ELECTRICAL 124	WALL-MOUNT	24	95	-	-	12.2	21.4	-	R410A	208/1	19	26	5	Y	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R201 / AC-201	ROOF/LEVEL 2	IDF 252	WALL-MOUNT	12	95	-	-	12.0	20.8	-	R410A	208/1	11	28	5	N	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R202 / AC-202	ROOF/LEVEL 2	ELEC 254	WALL-MOUNT	24	95	-	-	12.0	20.8	-	R410A	208/1	11	28	5	N	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R203 / AC-203	ROOF/LEVEL 2	STAIRWELL - SOUTHEAST	CEILING SUPPENDED	24	95	15.4	17	10.8	12.2	2.97	R410A	208/1	19	26	5	N	200 / 50	MITSUBISHI PCA/PUZ	1, 2
ACCU-R204 / AC-204	ROOF/LEVEL 2	STAIRWELL - SOUTHWEST	CEILING SUPPENDED	36	95	24.4	17	11.0	19.1	2.88	R410A	208/1	25	31	5	N	200 / 50	MITSUBISHI PCA/PUZ	1, 2
ACCU-R301 / AC-301	ROOF/LEVEL 3	IDF 352	WALL-MOUNT	12	95	-	-	12.0	20.8	-	R410A	208/1	11	28	5	N	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3
ACCU-R302 / AC-302	ROOF/LEVEL 3	ELEVATOR MACHINE ROOM 354	WALL-MOUNT	12	95	-	-	12.0	20.8	-	R410A	208/1	11	28	5	N	200 / 50	MITSUBISHI PKA/PUY	1, 2, 3

GENERAL NOTES:

A. MINIMUM EFFICIENCY IS AT ARI STANDARD CONDITIONS.

B. PROVIDE WASHABLE MERV 8 FILTERS

C. SCHEDULED REFRIGERANT CHARGE DOES NOT INCLUDE SYSTEM PIPING. REFER TO MANUFACTURER'S DATA FOR REFRIGERANT CHARGE FOR PIPING.

NOTES:

1. PROVIDE CONDENSATE PUMP: LITTLE GIANT EC-400, 120 VOLTS, 1 PHASE, 0.24 AMPS, 20 WATTS. ROUTE CONDENSATE DRAIN VIA 3/4 INCH COPPER HEADER, SLOPED AT 1/8 INCH PER FOOT TO JANITOR ROOM MOP SINK OR MECHANICAL ROOM FLOOR DRAIN.

2. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT.

3. COOLING ONLY UNIT.

BOILER SCHEDULE

TAG	LOCATION	SERVICE	TYPE	HEATING CAPACITY (MBH)	FLUID: GLYCOL (%)	FLOW MAX (GPM)	FLOW MIN (GPM)	TEMPERATURE LWT (°F)	TEMPERATURE EWT (°F)	MAX WPD (FT WG)	FUEL: TYPE	INPUT (MBH)	MIN AFUE (%)	ELECTRICAL: VOLT/ PHASE	FLA (A)	GEN. POWER (Y/N)	APPROX. WEIGHT (LBS)	MANUFACTURER & MODEL	NOTES
B-B01	BASEMENT	HWS	CONDENSING	2,397.5	0	240	50	115	95	15	NAT. GAS	2,500	94.5	208/3	10.3	YES	2,500	RBI FLEXCORE 2500	1., 2
B-B02	BASEMENT	HWS	CONDENSING	2,397.5	0	240	50	115	95	15	NAT. GAS	2,500	94.5	208/3	10.3	YES	2,500	RBI FLEXCORE 2500	1., 2

GENERAL NOTES:

A. UNITS MOUNTED ON HOUSEKEEPING PAD.

B. UNIT HAS A MINIMUM TURNDOWN OF 5:1 IN COMPLIANCE WITH 2018 WSEC C403.3.4.

C. PROVIDE 48 INCHES CLEAR BETWEEN MULTIPLE BOILERS.

D. PROVIDE A MINIMUM SIDE CLEARANCE OF 36 INCHES FOR EACH BOILER.

E. PROVIDE 36 INCHES TOP CLEARANCE ABOVE BOILER.

F. PROVIDE TWO MEANS OF EXIT WHEN BOILER ROOM EXCEEDS 500 SF AND ANY SINGLE BOILER INPUT CAPACITY EXCEEDS 400 MBH.

G. PROVIDE BOILER SHUT-OFF BUTTON AT EXIT(S) TO BOILER ROOM. BUTTON TO SHUT OFF POWER AND FUEL SUPPLY TO BOILERS.

NOTES:

1. ROUTE COMBUSTION AIR AND FLUE TO OUTDOORS THROUGH SIDEWALL OF THE MECHANICAL ROOM INDEPENDENT OF OTHER BOILERS PER MANUFACTURER RECOMMENDATIONS.

2. PROVIDE INDIVIDUAL CONDENSATE TRAP FOR EACH BOILER, AND ONE YEAR'S SUPPLY OF NEUTRALIZATION AGENT.

RADIATOR SCHEDULE

TAG NUMBER	LOCATION / SERVICE	TYPE	LENGTH (IN)	HEIGHT (IN)	DEPTH (IN)	HYDRONYIC HEATING: OUTPUT (BTUH/FT)	DESIGN (BTU/H)	FLOW (GPM)	AWT (°F)	EAT (°F)	MAX. WPD (FT HD.)	MANUFACTURER & MODEL
FT-101	1523 OFFICE	HEATING ONLY, 2 PIPE	30	10-3/4	6-1/16	433	1,082	1.00	110	70	0.20	VULCAN JV4-AR-PM
FT-1-102	1521 OFFICE	HEATING ONLY, 2 PIPE	60	10-3/4	6-1/16	433	2,165	1.00	110	70	0.25	VULCAN JV4-AR-PM

GENERAL NOTE(S):

A. NONE

TANK SCHEDULE

TAG	LOCATION	SERVICE	TYPE	PRESSURE: MIN (PSIG)	PRESSURE: MAX (PSIG)	VOLUME: TOTAL (GAL)	VOLUME: ACCEPTANCE (GAL)	SYSTEM CONN. SIZE (IN)	MANUFACTURER & MODEL	NOTES
EXPANSION TANKS										
ET-401	MECH PENTHOUSE	HEATING WATER	BLADDER	12	125	185	110		TACO CA	1
ET-402	MECH PENTHOUSE	CHILLED WATER	BLADDER	12	125	185	110		TACO CA	2
ET-402	MECH PENTHOUSE	CHILLED WATER	BLADDER	12	125	185	110		TACO CA	2
BUFFER TANKS										
BT-402	MECH PENTHOUSE	CHILLED WATER	4-PORT BUFFER	-	125	2,500	-	6	TACO MPT	

GENERAL NOTES:

A. FLOOR MOUNTED TANK INSTALLED ON 4-INCH HOUSEKEEPING PAD.

B. DESIGNED AND CONSTRUCTED PER ASME CODE SECTION VIII DIVISION 1.

NOTES:

1. TANK SIZE BASED ON MINIMUM TEMPERATURE 40°F, MAXIMUM TEMPERATURE 140°F.

2. TANK SIZE BASED ON MINIMUM TEMPERATURE 40°F, MAXIMUM TEMPERATURE 100°F.

PRCNC20221036

BUILDING PERMIT SET

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STATE OF WASHINGTON 51382 REGISTERED PROFESSIONAL ENGINEER 6/27/2022

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

M004

BREAK HORSEPOWER AHU-1

SYSTEM NAME	JURISDICTION:	CODE REFERENCE:	SYSTEM TYPE:	SYSTEM SUPPLY (CFMS):	CREDITS							OPTION 2 FAN SYSTEM BHP	OPTION 2 FAN SYSTEM 90% BHP
					INCLUDED?	DEVICE	ADJUSTMENT	ADDITIONAL INPUT	PD	CFMD	A		
AHU-1	WASHINGTON	WA ENERGY CODE 2019 - C403.8.1 2018	VARIABLE VOLUME	22,000 CFM	YES	RETURN OR EXHAUST SYSTEMS REQUIRED BY CODE OR ACCREDITATION STANDARDS TO BE FULLY DUCTED, OR SYSTEMS REQUIRED TO MAINTAIN AIR PRESSURE DIFFERENTIALS BETWEEN ADJACENT ROOMS.	0.5 IN. OF WATER (2.15 IN. OF WATER FOR LABORATORY AND VIVARIUM SYSTEMS)	N/A	0.5	22000	2.66	≤ 47.39 bhp	42.65
					YES	RETURN AND/OR EXHAUST AIRFLOW CONTROL DEVICES	0.5 IN. OF WATER	-	0.5	22000	2.66		
					YES	EXHAUST FILTERS, SCRUBBERS, OR OTHER EXHAUST TREATMENT	THE PRESSURE DROP OF DEVICE CALCULATED AT FAN SYSTEM DESIGN CONDITION	0.16	0.16	22000	0.85		
					NO	PARTICULATE FILTRATION CREDIT: MERV 9 THROUGH 12	0.5 IN. OF WATER	-	-	-	-		
					YES	PARTICULATE FILTRATION CREDIT: MERV 13 THROUGH 15	0.9 IN. OF WATER	-	0.9	20000	4.36		
					NO	PARTICULATE FILTRATION CREDIT: MERV 16 AND GREATER AND ELECTRONICALLY ENHANCED FILTERS	PRESSURE DROP CALCULATED AT 2× CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	CARBON AND OTHER GAS-PHASE AIR CLEANERS	CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	BIOSAFETY CABINET	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	ENERGY RECOVERY DEVICE, OTHER THAN COIL RUNAROUND LOOP	FOR EACH AIRSTREAM [(2.2 × ENTHALPY RECOVERY RATIO) - 0.5] IN. OF WATER	0.5	-	9000	-		
								2		9000	0.00		
					YES	COIL RUNAROUND LOOP	0.6 IN. OF WATER FOR EACH AIRSTREAM	2	1.2	22000	6.39		
					NO	EVAPORATIVE HUMIDIFIER/COOLER IN SERIES WITH ANOTHER COOLING COIL	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	SOUND ATTENUATION SECTION (FANS SERVING SPACES WITH DESIGN BACKGROUND NOISE GOALS BELOW NC35)	0.15 IN. OF WATER	-	-	-	-		
					YES	EXHAUST SYSTEM SERVING FUME HOODS	0.35 IN. OF WATER	-	0.35	22000	1.86		
					NO	LABORATORY AND VIVARIUM EXHAUST SYSTEMS IN HIGH-RISE BUILDINGS	0.25 IN. OF WATER/100 FT OF VERTICAL DUCT EXCEEDING 75 FT	-	-	-	-		
					DEDUCTIONS								
					NO	SYSTEMS WITHOUT CENTRAL COOLING DEVICE	-0.6 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITHOUT CENTRAL HEATING DEVICE	-0.3 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITH CENTRAL ELECTRIC RESISTANCE HEAT	-0.2 IN. OF WATER	-	-	-	-		
											18.79		

BREAK HORSEPOWER AHU-3

SYSTEM NAME	JURISDICTION:	CODE REFERENCE:	SYSTEM TYPE:	SYSTEM SUPPLY (CFMS):	CREDITS							OPTION 2 FAN SYSTEM BHP	OPTION 2 FAN SYSTEM 90% BHP
					INCLUDED?	DEVICE	ADJUSTMENT	ADDITIONAL INPUT	PD	CFMD	A		
AHU-3	WASHINGTON	WA ENERGY CODE 2019 - C403.8.1 2018	VARIABLE VOLUME	31,000 CFM	NO	RETURN OR EXHAUST SYSTEMS REQUIRED BY CODE OR ACCREDITATION STANDARDS TO BE FULLY DUCTED, OR SYSTEMS REQUIRED TO MAINTAIN AIR PRESSURE DIFFERENTIALS BETWEEN ADJACENT ROOMS.	0.5 IN. OF WATER (2.15 IN. OF WATER FOR LABORATORY AND VIVARIUM SYSTEMS)	N/A	-	-	-	≤ 53.88 bhp	48.50
					NO	RETURN AND/OR EXHAUST AIRFLOW CONTROL DEVICES	0.5 IN. OF WATER	-	-	-	-		2018 WSEC C403.6.10 requirement 9
					YES	EXHAUST FILTERS, SCRUBBERS, OR OTHER EXHAUST TREATMENT	THE PRESSURE DROP OF DEVICE CALCULATED AT FAN SYSTEM DESIGN CONDITION	0.11	0.11	13950	0.37		
					NO	PARTICULATE FILTRATION CREDIT: MERV 9 THROUGH 12	0.5 IN. OF WATER	-	-	27900	-		
					YES	PARTICULATE FILTRATION CREDIT: MERV 13 THROUGH 15	0.9 IN. OF WATER	-	0.9	31000	6.75		
					NO	PARTICULATE FILTRATION CREDIT: MERV 16 AND GREATER AND ELECTRONICALLY ENHANCED...	PRESSURE DROP CALCULATED AT 2× CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIG...	-	-	-	-		
					NO	CARBON AND OTHER GAS-PHASE AIR CLEANERS	CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	BIOSAFETY CABINET	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					YES	ENERGY RECOVERY DEVICE, OTHER THAN COIL RUNAROUND LOOP	FOR EACH AIRSTREAM [(2.2 × ENTHALPY RECOVERY RATIO) - 0.5] IN. OF WATER	0.662	0.9564	13950	6.46		
								2		13950	0.00		
					NO	COIL RUNAROUND LOOP	0.6 IN. OF WATER FOR EACH AIRSTREAM	-	-	-	-		
					NO	EVAPORATIVE HUMIDIFIER/COOLER IN SERIES WITH ANOTHER COOLING COIL	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	SOUND ATTENUATION SECTION (FANS SERVING SPACES WITH DESIGN BACKGROUND NOISE...	0.15 IN. OF WATER	-	-	-	-		
					NO	EXHAUST SYSTEM SERVING FUME HOODS	0.35 IN. OF WATER	-	-	-	-		
					NO	LABORATORY AND VIVARIUM EXHAUST SYSTEMS IN HIGH-RISE BUILDINGS	0.25 IN. OF WATER/100 FT OF VERTICAL DUCT EXCEEDING 75 FT	-	-	-	-		
					DEDUCTIONS								
					NO	SYSTEMS WITHOUT CENTRAL COOLING DEVICE	-0.6 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITHOUT CENTRAL HEATING DEVICE	-0.3 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITH CENTRAL ELECTRIC RESISTANCE HEAT	-0.2 IN. OF WATER	-	-	-	-		
											13.58		

BREAK HORSEPOWER AHU-4

SYSTEM NAME	JURISDICTION:	CODE REFERENCE:	SYSTEM TYPE:	SYSTEM SUPPLY (CFMS):	CREDITS							OPTION 2 FAN SYSTEM BHP	OPTION 2 FAN SYSTEM 90% BHP
					INCLUDED?	DEVICE	ADJUSTMENT	ADDITIONAL INPUT	PD	CFMD	A		
AHU-4	WASHINGTON	WA ENERGY CODE 2019 - C403.8.1 2018	VARIABLE VOLUME	20,000 CFM	NO	RETURN OR EXHAUST SYSTEMS REQUIRED BY CODE OR ACCREDITATION STANDARDS TO BE FULLY DUCTED, OR SYSTEMS REQUIRED TO MAINTAIN AIR PRESSURE DIFFERENTIALS BETWEEN ADJACENT ROOMS.	0.5 IN. OF WATER (2.15 IN. OF WATER FOR LABORATORY AND VIVARIUM SYSTEMS)	N/A	-	-	-	≤ 37.41 bhp	33.67
					NO	RETURN AND/OR EXHAUST AIRFLOW CONTROL DEVICES	0.5 IN. OF WATER	-	-	-	-		2018 WSEC C403.6.10 requirement 9
					YES	EXHAUST FILTERS, SCRUBBERS, OR OTHER EXHAUST TREATMENT	THE PRESSURE DROP OF DEVICE CALCULATED AT FAN SYSTEM DESIGN CONDITION	0.18	0.18	13950	0.61		
					NO	PARTICULATE FILTRATION CREDIT: MERV 9 THROUGH 12	0.5 IN. OF WATER	-	-	-	-		
					YES	PARTICULATE FILTRATION CREDIT: MERV 13 THROUGH 15	0.9 IN. OF WATER	-	0.9	31000	6.75		
					NO	PARTICULATE FILTRATION CREDIT: MERV 16 AND GREATER AND ELECTRONICALLY ENHANCED...	PRESSURE DROP CALCULATED AT 2× CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIG...	-	-	-	-		
					NO	CARBON AND OTHER GAS-PHASE AIR CLEANERS	CLEAN FILTER PRESSURE DROP AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	BIOSAFETY CABINET	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					YES	ENERGY RECOVERY DEVICE, OTHER THAN COIL RUNAROUND LOOP	FOR EACH AIRSTREAM [(2.2 × ENTHALPY RECOVERY RATIO) - 0.5] IN. OF WATER	0.5	0.6	13950	4.05		
								2		13950	0.00		
					NO	COIL RUNAROUND LOOP	0.6 IN. OF WATER FOR EACH AIRSTREAM	-	-	-	-		
					NO	EVAPORATIVE HUMIDIFIER/COOLER IN SERIES WITH ANOTHER COOLING COIL	PRESSURE DROP OF DEVICE AT FAN SYSTEM DESIGN CONDITION	-	-	-	-		
					NO	SOUND ATTENUATION SECTION (FANS SERVING SPACES WITH DESIGN BACKGROUND NOISE...	0.15 IN. OF WATER	-	-	-	-		
					NO	EXHAUST SYSTEM SERVING FUME HOODS	0.35 IN. OF WATER	-	-	-	-		
					NO	LABORATORY AND VIVARIUM EXHAUST SYSTEMS IN HIGH-RISE BUILDINGS	0.25 IN. OF WATER/100 FT OF VERTICAL DUCT EXCEEDING 75 FT	-	-	-	-		
					DEDUCTIONS								
					NO	SYSTEMS WITHOUT CENTRAL COOLING DEVICE	-0.6 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITHOUT CENTRAL HEATING DEVICE	-0.3 IN. OF WATER	-	-	-	-		
					NO	SYSTEMS WITH CENTRAL ELECTRIC RESISTANCE HEAT	-0.2 IN. OF WATER	-	-	-	-		
											11.41		

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

M005

BUILDING PERMIT SET

MINIMUM AVERAGE FULL-LOAD EFFICIENCY SMALL MOTORS (%) (WASHINGTON)

MOTOR HP	OPEN MOTORS					
	POLYPHASE			CAPACITOR & INDUCTION		
NUMBER OF POLES	2	4	6	2	4	6
SYNCHRONOUS SPEED (RPM)	3,600	1,800	1,200	3,600	1,800	1,200
0.25	65.6	69.5	67.5	66.6	68.5	62.2
0.33	69.5	73.4	71.4	70.5	72.4	66.6
0.5	73.4	78.2	75.3	72.4	76.2	76.2
0.75	76.8	81.1	81.7	76.2	81.8	80.2
1	77	83.5	82.5	80.4	82.6	81.1
1.5	84	86.5	83.8	81.5	83.8	
2	85.5	86.5		82.9	84.5	
3	85.5	86.9		84.1		

GENERAL NOTES:
A. AVERAGE FULL LOAD EFFICIENCIES SHALL BE ESTABLISHED IN ACCORDANCE WITH 10 CFR 431

MINIMUM NOMINAL FULL-LOAD EFFICIENCY (%) (WASHINGTON)

MOTOR		NEMA DESIGN A, NEMA DESIGN B, AND IEC DESIGN N MOTORS (EXCLUDING FIRE PUMP)								NEMA DESIGN C AND IEC DESIGN H MOTORS AT 60HZ					
		2 POLE		4 POLE		6 POLE		8 POLE		4 POLE		6 POLE		8 POLE	
HP	KW	ENCLOSED	OPEN	ENCLOSED	OPEN	ENCLOSED	OPEN	ENCLOSED	OPEN	ENCLOSED	OPEN	ENCLOSED	OPEN	ENCLOSED	OPEN
1	0.75	77	77	85.5	85.5	82.5	82.5	75.5	75.5	85.5	85.5	82.5	82.5	75.5	75.5
1.5	1.1	84	84	86.5	86.5	87.5	86.5	78.5	77.5	86.5	86.5	87.5	86.5	78.5	77.5
2	1.5	85.5	85.5	86.5	86.5	88.5	87.5	84	86.5	86.5	86.5	88.5	87.5	84	86.5
3	2.2	86.5	85.5	89.5	89.5	89.5	88.5	85.5	87.5	89.5	89.5	89.5	88.5	85.5	87.5
5	3.7	88.5	86.5	89.5	89.5	89.5	89.5	86.5	88.5	89.5	89.5	89.5	89.5	86.5	88.5
7.5	5.5	89.5	88.5	91.7	91	91	90.2	86.5	89.5	91.7	91	91	90.2	86.5	89.5
10	7.5	90.2	89.5	91.7	91.7	91	91.7	89.5	90.2	91.7	91.7	91	91.7	89.5	90.2
15	11	91	90.2	92.4	93	91.7	91.7	89.5	90.2	92.4	93	91.7	91.7	89.5	90.2
20	15	91	91	93	93	91.7	92.4	90.2	91	93	93	91.7	92.4	90.2	91
25	18.5	91.7	91.7	93.6	93.6	93	93	90.2	91	93.6	93.6	93	93	90.2	91
30	22	91.7	91.7	93.6	94.1	93	93.6	91.7	91.7	93.6	94.1	93	93.6	91.7	91.7
40	30	92.4	92.4	94.1	94.1	94.1	94.1	91.7	91.7	94.1	94.1	94.1	94.1	91.7	91.7
50	37	93	93	94.5	94.5	94.1	94.1	92.4	92.4	94.5	94.5	94.1	94.1	92.4	92.4
60	45	93.6	93.6	95	95	94.5	94.5	92.4	93	95	95	94.5	94.5	92.4	93
75	55	93.6	93.6	95.4	95	94.5	94.5	93.6	94.1	95.4	95	94.5	94.5	93.6	94.1
100	75	94.1	93.6	95.4	95.4	95	95	93.6	94.1	95.4	95.4	95	95	93.6	94.1
125	90	95	94.1	95.4	95.4	95	95	94.1	94.1	95.4	95.4	95	95	94.1	94.1
150	110	95	94.1	95.8	95.8	95.8	95.4	94.1	94.1	95.8	95.8	95.8	95.4	94.1	94.1
200	150	95.4	95	96.2	95.8	95.8	95.4	94.5	94.1	96.2	95.8	95.8	95.4	94.5	94.1
250	186	95.8	95	96.2	95.8	95.8	95.8	95	95						
300	224	95.8	95.4	96.2	95.8	95.8	95.8								
350	261	95.8	95.4	96.2	95.8	95.8	95.8								
400	298	95.8	95.8	96.2	95.8										
450	336	95.8	96.2	96.2	96.2										
500	373	95.8	96.2	96.2	96.2										

GENERAL NOTES:
A. NOMINAL EFFICIENCIES SHALL BE ESTABLISHED IN ACCORDANCE WITH DOE 10 CFR 431.
B. FOR PURPOSES OF DETERMINING THE REQUIRED MINIMUM NOMINAL FULL-LOAD EFFICIENCY OF AN ELECTRIC MOTOR THAT HAS A HORSEPOWER OR KILOWATT RATING BETWEEN TWO HORSEPOWER OR TWO KILOWATT RATINGS LISTED IN THIS TABLE, EACH SUCH MOTOR SHALL BE DEEMED TO HAVE A LISTED HORSEPOWER OR KILOWATT RATING, DETERMINED AS FOLLOWS:
1. A HORSEPOWER AT OR ABOVE THE MIDPOINT BETWEEN THE TWO CONSECUTIVE HORSEPOWERS SHALL BE ROUNDED UP TO THE HIGHER OF THE TWO HORSEPOWERS.
2. A HORSEPOWER BELOW THE MIDPOINT BETWEEN THE TWO CONSECUTIVE HORSEPOWERS SHALL BE ROUNDED DOWN TO THE LOWER OF THE TWO HORSEPOWERS.
3. A KILOWATT RATING SHALL BE DIRECTLY CONVERTED FROM KILOWATTS TO HORSEPOWER USING THE FORMULA 1 KW = (1/0.746) HORSEPOWER. THE CONVERSION SHOULD BE CALCULATED TO THREE SIGNIFICANT DECIMAL PLACES, AND THE RESULTING HORSEPOWER SHALL BE ROUNDED IN ACCORDANCE WITH 1 OR 2, WHICHEVER APPLIES.

MECHNICAL PIPE MATERIAL SCHEDULE

SERVICE	MAX OPERATING PRESSURE (PSI)	MAX OPERATING TEMPERATURE (°F)	LOCATION	SIZE	DESCRIPTION	NOTES
HEATING HOT WATER (HHW)	TBD	110	ABOVE GRADE	SMALL BORE 2" & SMALLER	PIPE: COPPER, HARD DRAWN TUBING, TYPE L, ASTM B88 FITTINGS: WROUGHT COPPER, ANSI B16.22, 150 PSI JOINTS: WHERE CONCEALED - SOLDER, WHERE ACCESSIBLE - PRO PRESS	1
				LARGE BORE 2-1/2" & LARGER	PIPE: BLACK STEEL, SHCEDULE 40 , ASTM A135 OR A53 FITTINGS: CLASS 150, DUCTILE IRON, ASTM A536, GRADE 65-45-12 JOINTS: WHERE CONCEALED - WELDED, WHERE ACCESSIBLE - MECHANICAL COUPLINGS	1
CHILLED WATER (CHW)	TBD	70	ABOVE GRADE	SMALL BORE 2" & SMALLER	PIPE: COPPER, HARD DRAWN TUBING, TYPE L, ASTM B88 FITTINGS: WROUGHT COPPER, ANSI B16.22, 150 PSI JOINTS: WHERE CONCEALED - SOLDER, WHERE ACCESSIBLE - PRO PRESS	1
				LARGE BORE 2-1/2" & LARGER	PIPE: BLACK STEEL, SHCEDULE 40 , ASTM A135 OR A53 FITTINGS: CLASS 150, DUCTILE IRON, ASTM A536, GRADE 65-45-12 JOINTS: WHERE CONCEALED - WELDED, WHERE ACCESSIBLE - MECHANICAL COUPLINGS	1
COIL CONDENSATE DRAINS AND INDIERECT DRAINS (D)	40	70	ABOVE GRADE	1/2" & LARGER	PIPE: COPPER, HARD DRAWN TUBING, TYPE L, ASTM B88 FITTINGS: WROUGHT COPPER, ANSI B16.22, 150 PSI JOINTS: WHERE CONCEALED - SOLDER, WHERE ACCESSIBLE - PRO PRESS	1

GENERAL NOTES:
A. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
NOTES:
1. REFER TO WA STATE CODE INSULATION SCHEDULE FOR INSULATION THICKNESS AND PERFORMANCE.
2. USE MANUFACTURE RECOMMENDED INSULATION.

MINIMUM PIPE INSULATION (WASHINGTON)

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE DIAMETER (IN)				
	CONDUCTIVITY (BTU-IN/(HR-SF-°F))	MEAN RATING TEMPERATURE (°F)	< 1	1 TO < 1-1/2	1-1/2 TO < 4	4 TO < 8	> 8
			NOMINAL INSULATION THICKNESS (IN)				
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5

GENERAL NOTES:
A. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
B. FOR PIPING SMALLER THAN 1-1/2 INCH AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION FOR THESE THICKNESSES BY 1 INCH (25 MM) IS PERMITTED (BEFORE THICKNESS ADJUSTMENT REQUIRED IN GENERAL NOTE D) BUT NOT TO A THICKNESS LESS THAN 1 INCH.
C. FOR DIRECT-BURIED HEATING AND HOT WATER SYSTEM PIPING, REDUCTION OF THESE THICKNESSES BY 1-1/2 INCHES IS PERMITTED (BEFORE THICKNESS ADJUSTMENT REQUIRED IN NOTE D) BUT NOT TO THICKNESSES LESS THAN 1 INCH.
D. FOR INSULATION OUTSIDE THE STATED CONDUCTIVITY RANGE, DETERMINE THE MINIMUM THICKNESS (T) AS FOLLOWS:
$T = r\{(1 + t/r)^{(K/k)} - 1\}$
WHERE:
T = MINIMUM INSULATION THICKNESS
r = ACTUAL OUTSIDE RADIUS OF THE PIPE
t = INSULATION THICKNESS LISTED IN THE TABLE FOR APPLICABLE FLUID TEMPERATURE AND PIPE SIZE
K = CONDUCTIVITY OF ALTERNATE MATERIAL AT MEAN RATING TEMPERATURE INDICATED FOR THE APPLICABLE FLUID TEMPERATURE (BTU-IN/(HR-SF-°F))
k = THE UPPER VALUE OF THE CONDUCTIVITY RANGE LISTED INTHE TABLE FOR THE APPLCIABLE FLUID TEMPERATURE

WSEC 2018 - COMMISSIONING

GENERAL
THE FOLLOWING SECTIONS IN THIS TABLE ARE REQUIRED TO BE PERFORMED AND COMPLETED BY A CERTIFIED COMMISSIONING PROFESSIONAL.

COMMISSIONING PLAN
COMMISSIONING PLAN REQUIRED TO BE DEVELOPED BY A CERTIFIED COMMISSIONING PROFESSIONAL COMPLYING WITH ALL THE REQUIREMENTS LISTED IN THE WSEC SECTION C408.1.

COMMISSIONED SYSTEMS
COMMISSIONING FOR MECHANICAL SYSTEMS MUST BE COMPLETED BY A CERTIFIED COMMISSIONING PROFESSIONAL FOR ALL SYSTEMS LISTED IN WASHINGTON STATE ENERGY CODE (WSEC) SECTION C408.1.

ALL HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH WSEC SECTION C408.2.2.

FUNCTIONAL PERFORMANCE TESTS SHALL BE PERFORMED ON ALL EQUIPMENT, SYSTEMS AND CONTROLS IN ACCORDANCE WITH WSEC SECTION C408.2.3. WRITTEN TEST PROCEDURES AND RESULTS SHALL BE DOCUMENTED. TESTS SHALL INCLUDE ALL MODES AND SEQUENCE OF OPERATION INCLUDING FULL-LOAD, PART-LOAD AND EMERGENCY CONDITIONS LISTED IN WSEC SECTION C408.2.3.1.

VERIFY SERVICE HOT WATER HEATING SYSTEMS COMMISSIONING SATISFIES ALL THE REQUIREMENTS OF WSEC SECTION C408.4.

VERIFY METERING SYSTEM COMMISSIONING SATISFIES ALL THE REQUIREMENTS OF WSEC SECTION C408.6.

SUPPORTING DOCUMENTS (C103.6)
SYSTEM DOCUMENTATION AND MANUALS TO BE PROVIDED TO OWNER PRIOR TO CERTIFICATION.
RECORD DOCUMENTS TO BE PROVIDED TO OWNER PRIOR TO CERTIFICATION.
TRAINING WILL BE PROVIDED TO THE OWNER PRIOR TO CERTIFICATION.

PRELIMINARY COMMISSIONING REPORT (C408.1.4.1)
PRELIMINARY COMMISSION TO BE PROVIDED TO OWNER WILL INCLUDE:
1. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING THAT ARE PART OF THE ENERGY CODE AND THAT WERE NOT CORRECTED BY THE TIME OF REPORT PREPARATION.
2. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION WITH THE ANTICIPATED COMPLETION DATE.
3. STATUS OF THE PROJECT SUPPORTING DOCUMENTS (SEE ABOVE).

FINAL COMMISSIONING REPORT (C408.1.3)
PROVIDE A FINAL COMMISSIONING REPORT, INCLUDING ALL THE REQUIREMENTS STATED IN SECTION C408.1.3, COMPLETED AND CERTIFIED BY THE CERTIFIED COMMISSIONING PROFESSIONAL AND DELIVERED TO THE BUILDING OWNER PRIOR TO THE FINAL INSPECTIONS OR OBTAINING A CERTIFICATE OF OCCUPANCY. INCLUDE THE FOLLOWING IN THE REPORT:
1. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
3. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.

MECHANICAL HVAC DUCT MATERIAL SCHEDULE

SERVICE	SMACNA PRESSURE CLASS	MATERIAL	LOCATION	INSULATION TYPE	NOTE
LOW PRESSURE SUPPLY AIR	+2" WG	GALVANIZED DUCT	EXPOSED OR VISIBLE	INTERNALLY LINED	
			CONCEALED OR IN MECHANICAL ROOMS	FIBERGLASS BLANKET	
			DOWNSTREAM OF AIR TERMINAL UNITS	INTERNALLY LINED	
			DOWNSTREAM OF FAN COIL UNITS	INTERNALLY LINED	
MEDIUM PRESSURE SUPPLY AIR	+6" WG	GALVANIZED DUCT	EXPOSED OR VISIBLE	INTERNALLY LINED	
			CONCEALED OR IN MECH ROOM	FIBERGLASS BLANKET	
			EXPOSED OUTSIDE BUILDING ENVELOPE	INTERNALLY LINED	
			UPSTREAM OF TERMINAL UNITS	INTERNALLY LINED	
LOW PRESSURE EXHAUST AIR	-2" WG	GALVANIZED DUCT	EXPOSED OR VISIBLE	NONE	
			CONCEALED OR IN MECHANICAL ROOMS	NONE	
			UPSTREAM OF TERMINAL UNITS	NONE	
			ALL ELSE	NONE	
LAB/FUME HOOD EXHAUST AIR	-6" WG	16 GAUGE 316 STAINLESS STEEL	BRANCHES TO FUME HOODS	NONE	
		16 GAUGE GALVANIZED DUCT	ALL ELSE	NONE	
TRANSFER AIR DUCT / RETURN AIR BOOTS	+/- 1" WG	GALVANIZED DUCT	ALL	INTERNALLY LINED	

GENERAL NOTES:
A. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
B. PRESSURE AND LEAKAGE DUCT TESTING PER UW STANDARDS.
NOTES:
1. NONE.

MINIMUM DUCT INSULATION (WASHINGTON)

DUCT SYSTEM	DUCT LOCATION	DUCT USE		CLIMATE ZONE	AIRFLOW	INSULATION R-VALUE	NOTES
OUTDOOR AIR	INSIDE CONDITIONED SPACE	UPSTREAM OF AUTOMATIC SHUTOFF DAMPER		4C & 5B	≥ 2,800 CFM	R-16	1
		DOWNSTREAM OF AUTOMATIC SHUTOFF DAMPER TO HVAC UNIT OR ROOM		4B	≥ 2,800 CFM	R-8	
				5B		R-12	
		INSIDE CONDTIONED SPACE		4C & 5B	< 2,800 CFM	R-7	1
SUPPLY AIR OR RETURN AIR	OUTSIDE THE BUILDING	OUTDOORS AND EXPOSED TO WEATHER		4C	ALL CFM	R-8	2
				5B		R-12	
	UNCONDITIONED SPACE	ENCLOSED BUT NOT IN CONDTIONED ENVELOPE		4C & 5B		R-6	2
		15°F BETWEEN INSIDE AND OUTSIDE OF DUCT		4C & 5B		R-3.3	3
	INSIDE THE BUILDING	IN A BUILDING ENVELOPE ASSEMBLY		4C & 5B		R-16	4
SUPPLY AIR	WITHIN CONDTIONED SPACE	SUPPLY AIR < 55°F OR SUPPLY AIR >105°F	DUCT OUTSIDE OF SPACE DIRECTLY SERVED	4C & 5B		R-3.3	2
			DUCT INSIDE OF SPACE DIRECTLY SERVED	4C & 5B		NONE	2
		SUPPLY AIR > 55°F OR SUPPLY AIR <105°F		4C & 5B		NONE	
RETURN AIR OR EXHAUST AIR		DOWNSTREAM OF ENERGY RECOVERY & UPSTREAM OF AUTOMATIC SHUTOFF DAMPER		4C		R-8	
				5B		R-12	
RELEIF AIR OR EXHAUST AIR		DOWNSTREAM OF AUTOMATIC SHUTOFF DAMPER		4C & 5B		R-16	

GENERAL NOTES:
A. INSULATION R-VALUES, MEASURED IN H·SF·°F/BTU, ARE FOR THE INSULATION AS INSTALLED AND DO NOT INCLUDE FILM RESISTANCE. THE REQUIRED MINIMUM THICKNESSES DO NOT CONSIDER WATER VAPOR TRANSMISSION AND POSSIBLE SURFACE CONDENSATION. INSULATION RESISTANCE MEASURED ON A HORIZONTAL PLANE IN ACCORDANCE WITH ASTM C518 AT A MEAN TEMPERATURE OF 75°F AT THE INSTALLED THICKNESS.
B. SEE INTERNATIONAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUCT INSULATION REQUIREMENTS.
C. OUTSIDE THE BUILDING INCLUDES ATTICS ABOVE INSULATED CEILINGS, PARKING GARAGES AND CRAWL SPACES.
NOTES:
1. SEE SECTION c403.10.1.1 FOR ADDITIONAL REQUIREMENTS.
2. SEE SECTION C403.10.2 FOR DETAILS.
3. SEE IMC SECTION 603.12 FOR ADDITIONAL REQUIREMENTS FOR CONDENSATION CONTROL AT DUCTWORK.
4. DUCT OR PLENUM IS SEPERATED FROM BUILDING ENVELOPE ASSEMBLY WITH THE MINIMUM INSULATION VALUE.

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STATE OF WASHINGTON
51382
REGISTERED PROFESSIONAL ENGINEER
6/27/2022

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

PRCNC20221036

M006

BUILDING PERMIT SET

VENTILATION SCHEDULE - MULTIPLE SPACES - WASHINGTON

AHU-1

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIRFLOW RATE Vbz (CFM)	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	OUTDOOR AIR INTAKE Voz (CFM)	PRIMARY OUTDOOR AIR FRACTION Zp	NOTES
231 BIOLOGY AP LAB	1283	1184	Science Laboratories	10	0.18	25	32.1	32.1	551.7	0.8	690	0.58	
232 MICROBIOLOGY LAB	1204	1268	Science Laboratories	10	0.18	25	30.1	30.1	517.7	0.8	648	0.51	
232A BULK STORAGE	152	45	Storage rooms, chemical	--	--	--	0.0	-	0.0	0.8	0	0.00	
233 BIOLOGY PREP	1253	723	Science Laboratories	10	0.18	25	31.3	31.3	538.8	0.8	674	0.93	
233A SPECIMEN STORAGE	152	45	Storage rooms, chemical	--	--	--	0.0	-	0.0	0.8	0	0.00	
234 GENERAL BIOLOGY LAB	1166	1245	Science Laboratories	10	0.18	25	29.2	29.2	501.4	0.8	627	0.50	
235 GENERAL BIOLOGY LAB	1256	1913	Science Laboratories	10	0.18	25	31.4	31.4	540.1	0.8	676	0.35	
312 GENERAL CHEMISTRY	1453	389	Science Laboratories	10	0.18	25	36.3	36.3	624.8	0.8	781	2.01	
314 CHEMISTRY PREP/STOCKROOM	611	425	Science Laboratories	10	0.18	25	15.3	15.3	262.7	0.8	329	0.77	
314A BULK	173	65	Storage rooms, chemical	--	--	--	0.0	-	0.0	0.8	0	0.00	
314B ORGANIC STORAGE	120	45	Storage rooms, chemical	--	--	--	0.0	-	0.0	0.8	0	0.00	
314C INORGANIC STORAGE	120	451	Storage rooms, chemical	--	-	--	0.0	-	0.0	0.8	0	0.00	
316 ORGANIC CHEMISTRY LAB	1454	1479	Science Laboratories	10	0.18	25	36.4	36.4	625.2	0.8	782	0.53	
318 CHEMISTRY INSTRUMENT ROOM	902	428	Science Laboratories	10	0.18	25	22.6	22.6	387.9	0.8	485	1.13	
TOTALS:	11299	9707					265	265	4550		5692	Zp max = 2.01	

TOTAL AIRFLOW: 5,000
SYSTEM POPULATION: 50

SYSTEM VENTILATION EFFICIENCY - Ev: 0.30
OCCUPANT DIVERSITY - D: 0.19
UNCORRECTED OUTDOOR AIR INTAKE - Vou: 2,405
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE - Vot: 8,016

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE SECTION 403 OF THE 2018 INTERNATIONAL MECHANICAL CODE WITH WASHINGTON AMMENDMENTS.
B. REFER TO AIR HANDLING UNIT SCHEDULE FOR ACTUAL OUTDOOR AIR FLOW RATE.
NOTES:
1. DESIGN OCCUPANCY REPRESENTS THE ACTUAL OCCUPANCY DOCUMENTED ON THE PLANS, WHICH IS NOT LESS THAN 1/2 THE CODE OCCUPANCY.

VENTILATION SCHEDULE - MULTIPLE SPACES - WASHINGTON

AHU-3

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIRFLOW RATE Vbz (CFM)	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	OUTDOOR AIR INTAKE Voz (CFM)	PRIMARY OUTDOOR AIR FRACTION Zp	NOTES
100 LOBBY	1903	800	Main entry lobbies	5	0.06	10	19.0	22.0	224.2	0.8	281	0.35	
100 LOBBY DOUBLE HEIGHT	747	1100	Main entry lobbies	5	0.06	10	7.5	12.0	104.8	0.8	132	0.12	
101 CLASSROOM	831	1030	Classrooms (age 9 plus)	10	0.12	35	29.1	32.0	419.7	0.8	525	0.51	
102 CLASSROOM	827	975	Classrooms (age 9 plus)	10	0.12	35	28.9	30.0	399.2	0.8	500	0.51	
103 WORKSTATIONS	455	130	Office spaces	5	0.06	5	2.3	5.0	52.3	0.8	66	0.51	
103A STUDY ROOM, 103F WORKROOM	245	115	Conference rooms	5	0.06	50	12.3	7.0	49.7	0.8	63	0.55	
103B, 103C, 103D OFFICE, 103E DOUBLE OFFICE	441	275	Office spaces	5	0.06	5	2.2	8.0	66.5	0.8	84	0.31	
104 DOUBLE CLASSROOM	1462	1095	Lecture classroom	7.5	0.06	65	95.0	48.0	447.7	0.8	560	0.51	
124 GRAVITY LAB (1/2)	652	590	Classrooms (age 9 plus)	10	0.12	35	22.8	16.0	238.2	0.8	298	0.51	
124 GRAVITY LAB (1/2)	652	590	Classrooms (age 9 plus)	10	0.12	35	22.8	16.0	238.2	0.8	298	0.51	
200, 210 HALL	1942	315	Corridors serving other than Group R occupancies	--	0.06	--	0.0	-	116.5	0.8	146	0.46	
201 CLASSROOM	808	1170	Classrooms (age 9 plus)	10	0.12	35	28.3	38.0	477.0	0.8	597	0.51	
202 CLASSROOM	805	925	Classrooms (age 9 plus)	10	0.12	35	28.2	28.2	378.4	0.8	473	0.51	
203, 204, 205 OFFICE	377	230	Office spaces	5	0.06	5	1.9	8.0	62.6	0.8	79	0.34	
206 CONFERENCE ROOM	323	175	Conference rooms	5	0.06	50	16.2	10.0	69.4	0.8	87	0.50	
207 CLASSROOM	793	1110	Classrooms (age 9 plus)	10	0.12	35	27.8	36.0	455.2	0.8	569	0.51	
208 CLASSROOM	844	1125	Classrooms (age 9 plus)	10	0.12	35	29.5	36.0	461.3	0.8	577	0.51	
243 SHARED LEARNING	688	810	Classrooms (age 9 plus)	10	0.12	35	24.1	25.0	332.6	0.8	416	0.51	
300 SHARED LEARNING	492	700	Classrooms (age 9 plus)	10	0.12	35	17.2	21.0	269.0	0.8	337	0.48	
308 EARTH SCIENCE B LAB (1/2)	708	650	Classrooms (age 9 plus)	10	0.12	35	24.8	18.0	265.0	0.8	332	0.51	
308 EARTH SCIENCE B LAB (1/2)	708	650	Classrooms (age 9 plus)	10	0.12	35	24.8	18.0	265.0	0.8	332	0.51	
309 EARTH SCIENCE PREP	540	305	Office spaces	5	0.06	5	2.7	2.7	45.9	0.8	58	0.19	
309A LAB TECH OFFICE	102	175	Office spaces	5	0.06	5	0.5	1.0	11.1	0.8	14	0.08	
309B ROCK PREP	167	70	Office spaces	5	0.06	5	0.8	1.0	15.0	0.8	19	0.27	
310 EARTH SCIENCE A LAB (1/2)	919	710	Classrooms (age 9 plus)	10	0.12	35	32.2	18.0	290.3	0.8	363	0.51	
310 EARTH SCIENCE A LAB (1/2)	919	710	Classrooms (age 9 plus)	10	0.12	35	32.2	18.0	290.3	0.8	363	0.51	
TOTALS:	19350	16530					533	475	6045		7569	Zp max = 0.55	

TOTAL AIRFLOW: 16,530
SYSTEM POPULATION: 95

SYSTEM VENTILATION EFFICIENCY - Ev: 0.61
OCCUPANT DIVERSITY - D: 0.20
UNCORRECTED OUTDOOR AIR INTAKE - Vou: 2,649
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE - Vot: 4,325

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE SECTION 403 OF THE 2018 INTERNATIONAL MECHANICAL CODE WITH WASHINGTON AMMENDMENTS.
B. REFER TO AIR HANDLING UNIT SCHEDULE FOR ACTUAL OUTDOOR AIR FLOW RATE.
NOTES:
1. DESIGN OCCUPANCY REPRESENTS THE ACTUAL OCCUPANCY DOCUMENTED ON THE PLANS, WHICH IS NOT LESS THAN 1/2 THE CODE OCCUPANCY.

VENTILATION SCHEDULE - MULTIPLE SPACES - WASHINGTON

AHU-4

LOCATION	FLOOR AREA (SF)	PRIMARY AIRFLOW RATE (CFM)	OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE Rp (CFM/PERSON)	AREA OUTDOOR AIRFLOW RATE Ra (CFM/SF)	DEFAULT OCCUPANT DENSITY (PEOPLE/1000SF)	CODE POPULATION	DESIGN POPULATION	OUTDOOR AIRFLOW RATE Vbz (CFM)	ZONE AIR DISTRIBUTION EFFECTIVENESS Ez	OUTDOOR AIR INTAKE Voz (CFM)	PRIMARY OUTDOOR AIR FRACTION Zp	NOTES
122 MOTHER'S	64	25	Office spaces	5	0.06	5	0.3	1.0	8.8	0.8	12	0.48	
123 STUDY ROOM	106	30	Office spaces	5	0.06	5	0.5	1.0	11.4	0.8	15	0.50	
125 130, 142 HALL	1547	250	Corridors serving other than Group R occupancies	--	0.06	--	0.0	-	92.8	0.8	117	0.47	
131 PHYSICS SUPPORT	495	140	Office spaces	5	0.06	5	2.5	2.5	42.1	0.8	53	0.38	
132 PHYSICS	1469	1045	Classrooms (age 9 plus)	10	0.12	35	51.4	25.0	426.3	0.8	533	0.51	
133 CLASSROOM	908	1150	Classrooms (age 9 plus)	10	0.12	35	31.8	36.0	469.0	0.8	587	0.51	
134 IDEATION STUDIO	826	705	Classrooms (age 9 plus)	10	0.12	35	28.9	19.0	289.1	0.8	362	0.51	
135 FAB LAB (1/2)	782	675	Classrooms (age 9 plus)	10	0.12	35	27.4	18.0	273.8	0.8	343	0.51	
135 FAB LAB (1/2)	782	675	Classrooms (age 9 plus)	10	0.12	35	27.4	18.0	273.8	0.8	343	0.51	
135A CHECK-IN/WORKROOM	138	70	Office spaces	5	0.06	5	0.7	1.0	13.3	0.8	17	0.24	
136 WORKSTATIONS	283	140	Office spaces	5	0.06	5	1.4	5.0	42.0	0.8	53	0.38	
140 COLLABORATION LOUNGE	998	460	Conference rooms	5	0.06	50	49.9	25.0	184.9	0.8	232	0.50	
222 WORKROOM	201	45	Office spaces	5	0.06	5	1.0	1.0	17.1	0.8	22	0.49	
230, 242 HALL	1474	220	Corridors serving other than Group R occupancies	--	0.06	--	0.0	-	88.4	0.8	111	0.50	
233B LAB TECH OFFICE	137	85	Office spaces	5	0.06	5	0.7	2.0	18.2	0.8	23	0.27	
236 WORKSTATIONS	372	145	Office spaces	5	0.06	5	1.9	7.0	57.3	0.8	72	0.50	
240 SHARED LEARNING	801	630	Classrooms (age 9 plus)	10	0.12	35	28.0	16.0	256.1	0.8	321	0.51	
300 HALL	903	860	Corridors serving other than Group R occupancies	--	0.06	--	0.0	-	54.2	0.8	68	0.08	
302, 303, 304 OFFICE	385	150	Office spaces	5	0.06	5	1.9	6.0	53.1	0.8	67	0.45	
305, 306, 307 OFFICE	264	160	Office spaces	5	0.06	5	1.3	9.0	60.8	0.8	77	0.48	
312A LAB TECH OFFICE	104	105	Office spaces	5	0.06	5	0.5	1.0	11.2	0.8	15	0.14	
315 FIELD EQUIPMENT	150	40	Storage rooms, chemical	--	--	--	0.0	-	0.0	0.8	0	0.00	
319 DOUBLE OFFICE	231	315	Office spaces	5	0.06	5	1.2	1.2	19.6	0.8	25	0.08	
320 WORKSTATIONS	356	165	Office spaces	5	0.06	5	1.8	1.8	30.3	0.8	38	0.23	
330, 342 HALL	1418	210	Corridors serving other than Group R occupancies	--	0.06	--	0.0	-	85.1	0.8	107	0.51	
340 SHARED LEARNING	497	685	Classrooms (age 9 plus)	10	0.12	35	17.4	22.0	279.6	0.8	350	0.51	
343 HALL, 311 STUDY ROOM	495	130	Office spaces	5	0.06	5	2.5	4.0	49.7	0.8	63	0.48	
TOTALS:	16186	9310					280	222	3208		4026	Zp max = 0.51	

TOTAL AIRFLOW: 9,310
SYSTEM POPULATION: 160

SYSTEM VENTILATION EFFICIENCY - Ev: 0.77
OCCUPANT DIVERSITY - D: 0.72
UNCORRECTED OUTDOOR AIR INTAKE - Vou: 2,680
CODE REQUIRED OUTDOOR AIR INTAKE FLOWRATE - Vot: 3,461

GENERAL NOTES:
A. SYSTEM OUTDOOR AIR CALCULATION IS BASED ON THE SECTION 403 OF THE 2018 INTERNATIONAL MECHANICAL CODE WITH WASHINGTON AMMENDMENTS.
B. REFER TO AIR HANDLING UNIT SCHEDULE FOR ACTUAL OUTDOOR AIR FLOW RATE.
NOTES:
1. DESIGN OCCUPANCY REPRESENTS THE ACTUAL OCCUPANCY DOCUMENTED ON THE PLANS, WHICH IS NOT LESS THAN 1/2 THE CODE OCCUPANCY.

PRCNC20221036

BUILDING PERMIT SET

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

M007

Washington State
TSPR Analysis
Total System Performance Ratio for HVAC

1

BUILDING ENERGY TOTAL SYSTEM PERFORMANCE RATIO
U.S. DEPARTMENT OF ENERGY

BUILDING INFORMATION

Pierce College New STEM Building	Building Type:	**Education**	Analysis Date:	**06/24/2022**
1601 39th Ave SE	Gross Floor Area:	**53,997 ft²**	Building ID #:	**25331**
Puyallup, WA 98374	Year of Construction:	**2022**	Software Release:	2021.2.0.253

Whole Building Total System Performance Ratio

Proposed Building TSPR: 15
Baseline Building TSPR: 14

The Total System Performance Ratio complies with the 2018 Washington State Energy Code.

Total System Performance Ratio (TSPR) is the ratio of the sum of a building's annual heating and cooling load in thousands of BTUs to the sum of the annual carbon emissions in pounds from energy consumption of the building HVAC systems.

SUBMITTED BY

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Phone Number	(971) 245-8260

ANALYSIS PARAMETERS

Energy Code	2018 Washington State Energy Code
ASHRAE Climate Zone	4C, Mixed - Marine
Weather Station	Tacoma Mcchord Afb WA USA TMY3 WMO#=742060

The Total System Performance Ratio Analysis has been performed in accordance with the 2018 Washington State Energy Code.

System Checksums

By PAE Consulting Engineers, Inc.

LOADS LAST UPDATED 06/24/2022

Classroom/Office — **Fan Coil**

COOLING COIL PEAK / CLG SPACE PEAK

Cooling Coil Peak — Peaked at Time: Mo/Hr: 7 / 15; Outside Air: OADB/WB/HR: 86 / 65 / 61
Clg Space Peak — Mo/Hr: Sum of; OADB: Peaks

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads						
Skylite Solar	18,155	0	18,155	2	20,342	3
Skylite Cond	547	0	547	0	235	0
Roof Cond	20,814	0	20,814	3	16,711	3
Glass Solar	91,094	0	91,094	12	211,811	35
Glass/Door Cond	9,428	0	9,428	1	-7,886	-1
Wall Cond	14,420	0	14,420	2	15,195	3
Partition/Door	0		0	0	0	0
Floor	-11		-11	0	-19.99	0
Adjacent Floor	0.00	0.00	0.00	0.00	0.00	0.00
Infiltration	5,845		5,845	1	-1,656	0
Sub Total ==>	160,294	0	160,294	21	254,734	42
Internal Loads						
Lights	42,827	10,642	53,468	7	44,030	7
People	328,609	0	328,609	42	172,181	29
Misc	115,683	0	115,683	15	114,941	19
Sub Total ==>	487,119	10,642	497,760	64	331,152	55
Ceiling Load	0	0	0	0	0	0
Ventilation Load	0	0	108,017	14	0	0
Adj Air Trans Heat	0		0	0	0	0
Dehumid. Ov Sizing			0	0		
Ov/Undr Sizing	14,902		14,902	2	14,902	2
Exhaust Heat		-3,680	-3,680	0		
Sup. Fan Heat			0	0		
Ret. Fan Heat		0	0	0		
Duct Heat Pkup		0	0	0		
Underflr Sup Ht Pkup			0	0		
Supply Air Leakage		0	0	0		
Grand Total ==>	662,315	6,962	777,294	100.00	600,788	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design; OADB: 19

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	-5,100	-5,100	0.66
Roof Cond	-12,847	-12,847	1.65
Glass Solar	0	0	0.00
Glass/Door Cond	-52,019	-52,019	6.69
Wall Cond	-25,228	-25,228	3.24
Partition/Door	0	0	0.00
Floor	-65	-65	0.01
Adjacent Floor	0.00	0.00	0.00
Infiltration	-25,439	-25,439	3.27
Sub Total ==>	-120,698	-120,698	15.51
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-657,261	84.49
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	1	1	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		0	0.00
RA Preheat Diff.		0	0.00
Additional Reheat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	-120,698	-777,959	100.00

TEMPERATURES

	Cooling	Heating
SADB	55.0	74.0
Ra Plenum	75.0	70.0
Return	75.4	70.0
Ret/OA	80.0	48.1
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	27,239	27,239
Terminal	27,239	27,239
Main Fan	27,239	27,239
Sec Fan	0	0
Nom Vent	11,712	11,712
AHU Vent	11,712	11,712
Infil	453	453
MinStop/Rh	0	0
Return	23,734	23,734
Exhaust	8,207	8,207
Rm Exh	3,959	3,959
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	43.0	43.0
cfm/ft²	1.02	1.02
cfm/ton	420.53	
ft²/ton	410.52	
Btu/hr·ft²	29.23	-29.26
No. People	699	

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter HR gr/lb	Leave DB °F	Leave WB °F	Leave HR gr/lb
Main Clg	64.8	777.3	655.3	27,239	80.0	63.3	61.4	55.0	53.6	59.8
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	64.8	777.3								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	26,591		
Part	0		
Int Door	1		
ExFlr	14		
Roof	9,538	208	2
Wall	11,930	2,769	23
Ext Door	0	0	0

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-778.0	27,239	48.1	74.0
Aux Htg	0.0	0	0.0	0.0
Preheat	-207.7	27,239	48.1	55.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-778.0			

Project Name: 21-1194
Dataset Name: PIERCE STEM.TRC

TRACE® 700 v6.3.5 calculated at 01:49 PM on 06/24/2022

System Checksums

By PAE Consulting Engineers, Inc.

Lab — **Fan Coil**

COOLING COIL PEAK / CLG SPACE PEAK

Cooling Coil Peak — Peaked at Time: Mo/Hr: 7 / 15; Outside Air: OADB/WB/HR: 86 / 65 / 61
Clg Space Peak — Mo/Hr: Sum of; OADB: Peaks

	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)
Envelope Loads						
Skylite Solar	0	0	0	0	0	0
Skylite Cond	0	0	0	0	0	0
Roof Cond	19,577	0	19,577	2	13,207	2
Glass Solar	71,207	0	71,207	9	154,030	23
Glass/Door Cond	10,283	0	10,283	1	189	0
Wall Cond	14,977	0	14,977	2	17,933	3
Partition/Door	0		0	0	0	0
Floor	-857		-857	0	-603.41	0
Adjacent Floor	0.00	0.00	0.00	0.00	0.00	0.00
Infiltration	8,160		8,160	1	1,819	0
Sub Total ==>	123,348	0	123,348	15	186,575	28
Internal Loads						
Lights	61,365	15,341	76,706	10	61,413	9
People	207,184	0	207,184	26	106,540	16
Misc	311,324	0	311,324	39	311,745	47
Sub Total ==>	579,872	15,341	595,213	74	479,697	72
Ceiling Load	0	0	0	0	0	0
Ventilation Load	0	0	85,555	11	0	0
Adj Air Trans Heat	0		0	0	0	0
Dehumid. Ov Sizing			0	0		
Ov/Undr Sizing	0		0	0	0	0
Exhaust Heat		-2,160	-2,160	0		
Sup. Fan Heat			0	0		
Ret. Fan Heat		0	0	0		
Duct Heat Pkup		0	0	0		
Underflr Sup Ht Pkup			0	0		
Supply Air Leakage		0	0	0		
Grand Total ==>	703,221	13,181	801,958	100.00	666,273	100.00

HEATING COIL PEAK

Mo/Hr: Heating Design; OADB: 19

	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)
Envelope Loads			
Skylite Solar	0	0	0.00
Skylite Cond	0	0	0.00
Roof Cond	-12,111	-12,111	2.40
Glass Solar	0	0	0.00
Glass/Door Cond	-56,737	-56,737	11.25
Wall Cond	-35,549	-35,549	7.05
Partition/Door	0	0	0.00
Floor	-5,106	-5,106	1.01
Adjacent Floor	0.00	0.00	0.00
Infiltration	-33,930	-33,930	6.73
Sub Total ==>	-143,432	-143,432	28.43
Internal Loads			
Lights	0	0	0.00
People	0	0	0.00
Misc	0	0	0.00
Sub Total ==>	0	0	0.00
Ceiling Load	0	0	0.00
Ventilation Load	0	-361,097	71.57
Adj Air Trans Heat	0	0	0
Ov/Undr Sizing	0	0	0.00
Exhaust Heat		0	0.00
OA Preheat Diff.		0	0.00
RA Preheat Diff.		0	0.00
Additional Reheat		0	0.00
Underflr Sup Ht Pkup		0	0.00
Supply Air Leakage		0	0.00
Grand Total ==>	-143,432	-504,529	100.00

TEMPERATURES

	Cooling	Heating
SADB	55.0	74.3
Ra Plenum	75.0	70.0
Return	75.5	70.0
Ret/OA	77.7	59.2
Fn MtrTD	0.0	0.0
Fn BldTD	0.0	0.0
Fn Frict	0.0	0.0

AIRFLOWS

	Cooling	Heating
Diffuser	30,276	30,276
Terminal	30,276	30,276
Main Fan	30,276	30,276
Sec Fan	0	0
Nom Vent	6,435	6,435
AHU Vent	6,435	6,435
Infil	605	605
MinStop/Rh	0	0
Return	27,748	27,748
Exhaust	3,907	3,907
Rm Exh	3,132	3,132
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS

	Cooling	Heating
% OA	21.3	21.3
cfm/ft²	1.45	1.45
cfm/ton	453.03	
ft²/ton	312.48	
Btu/hr·ft²	38.40	-24.16
No. People	429	

COOLING COIL SELECTION

	Total Capacity ton	Total Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB °F	Enter WB °F	Enter HR gr/lb	Leave DB °F	Leave WB °F	Leave HR gr/lb
Main Clg	66.8	802.0	692.6	30,276	77.7	62.0	59.1	55.0	52.8	56.9
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
Total	66.8	802.0								

AREAS

	Gross Total	Glass ft²	Glass (%)
Floor	20,883		
Part	0		
Int Door	1		
ExFlr	1,103		
Roof	8,795	0	0
Wall	15,880	2,972	19
Ext Door	31	31	100

HEATING COIL SELECTION

	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F
Main Htg	-504.5	30,276	59.2	74.3
Aux Htg	0.0	0	0.0	0.0
Preheat	0.0	0	0.0	0.0
Humidif	0.0	0	0.0	0.0
Opt Vent	0.0	0	0.0	0.0
Total	-504.5			

Project Name: 21-1194
Dataset Name: PIERCE STEM.TRC

TRACE® 700 v6.3.5 calculated at 01:49 PM on 06/24/2022

integrus ARCHITECTURE
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JUSTIN STENKAMP — STATE OF WASHINGTON — 51382 — REGISTERED PROFESSIONAL ENGINEER — 6/27/2022

PAE pae-engineers.com
LUMA Lumald.com

STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

PRCNC20221036

EQUIPMENT SCHEDULES - MECHANICAL

M008

BUILDING PERMIT SET

Mechanical Requirements List, pg 1 of 25

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Project:
Pierce College New STEM Building - 2018 WSEC
1601 39th Ave SE
Puyallup, WA 98374

Date: 2022-06-24

Applies	Code Section	Code Provision	Compliance Information Required In Permit Documentation	Location in Documents	Building Department Notes
SCOPE					
	C103.1	Construction documents - General	For a shell & core or tenant space (first build-out) project, indicate if there is no mechanical scope included in the project.		
	C103.1	Construction documents - General	For an alteration project, indicate if there is no mechanical scope included in the project.		
PERFORMANCE CRITERIA & SYSTEM DESIGN					
NA	C403.1	Exempt process equipment	Identify equipment used by manufacturing, industrial or commercial processes that are not for space conditioning or maintaining comfort and amentities for occupants; identify provisions applicable to this equipment per C403.1 exception		
YES	C403.1.1	HVAC total system performance ratio (TSPR)	For systems serving office, retail, library or education occupancies, provide a TSPR report that demonstrates the proposed design ratio is equal to or greater than the standard reference design ratio, or exception applied	M007	
YES	C403.1.2	Calculation of heating and cooling loads	Provide load calculations performed per ASHRAE Std 183 or equivalent, using design parameters per C302 and Appendix C; include load adjustments to account for energy recovery	M007	
NA	C403.1.3	Data centers	Provide documentation that demonstrates that data center systems comply with the maximum allowed Design MLC and Annualized MLC per ASHRAE 90.4 with 2018 WSEC adjustments per climate zone		
YES	C403.2.1 C403.4.2.2	Zone isolation	If there are HVAC zones that are intended to be occupied non-simultaneously, identify isolation zone areas on plans; if multiple zones intended to be occupied simultaneously will be combined into a single isolation zone, include on plans that the combined zone area does not exceed 25,000 sf and does not include more than one floor; or exception applied	M003	
YES			Indicate locations of associated zone isolation dampers in HVAC distribution system	M003	
YES			Refer to HVAC Controls section in Requirements List for applicable automatic setback and shutdown controls requirements		
EQUIPMENT SELECTION & PERFORMANCE					

Mechanical Requirements List, pg 2 of 25

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YES	C403.3.1	Equipment and system sizing	Indicate that output capacities of heating and cooling equipment and systems are no greater than the smallest available equipment size that exceeds the calculated loads; note exceptions applied	M002, M003, M004, M007	
YES	C403.3.2 C403.9.1	HVAC equipment performance requirements (efficiency)	Provide equipment schedules on plans and in WSEC mechanical equipment compliance reports; indicate equipment type, calculated loads, capacity, rated and WSEC minimum efficiencies for all heating and cooling equipment; include supply and ventilation air cfms and operating hours for all air systems; identify heating and cooling equipment that does not have a corresponding WSEC minimum efficiency (manufacturer rated)	M005	
NA	C405.8	Electric motor efficiency	List all motors ≥ 1/12 hp (that are not integral to a rated piece of equipment) in the mechanical or electrical equipment schedules on plans; indicate motor type and applicable efficiency table, hp, rpm, number of poles and rated efficiency, or exception applied		
NA	C403.3.2	Gas and oil-fired forced air furnace and unit heaters	For forced air furnaces with capacity ≥ 225,000 Btu/h and all unit heaters, indicate in equipment schedule intermittent ignition or IID, flue or draft damper, and rated jacket loss		
YES	C403.3.2.4	Packaged electric heating / cooling equipment	Verify all packaged electric equipment with > 6,000 Btu/h cooling capacity and any amount of heating is a heat pump; include in equipment schedules	M004	
NA	C403.3.3	Hot gas bypass limitation for DX cooling equipment	For cooling equipment with hot gas bypass, provide either multiple step unloading or continuous capacity modulation; indicate bypass capacity per Table C403.3.3		
NA	C403.3.2.5	Humidification	For cooling systems with humidification equipment that are also required to have air economizer, indicate humidifier is adiabatic (direct evaporative or fog atomization), or exception applied		
YES	C403.3.2	Hydronic equipment	Refer to Requirements List section Hydronic Systems - Equipment Selection & Performance for selection criteria specific to chillers and boilers		
NA	C403.9	Heat rejection equipment	Refer to Requirements List section Heat Rejection Systems - Equipment Selection & Performance for selection criteria specific to cooling towers, dry coolers and condensers (air-cooled and evaporative)		
EQUIPMENT SELECTION & PERFORMANCE - DEDICATED OUTSIDE AIR SYSTEMS (DOAS)					

Mechanical Requirements List, pg 3 of 25

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YES	C403.3.5 C403.3.5.4	Dedicated outdoor air systems	For buildings with occupancies required to comply with the DOAS provisions per Table C403.3.5, identify on plans all occupancies in the building and indicate which occupied spaces are required to have ventilation air delivered by a DOAS; or exception applied	M006	
NA			If natural ventilation exception is applied, identify these spaces on plans; indicate operable window area complies with IMC Section 402; provide documentation describing how required ventilation will be provided during all occupied hours, including during inclement weather		
YES			If high efficiency VAV exception is applied, identify these spaces on plans; refer to Single Zone VAV section for Groups A-1, A-2 and A-3 occupancy classifications, or Multiple Zone VAV for other than Groups A-1, A-2 and A-3 (per Table C403.3.5)	M006	
NA			If compliance with the DOAS provisions is deemed to be impractical, provide documentation that demonstrates the alternate design strategy applied that achieves a comparable level of energy efficiency, as pre-approved by the AHJ		
YES			Refer to Requirements List section after Multiple-Zone Air Systems for High Efficiency Multiple-Zone VAV Systems exception to C403.3.5 DOAS		
NA			Refer to Requirements List section after High Efficiency Multiple-Zone Air Systems for High Efficiency Single-Zone VAV Systems exception to C403.3.5 DOAS		
NA	C403.3.5.1	DOAS energy recovery method and effectiveness	For all DOAS systems, indicate exhaust air ER method and basis of rated effectiveness (sensible or latent); indicate ≥ 60% sensible or ≥ 50% enthalpy ER effectiveness based on delta between outdoor air and return air enthalpies at design conditions; or exception applied		
NA			If applying exception for DCV, identify occupant load in space and airflow control configured to reduce ventilation rate by ≥ 50% when occupancy is less than design occupancy		
NA	C403.3.5.1	DOAS fan power	For DOAS with total system fan hp < 5 hp, indicate total system fan power does not exceed 1 watt per cfm		
NA			For DOAS with total system fan hp ≥ 5 hp, indicate total system fan power complies with fan power limitation per Section C403.8.1		

Mechanical Requirements List, pg 4 of 25

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NA	C403.3.5.2	Heating / cooling system controls with DOAS	Indicate systems and equipment associated with the delivery of zone level heating and cooling (fans, hydronic pumps, primary air dampers, etc) are configured to shut off, and central equipment is configured to turn down, when there is no call for heating or cooling in the zone they serve		
NA			If applying Exception to heating / cooling fans used for air mixing in the space during deadband periods, include fan watts per cfm in equipment schedule		
NA	C403.3.5.3	Decoupled DOAS supply air	Indicate method of delivery of DOAS supply air to the occupied space (directly into space, downstream of terminal heating / cooling coils); or exception applied		
NA	C403.6.1	Multiple zone DOAS	For DOAS serving multiple zones, indicate controls configured to reduce the volume of outdoor air in each zone independently when the zone is unoccupied; or exception applied		
ADDITIONAL EFFICIENCY CREDITS - DEDICATED OUTSIDE AIR SYSTEMS (DOAS)					
	C406.6	DOAS	For building occupancies not subject to the requirements of Section C403.3.5, to comply with this additional efficiency credit, provide calculations that demonstrate 90% or more of the total floor area of all occupied, conditioned spaces are served by a DOAS per C403.3.5		
	C406.7	High performance DOAS - Energy recovery effectiveness and fan power	For all building occupancies, to comply with this additional efficiency credit, demonstrate compliance with C406.6		
			Indicate energy recovery sensible effectiveness of all DOAS is ≥ 80%		
			For each system, indicate that total system fan power does not exceed 0.5 watts per cfm		
FANS AND FAN CONTROLS					
YES	C403.8.1	Fan power limitation	For all HVAC fan systems that provide heating and / or cooling and all DOAS, provide system total nameplate hp in equipment schedules on project plans	M002	
YES			For all applicable HVAC systems with total fan motor nameplate hp > 5hp, verify fan system motor hp or bhp complies with fan power limits per equations in Table C403.8.1(1)	M007	
NA			Terminal units installed in conjunction with a DOAS (hydronic heat pumps, VRF heat pumps, chilled/hot water terminal units, variable volume terminal units) shall be treated as independent air-handling units for purposes of fan power calculations		

Mechanical Requirements List, pg 5 of 25

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YES	C403.8.2	Motor nameplate hp	For all applicable HVAC systems with total fan motor nameplate hp > 5hp, indicate fan motors specified are the smallest available motor hp size greater than fan bhp, note exceptions applied	M002	
YES	C405.8	Fractional hp fan motors	For all fractional hp fan motors (1/12 - 1 hp), indicate that motors comply with applicable WSEC efficiency tables; if motor type is not listed in an efficiency table, indicate whether fan has an electronically commutated motor, has motor rated efficiency of at least 70%, or exception applied	M002, M005	
YES	C403.8.3	Fan efficiency	For individual fans > 5hp, and multiple fans combined in series or parallel that operate as the functional equivalent of a single fan with a combined total motor hp > 5hp, indicate in equipment schedule that rated FEG for all applicable fans is ≥ 67, or exception applied; indicate these fans are sized so total efficiency is within 15% of the fan maximum total efficiency	M002	
	C403.8.4	Group R occupancy exhaust fan efficacy	For all exhaust fans ≤ 400 cfm in Group R occupancies, indicate in equipment schedule the fan flow rate and efficacy (cfm/watt), or exception applied; refer to Table C403.8.4		
YES	C403.2.3	Variable flow capacity - fans	For fan motors ≥ 7.5 hp, indicate method of variable flow control (VSD or equivalent method) in equipment schedule, or exception applied	M002	
YES	C403.8.5.1	Fan airflow control	For DX air handling units with cooling capacity ≥ 42,000 Btu/h and evaporative and chilled water air handling units with fan ≥ 0.25 hp, indicate whether system is single zone or multiple zone and related control method (cooling capacity controlled in response to space temperature, space temperature is controlled by modulating supply airflow, or both)	M801, M802, M803	
YES			For mechanical cooling systems (includes DX and chilled water coils) that control cooling capacity in response to space temperature - Provide a minimum of two stages of fan control; indicate minimum fan speed is ≤ 66% of full speed drawing ≤ 40% of full speed fan power during periods of low cooling or ventilation only	M801, M802, M803	

Mechanical Requirements List, pg 6 of 25

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YES			For other mechanical cooling systems (includes DX and chilled water coils) that control space temperature by modulating airflow (in lieu of, or in addition to, controlling capacity in response to space temperature) - Provide fan controls for modulating supply airflow; indicate minimum fan speed is ≤ 50% of full speed drawing ≤ 30% of full speed fan power during periods of low cooling or ventilation only; or exception applied	M801, M802, M803	
ADDITIONAL EFFICIENCY PACKAGE OPTION, MORE EFFICIENT HVAC EQUIPMENT & FAN PERFORMANCE - MUST COMPLY WITH ALL 3 PROVISIONS TO BE ELIGIBLE					
	C406.2.1	HVAC system selection	To comply with this additional efficiency credit, provide calculations that demonstrate (based on heating and cooling output capacity) that 90% or more of all HVAC equipment serving conditioned floor areas have a corresponding WSEC listed efficiency; or exception applied		
	C406.2.2	Minimum equipment efficiency	In addition to system selection requirement, indicate that all associated heating and cooling equipment have a rated efficiency for all equipment performance criteria (heating, cooling, full load, part load) that is at least 15% better than the listed WSEC efficiency; include specific equipment exceptions applied		
			For systems required to provide a TSPR report per C403.1.1, demonstrate that the proposed design ratio is at minimum 10% higher than the standard reference design ratio		
			For projects complying via weighted average efficiency exception, include calculations that demonstrate the overall average better than code efficiency of all equipment performance criteria for all equipment is ≥ 15%; indicate that all equipment has at least 5% better than code efficiency		
			For systems serving low energy and semi-heated spaces, indicate that 90% or more of installed heating output capacity is provided by electric infrared or gas-fired radiant equipment for localized heating applications only		
	C406.2.3	Minimum fan efficiency grade	In addition to system selection and efficiency requirements, indicate rated FEG of all ≥ 1 hp (750 watt) stand alone supply, return and exhaust fans is ≥ 71; indicate these fans are sized so the fan efficiency at design conditions is within 10% of the maximum total or static efficiency		
VENTILATION, EXHAUST & ENERGY RECOVERY					
YES	C403.2.2.1	Ventilation	Indicate method of ventilation air delivery (natural or mechanical) for each zone	M006	

Mechanical Requirements List, pg 7 of 25

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YES			If mechanically delivered, indicate that ventilation systems are configured to provide not more than 150% of, but at least the minimum required volume of outdoor air to each zone per IMC, ASHRAE 62.1 or other applicable code (WAC, OSHA, etc); or exception applied	M006	
			If delivered via natural ventilation, identify required elements per IMC including: minimum openable area to the outdoors or qualifying adjoining spaces; criteria for ensuring required ventilation is provided during all occupied hours of the year (including during inclement outdoor conditions)		
YES	C403.2.2.2	Exhaust	Indicate that exhaust systems are configured to provide not more than 150% of, but at least the minimum required volume from each zone per IMC, or other applicable code (WAC, OSHA, etc); or exception applied	M201, M202, 203	
YES	C403.4.2.4	Exhaust system off-hour controls	Refer to Requirements List section HVAC Controls for off-hour controls requirements for exhaust systems		
	C403.3.6	Balanced ventilation for Group R-2 occupancy	For Group R-2 dwelling and sleeping units, indicate that each habitable space is provided with a balanced ventilation system; indicate system is provided with energy recovery with 60% sensible recovery effectiveness		
YES	C403.7.1	Demand controlled ventilation	Identify spaces > 500 sf with occupant load ≥ 25 people/1,000 sf per IMC; for each space indicate whether it is served by an HVAC system with total design ventilation air > 3,000 cfm, and / or the system has airside economizer or automatic modulating outdoor air damper; indicate controls are configured to provide demand controlled ventilation or provide supporting documentation for applied exception	M100, M101, M102A, M103A	
YES	C403.7.2	Occupancy sensors	For gyms, classrooms, auditoriums, conference rooms and other spaces with occupant load ≥ 25 people/1,000 sf per IMC, that have an area > 500 sf, indicate occupancy-based ventilation air control when space is unoccupied and method (closes outdoor air damper or shuts-off equipment); or alternate means provided to automatically reduce ventilation air when space is partially occupied; or exception applied	M100, M101, M102A, M103A	
YES	C403.7.3	Ventilation air heating control	For ventilation air systems that operate in conjunction with heating and cooling systems, indicate that ventilation air is tempered (via heating or heat recovery) to no greater than 60F when the space conditioning system is in cooling mode	M802, M803	

Mechanical Requirements List, pg 8 of 25

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	C403.7.4.2	Ventilation controls for Group R-1 guestrooms	Refer to Requirements List section HVAC Controls for Group R-1 temperature setback and set-up controls		
			Indicate method of ventilation and exhaust isolation for each guest room and automatic controls that are configured to turn off ventilation and exhaust airflow when each room is unoccupied		
	C403.8.4	Group R occupancy exhaust fan efficacy	Refer to Requirements List section Fans & Fan Controls		
	C403.7.5 C403.7.5.1	Enclosed loading dock ventilation	For enclosed loading docks, indicate ventilation / exhaust system method of activation (gas detection system for CO and NO2, or occupancy sensors), and control method (staged or modulating)		
	C403.7.5 C403.7.5.2	Enclosed parking garage ventilation	For enclosed parking garages, indicate ventilation / exhaust system activated by gas detection system for CO and NO2, and control method (staged or modulating); or exception applied		
YES	C403.7.6	Ventilation / exhaust systems energy recovery	For systems with design ventilation air > 5,000 cfm, or design supply air cfm and % ventilation air exceeding the values in Tables C403.7.6(1) or (2), indicate exhaust air energy recovery method; or exception applied with supporting calculations	M801, M802, M803	
YES			For rooms served by multiple systems with aggegate design ventilation air > 5,000 cfm, or aggregate design supply air cfm and % ventilation air exceeding the values in Tables C403.7.6(1) or (2), indicate exhaust air energy recovery method; or exception applied with supporting calculations	M002	
YES			Indicate energy recovery rated effectiveness that increases outdoor air enthalpy by ≥ 50% based on delta between outdoor air and return air enthalpies at design conditions	M002	
	C403.7.7.1.1 C403.7.7.1.2 C403.7.7.1.3	Kitchen exhaust hood system	Indicate on plans the type, duty, UL rating and exhaust airflow rate of each kitchen hood		
			Provide calculations that show a balanced accounting of total kitchen exhaust (include all hoods) with % of: supply air, transfer air from adjacent spaces, and make-up air		
			For hoods with make-up air drawn directly into the exhaust air cavity of each hood, indicate that replacement air does not exceed 10% of hood exhaust airflow rate		
			For kitchens with total hood exhaust exceeding 2,000 cfm, indicate that each hood is UL 710 rated and maximum exhaust airflow rate of each hood is per Table C403.7.7.1.2; or exception applied		

Mechanical Requirements List, pg 9 of 25

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			For kitchens with total hood exhaust exceeding 2,000 cfm, indicate energy efficiency compliance method (demand ventilation, energy recovery, or transfer air that would otherwise be exhausted); or exception applied		
YES	C403.7.7.2	Laboratory exhaust systems energy recovery	For buildings with total lab exhaust > 5,000 cfm, indicate method of energy recovery used to pre-condition laboratory make-up air; energy recovery effectiveness (min 25°F increase in outside air temperature); or alternative method per exception (VAV exhaust, semi-conditioned makeup, or CERM calculation)	M803	
YES	C403.7.7.3	Transfer air	For spaces where conditioned supply air is utilized as transfer air to balance mechanical exhaust, indicate basis of transfer airflow (supply required to meet loads, health/safety requirement, air that would normally be exhausted); or exception applied	M201, M202, M203	
YES	C403.7.8.1 C403.7.8.3	Shutoff dampers for building isolation	Indicate locations of outdoor air intake, exhaust and relief outlet dampers on plans; indicate whether dampers are Class 1 motorized, or gravity and exception applied (include leakage rating, cfm/sf)	M002	
			Indicate location of stairway and elevator hoistway shaft vent dampers on plans; verify dampers are Class 1 motorized; or exception applied		
YES	C403.7.8.2 C403.7.8.3	Shutoff dampers for return air	Indicate locations of return air dampers that are integral to airside economizer operation; verify dampers are motorized; indicate whether dampers are Class 1, or within packaged equipment eligible for leakage rating exception (include leakage rating, cfm/sf)	M002	
YES	C403.7.8.4	Damper actuation	Indicate automatic controls configured to close outdoor air intake, exhaust and relief outlet dampers during unoccupied equipment operation; not including economizer cooling, night flush or IMC required outdoor air / exhaust	M802, M803	
			Indicate method of activation of stairway and elevator hoistway shaft vent dampers (fire alarm or interruption of power)		
	C404.11.4	Exhaust system energy recovery for heated indoor pools and permanent spas	For buildings with pools or spas with water surface area > 200 sf, indicate exhaust air energy recovery method and use of waste heat (preheat ventilation air, pool water or service hot water); or exception applied		
			Indicate energy recovery system has the rated effectiveness and is configured to decrease the exhaust air temperature at design conditions by ≥ 36°F		

Mechanical Requirements List, pg 10 of 25

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HVAC CONTROLS					
YES	C403.4.1	Thermostatic controls (thermostats and humidistats)	Indicate locations of thermostatic and humidity control devices and the zones they serve on plans, including perimeter system zones	M100, M101, M102A, M103A	
YES			Where adjacent (neighboring) zones are controlled by separate thermostats (including perimeter systems used to offset heat gain or loss), and are connected by permanent openings > 10% of either zone sf area, indicate controls configured to prevent adjacent zones from operating in conflicting modes (one in heat, other in cool); applies to adjacent perimeter zones, adjacent nonperimeter zones, and adjacent perimeter and nonperimeter zones	M802	
YES			If applying Exception 2 to nonperimeter zones adjacent to perimeter zones, indicate that setpoints and deadband settings in these zones are coordinated so cooling in a nonperimeter zone does not occur until the temperature in that zone is 5°F higher than the adjacent perimeter zone temperature in heating	M802	
NA			If applying Exception 3 for DOAS, indicate supply air temperature heating setpoint is ≤ 65°F and cooling setpoint is ≥ 72°F, or method of supply air temperature reset		
NA	C403.4.1.1	Heat pump supplementary heat	Indicate staged heating operation with compression as the first stage of heating and supplemental heating controlled with outdoor lock-out temperature set to 40°F or less		
YES	C403.4.1.2	Deadband	Indicate zone thermostatic controls configured with 5°F minimum deadband for systems that control both heating and cooling	M801	
NA	C403.4.1.3	Setpoint overlap restriction (thermostats)	If separate heating and cooling thermostatic control devices are used to serve a zone, indicate locations of both thermostatic control devices and the zone they serve on plans		
YES			Indicate a limit switch, mechanical stop or DDC control with programming to prevent simultaneous heating and cooling	M801	
NA	C403.4.1.4	Heated or cooled vestibules	Indicate thermostatic controls within heated or cooled vestibules with a heating setpoint ≤ 60°F and cooling setpoint ≥ 85°F; indicate controls are configured to turn off heating when outdoor temperature is > 45°F; or note exception applied		
NA	C403.4.1.4	Heated air curtains	Indicate controls are configured to turn off air curtain heating when outdoor temperature is > 45°F		

Mechanical Requirements List, pg 11 of 25

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NA	C403.4.1.6	Door switches for HVAC system thermostatic control	Where doors open to the outdoors from a conditioned space, indicate automatic controls configured to setback the HVAC system(s) when the door is open for > 5 minutes; indicate method of HVAC system setback control (turns off the HVAC system or resets the heating setpoint to 55°F and cooling setpoint to 85°F), or exception applied		
YES	C403.4.2 C403.4.2.1 C403.4.2.2	Automatic setback and shutdown	Indicate zone thermostatic controls configured with required automatic setback and manual override functions, setback temperatures, and control method (automatic time clock or 7 day programmable controls); note exceptions applied	M802, M803	
YES	C403.4.2.3	Automatic (optimum) start and stop	Indicate all HVAC systems are provided with automatic start and stop controls; indicate start controls are configured to adjust the equipment start time as required to bring each area served up to design temperature just prior to scheduled occupancy; indicate stop controls are configured to reduce heating setpoint and increase cooling setpoint by at least 2°F prior to scheduled unoccupied periods	M801, M802, M803	
YES	C403.4.2.4	Exhaust system off-hour controls	For exhaust systems serving conditioned spaces in all occupancies other than Group R, indicate method of control and that controls are configured to turn exhaust systems on and off in concert with the ventilation air systems providing their make-up air, or exception applied	M803	
NA	C403.4.2.5	Transfer and destratification fan system off-hour controls	For transfer fan or mixing fan systems serving conditioned spaces in all occupancies other than Group R, indicate method of control and that controls are configured to turn fans on and off in concert with the associated HVAC systems, or exception applied		
NA	C403.4.7	Combustion heating equipment	For combustion heating equipment other than boilers or radiant heaters with output capacity > 225,000 Btu/h, indicate modulating or staged combustion control		
NA	C403.4.7.1	Combustion decorative vented appliance, combustion fireplace and fire pit controls	Indicate controls that are configured to limit operation of combustion appliance, fireplace and fire pit to ≤ 1 hour without override, or that occupancy sensor controls are provided		

Mechanical Requirements List, pg 12 of 25

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	C403.7.4.1	Temperature setpoint controls for Group R-1 guestrooms	For hotels / motels with over 50 guest rooms, indicate automatic controls for HVAC equipment serving guest rooms are configured to setback (heating) and set-up (cooling) temperature setpoint by at least 4°F when room is unoccupied, and adjust setpoint to 60°F (heating) and 80°F (cooling) when room is unrented / vacated; indicate control method - activated by room entry, occupancy sensor or networked guestroom control system		
	C403.7.4.2	Ventilation controls for Group R-1 guestrooms	Refer to Requirements List section Ventilation, Exhaust & Energy Recovery		
	C403.4.9 C403.4.10	Thermostatic controls for Group R2 / R3 dwelling units and Group R2 sleeping units	For primary space conditioning systems, indicate 5-2 programmable thermostats capable of two setback periods per day; indicate each non-primary system is provided with at minimum an adjustable thermostat, or exception applied. For all thermostats indicate purpose (heating only, cooling only, or both) and required temperature range; indicate thermostats are configured for at minimum a 5°F deadband		
YES	C403.4.11.1 C403.4.11.2 C403.4.11.3	DDC system applications, controls and display	Provide central and zone level DDC controls as required based on system application, capacity or size thresholds and other qualification per Table C403.4.11.1	M801	
YES			Identify all DDC system input / output control points in project documents	M801, M802, M803	
YES			Indicate control capability includes monitoring zone and system level demand for fan pressure, pump pressure, heating and cooling; indicate capability to transfer demand information from zones to air / hydronic distribution system controllers, and to central plant systems and equipment controllers	M801, M802, M803	
YES			Indicate system has the capability for trending and graphically displaying input / output points	M801, M802, M803	
NA	C403.5.1	DX air handler variable cooling control(Located under Integrated Economizer Control)	For DX air handlers with cooling capacity ≥ 65,000 Btu/h, indicate number of cooling stages provided and method (multiple compressors and / or variable speed compressors); indicate minimum displacement (capacity reduction) as % of full load; indicate thermostats are configured with the same number of cooling stages and displacement		
NA			Indicate control method (cooling capacity controlled in response to space temperature, space temperature controlled by modulating supply airflow, or both)		
DUCTWORK, SHAFTS AND PLENUMS					

Mechanical Requirements List, pg 13 of 25

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YES	C403.10.1.1 C403.10.2	Duct construction	Indicate on plans that all ductwork is constructed and sealed per IMC	M005	
NA			For outdoor air ductwork, also indicate on plans that ductwork meets air leakage requirements per C402.5 and vapor retarder requirements per the IBC		
YES	C403.10.2.1 C403.10.2.2 C403.10.2.3	Duct pressure classifications	Identify location of low, medium and high pressure ductwork on plans	M005	
NA	C403.10.2.3	High pressure duct leakage test	Indicate high pressure duct leakage testing requirements on plans; provide test results to jurisdiction when completed		
NA	C403.10.1.1 C403.10.1.2	Duct insulation	For outdoor air ductwork located within conditioned space (upstream or downstream of shutoff damper), identify climate zone and indicate ductwork insulation R-value per Table C403.10.1.1 on plans; or exception applied		
YES			For supply and return air ductwork located within unconditioned space or outdoors, identify climate zone and indicate ductwork insulation R-value per Table C403.10.1.2 on plans; or exception applied	M005	
YES			For supply air ductwork located within conditioned space, identify on plans if design supply air temperature is < 55°F or > 105°F; indicate ductwork insulation R-value per Table C403.10.1.2 on plans; or exception applied	M005	
YES			For return and exhaust air ductwork located within conditioned space (upstream of the shutoff damper) and downstream of an energy recovery media, indicate ductwork insulation R-value per Table C403.10.1.2; or exception applied	M005	
YES			For exhaust and relief air ductwork located within conditioned space and downstream of the shutoff damper, indicate ductwork insulation R-value per Table C403.10.1.2; or exception applied	M005	
NA	C403.10.1.1 C402.1.3	Shaft and plenum insulation	For outdoor air shafts and plenums, indicate on plans that the R-value of insulation on these elements complies with Table C402.1.3 for steel-framed walls		
PIPING					
YES	C403.10.3	Piping insulation	Indicate design temperature range of fluid conveyed in piping and thickness of insulation (in inches) on hydronic piping plans; or exception applied	M005	
YES	C403.10.3.1	Protection of piping insulation	Indicate method of protection of pipe insulation from damage / degredation on hydronic piping plans	M005	

Mechanical Requirements List, pg 14 of 25

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ECONOMIZERS					
YES	C403.5	Air economizer required	Identify all cooling systems requiring air economizer controls in equipment schedules on plans and in WSEC mechanical equipment compliance reports	M002	
YES			Indicate all systems utilizing air economizer exceptions in WSEC mechanical equipment compliance report, including those with water-side economizer in lieu of air economizer; indicate on plans and in WSEC mechanical equipment compliance reports all eligible exception(s) taken and measures to comply with exception(s)	M004	
YES	C403.4.1 C403.5.1	Integrated economizer operation - air and water	Indicate air and water-side economizers are configured for partial cooling operation even where additional mechanical cooling is required to meet the load	M802, M803	
NA			For DX air handlers with single or multiple stages of mechanical cooling; indicate controls are configured with air economizer as the first stage of cooling		
NA			Refer to Requirements List section HVAC Controls for additional requirements for DX air handlers		
YES	C403.5.2	Economizer heating system impact - air and water	Verify control method of HVAC systems with economizers does not increase building heating energy usage during normal operation	M801, M802, M803	
YES	C403.5.3.1	Air economizer capacity	Indicate modulating outdoor air and return air dampers are configured to provide up to 100% outdoor air for cooling	M801, M802, M803	
YES	C403.5.1 C403.5.3.2	Air economizer controls and integrated operation	Indicate that economizer controls are configured to provide partial economizer cooling when additional mechanical cooling is also required to meet the cooling load	M801, M802, M803	
YES			Indicate that control of economizer dampers is not based only on mixed air temperature; or exception applied for systems with cooling capacity ≤ 65,000 Btu/h	M801, M802, M803	
YES	C403.5.3.3	Air economizer high limit controls	Indicate high limit shut-off control method and required high limit per Table C403.5.3.3	M801, M802, M803	
YES	C403.5.3.4	Relief of excess outdoor air	Refer to Requirements List section Ventilation, Exhaust & Energy Recovery	M801, M802, M803	
YES			Indicate relief air outlets are sized and configured to relieve excess building air during air economizer operation to prevent building over-pressurization	M801, M802, M803	
YES			Indicate relief air outlet are located to avoid recirculation into the building	M801, M802, M803	

Mechanical Requirements List, pg 15 of 25

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NA	C403.5.4.1	Water economizer capacity	For eligible systems where water-side economizer may be provided in lieu of air economizer, indicate system is capable of 100% design cooling capacity at 50°F db / 45°F wb outdoor air temperatures; indicate if threshold for 100% design cooling capacity via economizer must be lowered to 45°F db / 40°F wb due to dehumidification requirements		
NA	C403.5.4.2	Water economizer maximum pressure drop	Indicate that the pressure drop across precooling coils and heat exchangers in water economizer systems do not exceed 15 feet (4572 mm)		
NA	C403.5.5	DX equipment economizer fault detection and diagnostics	For DX air handlers with economizer and cooling capacity ≥ 54,000 Btu/h, provide a fault detection and diagnostics (FDD) system to monitor economizer system operation and report faults		
HYDRONIC SYSTEMS - EQUIPMENT SELECTION & PERFORMANCE					
NA	C403.3.2.1	Maximum air cooled chiller capacity	For chilled water plants and buildings with > 500 tons of cooling capacity, indicate air-cooled chiller capacity is ≤ 100 tons, or exception applied		
YES	C403.6.7	Large capacity cooling systems	For buildings ≥ 300 tons of cooling capacity, indicate method of multi-stage or variable capacity control (VSD, multiple staged compressors, or max capacity of any single unit	M801	
NA	C403.3.2.2	Non-standard water-cooled centrifugal chillers	For water-cooled centrifugal chillers not designed for operation at standard conditions, provide calculations documenting maximum full load and part load rated equipment performance requirements		
NA	C403.3.3	Hot gas bypass limitation for chillers	For cooling equipment with hot gas bypass, provide either multiple step unloading or continuous capacity modulation; indicate bypass capacity per Table C403.3.3		
YES	C403.4.3 C403.3.4	Large capacity boiler systems	For hydronic systems with only a single boiler that has > 500,000 Btu/h input capacity, indicate multi-stage or modulating burner	M801	
YES			For boiler system (single or multiple) with > 1,000,000 Btu/h input capacity, indicate turndown ratio per Table C403.3.4 and method (multiple single input boilers, modulating boilers, or combination)	M801	
YES	C403.2.3	Variable flow capacity - pumps	For pump motors ≥ 7.5 hp, indicate method of variable flow control (VSD or equivalent method) in equipment schedule, or exception applied	M004	
HYDRONIC SYSTEMS - CONTROLS					
YES	C403.4.3	Boiler sequencing	Indicate automatic controls that sequence operation of multiple boilers	M801	

Mechanical Requirements List, pg 16 of 25

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NA	C403.4.3.2	Two-pipe changeover systems	Indicate changeover deadband is ≥ 15°F outdoor air temperature; indicate controls are configured so that heating / cooling modes are active for at minimum 4 hours before changeover and that the delta between heating / cooling supply temperatures at changeover point is		
NA	C403.4.1.5	Heating water temperature setback	For boilers that provide building heating via one- or two-pipe systems, indicate controls that provide heating water temperature setback based on outdoor temperature		
YES	C403.4.4	Hydronic system part load controls and supply-water temperature reset	For heating and chilled water systems with ≥ 300,000 Btu/h output capacity, indicate system controls are configured to automatically reset supply water temperature based upon demand; or exception applied	M801	
YES			Indicate automatic pump flow controls are configured to reduce system flow rate by ≥ 50%, or the maximum allowed by the equipment manufacturer, based upon the heating or cooling loads; or decribe why not required	M801	
YES			For hydronic systems with output capacity ≥ 300,000 Btu/h that serve heating water systems, chilled water systems and water-cooled unitary air conditioners, indicate that pumps are provided with a variable speed drive if one of the following conditions apply: 1) System pump motor hp is ≥ 2 hp and pumps are designed to operate continuously or per time schedule; 2) System pump motor hp is ≥ 7.5 hp and pumps are controlled by automatic DDC configured to only operate pumps when there is a call for zone heating or cooling	M004	
YES			Where variable speed drives are required, indicate system is configured so that pump motor power is ≤ 30% of design wattage at 50% of design flow rate; indicate pump flow is controlled to maintain one control valve nearly wide open, or to maintain a mimimum differential pressure; or exception applied	M004, M801	
YES	C403.4.6	Hydronic system variable pump flow control	For individual pumps required to have variable speed controls, indicate manner of pump speed control (differential pressure, static pressure setpoint, zone heating or cooling demand, or based on the relationship between variable speed controller fequency and power)	M004, M801	
YES	C403.4.5	Chiller / boiler plant pump isolation	Indicate controls are configured to automatically reduce overall plant flow and shut-off flow through individual chillers and boilers when not in use	M801	

Mechanical Requirements List, pg 17 of 25

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	C403.4.3.3.1	Water loop heat pump - temperature deadband	Indicate method of water loop temperture control (central plant equipment controls are configured to provide ≥ 20°F water supply temperature deadband between heat rejection and heat addition modes, or controls are configured for system loop temperature optimization		
	C403.4.3.3.2	Water loop heat pump - heat rejection equipment	Indicate type of cooling tower (open- or closed-circuit) in equipment schedule; indicate whether the cooling tower is used directly in the heat pump loop or in conjunction with a separate heat exchanger; indicate method used to limit system heat loss when heat rejection is not needed		
	C403.4.3.3.3	Water loop heat pump - isolation valves	For hydronic heat pump systems with total system power > 10 hp, indicate 2-way isolation valves on each heat pump and variable flow system control		
HEAT REJECTION SYSTEMS - EQUIPMENT SELECTION & PERFORMANCE					
NA	C403.9.1.3	Centrifugal fan open-circuit cooling towers	For open-circuit centrifugal fan cooling towers with ≥ 1,100 gpm capacity, indicate cooling towers comply with efficiency requirements for axial fan open circuit cooling towers		
HEAT REJECTION & RECOVERY - CONTROLS					
YES	C403.9.1.1C 403.9.1.2	Fan speed control	For each fan powered by an individual motor or array of motors, with total connected fan power ≥ 5 hp (including motor service factor), indicate method of automatic fan speed control (adjusted based on leaving fluid temperature or condenser temperature / pressure of heat rejection device); verify fan selection provides ≤ 30% design wattage at 50% design airflow	M002, M802, M803	
NA			For multiple-cell heat rejection equipment with VSD, indicate controls are configured to ramp all fans in unison (not staged on / off operation)		
NA	C403.9.1.4	Cooling tower flow turndown	For open-circuit cooling towers configured with multiple- or variable-speed condenser water pumps, indicate system is designed so all cells can be run in parallel; indicate method of condenser pump turn down control		
NA	C403.9.2.1	Heat recovery for service water heating	For buildings with 24-hour operation and > 1,500,000 Btu/h of heat rejection capacity and design service hot water load > 250,000 Btu/h, indicate condenser heat recovery to pre-heat service water; or exception applied. Provide calculations showing the amount of recovered heat that is utilized (60% of peak heat rejection load or pre-heat service water to 85°F).		

Mechanical Requirements List, pg 18 of 25

2018 WSEC Requirements for Commercial Buildings including Group R2, R3 & R4 over 3 stories & all R1 -- Administered by ©2022 NEEA, All rights reserved
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	C403.9.2.2	Steam condensate systems heat recovery	For buildings with on-site steam heating systems, indicate condensate water heat recovery and use of recovered heat		
			For buildings that use off-site generated steam where condensate is not returned to the source, indicate on-site condensate water heat recovery		
	C403.9.2.3	Refrigeration condenser heat recovery	For buildings with food service, meat or deli departments that have ≥ 500,000 Btu/h of remote refrigeration capacity for coolers / freezers, indicate condenser heat recovery and use of captured energy (service water heating, space heating, or dehumidification reheating)		
			For buildings with ≥ 40,000 sf conditioned floor area and ≥ 1,000,000 Btu/h of remote refrigeration capacity, indicate condenser heat recovery to pre-heat service water; indicate remaining recovered heat is applied to space heating or dehumidification reheating		
NA	C403.9.2.4	Heat recovery for space heating	For buildings that operate > 70 hour per week, that are not served by a DOAS with energy recovery, and have > 1,500,000 Btu/h of heat rejection capacity and ≥ 0.45 cfm per sf of design minimum supply airflow with reheat, indicate condenser heat recovery is provided for space heating that complies with Sections C403.9.2.4.1 or C403.9.2.4.2 or C403.9.2.4.4		
NA	C403.9.2.4.1 C403.9.2.4.4	Water to water heat recovery	Indicate that 90% or more of the total building space heating and ventilation air design loads are served by heat energy rejected from either a heat recovery chiller or the cooling loop of water to water heat pump equipment		
YES	C403.9.2.4.2	Exhaust heat recovery	Indicate that waste heat is recovered from least 90% of the total building exhaust airflow such that leaving exhaust air temperature while in heat recovery mode is 55 deg F dry bulb; note exhaust air systems eligible for exception to this requirement	M002, M803	
NA	C403.9.2.4.3	Process heat recovery	In spaces with 5 watts per sf year-round cooling loads from lights and equipment, indicate these spaces are served by water-cooled equipment configured for heat recovery		
NA			If these spaces are served by economizer (air or water), indicate automatic controls are configured to disable economizer operation while system is in heat recovery mode		
MULTIPLE ZONE AIR SYSTEMS					

Mechanical Requirements List, pg 19 of 25

2018 WSEC Requirements for Commercial Buildings including Group R2, R3 & R4 over 3 stories & all R1 -- Administered by ©2022 NEEA, All rights reserved
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YES	C403.6.1	Air systems serving multiple zones	Identify supply air systems serving multiple zones and the zones they serve on plans; indicate whether system is VAV and method of primary air control; or provide supporting documentation for applied exception to VAV	M006	
YES	C403.6.1	VAV air terminal primary supply airflow	Provide equipment schedules on plans that list all VAV air terminals and types (fan-powered series and parallel air terminals, single duct and dual duct air terminals, etc)	M003	
YES			For each air terminal include: maximum primary supply airflow rates during zone peak heating and zone peak cooling; maximum terminal airflow during reheating, recooling or mixing; minimum ventilation airflow rate, and the basis for these values; if IMC or ASHRAE 62.1 multiple zone equation is the basis for minimum flow rates, provide this calculation on plans	M003	
YES	C403.6.2	Single duct VAV terminal units	Indicate single duct terminal units are configured to reduce primary supply air before reheating or recooling	M003, M802	
NA	C403.6.3	Dual duct systems - terminal units	For systems with separate warm air and cool air ducts, indicate terminal units are configured to reduce the flow from one duct to minimum before mixing with air from the other duct		
NA	C403.6.8C40 3.6.9	VAV system static - pressure sensors and DDC set points	Indicate locations of duct static pressure sensors on plans; include at least one sensor per major duct branch; verify controller setpoint pressure at each sensor is ≤ 1.2 inch w.g.	M802, M803	
NA			For systems with zone level DDC, indicate controls are configured to monitor zone damper positions and reset static pressure setpoint based on the zone requiring most pressure; include control logic that automatically detects and generates an alarm if any zone excessively drives reset logic, and allows building operators to exclude zones from reset logic	M802, M803	
YES	C403.6.4	VAV system supply air reset	Indicate controls automatically reset supply air temperature in response to building loads or outdoor air temperature; or exception applied	M802, M803	
YES	C403.6.5	Multiple-zone VAV system ventilation optimization controls	For systems with zone level DDC controls, indicate controls are configured to automatically reduce outdoor airflow in response to changes in system ventilation efficiency; or exception applied	M802, M803	

Mechanical Requirements List, pg 20 of 25

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NA	C403.6.6	Parallel fan powered VAV air terminals	Indicate controls automatically activate or shut off the air terminal fan based on call for heating and / or ventilation; indicate controls are configured to activate the terminal fan as the first stage of heating prior to activating the heating coil; indicate control method of primary air during warmup or temperature setback mode		
HIGH EFFICIENCY MULTIPLE-ZONE VAV SYSTEMS - EXCEPTION TO C403.3.5 DOAS, MUST COMPLY WITH ALL 15 PROVISIONS TO BE ELIGIBLE					
YES	C403.6.10,Ite m 1	Minimum area served and zoning	Indicate that each high efficiency multiple-zone VAV systems serves an area ≥ 3,000 sf and includes ≥ 5 zones	M006	
YES	C403.6.10, Item 2	Air economizer	Indicate system is configured for 100% air economizer operation and complies with all related economizer requirements per C403.5 (without economizer exceptions)	M802, M803	
YES	C403.6.10, Item 3	Direct digital controls (DDC)	Provide DDC controls for all components of system per C403.4.11 (regardless of system size); identify all DDC system input / output control points; indicate capability for trending and graphical display	M801, M802, M803	
YES	C403.6.10, Items 4 and 5	Supply and outdoor airflow measurement and control	For systems with minimum required outdoor air > 2,500 cfm, provide an airflow monitoring station that is configured to measure outdoor air intake under all load conditions; indicate control sequence that increases or reduces outdoor air cfm based on VAV terminal feedback of ventilation efficiency (per C403.6.5 without exceptions) or and DCV (per C403.7.1)	M802, M803	
YES			Provide a suppy airflow monitoring station that is configured to measure supply air delivered to VAV terminals under all load conditions	M802, M803	
YES	C403.6.10,Ite m 6	Zone isolation and maximum area served	Verify maximum area served by a single VAV system is ≤ 50,000 sf, or one entire floor, whichever is greater; in addition if a system serves > 25,000 sf, that includes areas that are expected to be occupied non-simultaneously, indicate zone isolation controls per C403.2.1	M006	
YES	C403.6.10, Item 7	Interior / exterior zone design supply air temperature	Verify that VAV terminals serving interior cooling driven loads are sized per a design supply air temperature that is 5°F higher than VAV terminals serving exterior zones while in cooling mode	M003	
YES	C403.6.10, Item 8	Maximum air terminal inlet velocity and fan power	Identify all air terminals with minimum primary airflow setpoints > 50% of maximum setpoint in mechanical equipment schedule for these air terminals indicate inlet velocity does not exceed 900 fpm	M003	

Mechanical Requirements List, pg 21 of 25

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YES	C403.6.10,Ite m 8	Maximum allowable system brake horsepower	For each multiple-zone VAV system, provide calculations that verify total fan system bhp is ≤ 90% of the total allowable fan system bhp per Option 2 equation in Table C403.8.1.1	M007	
NA	C403.6.10,Ite m 9	Fan-powered terminal unit motor and control	Indicate all series and parallel fan-powered terminals have electronically commutated motors (ECM); indicate DDC control system is configured to vary air terminal fan speed as a function of the load; indicate fan speed during periods of low heating, low cooling, or ventilation-only mode is ≤ 66% of peak design air flow, or provide supporting documentation for applied exception		
YES	C403.6.10, Item 10	Application of single duct and fan-powered terminal units	Indicate VAV terminal types on plans; verify fan-powered terminal units only serve perimeter zones with envelope loads and interior zones with high occupant density and DCV per C403.7.1; verify all other zones are served by single duct terminal units	M003	
NA	C403.6.10, Item 11	Fan-powered terminal unit primary air reset	Indicate DDC controls are configured to automatically reset the primary supply air cfm setpoint of all fan-powered terminal units to the minimum required to maintain ventilation during occupied heating or deadband mode, based upon the VAV air handling unit minimum ventilation air fraction		
YES	C403.6.10,Ite m 12	Controls for high occupant density spaces	For zones > 150 sf with high occupant density (≥ 25 people / 1000 sf), indicate zone is served by a dedicated terminal unit with DCV control that resets terminal unit ventilation setpoint based on measured CO2; also indicate occupancy sensor control that automatically reduces minimum ventilation to zero and sets back room heating and cooling setpoints by ≥ 5°F when space in unoccupied	M003, M802, M101, M102A, M103A	
NA	C403.6.10, Item 13	Dedicated cooling systems serving data centers and server, electronic equipment and telecom spaces	For data centers and server, electronic equipment, telecom or similar spaces with design cooling loads > 5 W/sf, indicate spaces are served by dedicated cooling systems that are independent of the HPVAV systems serving the rest of building		
NA			Indicate dedicated cooling systems are configured for 100% air economizer operation and comply with all related economizer requirements per C403.5 (without economizer exceptions), or heat recovery per C403.5, Exception 9	M004	
NA	C403.6.10, Item 14	Central plant efficiency	Indicate whether systems are served by a high efficiency heating water plant, or a high efficiency chilled water plant		

Mechanical Requirements List, pg 22 of 25

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NA			If complying via high efficiency heating water plant: Indicate all VAV terminals have hydronic heating coils served by a heating water system with either gas-fired boiler(s) with thermal efficiency (Et) ≥ 92%, air-to-water heat pumps, or heat recovery chillers; indicate hydronic heating coils are sized per a maximum 120°F entering water temperature during peak demand		
NA			If complying via high efficiency chilled water plant: Indicate all VAV air handlers have cooling coils served by chillers with rated IPLV efficiency that exceeds WSEC listed IPLV by at least 25% per Table C403.3.2(7) (note water-cooled IPLV is max, all others are min); indicate smallest chiller or compressor in plant is ≤ 20% of the total plant capacity, or provide thermal storage sized for ≥ 20% of total plant capacity		
YES	C403.6.10, Item 15	Fault detection and diagnostics	Indicate DDC system includes automatic fault detection and diagnostics (FDD) configured to monitor operation and provide fault reporting of all required parameters for all VAV air handlers and VAV air terminal units in the HPVAV system	M802, M803	
HIGH EFFICIENCY SINGLE-ZONE VAV SYSTEMS - EXCEPTION TO C403.3.5 DOAS, MUST COMPLY WITH ALL 8 PROVISIONS TO BE ELIGIBLE					
NA	C403.12, Item 1	Air economizer	Indicate system is configured for 100% air economizer operation and complies with all related economizer requirements per C403.5 (without economizer exceptions)		
NA	C403.12, Item 2	Direct digital controls (DDC)	Provide DDC controls for all components of system per C403.4.11 (regardless of system size); identify all DDC system input / output control points; indicate capability for trending and graphical display		
NA	C403.12,Item 3	Outdoor airflow measurement and control	For systems with minimum required outdoor air ≥ 1,000 cfm, provide an airflow monitoring station that is configured to measure outdoor air intake under all load conditions; indicate controls that adjust outdoor air cfm via DCV per C403.7.1		
NA	C403.12,Item 4	Maximum allowable system brake horsepower	For each single-zone VAV system, provide calculations that verify total fan system bhp is ≤ 90% of the total allowable fan system bhp per Option 2 equation in Table C403.8.1.1		
NA	C403.12, Item 5	Supply airflow control	Provide controls that adjust supply airflow based on the heating and cooling loads; indicate control sequence that limits minimum fan speed to 30% of peak design airflow or required ventilation during unoccupied mode, whichever is less		

Mechanical Requirements List, pg 23 of 25

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NA	C403.12,Item 6	Controls for high occupant density spaces	For zones > 150 sf with high occupant density (≥ 25 people / 1000 sf), indicate DCV control that resets ventilation setpoint based on measured CO2; also indicate occupancy sensor control that automatically reduces minimum ventilation to zero and sets back room heating and cooling setpoints by ≥ 5°F when space in unoccupied		
NA	C403.12, Item 7	High efficiency system option	Indicate which system performance option is applied - high efficiency DX cooling and heat pump or high efficiency gas heating; or heating coils served by a high efficiency heating water plant; or cooling coils served by high efficiency chilled water plant		
NA			If complying via high efficiency DX: Indicate full load and part load rated cooling efficiency exceeds WSEC listed efficiency by at least 15%; if heating is supplied by a gas-fired furnace, indicate thermal efficiency (Et) is ≥ 90%; if system is a heat pump, indicate heating efficiency (HSPF or COP) exceeds WSEC listed efficiency by at least 10%; control of cooling and heating coil output shall be configured with a minimum of 2-stages or modulating		
NA			If complying via high efficiency heating water plant: Indicate hydronic heating coils are served by a heating water system with either gas-fired boiler(s) with thermal efficiency (Et) ≥ 92%, air-to-water heat pumps, or heat recovery chillers; indicate hydronic heating coils are sized per a maximum 120°F entering water temperature during peak demand		
NA			If complying via high efficiency chilled water plant: Indicate cooling coils are served by chillers with rated IPLV efficiency that exceeds WSEC listed IPLV by at least 25% per Table C403.3.2(7) (note water-cooled IPLV is max, all others are min); indicate smallest chiller or compressor in plant is ≤ 20% of the total plant capacity, or provide thermal storage sized for ≥ 20% of total plant capacity		
NA	C403.12, Item 8	Fault detection and diagnostics	Indicate DDC system includes automatic fault detection and diagnostics (FDD) configured to monitor operation and provide fault reporting of all required parameters for all HPVAV single-zone air systems		
EXTERIOR HEATING SYSTEMS					
	C403.11.1	Heating outside a building	Indicate systems providing heating in non-enclosed outdoor occupied spaces are radiant systems		

Mechanical Requirements List, pg 24 of 25

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			Indicate occupancy sensing or timer switch controls configured to automatically shut off heating system when area served is unoccupied		
	C403.11.2	Snow melt systems	Indicate automatic controls configured to shut off system when pavement temperature exceeds 50°F and no precipitation is falling, and when outdoor air temperature exceeds 40°F		
	C403.11.3	Freeze protection system controls	Indicate automatic controls to shut off system when outdoor temperature exceeds 40°F, or conditions protect fluid from freezing		
HVAC EQUIPMENT ENERGY USE METERING					
YES	C409.3.1	HVAC equipment energy use metering	For new buildings > 50,000 sf and building additions > 25,000 sf, verfiy energy use metering of all equipment used to provide space heating and cooling, dehumidification and ventilation will be provided per C409; indicate equipment eligible for exception	M801, see Elec dwgs for elec meters of HVAC scope	
DOCUMENTATION AND SYSTEM SPECIFIC REQUIREMENT TO SUPPORT COMMISSIONING (CX)					
YES	C408.1	Scope of mechanical systems commissioning	For buildings with ≥ 240,000 Btu/h total output cooling capacity or ≥ 300,000 Btu/h total output heating capacity, indicate that all mechanical systems regardless of individual capacity are required to be commissioned; or provide building heating / cooling capacity calculation demonstrating eligibilty for exception	M005	
YES			Indicate that all systems, equipment and controls for which the WSEC requires control functions and / or configuration to perform specific functions are included in the Cx scope	M005	
YES	C408.1.1 C408.1.4.1	Commissioning requirements in construction documents	Indicate in plans and specifications that Cx per C408 is required for all applicable mechanical systems	M005	
YES			Include general summary that includes at minimum: narrative description of activites, responsibilities of the Cx team, schedule of activities including verification of project close out documentation per C103.6, and conflict of interest plan (if required)	M005	
YES			Include in general summary that a Cx project report or Compliance Checklist (Figure C408.1.4.1) shall be completed by the Certified Cx Professional and provided to the owner prior to the final mechanical inspection.	M005	

Mechanical Requirements List, pg 1 of 25

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Project:
Pierce College New STEM Building - 2018 WSEC
1601 39th Ave SE
Puyallup, WA 98374

Date: 2022-06-24

Applies	Code Section	Code Provision	Compliance Information Required In Permit Documentation	Location in Documents	Building Department Notes
SCOPE					
	C103.1	Construction documents - General	For a shell & core or tenant space (first build-out) project, indicate if there is no mechanical scope included in the project.		
	C103.1	Construction documents - General	For an alteration project, indicate if there is no mechanical scope included in the project.		
PERFORMANCE CRITERIA & SYSTEM DESIGN					
NA	C403.1	Exempt process equipment	Identify equipment used by manufacturing, industrial or commercial processes that are not for space conditioning or maintaining comfort and amentities for occupants; identify provisions applicable to this equipment per C403.1 exception		
YES	C403.1.1	HVAC total system performance ratio (TSPR)	For systems serving office, retail, library or education occupancies, provide a TSPR report that demonstrates the proposed design ratio is equal to or greater than the standard reference design ratio, or exception applied	M007	
YES	C403.1.2	Calculation of heating and cooling loads	Provide load calculations performed per ASHRAE Std 183 or equivalent, using design parameters per C302 and Appendix C; include load adjustments to account for energy recovery	M007	
NA	C403.1.3	Data centers	Provide documentation that demonstrates that data center systems comply with the maximum allowed Design MLC and Annualized MLC per ASHRAE 90.4 with 2018 WSEC adjustments per climate zone		
YES	C403.2.1 C403.4.2.2	Zone isolation	If there are HVAC zones that are intended to be occupied non-simultaneously, identify isolation zone areas on plans; if multiple zones intended to be occupied simultaneously will be combined into a single isolation zone, include on plans that the combined zone area does not exceed 25,000 sf and does not include more than one floor; or exception applied	M003	
YES			Indicate locations of associated zone isolation dampers in HVAC distribution system	M003	
YES			Refer to HVAC Controls section in Requirements List for applicable automatic setback and shutdown controls requirements		
EQUIPMENT SELECTION & PERFORMANCE					

Page 1/25

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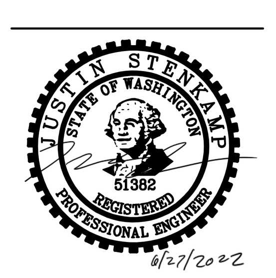

6/27/2022

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

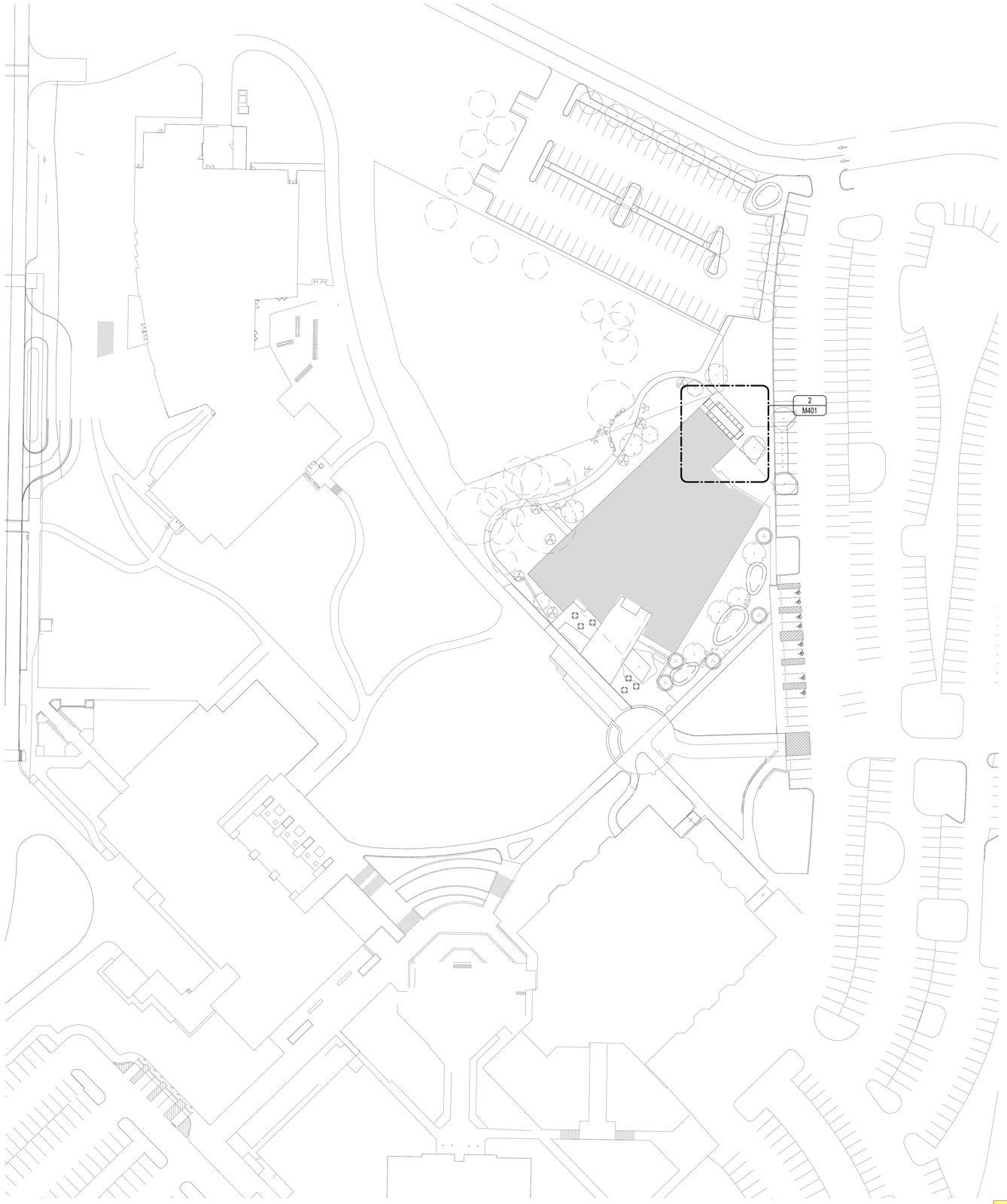
#	Date	Description

EQUIPMENT SCHEDULES - MECHANICAL

PRCNC20221036

M009

BUILDING PERMIT SET



1 SITE PLAN - MECHANICAL
1" = 40'-0"

GENERAL NOTES:

A. GENERAL NOTE A.
B. GENERAL NOTE B.
C. GENERAL NOTE C.
D. GENERAL NOTE D.
E. GENERAL NOTE E.

NOTES:

1. KEY NOTE 1.
2. KEY NOTE 2.
3. KEY NOTE 3.
4. KEY NOTE 4.
5. KEY NOTE 5.

PRCNC20221036

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6/27/2022

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SITE PLANS - MECHANICAL

M010

BUILDING PERMIT SET

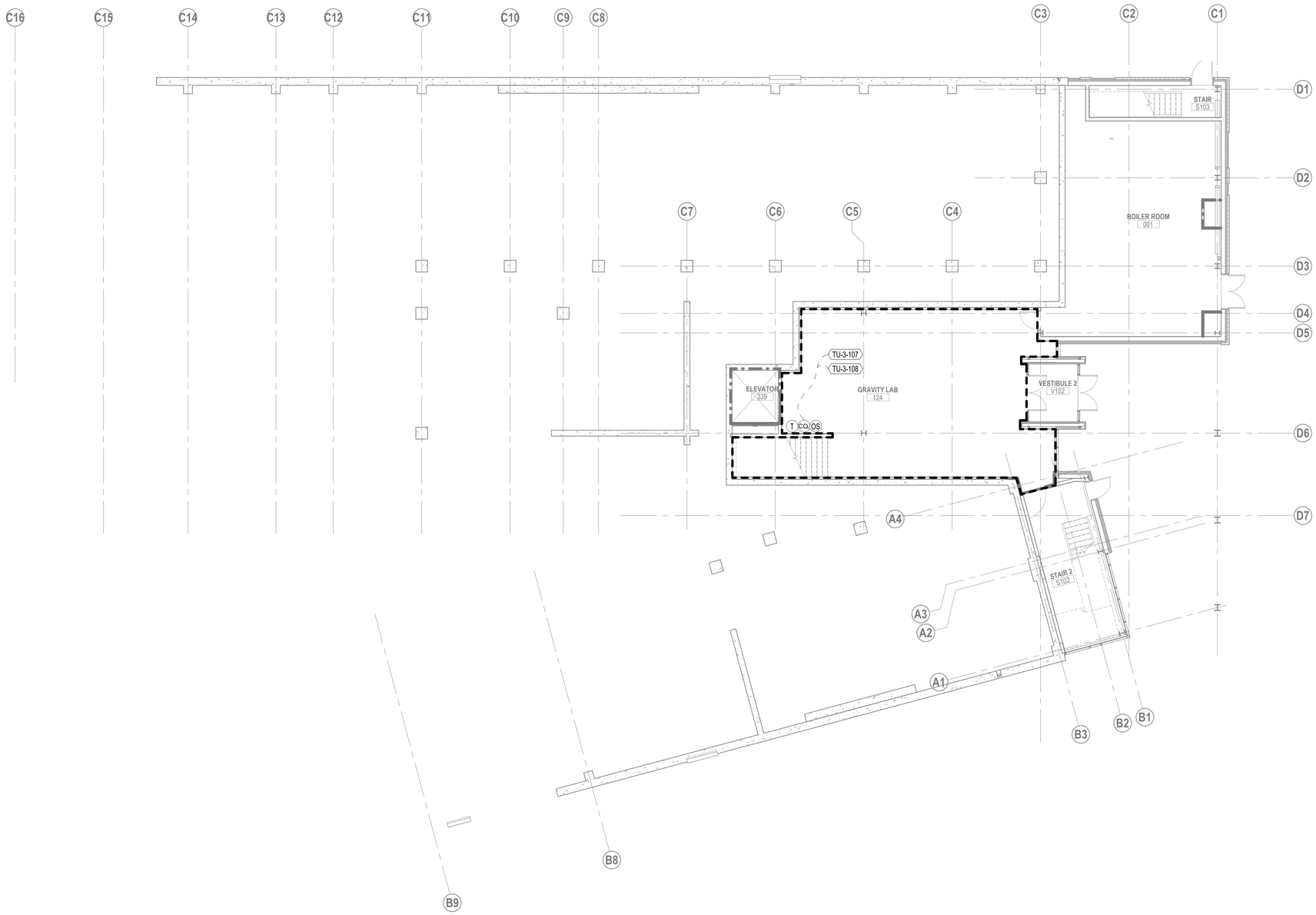
GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THERMOSTATS.

B. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.



1 FLOOR PLAN - LEVEL 0 - MECHANICAL ZONING
1/8" = 1'-0"

PRCNC20221036

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LEVEL 0 - FLOOR PLAN - MECHANICAL ZONING

M100

BUILDING PERMIT SET

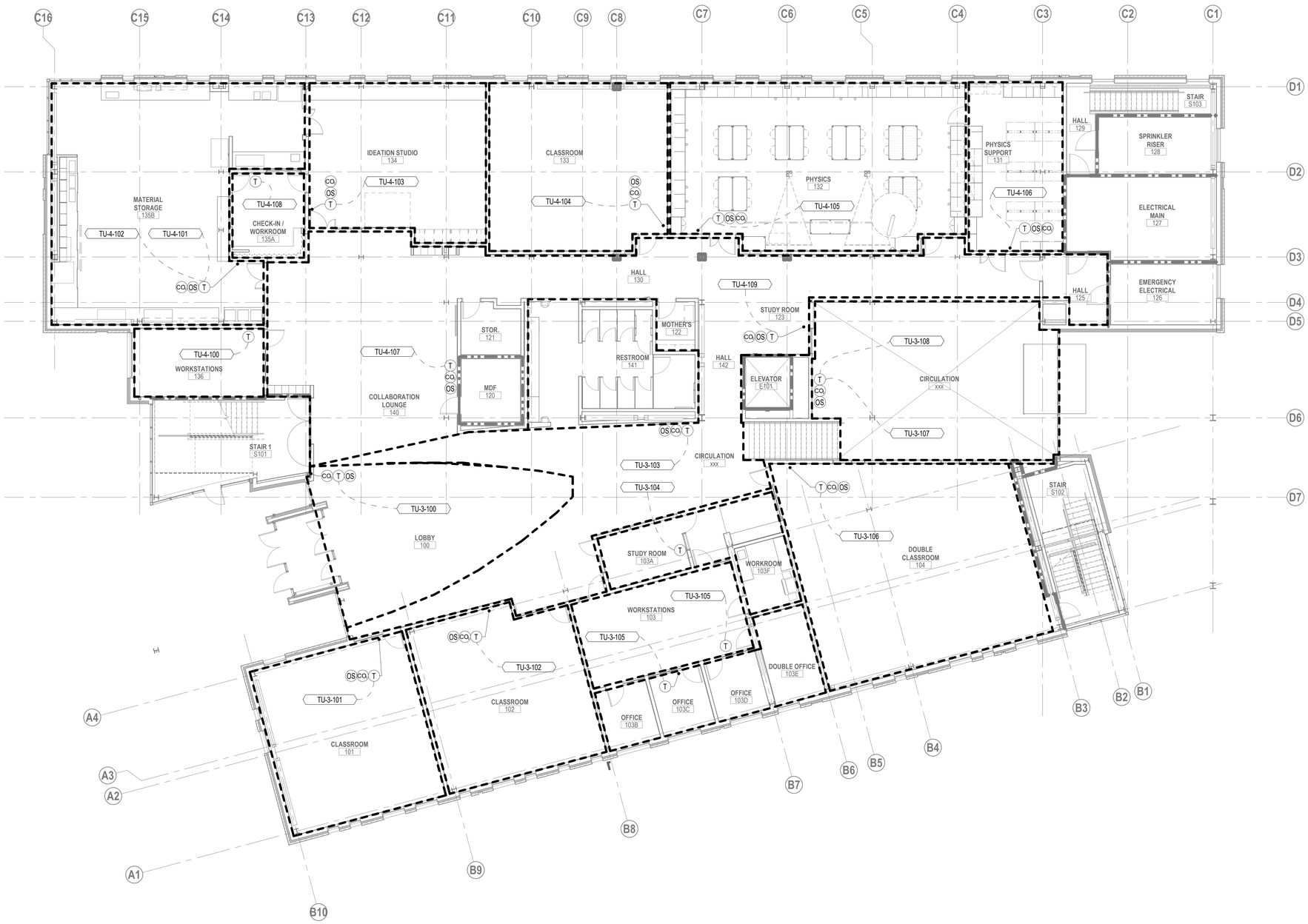
GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THERMOSTATS.

B. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.



1 LEVEL 1 - FLOOR PLAN - MECHANICAL - ZONING
1/8" = 1'-0"

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#	Date	Description

LEVEL 1 - FLOOR PLAN - MECHANICAL ZONING

M101

BUILDING PERMIT SET

GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THERMOSTATS.

B. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.

1 LEVEL 2 - FLOOR PLAN - MECHANICAL - ZONING
1/8" = 1'-0"

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#	Date	Description

LEVEL 2 - FLOOR PLAN - MECHANICAL ZONING

M102A

BUILDING PERMIT SET

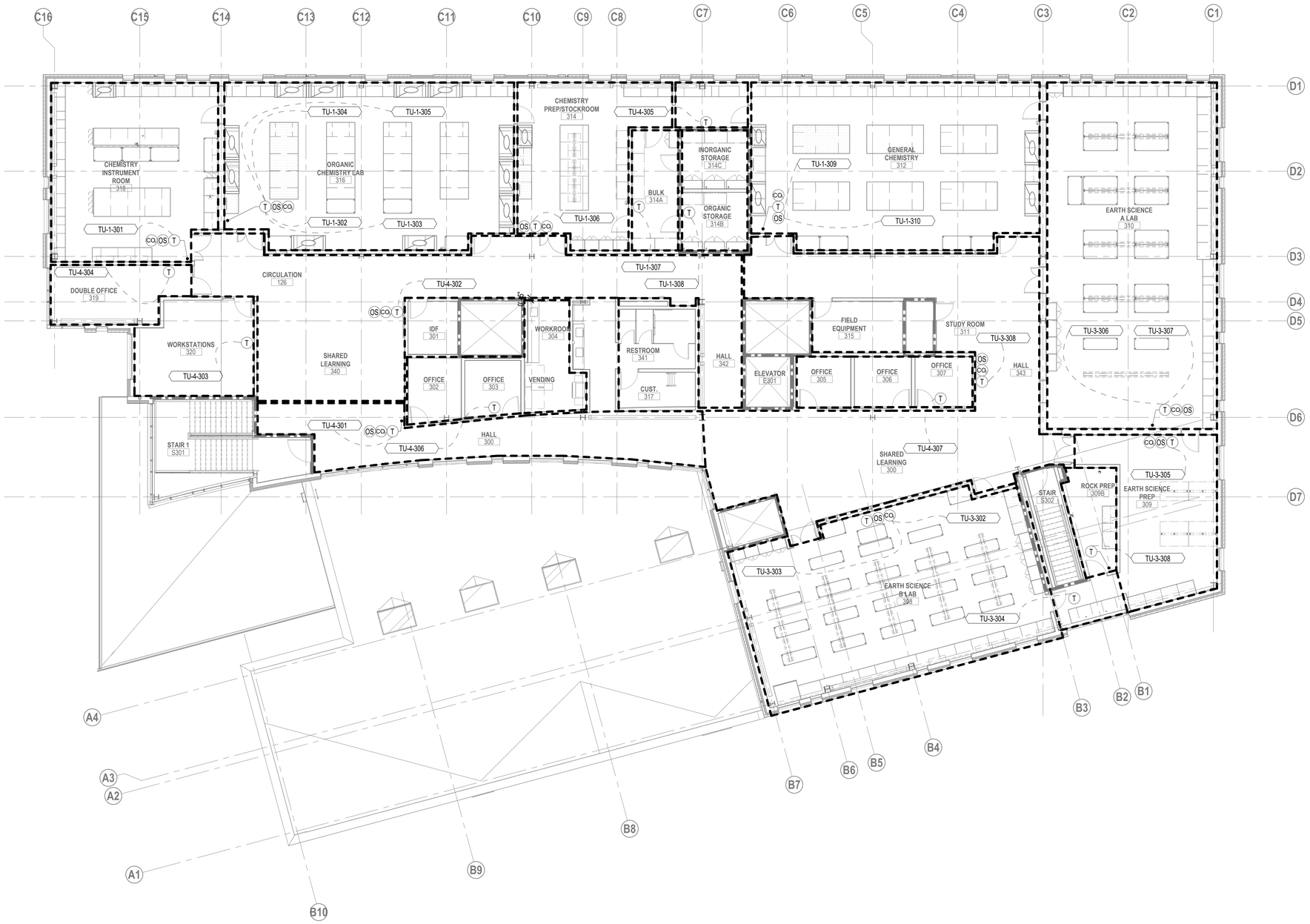
GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF THERMOSTATS.

B. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.



1 LEVEL 3 - FLOOR PLAN - MECHANICAL - ZONING
1/8" = 1'-0"

PRCNC20221036

BUILDING PERMIT SET

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Job No.:	22135.00
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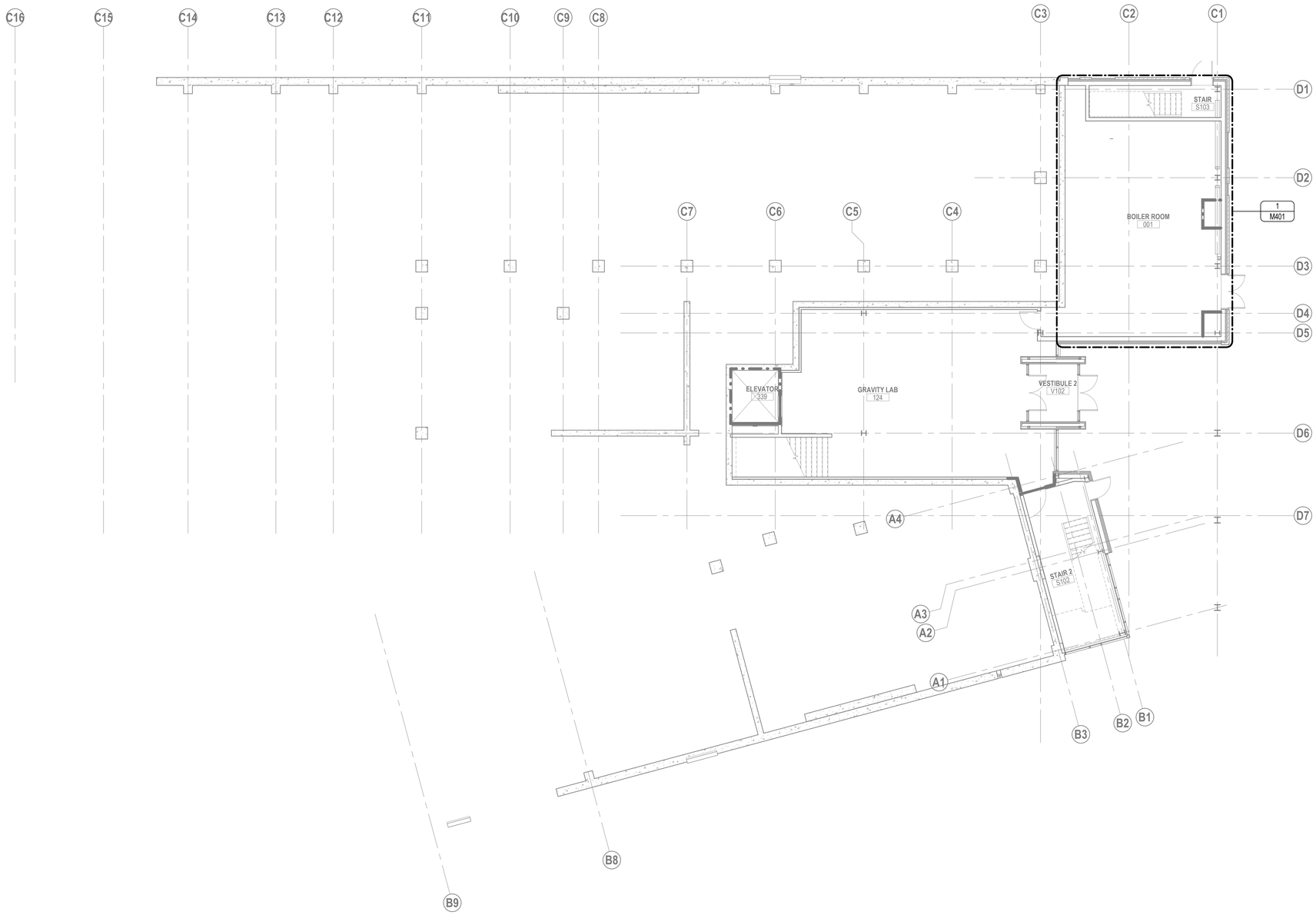
Revisions

#	Date	Description

LEVEL 3 - FLOOR PLAN - MECHANICAL ZONING

M103A



1 LEVEL 0 - FLOOR PLAN - MECHANICAL
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE SHEET METAL DUCTWORK AND COMPONENTS INCLUDING HANGING, SEALING, PLENUMS, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION, NFPA 90A, AND 90B STANDARDS.

B. DUCT DIMENSIONS SHOWN ARE INSIDE SHEET METAL DIMENSIONS OR CLEAR OPENING INSIDE LINED DUCT. THE FIRST NUMBER REPRESENTS THE WIDTH OF DUCT IN PLAN VIEW.

C. SIZE BRANCH DUCTWORK TO MATCH EQUIPMENT CONNECTION SIZE, UNLESS OTHERWISE NOTED.

D. SIZE BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER OR GRILLE CONNECTION SIZE, UNLESS OTHERWISE NOTED.

E. PROVIDE 24-INCH x 24-INCH ACCESS DOORS FOR MECHANICAL EQUIPMENT LOCATED ABOVE HARD LID CEILINGS. COORDINATE FINAL ACCESS DOOR LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

F. RUN DUCTS CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. INSTALL DUCTWORK AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

G. COORDINATE WORK WITH OTHER TRADES. PROVIDE OFFSETS IN DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES. M603 FOR CONNECTION DETAILS.

J. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

K. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

NOTES:

1. NONE.

PRCNC20221036

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

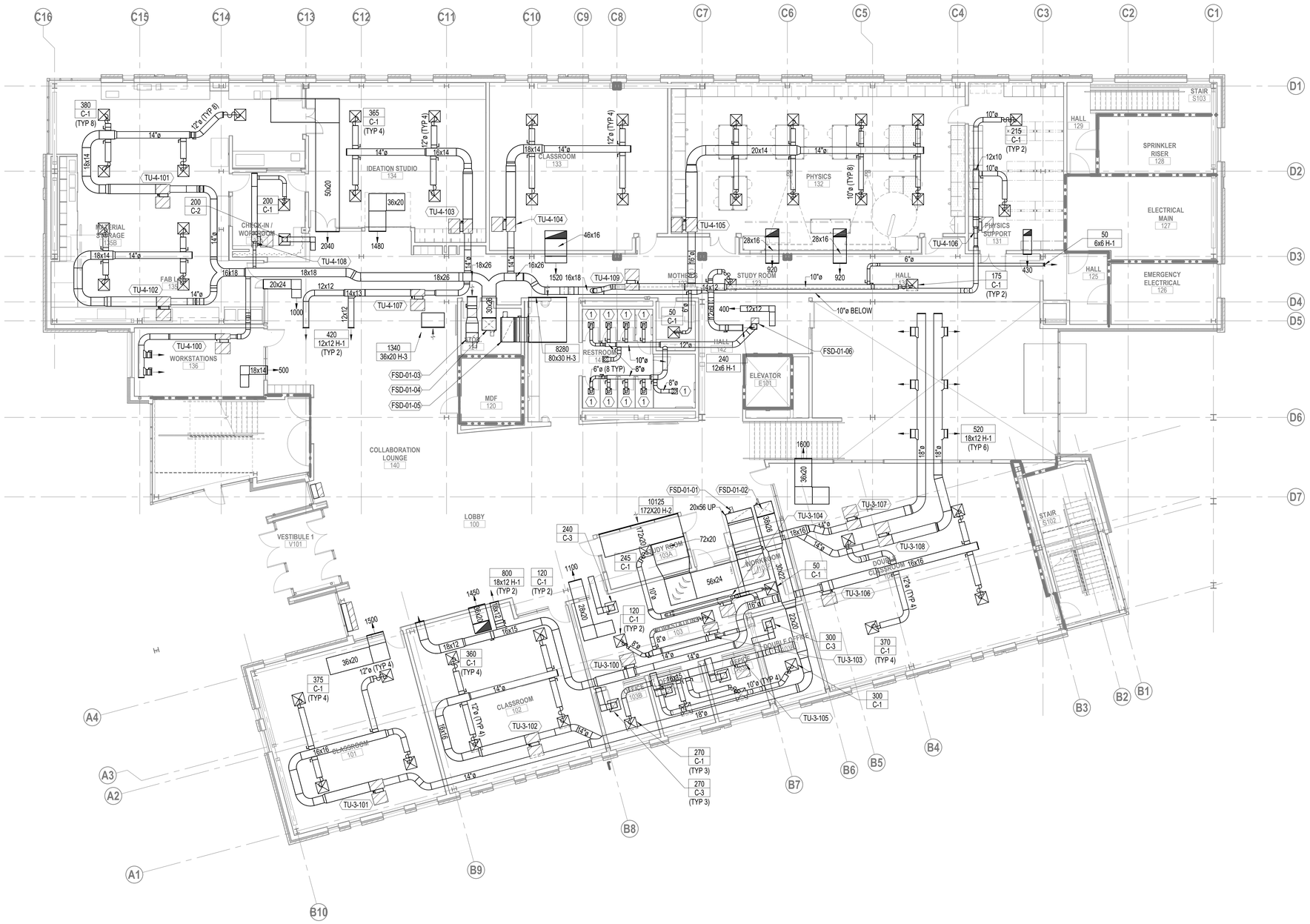
Revisions

#	Date	Description

LEVEL 0 - FLOOR PLAN - MECHANICAL

M200

BUILDING PERMIT SET



1 LEVEL 1 - FLOOR PLAN - MECHANICAL
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE SHEET METAL DUCTWORK AND COMPONENTS INCLUDING HANGING, SEALING, PLENUMS, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION, NFPA 90A, AND 90B STANDARDS.

B. DUCT DIMENSIONS SHOWN ARE INSIDE SHEET METAL DIMENSIONS OR CLEAR OPENING INSIDE LINED DUCT. THE FIRST NUMBER REPRESENTS THE WIDTH OF DUCT IN PLAN VIEW.

C. SIZE BRANCH DUCTWORK TO MATCH EQUIPMENT CONNECTION SIZE, UNLESS OTHERWISE NOTED.

D. SIZE BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER OR GRILLE CONNECTION SIZE, UNLESS OTHERWISE NOTED.

E. PROVIDE 24-INCH x 24-INCH ACCESS DOORS FOR MECHANICAL EQUIPMENT LOCATED ABOVE HARD LID CEILINGS. COORDINATE FINAL ACCESS DOOR LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

F. RUN DUCTS CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. INSTALL DUCTWORK AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

G. COORDINATE WORK WITH OTHER TRADES. PROVIDE OFFSETS IN DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES. M603 FOR CONNECTION DETAILS.

J. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

K. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

NOTES:

1. GENDER NEUTRAL RESTROOM. RESTROOM STALL PROVIDED WITH INDIVIDUAL EXHAUST GRILL AND MANUAL BALANCE DAMPER. STALL DOOR PROVIDED WITH 2" UNDERCUT FOR AIRFLOW.

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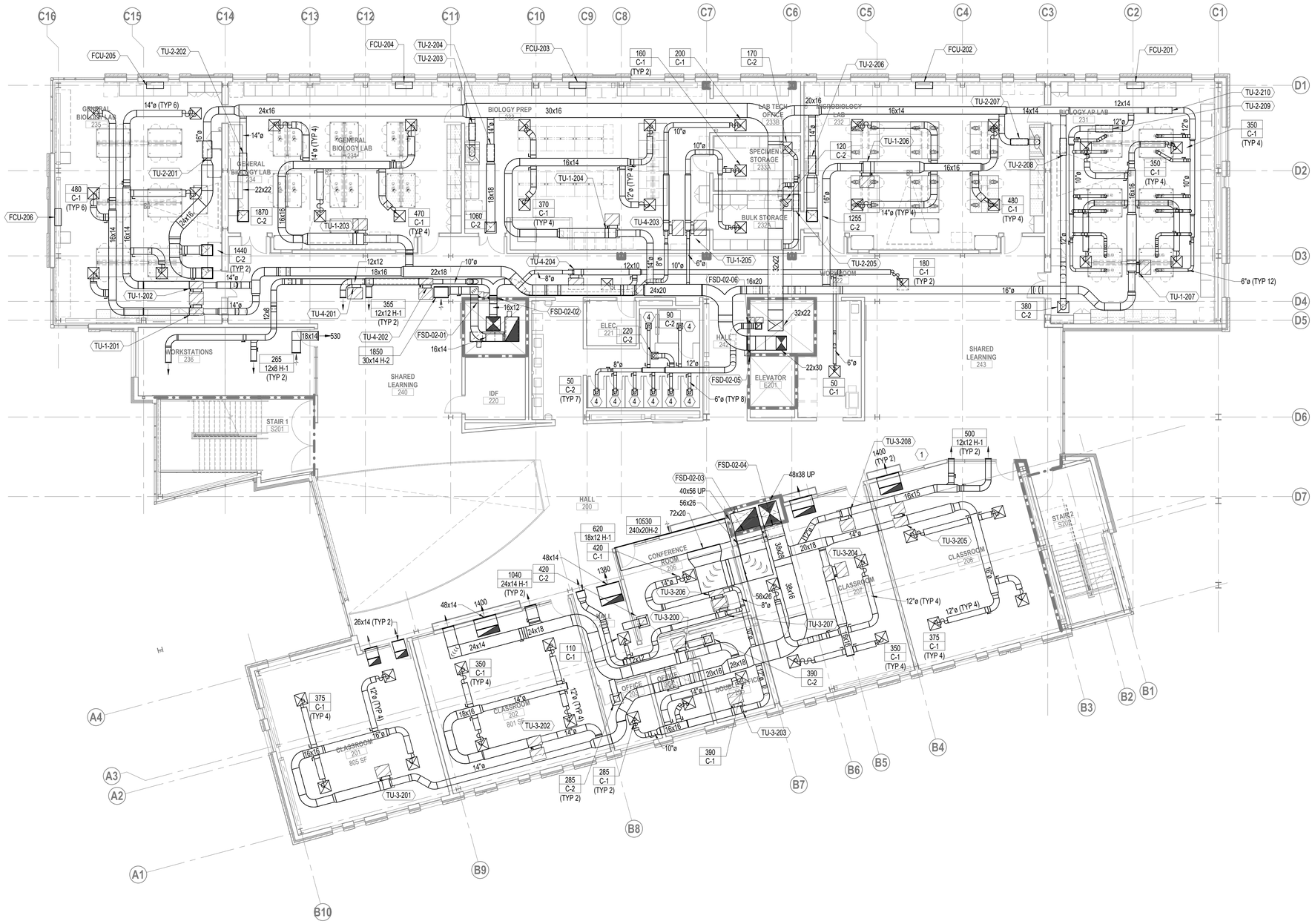
LEVEL 1 - FLOOR PLAN - MECHANICAL

M201

BUILDING PERMIT SET



1 LEVEL 2 - FLOOR PLAN - MECHANICAL
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE SHEET METAL DUCTWORK AND COMPONENTS INCLUDING HANGING, SEALING, PLENUMS, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION, NFPA 90A, AND 90B STANDARDS.

B. DUCT DIMENSIONS SHOWN ARE INSIDE SHEET METAL DIMENSIONS OR CLEAR OPENING INSIDE LINED DUCT. THE FIRST NUMBER REPRESENTS THE WIDTH OF DUCT IN PLAN VIEW.

C. SIZE BRANCH DUCTWORK TO MATCH EQUIPMENT CONNECTION SIZE, UNLESS OTHERWISE NOTED.

D. SIZE BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER OR GRILLE CONNECTION SIZE, UNLESS OTHERWISE NOTED.

E. PROVIDE 24-INCH x 24-INCH ACCESS DOORS FOR MECHANICAL EQUIPMENT LOCATED ABOVE HARD LID CEILINGS. COORDINATE FINAL ACCESS DOOR LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

F. RUN DUCTS CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. INSTALL DUCTWORK AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

G. COORDINATE WORK WITH OTHER TRADES. PROVIDE OFFSETS IN DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES. M603 FOR CONNECTION DETAILS.

J. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

K. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

NOTES:

1. PROVIDE VINYL MASS LOADED WRAP ON ALL FAN POWERED TERMINAL UNITS.
2. PROVIDE INTERNAL LINING ON ALL TRANSFER DUCTWORK.
3. PROVIDE SILENCERS IMMEDIATELY UPSTREAM AND DOWNSTREAM OF ALL FAN POWERED TERMINAL UNITS.
4. GENDER NEUTRAL RESTROOM. RESTROOM STALL PROVIDED WITH INDIVIDUAL EXHAUST GRILL AND MANUAL BALANCE DAMPER. STALL DOOR PROVIDED WITH 2" UNDERCUT FOR AIRFLOW.

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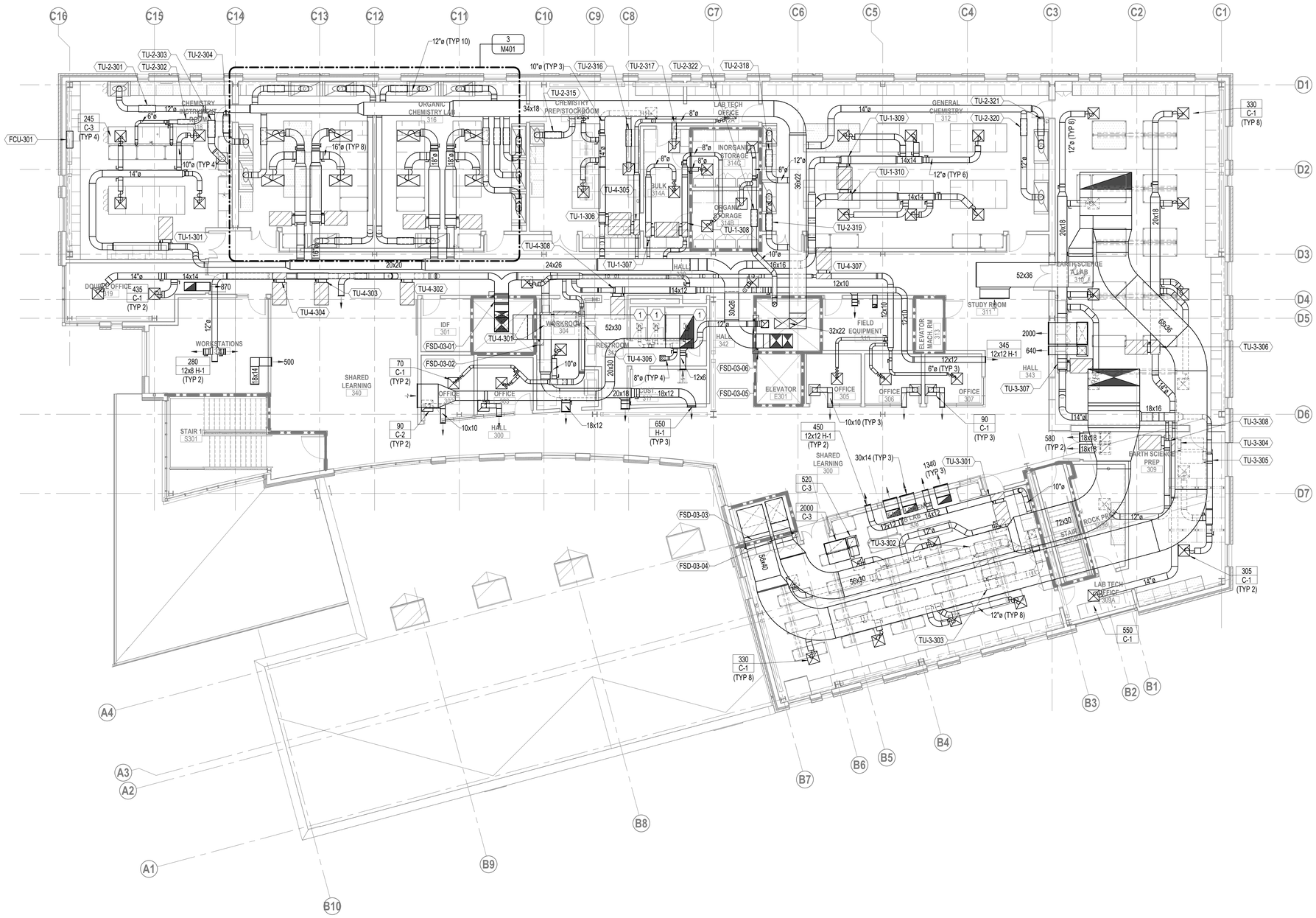
LEVEL 2 - FLOOR PLAN - MECHANICAL

M202

BUILDING PERMIT SET



1 LEVEL 3 - FLOOR PLAN - MECHANICAL
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE SHEET METAL DUCTWORK AND COMPONENTS INCLUDING HANGING, SEALING, PLENUMS, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION, NFPA 90A, AND 90B STANDARDS.

B. DUCT DIMENSIONS SHOWN ARE INSIDE SHEET METAL DIMENSIONS OR CLEAR OPENING INSIDE LINED DUCT. THE FIRST NUMBER REPRESENTS THE WIDTH OF DUCT IN PLAN VIEW.

C. SIZE BRANCH DUCTWORK TO MATCH EQUIPMENT CONNECTION SIZE, UNLESS OTHERWISE NOTED.

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F. RUN DUCTS CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. INSTALL DUCTWORK AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

G. COORDINATE WORK WITH OTHER TRADES. PROVIDE OFFSETS IN DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES. M603 FOR CONNECTION DETAILS.

J. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

K. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

NOTES:

1. GENDER NEUTRAL RESTROOM. RESTROOM STALL PROVIDED WITH INDIVIDUAL EXHAUST GRILL AND MANUAL BALANCE DAMPER. STALL DOOR PROVIDED WITH 2" UNDERCUT FOR AIRFLOW.

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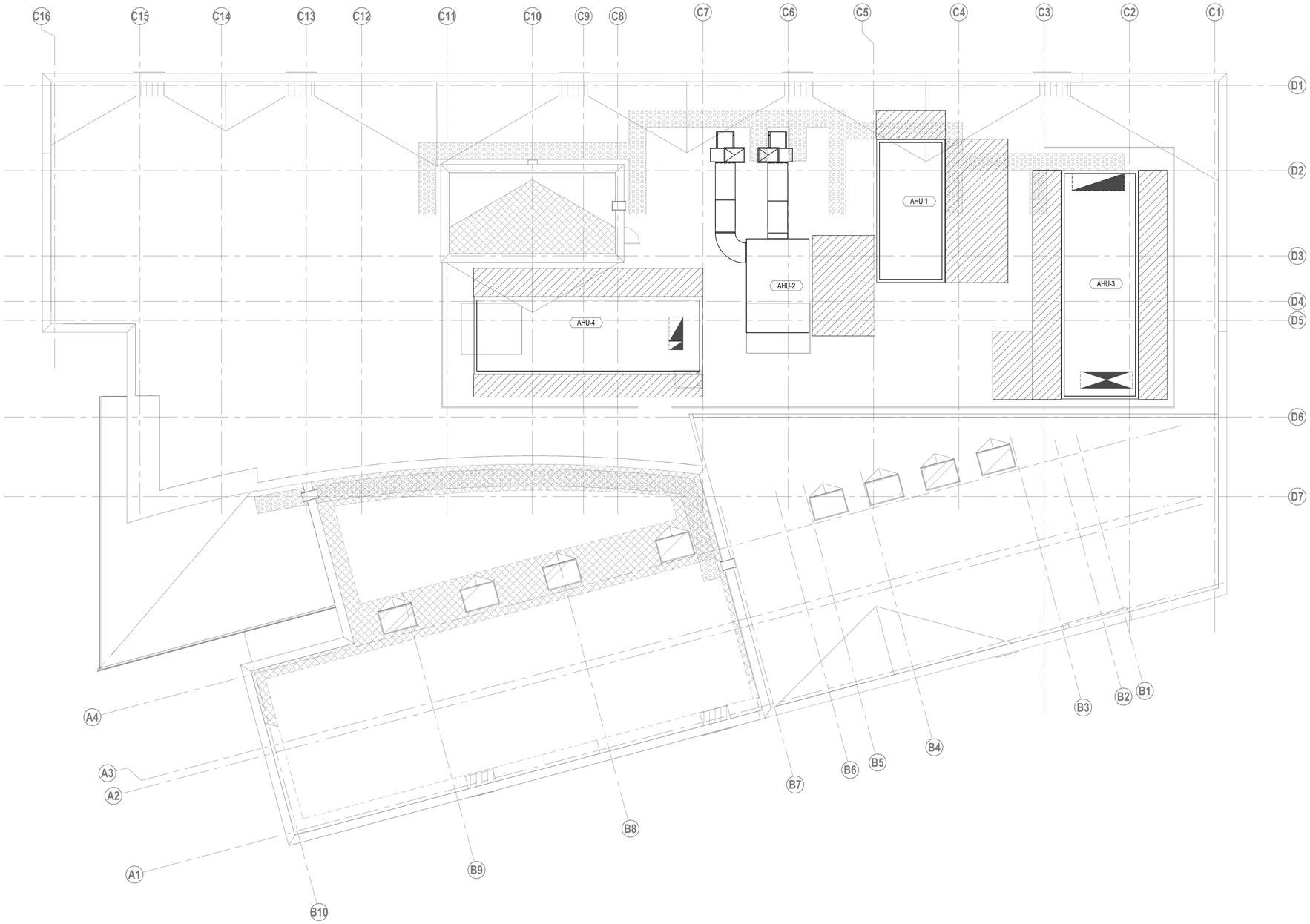
LEVEL 3 - FLOOR PLAN - MECHANICAL

M203



1 ROOF PLAN - MECHANICAL
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE SHEET METAL DUCTWORK AND COMPONENTS INCLUDING HANGING, SEALING, PLENUMS, AND ACCESSORIES IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA STANDARDS FOR HVAC DUCT CONSTRUCTION, NFPA 90A, AND 90B STANDARDS.

B. DUCT DIMENSIONS SHOWN ARE INSIDE SHEET METAL DIMENSIONS OR CLEAR OPENING INSIDE LINED DUCT. THE FIRST NUMBER REPRESENTS THE WIDTH OF DUCT IN PLAN VIEW.

C. SIZE BRANCH DUCTWORK TO MATCH EQUIPMENT CONNECTION SIZE, UNLESS OTHERWISE NOTED.

D. SIZE BRANCH DUCTWORK TO DIFFUSERS AND GRILLES TO MATCH DIFFUSER OR GRILLE CONNECTION SIZE, UNLESS OTHERWISE NOTED.

E. PROVIDE 24-INCH x 24-INCH ACCESS DOORS FOR MECHANICAL EQUIPMENT LOCATED ABOVE HARD LID CEILINGS. COORDINATE FINAL ACCESS DOOR LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

F. RUN DUCTS CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. INSTALL DUCTWORK AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.

G. COORDINATE WORK WITH OTHER TRADES. PROVIDE OFFSETS IN DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS AT NO ADDITIONAL COST TO THE OWNER.

H. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

I. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES. M603 FOR CONNECTION DETAILS.

J. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

K. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

NOTES:

1. NONE.

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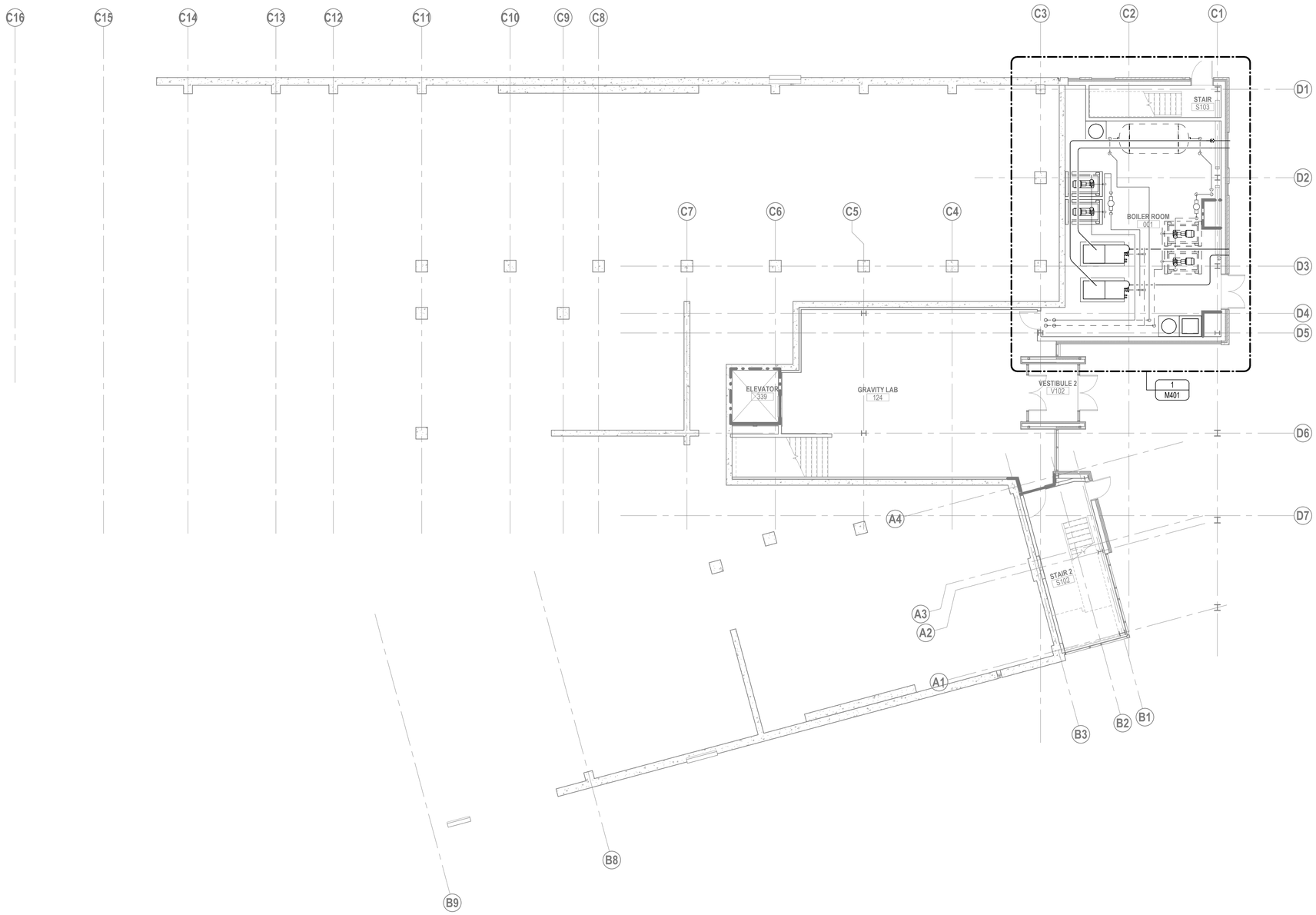
Revisions

#	Date	Description

ROOF PLAN - MECHANICAL

M204

BUILDING PERMIT SET



1 LEVEL 0 - FLOOR PLAN - MECHANICAL PIPING
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE INDEPENDENT 3/4-INCH SUPPLY AND RETURN HYDRONIC PIPING FROM BRANCH LINES TO TERMINAL EQUIPMENT UNLESS OTHERWISE NOTED.

A. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.

B. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

C. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, OR ROOFS. FILL ANNULAR SPACE WITH MINERAL FIBER (OR FIRE STOPPING MATERIAL WHERE FIRE RATED) AND SEAL WATERTIGHT.

D. PROVIDE WALL SLEEVES FLUSH WITH FINISHED SURFACE.

E. PROVIDE FLOOR SLEEVES EXTENDING A MINIMUM OF 2 INCHES ABOVE FINISHED FLOOR WITHIN EQUIPMENT ROOMS AND SHAFTS. DO NOT SUPPORT PIPING BY RESTING PIPE CLAMPS ON FLOOR SLEEVES.

F. PROVIDE ROOF SLEEVES EXTENDING A MINIMUM OF 8 INCHES ABOVE ROOF.

G. PROVIDE WALL AND CEILING PLATES AT EACH PIPE PENETRATION THROUGH ARCHITECTURAL WALLS AND CEILINGS.

H. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.

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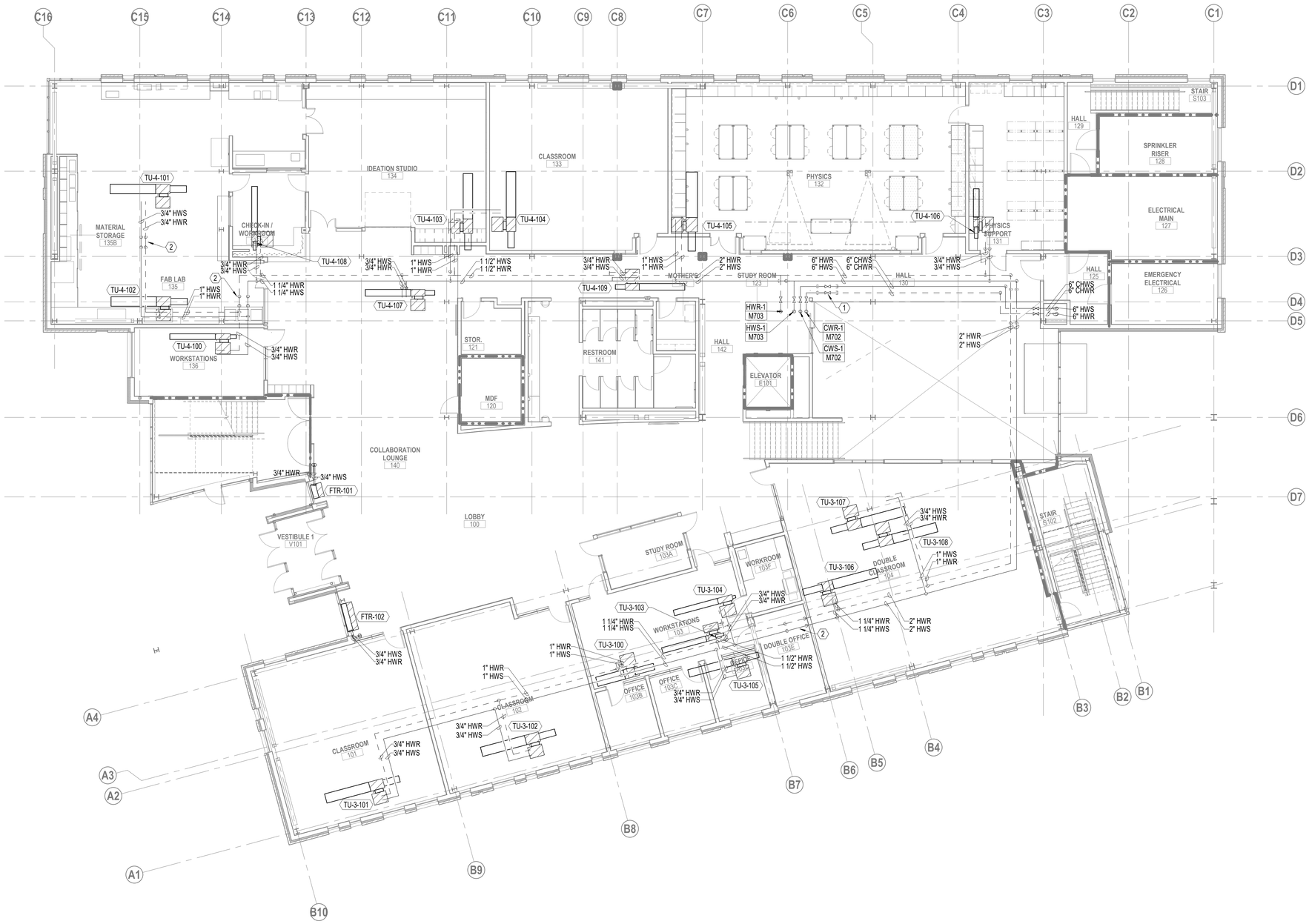
LEVEL 0 - FLOOR PLAN - MECHANICAL PIPING

M300

BUILDING PERMIT SET



1 LEVEL 1 - FLOOR PLAN - MECHANICAL PIPING
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE INDEPENDENT 3/4-INCH SUPPLY AND RETURN HYDRONIC PIPING FROM BRANCH LINES TO TERMINAL EQUIPMENT UNLESS OTHERWISE NOTED.

A. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.

B. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

C. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, OR ROOFS. FILL ANNULAR SPACE WITH MINERAL FIBER (OR FIRE STOPPING MATERIAL WHERE FIRE RATED) AND SEAL WATERTIGHT.

D. PROVIDE WALL SLEEVES FLUSH WITH FINISHED SURFACE.

E. PROVIDE FLOOR SLEEVES EXTENDING A MINIMUM OF 2 INCHES ABOVE FINISHED FLOOR WITHIN EQUIPMENT ROOMS AND SHAFTS. DO NOT SUPPORT PIPING BY RESTING PIPE CLAMPS ON FLOOR SLEEVES.

F. PROVIDE ROOF SLEEVES EXTENDING A MINIMUM OF 8 INCHES ABOVE ROOF.

G. PROVIDE WALL AND CEILING PLATES AT EACH PIPE PENETRATION THROUGH ARCHITECTURAL WALLS AND CEILINGS.

H. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. LINE TAKEOFF CAPPED FOR FUTURE DEMAND. SEE RISER DIAGRAM M702 FOR DETAIL.
2. PROVIDE OFFSETS TO AVOID STRUCTURE AND DUCTWORK AS NEEDED.

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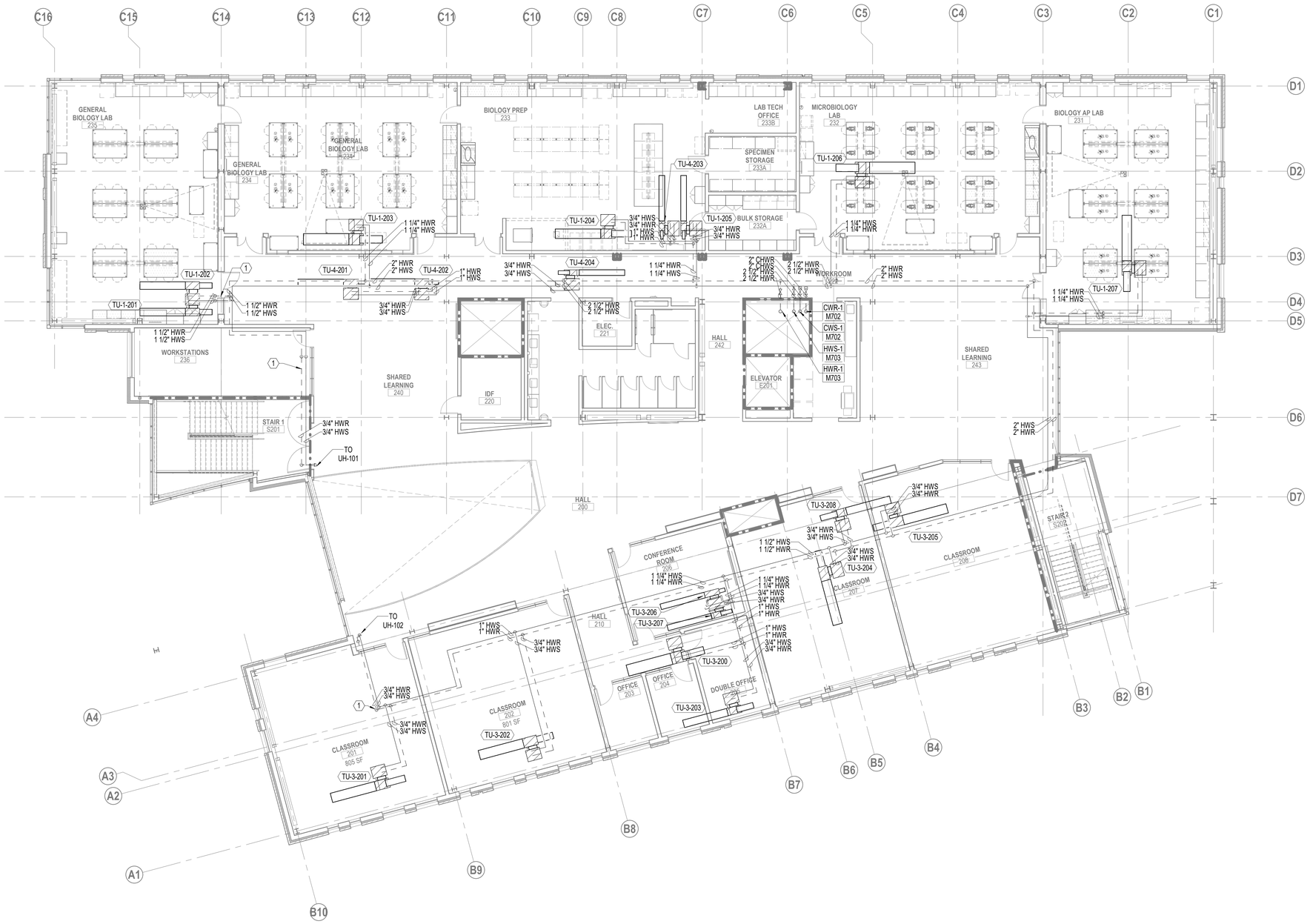
LEVEL 1 - FLOOR PLAN - MECHANICAL PIPING

M301

BUILDING PERMIT SET



1 LEVEL 2 - FLOOR PLAN - MECHANICAL PIPING
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE INDEPENDENT 3/4-INCH SUPPLY AND RETURN HYDRONIC PIPING FROM BRANCH LINES TO TERMINAL EQUIPMENT UNLESS OTHERWISE NOTED.

A. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.

B. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

C. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, OR ROOFS. FILL ANNULAR SPACE WITH MINERAL FIBER (OR FIRE STOPPING MATERIAL WHERE FIRE RATED) AND SEAL WATERTIGHT.

D. PROVIDE WALL SLEEVES FLUSH WITH FINISHED SURFACE.

E. PROVIDE FLOOR SLEEVES EXTENDING A MINIMUM OF 2 INCHES ABOVE FINISHED FLOOR WITHIN EQUIPMENT ROOMS AND SHAFTS. DO NOT SUPPORT PIPING BY RESTING PIPE CLAMPS ON FLOOR SLEEVES.

F. PROVIDE ROOF SLEEVES EXTENDING A MINIMUM OF 8 INCHES ABOVE ROOF.

G. PROVIDE WALL AND CEILING PLATES AT EACH PIPE PENETRATION THROUGH ARCHITECTURAL WALLS AND CEILINGS.

H. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. PROVIDE OFFSETS TO AVOID STRUCTURE AND DUCTWORK AS NEEDED.

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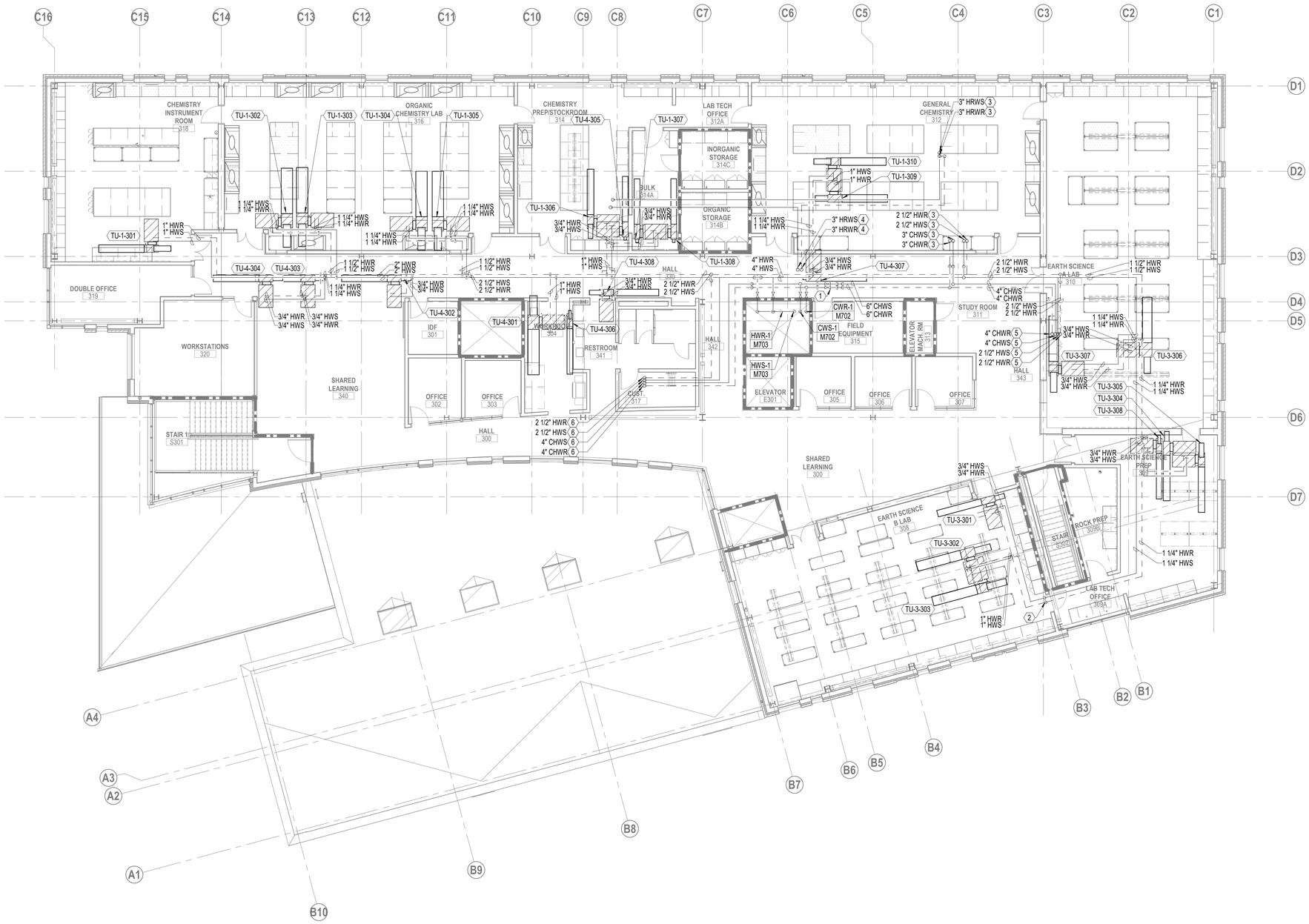
LEVEL 2 - FLOOR PLAN - MECHANICAL PIPING

M302

PRCNC20221036

BUILDING PERMIT SET



1 LEVEL 3 - FLOOR PLAN - MECHANICAL PIPING
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE INDEPENDENT 3/4-INCH SUPPLY AND RETURN HYDRONIC PIPING FROM BRANCH LINES TO TERMINAL EQUIPMENT UNLESS OTHERWISE NOTED.

A. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.

B. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

C. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, OR ROOFS. FILL ANNULAR SPACE WITH MINERAL FIBER (OR FIRE STOPPING MATERIAL WHERE FIRE RATED) AND SEAL WATERTIGHT.

D. PROVIDE WALL SLEEVES FLUSH WITH FINISHED SURFACE.

E. PROVIDE FLOOR SLEEVES EXTENDING A MINIMUM OF 2 INCHES ABOVE FINISHED FLOOR WITHIN EQUIPMENT ROOMS AND SHAFTS. DO NOT SUPPORT PIPING BY RESTING PIPE CLAMPS ON FLOOR SLEEVES.

F. PROVIDE ROOF SLEEVES EXTENDING A MINIMUM OF 8 INCHES ABOVE ROOF.

G. PROVIDE WALL AND CEILING PLATES AT EACH PIPE PENETRATION THROUGH ARCHITECTURAL WALLS AND CEILINGS.

H. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. LINE TAKEOFF CAPPED FOR FUTURE DEMAND. SEE RISER DIAGRAM M702 FOR DETAIL.
2. PROVIDE OFFSETS TO AVOID STRUCTURE AND DUCTWORK AS NEEDED.
3. UP TO AIR HANDELING UNIT 1.
4. UP TO AIR HANDELING UNIT 2.
5. UP TO AIR HANDELING UNIT 3.
6. UP TO AIR HANDELING UNIT 4.

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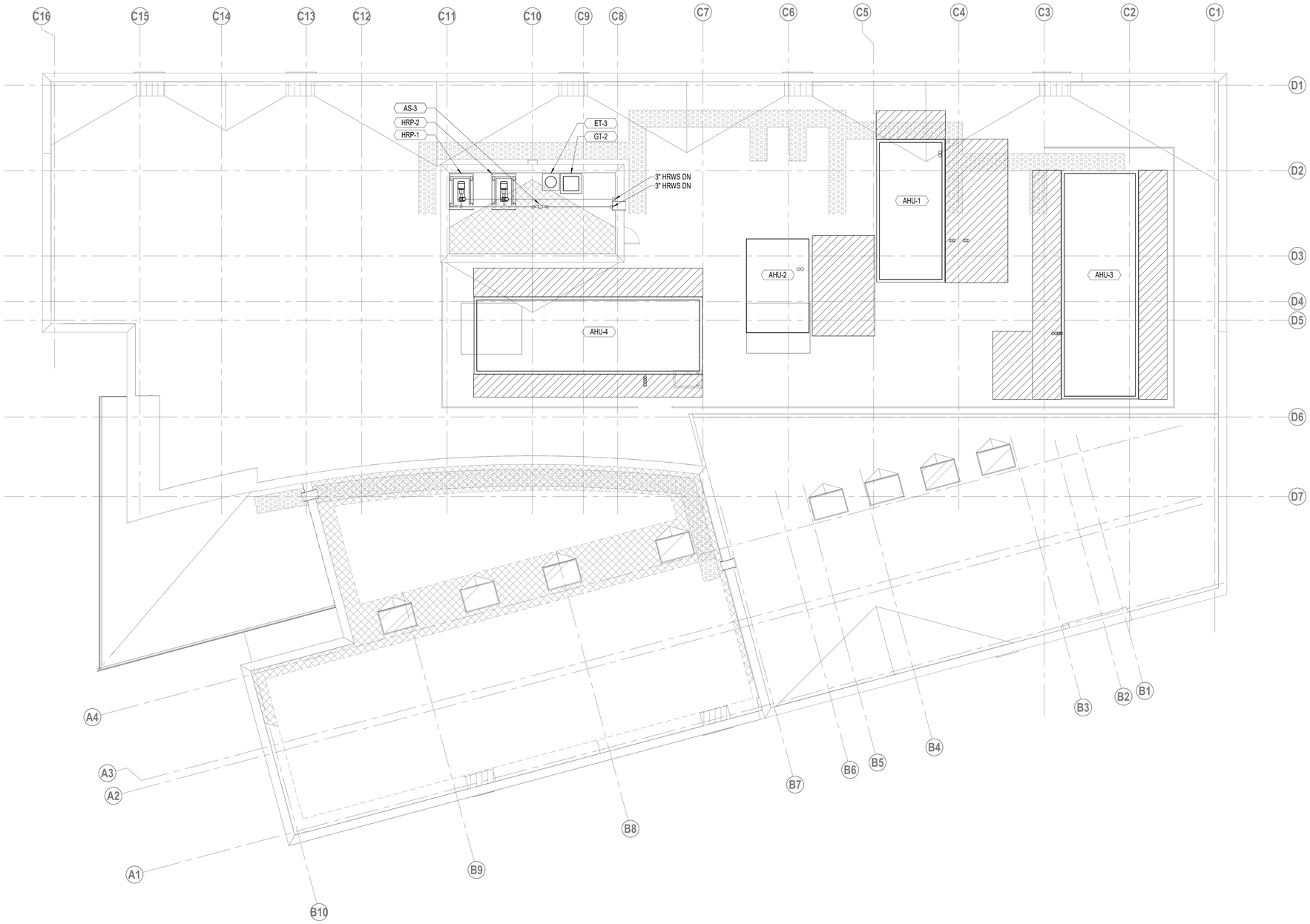
LEVEL 3 - FLOOR PLAN - MECHANICAL PIPING

M303

PRCNC20221036

BUILDING PERMIT SET



1 ROOF PLAN - MECHANICAL PIPING
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE INDEPENDENT 3/4-INCH SUPPLY AND RETURN HYDRONIC PIPING FROM BRANCH LINES TO TERMINAL EQUIPMENT UNLESS OTHERWISE NOTED.

A. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.

B. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE DIMENSIONS PRIOR TO FABRICATION.

C. PROVIDE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, OR ROOFS. FILL ANNULAR SPACE WITH MINERAL FIBER (OR FIRE STOPPING MATERIAL WHERE FIRE RATED) AND SEAL WATERTIGHT.

D. PROVIDE WALL SLEEVES FLUSH WITH FINISHED SURFACE.

E. PROVIDE FLOOR SLEEVES EXTENDING A MINIMUM OF 2 INCHES ABOVE FINISHED FLOOR WITHIN EQUIPMENT ROOMS AND SHAFTS. DO NOT SUPPORT PIPING BY RESTING PIPE CLAMPS ON FLOOR SLEEVES.

F. PROVIDE ROOF SLEEVES EXTENDING A MINIMUM OF 8 INCHES ABOVE ROOF.

G. PROVIDE WALL AND CEILING PLATES AT EACH PIPE PENETRATION THROUGH ARCHITECTURAL WALLS AND CEILINGS.

H. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

NOTES:

1. NONE.

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

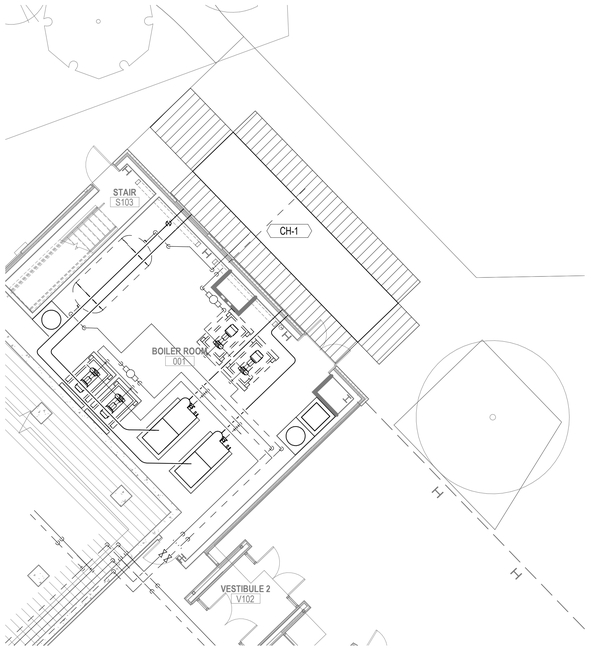
Revisions

#	Date	Description

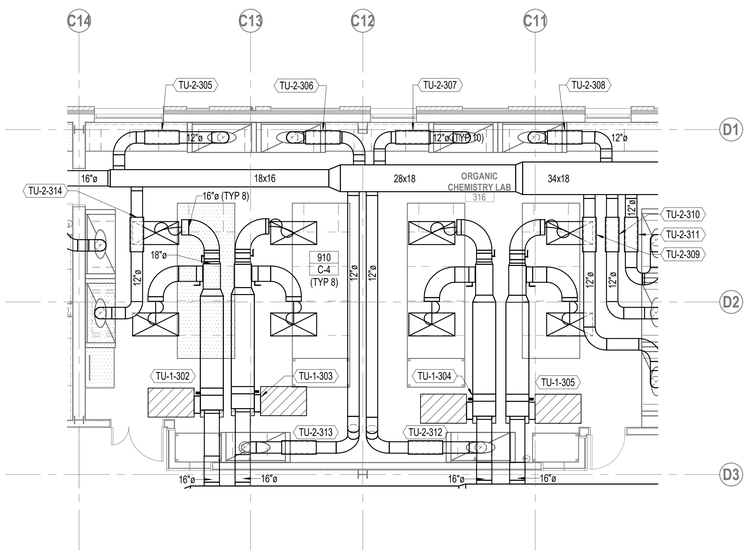
ROOF PLAN - MECHANICAL PIPING

M304

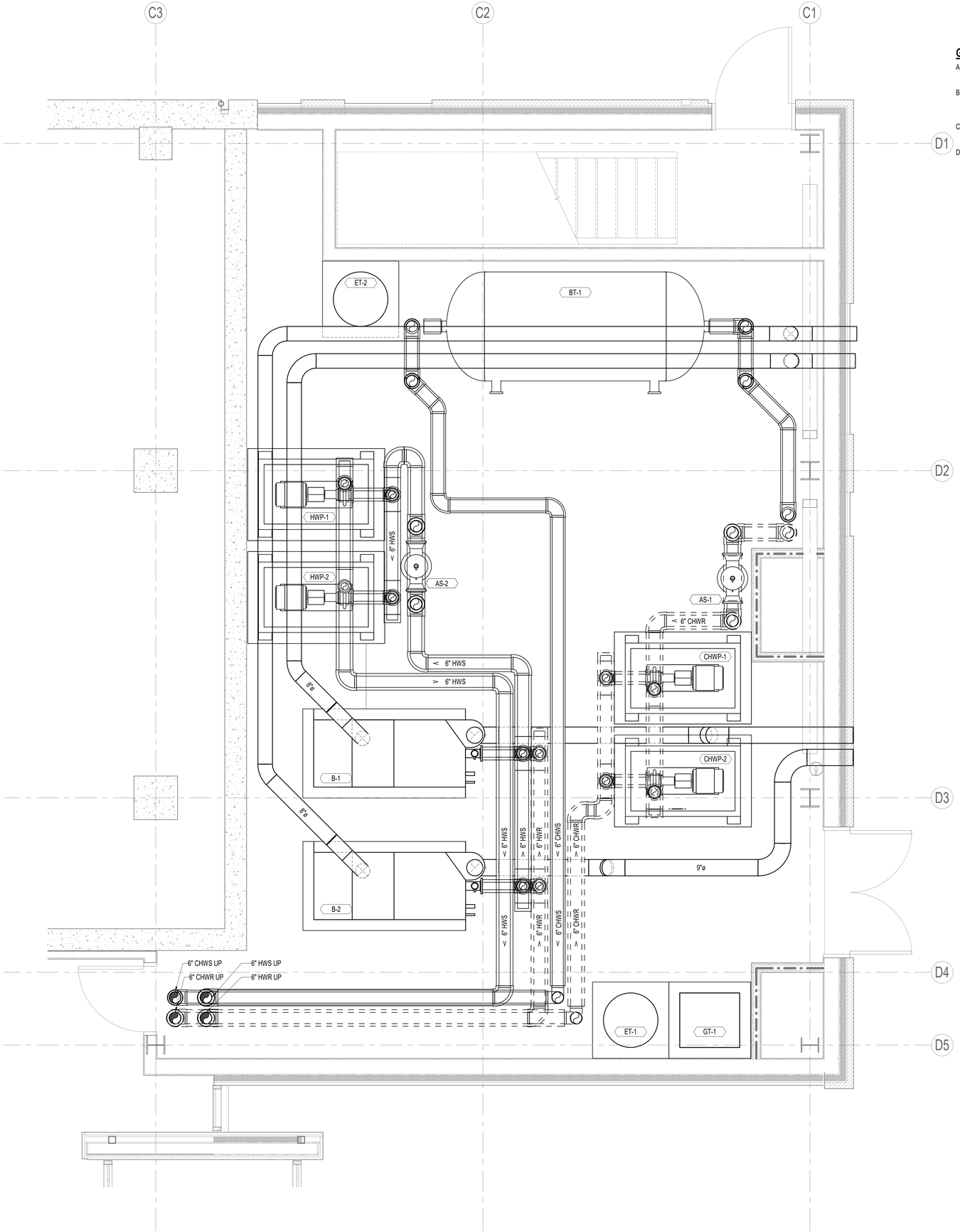
BUILDING PERMIT SET



2 PRINT - Mechanical - Site - Callout 1
1/8" = 1'-0"



3 LEVEL 3 - ORGANIC CHEMISTRY LAB 316 - ENLARGED PLAN - MECHANICAL
3/16" = 1'-0"



1 PRINT - MP - 001 BOILER ROOM - ENLARGED PLAN
1/2" = 1'-0"

GENERAL NOTES:

A. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

B. REFERENCE ARCH RCP'S FOR EXACT DIFFUSER LOCATIONS, AND M603 FOR CONNECTION DETAILS.

C. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

D. OUTLETS SHOWN ALONG RACEWAY, NOT INDICATED AS ABOVE COUNTER, ARE KNEE SPACE OUTLETS. COORDINATE EXACT LOCATION WITH LAB CONSULTANT AND CASEWORK DRAWINGS.

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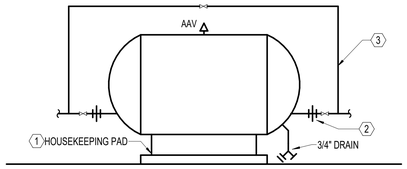
ENLARGED PLAN - MECHANICAL

PRCNC20221036

M401

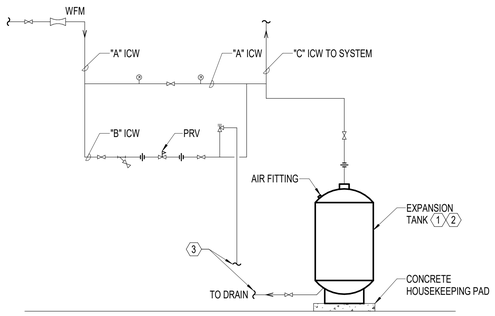
BUILDING PERMIT SET



NOTES:

1. SEE SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.
2. FULL LINE SIZE FLANGED CONNECTION.
3. FULL LINE BYPASS.

9 BUFFER TANK PIPING CONNECTIONS
NONE



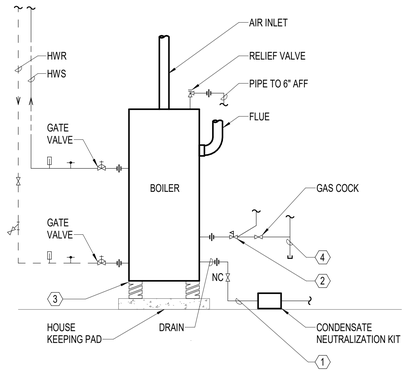
GENERAL NOTES:

A. SET PRESSURE RELIEF VALVES TO 15 PSI BELOW THE RATED OPERATING PRESSURE.

NOTES:

1. SEE SPECIFICATIONS FOR SEISMIC REQUIREMENTS.
2. VERTICAL FLOOR MOUNTED OR HORIZONTAL SUSPENDED FROM STRUCTURE AS INDICATED ON THE DRAWING.
3. DRAIN PIPING TO APPROVED RECEPTOR. TERMINATE AT DRAIN WITH AIR GAP.

10 EXPANSION TANK
NONE



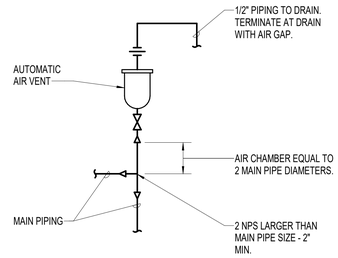
GENERAL NOTES:

A. SET PRESSURE RELIEF VALVES TO 15 PSI BELOW THE RATED OPERATING PRESSURE.

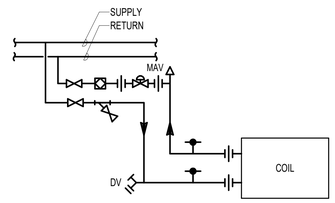
NOTES:

1. VENT DRAIN AND TRAP PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PRESSURE REGULATOR. REFER TO PLUMBING DOCUMENTS FOR ADDITIONAL INFORMATION.
3. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.
4. MAIN GAS VALVE. REFER TO PLUMBING DOCUMENTS FOR ADDITIONAL INFORMATION.
5. EQUIPMENT AND PIPING PROVIDED BY PLUMBING.
6. ISOLATION VALVE. PROVIDE WITH BOILER.
7. GAS CONTROL VALVE. PROVIDED WITH BOILER.
8. PILOT REGULATOR AND SOLENOID VALVE. PROVIDED WITH BOILER.

7 BOILER PIPING
NONE

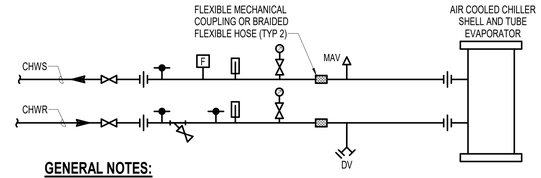


4 AUTOMATIC AIR VENT
NONE



2-WAY

5 HYDRONIC COIL PIPING DETAIL - 2-WAY
NONE



GENERAL NOTES:

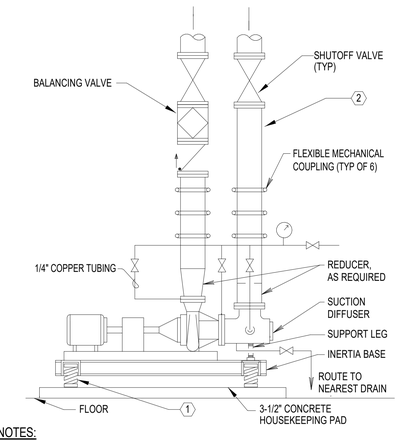
A. INSTALL ALL PIPING TO ALLOW SERVICING AND REPAIR ACCESS. INCLUDE A UNION OR VICTAULIC TYPE COUPLING IN PIPING AT A LOCATION IN EACH PIPE THAT ALLOWS PIPES TO BE EASILY REMOVED FOR TUBE BUNDLE MAINTENANCE.

B. VIBRATION ISOLATION AND SEISMIC RESTRAINT PER SPECIFICATIONS.

C. WELDED PIPE CONNECTIONS ARE NOT ALLOWED BETWEEN STRAINER AND EVAPORATOR DUE TO THE CHANCE OF SLAG ENTERING THE EVAPORATOR.

D. PROVIDE DUAL BASKET STRAINERS.

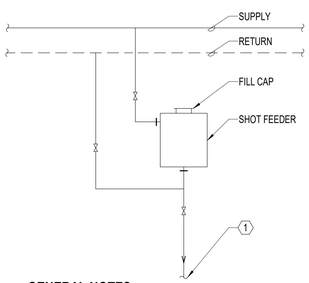
1 AIR COOLED CHILLER PIPING CONNECTIONS
NONE



NOTES:

1. SEE SPECIFICATIONS FOR VIBRATION ISOLATION AND SEISMIC RESTRAINT.
2. PROVIDE DUAL BASKET STRAINERS.

2 BASE MOUNTED PUMPS
NONE



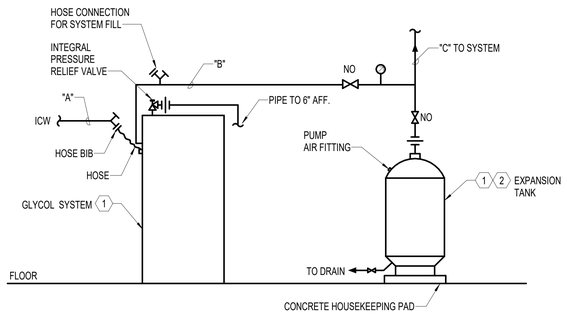
GENERAL NOTES:

A. INSULATE PIPING AND CHEMICAL FEEDER.

NOTES:

1. ROUTE TO NEAREST APPROVED RECEPTOR.

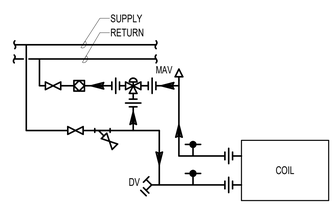
11 BY-PASS CHEMICAL FEEDER
NONE



NOTES:

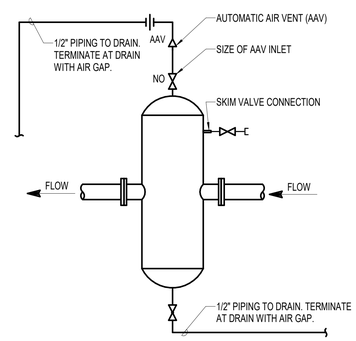
1. SEE SPECIFICATIONS FOR SEISMIC RESTRAINT REQUIREMENTS.
2. VERTICAL FLOOR MOUNTED OR HORIZONTAL SUSPENDED FROM STRUCTURE AS INDICATED ON THE DRAWING.

8 GLYCOL MIXING TANK
NONE



3-WAY

6 HYDRONIC COIL PIPING DETAIL - 3-WAY
NONE



3 AIR SEPARATOR - HIGH EFFICIENCY COALESCING
NONE

GENERAL NOTES:

A. DETAILS ARE PRELMINARY AND HAVE NOT BEEN EDITED TO MATCH THE BOD EQUIPMENT.

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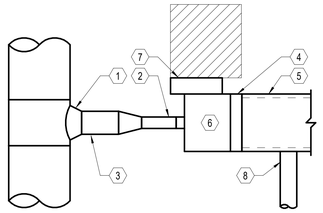
DETAILS - MECHANICAL

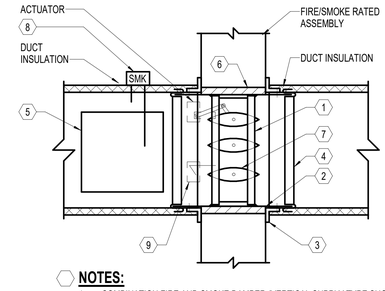
M601



NOTES:

1. CONICAL TEE.
2. INLET DUCT. MINIMUM STRAIGHT LENGTH = 3'-0" OR 4 DUCT DIAMETERS FROM MAIN DUCT, WHICHEVER IS LARGER. FLEXIBLE CONNECTIONS ARE NOT ALLOWED.
3. MEDIUM PRESSURE MAIN DUCT. IF UNDER 10'-0" IN LENGTH, DUCT SIZE TO BE SAME SIZE AS TERMINAL UNIT INLET CONNECTION, IF LENGTH IS 10'-0" OR LARGER, DUCT SIZE TO BE AS SHOWN ON PLAN.
4. HEATING COIL, WHERE INDICATED (ELECTRIC OR HYDRONIC). MAINTAIN NATIONAL ELECTRIC CODE CLEARANCE REQUIRED FOR ELECTRIC RE- HEAT COILS.
5. DISCHARGE DUCT TO BE 1.5" LINED SHEET METAL, MINIMUM 8'-0" LONG, SAME SIZE AS TERMINAL UNIT OUTLET, OR AS SHOWN ON PLAN, WHICHEVER IS LARGER.
6. TERMINAL UNIT. INSTALL UNIT WITHIN 2' ABOVE INSTALLED CEILING PLANE TO MAINTAIN SERVICE ACCESS.
7. CONTROL ENCLOSURE. PROVIDE 36" CLEARANCE DIRECTLY IN FRONT OF ENCLOSURE. MOUNT CONTROL PANEL AND COIL VALVE ASSEMBLY ON SAME SIDE OF UNIT.
8. FIRST BRANCH DUCT TAP MAY NOT BE WITHIN FIRST 5'-0" OF PLENUM.

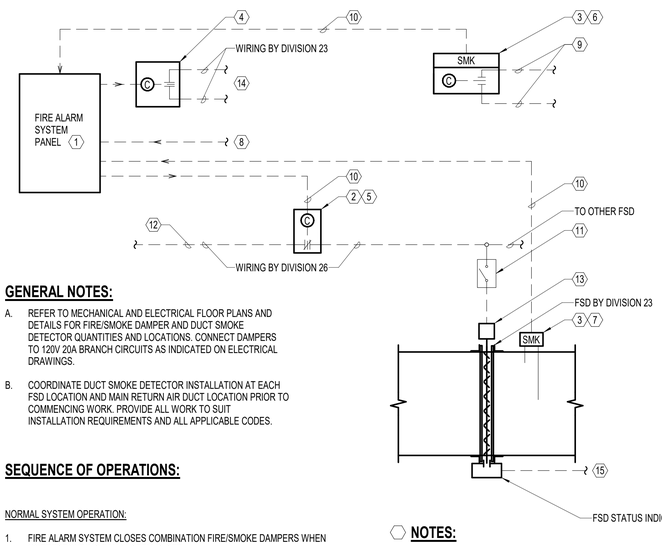
4 TYPICAL TERMINAL UNIT
NONE



NOTES:

1. COMBINATION FIRE AND SMOKE DAMPER (VERTICAL SUPPLY TYPE SHOWN, HORIZONTAL & RETURN/EXHAUST SIMILAR).
2. GALVANIZED STEEL SLEEVE GAUGE NOT LESS THAN CONNECTION DUCT. FASTEN TO DAMPER FRAME AND PERIMETER ANGLES. CAULK BETWEEN DAMPER FRAME & SLEEVE.
3. PERIMETER ANGLES-14 GA. GALVANIZED STEEL, 1 1/2" x 1 1/2" MIN. TO PROVIDE 1" MIN. OVERLAP OF OPENING ON ALL 4 SIDES. DO NOT FASTEN TO PARTITION.
4. AIR TIGHT, BREAKAWAY DUCT CONNECTION.
5. ACCESS PANEL-SIZE & LOCATION TO PERMIT SERVICING FUSIBLE ROD AND LINK. ACTUATOR TO BE LOCATED OUT OF AIR STREAM. LOCATE PANEL WITHIN 12" OF FSD.
6. PROVIDE 15/16" TO 1/2" CLEARANCE ON HEIGHT & WIDTH, OR AS SPECIFIED BY DAMPER MANUFACTURER. FILL OPENING WITH FIRESTOP MATERIAL.
7. PROVIDE AIRFOIL BLADES ON MEDIUM PRESSURE DUCTWORK.
8. SMOKE DETECTOR FURNISHED PER DIVISION 26, INSTALLED PER DIVISION 23, POWER WIRING PER DIVISION 26, CONTROL WIRING PER DIVISION 28.
9. DAMPER POSITION SWITCH.

1 COMBINATION FIRE/SMOKE DAMPER
NONE



GENERAL NOTES:

A. REFER TO MECHANICAL AND ELECTRICAL FLOOR PLANS AND DETAILS FOR FIRE/SMOKE DAMPER AND DUCT SMOKE DETECTOR QUANTITIES AND LOCATIONS. CONNECT DAMPERS TO 120V 20A BRANCH CIRCUITS AS INDICATED ON ELECTRICAL DRAWINGS.

B. COORDINATE DUCT SMOKE DETECTOR INSTALLATION AT EACH FSD LOCATION AND MAIN RETURN AIR DUCT LOCATION PRIOR TO COMMENCING WORK. PROVIDE ALL WORK TO SUIT INSTALLATION REQUIREMENTS AND ALL APPLICABLE CODES.

SEQUENCE OF OPERATIONS:

NORMAL SYSTEM OPERATION:

1. FIRE ALARM SYSTEM CLOSES COMBINATION FIRE/SMOKE DAMPERS WHEN CORRESPONDING FAN SYSTEM IS OFF.
2. DDC SYSTEM PROVIDES REQUIRED FAN SYSTEM STATUS SIGNALS TO FIRE ALARM SYSTEM TO ACHIEVE THIS OPERATION.

UPON THE DETECTION OF SMOKE BY ANY DUCT SMOKE DETECTOR:

1. THE FIRE ALARM SYSTEM SIGNALS THE AIR HANDLING UNIT IN ALARM TO SHUTDOWN VIA ADDRESSABLE CONTROL RELAY LOCATED AT EACH AIR HANDLING UNIT.
2. THE FIRE ALARM SYSTEM PROVIDES A SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY TO INITIATE THE DDC SYSTEM SHUTDOWN MODE.
3. UPON CONFIRMATION THAT AIR HANDLING UNITS HAVE SHUTDOWN, THE DDC SYSTEM PROVIDES FAN SHUTDOWN STATUS SIGNAL TO THE FIRE ALARM SYSTEM.
4. THE FIRE ALARM SYSTEM CLOSES COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S) 20-SECONDS (ADJUSTABLE) AFTER FAN SHUTDOWN SIGNAL OCCURRED.

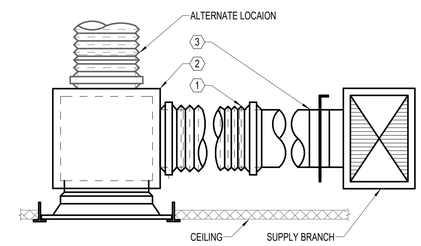
UPON FIRE ALARM RESET AFTER THE DETECTION OF SMOKE HAS OCCURRED:

1. THE FIRE ALARM SYSTEM OPENS COMBINATION FIRE/SMOKE DAMPERS VIA ADDRESSABLE CONTROL RELAY(S).
2. THE FIRE ALARM SYSTEM DISABLES FAN SHUTDOWN SIGNAL TO THE DDC SYSTEM VIA SINGLE ADDRESSABLE CONTROL RELAY.
3. THE FIRE ALARM SYSTEM DISABLES SHUTDOWN SIGNAL TO EACH AIR HANDLING UNIT VIA ADDRESSABLE CONTROL RELAY.

NOTES:

1. REFER TO ELECTRICAL PLANS FOR FIRE ALARM PANEL LOCATION.
2. MOUNT ADJACENT TO APPROPRIATE ELECTRICAL PANEL.
3. PROVIDE/MAINTAIN WORKING ACCESS TO DUCT SMOKE DETECTORS.
4. REMOTE ADDRESSABLE FIRE ALARM RELAY PROVIDED BY DIVISION 28 (FORM C CONTACT). MOUNT ADJACENT TO FIRE ALARM PANEL.
5. REMOTE ADDRESSABLE FIRE ALARM RELAY BY DIVISION 28 (PROGRAMMED FOR 20 SECOND DELAY AFTER FAN STOP SIGNAL).
6. AHU DUCT SMOKE DETECTOR WITH SEPARATELY ADDRESSABLE RELAY BASE (FORM C CONTACT) FURNISHED BY DIVISION 28. WIRED BY DIVISION 28 TO FIRE ALARM SYSTEM. DETECTOR INSTALLED BY DIVISION 23.
7. DUCT SMOKE DETECTOR FURNISHED BY DIVISION 28. WIRED BY DIVISION 28 TO FIRE ALARM SYSTEM. INSTALLED BY DIVISION 23.
8. FAN SHUTDOWN STATUS SIGNAL FROM DDC SYSTEM (FORM C CONTACT).
9. WIRING BY DIVISION 23 FOR HARDWIRED AHU SHUTDOWN.
10. FIRE ALARM WIRE BY DIVISION 28.
11. DISCONNECT BY DIVISION 26 (TYP) FOR EACH FSD.
12. 120V BRANCH CIRCUIT BY DIVISION 26 (TYP).
13. FSD ACTUATOR BY DIVISION 23 (TYP).
14. FAN SHUTDOWN BY DDC SYSTEM.
15. TO DDC BY DIVISION 23. TO FIRE ALARM BY DIVISION 28

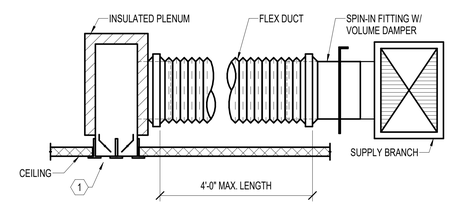
5 HVAC AND FIRE ALARM INTERFACE WITH FSD STATUS INDICATOR
NONE



NOTES:

1. FLEX DUCT. 4' MAX LENGTH.
2. SHEETMETAL PLENUM SIZED 3-INCHES LARGER THAN DIFFUSER DUCT CONNECTION SIZE WITH 1-INCH BLACK DUCT LINER.
3. SPIN-IN FITTING WITH VOLUME DAMPER.

2 TYPICAL SQUARE NECK T-BAR DIFFUSER
NONE



NOTES:

1. REFER TO ARCH RCP FOR CEILING AND DIFFUSER LOCATIONS.

3 TYPICAL SLOT DIFFUSER
NONE

GENERAL NOTES:

A. DEATILS ARE PRELMINARY AND HAVE NOT BEEN EDITED TO MATCH THE BOD EQUIPMENT.

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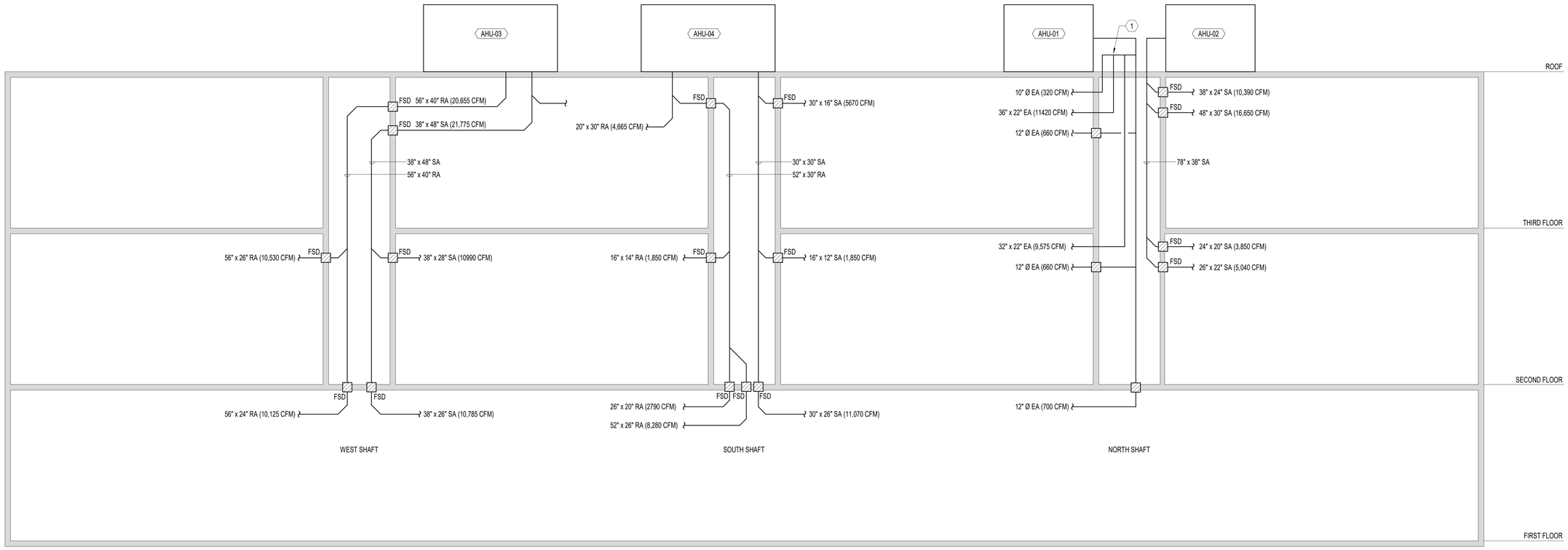
DETAILS - MECHANICAL

M602

NOTES:

1. PROVIDE ADD ALT PRICING FOR ADDITIONAL 10x8 RISER TO MEET LEED ENHANCED INDOOR AIR QUALITY CREDIT SERVING JANITOR CLOSETS. 400 CFM TOTAL EA.



1 AIR FOW DIAGRAM
NONE

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FLOW DIAGRAMS - MECHANICAL

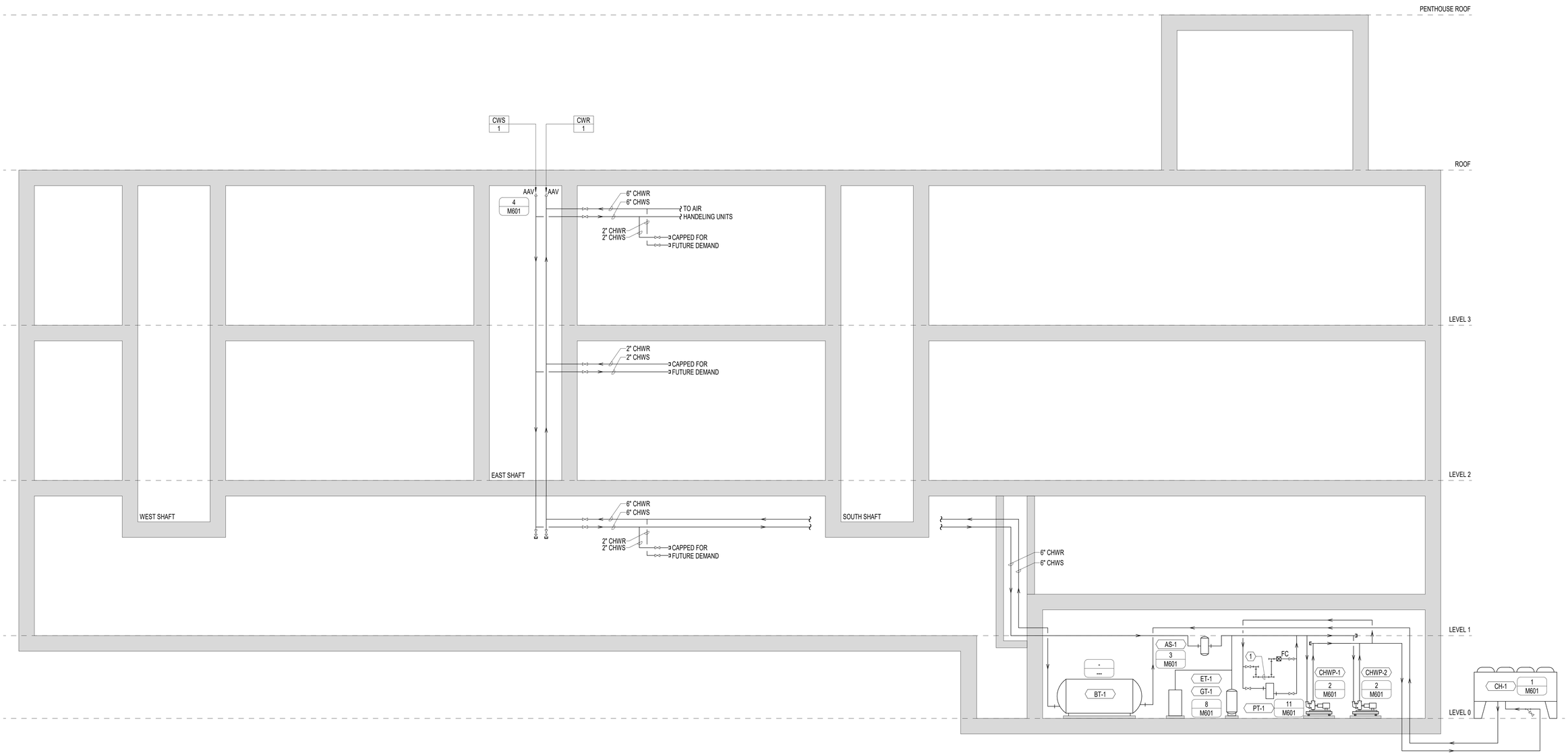
PRCNC20221036

M701

BUILDING PERMIT SET

NOTES:

1. CORROSION COUPON RACK.



1 CHILLED WATER FOW DIAGRAM
NONE

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FLOW DIAGRAMS - MECHANICAL

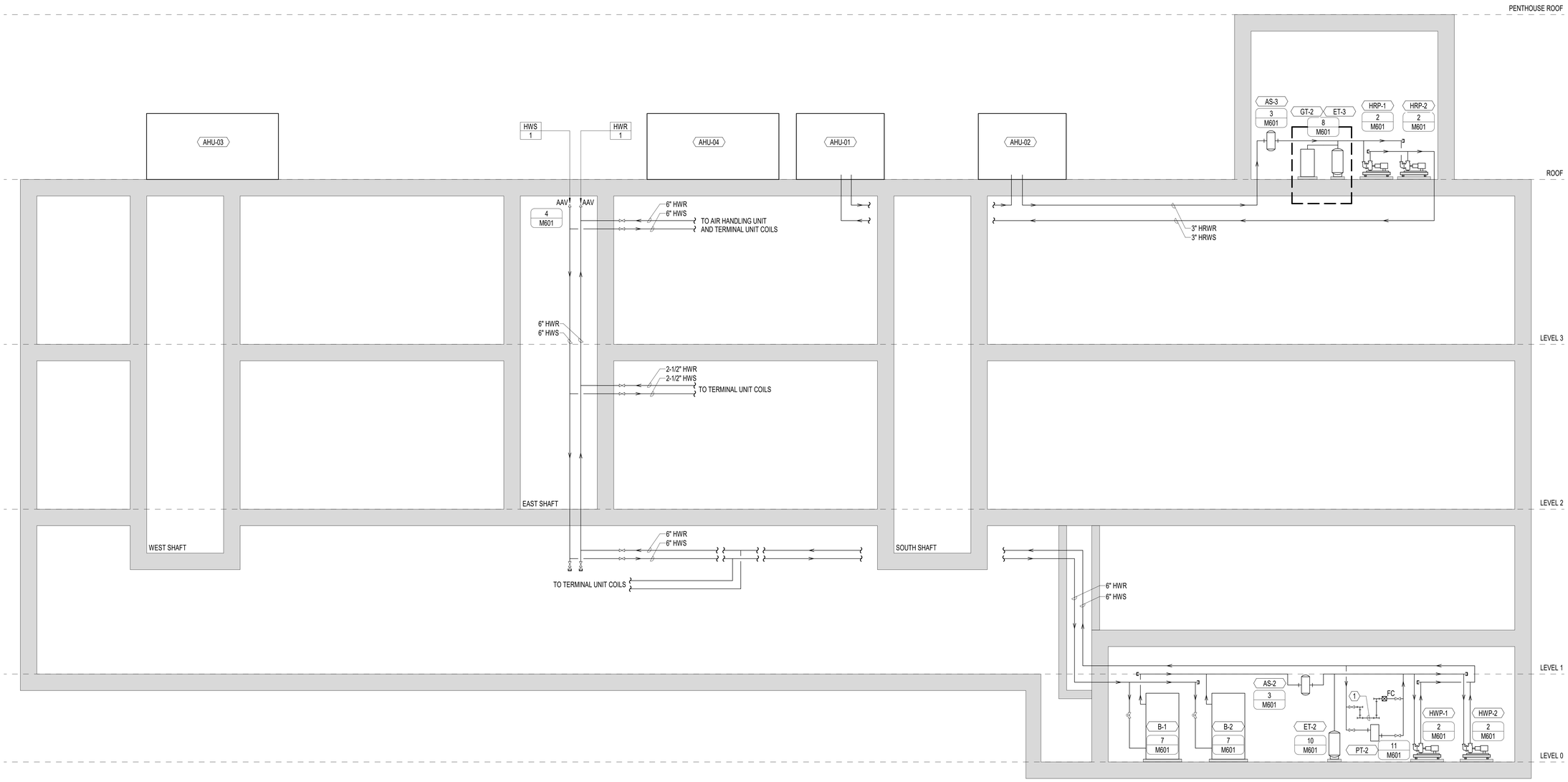
PRCNC20221036

M702

BUILDING PERMIT SET

NOTES:

1. CORROSION COUPON RACK.



1 HEATING WATER FLOW DIAGRAM - BOILER
NONE

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8/27/2022

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

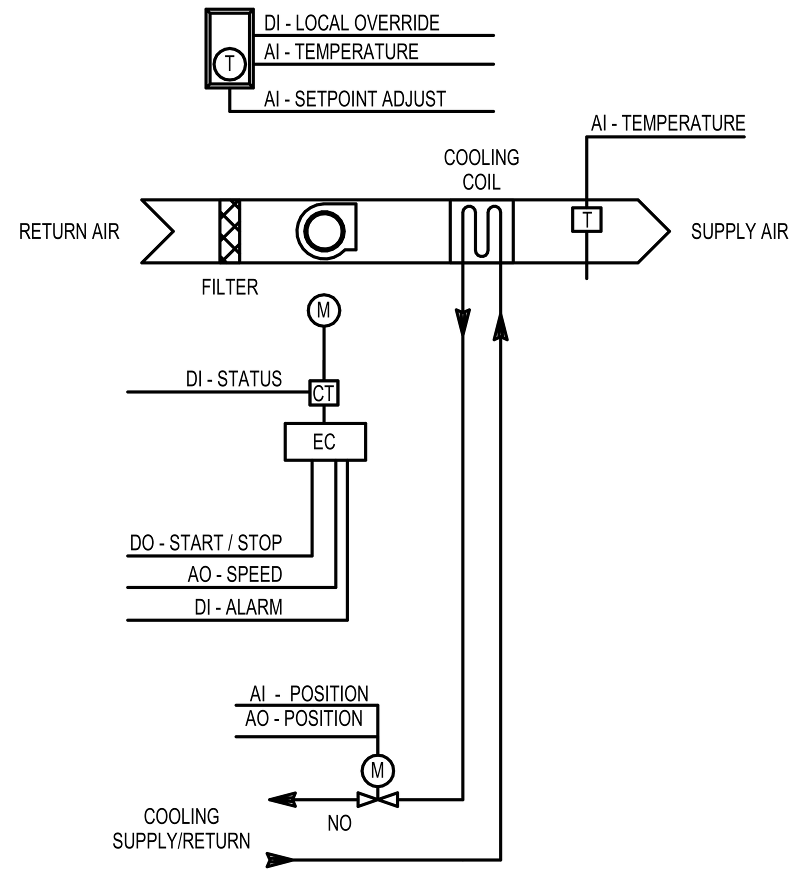
#	Date	Description

FLOW DIAGRAMS - MECHANICAL

PRCNC20221036

M703

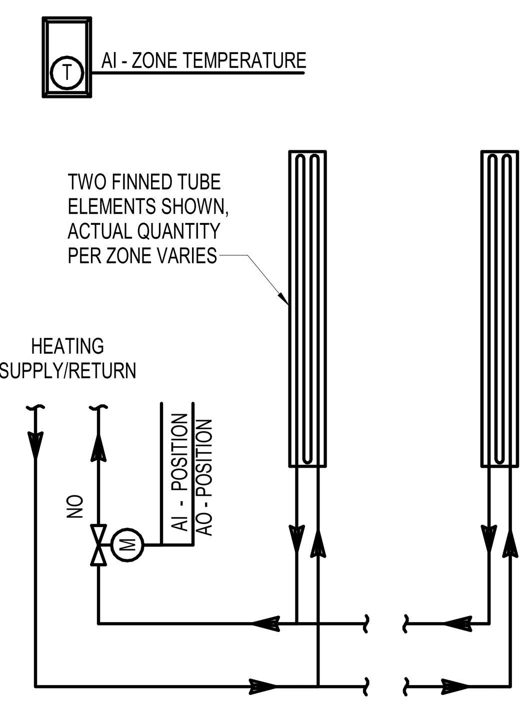
BUILDING PERMIT SET



FAN COIL UNIT - COOLING ONLY

- GENERAL
  - COOLING COIL VALVE MODULATE TO MAINTAIN ZONE COOLING TEMPERATURE SETPOINT
  - MAXIMUM RATE OF CHANGE FOR VALVE OPERATION IS 10% PER MINUTE
- SCHEDULE OF OPERATION
  - FAN COIL UNIT ZONE SCHEDULE MATCHES ASSOCIATED AIR HANDLER SEQUENCE OF OPERATION
- OCCUPIED MODE
  - ZONE TEMPERATURE DROPS BELOW COOLING SETPOINT OR ZONE TEMPERATURE ABOVE ZONE TEMPERATURE DROPS BELOW COOLING SETPOINT OR ZONE TEMPERATURE ABOVE
    - FAN OFF
    - COOLING COIL VALVE CLOSED
  - ZONE TEMPERATURE ABOVE COOLING SETPOINT
    - FAN OPERATES AT FULL SPEED
    - COOLING COIL VALVE MODULATES TO MAINTAIN ZONE COOLING SETPOINT
- UNOCCUPIED MODE
  - COOLING COIL VALVE CLOSED
  - FAN OFF
- ALARMS/SAFETIES
  - FAN FAILURE ALARM
- POINTS FOR MONITORING
  - COOLING COIL VALVE POSITION
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

5 FCU-XXX - 2-PIPE
N.T.S



FINNED TUBE

- GENERAL
  - FINNED TUBE OPERATES TO MAINTAIN SPACE TEMPERATURE SETPOINT
- SCHEDULE OF OPERATION
  - FINNED TUBE OPERATES WHEN COMMANDED BY CONTROL SYSTEM
  - UNIT OPERATES 24 HOURS A DAY 7 DAYS A WEEK
- OCCUPIED MODE
  - TEMPERATURE BELOW HEATING SETPOINT
    - HEATING VALVE MODULATES TO MAINTAIN SPACE HEATING TEMPERATURE SETPOINT
  - TEMPERATURE ABOVE HEATING SETPOINT
    - HEATING VALVE OFF
- UNOCCUPIED MODE
  - TEMPERATURE BELOW SETBACK HEATING SETPOINT
    - HEATING VALVE MODULATES TO MAINTAIN SPACE HEATING TEMPERATURE SETPOINT
  - TEMPERATURE ABOVE SETBACK HEATING SETPOINT
    - HEATING VALVE OFF
- ALARMS/SAFETIES
  - STATUS
- POINTS FOR MONITORING
  - NONE
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

4 FINNED TUBE
N.T.S

SYSTEM CONTROLS

- GENERAL
  - THE FOLLOWING OUTLINES THE SYSTEM LEVEL CONTROLS FOR THE PROJECT
  - THE SEQUENCES OF OPERATION PRESENTED ARE INTENDED TO BE PERFORMANCE BASED. IMPLEMENTED CONTROL SEQUENCES THAT PROVIDE THE SAME FUNCTIONAL RESULT USING DIFFERENT DETAILED LOGIC ARE ACCEPTABLE.
- SCHEDULE OF OPERATION
  - PROVIDE A MINIMUM OF SIX SCHEDULES FOR EQUIPMENT OPERATION INCLUDING THE FOLLOWING COMPONENTS AS A MINIMUM
    - SEVEN UNIQUE DAYS PER WEEK
    - INDIVIDUAL TIME CYCLE CAPABILITY FOR EACH PIECE OF EQUIPMENT
- OCCUPIED MODE
  - EACH SYSTEM ENTERS OCCUPIED MODE AS DETERMINED BY THE SCHEDULE OF OPERATION
    - OPTIMUM START: PROVIDE CONTROLS FOR EACH SYSTEM THAT VARY THE START-UP TIME TO MEET THE TEMPERATURE SET POINT AT THE TIME OF OCCUPANCY
  - MANUAL OVERRIDE: ALLOW TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS BASED ON INPUT FROM ANY ONE OF THE FOLLOWING
    - CONTROLS SYSTEM USER INPUT
    - ROOM TEMPERATURE SENSORS WITH OVERRIDE REQUEST BUTTON
    - MANUAL OPERATED TIMER
    - OCCUPANCY SENSOR
- UNOCCUPIED MODE
  - EACH SYSTEM ENTERS UNOCCUPIED MODE AS DETERMINED BY THE SCHEDULE OF OPERATION
    - ZONE TEMPERATURE SETPOINTS CHANGE TO SETBACK VALUES

SYSTEM CONTROLS (CONTINUED)

- INPUTS/OUTPUTS
  - DIGITAL INPUTS (DI): TWO STATE SIGNAL FROM SENSING DEVICE TO CONTROL SYSTEM. EXAMPLES: ON/OFF, OPEN/CLOSE, ENABLE/DISABLE.
  - DIGITAL OUTPUTS (DO): TWO STATE SIGNAL FROM CONTROL SYSTEM TO CONTROL DEVICE. EXAMPLES: ON/OFF, OPEN/CLOSE, ENABLE/DISABLE.
  - ANALOG INPUTS (AI): LOW VOLTAGE, CURRENT, OR RESISTANCE SIGNAL FROM SENSING DEVICE TO CONTROL SYSTEM. EXAMPLES: 0 TO 10 VDC, 4 TO 20 mA.
  - ANALOG OUTPUTS (AO): LOW VOLTAGE, CURRENT, OR RESISTANCE SIGNAL FROM CONTROL SYSTEM TO CONTROL DEVICE. EXAMPLES: 0 TO 10 VDC, 4 TO 20 mA.
- BUILDING STATIC PRESSURE CONTROLS
  - SETPOINT: 0.05 INCHES OF WATER RELATIVE TO OUTDOORS
- ZONE TEMPERATURE CONTROLS
  - DEADBAND:
    - WHERE USED TO CONTROL BOTH HEATING AND COOLING PROVIDE A MINIMUM DEADBAND OF 5 DEGREES F BETWEEN HEATING AND COOLING SETPOINTS
    - WHEN ZONE TEMPERATURE IS WITHIN DEADBAND: HEATING AND COOLING ENERGY TO THE ZONE IS SET TO MINIMUM OR OFF
  - TEMPERATURE SENSORS WITH USER ADJUSTMENT CAPABILITY
    - WARMER: INCREASE HEATING AND COOLING SETPOINTS BY 2 DEGREES F
    - COLDER: DECREASE HEATING AND COOLING SETPOINTS BY 2 DEGREES F

3 GENERAL SYSTEM CONTROL NOTES
N.T.S

HEATING WATER PLANT – BOILERS – VARIABLE PRIMARY

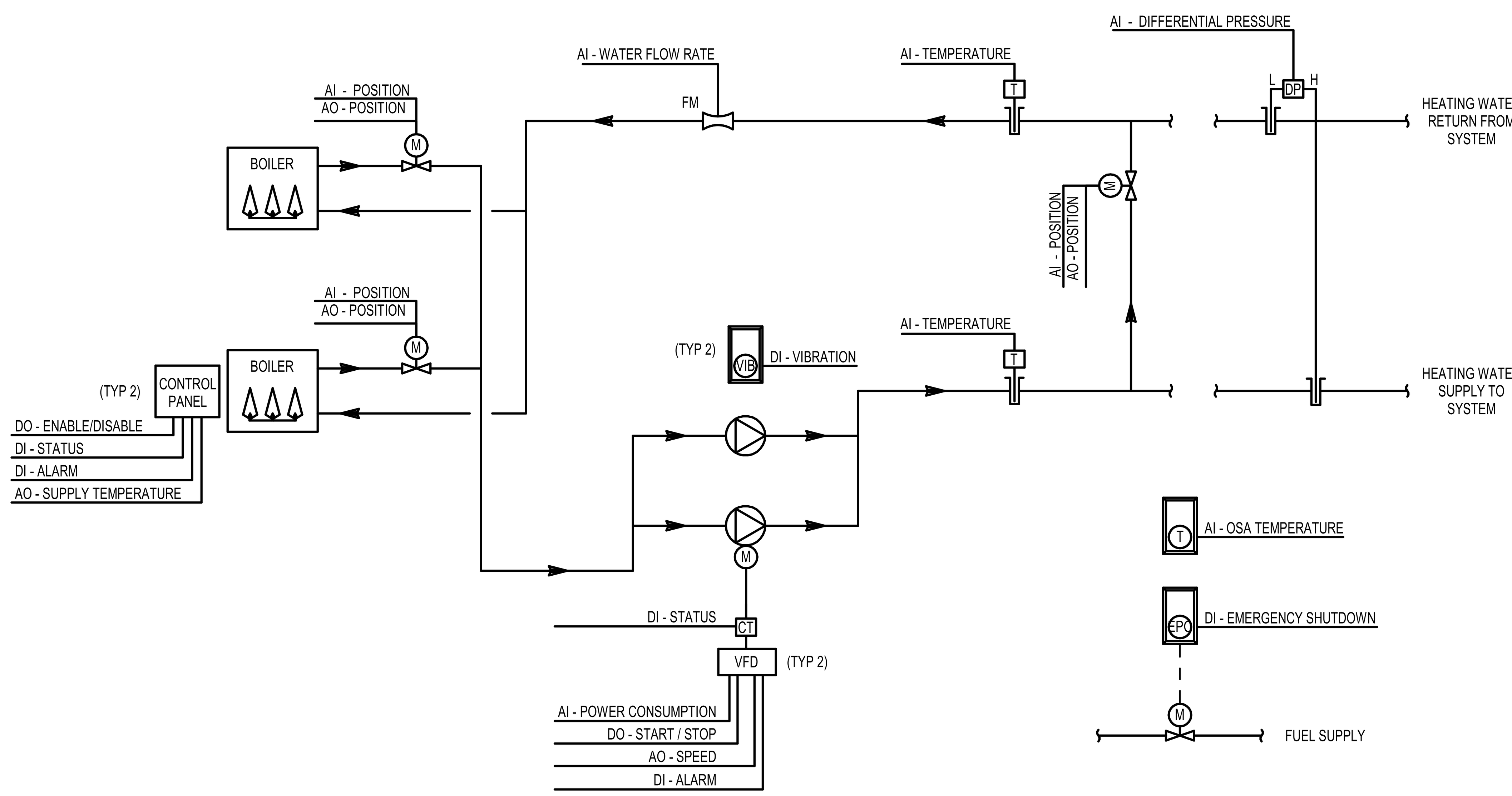
- GENERAL
  - CIRCULATION PUMPS OPERATE AT VARIABLE SPEED, BOILERS MODULATE TO MAINTAIN LOOP SUPPLY TEMPERATURE SETPOINT
- SCHEDULE OF OPERATION
  - OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - OPERATES WHEN COMMANDED BY CONTROL SYSTEM
- OCCUPIED MODE
  - STARTUP
    - LEAD BOILER ISOLATION VALVE OPEN
    - LEAD PUMP OPERATES AT MINIMUM SPEED
  - PUMP CONTROL
    - PUMPS DISABLED WHEN OUTDOOR AIR TEMPERATURE IS ABOVE 70 DEGREES F
    - SYSTEM DIFFERENTIAL PRESSURE SETPOINT IS ESTABLISHED AS PART OF THE TESTING ADJUSTING AND BALANCING OF THE SYSTEM TO ACHIEVE THE DESIGN FLOW RATE OF THE CRITICAL BRANCH.
      - DIFFERENTIAL PRESSURE SETPOINT RESET: SETPOINT RESET BY TRIM AND RESPOND LOGIC TO THE LOWEST POSSIBLE VALUE WHILE MAINTAINING THE MOST OPEN CONTROL VALVE AT TERMINAL EQUIPMENT 90% OPEN
    - PUMP SPEED MODULATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT
      - HOLD PUMP SPEED CONSTANT WHEN BOILERS STAGING ON/OFF
    - LEAD STANDBY SEQUENCE
      - WHEN LEAD PUMP FAILS THE STANDBY PUMP OPERATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT
      - FAILED PUMP IS DISABLED UNTIL RE-ENABLED BY CONTROL SYSTEM USER
    - LEAD PUMP DESIGNATION ALTERNATES WEEKLY TO DIVIDE OPERATING TIME EQUALLY BETWEEN PUMPS
  - HEATING WATER BYPASS VALVE CONTROL
    - MODULATE BYPASS VALVE TO MAINTAIN SYSTEM MINIMUM FLOW RATE AS MEASURED BY HEATING WATER FLOW METER
  - BOILER CONTROL
    - BOILERS ARE ENABLED WHEN THE FOLLOWING CONDITIONS ARE MET:
      - OUTDOOR AIR TEMPERATURE IS BELOW 65 DEGREES F FOR 1 HOUR
      - ANY ONE HEATING VALVE IN THE SYSTEM IS 10% OR MORE OPEN
    - BOILER MANUFACTURER CONTROLS SYSTEM OPERATES BOILERS AND BOILER ISOLATION VALVES TO ASSURE SAFE OPERATION OF BOILERS AND TO MAINTAIN HEATING WATER SUPPLY TEMPERATURE SETPOINT PROVIDED BY THE DDC SYSTEM
      - UPON CALL FOR HEATING THE LEAD BOILER ISOLATION VALVE OPENS SLOWLY
      - WHEN FLOW IS ESTABLISHED THROUGH THE LEAD BOILER THE LEAD BOILER MODULATES TO MAINTAIN HEATING WATER SUPPLY TEMPERATURE SETPOINT

HEATING WATER PLANT – BOILERS – VARIABLE PRIMARY (CONTINUED)

- LEAD LAG SEQUENCE
  - LEAD BOILER OPERATES TO MAINTAIN SYSTEM HEATING WATER SUPPLY TEMPERATURE SETPOINT
    - WHEN LEAD BOILER REACHES 60% CAPACITY FOR 2 MINUTES
      - REDUCE HEATING WATER SUPPLY TEMPERATURE SETPOINT BY 2 DEGREES F
      - LAG BOILER ISOLATION VALVE OPENS SLOWLY
      - WHEN FLOW IS ESTABLISHED THROUGH THE LAG BOILER START LAG BOILER
      - LEAD AND LAG BOILER OPERATE IN UNISON AT SAME CAPACITY TO MAINTAIN SYSTEM HEATING WATER SUPPLY TEMPERATURE SETPOINT
      - RETURN HEATING WATER SUPPLY TEMPERATURE SETPOINT BACK TO ORIGINAL SETPOINT
    - STAGE THE REMAINING BOILERS AND ASSOCIATED ISOLATION VALVES IN SIMILAR FASHION TO MAINTAIN SYSTEM HEATING WATER SUPPLY TEMPERATURE SETPOINT
    - BOILER TO START RUNNING TURNS OFF WHEN OPERATING BOILERS REACH MINIMUM CAPACITY FOR 2 MINUTES THE LAST
      - AFTER A TIME DELAY THE ASSOCIATED BOILER ISOLATION VALVE CLOSES SLOWLY
      - STAGE OFF BOILERS IN THE OPPOSITE SEQUENCE THEY STARTED
  - UPON FAILURE OF ANY BOILER THE ASSOCIATED ISOLATION VALVE CLOSES AND THE NEXT BOILER IN THE STAGING SEQUENCE OPERATES
  - LEAD BOILER DESIGNATION ALTERNATES WEEKLY TO DIVIDE OPERATING TIME EQUALLY BETWEEN BOILERS
- HEATING WATER SUPPLY TEMPERATURE SETPOINT CONTROL
  - HEATING WATER SYSTEM DEMAND RESET - TRIM AND RESPOND
    - HEATING WATER SUPPLY TEMPERATURE STARTING SETPOINT = 120 DEGREES F
    - HEATING WATER SUPPLY TEMPERATURE SETPOINT IS RESET TO LOWEST POSSIBLE VALUE USING TRIM AND RESPOND LOGIC TO MAINTAIN CRITICAL TERMINAL EQUIPMENT VALVES AT 90% OPEN
      - EVERY 2 MINUTES HEATING WATER SUPPLY WATER TEMPERATURE SETPOINT IS DECREASED BY 0.10 DEGREES F
        - WHEN TWO OR MORE TERMINAL EQUIPMENT VALVES ARE MORE THAN 90% OPEN THE HEATING WATER SUPPLY TEMPERATURE SETPOINT INCREASES BY 0.15 DEGREES F
      - MAXIMUM HEATING WATER TEMPERATURE SETPOINT = 140 DEGREES F
      - MINIMUM HEATING WATER TEMPERATURE SETPOINT = 100 DEGREES F
- EMERGENCY BOILER ROOM SHUTDOWN
  - EMERGENCY STOP SWITCH LOCATED AT ENTRANCES TO BOILER ROOM WILL DISCONNECT POWER AND ISOLATE FUEL TO THE BOILER PLANT WHEN ACTIVATED
- UNOCCUPIED MODE
  - GENERAL: EQUIPMENT AND VALVES IN DE-ENERGIZED POSITIONS
  - UPON CALL FOR HEATING FROM THE DDC SYSTEM THE SYSTEM ENTERS OCCUPIED MODE

HEATING WATER PLANT – BOILERS – VARIABLE PRIMARY (CONTINUED)

- ALARMS/SAFETIES
  - BOILER SYSTEM ALARM: NOTIFICATION FROM THE BOILER MANUFACTURER CONTROLS SYSTEM OF ANY ALARM CONDITION
  - EMERGENCY BOILER ROOM SHUTDOWN SAFETY: STOP SWITCH LOCATED AT ENTRANCES TO BOILER ROOM SHUT DOWN BOILER PLANT EQUIPMENT WHEN ACTIVATED
  - EMERGENCY BOILER ROOM SHUTDOWN ALARM: ACTIVATION OF EMERGENCY STOP SWITCH
  - HIGH HEATING WATER SUPPLY TEMPERATURE ALARM: TEMPERATURE IS MORE THAN 10 DEGREES F ABOVE SETPOINT FOR 5 MINUTES
  - LOW HEATING WATER SUPPLY TEMPERATURE ALARM: TEMPERATURE IS MORE THAN 10 DEGREES F BELOW SETPOINT FOR 5 MINUTES
  - VARIABLE FREQUENCY DRIVE (VFD) ALARMS: PROVIDE INDIVIDUAL SIGNALS TO THE DDC CONTROLLER INDICATING ALARM CONDITION AND ALARM TYPE
  - HEATING WATER PUMP FAILURE ALARM: PUMP FAILURE INDICATED BY CURRENT TRANSFORMER SWITCH
- POINTS FOR MONITORING
  - BOILER ISOLATION VALVE POSITION (TYP)
  - BOILER FIRING RATE (TYP)
  - VARIABLE FREQUENCY DRIVE SPEED (TYP)
  - VARIABLE FREQUENCY DRIVE CURRENT (TYP)
  - VARIABLE FREQUENCY DRIVE ENERGY USE (TYP)
  - HEATING WATER SUPPLY TEMPERATURE
  - HEATING WATER RETURN TEMPERATURE
  - WATER FLOW METER FLOW RATE
  - BOILER SYSTEM ENERGY GENERATION (BTU METER)
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE



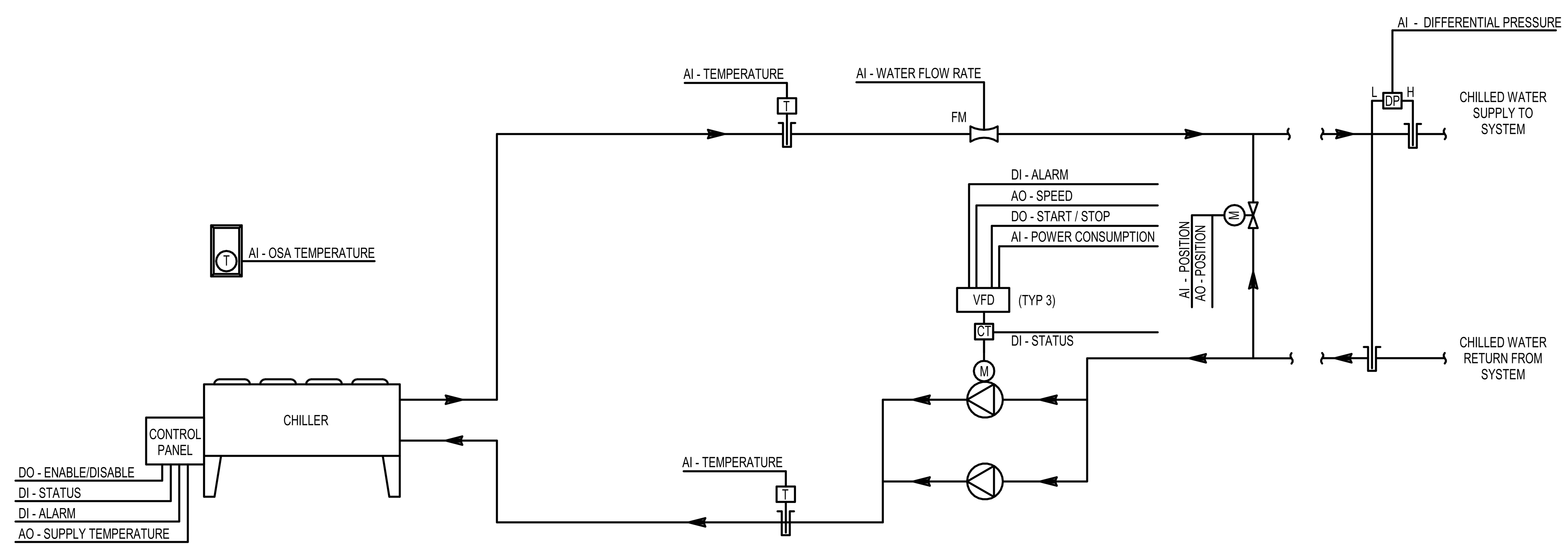
2 HEATING WATER PLANT
N.T.S

CHILLED WATER PLANT - AIR COOLED CHILLER

- GENERAL
  - CIRCULATION PUMPS OPERATE AT VARIABLE SPEED, CHILLERS MODULATE TO MAINTAIN LOOP SUPPLY TEMPERATURE SETPOINT
- SCHEDULE OF OPERATION
  - OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - OPERATES WHEN COMMANDED BY CONTROL SYSTEM
- OCCUPIED MODE
  - STARTUP
    - LEAD CHILLER ISOLATION VALVE OPEN
    - LEAD PUMP OPERATES AT MINIMUM SPEED
  - PUMP CONTROL
    - PUMPS DISABLED WHEN OUTDOOR AIR TEMPERATURE IS BELOW 55 DEGREES F
    - SYSTEM DIFFERENTIAL PRESSURE SETPOINT IS ESTABLISHED AS PART OF THE TESTING ADJUSTING AND BALANCING OF THE SYSTEM TO ACHIEVE THE DESIGN FLOW RATE OF THE CRITICAL BRANCH.
      - DIFFERENTIAL PRESSURE SETPOINT RESET: SETPOINT RESET BY TRIM AND RESPOND LOGIC TO THE LOWEST POSSIBLE VALUE WHILE MAINTAINING THE MOST OPEN CONTROL VALVE AT TERMINAL EQUIPMENT 90% OPEN
    - PUMP SPEED MODULATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT
      - HOLD PUMP SPEED CONSTANT WHEN CHILLERS STAGING ON/OFF
    - LEAD STANDBY SEQUENCE
      - WHEN LEAD PUMP FAILS THE STANDBY PUMP OPERATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT
      - FAILED PUMP IS DISABLED UNTIL RE-ENABLED BY CONTROL SYSTEM USER
    - LEAD PUMP DESIGNATION ALTERNATES WEEKLY TO DIVIDE OPERATING TIME EQUALLY BETWEEN PUMPS
  - BYPASS VALVE CONTROL
    - MODULATE BYPASS VALVE TO MAINTAIN SYSTEM MINIMUM FLOW RATE AS MEASURED BY WATER FLOW METER
  - CHILLER CONTROL
    - CHILLERS ARE ENABLED WHEN THE FOLLOWING CONDITIONS ARE MET:
      - OUTDOOR AIR TEMPERATURE IS ABOVE 65 DEGREES F FOR 1 HOUR
      - ANY ONE COOLING VALVE IN THE SYSTEM IS 10% OR MORE OPEN
    - CHILLER MANUFACTURER CONTROLS SYSTEM OPERATES CHILLERS AND CHILLER ISOLATION VALVES TO ASSURE SAFE OPERATION OF CHILLERS AND TO MAINTAIN CHILLED WATER SUPPLY TEMPERATURE SETPOINT PROVIDED BY THE DDC SYSTEM
      - UPON CALL FOR COOLING THE LEAD CHILLER ISOLATION VALVE OPENS SLOWLY
      - WHEN FLOW IS ESTABLISHED THROUGH THE LEAD CHILLER THE LEAD CHILLER MODULATES TO MAINTAIN CHILLED WATER SUPPLY TEMPERATURE SETPOINT

CHILLED WATER PLANT - AIR COOLED CHILLER (CONTINUED)

- CHILLED WATER SUPPLY TEMPERATURE SETPOINT CONTROL
  - CHILLER OPERATES TO MAINTAIN SYSTEM CHILLED WATER SUPPLY TEMPERATURE SETPOINT
  - CHILLED WATER SYSTEM DEMAND RESET - TRIM AND RESPOND
    - CHILLED WATER SUPPLY TEMPERATURE STARTING SETPOINT = 48 DEGREES F
    - CHILLED WATER SUPPLY TEMPERATURE SETPOINT IS RESET TO HIGHEST POSSIBLE VALUE USING TRIM AND RESPOND LOGIC TO MAINTAIN CRITICAL TERMINAL EQUIPMENT VALVES AT 90% OPEN
      - EVERY 2 MINUTES CHILLED WATER SUPPLY WATER TEMPERATURE SETPOINT IS INCREASED BY 0.10 DEGREES F
        - WHEN TWO OR MORE TERMINAL EQUIPMENT VALVES ARE MORE THAN 90% OPEN THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT DECREASES BY 0.15 DEGREES F
      - MAXIMUM CHILLED WATER TEMPERATURE SETPOINT = 53 DEGREES F
      - MINIMUM CHILLED WATER TEMPERATURE SETPOINT = 44 DEGREES F
- UNOCCUPIED MODE
  - GENERAL: EQUIPMENT AND VALVES IN DE-ENERGIZED POSITIONS
  - UPON CALL FOR COOLING FROM THE DDC SYSTEM THE SYSTEM ENTERS OCCUPIED MODE
- ALARMS/SAFETIES
  - CHILLER SYSTEM ALARM: NOTIFICATION FROM THE CHILLER MANUFACTURER CONTROLS SYSTEM OF ANY ALARM CONDITION
  - EMERGENCY CHILLER ROOM SHUTDOWN ALARM: ACTIVATION OF EMERGENCY STOP SWITCH
  - HIGH CHILLED WATER SUPPLY TEMPERATURE ALARM: TEMPERATURE IS MORE THAN 5 DEGREES F ABOVE SETPOINT FOR 5 MINUTES
  - LOW CHILLED WATER SUPPLY TEMPERATURE ALARM: TEMPERATURE IS MORE THAN 5 DEGREES F BELOW SETPOINT FOR 5 MINUTES
  - VARIABLE FREQUENCY DRIVE (VFD) ALARMS: PROVIDE INDIVIDUAL SIGNALS TO THE DDC CONTROLLER INDICATING ALARM CONDITION AND ALARM TYPE
  - CHILLED WATER PUMP FAILURE ALARM: PUMP FAILURE INDICATED BY CURRENT TRANSFORMER SWITCH
- POINTS FOR MONITORING
  - CHILLER ISOLATION VALVE POSITION
  - BYPASS VALVE POSITION
  - VARIABLE FREQUENCY DRIVE SPEED
  - VARIABLE FREQUENCY DRIVE CURRENT
  - VARIABLE FREQUENCY DRIVE ENERGY USE
  - CHILLED WATER SUPPLY TEMPERATURE
  - CHILLED WATER RETURN TEMPERATURE
  - WATER FLOW METER FLOW RATE
  - CHILLER SYSTEM ENERGY GENERATION
  - INDOOR DEWPOINT TEMPERATURE
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE



1 CHILLED WATER PLANT
N.T.S

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JUSTIN STENKAMP STATE OF WASHINGTON 51382 REGISTERED PROFESSIONAL ENGINEER 6/27/2022

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Revisions

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CONTROL DIAGRAMS - MECHANICAL

PRCNC20221036

M801

BUILDING PERMIT SET

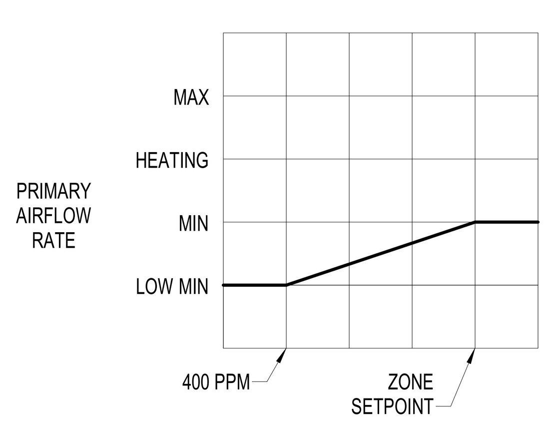
TERMINAL UNIT - VARIABLE VOLUME WITH REHEAT

- GENERAL
  - TERMINAL UNIT OPERATES AS VARIABLE VOLUME TO MAINTAIN ZONE TEMPERATURE SETPOINT
  - TERMINAL UNIT OPERATES AS VARIABLE VOLUME TO MAINTAIN ZONE CARBON DIOXIDE SETPOINT
  - MAXIMUM RATE OF CHANGE FOR DAMPER OPERATION IS 10% PER MINUTE
  - MAXIMUM RATE OF CHANGE FOR VALVE OPERATION IS 10% PER MINUTE
- SCHEDULE OF OPERATION
  - TERMINAL UNIT SCHEDULE MATCHES ASSOCIATED AIR HANDLER SEQUENCE OF OPERATION
- OCCUPIED MODE
  - ZONE TEMPERATURE CONTROL
    - ZONE TEMPERATURE BELOW HEATING SETPOINT
      - FIRST STAGE OF HEATING INCREASES SUPPLY AIR TEMPERATURE, SECOND STAGE OF HEATING INCREASES SUPPLY AIRFLOW
      - LEAVING AIR TEMPERATURE SETPOINT SET TO MAXIMUM VALUE
      - HEATING COIL MODULATES TO MAINTAIN LEAVING AIR TEMPERATURE SETPOINT
      - DAMPER MODULATES TO MAINTAIN MINIMUM AIRFLOW RATE
      - IF ZONE TEMPERATURE BELOW HEATING SETPOINT FOR 5 MINUTES
        - DAMPER MODULATES LINEARLY BETWEEN MINIMUM AIRFLOW RATE AND HEATING AIRFLOW RATE TO MAINTAIN ZONE HEATING SETPOINT
      - WHEN ZONE TEMPERATURE IS EQUAL TO HEATING SETPOINT
        - REVERSE SEQUENCE IDENTIFIED ABOVE
    - ZONE TEMPERATURE BETWEEN HEATING AND COOLING SETPOINTS
      - LEAVING AIR TEMPERATURE SETPOINT SET TO ASSOCIATED AIR HANDLER LEAVING AIR TEMPERATURE
      - HEATING COIL OFF
      - DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE
    - ZONE TEMPERATURE ABOVE COOLING SETPOINT
      - LEAVING AIR TEMPERATURE SETPOINT SET TO ASSOCIATED AIR HANDLER LEAVING AIR TEMPERATURE
      - HEATING COIL OFF
      - DAMPER MODULATES LINEARLY BETWEEN MINIMUM AIRFLOW RATE AND MAXIMUM AIRFLOW RATE TO MAINTAIN ZONE COOLING SETPOINT
        - WHEN ZONE TEMPERATURE IS EQUAL TO COOLING SETPOINT
          - REVERSE SEQUENCE IDENTIFIED ABOVE
  - ZONE CARBON DIOXIDE CONTROL
    - DAMPER MODULATES LINEARLY BASED ON CARBON DIOXIDE LEVEL
    - CARBON DIOXIDE LEVEL AT 400 PPM OR LESS
      - DAMPER MODULATES TO MAINTAIN LOW MINIMUM AIRFLOW RATE
    - CARBON DIOXIDE LEVEL AT SETPOINT OR HIGHER
      - DAMPER MODULATES TO MAINTAIN MINIMUM AIRFLOW RATE
- UNOCCUPIED MODE
  - HEATING COIL OFF
  - DAMPER OPEN
- ALARMS/SAFETIES
  - LOW AIRFLOW ALARM: AIRFLOW RATE IS LESS THAN 50% OF SETPOINT FOR 5 MINUTES
  - LOW LEAVING AIR TEMPERATURE ALARM: LEAVING AIR TEMPERATURE IS MORE THAN 10 DEGREES BELOW SETPOINT FOR 5 MINUTES
- POINTS FOR MONITORING
  - DAMPER POSITION
  - HEATING COIL VALVE POSITION
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

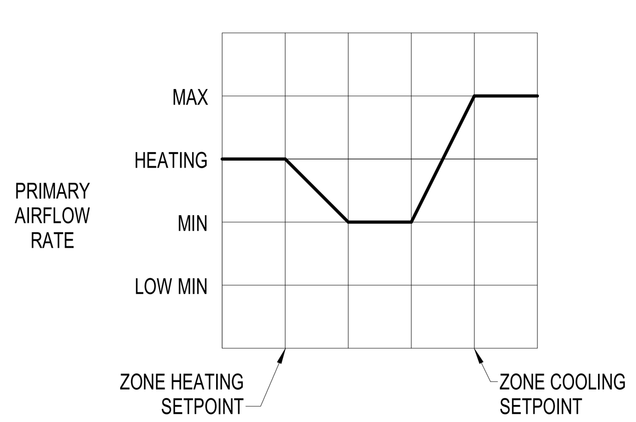
GENERAL NOTES:

A. REFER TO MECHANICAL ZONING PLANS, M1XX SERIES, FOR ZONE SENSOR REQUIREMENTS.

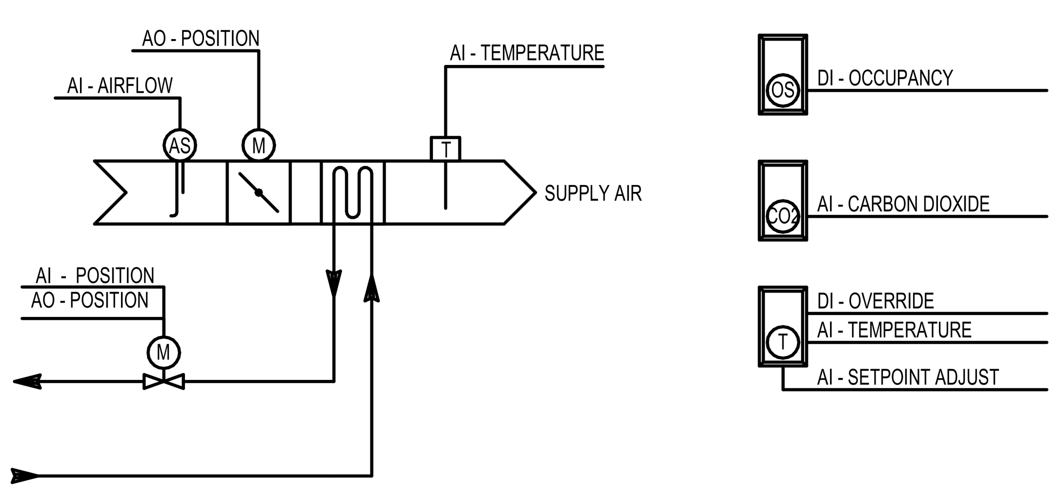
B. WHERE TWO ZONES ARE CONNECTED BY PERMANENT OPENINGS, CONFIGURE CONTROLS SUCH THAT COOLING IS LOCKED OUT WHEN ONE ZONE IS IN HEATING.



ZONE CARBON DIOXIDE LEVEL



ZONE TEMPERATURE



2 TERMINAL UNIT - VVR
N.T.S

AIR HANDLING UNIT - VAV - MULTIPLE ZONE

- GENERAL
  - MULTIPLE ZONE AIR HANDLING UNIT OPERATES AT VARIABLE VOLUME
- SCHEDULE OF OPERATION
  - UNIT OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - UNIT OPERATES WHEN COMMANDED BY CONTROL SYSTEM
  - UNIT OPERATES VIA LOCAL WALL SWITCH
  - UNIT OPERATES VIA LOCAL OCCUPANCY SENSOR
- HEATING COIL PUMP CONTROL
  - PUMP OPERATES UNDER THE FOLLOWING CONDITIONS
    - OUTDOOR AIR TEMPERATURE IS BELOW 40 DEGREES F
    - HEATING COIL VALVE GREATER THAN 0% OPEN
- COOLING COIL PUMP CONTROL
  - PUMP OPERATES WHEN COOLING COIL VALVE GREATER THAN 0% OPEN
- OPTIMUM START
  - PROVIDE CONTROL ALGORITHM TO AUTOMATICALLY START THE SYSTEM TO ACHIEVE SPACE TEMPERATURE SETPOINT AT THE TIME OF OCCUPANCY AS A FUNCTION OF THE FOLLOWING VARIABLES (AS A MINIMUM):
    - DIFFERENCE BETWEEN SPACE TEMPERATURE AND OCCUPIED ZONE TEMPERATURE SETPOINT
    - OUTSIDE AIR TEMPERATURE
    - AMOUNT OF TIME PRIOR TO SCHEDULED OCCUPANCY
  - SUPPLY AIR TEMPERATURE SETPOINT MINIMUM = 55 DEGREES F
  - SUPPLY AIR TEMPERATURE SETPOINT MAXIMUM = 90 DEGREES F
  - SUPPLY FAN CONTROL
    - SAME AS IN OCCUPIED MODE
  - RETURN FAN CONTROL
    - MODULATE RETURN FAN SPEED TO MATCH SUPPLY FAN AIRFLOW RATE
  - WARM UP
    - AIR HANDLING UNIT OPERATES IN FULL RECIRCULATION MODE AND ADDS HEAT TO ACHIEVE ZONE TEMPERATURE HEATING SETPOINT
    - ZONE TEMPERATURE BELOW HEATING SETPOINT
      - MIXING BOX CONTROL
        - OUTSIDE AIR DAMPER CLOSED
        - RELIEF AIR DAMPER CLOSED
        - RETURN AIR DAMPER OPEN
      - SUPPLY FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - RETURN FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - HEATING
        - SUPPLY AIR TEMPERATURE SETPOINT RESET 1 DEGREE F PER MINUTE UNTIL MAXIMUM VALUE IS REACHED
          - HEATING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
        - WHEN ZONE TEMPERATURE MEETS HEATING SETPOINT FOR 5 MINUTES
          - ENTER OCCUPIED MODE
  - COOL DOWN
    - AIR HANDLING UNIT OPERATES IN FULL ECONOMIZER MODE TO ACHIEVE ZONE TEMPERATURE COOLING SETPOINT
    - ZONE TEMPERATURES ABOVE COOLING SETPOINT AND OUTDOOR AIR TEMPERATURE IS 2°F (ADJ) OR MORE BELOW ZONE TEMPERATURE
      - MIXING BOX CONTROL
        - OUTSIDE AIR DAMPER OPEN
        - RELIEF AIR DAMPER OPEN
        - RETURN AIR DAMPER MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - SUPPLY FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - RETURN FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - COOLING
        - COOLING COIL VALVE CLOSED
        - SUPPLY AIR TEMPERATURE SETPOINT RESET 1 DEGREE F PER MINUTE UNTIL SETPOINT VALUE IS REACHED
        - WHEN ZONE TEMPERATURES MEET COOLING SETPOINT OR SUPPLY FAN SPEED REACHES 100% FOR 5 MINUTES
          - ENTER OCCUPIED MODE

AIR HANDLING UNIT - VAV - MULTIPLE ZONE (CONTINUED)

    - ZONE TEMPERATURES ABOVE COOLING SETPOINT AND OUTDOOR AIR TEMPERATURE 2°F (ADJ) BELOW ZONE TEMPERATURE OR WARMER
      - MIXING BOX CONTROL
        - OUTSIDE AIR DAMPER CLOSED
        - RELIEF AIR DAMPER CLOSED
        - RETURN AIR DAMPER OPEN
      - SUPPLY FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - RETURN FAN CONTROL
        - FAN STARTS AND RAMPS UP TO 50% SPEED
      - COOLING
        - COOLING COIL VALVE ENABLED
        - SUPPLY AIR TEMPERATURE SETPOINT RESET 1 DEGREE F PER MINUTE UNTIL MINIMUM SETPOINT VALUE IS REACHED
          - COOLING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
        - WHEN ZONE TEMPERATURES MEET COOLING SETPOINT OR SUPPLY FAN SPEED REACHES 100% FOR 5 MINUTES
          - ENTER OCCUPIED MODE
- OCCUPIED MODE
  - SUPPLY AIR TEMPERATURE SETPOINT MINIMUM = 55 DEGREES F
  - SUPPLY AIR TEMPERATURE SETPOINT MAXIMUM = 65 DEGREES F
  - AIR HANDLING UNIT BEGINS OPERATION AT MINIMUM OUTDOOR AIRFLOW AND MINIMUM FAN SPEED
  - MIXING BOX CONTROL
    - OUTSIDE AIR DAMPER MODULATES TO MINIMUM POSITION
    - RELIEF AIR DAMPER MODULATES TO MINIMUM POSITION
    - RETURN AIR DAMPER MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
    - OUTDOOR AIRFLOW CONTROL
      - AIR SIDE ECONOMIZER ENABLED: OUTDOOR AIR TEMPERATURE BELOW RETURN AIR TEMPERATURE
        - OUTSIDE AIR DAMPER OPEN
        - RELIEF AIR DAMPER MODULATES TO MAINTAIN BUILDING STATIC PRESSURE SETPOINT
        - RETURN AIR DAMPER MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - AIR SIDE ECONOMIZER DISABLED: OUTDOOR AIR TEMPERATURE ABOVE RETURN AIR TEMPERATURE
        - OUTSIDE AIR DAMPER OPEN
        - RELIEF AIR DAMPER AT MINIMUM POSITION
        - RETURN AIR DAMPER MODULATES TO MAINTAIN OUTDOOR AIRFLOW RATE
    - ZONE CARBON DIOXIDE CONTROL
      - AIR SIDE ECONOMIZER ENABLED: OUTDOOR AIR TEMPERATURE BELOW RETURN AIR TEMPERATURE
        - OUTSIDE AIR DAMPER OPEN
        - RELIEF AIR DAMPER MODULATES TO MAINTAIN BUILDING STATIC PRESSURE SETPOINT
        - RETURN AIR DAMPER MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - AIR SIDE ECONOMIZER DISABLED: OUTDOOR AIR TEMPERATURE ABOVE RETURN AIR TEMPERATURE
        - OUTSIDE AIR DAMPER OPEN
        - RELIEF AIR DAMPER MODULATES TO MAINTAIN BUILDING STATIC PRESSURE SETPOINT
        - RETURN AIR DAMPER MODULATES TO MAINTAIN CRITICAL ZONE CARBON DIOXIDE SETPOINT
          - CRITICAL ZONE IS DEFINED AS THE ZONE WITH HIGHEST CARBON DIOXIDE LEVEL
  - HEAT EXCHANGER BYPASS DAMPER CONTROL
    - BYPASS DAMPER MODULATES BASED ON OUTDOOR AIR TEMPERATURE TO ACHIEVE AIR-SIDE ECONOMIZER OPERATION IN COOLING MODE
      - SUPPLY AIR TEMPERATURE BELOW SETPOINT
        - BYPASS DAMPER CLOSED
      - SUPPLY AIR TEMPERATURE ABOVE SETPOINT AND OUTDOOR AIR TEMPERATURE BELOW SUPPLY AIR TEMPERATURE SETPOINT
        - BYPASS DAMPER MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - SUPPLY AIR TEMPERATURE ABOVE SETPOINT AND OUTDOOR AIR TEMPERATURE ABOVE SUPPLY AIR TEMPERATURE SETPOINT
        - BYPASS DAMPER CLOSED

AIR HANDLING UNIT - VAV - MULTIPLE ZONE (CONTINUED)

  - HEAT EXCHANGER WHEEL SPEED CONTROL
    - WHEEL SPEED MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - SUPPLY AIR TEMPERATURE BELOW SETPOINT
        - WHEEL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - SUPPLY AIR TEMPERATURE ABOVE SETPOINT AND OUTDOOR AIR TEMPERATURE BELOW SUPPLY AIR TEMPERATURE SETPOINT
        - WHEEL AT MINIMUM SPEED
      - SUPPLY AIR TEMPERATURE ABOVE SETPOINT AND OUTDOOR AIR TEMPERATURE ABOVE SUPPLY AIR TEMPERATURE SETPOINT
        - WHEEL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
    - OPTION 1 (SELECTED AT USER INTERFACE): WHEEL SPEED MODULATES BASED ON RELIEF AIR AND OUTDOOR AIR TEMPERATURES TO PREVENT FROSTING OF HEAT EXCHANGER SURFACES
      - OUTDOOR AIR TEMPERATURE BELOW 32 DEGREES F
        - WHEEL MODULATES TO MAINTAIN RELIEF AIR TEMPERATURE OF 34°F (ADJ)
        - WHEN RELIEF AIR TEMPERATURE DROPS BELOW 34°F (ADJ) FOR 1 MINUTE (ADJ)
          - WHEEL STOPS FOR 2 MINUTES
          - WHEEL STARTS UP AFTER 2 MINUTES AND RUNS FOR MINIMUM OF 30 MINUTES BEFORE BEING ALLOWED TO STOP AGAIN
    - OPTION 2 (SELECTED AT USER INTERFACE): WHEEL SPEED MODULATES BASED ON DIFFERENTIAL PRESSURE ACROSS HEAT EXCHANGER TO PREVENT FROSTING OF HEAT EXCHANGER SURFACES
      - OUTDOOR AIR TEMPERATURE BELOW 32°F
        - WHEEL SPEED MODULATES TO MAINTAIN DIFFERENTIAL PRESSURE ACROSS HEAT EXCHANGER WITHIN 100% TO 120% OF TYPICAL VALUE
  - SUPPLY AIR TEMPERATURE CONTROL
    - SUPPLY AIR TEMPERATURE SETPOINT SET TO CURRENT SUPPLY AIR TEMPERATURE READING
      - MAXIMUM SUPPLY AIR TEMPERATURE SETPOINT RATE OF CHANGE: 1°F PER MINUTE
    - SUPPLY AIR TEMPERATURE BELOW SETPOINT
      - HEATING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - COOLING COIL VALVE CLOSED
    - SUPPLY AIR TEMPERATURE AT SETPOINT
      - HEATING COIL VALVE CLOSED
      - COOLING COIL VALVE CLOSED
    - SUPPLY AIR TEMPERATURE ABOVE SETPOINT
      - FIRST STAGE OF COOLING UTILIZES AIR SIDE ECONOMIZER OPERATION OF THE MIXING BOX
      - SECOND STAGE OF COOLING OCCURS WHEN AIR SIDE ECONOMIZER CANNOT MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT OR WHEN AIR SIDE ECONOMIZER IS NOT AVAILABLE
      - AIR SIDE ECONOMIZER ENABLED
        - HEATING COIL VALVE CLOSED
        - COOLING COIL VALVE CLOSED
        - SUPPLY AIR TEMPERATURE SETPOINT RESETS UNTIL ONE OF THE FOLLOWING OCCURS
          - SUPPLY AIR TEMPERATURE IS WITHIN 1 DEGREE F OF OUTSIDE AIR TEMPERATURE
          - MINIMUM SETPOINT VALUE IS REACHED
        - MIXING BOX DAMPERS MODULATE TO ACHIEVE SUPPLY AIR TEMPERATURE SETPOINT
      - AIR SIDE ECONOMIZER DISABLED
        - HEATING COIL VALVE CLOSED
        - COOLING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
- UNOCCUPIED MODE
  - AIR HANDLING UNIT SHUT OFF UNLESS ZONE TEMPERATURES EXCEED SETBACK SETPOINTS
  - ZONE TEMPERATURE BETWEEN SETBACK HEATING SETPOINT AND SETBACK COOLING SETPOINT
    - AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - ZONE TEMPERATURE BELOW SETBACK HEATING SETPOINT
    - AIR HANDLING UNIT OPERATES IN OPTIMUM START, WARM UP MODE UNTIL ZONE TEMPERATURE REACHES SETBACK HEATING SETPOINT
      - WHEN ZONE TEMPERATURE MEETS SETBACK HEATING SETPOINT FOR 5 MINUTES
        - AIR HANDLER TURNS OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - ZONE TEMPERATURE ABOVE SETBACK COOLING SETPOINT
    - AIR HANDLING UNIT OPERATES IN OPTIMUM START, COOL DOWN MODE UNTIL ZONE TEMPERATURE REACHES SETBACK COOLING SETPOINT
      - WHEN ZONE TEMPERATURE MEETS SETBACK COOLING SETPOINT FOR 5 MINUTES
        - AIR HANDLER TURNS OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS

AIR HANDLING UNIT - VAV - MULTIPLE ZONE (CONTINUED)

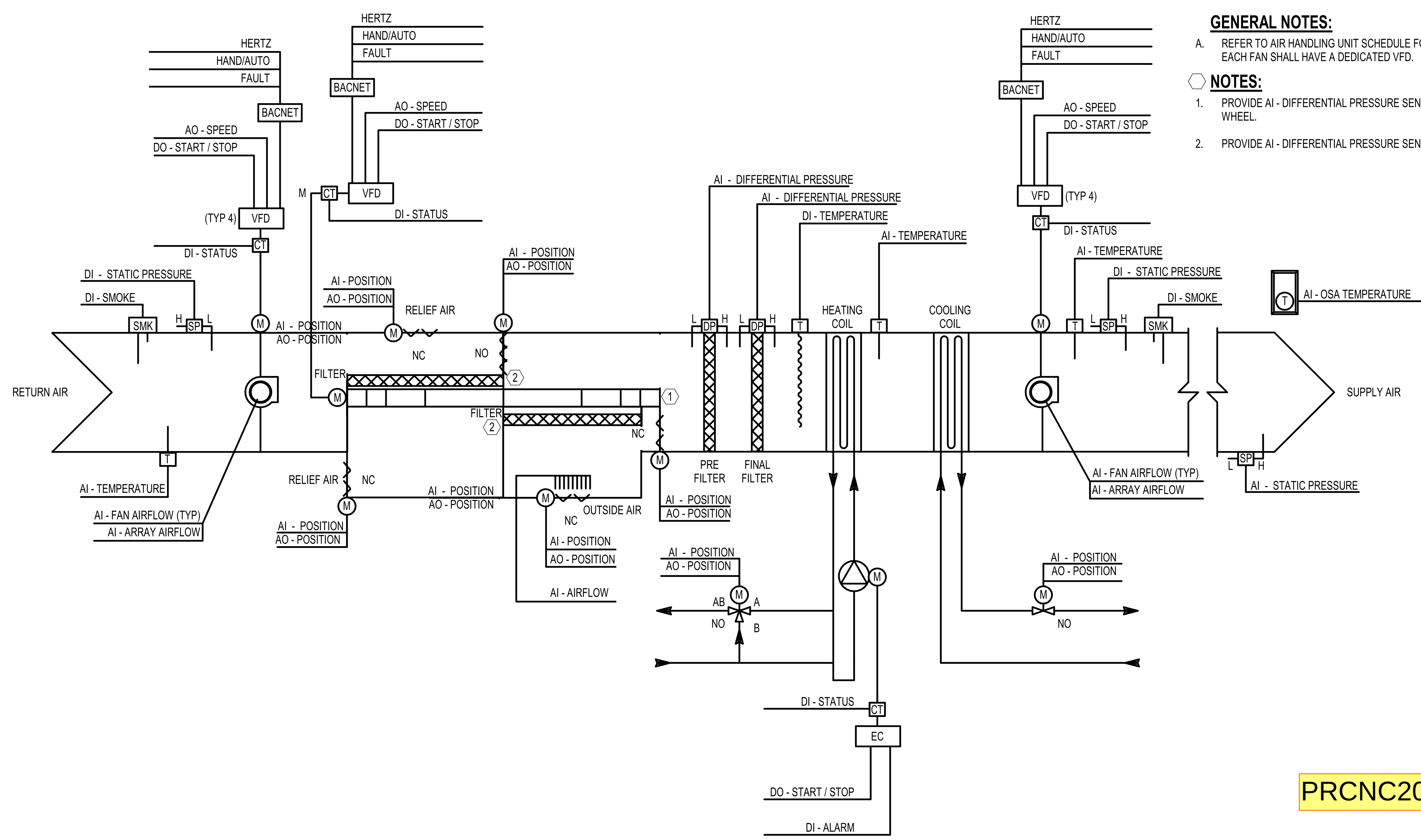
- ECONOMIZER FAULT DETECTION DIAGNOSTICS (FDD) SYSTEM
  - DISPLAY SYSTEM STATUS BASED ON TEMPERATURE SENSORS LOCATED IN OUTDOOR AIR, SUPPLY AIR, AND RETURN AIR
    - FREE COOLING AVAILABLE
    - ECONOMIZER ENABLED
    - COMPRESSOR ENABLED
    - HEATING ENABLED
    - MIXED AIR LOW LIMIT CYCLE ACTIVE
  - PROVIDE UNIT CONTROLLER CAPABLE OF MANUALLY INITIATING EACH OPERATING MODE TO VERIFY OPERATION OF COMPRESSORS, ECONOMIZERS, AND FANS INDEPENDENTLY
  - FAULT REPORTING
    - OUTDOOR AIR TEMPERATURE SENSOR FAILURE/FAULT
    - RETURN AIR TEMPERATURE SENSOR FAILURE/FAULT
    - SUPPLY AIR TEMPERATURE SENSOR FAILURE/FAULT
    - ECONOMIZER NOT OPERATING WHEN ENABLED
    - ECONOMIZER OPERATING WHEN DISABLED
    - ECONOMIZER DAMPER OPERATOR FAILURE/FAULT
    - OUTDOOR AIRFLOW RATE EXCEEDS SETPOINT BY 10% FOR 5 MINUTES
- ALARMS/SAFETIES
  - HIGH LEAVING AIR TEMPERATURE ALARM: LEAVING AIR TEMPERATURE IS MORE THAN 10°F (ADJ) ABOVE SETPOINT FOR 5 MINUTES
  - LOW LEAVING AIR TEMPERATURE ALARM: LEAVING AIR TEMPERATURE IS MORE THAN 10°F (ADJ) BELOW SETPOINT FOR 5 MINUTES
  - FIRE ALARM SHUTDOWN SAFETY: UPON RECEIVING FIRE ALARM SIGNAL FROM FIRE ALARM SYSTEM TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - SMOKE DETECTION ALARM: UPON DETECTION OF SMOKE BY SMOKE DETECTOR LOCATED IN THE AIR HANDLER OR ASSOCIATED DUCTWORK, TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - FREEZE PROTECTION ALARM: LOW LIMIT THERMOSTAT LOCATED BETWEEN HEATING AND COOLING COILS SENSES A TEMPERATURE BELOW 40°F, TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - PRE-FILTER CHANGE ALARM: WHEN DIFFERENTIAL PRESSURE MEASURED ACROSS FILTER BANK INDICATES THE STATIC PRESSURE DROP EXCEEDS 1.0 INCHES W.G.
  - FINAL-FILTER CHANGE ALARM: WHEN DIFFERENTIAL PRESSURE MEASURED ACROSS FILTER BANK INDICATES THE STATIC PRESSURE DROP EXCEEDS 1.5 INCHES W.G.
  - SUPPLY DUCT STATIC PRESSURE HIGH LIMIT ALARM: IN THE EVENT THE STATIC PRESSURE EXCEEDS 1.75 INCHES W.G.
  - SUPPLY FAN DISCHARGE PRESSURE HIGH LIMIT SAFETY: IN THE EVENT THE STATIC PRESSURE EXCEEDS 2.0 INCHES W.G. HARD WIRED MANUAL RESET PRESSURE SWITCH SHUTS DOWN FAN
  - RETURN FAN INLET PRESSURE LOW LIMIT SAFETY: IN THE EVENT THE STATIC PRESSURE EXCEEDS -1.50 INCHES W.G. HARD WIRED MANUAL RESET PRESSURE SWITCH SHUTS DOWN FAN
  - VARIABLE FREQUENCY DRIVE (VFD) ALARMS: PROVIDE INDIVIDUAL SIGNALS TO THE DDC CONTROLLER INDICATING ALARM CONDITION AND ALARM TYPE. IN THE EVENT OF VFD SHUTDOWN, TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - HEATING COIL PUMP FAILURE ALARM: FAILURE OF PUMP
    COOLING COIL PUMP FAILURE ALARM: FAILURE OF PUMP
  - HEAT WHEEL FAILURE ALARM: FAILURE OF WHEEL
- POINTS FOR MONITORING
  - SUPPLY AIR TEMPERATURE
  - HEATING COIL CONTROL VALVE POSITION
  - COOLING COIL CONTROL VALVE POSITION
  - HEATING COIL PUMP FAILURE ALARM: FAILURE OF PUMP
  - COOLING COIL PUMP FAILURE ALARM: FAILURE OF PUMP
  - HEAT WHEEL FAILURE ALARM: FAILURE OF WHEEL
  - VARIABLE FREQUENCY DRIVE SPEED
  - VARIABLE FREQUENCY DRIVE CURRENT
  - VARIABLE FREQUENCY DRIVE ENERGY USE
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

GENERAL NOTES:

A. REFER TO AIR HANDLING UNIT SCHEDULE FOR QUANTITY OF FANS. EACH FAN SHALL HAVE A DEDICATED VFD.

NOTES:

1. PROVIDE AI - DIFFERENTIAL PRESSURE SENSOR ACROSS ENTHALPY WHEEL.
2. PROVIDE AI - DIFFERENTIAL PRESSURE SENSOR ACROSS FILTER BANK.



1 VAV - MULTIPLE ZONE - ENTHALPY WHEEL
N.T.S

PRCNC20221036

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

CONTROL DIAGRAMS - MECHANICAL

M802

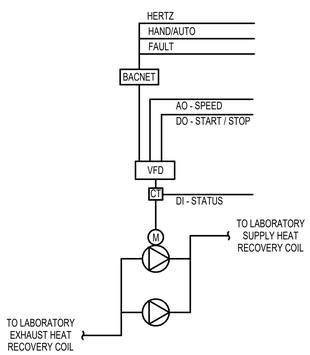
BUILDING PERMIT SET

GENERAL NOTES:

A. REFER TO AIR HANDLING UNIT SCHEDULE FOR QUANTITY OF FANS.

B. ROOM LEVEL AIRFLOWS TO VARY BASED ON OCCUPANCY (VIA ROOM OCCUPANCY SENSOR) FUME HOOD AIRFLOW (VIA SASH SENSOR).

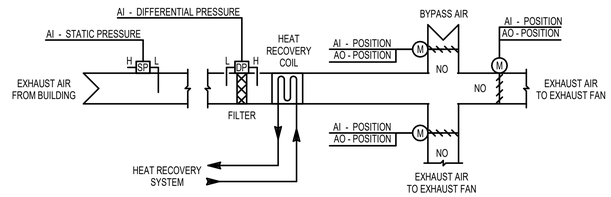
C. BMS TO CONTROL REHEAT COIL. BMS CONTRACTOR TO PROVIDE ROOM LEVEL THERMOSTAT.

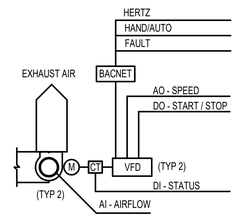


LABORATORY HEAT RECOVERY PUMPS

- GENERAL
  - PUMPS OPERATE TO MAINTAIN LABORATORY SUPPLY HEAT RECOVERY COIL LEAVING AIR TEMPERATURE
- SCHEDULE OF OPERATION
  - UNIT OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - UNIT OPERATES WHEN LABORATORY SUPPLY AIR HANDLING UNIT OPERATES
- ENABLED MODE
  - PUMP CONTROL
    - PUMP SPEED MODULATES BETWEEN MINIMUM FLOW AND MAXIMUM FLOW (AS SET BY THE TEST AND BALANCE AGENT) TO MAINTAIN LABORATORY SUPPLY HEAT RECOVERY COIL LEAVING AIR TEMPERATURE OF 55°F (ADJ)
    - LEAD STANDBY SEQUENCE
      - WHEN LEAD PUMP FAILS THE STANDBY PUMP OPERATES TO MAINTAIN HEAT RECOVERY COIL LEAVING AIR TEMPERATURE
      - FAILED PUMP IS DISABLED UNTIL RE-ENABLED BY CONTROL SYSTEM USER
    - LEAD PUMP DESIGNATION ALTERNATES WEEKLY TO DIVIDE OPERATING TIME EQUALLY BETWEEN PUMPS
- DISABLED MODE (MAINTENANCE MODE)
  - PUMPS OFF
- ALARMS/SAFETIES
  - VARIABLE FREQUENCY DRIVE SPEED (TYP)
  - VARIABLE FREQUENCY DRIVE CURRENT (TYP)
  - VARIABLE FREQUENCY DRIVE ENERGY USE (TYP)
- POINTS FOR MONITORING
  - LABORATORY SUPPLY HEAT RECOVERY COIL TEMPERATURE
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

2 LABORATORY HEAT RECOVERY
N.T.S

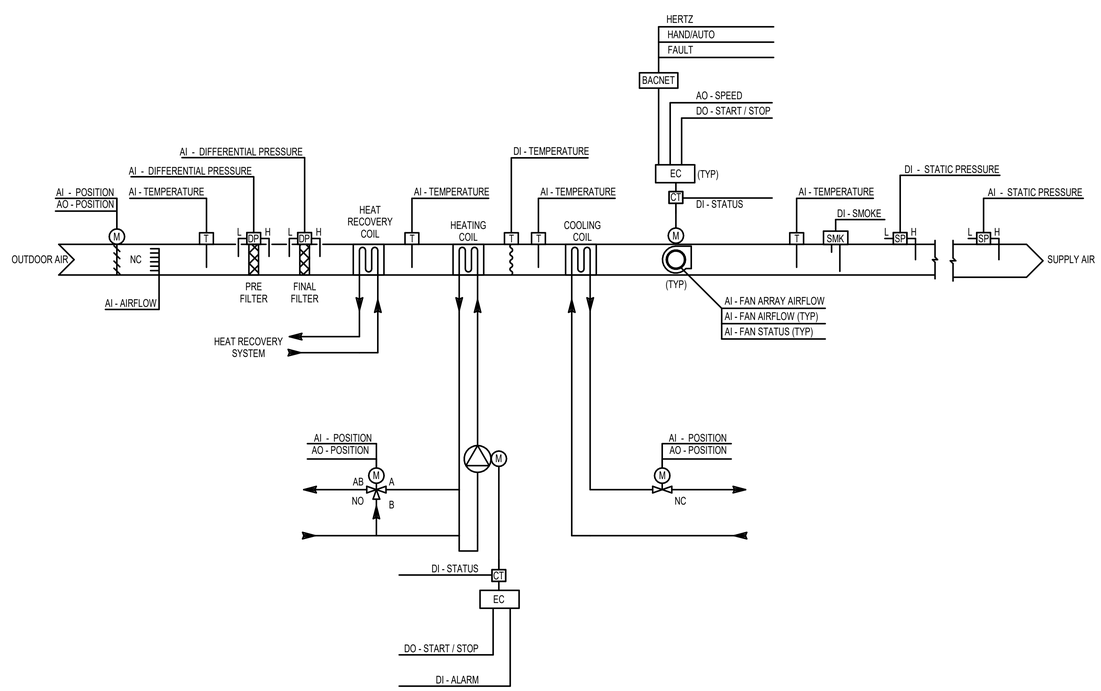




LABORATORY EXHAUST FAN

- GENERAL
  - FAN OPERATES TO MAINTAIN CONSTANT AIRFLOW
  - BYPASS DAMPER MODULATES TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE SETPOINT
- SCHEDULE OF OPERATION
  - UNIT OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - UNIT OPERATES WHEN COMMANDED BY CONTROL SYSTEM
- ENABLED MODE
  - FAN CONTROL
    - OPEN FAN ISOLATION DAMPER
    - FAN TO MAINTAIN SYSTEM AIRFLOW AS MEASURED AT THE FAN INLET AIR MEASURING STATION
    - LEAD STANDBY SEQUENCE
      - WHEN LEAD FAN FAILS, THE LEAD ISOLATION DAMPER CLOSES, THE STANDBY FAN ISOLATION DAMPER OPENS, AND THE STANDBY FAN OPERATES TO MAINTAIN SYSTEM AIRFLOW AS MEASURED BY THE STANDBY FAN INLET AIR MEASURING STATION
      - FAILED FAN IS DISABLED UNTIL RE-ENABLED BY CONTROL SYSTEM USER
    - LEAD FAN DESIGNATION ALTERNATES WEEKLY TO DIVIDE OPERATING TIME EQUALLY BETWEEN FANS
  - BYPASS DAMPER CONTROL
    - MODULATE BYPASS DAMPER TO MAINTAIN DUCT STATIC PRESSURE SET POINT (ADJ) AS SET BY TEST AND BALANCE AGENT
- DISABLED MODE (MAINTENANCE MODE)
  - FAN OFF
  - CLOSE FAN ISOLATION DAMPER
  - CLOSE BYPASS DAMPER
- ALARMS/SAFETIES
  - FAN STATUS
- POINTS FOR MONITORING
  - FAN AIRFLOW
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

3 LABORATORY EXHAUST FAN AND HEAT RECOVERY
N.T.S



1 LABORATORY SUPPLY AIR HANDLING UNIT
N.T.S

LABORATORY SUPPLY AIR HANDLING UNIT

- GENERAL
  - MULTIPLE ZONE AIR HANDLING UNIT OPERATES AT VARIABLE VOLUME
- SCHEDULE OF OPERATION
  - UNIT OPERATES 24 HOURS A DAY 7 DAYS A WEEK
  - UNIT OPERATES WHEN ASSOCIATED LABORATORY EXHAUST FAN OPERATES
- SUPPLY AIR TEMPERATURE SETPOINT
  - MAXIMUM SUPPLY AIR TEMPERATURE SETPOINT RATE OF CHANGE: 1°F PER MINUTE (ADJ)
  - MINIMUM SETPOINT = 55°F (ADJ)
  - MAXIMUM SETPOINT = 75°F (ADJ)
- ENABLED MODE
  - HEATING COIL PUMP CONTROL
    - PUMP OPERATES UNDER THE FOLLOWING CONDITIONS
      - OUTDOOR AIR TEMPERATURE IS BELOW 40°F
      - HEATING COIL VALVE GREATER THAN 0% OPEN
  - AIR HANDLING UNIT BEGINS OPERATION AT MINIMUM SPEED
    - OUTSIDE AIR DAMPER OPEN
  - SUPPLY FAN CONTROL
    - FAN STARTS AT MINIMUM SPEED
      - MAXIMUM SUPPLY FAN SPEED SETPOINT RATE OF CHANGE: 2% PER MINUTE (ADJ)
    - FAN SPEED RESET – DUCT STATIC PRESSURE TRIM AND RESPOND
      - SUPPLY FAN SPEED MODULATES TO MAINTAIN SUPPLY DUCT STATIC PRESSURE SETPOINT
      - SUPPLY DUCT STATIC PRESSURE SETPOINT IS RESET TO LOWEST POSSIBLE VALUE USING TRIM AND RESPOND LOGIC TO MAINTAIN CRITICAL TERMINAL UNITS AT 90% OPEN
        - EVERY 2 MINUTES SUPPLY STATIC PRESSURE SETPOINT IS REDUCED BY 0.05 INCHES W.G. (ADJ)
          - WHEN TWO OR MORE TERMINAL UNIT DAMPERS ARE MORE THAN 90% OPEN THE SUPPLY STATIC PRESSURE SETPOINT INCREASES BY 0.07 INCHES W.G.
        - MAXIMUM AND MINIMUM DUCT STATIC PRESSURE SET POINT TO BE SET BY TEST AND BALANCE AGENT
  - SUPPLY AIR TEMPERATURE CONTROL
    - SUPPLY AIR TEMPERATURE SETPOINT SET TO CURRENT SUPPLY AIR TEMPERATURE READING
      - MAXIMUM SUPPLY AIR TEMPERATURE SETPOINT RATE OF CHANGE: 1°F PER MINUTE (ADJ)
    - SUPPLY AIR TEMPERATURE BELOW SETPOINT
      - HEATING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT
      - COOLING COIL VALVE CLOSED
    - SUPPLY AIR TEMPERATURE AT SETPOINT
      - HEATING COIL VALVE CLOSED
      - COOLING COIL VALVE CLOSED
    - SUPPLY AIR TEMPERATURE ABOVE SETPOINT
      - HEATING COIL VALVE CLOSED
      - COOLING COIL MODULATES TO MAINTAIN SUPPLY AIR TEMPERATURE SETPOINT

LABORATORY SUPPLY AIR HANDLING UNIT (CONTINUED)

- DISABLED MODE (MAINTENANCE MODE)
  - GENERAL: FANS OFF, ISOLATION DAMPER SHUT, VALVES IN DE-ENERGIZED POSITIONS
  - THE SYSTEM CANNOT ENTER OCCUPIED MODE UNTIL MAINTENANCE MODE IS RELEASED FROM THE OPERATOR WORKSTATION
- ALARMS/SAFETIES
  - HIGH LEAVING AIR TEMPERATURE ALARM: LEAVING AIR TEMPERATURE IS MORE THAN 10°F ABOVE SETPOINT FOR 5 MINUTES
  - LOW LEAVING AIR TEMPERATURE ALARM: LEAVING AIR TEMPERATURE IS MORE THAN 10°F BELOW SETPOINT FOR 5 MINUTES
  - FIRE ALARM SHUTDOWN SAFETY: UPON RECEIVING FIRE ALARM SIGNAL FROM FIRE ALARM SYSTEM TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - SMOKE DETECTION ALARM: UPON DETECTION OF SMOKE BY SMOKE DETECTOR LOCATED IN THE AIR HANDLER OR ASSOCIATED DUCTWORK, TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - FREEZE PROTECTION ALARM: LOW LIMIT THERMOSTAT LOCATED BETWEEN HEATING AND COOLING COILS SENSES A TEMPERATURE BELOW 40 DEGREES F, TURN AIR HANDLER OFF, ALL COMPONENTS IN NORMAL DE-ENERGIZED POSITIONS
  - FAN FAILURE ALARM: VIA AIRFLOW MEASURING STATION
  - PRE-FILTER CHANGE ALARM: WHEN DIFFERENTIAL PRESSURE MEASURED ACROSS FILTER BANK INDICATES THE STATIC PRESSURE DROP EXCEEDS 1.0 INCHES W.G. (ADJ)
  - FINAL-FILTER CHANGE ALARM: WHEN DIFFERENTIAL PRESSURE MEASURED ACROSS FILTER BANK INDICATES THE STATIC PRESSURE DROP EXCEEDS 1.5 INCHES W.G. (ADJ)
  - SUPPLY DUCT STATIC PRESSURE HIGH LIMIT ALARM: IN THE EVENT THE STATIC PRESSURE EXCEEDS 1.75 INCHES W.G. (ADJ, SET BY TEST AND BALANCE AGENT)
  - SUPPLY FAN OUTLET PRESSURE HIGH LIMIT SAFETY: IN THE EVENT THE STATIC PRESSURE EXCEEDS 3.5 INCHES W.G. (ADJ, SET BY TEST AND BALANCE AGENT) HARD WIRED MANUAL RESET PRESSURE SWITCH SHUTS DOWN FAN
  - HEATING COIL PUMP FAILURE ALARM: FAILURE OF PUMP
- POINTS FOR MONITORING
  - SUPPLY TEMPERATURE SETPOINT
  - SUPPLY TEMPERATURE
  - SUPPLY FAN ARRAY AIRFLOW
- NOTES
  - SETPOINTS AND VARIABLES ARE TO BE INDIVIDUALLY ADJUSTABLE THROUGH CONTROL SYSTEM GRAPHICAL USER INTERFACE

PRCNC20221036

BUILDING PERMIT SET

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Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

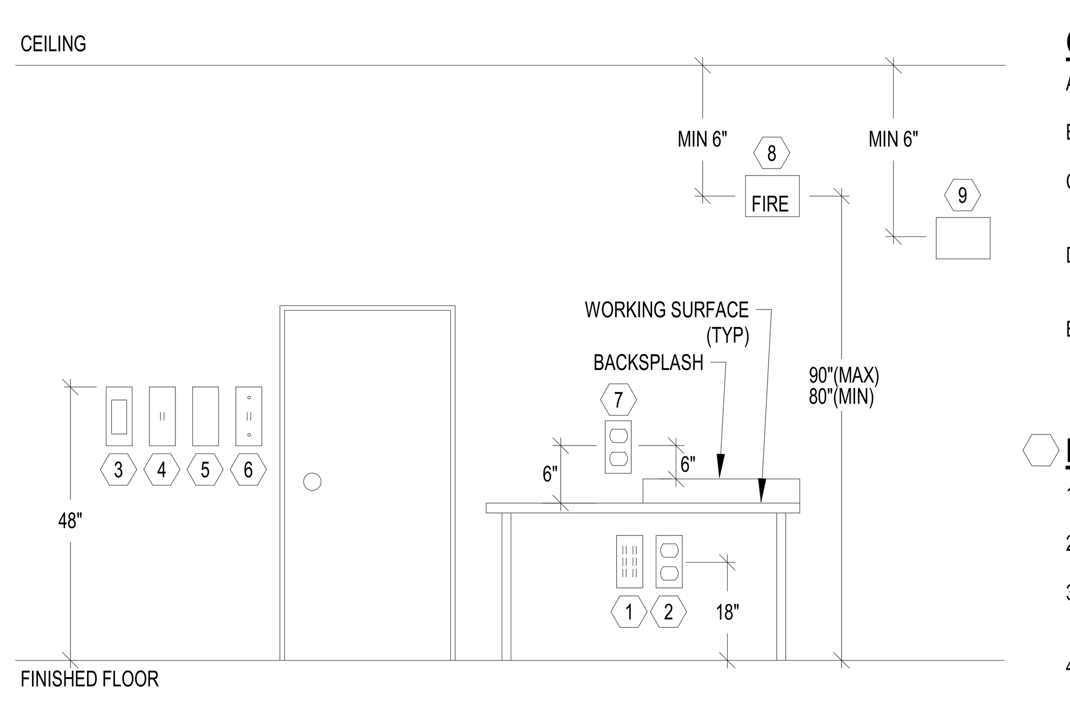
Revisions

#	Date	Description

CONTROL DIAGRAMS - MECHANICAL

M803

DEVICE MOUNTING HEIGHTS



GENERAL NOTES:

A. LOCATE ALL FIRE ALARM DEVICES PER CODE.

B. LOCATE ALL ACCESSIBLE SWITCHES PER ADA GUIDELINES.

C. FIELD COORDINATE ALL ABOVE COUNTER DEVICES WITH MILLWORK CONTRACTOR.

D. IF APPLICABLE, TELECOM CONSULTANTS' DRAWINGS TAKE PRECEDENCE OVER THIS DETAIL FOR TELECOM DEVICES.

E. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES. WHERE NO ELEVATION EXISTS, REFER TO TYPICAL MOUNTING HEIGHTS IN THIS DETAIL.

NOTES:

1. TELECOM OUTLET.
2. RECEPTACLE.
3. FIRE ALARM PULL STATION.
4. LIGHT SWITCH.
5. CARD READER.
6. WALL PHONE.
7. ABOVE COUNTER DEVICE. MAINTAIN A CONSISTENT HEIGHT THROUGHOUT SPACE.
8. FIRE ALARM STROBE.
9. OCCUPANCY SENSOR.

ABBREVIATIONS - ELECTRICAL

AFF	ABOVE FINISHED FLOOR	KVA	KILOVOLT-AMPERE
ADA	AMERICANS DISABILITIES ACT	KVAR	KILOVOLT-AMPERE REACTIVE
A	AMPERE (AMP)	LA	LIGHTNING ARRESTOR
AL	ALUMINUM	LED	LIGHT EMITTING DIODE
ARCH	ARCHITECT / ARCHITECTURAL	LRC	LIGHTING RELAY CONTROL PANEL
ATS	AUTOMATIC TRANSFER SWITCH	LTG	LIGHTING
AWG	AMERICAN WIRE GAUGE	LV	LOW VOLTAGE
C	CONDUIT	MATV	MASTER ANTENNA TELEVISION
CAT	CATEGORY CABLE	MAX	MAXIMUM
CB	CIRCUIT BREAKER	MCA	MINIMUM CIRCUIT AMPACITY
CCTV	CLOSED CIRCUIT TELEVISION	MCB	MAIN CIRCUIT BREAKER
CKT	CIRCUIT	MCC	MOTOR CONTROL CENTER
CLG	CEILING	MDP	MAIN DISTRIBUTION PANEL
CT	CURRENT TRANSFORMER	MECH	MECHANICAL
CU	COPPER	MH	METAL HALIDE
DN	DOWN	MIN	MINIMUM
EM	EMERGENCY	MLO	MAIN LUGS ONLY
EMT	ELECTRICAL METALLIC TUBING	MOCP	MAXIMUM OVERCURRENT PROTECTION
EP	EXPLOSION PROOF	MTS	MANUAL TRANSFER SWITCH
EPO	EMERGENCY POWER OFF	MV	MEDIUM VOLTAGE
EWC	ELECTRIC WATER COOLER	NIC	NOT IN CONTRACT
FA	FIRE ALARM	NL	NIGHT LIGHT CIRCUIT
FLA	FULL LOAD AMPS	PA	PUBLIC ADDRESS
FLUOR	FLUORESCENT	PE	PHOTOELECTRIC CELL
FCIC	FURNISHED BY CONTRACTOR	PF	POWER FACTOR
	INSTALLED BY CONTRACTOR	PNL	PANELBOARD
FOIC	FURNISHED BY OWNER	PVC	POLYVINYL CHLORIDE
	INSTALLED BY CONTRACTOR	PWR	POWER
FOIO	FURNISHED BY OWNER	SDP	SUB-DISTRIBUTION PANEL
	INSTALLED BY OWNER	STR	STARTER
GEN	GENERATOR	SV	SOLENOID VALVE
GFP	GROUND FAULT PROTECTION	SW	SWITCH
GFI	GROUND FAULT INDICATOR	TD	TIME DELAY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TP	TAMPERPROOF
GRC	GALVANIZED RIGID CONDUIT	TTB	TELEPHONE TERMINAL BOARD
GRD	GROUND	TTC	TELEPHONE TERMINAL CABINET
HP	HORSEPOWER	TV	TELEVISION
HPS	HIGH PRESSURE SODIUM	TYP	TYPICAL
HV	HIGH VOLTAGE	UG	UNDERGROUND
HZ	HERTZ	UPS	UNINTERRUPTIBLE POWER SUPPLY
IG	ISOLATED GROUND	V	VOLTAGE
INC	INCANDESCENT	VA	VOLT-AMPERE
INV	INVERTER	VFD	VARIABLE FREQUENCY DRIVE
JB	JUNCTION BOX	VP	VAPORPROOF
KW	KILOWATT	W	WATTS
KWH	KILOWATT HOUR	WP	WEATHERPROOF
KV	KILOVOLT	XFMR	TRANSFORMER

ELECTRICAL EQUIPMENT DESIGNATION

E 4 L - 1 - 1A - A

POWER TYPE:
- BLANK - NORMAL POWER
- E - EMERGENCY POWER
- U - UNINTERRUPTIBLE POWER

VOLTAGE:
- 2 - 208Y/120V
- 4 - 480Y/277V
- 5 - 4160Y/2400V
- 15 - 12470Y/7200V

EQUIPMENT:
- D - MAIN DISTRIBUTION PANEL
- S - SUB DISTRIBUTION PANEL
- B - BUSWAY
- M - MOTOR CONTROL CENTER
- A - AUTOMATIC TRANSFER SWITCH
- P - POWER PANEL
- L - LIGHTING PANEL
- T - TRANSFORMER
- U - UPS
- LRC - LIGHTING RELAY CONTROL PANEL

BUILDING LEVEL:
- 0 - BASEMENT
- 1 - FIRST LEVEL
- 2 - SECOND LEVEL
- 3 - THIRD LEVEL
- 4 - FOURTH LEVEL
- ETC.

GRID LOCATION:
- 1A - NEAR INTERSECTION OF GRID LINES 1 AND A

IDENTIFIER:
- A - FIRST IN SERIES OF EQUIPMENT
- B - SECOND IN SERIES OF EQUIPMENT
- ETC.

DESIGNATION SYMBOLS

- --- / 123: EQUIPMENT DESIGNATOR SEE SCHEDULE.
- E / X: EXISTING TO REMAIN, EXISTING TO BE REMOVED
- R / F: EXISTING TO BE RELOCATED, FUTURE
- N: NEW, POINT OF CONNECTION
- 1: NOTE

POWER - SINGLE LINE DIAGRAM & RISER

- GFP: CIRCUIT BREAKER, WITH GROUND FAULT PROTECTION, DRAW OUT
- DISTRIBUTION SWITCHBOARD / PANELBOARD, WITH INTERNAL BUS
- UTILITY POLE
- PANEL NAME / MCB / 225: PANELBOARD; PANEL INCOMING DESIGNATOR: MLO UNLESS MARKED MCB; AMPACITY (AMPS)
- T: TRANSFORMER
- T / T: SERVICE TRANSFORMER, WITH VAULT
- G: GENERATOR, AUTOMATIC TRANSFER SWITCH
- M / MB / MA / MPQ: METER: UTILITY, BASIC, ADVANCED, POWER QUALITY
- CT / PT: TRANSDUCER: CURRENT, POTENTIAL (VOLTAGE), COMBINED
- SPD: SURGE PROTECTIVE DEVICE, PUSH BUTTON
- ELECTRICAL BUSWAY, BUSWAY PLUG-IN CIRCUIT BREAKER
- X / XX.XX, XXXX: FEEDER CONTINUATION CALLOUT, FEEDER TAG
- FEEDER: DROP, RISE, CAP, BREAK, CONTINUATION
- SWITCH, FUSED SWITCH
- F: DISCONNECT, FUSED DISCONNECT
- MOTOR, MOTOR WITH CONTROLLER, MOTOR WITH STARTER
- PV ARRAY, INVERTER

FIRE ALARM

- FS / TS: SPRINKLER SYSTEM SWITCH: FLOW, TAMPER
- F / CS: MANUAL FIRE ALARM STATION: CALL STATION
- I / H / P: DETECTOR: IONIZATION, HEAT, PHOTOELECTRIC
- P / P: DETECTOR: BEAM
- DUCT DETECTOR, TYPE AS NOTED
- F: FIREMANS PHONE JACK
- D / C: MAGNETIC DOOR HOLDER, CLOSER

WALL	CEILING	NOTIFICATION DEVICES
F	F	FIRE ALARM: VISUAL
F, F	F, F	FIRE ALARM: HORN; HORN W/VISUAL
S, S	S, S	FIRE ALARM: SPEAKER; SPEAKER W/VISUAL
F, F	F, F	FIRE ALARM: BELL; BELL W/VISUAL
C, C	C, C	FIRE ALARM: CHIME; CHIME W/VISUAL

POWER - PLANS

- WALL RECEPTACLE: DUPLEX, QUADPLEX
- G: SINGLE WALL RECEPTACLE, FACELESS GFCI REMOTE TEST BUTTON
- G: DENOTES GFCI
- W: DENOTES GFCI AND WEATHER PROOF
- *: DENOTES RECEPTACLE ABOVE COUNTER
- SPECIAL PURPOSE RECEPTACLE.
- CEILING RECEPTACLE: DUPLEX, QUADPLEX
- FB1 / FB2: FLUSH FLOORBOX RECEPTACLE. REFER TO SCHEDULE FOR QUANTITY AND TYPES OF DEVICES.
- PT1 / PT2: FLUSH POKE-THROUGH RECEPTACLE. REFER TO SCHEDULE FOR QUANTITY AND TYPES OF DEVICES.
- DENOTES SPLIT-WIRED, HALF SWITCHED / CONTROLLED VIA MANUAL CONTROL, MOTION CONTROL OR TIME-BASED CONTROL. SEE SPECIFICATIONS & PLANS.
- DENOTES FULL SWITCHED / CONTROLLED VIA MANUAL CONTROL, MOTION CONTROL OR TIME-BASED CONTROL. SEE SPECIFICATIONS & PLANS.
- FB3 / FB4: SWITCHED / CONTROLLED FLUSH FLOORBOX RECEPTACLE. REFER TO SCHEDULE & PLANS FOR CONTROL INFORMATION.
- PT3 / PT4: SWITCHED / CONTROLLED FLUSH POKE-THROUGH RECEPTACLE. REFER TO SCHEDULE & PLANS FOR CONTROL INFORMATION.
- FB1 X, PT1 X: LETTER DESIGNATOR:
  - E = EMERGENCY, U = UPS, S = SWITCHED, C = CRITICAL
  - IG = ISOLATED GROUND, P = SURGE PROTECTIVE DEVICE, A = AFCI, B = WITH USB OUTLETS
- 2NP1:42.: DENOTES PANELBOARD AND CIRCUIT NUMBER.
- 42.: DENOTES CIRCUIT NUMBER. REFER TO SHEET GENERAL NOTES FOR PANELBOARD.
- PEDESTAL OUTLET: POWER OR SIGNAL. MOUNTED ABOVE TABLE.
- J: SURFACE OUTLET STRIP: DIMENSION AS SHOWN. SEE SPECIFICATIONS.
- 1,3,5 / 1,3,5: POWER POLE, POWER, COMBINATION CIRCUITS AS INDICATED.
- J: JUNCTION BOX
- H J 1,3,5: JUNCTION BOX HOME RUN. CIRCUITS AS INDICATED.
- F J 1,3,5: JUNCTION BOX HOME RUN & FURNITURE FEED. CIRCUITS AS INDICATED.
- CONNECTION TO EQUIPMENT PROVIDED BY OTHERS
- PUSH BUTTON STATION: SINGLE, DOUBLE
- ELECTRICAL EQUIPMENT
- PANELBOARD: SURFACE, RECESSED
- ENCLOSURE: SURFACE, RECESSED
- T: TRANSFORMER
- GROUND ROD, IN TEST WELL
- GROUND PAD

GENERAL NOTES:

A. THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

LIGHTING

EMERGENCY / NORMAL

- NA: TRACK: WITH CURRENT LIMITER, WITHOUT CURRENT LIMITER
- RECESSED DOWNLIGHT:: SQUARE, ROUND
- RECESSED WALLWASHER: SQUARE, ROUND
- RECESSED ADJUSTABLE ACCENT: SQUARE, ROUND
- DOWNLIGHT: SURFACE: SQUARE, ROUND
- WALL WASHER: SURFACE SQUARE, ROUND
- ADJUSTABLE ACCENT: SURFACE: SQUARE, ROUND
- ADJUSTABLE ACCENT: MULTILAMP
- LINEAR: RECESSED
- LINEAR: RECESSED ASYMMETRIC
- LINEAR: SURFACE
- LINEAR: SURFACE ASYMMETRIC
- LINEAR: SUSPENDED
- LINEAR: SUSPENDED ASYMMETRIC
- LINEAR: WALL MOUNTED
- LINEAR: WALL MOUNTED ASYMMETRIC
- STRIP LIGHT
- NA: LINEAR: UNDERCABINET
- LINEAR ACCENT: ARCHITECTURE INTEGRATED
- PENDANT: SQUARE, ROUND
- NA: EXIT SIGN: TOP SURFACE OR TOP RECESSED: SINGLE , DOUBLE
- NA: EXIT SIGN: SIDE OR FLAG MOUNT: SINGLE , DOUBLE
- NA: EXIT SIGN: BACK SURFACE MOUNT
- WALL MOUNTED: RECESSED: SQUARE, ROUND
- WALL MOUNTED: SURFACE: SQUARE, ROUND
- POLE-MOUNTED: AREA: SQUARE, ROUND
- POLE-MOUNTED: STREET: RECTANGULAR, OVAL
- POLE-MOUNTED: PEDESTRIAN: SQUARE, ROUND
- BOLLARD 360: SQUARE, ROUND
- BOLLARD 180: SQUARE, ROUND
- NA: INGRADE SQUARE, ROUND
- NA: INGRADE ADJUSTABLE SQUARE, ROUND
- NA: FLOOD LIGHT
- CS XXX: CONTROL STATION. REFER TO SCHEDULE.
- S, S^2: WALL SWITCH: 1 POLE, 2 POLE
- S^3, S^4: WALL SWITCH: 3 WAY, 4 WAY
- S^K, S^M: WALL SWITCH: KEY LOCK, MOMENTARY
- S^{LV}, S^P: WALL SWITCH: LOW VOLTAGE, PILOT
- S^T, S^D: WALL SWITCH: TIMER, MANUAL DIMMER
- S^{OS}, S^{OS}_D: WALL COMBINATION OCCUPANCY SWITCH, OCCUPANCY DIMMER
- S^{OS}, S^{OS}_D: WALL COMBINATION VACANCY SWITCH, VACANCY DIMMER
- PE: PHOTOELECTRIC CELL: WALL MOUNTED, CEILING MOUNTED
- OS X: OCCUPANCY SENSOR: CEILING OR WALL MOUNTED
- VS X: VACANCY SENSOR: CEILING OR WALL MOUNTED
  "X" DESIGNATES DEVICE TYPE:
  U: ULTRASONIC R: INFRARED DT: DUAL TECHNOLOGY
- L#: DESIGNATES LUMINAIRE TYPE (SEE LUMINAIRE SCHEDULE)
- EM: DESIGNATES EMERGENCY FIXTURE
- a,b,c,d,e...etc: DESIGNATES STANDALONE CONTROL ZONE.
- 42. / PNL:42.: DESIGNATES LIGHTING CIRCUIT, PANEL:CIRCUIT.
- Z###: DESIGNATES NETWORK CONTROL ZONE. REFER TO SCHEDULE REFER TO ZONE SCHEDULE FOR CIRCUITING OF NETWORKED LIGHTING.

ELECTRICAL SHEET LIST

SHEET #	SHEET NAME
E001	SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL
E002	LUMINAIRE SCHEDULE
E003	LIGHTING CONTROLS
E004	EQUIPMENT CONNECTION SCHEDULE
E005	EQUIPMENT CONNECTION SCHEDULE
E010	SITE PLANS - ELECTRICAL
E011	SITE PLANS - LIGHTING
E100	LEVEL 0 - FLOOR PLAN - ELECTRICAL
E101	LEVEL 1 - FLOOR PLAN - ELECTRICAL
E102	LEVEL 2 - FLOOR PLAN - ELECTRICAL
E103	LEVEL 3 - FLOOR PLAN - ELECTRICAL
E104	ROOF PLAN - ELECTRICAL
E120	LEVEL 0 - REFLECTED CEILING PLAN - LIGHTING
E121	LEVEL 1 - REFLECTED CEILING PLAN - LIGHTING
E122	LEVEL 2 - REFLECTED CEILING PLAN - LIGHTING
E123	LEVEL 3 - REFLECTED CEILING PLAN - LIGHTING
E131	LEVEL 1 - FLOOR PLAN - FIRE ALARM
E132	LEVEL 2 - FLOOR PLAN - FIRE ALARM
E133	LEVEL 3 - FLOOR PLAN - FIRE ALARM
E401	ENLARGED PLAN - ELECTRICAL
E601	DETAILS - ELECTRICAL
E701	SINGLE-LINE DIAGRAM - ELECTRICAL
E701.1	SINGLE-LINE DIAGRAM - ELECTRICAL - ALTERNATE
E702	PRIMARY SINGLE-LINE DIAGRAM
E703	FIRE ALARM RISER - ELECTRICAL
Grand total: 25	

FOR REFERENCE ONLY

PRCNC20221036

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Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL

E001

FOR REFERENCE ONLY

FIXTURE TYPE	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER	SIZE	INPUT WATTS	LAMP SOURCE (Type, CCT, Delivered Lumens)	POWER SUPPLY (Integral/Remote) (Electronic/Magn.) (Dimming Type)	INPUT VOLTAGE	FINISH	MOUNTING	NOTES
S1	SURFACE MOUNT CYLINDER EXTERIOR ENTRY	LIGMAN UTA-80551 SERIES	10"H x 7 1/4" DIA	20W	LED, 3500K, 2,234 LUMENS 80+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
S2	BOLLARD EXTERIOR PATH	KIM LIGHTING PA7R	3'-6 1/2"H x 7" DIA	22W	LED, 4000K, 1,377 LUMENS 80+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
S3	PEDESTRIAN POLE, TYPE III DISTRIBUTION EXTERIOR PATH	KIM LIGHTING OURO EDGE-LIT SERIES	2'-0"H x 1'-8" DIA	50W	LED, 4000K, 5,505 LUMENS 80+ CRI BUG: B1 U0 G2	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	POLE MOUNTED APROX. 12'-0" HEIGHT	
S4	SINGLE POLE, TYPE II DISTIRBUTION PARKING LOT	KIM LIGHTING ALTITUDE ALT120 SERIES	4 1/8"H x 1'-5"W x 2'-2 3/4"L	135W	LED, 4000K, 15,611 LUMENS 80+ CRI BUG: B4 U0 G5	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	POLE MOUNTED APROX. 25'-0" HEIGHT	
S4A	DOUBLE POLE, TYPE V DISTRIBUTION PARKING LOT	KIM LIGHTING ALTITUDE ALT120 SERIES	4 1/8"H x 1'-5"W x 2'-2 3/4"L	135W	LED, 4000K, 15,658 LUMENS 80+ CRI BUG: B5 U0 G3	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	POLE MOUNTED APROX. 25'-0" HEIGHT	

FIXTURE TYPE	PRODUCT DESCRIPTION	BASIS OF DESIGN MANUFACTURER	SIZE	INPUT WATTS	LAMP SOURCE (Type, CCT, Delivered Lumens)	POWER SUPPLY (Integral/Remote) (Electronic/Magn.) (Dimming Type)	INPUT VOLTAGE	FINISH	MOUNTING	NOTES
L100	PENDANT LINEAR LED DIRECT/INDIRECT, DUAL CIRCUIT CLASSROOMS	FINELITE	2 1/2"H x 10"W x LENGTH PER PLANS	7W/FT	LED, 3500K, 341 LM/FT UP 384 LM/FT DOWN, 90 CRI	INTEGRAL, 0-10V, DIM TO 1%	PER ELEC	PER ARCHITECT	PENDANT	
L101	WALL MOUNT LINEAR LED WITH WALL WASH LENS CIRCULATION	VODE WINGRAIL	2 1/4"H x 1 1/4"W x LENGTHS PER PLANS	6.1W/FT	LED, 3500K, 583 LM/FT 90+ CRI	REMOTE 0-10V DIMMING TO 1%	PER ELEC	PER ARCHITECT	WALL MOUNT	
L102	RECESSED LINEAR LED WITH WALL WASH LENS CIRCULATION	FINLITE	4"H x 5"W x LENGTH PER PLANS APERTURE 3 1/2"	3.8W/FT	LED, 3500K, 412 LM/FT, 90CRI	INTEGRAL, 0-10V, DIM TO 1%	PER ELEC	PER ARCHITECT	RECESSED	
L103	PENDANT LINEAR LED DIRECT, SATIN LENS COLLABORATION LOUNGE	FINLITE	4 3/8"H x 2"W x LENGTH PER PLANS APERTURE 1 1/2"	3.8W/FT	LED, 3500K, 332 LM/FT, 90CRI	INTEGRAL, 0-10V, DIM TO 1%	PER ELEC	PER ARCHITECT	PENDANT	
L104-3K	RECESSED LINEAR LED, SELF-COVING, PERIMETER ROOM FILL DISTRIBUTION, 1" REGRESS, WALL-TO-WALL LAYOUT RESTROOMS	FINLITE	5"H x 2"W x LENGTH PER PLANS	3.8W/FT	LED, 3000K, 320 LM/FT, 90 CRI	INTEGRAL, 0-10V, DIM TO 1%	PER ELEC	PER ARCHITECT	RECESSED, COVE	
L105	PENDANT LINEAR LED DIRECT/INDIRECT, DUAL CURCUIT, 1/2" REGRESS WITH LOUVER OFFICE	FINLITE	5 1/2"H x 4"W x LENGTH PER PLANS	7.6W/FT	LED, 3500K, 383 LM/FT DOWN 489 LM/FT UP, 90 CRI	INTEGRAL, 0-10V, DIM TO 1%	PER ELEC	PER ARCHITECT	PENDANT	
L106	PENDANT MOUNT INDUSTRIAL STRIP IDF, STORAGE, BOH	COLUMBIA LIGHTING CSL SERIES	2 3/4" H x 2 1/4" W x 4'-0" L	38W	LED, 3500K 4,876 LUMENS MIN 80 CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	ADD "GLH5" AIRCRAFT CABLE HANGER IF FIXTURE IS PENDANT MOUNTED
L107	NOT IN USE									
L108	LINEAR LED UNDERCABINET LIGHTING UNDERCABINET	KELVIX BRET 502	1/2"H x 3/4"W x LENGTHS PER PLANS	2.6W/FT	LED, 3500K, 205 LM/FT 90+ CRI	REMOTE 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
L109	WALL MOUNTED LINEAR DIRECT LED, REGRESS LENS WITH LOUVERS CLASSROOMS	FINELITE	4 7/8"H x 2"W x LENGTHS PER PLANS	8W/FT	LED, 3500K, 357 LM/FT 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	WALL MOUNT	
L110	WALL MOUNTED LINEAR DIRECT/INDIRECT LED STAIRWELLS	FINELITE	5 1/2"H x 4"W x LENGTH PER PLANS	15.6W/FT	LED, 3500K, 850 LM/FT UP 765 LM/FT DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	WALL MOUNT	
L111	INDUSTRIAL LINEAR LED STRIP ELEVATOR SHAFTS	COLUMBIA LXEN	3 7/8"H x 4 1/2"W x 4'-0"L	37W	LED, 3500K, NOMENAL 1,000 LM/FT 80+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
L200	RECESSED LED DOWNLIGHT, DECORATIVE OPEN TRIM CIRCULATION	ALPHABET	4"H x 2'-0" W x 7 5/16" L 3 11/16" APERTURE	14.3W	LED, 3500K 1,250 LUMENS 93+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	RECESSED	
L200-3K	RECESSED LED DOWNLIGHT, DECORATIVE OPEN TRIM RESTROOMS	ALPHABET	4"H x 2'-0" W x 7 5/16" L 3 11/16" APERTURE	14.3W	LED, 3000K 1,250 LUMENS 93+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	RECESSED	
L200A	RECESSED LED DOWNLIGHT, PINHOLE APERTURE VESTIBULES	ALPHABET	4"H x 2'-0" W x 7 5/16" L 1 13/16" APERTURE	14.3W	LED, 3500K 1,250 LUMENS 93+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	RECESSED	
L201	PENDANT LED DIRECT/INDIRECT, LOWER OUTPUT VARIOUS	ALPHABET	12"H x 4 15/16"DIA	23.6W	LED, 3500K 750 LUMENS UP 1,000 LUMENS DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	
L201A	PENDANT LED DIRECT/INDIRECT, HIGHER OUTPUT VARIOUS	ALPHABET	12"H x 4 15/16"DIA	38.8W	LED, 3500K 750 LUMENS UP 2,000 LUMENS DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	
L201B	SURFACE CYLINDER LED DOWNLIGHT VARIOUS	ALPHABET	12"H x 4 15/16"DIA	12.8W	LED, 3500K 1,000 LUMENS DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
L202	RECESSED LED BUTTON DOWNLIGHT DISPLAY CASEWORK	ALPHABET	5/8"H x 4 2 1/4"DIA	5W	LED, 3000K 36 LUMENS DOWN 85 CRI	ELV DIMMING	PER ELEC	PER ARCHITECT	RECESSED	
L203	PENDANT LED DIRECT/INDIRECT ENTRIES	ALPHABET	10.6 H x 4 18.7 DIA	96W	LED, 3500K 4500 LUMENS DOWN 1500 LUMENS UP 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	
L204	SURFACE DIRECT LED STAIRWELL	ALPHABET	4 1/2"H x 24"DIA	54W	LED, 3500K 4100 LUMENS DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	SURFACE	
L204A	PENDANT DIRECT LED STAIRWELL	ALPHABET	4 1/2"H x 24"DIA	54W	LED, 3500K 4100 LUMENS DOWN 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	
L204B	PENDANT DIRECT/INDIRECT LED STAIRWELL	ALPHABET	4 1/2"H x 36"DIA	60W	LED, 3500K 4455 LUMENS DOWN 1045 LUMENS UP 90+ CRI	INTEGRAL 0-10V DIMMING	PER ELEC	PER ARCHITECT	PENDANT	

GENERAL NOTES:

A. SPECIFICATIONS SHOWN REPRESENT THE BASIS OF DESIGN. OTHER LISTED MANUFACTURERS ARE ALTERNATES TO THE BASIS OF DESIGN. SEE SPEC SECTION 265000 FOR MORE INFORMATION ON ALTERNATE FIXTURES.
B. LIGHT OUTPUT LISTED IN THIS SCHEDULE IS DELIVERED LUMENS UNLESS OTHERWISE NOTED.
C. CONTRACTOR TO VERIFY LUMINAIRE VOLTAGE WITH BRANCH CIRCUIT PRIOR TO ORDERING.
D. CONTRACTOR TO COORDINATE ALL CEILING TYPES FOR MOUNTING OF LUMINAIRES PRIOR TO ORDERING AND ROUGH-IN.
E. CONFIRM ALL LUMINAIRE FINISHES, AND MOUNTING TYPES WITH ARCHITECT PRIOR TO ORDERING.
F. CONFIRM SUSPENSION HEIGHTS, AS WELL AS ALL MOUNTING ELEVATIONS FOR WALL MOUNTED LUMINAIRES WITH ARCHITECT OR LIGHTING DESIGNER PRIOR TO FINAL INSTALLATION AND CUTTING OF EXCESS POWER AND SUSPENSION CABLES.

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Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

LUMINAIRE SCHEDULE

PRCNC20221036

E002

FOR REFERENCE ONLY

LIGHTING CONTROL SEQUENCE OF OPERATION

AREA	COMMENTS	CONTROL TYPE
ELEVATOR PIT& HOISTWAYS	FOR OCCUPANT SAFETY AUTOMATIC CONTROLS IS NOT PROVIDED. PROVIDE WALL SWITCH TO MANUALLY CONTROL ELEVATOR HOISTWAY AND PIT LIGHTS, SWITCH LOCATION TO BE FIELD VERIFIED. UNDER EMERGENCY CONDITIONS LIGHTS TO AUTOMATICALLY TURN ON WHILE IN USE.	ON/OFF SWITCH
EGRESS STAIRWELLS	LIGHTS TO REMAIN ON 24 HOURS FOR SAFETY AND SECURITY IN THE STAIRWAYS. LOCAL DIMMING CONTROL OCCUPANCY SENSOR AUTOMATICALLY DIMS LIGHTS TO 50% WHEN STAIRWAY IS UNOCCUPIED FOR MORE THAN 15 MINUTES, AND AUTOMATICALLY RAISES LIGHTS TO 100% POWER WHEN STAIRWAY IS OCCUPIED. PER SEC C405.2.1.1 EXCEPTION 3, MANUAL OVERRIDE CONTROL/SWITCH IS NOT REQUIRED.	DIMMABLE OCCUPANCY SENSOR
LOBBY	PROVIDE AUTOMATIC DAYTIME AND NIGHTTIME MODES PROGRAMMED VIA LIGHTING CONTROL TIME-CLOCK SYSTEM FOR 24 HOUR SPACE. TIME-CLOCK SYSTEM PROGRAMMEDTO SUNRISE: TRIGGER LOBBY DAY SCENE ON 3 MIN FADE. SUNSET: TRIGGER LOBBY EVENING SCENE ON 10 MIN FADE. MANUAL DIMMING SWITCHES TO BE PROVIDED FOR BUILDING STAFF TO OVERRIDE TIMECLOCK MODES, SWITCH LOCATION TO BE FIELD VERIFIED.	DAYLIGHT + MANUAL DIMMING SWITCHES
AMENITY SPACES	SPACE TO BE ON OCCUPANCY SENSOR CONTROL WITH MANUAL (ON/OFF) AND AUTO (OFF) AFTER 15 MINUTES OF VACANCY. PROVIDE PHOTOCELL SENSORS FOR AUTOMATIC DIMMING OF LIGHTS IN DAYLIGHT ZONES BASED ON AVAILABLE DAYLIGHT. MANUAL DIMMING SWITCHES LOCATED NEAR ROOM ENTRY - FIELD VERIFIED.	DAYLIGHT + MANUAL DIMMING SWITCHES
CORRIDORS	LIGHTS REMAIN ON 24 HOURS FOR SAFETY AND SECURITY. PER SEC C405.2.1.1 EXCEPTION 3, MANUAL OVERRIDE CONTROL/SWITCH IS NOT REQUIRED.	NOT REQUIRED
ELEVATOR LOBBIES	LIGHTS REMAIN ON 24 HOURS FOR SAFETY AND SECURITY. PER SEC C405.2.1.1 EXCEPTION 3, MANUAL OVERRIDE CONTROL/SWITCH IS NOT REQUIRED.	NOT REQUIRED
PRIVATE OFFICES, WORKROOM	PROVIDE OCCUPANCY SENSOR CONTROL WITH MANUAL (ON/OFF) AND AUTO OFF AFTER 15 MINUTES OF VACANCY. PROVIDE MANUAL DIMMING SWITCHES ADJACENT TO ROOM ENTRY, LOCATION TO BE FIELD VERIFIED.	OCCUPANCY SENSOR + DIMMABLE ON/OFF SWITCH
STORAGE ROOMS, JANITOR ROOM, TRASH ROOMS, BIKE ROOM, MAINTENANCE, PACKAGE ROOM	PROVIDE OCCUPANCY SENSOR CONTROL WITH MANUAL (ON/OFF) AND AUTO OFF AFTER 15 MINUTES OF VACANCY. PROVIDE OS-(ON/OFF) SWITCHES ADJACENT TO ROOM ENTRY, LOCATION TO BE FIELD VERIFIED.	OCCUPANCY SENSOR(ON/OFF) SWITCH
BACK OF HOUSE UTILITY ROOMS (ELECTRICAL, MECHANICAL, ETC.)	CONTROLS WILL NOT BE PROVIDED IN UTILITY SPACES FOR OCCUPANT SAFETY. PROVIDE MANUAL (ON/OFF) SWITCH ADJACENT TO ROOM ENTRY.	ON/OFF SWITCH
COMMON AREA RESTROOMS (SINGLE OCCUPANCY)	PROVIDE OCCUPANCY SENSOR CONTROL WITH MANUAL (ON/OFF) AND AUTO OFF AFTER 15 MINUTES OF VACANCY. PROVIDE OS-(ON/OFF) SWITCHES ADJACENT TO ROOM ENTRY, LOCATION TO BE FIELD VERIFIED.	OCCUPANCY SENSOR(ON/OFF) SWITCH
EXTERIOR LIGHTING	PROVIDE ASTRONOMICAL TIME CLOCK WITH PHOTOCELL FOR AUTOMATIC EXTERIOR LIGHTING CONTROL. SET TIME CLOCK TO 15 MIN AFTER SUNRISE: TRIGGER LEVEL LIGHT OFF MODE. 15 MIN BEFORE SUNSET: TRIGGER EXTERIOR STREET LEVEL LIGHTING ON MODE. PROVIDE OVERRIDE SWITCH IN LEVEL 1 ELECTRICAL ROOM FOR ALL EXTERIOR LIGHTING.	ASTRONOMICAL TIME-CLOCK EXTERIOR PHOTOCELL

NOTE: 1. PROVIDE PROPER DRIVERS AND DEVICES TO COMPLY WITH CODE AND LIGHTING CONTROL INTENT. SUBMIT LIGHTING CONTROL SHOP DRAWINGS PRIOR TO COMMENCEMENT OF WORK.
2. LIGHTING CONTROL SYSTEM TO BE FULLY ADDRESIBLE.

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LIGHTING CONTROLS

E003

FOR REFERENCE ONLY

EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESCRIPTIONS			ELECTRICAL CHARACTERISTICS							CONNECTION CHARACTERISTICS					FEEDER CHARACTERISTICS			PANEL INFORMATION				SCCA	NOTES
TAG	DESCRIPTION	LOCATION	KW	HP	FLA	MCA	MOCP	VOLTS	PHASE	VFD	1-POINT CONNECT	STARTER DIVISION	DISCONNECT DIVISION	GENERATOR BACKUP POWER REQUIRED	CONDUIT DIA (INCH)	PHASE CONDUCTORS	GROUND CONDUCTOR	PANEL NAME	CIRCUIT BREAKER SIZE/POLES	CIRCUIT NUMBER(S)	STARTER SIZING	AVAILABLE FAULT AT EQUIPMENT (AMPS)	
MECHANICAL																							
DUCT SMOKE DETECTORS	AT FSD'S	VARIES (QTY 18)					20	120	1						1/2"	3#12	#12						
DUCT SMOKE DETECTORS	AT AHU - SUPPLY & RETURN	ROOF (QTY 6)					20	120	1						1/2"	3#12	#12						
FSD	FIRE SMOKE DAMPER	LEVEL 1 (QTY 6)	0.10				20	120	1					Y	1/2"	3#12	#12						
FSD	FIRE SMOKE DAMPER	LEVEL 2 (QTY 6)	0.10				20	120	1					Y	1/2"	3#12	#12						
FSD	FIRE SMOKE DAMPER	LEVEL 3 (QTY 6)	0.10				20	120	1					Y	1/2"	3#12	#12						
BTU	BTU METER	LEVEL 1 MECH ROOM (QTY 3)	0.50				20	120	1					N	1/2"	3#12	#12						
DDC PANEL	CONTROL PANEL - 1st floor	ELEC ROOM	0.10				20	120	1					N	1/2"	3#12	#12						
DDC PANEL	CONTROL PANEL - 2nd floor	ELEC ROOM	0.10				20	120	1					N	1/2"	3#12	#12						
DDC PANEL	CONTROL PANEL - PENTHOUSE	ROOF MECH ROOM	0.10				20	120	1					N	1/2"	3#12	#12						
DDC PANEL	CONTROL PANEL - PENTHOUSE	LEVEL 1 MECH ROOM	0.10				20	120	1					N	1/2"	3#12	#12						
AHU-401	AIR HANDLING UNIT	ROOF									Y	23	23	N									
	-SUPPLY FAN			(4) 15			125	480	3	Y					1 1/2"	4#1	1#6						
	-RUN AROUND LOOP PUMP			5			20	480	3	Y					1/2"	4#12	#12						
	-LIGHTS/RECEPTACLES		0.50				20	120	1	N	Y				1/2"	3#12	#12						
AHU-402	AIR HANDLING UNIT	ROOF								-	Y	23	26	N									
	-SUPPLY FAN			(4) 15			125	480	3	Y					1 1/2"	4#1	1#6						
	-RETURN/RELIEF FAN			(2) 7.5			30	480	3	Y					3/4"	4#10	1#10						
	-ENTHALPY WHEEL			1			20	480	3	Y					1/2"	4#12	#12						
	-LIGHTS/RECEPTACLES		0.50				20	120	1	N	Y				1/2"	3#12	#12						
AHU-403	AIR HANDLING UNIT	ROOF								-	Y	23	26	N									
	-SUPPLY FAN			(4) 15			125	480	3	Y					1 1/2"	4#1	1#6						
	-RETURN/RELIEF FAN			(2) 7.5			30	480	3	Y					3/4"	4#10	1#10						
	-ENTHALPY WHEEL			1			20	480	3	Y					1/2"	4#12	#12						
	-LIGHTS/RECEPTACLES		0.50				20	120	1	N	Y				1/2"	3#12	#12						
AHU-404	AIR HANDLING UNIT	ROOF								-	Y	23	26	N									
	-SUPPLY FAN			(4) 15			125	480	3	Y					1 1/2"	4#1	1#6						
	-RETURN/RELIEF FAN			(2) 7.5			30	480	3	Y					3/4"	4#10	1#10						
	-ENTHALPY WHEEL			1			20	480	3	Y					1/2"	4#12	#12						
	-LIGHTS/RECEPTACLES		0.50				20	120	1	N	Y				1/2"	3#12	#12						
LEF-401	LAB EXHAUST FAN	ROOF		20			40	480	3	Y	Y	23	26	N	3/4"	4#8	1#10						
LEF-402	LAB EXHAUST FAN	ROOF		20			40	480	3	Y	Y	23	26	N	3/4"	4#8	1#10						
LEF-403	LAB EXHAUST FAN	ROOF		20			40	480	3	Y	Y	23	26	N	3/4"	4#8	1#10						
FH-1	FUME HOOD																						
CH-401	AIR COOLED CHILLER	ROOF	360			583.00	600	480	3	Y	Y	23	26	N	(2) 3 1/2"	(2) 4#500	(2) #1						
HWP-101	HEATING WATER PUMP	LEVEL 1 MECHANICAL ROOM		30			40	480	3	Y	Y	23	26	N	3/4"	4#8	#10						
HWP-102	HEATING WATER PUMP	LEVEL 1 MECHANICAL ROOM		30			40	480	3	Y	Y	23	26	N	3/4"	4#8	#10						
HWP-103	BOILER PUMP	LEVEL 1 MECHANICAL ROOM		7.5			20	480	3	Y	Y	23	26	N	1/2"	4#12	#12						
HWP-104	BOILER PUMP	LEVEL 1 MECHANICAL ROOM		7.5			20	480	3	Y	Y	23	26	N	1/2"	4#12	#12						
B-101	GAS BOILER	LEVEL 1 MECHANICAL ROOM				8.10		120	1	N	Y			N	1/2"	3#12	#12						
B-102	GAS BOILER	LEVEL 1 MECHANICAL ROOM				8.10		120	1	N	Y			N	1/2"	3#12	#12						
CHWP-103	CHILLED WATER PUMP	LEVEL 1 MECHANICAL ROOM		50			90	480	3	Y	Y	23	26	N	1-1/4"	4#2	1#8						
CHWP-104	CHILLED WATER PUMP	LEVEL 1 MECHANICAL ROOM		50			90	480	3	Y	Y	23	26	N	1-1/4"	4#2	1#8						
CP-401	HEATING COIL PUMP	LEVEL 3 - BELOW AHU-401		7.5			20	480	3	Y	Y	23	26	N	1/2"	4#12	#12						
CP-402	HEATING COIL PUMP	LEVEL 3 - BELOW AHU-402		3			20	480	3	Y	Y	23	26	N	1/2"	4#12	#12						
CP-403	HEATING COIL PUMP	LEVEL 3 - BELOW AHU-403		3			20	480	3	Y	Y	23	26	N	1/2"	4#12	#12						
GT-401	DUAL GLYCOL FEED SYSTEM	MECHANICAL ROOM		1/2			20	120	1					N	1/2"	3#12	#12						
UH	UNIT HEATER	LEVEL 1 (QTY 3)	(3) 5				70	277	1	N	Y			(2) N, (1) Y	1 1/4"	4#4	#8						
UH	UNIT HEATER	LEVEL 1 (QTY 2)	(2) 2.5				30	277	1	N	Y			N	1/2"	3#12	#10						
UH	UNIT HEATER	ROOF (QTY 2)	(2) 5				50	277	1	N	Y			N	3/4"	3#12	#10						
AC/ACCU	SPLIT SYSTEM (34 MBH)	ROOF/ELEV MACH ROOM			25		40	208	1					Y	3/4"	3#8	#10						
	-CONDENSATE PUMP	ELEV MACH ROOM	0.50				20	120	1					Y	1/2"	3#12	#12						
AC/ACCU	SPLIT SYSTEM (34 MBH)	ROOF/ EM ELEC			25		40	208	1					Y	3/4"	3#8	#10						
	-CONDENSATE PUMP	EM ELEC	0.50				20	120	1					Y	1/2"	3#12	#12						
AC/ACCU	SPLIT SYSTEM (34 MBH)	ROOF/ ELEC			25		40	208	1					N	3/4"	3#8	#10						
	-CONDENSATE PUMP	ELEC	0.50				20	120	1					N	1/2"	3#12	#12						
AC/ACCU	SPLIT SYSTEM (12 MBH)	ROOF/MDF			15		20	208	1					Y	1/2"	3#12	#12						
	-CONDENSATE PUMP	MDF	0.50				20	120	1					Y	1/2"	3#12	#12						
AC/ACCU	SPLIT SYSTEM (9 MBH)	ROOF/IDF			15		20	208	1					N	1/2"	3#12	#12						
	-CONDENSATE PUMP	IDF	0.50				20	120	1					N	1/2"	3#12	#12						
AC/ACCU	SPLIT SYSTEM (9 MBH)	ROOF/IDF			15		20	208	1					N	1/2"	3#12	#12						
	-CONDENSATE PUMP	IDF	0.50				20	120	1					N	1/2"	3#12	#12						
VAV	FAN POWERED TERMINAL UNIT	LEVEL 1 (QTY 10)		1			20	277	1					N	1/2"	3#12	#12						
	FAN POWERED TERMINAL UNIT	LEVEL 2 (QTY 14)		1			20	277	1					N	1/2"	3#12	#12						
	FAN POWERED TERMINAL UNIT	LEVEL 3 (QTY 8)		1			20	277	1					N	1/2"	3#12	#12						
PLUMBING																							
SP-1	SUMP PUMP	ELEVATOR PIT		1/2	8.50		20	208	1	N	Y	23	26	N	1/2"	3#12	#12						
AC-1	AIR COMPRESSOR	RM 134A		15	21.00		30	480	3	N	Y	23	26	N	3/4"	4#10	#10						
AD-1	-	RM 134A			8.60		20	120	1	N	Y	23	26	N	1/2"	3#12	#12						
CP-1	CONTROL PUMP	WATER HEATER		3			20	480	3						1/2"	4#12	#12						
CP-2	CONTROL PUMP	WATER HEATER		2			20	208	3						1/2"	4#12	#12						
WH-1	WATER HEATER	OUTDOOR				67.00	90	208	3	N	Y	23	26		1 1/4"	4#3	#8						
WH-2	WATER HEATER	OUTDOOR				67.00	90	208	3	N	Y	23	26		1 1/4"	4#3	#8						
TP-#	TRAP PRIMERS	SEE PLANS	0.10				20	120	1	N	Y	26	26	N	1/2"	3#12	#12						
FP-1	FIRE PUMP	LEVEL 1		20			40	480	3						3/4"	4#8	#10						
JP-1	JOCKEY PUMP																						

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EQUIPMENT CONNECTION SCHEDULE

E004

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MARK	NAME	NEW/EXIST	EXISTING LOCATION	OFOI/OFCI/CFCI	MANUFACTURER	MODEL NUMBER	FLOOR/BENCH	VOLTS	PHASE	AMPS	KW	MOCP	DED PWR	PLUG TYPE	GEN-POWER	CONDUIT DIA (INCH)	PHASE & GND CONDUCTORS	PANEL	COMMENTS	SURVEYED
LAB EQUIPMENT SCHEDULE - 1ST FLOOR MATERIAL STORAGE 133B AND FAB LAB 135																				
	3D PRINTER																			
	LASER CUTTER																			
	DYEING VAT																			
	FIRE CABINET																			
	SUBLIMATION PRINTER																			
	SEWING MACHINE																			
	DIE CUTTER																			
	HEAT PRESS																			
	PAINT BOOTH																			
LAB EQUIPMENT SCHEDULE - 1ST FLOOR CIRCULATION 100																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 1ST FLOOR COLLABORATION LOUNGE 140																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 1ST FLOOR LOBBY 100																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR GENERAL BIOLOGY LAB 235																				
	REFRIGERATOR																			
LAB EQUIPMENT SCHEDULE - 2ND FLOOR GENERAL BIOLOGY LAB 234																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR BIOLOGY PREP 233																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR SPECIMEN STORAGE 233A																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR MICROBIOLOGY LAB 232																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR HALL 200																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 2ND FLOOR BIOLOGY AP LAB 231																				
LAB EQUIPMENT SCHEDULE - 2ND FLOOR SHARED LEARNING 243																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 2ND FLOOR SHARED LEARNING 240																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 2ND FLOOR CONFERENCE ROOM 206																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 3RD FLOOR CHEMISTRY INSTRUMENT ROOM 318																				
	ICE MACHINE																			
	AA																			
LAB EQUIPMENT SCHEDULE - 3RD FLOOR CHEMISTRY PREP/STOCKROOM 314																				
	REFRIGERATOR																			
	WATER DIST.																			
	U.C.G.W																			
	EP REFRIGERATOR																			
LAB EQUIPMENT SCHEDULE - 3RD FLOOR ORGANIC STORAGE 314B																				
LAB EQUIPMENT SCHEDULE - 3RD FLOOR ORGANIC STORAGE 314B																				
LAB EQUIPMENT SCHEDULE - 3RD FLOOR EARTH SCIENCE PREP 309																				
LAB EQUIPMENT SCHEDULE - 3RD FLOOR SHARED LEARNING 340																				
	VISUAL DISPLAY																			
LAB EQUIPMENT SCHEDULE - 3RD FLOOR EARTH SCIENCE PREP 209																				

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E005

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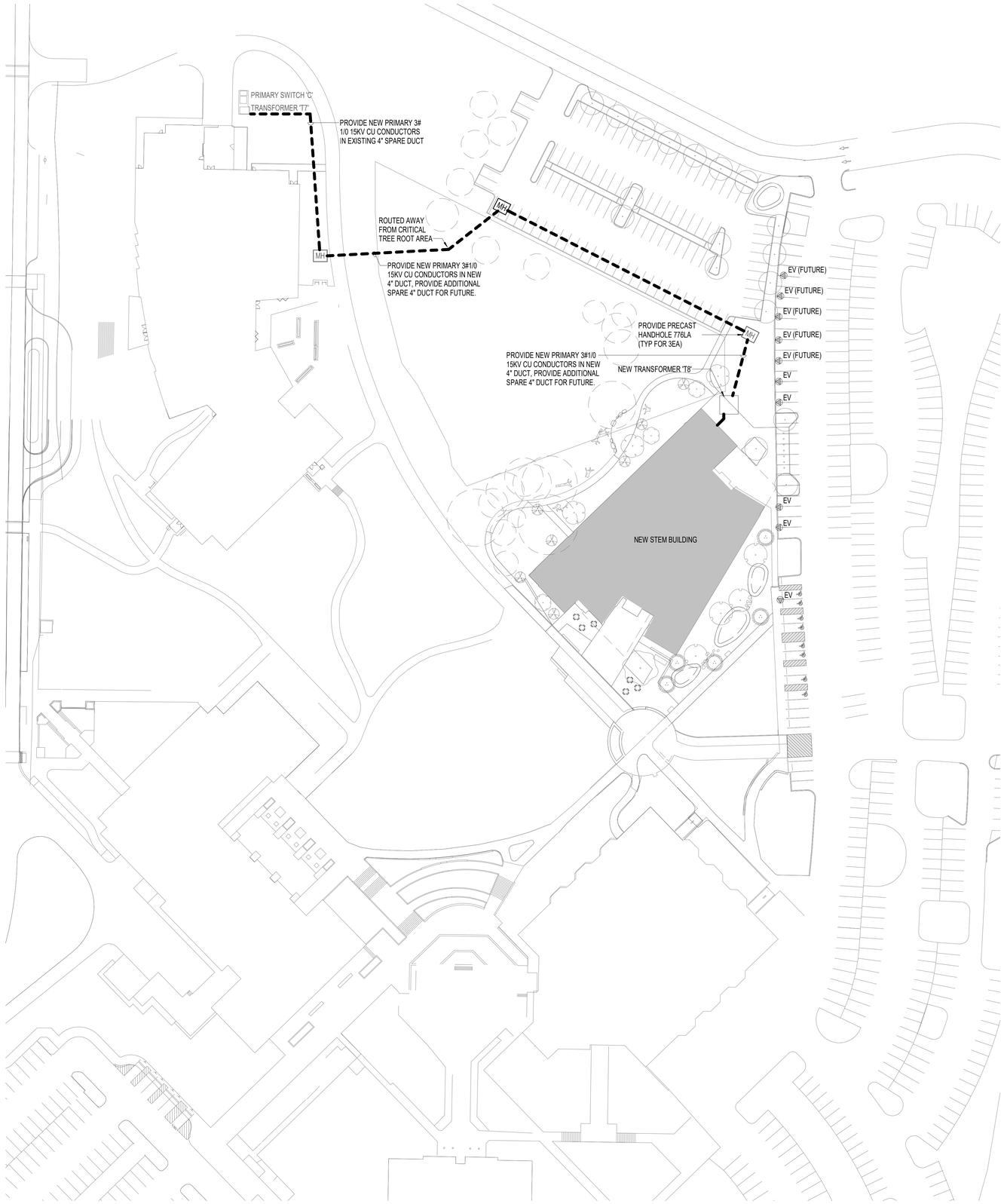

1 SITE PLAN - ELECTRICAL
1" = 40'-0"

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SITE PLANS - ELECTRICAL

E010

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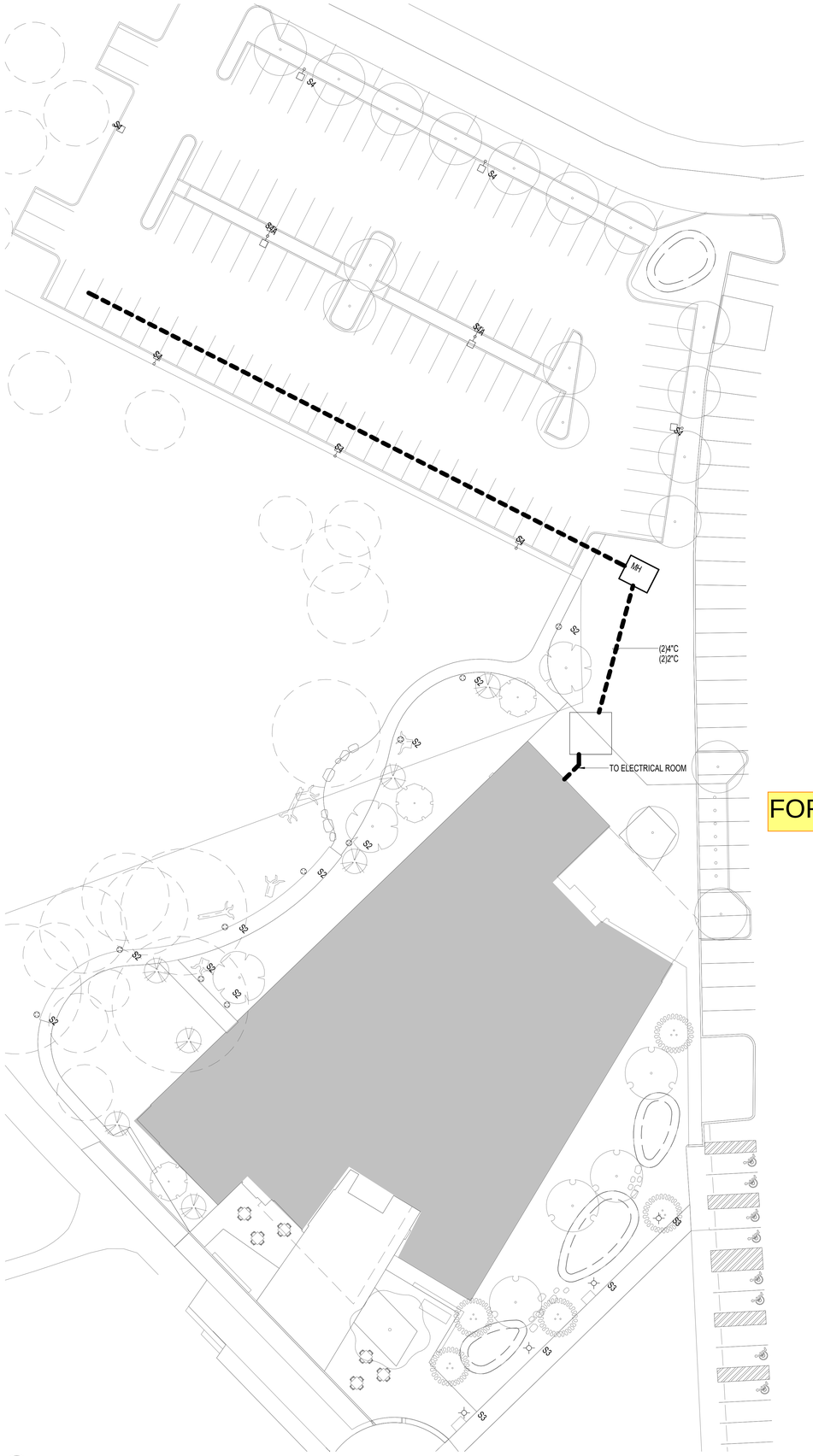

1 SITE PLAN - LIGHTING
1" = 20'-0"

GENERAL NOTES:

A. REFER TO THE LANDSCAPE AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL DEVICES. REQUEST CLARIFICATIONS IN WRITING PRIOR TO INSTALLATION. INSTALLED, UNCOORDINATED ELEMENTS SHALL BE RELOCATED PER THE DIRECTION OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE PROJECT, OWNER OR DESIGN TEAM IF REQUIRED.

B. EMERGENCY EGRESS LIGHTING WILL BE POWERED FROM THE BUILDING EMERGENCY POWER SYSTEM.

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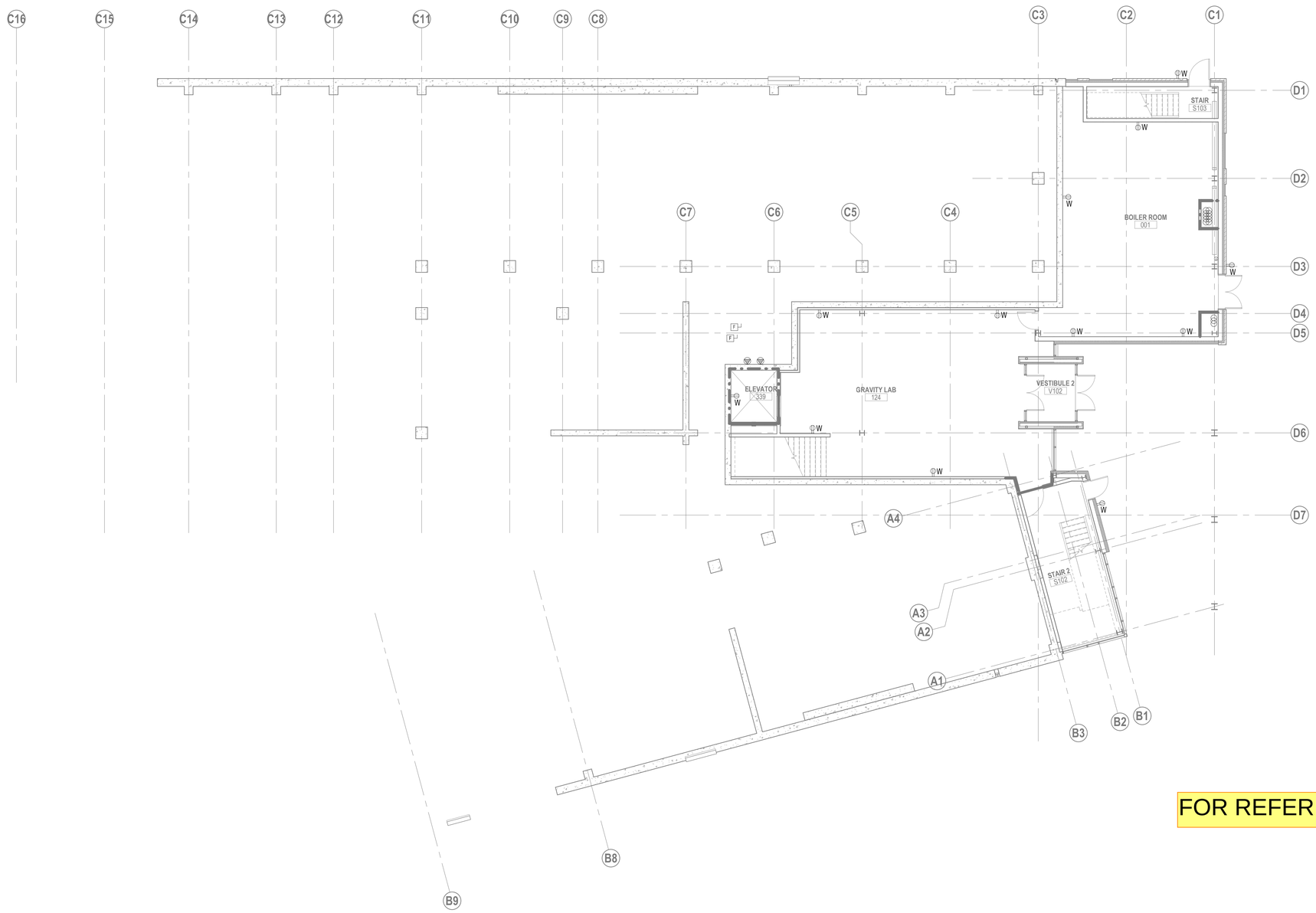
SITE PLANS - LIGHTING

E011



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1 LEVEL 0 - FLOOR PLAN - ELECTRICAL
1/8" = 1'-0"

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LEVEL 0 - FLOOR PLAN - ELECTRICAL

E100

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GENERAL NOTES:

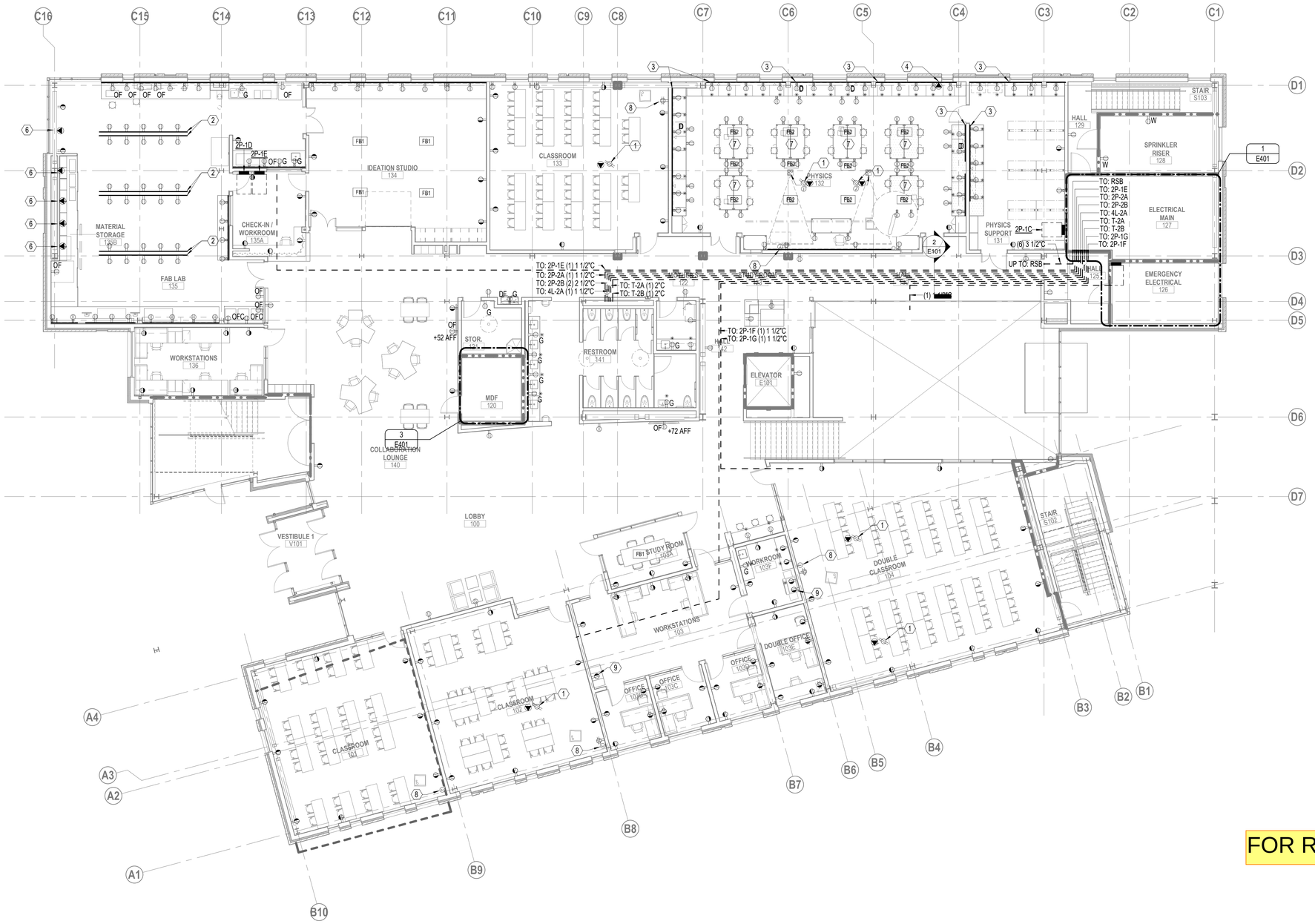
A. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

B. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

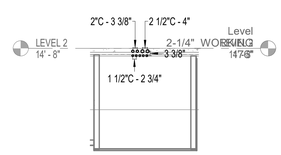
C. OUTLETS SHOWN ALONG RACEWAY, NOT INDICATED AS ABOVE COUNTER, ARE KNEE SPACE OUTLETS. COORDINATE EXACT LOCATION WITH LAB CONSULTANT AND CASEWORK DRAWINGS.

NOTES:

1. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE FOR PROJECTOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. MOUNT TO SUSPENDED FRAME. CONFIRM EXACT MOUNTING REQUIREMENTS AND LOCATION WITH LAB CONSULTANT.
3. PROVIDE ABOVE COUNTER DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. ALTERNATE CIRCUITING EVERY RECEPTACLE. PROVIDE GFCI FOR ALL RECEPTACLES LOCATED WITHIN 6' OF SINKS. PROVIDE (1) SPARE CONDUIT FROM WIREMOLD TO CEILING/CRAWL SPACE. COORDINATE EXACT LOCATION WITH LAB CONSULTANT.
4. PROVIDE DEDICATED CONNECTION TO ELECTRIC COOKTOP WITH RANGE HOOD.
5. PROVIDE 120V CONNECTION TO FUME HOOD. ALL INTERNAL LIGHT FIXTURES, ELECTRICAL DEVICES, SWITCHES, RECEPTACLES, AND OTHER COMPONENTS SHALL BE PROVIDED, INSTALLED AND FACTORY PRE-WIRED TO A JUNCTION BOX FLUSH MOUNTED AT 96" AFF ABOVE HOOD.
6. PROVIDE DEDICATED 208V CONNECTION TO LAB EQUIPMENT.
7. FACTORY PRE-WIRED CORD-AND-PLUG TABLE WITH INTEGRATED OUTLETS. PROVIDE PEDESTAL AND KNEE OUTLETS AS SHOWN. PEDESTALS SHALL BE RAISED 1" TO 2" TO ACCOMODATE AC ADAPTERS AT BOTTOM PLUG. CONFIRM EXACT LOCATION AND INSTALLATION REQUIREMENTS WITH LAB CONSULTANT PRIOR TO ROUGH-IN.
8. PROVIDE DEDICATED CONNECTION TO AV STATION.
9. PROVIDE DEDICATED CONNECTION TO COPIER.



1 LEVEL 1 - FLOOR PLAN - ELECTRICAL
1/8" = 1'-0"



2 Electrical Corridor Conduit Route
1/4" = 1'-0"

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

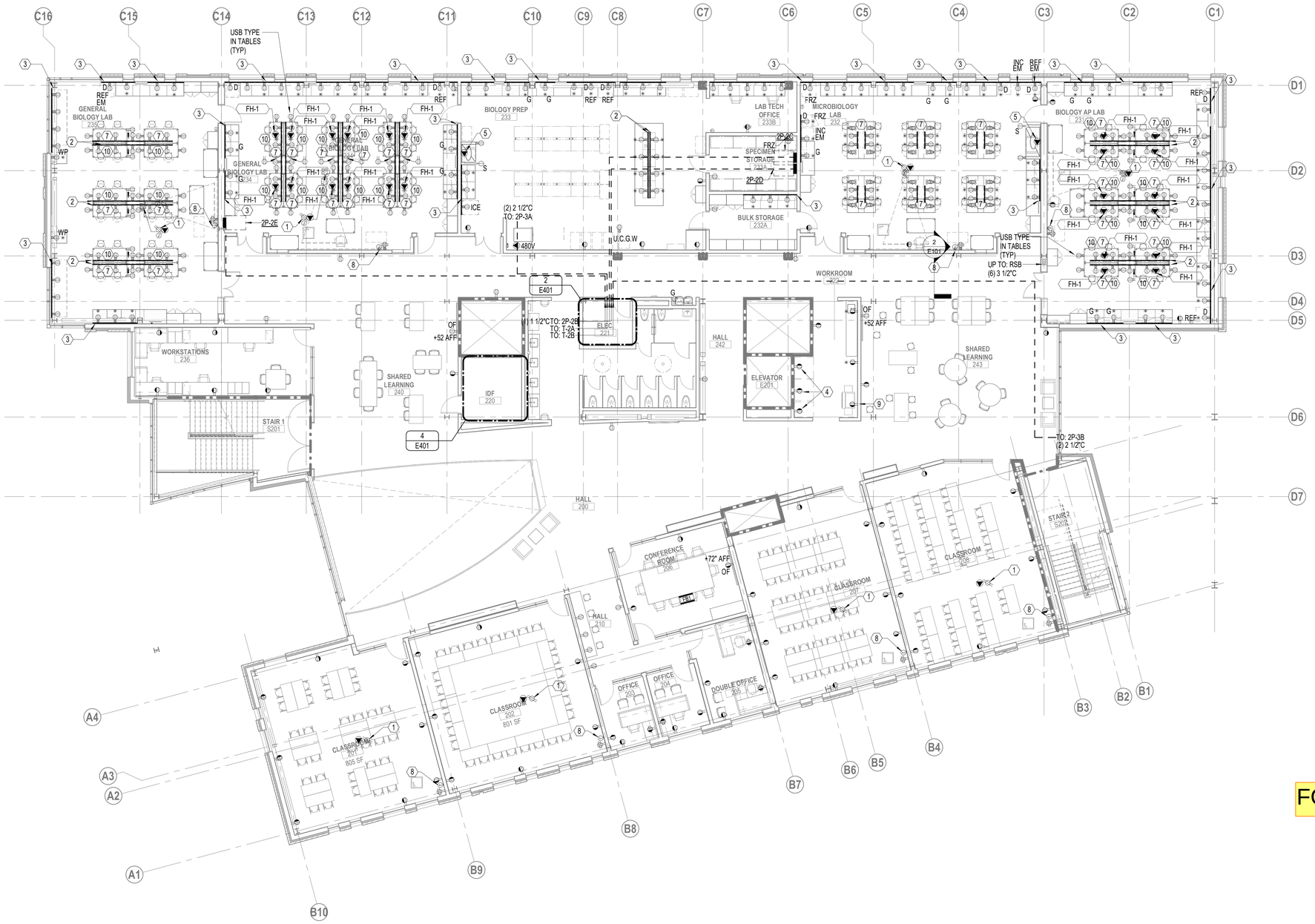
Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

LEVEL 1 - FLOOR PLAN - ELECTRICAL

E101



1 LEVEL 2 - FLOOR PLAN - ELECTRICAL
1/8" = 1'-0"

GENERAL NOTES:

A. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

B. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

C. OUTLETS SHOWN ALONG RACEWAY, NOT INDICATED AS ABOVE COUNTER, ARE KNEE SPACE OUTLETS. COORDINATE EXACT LOCATION WITH LAB CONSULTANT AND CASEWORK DRAWINGS.

NOTES:

1. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE FOR PROJECTOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. MOUNT TO SUSPENDED FRAME. CONFIRM EXACT MOUNTING REQUIREMENTS AND LOCATION WITH LAB CONSULTANT.
3. PROVIDE ABOVE COUNTER DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. ALTERNATE CIRCUITING EVERY RECEPTACLE. PROVIDE GFCI FOR ALL RECEPTACLES LOCATED WITHIN 6' OF SINKS. PROVIDE (1) SPARE CONDUIT FROM WIREMOLD TO CEILING/CRAWL SPACE. COORDINATE EXACT LOCATION WITH LAB CONSULTANT.
4. PROVIDE DEDICATED CONNECTION TO VENDING MACHINE.
5. PROVIDE 120V CONNECTION TO FUME HOOD. ALL INTERNAL LIGHT FIXTURES, ELECTRICAL DEVICES, SWITCHES, RECEPTACLES, AND OTHER COMPONENTS SHALL BE PROVIDED, INSTALLED AND FACTORY PRE-WIRED TO A JUNCTION BOX FLUSH MOUNTED AT 96" AFF ABOVE HOOD.
6. PROVIDE DEDICATED 208V CONNECTION TO LAB EQUIPMENT.
7. FACTORY PRE-WIRED CORD-AND-PLUG TABLE WITH INTEGRATED OUTLETS. PROVIDE PEDESTAL AND KNEE OUTLETS AS SHOWN. PEDESTALS SHALL BE RAISED 1" TO 2" TO ACCOMODATE AC ADAPTERS AT BOTTOM PLUG. CONFIRM EXACT LOCATION AND INSTALLATION REQUIREMENTS WITH LAB CONSULTANT PRIOR TO ROUGH-IN.
8. PROVIDE DEDICATED CONNECTION TO AV STATION.
9. PROVIDE DEDICATED CONNECTION TO COPIER.
10. USB TYPE DECORA RECEPTACLES ON TABLE EDGES.

FOR REFERENCE ONLY

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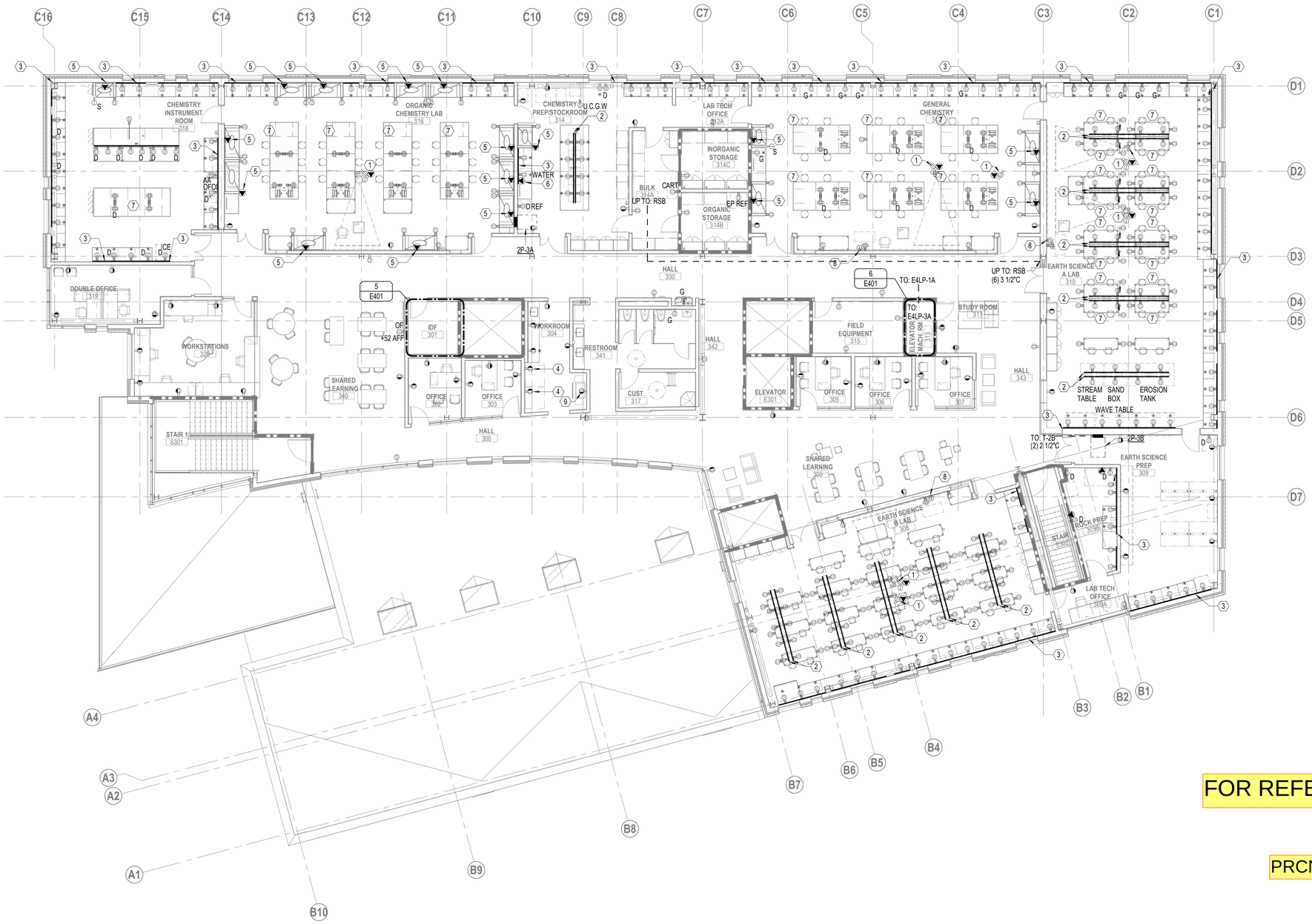
LEVEL 2 - FLOOR PLAN - ELECTRICAL

E102



1 LEVEL 3 - FLOOR PLAN - ELECTRICAL
1/8" = 1'-0"

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GENERAL NOTES:

A. REFER TO LAB CONSULTANT DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

B. COORDINATE FLOOR-BOX LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

C. OUTLETS SHOWN ALONG RACEWAY, NOT INDICATED AS ABOVE COUNTER, ARE KNEE SPACE OUTLETS. COORDINATE EXACT LOCATION WITH LAB CONSULTANT AND CASEWORK DRAWINGS.

NOTES:

1. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE FOR PROJECTOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. MOUNT TO SUSPENDED FRAME. CONFIRM EXACT MOUNTING REQUIREMENTS AND LOCATION WITH LAB CONSULTANT.
3. PROVIDE ABOVE COUNTER DUAL CHANNEL SURFACE-MOUNTED RACEWAY WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (5) DUPLEX RECEPTACLES. ALTERNATE CIRCUITING EVERY RECEPTACLE. PROVIDE GFCI FOR ALL RECEPTACLES LOCATED WITHIN 6' OF SINKS. PROVIDE (1) SPARE CONDUIT FROM WIREMOLD TO CEILING/CRAWL SPACE. COORDINATE EXACT LOCATION WITH LAB CONSULTANT.
4. PROVIDE DEDICATED CONNECTION TO VENDING MACHINE.
5. PROVIDE 120V CONNECTION TO FUME HOOD. ALL INTERNAL LIGHT FIXTURES, ELECTRICAL DEVICES, SWITCHES, RECEPTACLES, AND OTHER COMPONENTS SHALL BE PROVIDED, INSTALLED AND FACTORY PRE-WIRED TO A JUNCTION BOX FLUSH MOUNTED AT 96" AFF ABOVE HOOD.
6. PROVIDE DEDICATED 208V CONNECTION TO LAB EQUIPMENT.
7. FACTORY PRE-WIRED CORD-AND-PLUG TABLE WITH INTEGRATED OUTLETS. PROVIDE PEDESTAL AND KNEE OUTLETS AS SHOWN. PEDESTALS SHALL BE RAISED 1" TO 2" TO ACCOMODATE AC ADAPTERS AT BOTTOM PLUG. CONFIRM EXACT LOCATION AND INSTALLATION REQUIREMENTS WITH LAB CONSULTANT PRIOR TO ROUGH-IN.
8. PROVIDE DEDICATED CONNECTION TO AV STATION.
9. PROVIDE DEDICATED CONNECTION TO COPIER.

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LEVEL 3 - FLOOR PLAN - ELECTRICAL

E103

FOR REFERENCE ONLY

GENERAL NOTES:

A. GENERAL NOTE A.

B. GENERAL NOTE B.

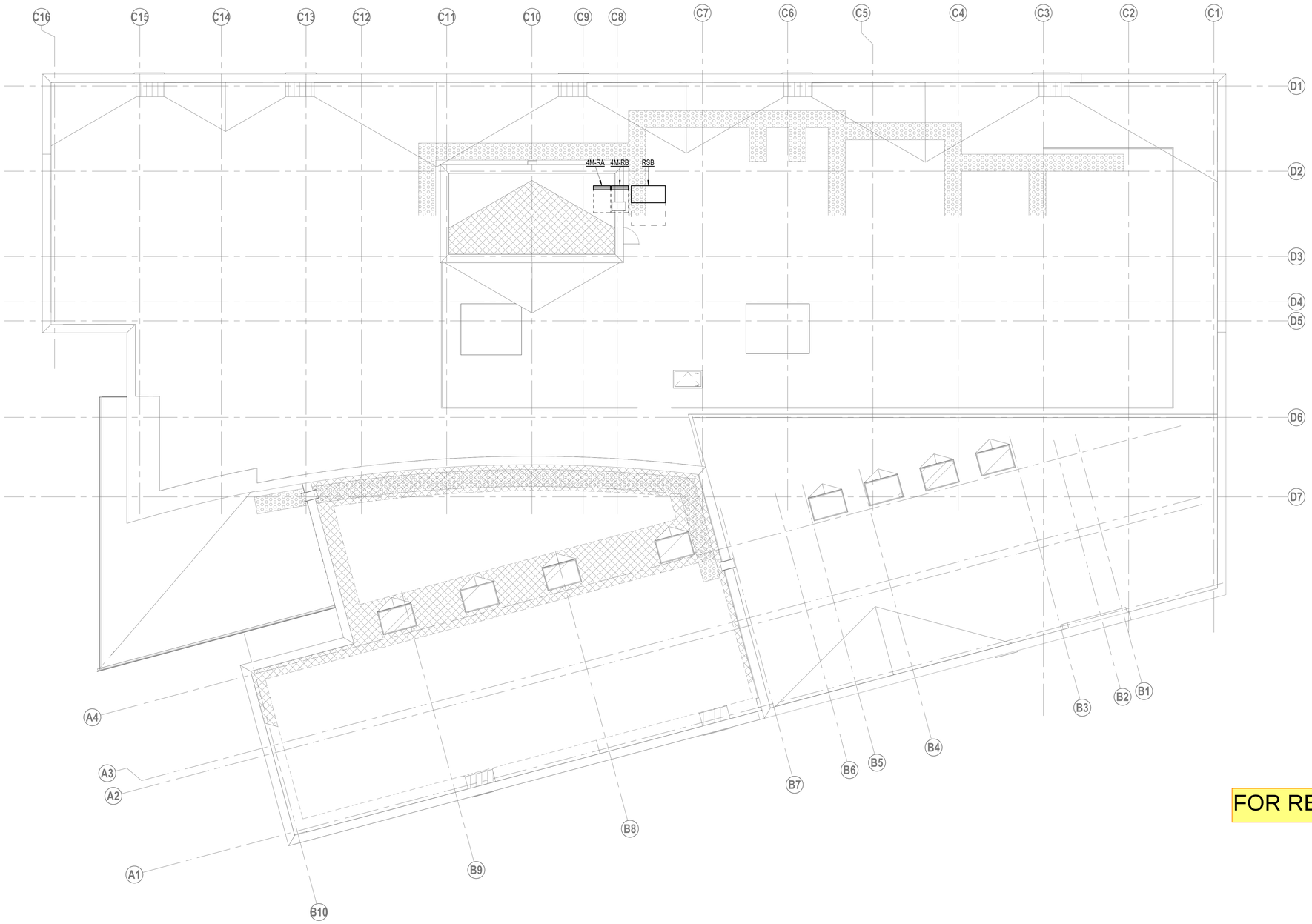
C. GENERAL NOTE C.

D. GENERAL NOTE D.

E. GENERAL NOTE E.

NOTES:

1. PROVIDE CEILING MOUNTED DUPLEX RECEPTACLE FOR PROJECTOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE ABOVE COUNTER WIREMOLD WITH DUPLEX RECEPTACLES EVERY 36". PROVIDE (1) CIRCUIT PER (4) DUPLEX RECEPTACLES.
3. PROVIDE CONNECTION TO FUME HOOD. REFER TO LAB EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
4. PROVIDE CONNECTION FOR A/V SCREEN.
5. PROVIDE DEDICATED CONNECTION TO LAB EQUIPMENT. POWER REQUIREMENTS PENDING LAB COORDINATION.



1 ROOF PLAN - ELECTRICAL
1/8" = 1'-0"

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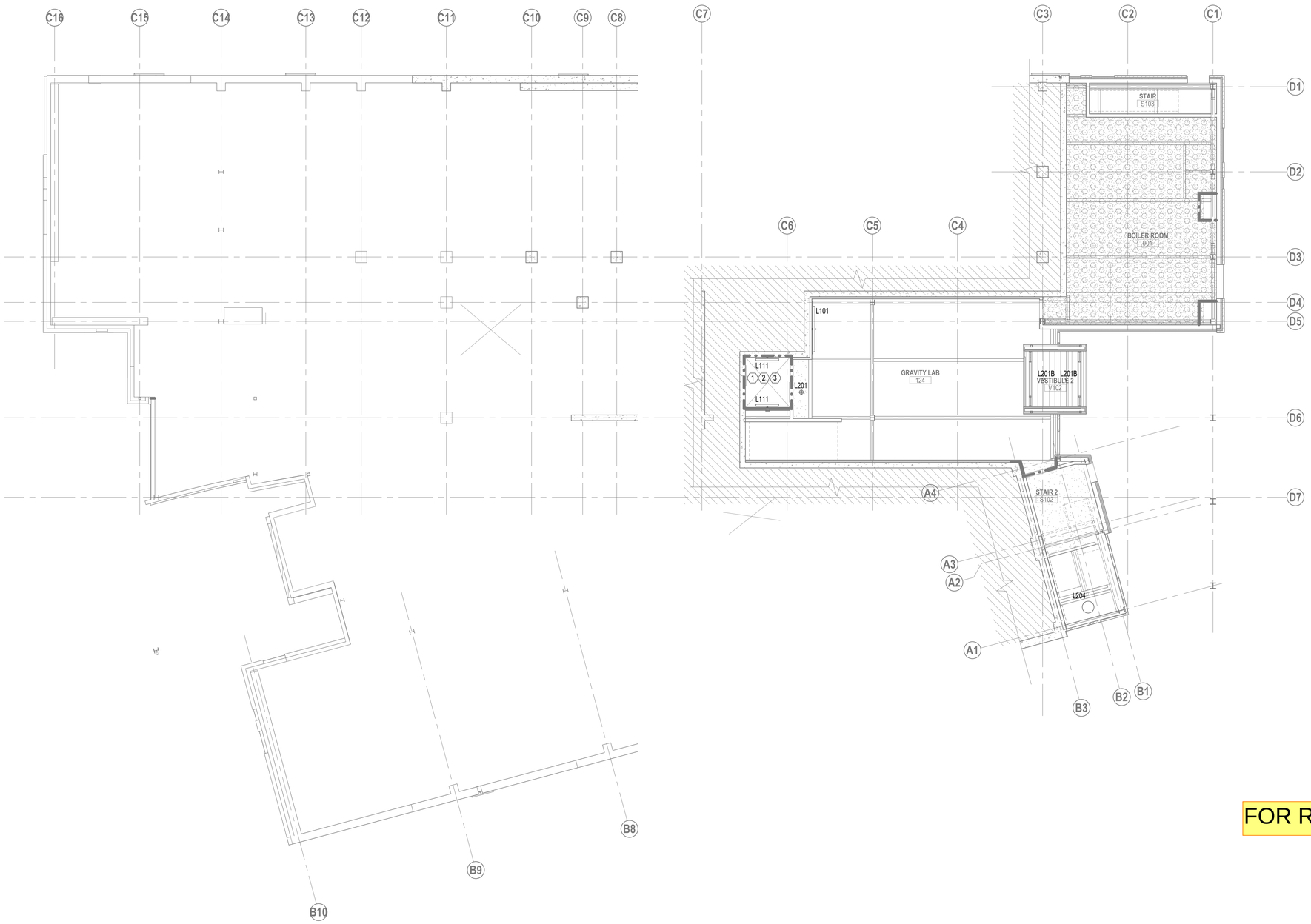
ROOF PLAN - ELECTRICAL

E104



1 LEVEL 0 - REFLECTED CEILING PLAN - LIGHTING
1/8" = 1'-0"

FOR REFERENCE ONLY

PRCNC20221036

GENERAL NOTES:

A. THIS IS A 100% DESIGN DEVELOPMENT SET OF DRAWINGS. NOT ALL SPACES ARE FULLY DESIGNED OR VETTED. ALL LUMINAIRES ARE SHOWN FOR DESIGN INTENT AND PRICING. FINAL LUMINAIRES AND ALTERNATE MANUFACTURERS WILL BE DEVELOPED IN THE CONSTRUCTION DOCUMENTS PROCESS. SPACES WITHOUT LIGHT FIXTURES OR LIGHTING CONTROLS SHOULD BE ASSUMED TO HAVE LIGHTING SIMILAR TO LIKE SPACES.

B. EGRESS LIGHTING SHALL BE PER CODE MINIMUM IN ALL SPACES WHERE EMERGENCY EGRESS LIGHTING IS REQUIRED INCLUDING ALL EXTERIOR SPACES. LUMINAIRES USED FOR EGRESS ILLUMINATION WILL BE DESIGNATED IN THE CONSTRUCTION DOCUMENT AND PERMIT PROCESS. IN STAIRS, ELECTRICAL ROOMS, IDF/MDF ROOMS, MECHANICAL ROOMS AND ELEVATOR MACHINE ROOMS ALL LIGHTING WILL BE ON EMERGENCY POWER. IN STAIRS, EMERGENCY LIGHTING IS TO BE CONTROLLED WITH OCCUPANCY SENSORS TO ALLOW 50% DIMMING WHEN THE SPACE IS UNOCCUPIED.

C. PROVIDE UL924 DEVICES IN APPLICABLE AREAS FOR EGRESS LIGHTS TO OPERATE WITH NORMAL POWERED LIGHTS DURING NORMAL POWER CONDITIONS, AND OVERRIDE TO FULL OUTPUT ON DURING EMERGENCY POWER CONDITIONS.

D. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFTEY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

NOTES:

1. PROVIDE (2) WALL MOUNT FIXTURES AT ELEVATOR PIT AND TOP OF HOISTWAY.
2. PROVIDE WALL SWITCH FOR PIT LIGHTING. FIELD VERIFY SWITCH LOCATION.
3. LIGHTS TO AUTOMATICALLY TURN ON IN ELEVATOR WHEN ELEVATOR IS IN PHASE 1 RECALL.

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Puyallup, WA 98374

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LEVEL 0 - REFLECTED CEILING PLAN - LIGHTING

E120

FOR REFERENCE ONLY

GENERAL NOTES:

A. THIS IS A 100% DESIGN DEVELOPMENT SET OF DRAWINGS. NOT ALL SPACES ARE FULLY DESIGNED OR VETTED. ALL LUMINAIRES ARE SHOWN FOR DESIGN INTENT AND PRICING. FINAL LUMINAIRES AND ALTERNATE MANUFACTURERS WILL BE DEVELOPED IN THE CONSTRUCTION DOCUMENTS PROCESS. SPACES WITHOUT LIGHT FIXTURES OR LIGHTING CONTROLS SHOULD BE ASSUMED TO HAVE LIGHTING SIMILAR TO LIKE SPACES.

B. EGRESS LIGHTING SHALL BE PER CODE MINIMUM IN ALL SPACES WHERE EMERGENCY EGRESS LIGHTING IS REQUIRED INCLUDING ALL EXTERIOR SPACES. LUMINAIRES USED FOR EGRESS ILLUMINATION WILL BE DESIGNATED IN THE CONSTRUCTION DOCUMENT AND PERMIT PROCESS. IN STAIRS, ELECTRICAL ROOMS, IDF/MDF ROOMS, MECHANICAL ROOMS AND ELEVATOR MACHINE ROOMS ALL LIGHTING WILL BE ON EMERGENCY POWER. IN STAIRS, EMERGENCY LIGHTING IS TO BE CONTROLLED WITH OCCUPANCY SENSORS TO ALLOW 50% DIMMING WHEN THE SPACE IS UNOCCUPIED.

C. PROVIDE UL924 DEVICES IN APPLICABLE AREAS FOR EGRESS LIGHTS TO OPERATE WITH NORMAL POWERED LIGHTS DURING NORMAL POWER CONDITIONS, AND OVERRIDE TO FULL OUTPUT ON DURING EMERGENCY POWER CONDITIONS.

D. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFTEY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

1 LEVEL 1 - REFLECTED CEILING PLAN - ELECTRICAL
1/8" = 1'-0"

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LEVEL 1 - REFLECTED CEILING PLAN - LIGHTING

E121

FOR REFERENCE ONLY

GENERAL NOTES:

A. THIS IS A 100% DESIGN DEVELOPMENT SET OF DRAWINGS. NOT ALL SPACES ARE FULLY DESIGNED OR VETTED. ALL LUMINAIRES ARE SHOWN FOR DESIGN INTENT AND PRICING. FINAL LUMINAIRES AND ALTERNATE MANUFACTURERS WILL BE DEVELOPED IN THE CONSTRUCTION DOCUMENTS PROCESS. SPACES WITHOUT LIGHT FIXTURES OR LIGHTING CONTROLS SHOULD BE ASSUMED TO HAVE LIGHTING SIMILAR TO LIKE SPACES.

B. EGRESS LIGHTING SHALL BE PER CODE MINIMUM IN ALL SPACES WHERE EMERGENCY EGRESS LIGHTING IS REQUIRED INCLUDING ALL EXTERIOR SPACES. LUMINAIRES USED FOR EGRESS ILLUMINATION WILL BE DESIGNATED IN THE CONSTRUCTION DOCUMENT AND PERMIT PROCESS. IN STAIRS, ELECTRICAL ROOMS, IDF/MDF ROOMS, MECHANICAL ROOMS AND ELEVATOR MACHINE ROOMS ALL LIGHTING WILL BE ON EMERGENCY POWER. IN STAIRS, EMERGENCY LIGHTING IS TO BE CONTROLLED WITH OCCUPANCY SENSORS TO ALLOW 50% DIMMING WHEN THE SPACE IS UNOCCUPIED.

C. PROVIDE UL924 DEVICES IN APPLICABLE AREAS FOR EGRESS LIGHTS TO OPERATE WITH NORMAL POWERED LIGHTS DURING NORMAL POWER CONDITIONS, AND OVERRIDE TO FULL OUTPUT ON DURING EMERGENCY POWER CONDITIONS.

D. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFTEY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.

1 LEVEL 2 - REFLECTED CEILING PLAN - ELECTRICAL
1/8" = 1'-0"

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LEVEL 2 - REFLECTED CEILING PLAN - LIGHTING

E122

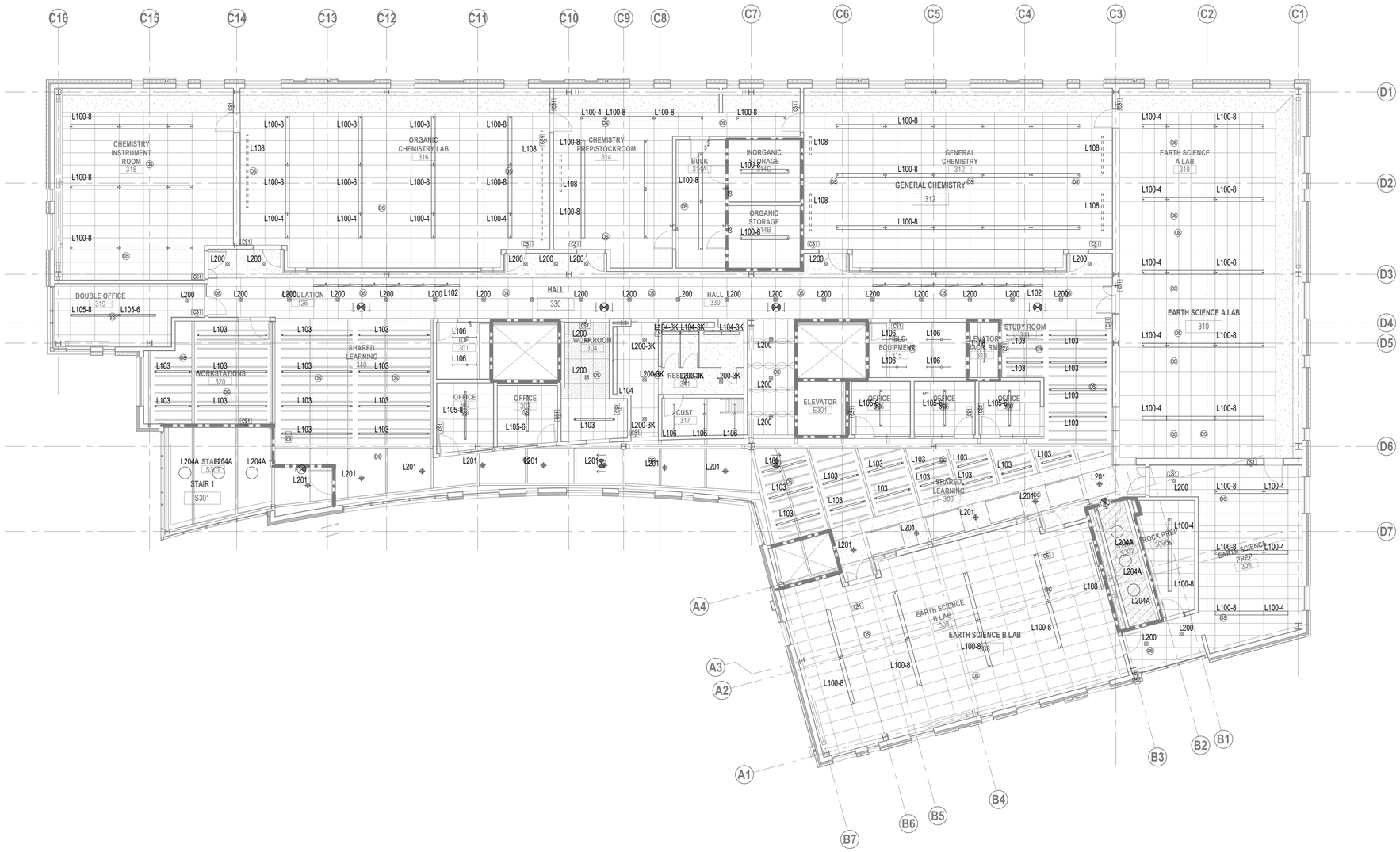
GENERAL NOTES:

A. THIS IS A 100% DESIGN DEVELOPMENT SET OF DRAWINGS. NOT ALL SPACES ARE FULLY DESIGNED OR VETTED. ALL LUMINAIRES ARE SHOWN FOR DESIGN INTENT AND PRICING. FINAL LUMINAIRES AND ALTERNATE MANUFACTURERS WILL BE DEVELOPED IN THE CONSTRUCTION DOCUMENTS PROCESS. SPACES WITHOUT LIGHT FIXTURES OR LIGHTING CONTROLS SHOULD BE ASSUMED TO HAVE LIGHTING SIMILAR TO LIKE SPACES.

B. EGRESS LIGHTING SHALL BE PER CODE MINIMUM IN ALL SPACES WHERE EMERGENCY EGRESS LIGHTING IS REQUIRED INCLUDING ALL EXTERIOR SPACES. LUMINAIRES USED FOR EGRESS ILLUMINATION WILL BE DESIGNATED IN THE CONSTRUCTION DOCUMENT AND PERMIT PROCESS. IN STAIRS, ELECTRICAL ROOMS, IDF/MDF ROOMS, MECHANICAL ROOMS AND ELEVATOR MACHINE ROOMS ALL LIGHTING WILL BE ON EMERGENCY POWER. IN STAIRS, EMERGENCY LIGHTING IS TO BE CONTROLLED WITH OCCUPANCY SENSORS TO ALLOW 50% DIMMING WHEN THE SPACE IS UNOCCUPIED.

C. PROVIDE UL924 DEVICES IN APPLICABLE AREAS FOR EGRESS LIGHTS TO OPERATE WITH NORMAL POWERED LIGHTS DURING NORMAL POWER CONDITIONS, AND OVERRIDE TO FULL OUTPUT ON DURING EMERGENCY POWER CONDITIONS.

D. EXIT SIGNS ARE TO BE PROVIDED TO MEET CODE REQUIREMENTS AND SHOULD BE LOCATED PER THE LIFE SAFTEY DIAGRAM PROVIDED BY THE ARCHITECT IN QUANTITY TO NOT EXCEED CODE MAXIMUM DISTANCES BETWEEN SIGNS. ALL EXIT SIGNS ARE TO BE ON EMERGENCY POWER.



1 LEVEL 3 - REFLECTED CEILING PLAN - ELECTRICAL
1/8" = 1'-0"

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LEVEL 3 - REFLECTED CEILING PLAN - LIGHTING

E123

FOR REFERENCE ONLY

GENERAL NOTES:

A. FIRE ALARM SYSTEM IS A PERFORMANCE BASED DESIGN-BUILD SYSTEM. PROVIDE COMPLETE, CODE-COMPLIANT SYSTEM INCLUDING ALL DEVICES, EQUIPMENT, AND CIRCUITING REQUIRED BY CODE OR SHOWN IN THESE DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR FULL DESIGN, PERMITTING, INSTALLATION, TESTING, AND COORDINATION WITH OTHER TRADES FOR A COMPLETE OPERATIONAL SYSTEM.

1 LEVEL 1 - FLOOR PLAN - FIRE ALARM
1/8" = 1'-0"

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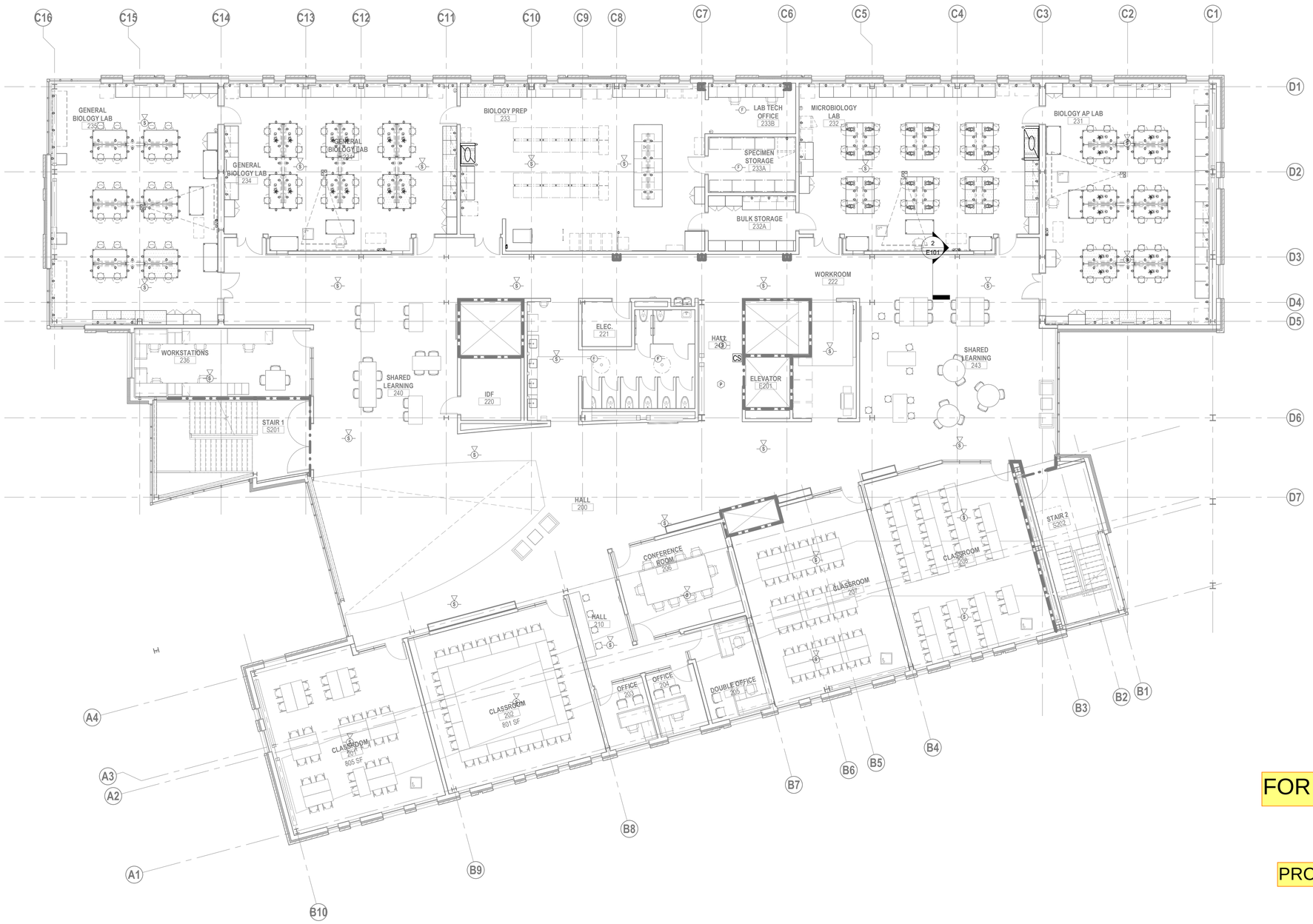
LEVEL 1 - FLOOR PLAN - FIRE ALARM

E131

FOR REFERENCE ONLY

GENERAL NOTES:

A. FIRE ALARM SYSTEM IS A PERFORMANCE BASED DESIGN-BUILD SYSTEM. PROVIDE COMPLETE, CODE-COMPLIANT SYSTEM INCLUDING ALL DEVICES, EQUIPMENT, AND CIRCUITING REQUIRED BY CODE OR SHOWN IN THESE DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR FULL DESIGN, PERMITTING, INSTALLATION, TESTING, AND COORDINATION WITH OTHER TRADES FOR A COMPLETE OPERATIONAL SYSTEM.



1 LEVEL 2 - FLOOR PLAN - FIRE ALARM
1/8" = 1'-0"

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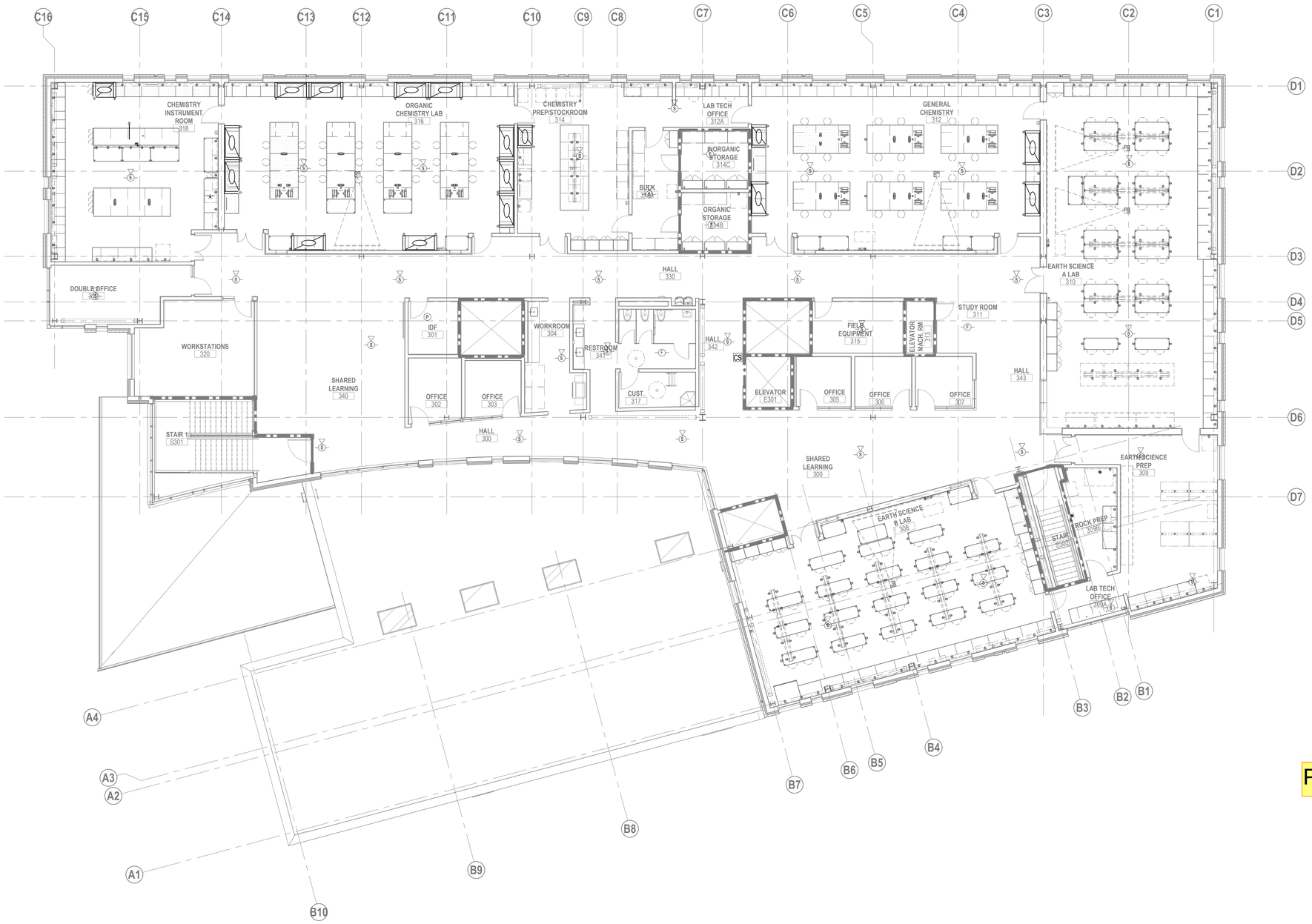
LEVEL 2 - FLOOR PLAN - FIRE ALARM

E132

FOR REFERENCE ONLY

GENERAL NOTES:

A. FIRE ALARM SYSTEM IS A PERFORMANCE BASED DESIGN-BUILD SYSTEM. PROVIDE COMPLETE, CODE-COMPLIANT SYSTEM INCLUDING ALL DEVICES, EQUIPMENT, AND CIRCUITING REQUIRED BY CODE OR SHOWN IN THESE DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR FULL DESIGN, PERMITTING, INSTALLATION, TESTING, AND COORDINATION WITH OTHER TRADES FOR A COMPLETE OPERATIONAL SYSTEM.



1 LEVEL 3 - FLOOR PLAN - FIRE ALARM
1/8" = 1'-0"

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Revisions

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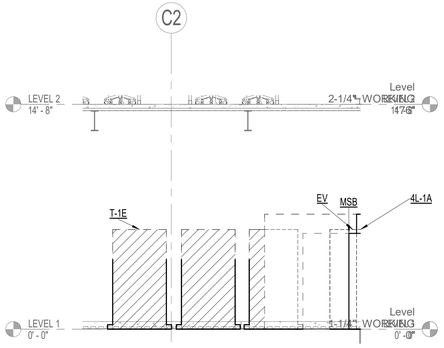
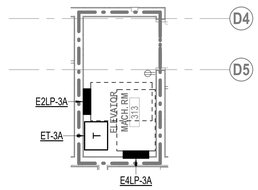
LEVEL 3 - FLOOR PLAN - FIRE ALARM

E133

FOR REFERENCE ONLY

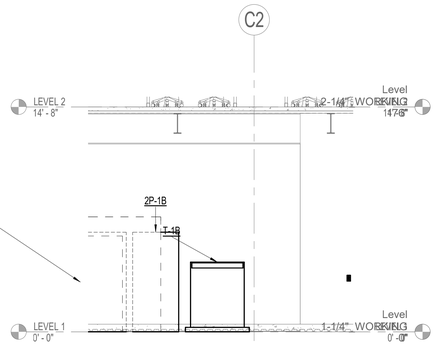


9 Electrical Room - North
1/4" = 1'-0"

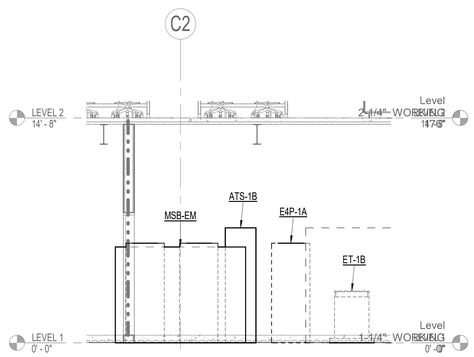


6 LEVEL 3 - ELEVATOR MACHINE RM - ENLARGED PLAN ELECTRICAL
1/4" = 1'-0"

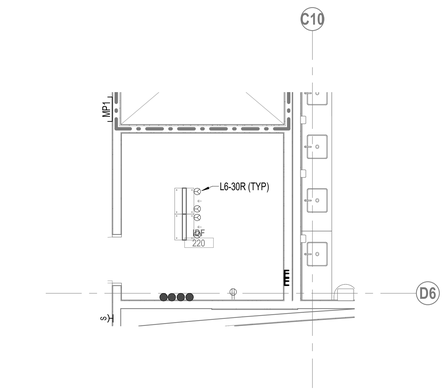
1 LEVEL 1 - FLOOR PLAN - ELECTRICAL
1/4" = 1'-0"



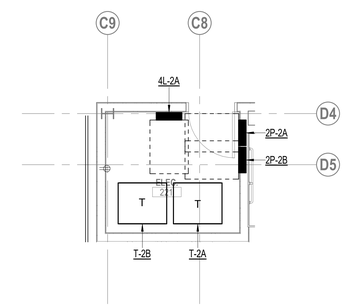
10 Electrical Room - South
1/4" = 1'-0"



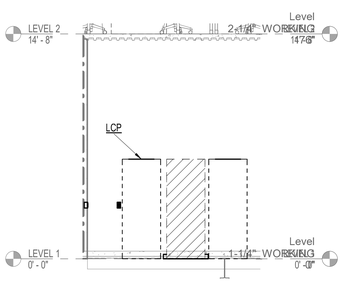
7 Emergency Electrical Room - NORTH
1/4" = 1'-0"



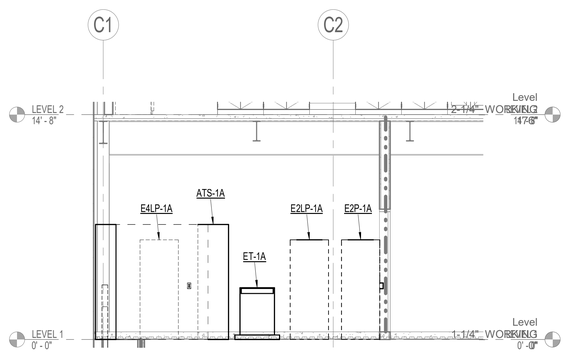
4 LEVEL 2 - IDF 220 - ENLARGED PLAN ELECTRICAL
1/4" = 1'-0"



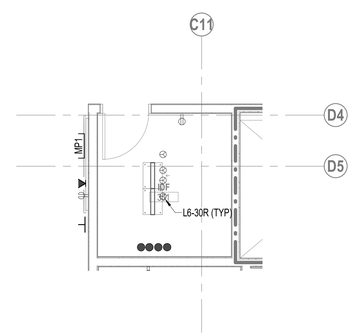
2 LEVEL 2 - ELEC 221 - ENLARGED PLAN ELECTRICAL
1/4" = 1'-0"



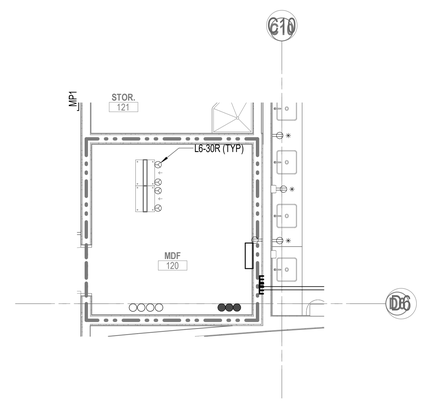
11 Electrical Room - West
1/4" = 1'-0"



8 Emergency Electrical Room - South
1/4" = 1'-0"



5 LEVEL 3 - IDF 301 - ENLARGED PLAN ELECTRICAL
1/4" = 1'-0"



3 LEVEL 1 - MDF 153 - ENLARGED PLAN ELECTRICAL
1/4" = 1'-0"

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STATE PROJECT NO.: 2020-148
PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

ENLARGED PLAN - ELECTRICAL

E401

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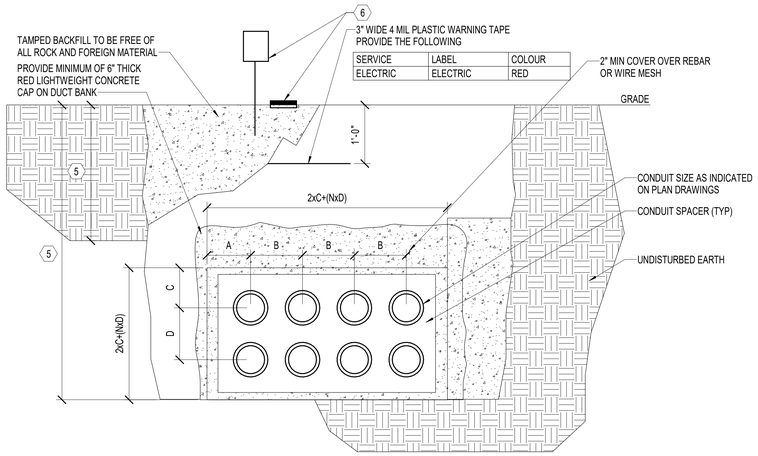


SIZE SPACING TABLE

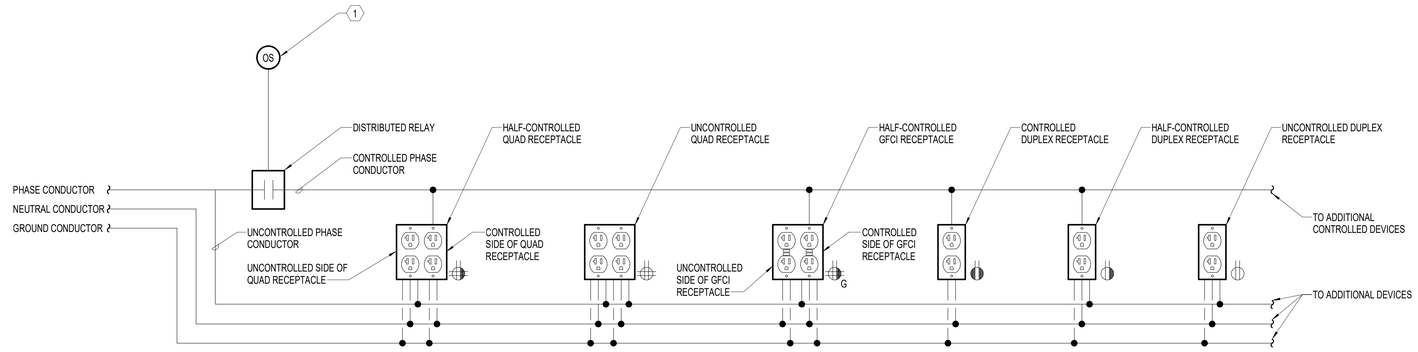
CONDUIT SIZE	A	B	C	D
1-1/2"	3.50"	3.50"	3.50"	3.50"
2"	5.00"	5.00"	5.00"	5.00"
3"	4.50"	6.50"	4.50"	6.50"
4"	5.00"	7.50"	5.00"	7.50"
5"	5.50"	6.50"	5.50"	8.50"
6"	6.00"	6.00"	6.00"	9.50"

*N=NUMBER OF SPACE BETWEEN CONDUIT CENTERLINES, NOT THE NUMBER OF CONDUITS

NOTES:

1. PROVIDE DUCT BANK REINFORCING OR RIGID STEEL CONDUIT WHEREVER DUCT BANK CROSSES UNDER CURRENT AND FUTURE ROADWAYS. PARKING LOTS WHERE LOCATED IN UNSTABLE SOIL WITHIN 5 FEET OF BUILDING FOUNDATIONS AND FOOTINGS AND AS OTHERWISE INDICATED.
2. CONDUITS IN POWER AND CONTROL DUCT BANKS SHALL BE SCHEDULE 40 PVC.
3. MINIMUM BURIAL DEPTH FOR POWER CONDUITS = 2'-0". WHERE DUCT BANKS ARE ROUTED BENEATH A BUILDING SLAB. MINIMUM BURIAL DEPTH SHALL BE PER NEC ARTICLES 300.5 AND 300.50.
4. PROVIDE RED CONCRETE CAP AND SIDES AS SHOWN.
5. BOTTOM OF DUCT BANKS TO BE INSTALLED AT OR BELOW FROSTLINE.
6. PROVIDE MARKERS ABOVE ALL CONDUITS LOCATED WITHIN 5 FEET OF ACTUAL ROUTE AND WITH A MAXIMUM OF 300 FEET BETWEEN MARKERS (PROVIDE ADDITIONAL MARKERS ALONG BENDS AS REQUIRED TO FOLLOW CONDUIT PATH). MARKERS SHALL BE CLEARLY MARKED PROVIDE ONE OF THE FOLLOWING DEPENDING ON INSTALLATION SURFACE. DIRT: RHINO TRIVIEW 400 UTILITY MARKER OR APPROVED EQUAL CONCRETE OR ASPHALT: ACP CONCRETE GRAPHICS UTILITY MARKER OR APPROVED EQUAL.

4 CONCRETE ENCASED DUCT BANK 1
NONE



GENERAL NOTES:

A. CONTROLLED RECEPTACLE SHALL HAVE PERMANENT IDENTIFICATION IN COMPLIANCE WITH ASHRAE 90.1 REQUIREMENTS.

B. WHERE AN ENTIRE DUPLEX RECEPTACLE IS UNSWITCHED, LOCATE A SWITCHED OR HALF SWITCHED DUPLEX RECEPTACLE CONTROLLED BY SENSOR NO FURTHER THAN SIX FEET AWAY.

C. FOR EACH ROOM, PROVIDE QUANTITIES OF RELAY MODULES AND WIRING TO SUPPORT SWITCHED POWER OUTLETS ON POWER DRAWINGS, AND PROVIDE FUNCTIONALITY DESCRIBED IN SPECIFICATIONS AND/OR LIGHTING CONTROL MATRIX.

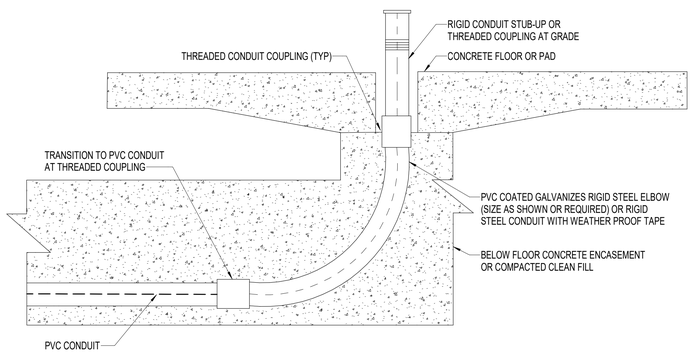
D. CONTROLLERS, RELAY MODULES AND DEVICES LOCATED IN PLENUM SPACES MUST BE UL 2043 LISTED; USE PLENUM RATED WIRING WHERE ROUTING IS EXPOSED IN PLENUM SPACES.

E. PROVIDE AT LEAST 50 PERCENT (AS SHOWN ON PLANS) OF ALL 125V RECEPTACLES INSTALLED IN PRIVATE OFFICES, OPEN OFFICES, CONFERENCE ROOMS, ROOMS USED PRIMARILY FOR PRINTING AND/OR COPYING FUNCTIONS, BREAK ROOMS, INDIVIDUAL WORKSTATIONS AND CLASSROOMS, SHALL BE CONTROLLED AS REQUIRED.

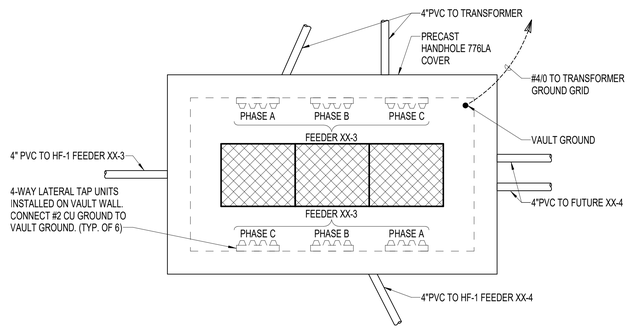
NOTES:

1. LOCAL LIGHTING CONTROL OCCUPANCY SENSOR WITHIN ROOM.

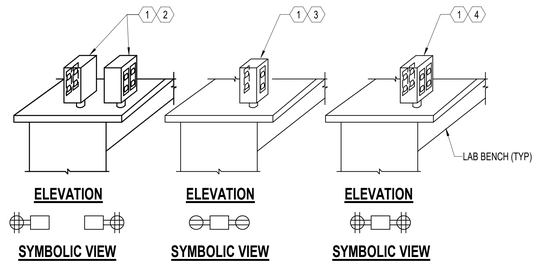
1 CONTROLLED RECEPTACLE WIRING DETAIL
NONE



5 CONDUIT STUB UP DETAIL
NONE



3 15KV VAULT LAYOUT
NONE



NOTES:

1. BRANCH CIRCUIT WIRING FOR PEDESTAL DEVICES SHALL BE ROUTED WITHIN LAB BENCH CASEWORK. ALL BRANCH CIRCUITS SHALL ENTER LAB BENCH CASEWORK FROM FLOOR BELOW. COORDINATE ROUTING AND INSTALLATION REQUIREMENTS WITH CASEWORK MANUFACTURER.
2. FOUR-GANG (TWO FRONT, TWO BACK), TWO-SIDED PEDESTAL WITH 1" HUB, FOUR-PLEX RECEPTACLES ON ONE SIDE AND BLANK COVER ON OPPOSITE. [* NTS] HUBBELL #SA6688 OR WATERSAVER E500WS SERIES BOX. PROVIDE WITH GRAY DEVICES AND STAINLESS-STEEL COVER PLATES.
3. TWO-GANG (ONE FRONT, ONE BACK), TWO-SIDED PEDESTAL WITH 1" HUB AND BACK-TO-BACK DUPLEX RECEPTACLES. [* NTS] HUBBELL #SA6686 OR WATERSAVER E400WS SERIES BOX. PROVIDE WITH GRAY DEVICES AND STAINLESS-STEEL COVER PLATES.
4. FOUR-GANG (TWO FRONT, TWO BACK), TWO-SIDED PEDESTAL WITH 1" HUB AND BACK-TO-BACK FOUR-PLEX RECEPTACLES. [* NTS] HUBBELL #SA6688 OR WATERSAVER E600WS SERIES BOX. PROVIDE WITH GRAY DEVICES AND STAINLESS-STEEL COVER PLATES.
5. [* NTS: CHANGE SERIES NUMBERS AS NEEDED FOR SINGLE/DOUBLE SIDED BOXES, 1" HUB UNDER BOX IS OPTIONAL, PROVIDE CALLOUT FOR FINISH TO BE PROVIDED ON BOX]

2 LAB BENCH TOP RECEPTACLE DETAIL
NONE

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STATE PROJECT NO.: 2020-148
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NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

DETAILS - ELECTRICAL

E601

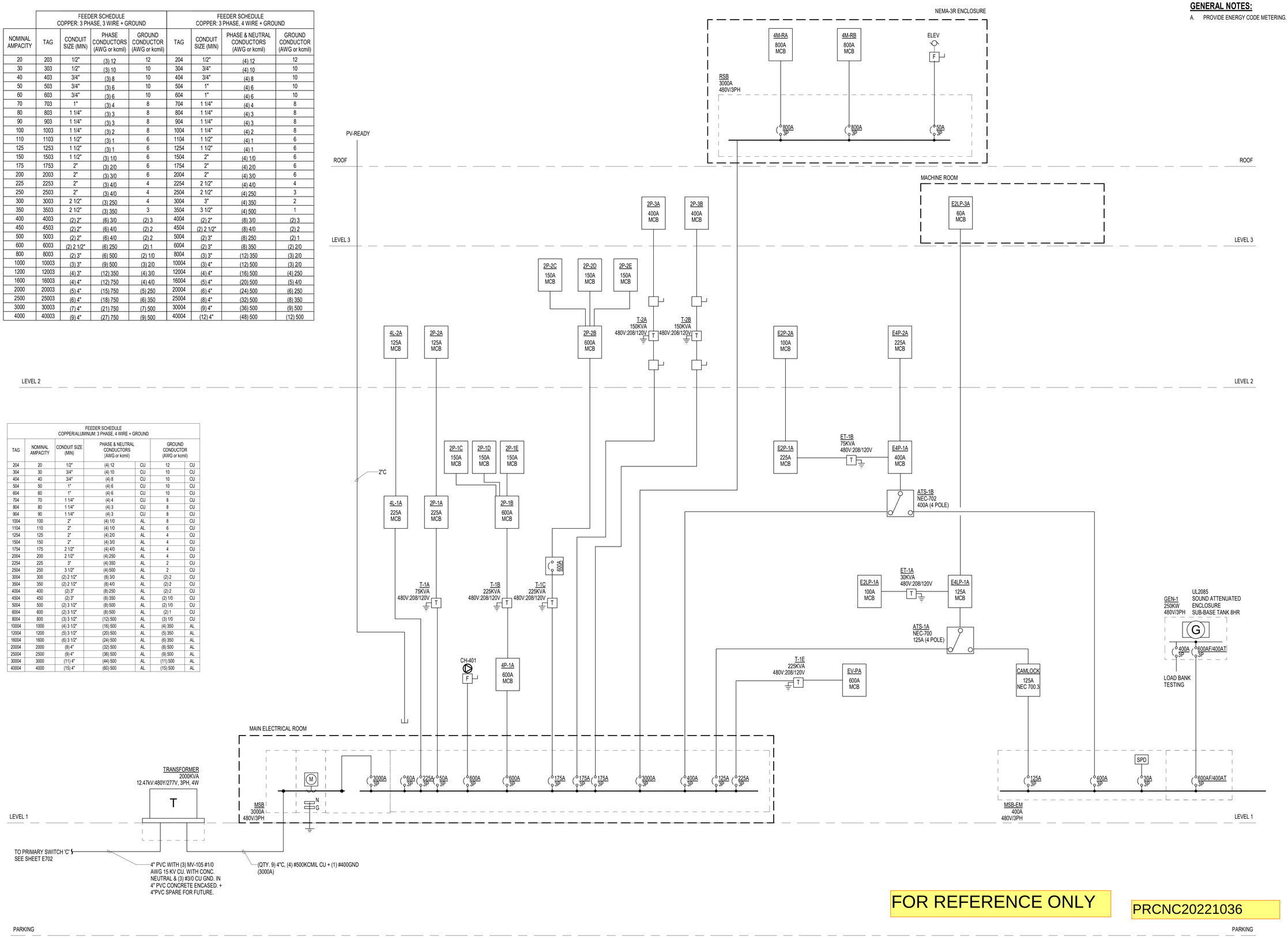
FOR REFERENCE ONLY

	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
NOMINAL AMPACITY	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)
20	203	1/2"	(3) 12	12	204	1/2"	(4) 12	12
30	303	1/2"	(3) 10	10	304	3/4"	(4) 10	10
40	403	3/4"	(3) 8	10	404	3/4"	(4) 8	10
50	503	3/4"	(3) 6	10	504	1"	(4) 6	10
60	603	3/4"	(3) 6	10	604	1"	(4) 6	10
70	703	1"	(3) 4	8	704	1 1/4"	(4) 4	8
80	803	1 1/4"	(3) 3	8	804	1 1/4"	(4) 3	8
90	903	1 1/4"	(3) 3	8	904	1 1/4"	(4) 3	8
100	1003	1 1/4"	(3) 2	8	1004	1 1/4"	(4) 2	8
110	1103	1 1/2"	(3) 1	6	1104	1 1/2"	(4) 1	6
125	1253	1 1/2"	(3) 1	6	1254	1 1/2"	(4) 1	6
150	1503	1 1/2"	(3) 1/0	6	1504	2"	(4) 1/0	6
175	1753	2"	(3) 2/0	6	1754	2"	(4) 2/0	6
200	2003	2"	(3) 3/0	6	2004	2"	(4) 3/0	6
225	2253	2"	(3) 4/0	4	2254	2 1/2"	(4) 4/0	4
250	2503	2"	(3) 4/0	4	2504	2 1/2"	(4) 250	3
300	3003	2 1/2"	(3) 250	4	3004	3"	(4) 350	2
350	3503	2 1/2"	(3) 350	3	3504	3 1/2"	(4) 500	1
400	4003	(2) 2"	(6) 3/0	(2) 3	4004	(2) 2"	(8) 3/0	(2) 3
450	4503	(2) 2"	(6) 4/0	(2) 2	4504	(2) 2 1/2"	(8) 4/0	(2) 2
500	5003	(2) 2"	(6) 4/0	(2) 2	5004	(2) 3"	(8) 250	(2) 1
600	6003	(2) 2 1/2"	(6) 250	(2) 1	6004	(2) 3"	(8) 350	(2) 2/0
800	8003	(2) 3"	(6) 500	(2) 1/0	8004	(3) 3"	(12) 350	(3) 2/0
1000	10003	(3) 3"	(9) 500	(3) 2/0	10004	(3) 4"	(12) 500	(3) 2/0
1200	12003	(4) 3"	(12) 350	(4) 3/0	12004	(4) 4"	(16) 500	(4) 250
1600	16003	(4) 4"	(12) 750	(4) 4/0	16004	(5) 4"	(20) 500	(5) 4/0
2000	20003	(5) 4"	(15) 750	(5) 250	20004	(6) 4"	(24) 500	(6) 250
2500	25003	(6) 4"	(18) 750	(6) 350	25004	(8) 4"	(32) 500	(8) 350
3000	30003	(7) 4"	(21) 750	(7) 500	30004	(9) 4"	(36) 500	(9) 500
4000	40003	(9) 4"	(27) 750	(9) 500	40004	(12) 4"	(48) 500	(12) 500

FEEDER SCHEDULE COPPER/ALUMINUM: 3 PHASE, 4 WIRE + GROUND						
TAG	NOMINAL AMPACITY	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)		GROUND CONDUCTOR (AWG or kcmil)	
204	20	1/2"	(4) 12	CU	12	CU
304	30	3/4"	(4) 10	CU	10	CU
404	40	3/4"	(4) 8	CU	10	CU
504	50	1"	(4) 6	CU	10	CU
604	60	1"	(4) 6	CU	10	CU
704	70	1 1/4"	(4) 4	CU	8	CU
804	80	1 1/4"	(4) 3	CU	8	CU
904	90	1 1/4"	(4) 3	CU	8	CU
1004	100	2"	(4) 1/0	AL	8	CU
1104	110	2"	(4) 1/0	AL	6	CU
1254	125	2"	(4) 2/0	AL	4	CU
1504	150	2"	(4) 3/0	AL	4	CU
1754	175	2 1/2"	(4) 4/0	AL	4	CU
2004	200	2 1/2"	(4) 250	AL	4	CU
2254	225	3"	(4) 350	AL	2	CU
2504	250	3 1/2"	(4) 500	AL	2	CU
3004	300	(2) 2 1/2"	(8) 3/0	AL	(2) 2	CU
3504	350	(2) 2 1/2"	(8) 4/0	AL	(2) 2	CU
4004	400	(2) 3"	(8) 250	AL	(2) 2	CU
4504	450	(2) 3"	(8) 350	AL	(2) 1/0	CU
5004	500	(2) 3 1/2"	(8) 500	AL	(2) 1/0	CU
6004	600	(2) 3 1/2"	(8) 500	AL	(2) 1	CU
8004	800	(3) 3 1/2"	(12) 500	AL	(3) 1/0	CU
10004	1000	(4) 3 1/2"	(16) 500	AL	(4) 350	AL
12004	1200	(5) 3 1/2"	(20) 500	AL	(5) 350	AL
16004	1600	(6) 3 1/2"	(24) 500	AL	(6) 350	AL
20004	2000	(8) 4"	(32) 500	AL	(8) 500	AL
25004	2500	(9) 4"	(36) 500	AL	(9) 500	AL
30004	3000	(11) 4"	(44) 500	AL	(11) 500	AL
40004	4000	(15) 4"	(60) 500	AL	(15) 500	AL

GENERAL NOTES:

A. PROVIDE ENERGY CODE METERING.



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PRCNC20221036

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Date:	06/30/22
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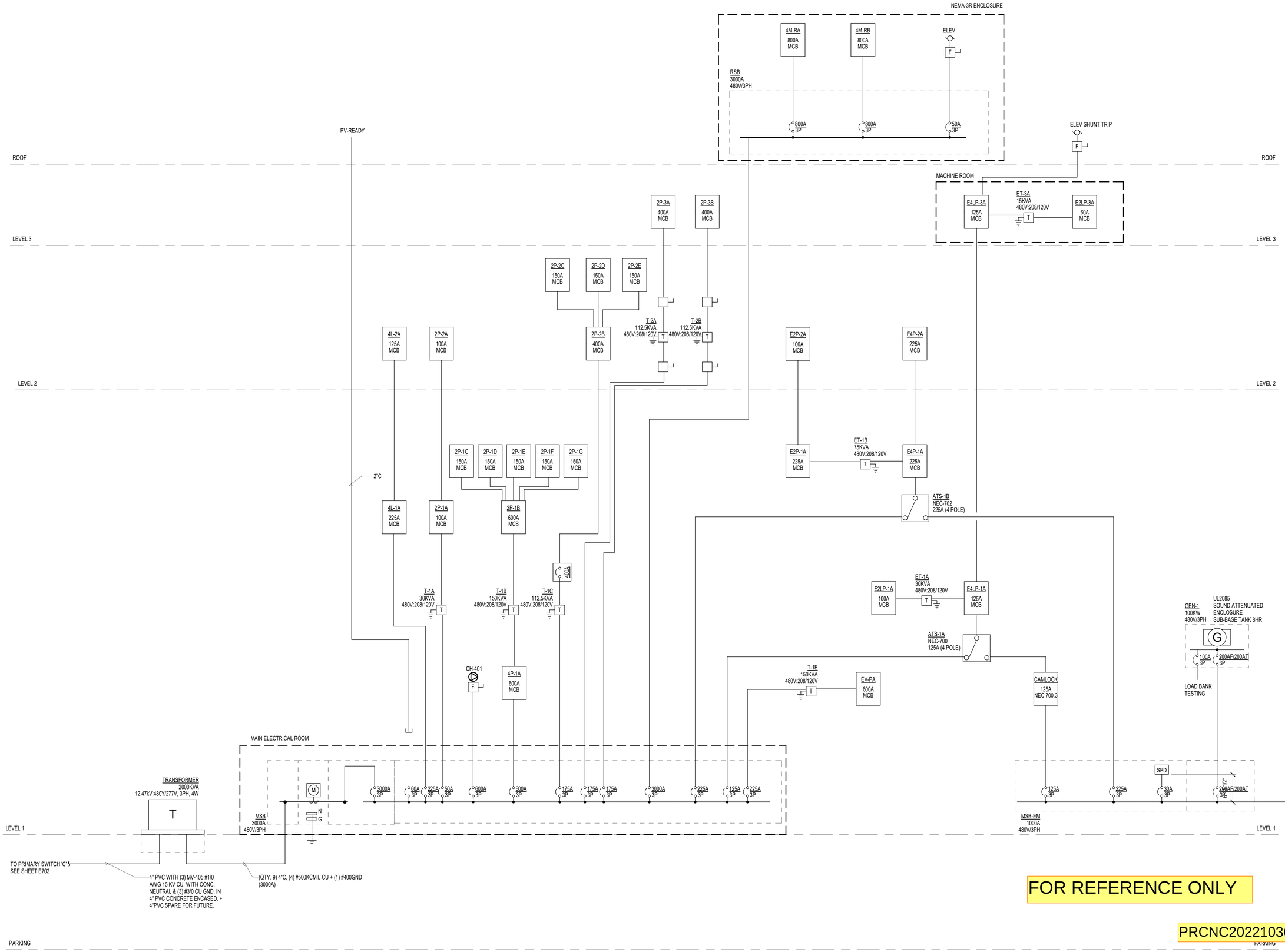
Revisions

#	Date	Description

SINGLE-LINE DIAGRAM - ELECTRICAL

E701

FOR REFERENCE ONLY



FOR REFERENCE ONLY

PRCNC20221036

1 SINGLE LINE DIAGRAM
NONE

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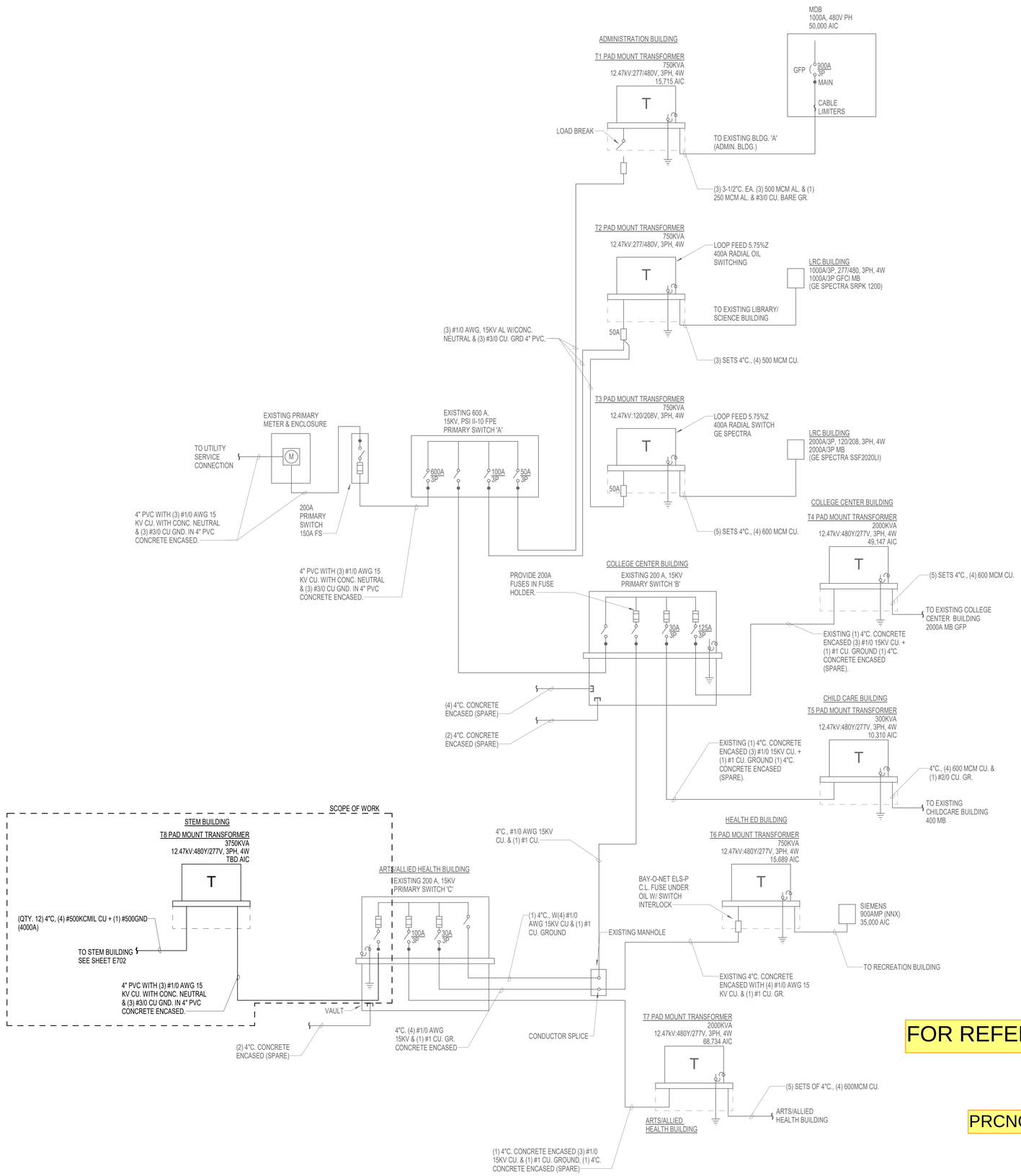
SINGLE-LINE DIAGRAM - ELECTRICAL - ALTERNATE

E701.1



1 PRIMARY SINGLE LINE DIAGRAM
NONE

FOR REFERENCE ONLY

PRCNC20221036

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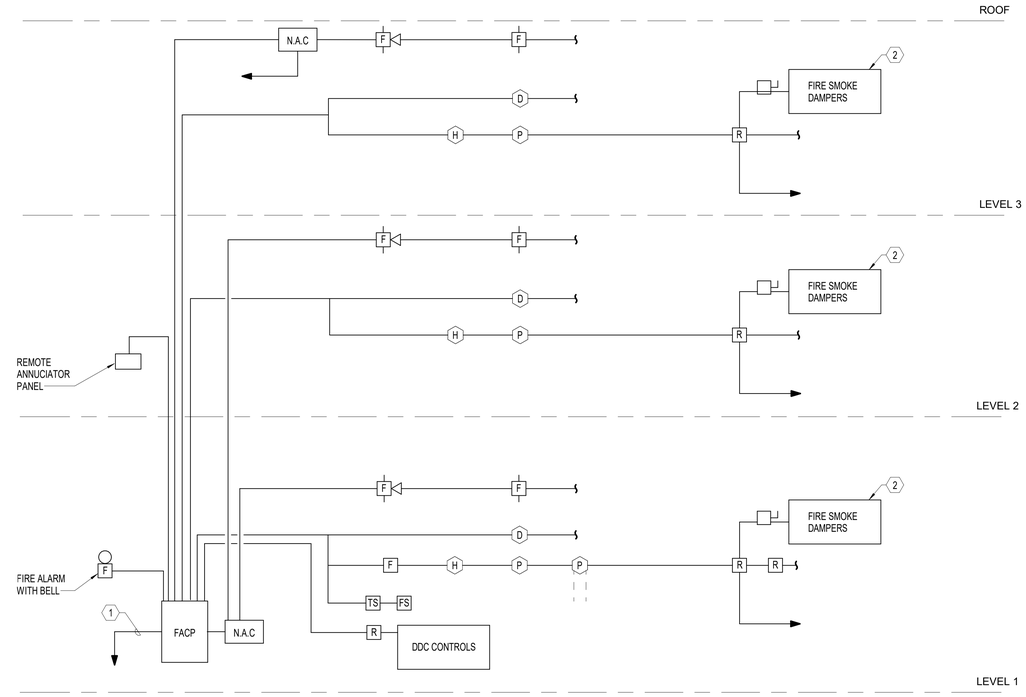
PRIMARY
SINGLE-LINE
DIAGRAM

E702

FOR REFERENCE ONLY



NOTES:

1. PHONE LINE FOR DIAL OUT.
2. LOCATION AND QUANTITY OF FSD'S ARE SHOWN ON MECHANICAL DRAWINGS. REFER TO DETAIL ____ FOR COMPLETE FSD WIRING AND CONTROL.

1 FIRE ALARM RISER
NONE

PRCNC20221036

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FIRE ALARM RISER - ELECTRICAL

E703

FOR REFERENCE ONLY

ABBREVIATIONS

ABF	AIRBLOWN FIBER	IG	ISOLATED GROUND
AFF	ABOVE FINISHED FLOOR	IMC	INTERMEDIATE METAL CONDUIT
AHJ	AUTHORITY HAVING JURISDICTION	JB	JUNCTION BOX
AN	ANALOG	LEC	LOCAL EXCHANGE CARRIER
ARCH	ARCHITECT / ARCHITECTURAL	MATV	MASTER ANTENNA TELEVISION
ARM	ARMORED	MDF	MAIN BUILDING DISTRIBUTION FACILITY
AVC	AUDIOVISUAL CONTRACTOR	MECH	MECHANICAL
BBC	BACKBONE BONDING CONDUCTOR (GE)	MH	MAINTENANCE HOLE (OUTSIDE PLANT)
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS (TBC)	MHz	MEGAHERTZ
BDF	BUILDING DISTRIBUTION FACILITY	MPOE	MINIMUM POINT OF ENTRY
BET	BUILDING ENTRANCE TERMINAL (PET)	NIC	NOT IN CONTRACT
BOC	BOTTOM OF CONDUIT	NVR	NETWORK VIDEO RECORDER
BOCT	BOTTOM OF CABLE TRAY	OFC	OPTICAL FIBER CABLE
BTP	BALANCED TWISTED PAIR (COPPER)	OLT	OPTICAL LINE TERMINAL
C	CONDUIT	ONT	OPTICAL NETWORK TERMINAL
CAM	CAMERA	OSP	OUTSIDE PLANT
CATV	COMMUNITY ACCESS TELEVISION	PA	PUBLIC ADDRESS
CCTV	CLOSED CIRCUIT TELEVISION	PB	PULLBOX
CF	CELLULAR FLOOR	PBB	PRIMARY BONDING BUSBAR (TMGB)
CLG	CEILING	PET	PROTECTED ENTRANCE TERMINAL (BET)
CO	CENTRAL OFFICE	PMV	PROJECT MANAGER VERIFICATION
CPE	CUSTOMER PREMISE EQUIPMENT	POE	POWER OVER ETHERNET
DAS	DISTRIBUTED ANTENNA SYSTEM	PON	PASSIVE OPTICAL NETWORK
dB	DECIBEL	POTS	PLAIN OLD TELEPHONE SERVICE
DB	DUCTBANK	PVC	POLYVINYL CHLORIDE CONDUIT
DEMARC	DEMARCATION POINT	PWR	POWER
DN	DOWN	R/W	RIGHT OF WAY
EQ	EQUAL DISTANCE	RAD	RADIUS
EC	ELECTRICAL CONTRACTOR	RG	RADIO GRADE
EF	ENTRANCE FACILITY	SBB	SECONDARY BONDING BUSBAR (TGB)
EMC	ELECTROMAGNETIC COMPATIBILITY	SBN	SUPPLEMENTARY BONDING NETWORK
EMERG	EMERGENCY	SCH40	SCHEDULE 40 PVC CONDUIT
EMI	ELECTROMAGNETIC INTERFERER	SCH80	SCHEDULE 80 PVC CONDUIT
EMT	ELECTRIC METALLIC TUBING	TBB	TELECOMMUNICATION BONDING BACKBONE
EP	ENTRANCE POINT (OUTSIDE PLANT)	TBC	TELECOMMUNICATION BONDING CONDUCTOR (BCT)
EPO	EMERGENCY POWER OFF	TE	TELECOMMUNICATION ENCLOSURE
ER	EQUIPMENT ROOM	TGB	TELECOMMUNICATION GROUNDING BUSBAR (SBB)
ERRC	EMERGENCY RESPONDER RADIO COVERAGE	TMGB	TELECOMMUNICATION MAIN GROUNDING BUSBAR (PBB)
FA	FIRE ALARM CONTROL PANEL	TO	TELECOMMUNICATIONS OUTLET
FCIC	FURNISHED BY CONTRACTOR INSTALLED BY CONTRACTOR	TR	TELECOMMUNICATIONS ROOM
FO	FIBER OPTIC	TTB	TELEPHONE TERMINAL BOARD
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR	TTC	TELEPHONE TERMINAL CABINET
FOIO	FURNISHED BY OWNER INSTALLED BY OWNER	TV	TELEVISION
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GE	GROUNDING EQUALIZER (BBC)	UG	UNDERGROUND
GHz	GIGAHERTZ	UON	UNLESS OTHERWISE NOTED
GPON	GIGABIT PASSIVE OPTICAL NETWORK	UPS	UNINTERRUPTIBLE POWER SUPPLY
GRC	GALVANIZED RIGID CONDUIT	W	WATTS
GRD	GROUND	WAO	WORK AREA OUTLET
HH	HANDHOLE	WAP	WIRELESS ACCESS POINT
Hz	HERTZ	WP	WEATHER PROOF
IDF	INTERMEDIATE DISTRIBUTION FRAME		

DESIGNATION SYMBOLS

- --- / 123 — EQUIPMENT DESIGNATORS SEE SCHEDULE.
- E / X — EXISTING TO REMAIN, EXISTING TO BE REMOVED
- R / F — EXISTING TO BE RELOCATED, FUTURE
- N — NEW, CONNECT TO
- 1 — NOTE
- 1 — REVISION NOTE
- X / XX.XX — DETAIL CALLOUT
- SYMBOL / DEVICE ✳ — DEVICE MOUNTED ABOVE COUNTER

PATHWAYS

- CONDUIT
- UNDERGROUND CONDUIT
- CONTINUATION, STUB, HOMERUN
- AERIAL
- SPLICE
- TERMINATION
- J — JUNCTION BOX
- PB — "PB" PULL BOX, "DB" DAS PULL-BOX, "VT" VAULT/MANHOLE, "HH" HAND HOLE
- CABLE TRAY: LADDER, WIRE MESH
- J — OPEN RUN CABLE PATHWAY
- CT: 12x4 / BOCT:8'-6" — CABLE TRAY TYPE, SIZE, AND BOTTOM OF CABLE TRAY CALLOUT. "CT" CABLE TRAY, "CR" CABLE RUNWAY, "WM" WIRE MESH
- (4) 2"/ BOC:8'-6" — QUANTITY, SIZE, AND BOTTOM OF CONDUIT CALLOUT.

EQUIPMENT

- VERTICAL CABLE MANAGERS
- RACK (19") OPEN: TWO POST, FOUR POST
- ARROW INDICATES AIRFLOW AT FRONT OF RACK (TYP)
- RACK (19") ENCLOSURE: WALL MOUNT, FLOOR MOUNT
- RACK (19"): IN-CABINET/CASEWORK (PULL OUT AND ROTATING)
- PLYWOOD BACKBOARD, WALL MOUNT
- BUSBAR, WALL MOUNT
- 110 PUNCH-DOWN BLOCK, WALL MOUNT
- COPPER TERMINAL/DEMARC (PROTECTED/FUSED), WALL MOUNT
- FIBER TERMINAL/DEMARC, WALL MOUNT

TELECOMMUNICATIONS

- OUTLET TYPE: DATA
- OUTLET TYPE: COMBINATION TELEPHONE/DATA
- OUTLET TYPE: TELEPHONE
- E,W,# — OUTLET DESIGNATORS: "E" EQUIPMENT OUTLET, "W" TELEPHONE OUTLET WITH MOUNTING STUDS, "#" QTY OF CABLES. TYPICAL ALL OUTLETS: PROVIDE TWO (2) CABLES PER OUTLET (UON)
- 48" AFF — OUTLET MOUNTING: WALL, ABOVE COUNTER, CEILING
- CD — OUTLET MOUNTING: CORD-DROP
- FB# — OUTLET MOUNTING, FLUSH FLOORBOX: REFER TO SCHEDULE FOR TYPES OF DEVICES. FOR IN-GRADE INSTALLATIONS, PROVIDE 1"C. HOME-RUN TO NEAREST TELECOM ROOM (UON).
- PT# — OUTLET MOUNTING, FLUSH POKE-THROUGH: REFER TO SCHEDULE FOR TYPES OF DEVICES. TYPICAL ALL FLOORBOXES/POKE-THROUGHS: SEE ELECTRICAL DRAWINGS FOR COMBINED SERVICE REQUIREMENTS.
- SYMBOL / DEVICE # — DATA CONNECTION FOR DEVICE. SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- DATA OUTLET FOR WIRELESS ACCESS POINT: WALL, CEILING.
- CONSOLIDATION POINT
- TV / TV D — CATV/MATV OUTLET: COAXIAL ONLY, COMBINATION COAX/DATA
- E — EMERGENCY TELEPHONE
- IMS/ICS — INTERCOM: "IMS" MASTER STATION, "ICS" CALL STATION
- ACU/ACS — AREA OF RESCUE: "ACU" COMMAND UNIT, "ACS" CALL STATION

CLOCK SYSTEMS

OFOI. SEE PLANS FOR ROUGH IN LOCATIONS

- WALL CLOCK, ANALOG FACE: STANDARD, LARGE.
- L — CEILING CLOCK, ANALOG FACE: STANDARD, LARGE.
- 12:00 / 12:00 L — WALL CLOCK, DIGITAL FACE: STANDARD, LARGE.
- 12:00 / 12:00 L — CEILING CLOCK, DIGITAL FACE: STANDARD, LARGE.
- COMBINATION ANALOG CLOCK / SPEAKER, FLUSH WALL MOUNT.
- COMBINATION DIGITAL CLOCK / SPEAKER, FLUSH WALL MOUNT.

SECURITY

OFOI. SEE PLANS FOR ROUGH IN LOCATIONS

- SW A B — DOOR REQUIRING ELECTRONIC SECURITY: "101" INDICATES DOOR NUMBER, "A" AND "B" INDICATES SECURED/NON-SECURED SIDES OF DOOR. SEE SCHEDULE FOR ADDITIONAL REQUIREMENTS.
- CR B,P,M — CREDENTIAL READER: "B" COMBINATION BIOMETRIC AND CARD READER, "P" COMBINATION KEYPAD AND CARD READER, "B,P" COMBINATION BIOMETRIC/KEYPAD/CARD READER, "M" MAG-STRIPE READER. PROVIDE AS ASSEMBLY WITH DOOR CONTACT, REQUEST TO EXIT AND ELECTRIC LOCK
- VP — VEHICLE CREDENTIAL READER
- OB — DOOR OPERATOR (ADA) BUTTON
- RB — DOOR RELEASE BUTTON
- DOOR CONTACT
- KP I,A — KEYPAD: "I" INTRUSION ALARM, "A" ACCESS CONTROL
- DB W,D — DURESS ALARM BUTTON: WALL, UNDER DESK/COUNTER
- MS / MS — MOTION SENSOR: WALL, CEILING
- GB / GB — GLASS BREAK DETECTOR: WALL, CEILING
- STROBE: WALL, CEILING
- S / S — SPEAKER: WALL, CEILING
- S — SURVEILLANCE CAM., FIXED: WALL, POLE/PARAPET, CEILING
- S — SURVEILLANCE CAM., PTZ: WALL, POLE/PARAPET, CEILING
- S — SURVEILLANCE CAM., MULTI-SENSOR: WALL, POLE/PARAPET, CEILING
- CAM:E - # — CAMERA TYPE AND NUMBER. SEE SCHEDULE FOR ADDITIONAL REQUIREMENTS.

AUDIOVISUAL

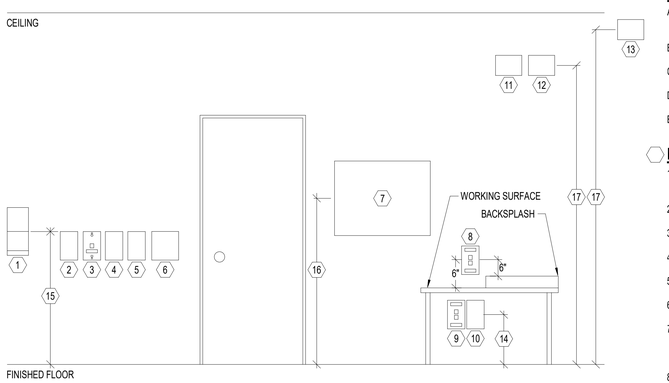
OFOI. SEE PLANS FOR ROUGH IN LOCATIONS

- CP# — CONTROL PANEL
- MP# — MEDIA INPUT/OUTPUT PLATE OR DEVICE
- EB# — EQUIPMENT BOX
- TB# — TABLE BOX
- M# — MICROPHONE
- WR — WIRELESS MICROPHONE RECEIVER ANTENNA
- AT — ASSISTIVE LISTENING TRANSMITTER ANTENNA
- V — VOLUME CONTROL: WALL
- S # / S # — LOUDSPEAKER: WALL, CEILING
- S # — LOUDSPEAKER, HIGH OUTPUT
- SB# — SPEAKER SOUND BAR: WALL
- # — DIRECT-LIT LED VIDEO DISPLAY: WALL
- # # — VIDEO DISPLAY: WALL, CEILING
- # # — PROJECTION SCREEN: WALL, CEILING
- S — PROJECTION SCREEN SWITCH: WALL
- # # — PROJECTOR: WALL, CEILING
- # — PROJECTOR: SHORT-THROW WALL
- # # — FIXED CAMERA: WALL, CEILING
- # # — PAN - TILT - ZOOM CAMERA: WALL, CEILING
- TYPICAL: "#" INDICATES TYPE. SEE AV SCHEDULE.

TECHNOLOGY SHEET LIST

SHEET #	SHEET NAME
T001	SYMBOLS, LEGENDS AND ABBREVIATIONS - TECHNOLOGY
T010	SITE PLANS - TECHNOLOGY
T100	LEVEL 0 - FLOOR PLAN - TECHNOLOGY
T101	LEVEL 1 - FLOOR PLAN - TECHNOLOGY
T102	LEVEL 2 - FLOOR PLAN - TECHNOLOGY
T103	LEVEL 3 - FLOOR PLAN - TECHNOLOGY
T104	ROOF PLAN - TECHNOLOGY
T401	ENLARGED PLAN - TECHNOLOGY
T402	ENLARGED PLAN - TECHNOLOGY
T403	ENLARGED PLAN - TECHNOLOGY
Grand total: 10	

DEVICE MOUNTING HEIGHTS



GENERAL NOTES:

A. WHERE APPLICABLE, ARCHITECTURAL DRAWINGS TAKE PRECEDENCE OVER THIS DETAIL FOR DEVICE ELEVATIONS.

B. LOCATE ACCESSIBLE SWITCHES PER ADA GUIDELINES.

C. FIELD COORDINATE ABOVE COUNTER DEVICES WITH MILLWORK CONTRACTOR.

D. CONFIRM FINAL DEVICE LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.

E. LOCATE DEVICES PER CODE. WALL MOUNTED DEVICES SHALL NOT PROTRUDE BEYOND ADA REQUIREMENTS.

NOTES:

1. EMERGENCY COMMUNICATION WALL MOUNT STATION
2. CARD READER
3. TELEPHONE OUTLET WITH MOUNTING STUDS
4. INTERCOM
5. AV CONTROL PANEL
6. AREA OF RESCUE STATION
7. DISPLAY (PRESENTATION OR DIGITAL SIGNAGE). SHALL NOT PROTRUDE MORE THAN 4" INTO WALKWAYS.
8. ABOVE COUNTER DEVICE (MAINTAIN A CONSISTENT HEIGHT THROUGHOUT SPACE)
9. TELECOM OUTLET
10. AV INPUT/OUTPUT PLATE
11. WIRELESS ACCESS POINT
12. INTERIOR SURVEILLANCE CAMERA
13. EXTERIOR SURVEILLANCE CAMERA
14. 18" AFF (UON)
15. 48" AFF (UON)
16. 60" AFF (UON)
17. HEIGHT AS NOTED ON DRAWINGS

REFERENCE NOTES (APPLIES TO ALL DRAWINGS):

A. THIS IS A STANDARD LEGEND SHEET, THEREFORE SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

B. WHERE ENLARGED PLANS CALL-OUTS ARE SHOWN, REFER TO REFERENCED SHEET FOR REQUIRED SCOPE OF WORK.

C. REQUIRED OFFSETS IN CONDUIT, CABLE TRAY, DEVICES, BOXES, AND PATHWAY TRANSITIONS AROUND OBSTRUCTIONS ARE PART OF THE BASE SCOPE OF WORK. EXACT PATHWAYS TO BE DETERMINED AND COORDINATED BY THE CONTRACTOR BETWEEN TRADES. PROVIDE A MINIMUM OF ONE PULL BOX FOR EVERY 100 FEET OF STRAIGHT EMPTY CONDUIT AND A PULL BOX FOR MORE THAN 180 DEGREES OF BEND IN A CONDUIT RUN. DEBURR, CLEAN, CAP, AND TAG ALL CONDUITS AND FURNISH WITH A MINIMUM OF TWO (2) PULL STRINGS.

D. LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE, ARCHITECTURAL DRAWING DEVICE LOCATIONS TAKE PRECEDENCE. WHERE EXACT DIMENSIONS FOR DEVICES ARE NOT SHOWN, DRAWINGS ARE TO BE SCALED TO DETERMINE DEVICE LOCATION, AND COORDINATED IN THE FIELD. INSTALL DEVICES IN AN ORDERLY MANNER AT THE SAME ELEVATION AS ADJACENT DEVICES, COORDINATED BETWEEN TRADES. WHERE INSTALLED DEVICES FEED OR ARE ASSOCIATED WITH FURNITURE, COORDINATE EXACT LOCATIONS WITH FINAL FURNITURE PLAN AND CASEWORK INSTALLER, PRIOR TO ROUGH-IN.

E. MOUNT AV MEDIA PLATES AND DEVICES SHOWN IN GROUPINGS DIRECTLY ADJACENT TO EACH OTHER IN THE FIELD UON. REFER TO AV SYSTEM DETAILS AND ELEVATIONS FOR ADDITIONAL REQUIREMENTS.

F. WHERE MULTI-SERVICE FLOOR, WALL OR CEILING DEVICES ARE SHOWN,PROVIDE (1)1"C FOR STRUCTURED CABLING SYSTEM OUTLETS, AND (2)1-1/4"C FOR AUDIOVISUAL SYSTEM DEVICES. PROVIDE ADDITIONAL CONDUITS AS REQUIRED FOR OTHER SYSTEMS CABLING. IN ADDITION, REFER TO ELECTRICAL DRAWINGS FOR ASSOCIATED POWER REQUIREMENTS AND INFRASTRUCTURE.

G. ROUTE AREA OR RESCUE RISER AND HORIZONTAL CABLING WITHIN LEVEL 2 SURVIVABLE PATHWAYS, INCLUDING WITHIN DESIGNATED 2-HOUR RATED VERTICAL RISER SHAFTS, HORIZONTALLY EMBEDDED WITHIN SLAB, AND OTHERWISE WITHIN 2-HOUR RATED WRAPPED CONDUIT. CONFIRM FINAL LOCATION OF CENTRAL COMMAND UNIT WITH THE AUTHORITY HAVING JURISDICTION (AHJ).

H. COORDINATE OSP/UNDERGROUND COMMUNICATIONS CONDUIT PATHWAYS WITH ELECTRICAL OSP/UNDERGROUND PATHWAYS.

SCOPE NOTES

THE FOLLOWING SCOPE NOTES ARE DERIVED FROM THE ARCHITECTURAL PRE-DESIGN DOCUMENT. UNLESS OTHERWISE NOTED, REFER TO THE FOLLOWING SCOPE NOTES FOR EQUIPMENT DEFINITIONS AND OWNERSHIP.

1. ERRCS CALL STATIONS TO BE DIRECTED TO PRIMARY CONTROL STATION AT LEVEL 1. IF CALL IS UNANSWERED AT LEVEL 1 CONTROL STATION, THE CALL WILL BE FORWARDED TO CAMPUS SECURITY OFFICE FOR RESPONSE.
2. ALL NETWORK SWITCHES ARE OWNER-FURNISHED, CONTRACTOR INSTALLED.
3. ALL VOIP PHONES ARE OWNER-FURNISHED, CONTRACTOR INSTALLED.
4. ALL AUDIO-VISUAL SYSTEMS ARE OWNER-FURNISHED, OWNER INSTALLED. CONTRACTOR TO PROVIDE CABLING AND ROUGH-IN MATERIALS TO SUPPORT AUDIO-VISUAL SYSTEMS.
5. CONTENT MANAGEMENT SYSTEM(S) FOR DIGITAL SIGNAGE LOCATIONS ARE OWNER-FURNISHED.
6. CABLE ROUGH-IN ONLY FOR FUTURE OWNER-PROVIDED SECURITY SYSTEMS. SEE PLANS FOR ROUGH-IN LOCATIONS.
7. CLOCK SYSTEMS AND PAGING SYSTEMS ARE OWNER-FURNISHED, OWNER INSTALLED. SEE DRAWINGS FOR CLOCK AND LOUDSPEAKER LOCATIONS. CONTRACTOR TO PROVIDE AND INSTALL ROUGH-IN MATERIALS AND CABLING TO EACH DEVICE LOCATION AS SHOWN.
8. WIRELESS ACCESS POINTS (WAP) LAYOUTS ARE PRELIMINARY AND SHOWN FOR BUDGETING PURPOSES ONLY. COORDINATE WITH OWNERS'S WAP VENDOR FOR HEAT MAP AND ADJUST/ADD/SUBTRACT LOCATION TO CONFORM.

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PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

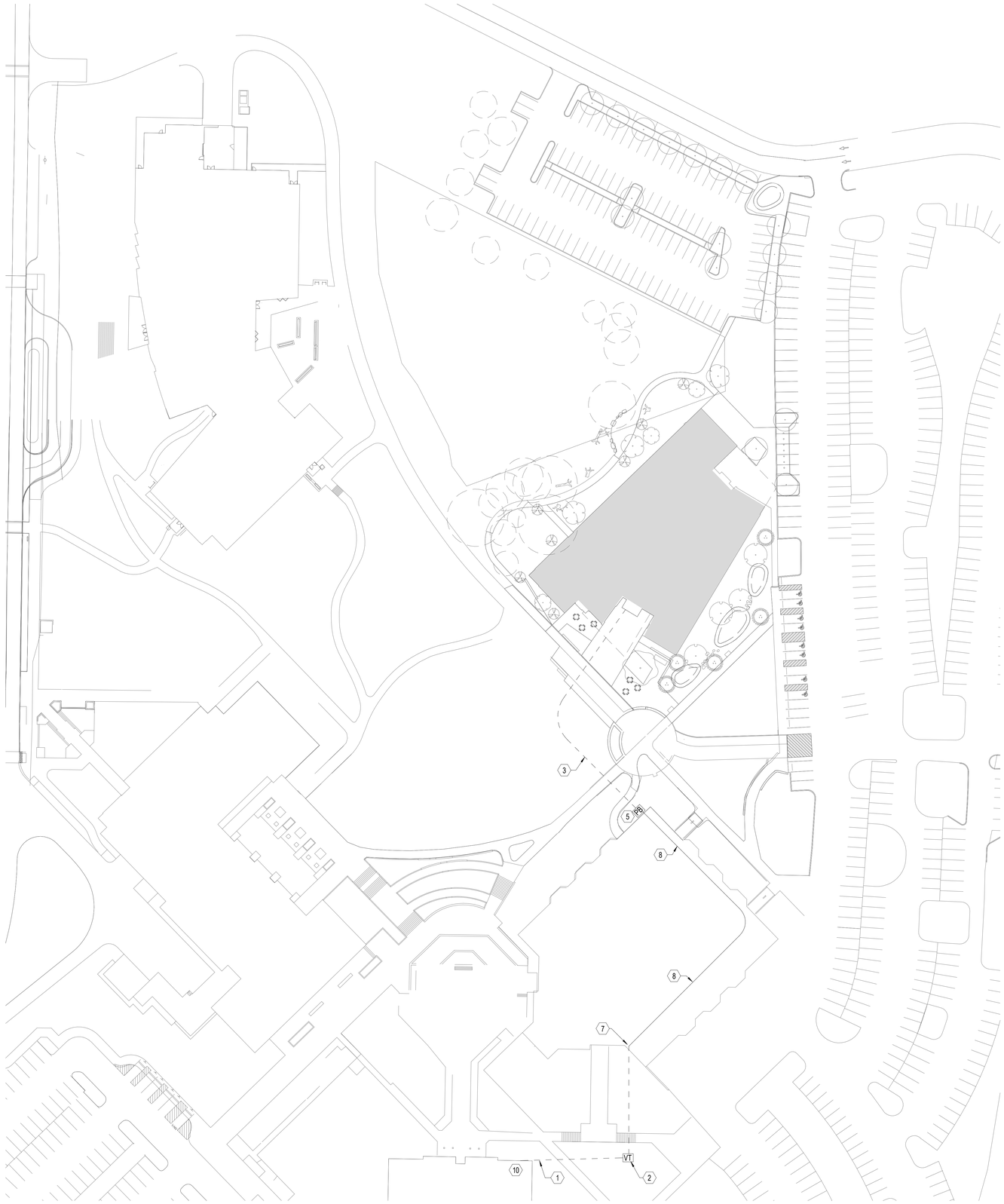
Revisions

#	Date	Description

SYMBOLS, LEGENDS AND ABBREVIATIONS - TECHNOLOGY

T001

FOR REFERENCE ONLY



1 SITE PLAN - TECHNOLOGY
1" = 40'-0"

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GENERAL NOTES:

A. COORDINATE WITH OWNER AND GENERAL CONTRACTOR BEFORE COMPLETING WORK IN LIBRARY TO ENSURE MINIMAL DISRUPTION DURING CONSTRUCTION

NOTES:

1. EXISTING UNDERGROUND CONDUIT FROM ADMIN BUILDING MPOE.
2. EXISTING VAULT LOCATION - TO BE REUSED.
3. NEW UNDERGROUND CONDUIT - (3) 4" CONDUITS.
4. NEW PULL BOX BY LVC.
5. EXISTING POE TO LIBRARY.
6. NEW CONDUIT OR USAGE OF EXISTING CABLE TRAY IN LIBRARY. ENSURE PROTECTION OF OSP CABLING TO STEM BY WAY OF RUGGEDIZED TUBING WHEN USING CABLE TRAY.
7. ADMINISTRATION BUILDING - OWNER TO TERMINATE BACKBONE CABLING, PROVIDED BY CONTRACTOR, AT ADMINISTRATION BUILDING MDF.

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SITE PLANS - TECHNOLOGY

T010

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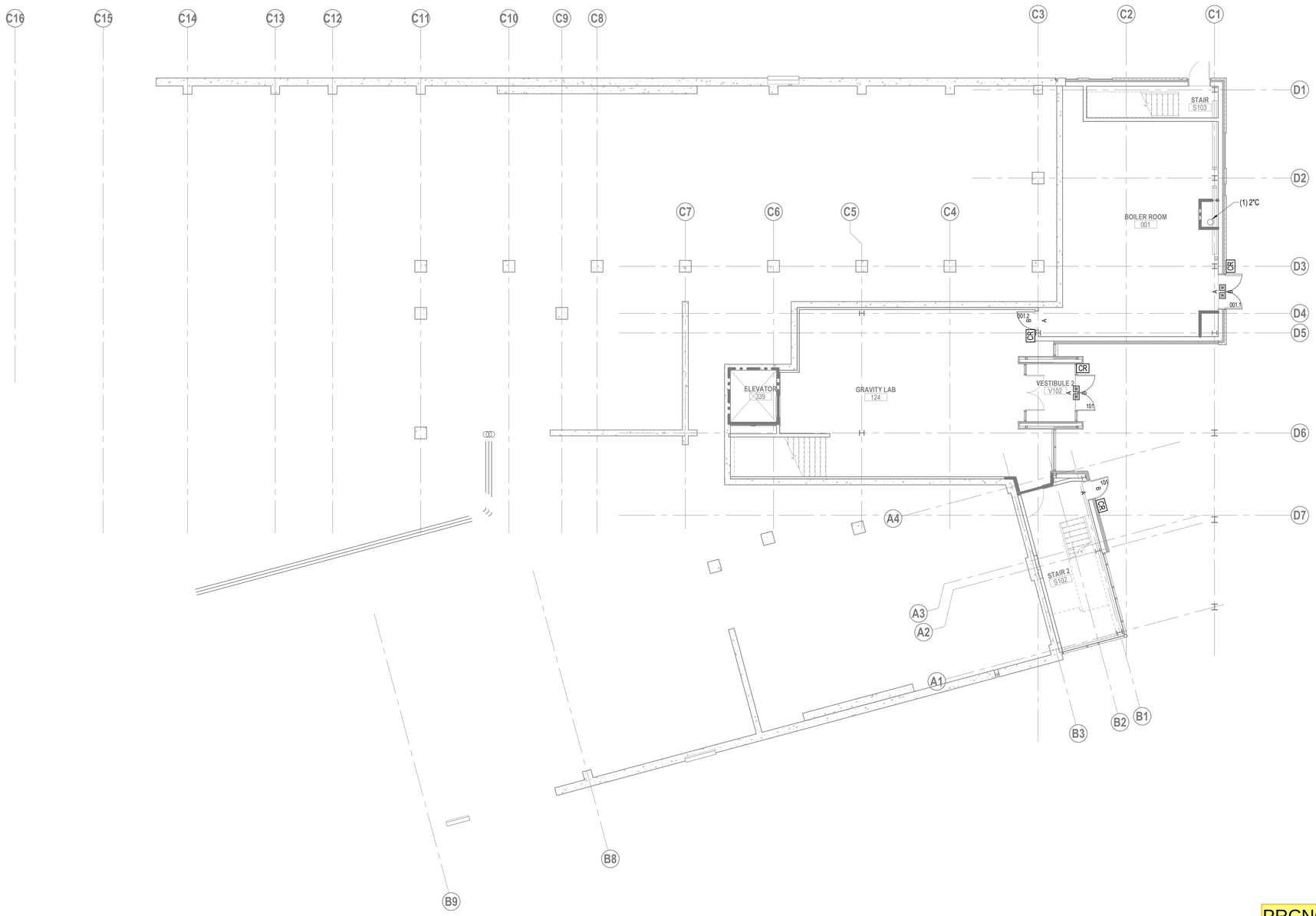

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1 LEVEL 0 - FLOOR PLAN - TECHNOLOGY\
1/8" = 1'-0"

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LEVEL 0 - FLOOR PLAN - TECHNOLOGY

T100

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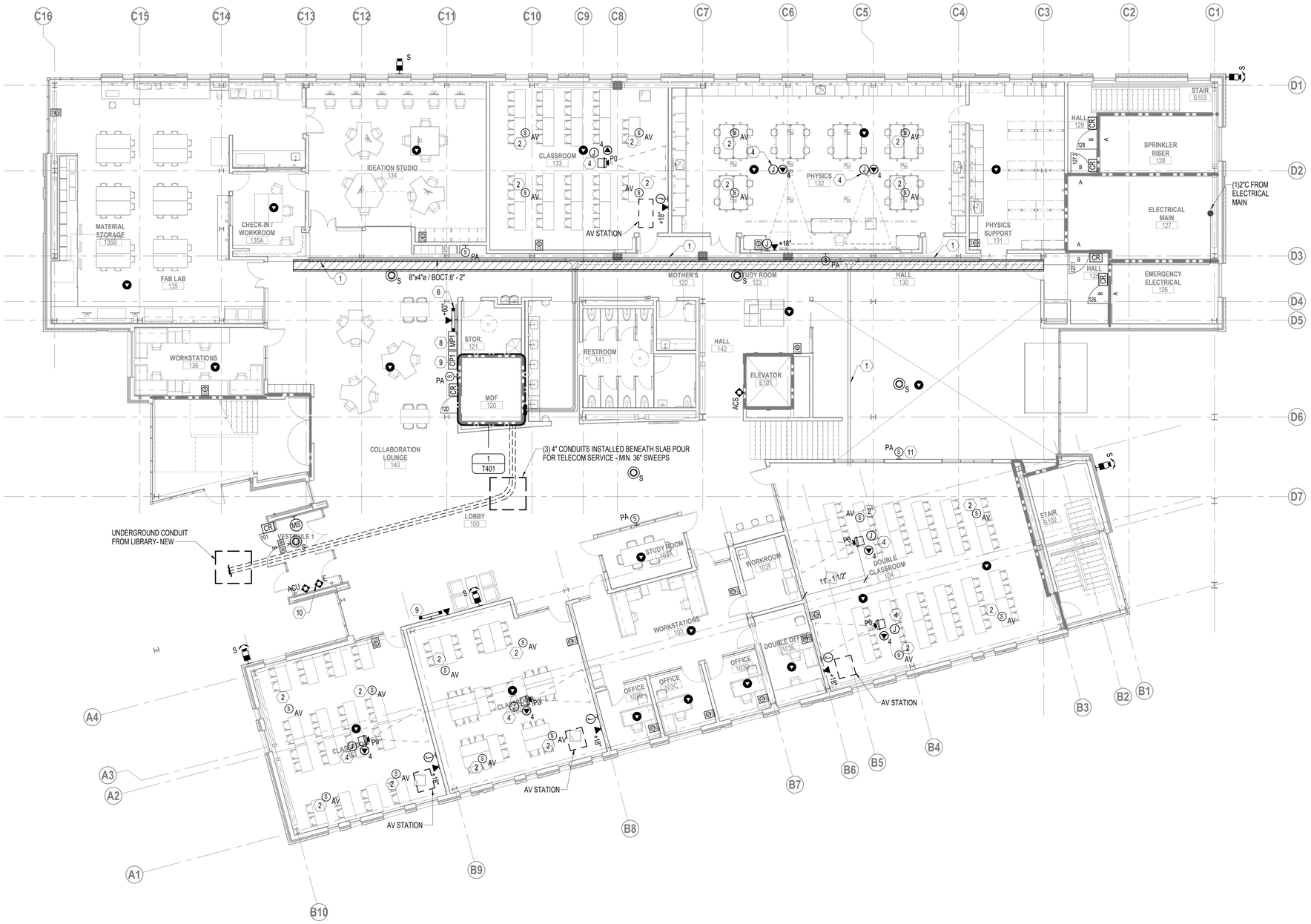

1 LEVEL 1 - FLOOR PLAN - TECHNOLOGY
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE (1) SHIELDED TWISTED-PAIR CATEGORY 6 CABLE TO ALL WIRELESS ACCESS POINT LOCATIONS.

B. SEE SCOPE NOTES ON COVER PAGE FOR MORE INFORMATION RELATED TO PROCUREMENT AND INSTALLATION OF MATERIALS NOTED ON THIS PAGE.

NOTES:

1. TWO (2) 4" CONDUITS INSTALLED TIGHT TO CEILING DECK WITH APPROPRIATE BENDS TO SERVICE CLASSROOM SPACES ON LEVEL 1.
2. (3) 4" CONDUITS FOR OWNER NETWORK SERVICES - CABLES QTY. (1) 100-PAIR UTP BUNDLE, (1) 24-STRAND OS2 FIBER. RUN CONDUIT TO MDF STUB-IN.
3. CARD READER ASSEMBLY - INCLUDES ELECTRIFIED LOCK, REQUEST TO EXIT, AND DOOR ASSEMBLY (TYP. 12).
4. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PROJECTOR. AS PART OF AV SYSTEM. INSTALL WITH (4) CAT6A FROM NEAREST MDF/IDF AND (1) 2" CONDUIT FROM AV CONNECTION PLATE AT TEACHING WALL.
5. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PENDANT CEILING SPEAKER. PROVIDE WITH (1) HOMERUN FROM AV CONNECTION PLATE AT TEACHING WALL.
6. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) 90-INCH INTERACTIVE LCD DISPLAY WITH BACKBOX BETWEEN STUD BAYS. CONTRACTOR TO INSTALL (1) 4-PORT DATA RECEPTACLE BEHIND DISPLAY LOCATION @ 48" AFF.
7. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV CONTROL PANEL. CONTRACTOR TO INSTALL (1) 2-GANG BACKBOX AND PROVIDE (1) CAT6 CABLE TO BACKBOX LOCATION.
8. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV INPUT PANEL. CONTRACTOR TO INSTALL (1) 1-GANG BACKBOX @ S.O.H AND PROVIDE (1) 2-3/4" CONDUIT FROM INPUT PANEL TO DISPLAY BACKBOX
9. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) 55-INCH DIGITAL SIGNAGE DISPLAY. CONTRACTOR TO INSTALL (1) 4-PORT DATA RECEPTACLE BEHIND DISPLAY LOCATION.
10. WALL MOUNTED EMERGENCY PHONE. COORDINATE WITH ELECTRICAL TO PROVIDE 120V EMERGENCY POWER AT LOCATION AS INDICATED.
11. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) IP PAGING SPEAKER. CONTRACTOR TO PROVIDE AND INSTALL 1 GANG BACKBOX WITH (1) CAT6A FROM NEAREST MDF/IDF.

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Revisions

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LEVEL 1 - FLOOR PLAN - TECHNOLOGY

T101

FOR REFERENCE ONLY

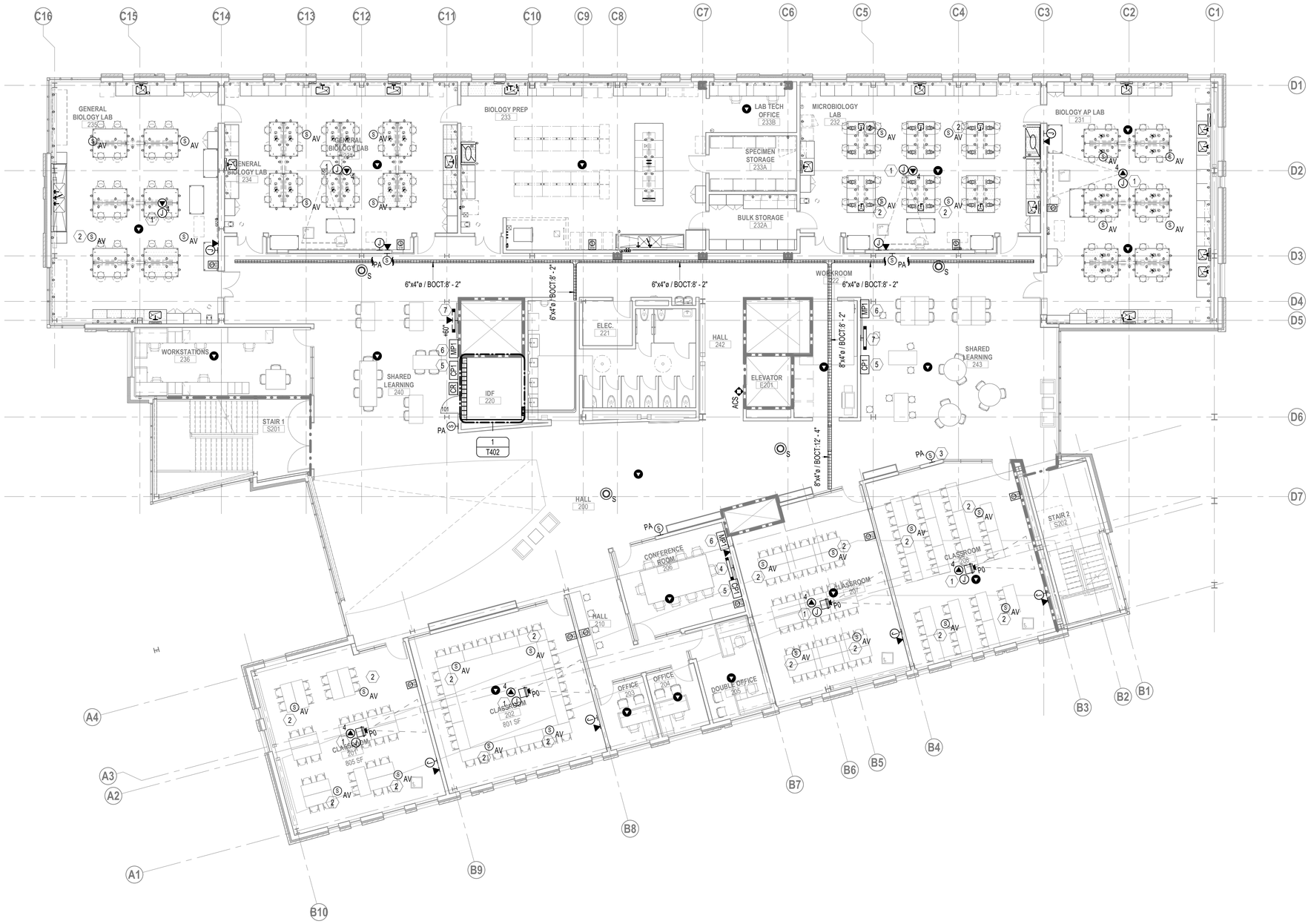
GENERAL NOTES:

A. PROVIDE (1) SHIELDED TWISTED-PAIR CATEGORY6 CABLE TO ALL WIRELESS ACCESS POINT LOCATIONS.

B. SEE SCOPE NOTES ON COVER PAGE FOR MOREINFORMATION RELATED TO PROCUREMENT AND INSTALLATION OF MATERIALS NOTED ON THIS PAGE.

NOTES:

1. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PROJECTOR. AS PART OF AV SYSTEM. INSTALL WITH (4) CAT6A FROM NEAREST MDF/IDF AND (1) 2" CONDUIT FROM AV CONNECTION PLATE AT TEACHING WALL
2. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PENDANT CEILING SPEAKER. PROVIDE WITH (1) HOMERUN FROM AV CONNECTION PLATE AT TEACHING WALL.
3. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) IP PAGING SPEAKER. CONTRACTOR TO PROVIDE AND INSTALL 1-GANG BACKBOX WITH (1) CAT6A FROM NEAREST MDF/IDF.
4. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) 86-INCH LCD DISPLAY WITH BACKBOX BETWEEN STUD BAYS. CONTRACTOR TO INSTALL (1) 4-PORT DATA RECEPTACLE BEHIND DISPLAY LOCATION.
5. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV INPUT PANEL. CONTRACTOR TO INSTALL (1) 1-GANG BACKBOX @ S.O.H AND PROVIDE (1) 2-3/4" CONDUIT FROM INPUT PANEL TO DISPLAY BACKBOX.
6. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV INPUT PANEL. CONTRACTOR TO INSTALL (1) 1-GANG BACKBOX AND PROVIDE (1) 2-3/4" CONDUIT FROM INPUT PANEL TO DISPLAY BACKBOX.
7. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) 90-INCH INTERACTIVE LCD DISPLAY WITH BACKBOX BETWEEN STUD BAYS. CONTRACTOR TO INSTALL (1) 4-PORT DATA RECEPTACLE BEHIND DISPLAY LOCATION.



1 LEVEL 2 - FLOOR PLAN - TECHNOLOGY
1/8" = 1'-0"

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PIERCE COLLEGE PUYALLUP
NEW STEM BUILDING
1601 39th AVE SE
Puyallup, WA 98374

Date:	06/30/22
Job No.:	22135.00
Drawn By:	Author
Checked By:	Checker

Revisions

#	Date	Description

LEVEL 2 - FLOOR PLAN - TECHNOLOGY

T102

FOR REFERENCE ONLY

1 LEVEL 3 - FLOOR PLAN - TECHNOLOGY
1/8" = 1'-0"

GENERAL NOTES:

A. PROVIDE (1) SHIELDED TWISTED-PAIR CATEGORY6 CABLE TO ALL WIRELESS ACCESS POINT LOCATIONS.

B. SEE SCOPE NOTES ON COVER PAGE FOR MORE INFORMATION RELATED TO PROCUREMENT AND INSTALLATION OF MATERIALS NOTED ON THIS PAGE.

NOTES:

1. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PROJECTOR. AS PART OF AV SYSTEM. INSTALL WITH (4) CAT6A FROM NEAREST MDF/IDF AND (1) 2" CONDUIT FROM AV CONNECTION PLATE AT TEACHING WALL.
2. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) PENDANT CEILING SPEAKER. PROVIDE WITH (1) HOMERUN FROM AV CONNECTION PLATE AT TEACHING WALL.
3. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) IP PAGING SPEAKER. CONTRACTOR TO PROVIDE AND INSTALL 1-GANG BACKBOX WITH (1) CAT6A FROM NEAREST MDF/IDF.
4. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV CONTROL PANEL. CONTRACTOR TO INSTALL (1) 2-GANG BACKBOX AND PROVIDE (1) CAT6 CABLE FROM NEAREST MDF/IDF TO BACKBOX LOCATION.
5. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) AV INPUT PANEL. CONTRACTOR TO INSTALL (1) 1-GANG BACKBOX AND PROVIDE (1) 2-3/4" CONDUIT FROM INPUT PANEL TO DISPLAY BACKBOX.
6. OWNER-FURNISHED, OWNER-INSTALLED (OFOI) 90-INCH INTERACTIVE LCD DISPLAY WITH BACKBOX BETWEEN STUD BAYS. CONTRACTOR TO INSTALL (1) 4-PORT DATA RECEPTACLE BEHIND DISPLAY LOCATION.

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LUMA Lumald.com

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LEVEL 3 - FLOOR PLAN - TECHNOLOGY

T103

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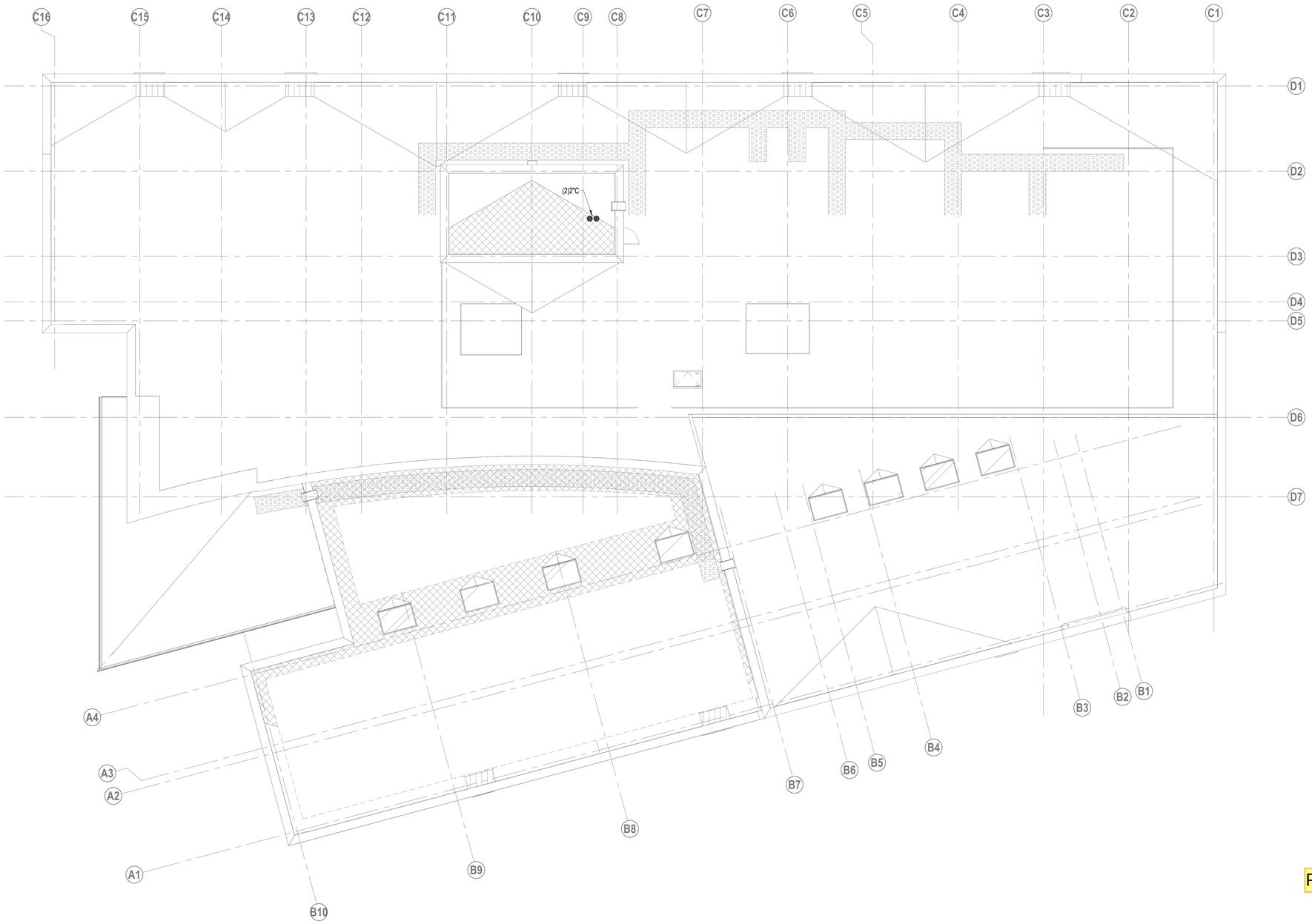

1 Print - 04 - Technology - Roof
1/8" = 1'-0"

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ROOF PLAN - TECHNOLOGY

T104

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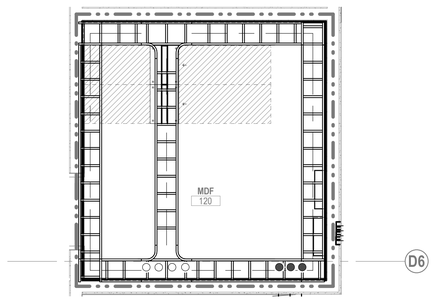
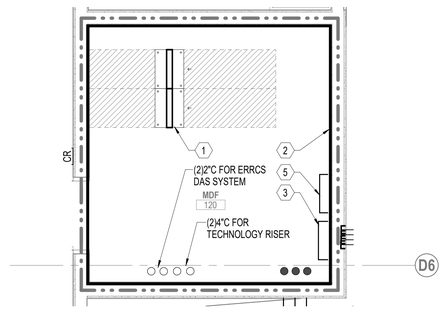


2 LEVEL 1 - ENLARGED MDF CABLE TRAY - TECHNOLOGY
3/8" = 1'-0"



1 LEVEL 1 - ENLARGED MDF - TECHNOLOGY
3/8" = 1'-0"

GENERAL NOTES:

A. MDF CLOSET - 2 HOUR RATED ROOM. ARCH TO SHOW FIRE PROOFING AS PART OF ARCHITECTURAL SET.

NOTES:

1. 2-POST TELECOM RACK
2. 3/4" A/C GRADE, FIRE RATED, VOID-FREE PLYWOOD. PAINTED WHITE.
3. ERRCS PANEL. COORDINATE WITH EX TO PROVIDE 120V EMERGENCY CIRCUIT.
4. (3)4"C TRANSITIONING FROM CABLE TRAY. (1)2"C FROM ELECTRICAL MAIN.
5. SECURITY PANEL. COORDINATE WITH EC TO PROVIDE 120V EMERGENCY CIRCUIT.
6. (3) 4" CONDUIT STUB-UPS FROM OSP CABLING.

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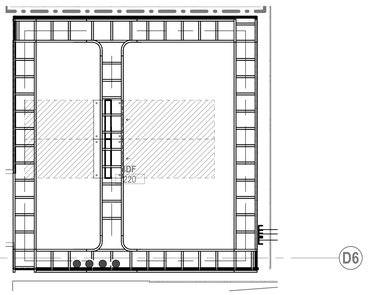
ENLARGED PLAN - TECHNOLOGY

T401

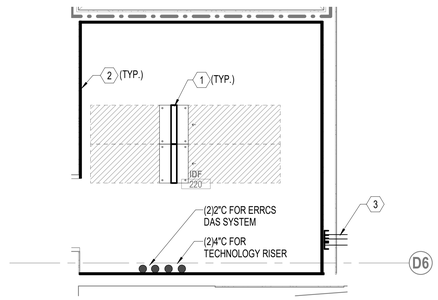
FOR REFERENCE ONLY

GENERAL NOTES:

A. IDF CLOSET - 2 HOUR RATED ROOM. ARCH TO SHOW FIRE PROOFING AS PART OF ARCHITECTURAL SET.



2 LEVEL 2 -ENLARGED IDF 252 CABLE TRAY - TECHNOLOGY
3/8" = 1'-0"



1 LEVEL 2 - ENLARGED IDF 252 - TECHNOLOGY
3/8" = 1'-0"

NOTES:

1. 2-POST TELECOM RACK
2. 3/4" A/C GRADE, FIRE RATED, VOID-FREE PLYWOOD. PAINTED WHITE.
3. (3)4"C TRANSITIONING FROM CABLE TRAY.

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ENLARGED PLAN - TECHNOLOGY

T402

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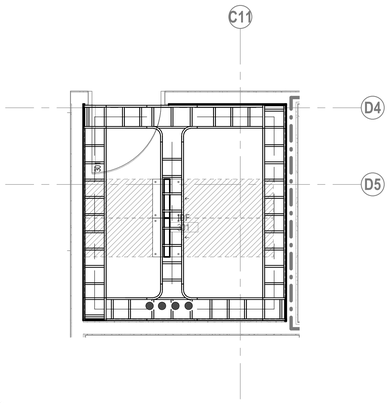
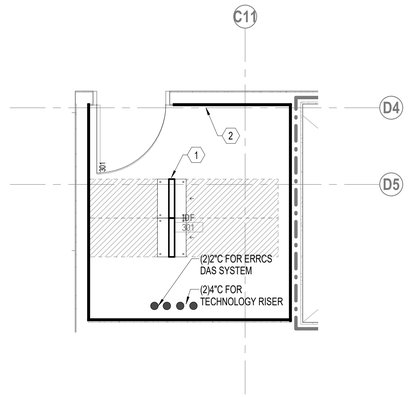


2 LEVEL 3 - ENLARGED IDF 301 CABLE TRAY - TECHNOLOGY
3/8" = 1'-0"



1 LEVEL 3 - ENLAGED IDF 301 - TECHNOLOGY
3/8" = 1'-0"

GENERAL NOTES:

A. IDF CLOSET - 2 HOUR RATED ROOM. ARCH TO SHOW FIRE PROOFING AS PART OF ARCHITECTURAL SET.

NOTES:

1. 2-POST TELECOM RACK
2. 3/4" A/C GRADE, FIRE RATED, VOID-FREE PLYWOOD. PAINTED WHITE.

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ENLARGED PLAN - TECHNOLOGY

T403

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City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

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DIAGRAMS - TECHNOLOGY

T701

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