

GENERAL NOTES

- CODE CONFLICTS**
ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH MOST CURRENT APPLICABLE CODE AND ORDINANCES OF PIERCE COUNTY
- DISCREPANCY**
IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPORT DISCREPANCIES FOUND WITHIN THESE DOCUMENTS TO THE ARCHITECT AS SOON AS THEY ARE DISCOVERED
- SCALING DRAWINGS**
DO NOT SCALE THE DRAWINGS. CONTACT ARCHITECT WITH ANY CONFLICTS
- DIMENSIONS**
DIMENSIONS ARE TO FACE OF STUD AND FACE OF CONC. U.N.O. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, EXISTING CONDITIONS, AND MEMBER SIZES PERTAINING TO THE WORK PRIOR TO PROCEEDING. ALL DIMENSIONS OF EXISTING CONDITIONS SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED. THE ARCHITECT MUST BE NOTIFIED IN WRITING OF ANY VARIATION FROM THE DIMENSIONS AND/OR CONDITIONS SHOWN ON THESE DRAWINGS.
- DOORS AND WINDOWS**
ALL WINDOW AND DOOR SIZES SHALL BE VERIFIED AND FIELD MEASURED PRIOR TO FABRICATION
- EXISTING CONDITIONS**
THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AT THE SITE AND SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY UNCERTAINTIES OR DISCREPANCIES WITHIN THESE DOCUMENTS
CONTRACTOR SHALL PROTECT THE EXISTING SITE WORK, LANDSCAPING, AND AREAS OF THE SITE NOT IN THE SCOPE OF WORK
- DEMOLITION**
CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. DEMOLITION DEBRIS SHALL NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE. PROTECT EXISTING STRUCTURE TO REMAIN
- HEALTH AND SAFETY**
CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY PRECAUTIONS AND THE MEANS AND METHODS TO PERFORM THE WORK.
CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS
- QUALITY STANDARDS**
ALL CONSTRUCTION SHALL MEET OR EXCEED INDUSTRY STANDARDS. DETAILS ARE PROVIDED FOR MINIMUM QUALITY AND TO GIVE STANDARDS OF CONSTRUCTION. IF CONDITION IS NOT SPECIFICALLY DETAILED, SUBMIT A DETAIL FOR GUIDANCE AND REVIEW FOR ACCEPTANCE.
CONTRACTOR SHALL PROVIDE BLOCKING AS REQUIRED FOR ALL CASEWORK, FIXTURE, AND SPECIALTY ITEMS.

2018 IBC REFERENCE

CHAPTER 3: USE AND OCCUPANCY CLASSIFICATION

304.1 BUSINESS GROUP B

CHAPTER 5: GENERAL BUILDING HEIGHTS AND AREAS
PROPOSED BUILDING DESIGN: B OCCUPANCY | NOT SPRINKLER | TYPE V-B

ALLOWABLE HEIGHT (TABLE 504.3)	CODE
40'	2
ALLOWABLE STORY (TABLE 504.4)	2
ALLOWABLE AREA (TABLE 506.2)	9,000 SF
ALLOWABLE AREA (EQ 506.2.3)	15,255 SF (SEE BELOW CALC)

AREA CALCULATION PER 506.2.3 SINGLE-OCCUPANCY, ONE STORY BUILDING

$$A_{\text{NS}} = A_1 + (NS * I_1)$$

$$A_1 = 9,000 \text{ SF}$$

$$NS = 9,000 \text{ SF}$$

$$I_1 = [F/P - 0.25] * W / 30$$

$$F = \text{BLDG P THAT FRONTS ON A PUBLIC WAY W/ MIN DL OF 20'}$$

$$= 354.75'$$

$$P = \text{PERIMETER OF ENTIRE BLDG}$$

$$= 354.75'$$

$$W = \text{WIDTH OF PUBLIC WAY}$$

$$= [(81.75 * 20.5) + (273 * 30)] / 354.75 = 27.8'$$

$$= [(354.75 / 354.75) - 0.25] * 27.8 / 30 = 0.75 * 0.93 = 0.695$$

$$= 9,000 \text{ SF} + (9,000 \text{ SF} * 0.675) = 15,255 \text{ SF}$$

	REQ'D	PROVIDED
HEIGHT	34'-0" (ZONING)	17'-10" (SEE A3.1)
STORY	1	1
AREA	15,255 SF	5,440 SF (3,831SF EXST + 1,771 SF NEW)

CHAPTER 6: TYPES OF CONSTRUCTION

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENT FOR TYPE V-B

PRIMARY STRUCTURAL FRAME 0 HR
BEARING WALLS (EXT & INT) 0 HR
FLOOR AND ASSOCIATED SECONDARY MEMBERS 0 HR
ROOF AND ASSOCIATED SECONDARY MEMBERS 0 HR

TABLE 602 FIRE-RESISTANCE RATING REQUIREMENT

X>=30 0 HR

602.5 TYPE V
TYPE V CONSTRUCTION IS THAT TYPE OF CONSTRUCTION IN WHICH THE STRUCTURAL ELEMENTS, EXTERIOR WALLS AND INTERIOR WALLS ARE OF ANY MATERIALS PERMITTED BY THIS CODE

CHAPTER 9: FIRE PROTECTION SYSTEMS

906.1 PORTABLE FIRE EXTINGUISHERS WHERE REQUIRED

GROUP B REQUIRES

906.3 SIZE AND DISTRIBUTION

TABLE 906.3(1) FIRE EXTINGUISHERS FOR CLASS A - LIGHT HAZARD

MIN RATED **2-A** | MAX FLR AREA: 11,250 | MAX DI: 75'

TABLE 906.3(2) FIRE EXTINGUISHERS FOR FLAMMABLE - LIGHT (LOW)

5-B | MAX DI: 30 **OR** 10-B | MAX DI: 50'

907.2.2 FIRE-ALARM, GROUP B

MANUAL ALARM WILL BE PROVIDED; DEFERRED SUBMITTAL

CHAPTER 10: MEANS OF EGRESS

TABLE 1004.5 MAX FLOOR AREA ALLOWANCES PER OCCUPANT

ACCESSORY STORAGE: 300 GROSS
ASSEMBLY-UNCONCENTRATED 15 NET
BUSINESS AREAS 100 GROSS (CONCENTRATED)

1005.3.2 OTHER EGRESS COMPONENTS SIZING EXCEPTION 1
MULTIPLIED BY 0.15' PER OCCUPANT

TABLE 1006.3.2 MINIMUM NUMBER OF EXITS PER STORY:

REQ'D: 1-500 PEOPLE, 2 EXITS

PROVIDE: 5 EXITS

1004.2.1 EGRESS BASED ON OCCUPANT LOAD AND COMMON PATH
TWO EXITS (ACCESS) SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN 1/2 OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE BUILDING OR AREA TO BE SERVED MEASURED IN A STRAIGHT LINE BETWEEN THEM

1010.1.1 SIZE OF DOOR: THE REQUIRED CAPACITY OF EACH DOOR OPENING SHALL BE SUFFICIENT FOR THE OCCUPANT LOAD THEREOF AND SHALL PROVIDE A MIN CLEAR OPENING WIDTH OF 32".

1010.1.7 THRESHOLDS... AT DOORWAYS SHALL NOT EXCEED 3/4"

1010.1.9.2 HARDWARE HEIGHT... INSTALLED 34 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE FINISHED FLOOR

1013.1 EXIT SIGNS REQUIRED... READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL... EXIT SIGN PLACEMENT SHALL BE SUCH THAT ANY POINT IN AN EXIT ACCESS CORRIDOR OR EXIT PASSAGEWAY IS WITHIN 100 FEET OR THE LISTED VIEWING DISTANCE OF THE SIGN, WHICHEVER IS LESS

1013.6.3 POWER SOURCE: TO ENSURE CONTINUED ILLUMINATION FOR A DURATION OF NOT LESS THAN 90 MIN IN CASE OF PRIMARY POWER LOSS... PROVIDED FROM STORAGE BATTERIES...

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE: B, W/O SPRINKLER = 200'

TABLE 1020.1 CORRIDOR FIRE-RESISTANCE RATING: B, W/O SPRINKLER, OCCUPANT LOAD IS LESS THAN 30 - NO FIRE-RATED CORRIDOR

SECTION 29 PLUMBING SYSTEMS

TABLE 2902.1 | **BUSINESS:**

WATER CLOSET: 1 PER 25 FOR FIRST 50,
AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50

LAVATORIES: 1 PER 40 FOR FIRST 80,
AND 1 PER 80 FOR REMAINDER EXCEEDING 80

2902.5 DRINKING FOUNTAIN LOCATION: PUBLIC DRINKING FOUNTAINS ARE LOCATED WITHIN A DISTANCE OF TRAVEL OF 500 FEET

LIST OF DRAWINGS

- GENERAL**
- G0.1 PROJECT INFORMATION
 - G0.2 EXIT ACCESS CODE
- ARCHITECTURAL**
- A1.1 SITE PLAN
 - A2.1 MAIN FLOOR PLAN
 - A2.2 REFLECTED CEILING PLAN
 - A2.3 ROOF PLAN
 - A3.1 BUILDING ELEVATIONS
 - A3.2 BUILDING ELEVATIONS
 - A4.1 BUILDING SECTIONS
 - A7.1 DOOR, WINDOW SCHEDULE & TYPE
- STRUCTURAL**
- S1.1 GENERAL NOTES
 - S1.2 GENERAL DETAILS
 - S2.1 FOUNDATION & MAIN FLOOR FRAMING PLAN
 - S2.2 ROOF FRAMING PLAN
- MECHANICAL**
- MH001 LEGEND, ABBREVIATIONS AND GENERAL NOTES
 - MH101 MECHANICAL FLOOR PLAN
 - MH501 DETAILS
 - MH601 SCHEDULES
 - MH801 SPECIFICATIONS
- ELECTRICAL**
- E2.2 FIRST FLOOR CEILING PLAN
- PLUMBING**
- PP001 LEGEND, ABBREVIATIONS AND GENERAL NOTES
 - PP101 FOUNDATION PLAN
 - PP102 PLUMBING FLOOR PLAN
 - PP501 DETAILS
 - PP601 SCHEDULES
 - PP701 SPECIFICATIONS

PROJECT INFORMATION

PROJECT NAME
CASCADE CHRISTIAN SCHOOLS | DISTRICT OFFICE TI & ADDITION

PROJECT ADDRESS
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT DESCRIPTION
TENENT IMPROVEMENT IN THE EXISTING SPACE
CONSTRUCT 1771 SF ADDITION SPACE

TAX PARCEL NUMBER
0429352148

MASTER PLAN
SITE CIVIL PERMIT# E-16-0150
OFF SITE CIVIL PERMIT # E-16-0261

DEFERRED PERMITS
ELECTRICAL (L&I), FIRE ALARM, TRUSS
SEE TRACK AND FIELD CIVIL PERMIT FOR SWPPP

PROJECT DIRECTORY

THE OWNER
CASCADE CHRISTIAN SCHOOLS
DORI JOHNSON
815 21ST ST SE
PUYALLUP, WA 98372
253.841.1776

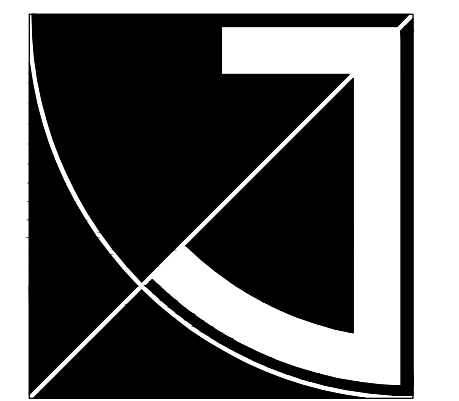
THE ARCHITECT
JEFF BROWN ARCHITECTURE
JEFF BROWN, ARCHITECT, AIA
1218 'C' STREET S.
TACOMA, WA 98444
253.606.8324
JEFF@JEFFBROWNNARCHITECTURE.COM

STRUCTURAL ENGINEER
CHRIS FYNBOE, P.E.
CHRIS FYNBOE
1218 'C' STREET S.
TACOMA, WA 98444
253.537.8128

MECHANICAL & PLUMBING ENGINEER
MIDDLE BROOK ENGINEERING, LLC
BRIAN MIDDLEBROOK, PE, PRINCIPAL
6216 174TH AVE SW
LONGBRANCH, WA 98351
253.765.8292
brian@middlebrookeng.com

CONTRACTOR
BERGMAN CONTRACTING
JAKE BERGMAN
PO BOX 732091
PUYALLUP, WA 98373
253.961.0602
jake@bergmancontracting.com

ELECTRICAL CONTRACTOR
BOONE ELECTRIC
JEFF PLATT
11409 58TH AVE E
PUYALLUP, WA 98373
253.8486998
jeff_p@boonerw.com



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
1218 'C' STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building Planning
Engineering Public Works
Fire Traffic

PROJECT NAME/ADDRESS

SYMBOLS LEGEND

- ROOM IDENTIFICATION: XXX, XXX
- DOOR NUMBER: XXX
- WINDOW NUMBER: XX
- EQUIPMENT NUMBER: XX
- WALL TYPE: XX
- CENTERLINE: CL
- NORTH ARROW: [North Arrow Symbol]
- HOSE BIB: [Hose Bib Symbol]
- DATUM: [Datum Symbol]
- REVISION: [Revision Symbol]
- SMOKE DETECTOR: [Smoke Detector Symbol]
- SMOKE & CO DETECTOR: [Smoke & CO Detector Symbol]
- COLUMN GRID/LINE: [Column Grid Line Symbol]
- ENLARGED DETAIL MARK: [Enlarged Detail Mark Symbol]
- BUILDING SECTION MARK: [Building Section Mark Symbol]
- DETAIL MARK: [Detail Mark Symbol]
- EXTERIOR ELEVATIONS SYMBOL: [Exterior Elevation Symbol]
- INTERIOR ELEVATION SYMBOL: [Interior Elevation Symbol]
- MATERIAL CALL OUT/TAG: [Material Call Out Tag Symbol]

PLUMBING CALC

CCS - OFFICE REMODEL & ADDITION

APPLICABLE CODE	OCCUPANCY	# OF OCC	WC		LAV	
			UNISEX	UNISEX	UNISEX	UNISEX
2018 IBC	B OFFICE	90	1/25 FOR FIRST 50	1 PER 50 AFTER	1/40 FOR FIRST 80	1 PER 80 AFTER
			2	1	2	1
		TOTAL REQ'D		3		3
		PROVIDED		3		3

CODE/ZONING INFORMATION

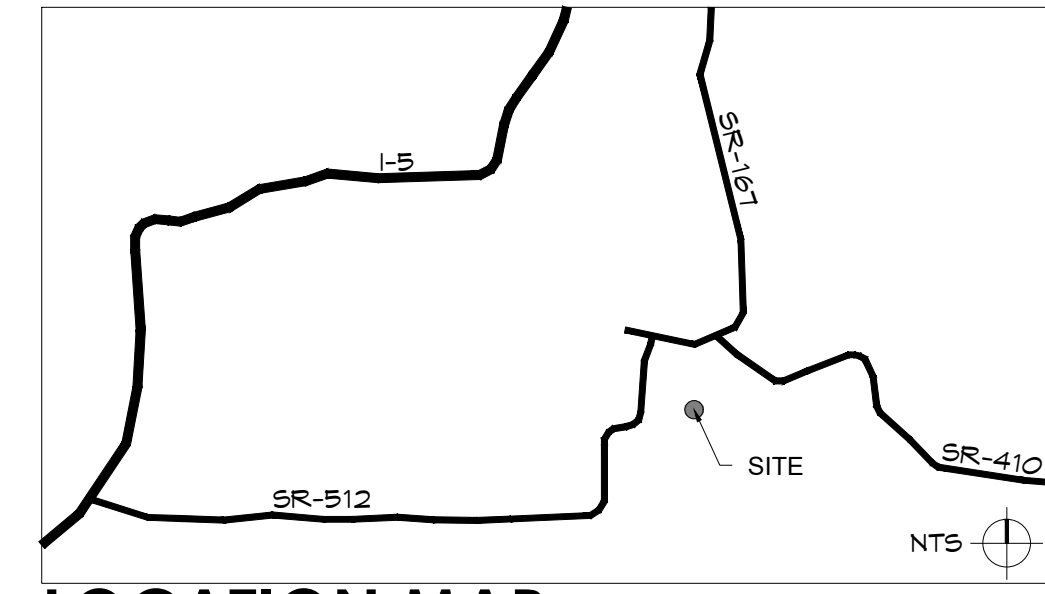
GOVERNING CODE
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 UNIFORM PLUMBING CODE
2018 WASHINGTON STATE ENERGY CODE, COMMERCIAL
ADOPTED BY WA STATE BUILDING CODE COUNCIL
AND ANY CITY OF PUYALLUP ORDINANCE

ZONING
RS-08/RS-04
HEIGHT LIMIT: 35'

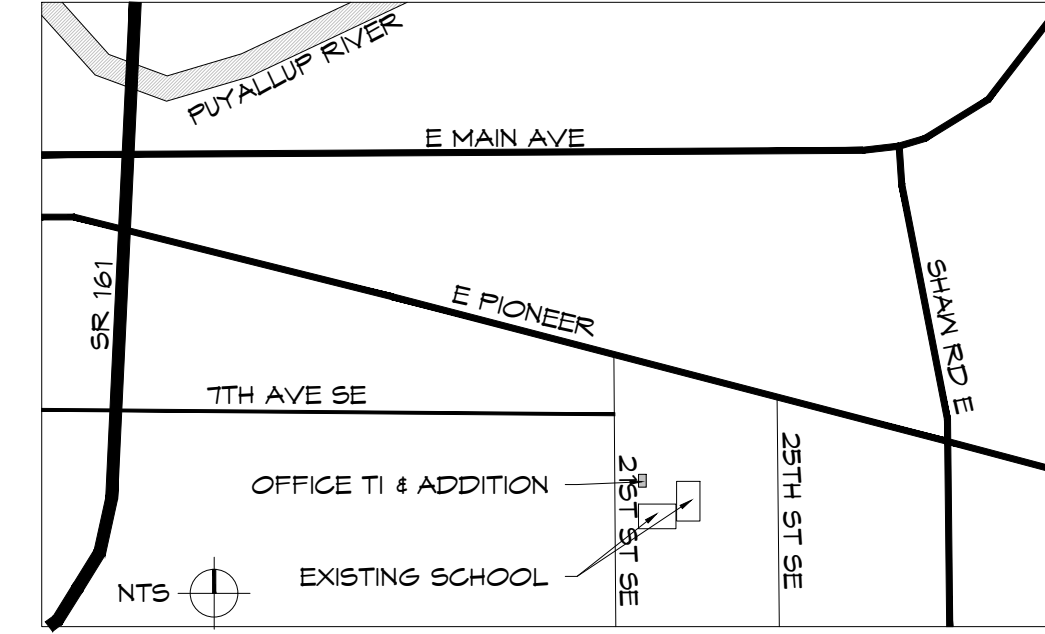
ENERGY COMPLIANCE
PRESCRIPTIVE PATH
AIR BARRIER TESTING PER 2018 WSEC
- ALL JOINTS AND SEAMS SHALL BE SEALED, INCLUDING SEALING TRANSITIONS IN PLACES AND CHANGES IN MATERIAL.
- ALL PENETRATIONS OF THE AIR BARRIER SHALL BE CAULKED, GASKETED, OR OTHERWISE SEALED IN A MANNER COMPATIBLE WITH THE CONSTRUCTION MATERIALS AND LOCATIONS.
- RECESSED LIGHTING FIXTURES SHALL COMPLY WITH SECTION C402.5.8
- AIR LEAKAGE TESTING SHALL BE PERFORMED PER ASTM C779 (OR EQUIVALENT) AND THE TARGET LEAKAGE RATE IS 0.25 cfm/ft2 AT 0.3 IN. WG
- SUBMIT AIR LEAKAGE TEST REPORTS TO JURISDICTION AND OWNER
- THE COMPLETED BUILDING SHALL BE TESTED AND THE AIR LEAKAGE RATE OF THE BUILDING ENVELOPE SHALL NOT EXCEED 0.25 cfm/ft2 AT A PRESSURE DIFFERENTIAL OF 0.3 INCHES WATER GAUGE AT THE UPPER 95 % CONFIDENCE INTERVAL
- IF THE TESTED RATE EXCEED THAT DEFINED HERE BY UP TO 0.15 cfm/ft2, A VISUAL INSPECTION OF THE AIR BARRIER SHALL BE CONDUCTED; AN ADDITIONAL REPORT IDENTIFYING THE CORRECTIVE ACTION TAKEN TO SEAL AIR LEAKS SHALL BE SUBMITTED
- IF INITIAL TEST RESULT EXCEEDS 0.40 cfm/ft2, INDICATE THAT CORRECTIVE ACTIONS SHALL ALSO INCLUDE RE-TESTING
- INDICATE AIR BARRIER TEST REPORT IN PROJECT CLOSE OUT DOCUMENTATION PROVIDED TO BUILDING OWNER

PROJECT CLOSURE DOCUMENT
PROVIDE PROJECT CLOSE DOCUMENTATION INCLUDING WSEC ENVELOPE COMPLIANCE FORM AND CALCULATION AND FENESTRATION NFRC RATING CERTIFICATES

VICINITY MAP



LOCATION MAP



ABBREVIATIONS

&	AND	GWB	GYPSUM WALL BOARD
<	ANGLE	HDR	HEADER
@	AT	INT.	INTERIOR
°	DEGREE	MFR	MANUFACTURE
∅	DIAMETER	NTS	NOT TO SCALE
B/W	BETWEEN	O.C.	ON CENTER
BLCK	BLOCKING	RC	RAIN CHAIN
€	CENTERLINE	PW, PLW	PLY WOOD
APP.	APPROXIMATE(LY)	REF	REFRIGERATOR
CLR.	CLEAR(ANCE)	SCHD	SCHDULE
C.O.	CLEAR OPENING	SHTG	SHEATHING
COL.	COLUMN	S.D.	SMOKE DETECTOR
CONC.	CONCRETE	TEM	TEMPER/SAFETY
C.J.	CONTROL JOINT	GLASS	GLASS
DEMO	DEMOLISH (ION)	T.O.BM	TOP OF BEAM
DN	DOWN	T.O.P.	TOP OF PLATE
DIM	DIMENSION	T.O.S.	TOP OF STEEL
D/W	DISH WASHER	TYP.	TYPICAL
ELEC.	ELECTRIC (AL)	U.N.O.	UNLESS NOTICED
E.Q.	EQUAL		OTHERWISE
E.J.	EXPANSION JOINT	VIF	VERIFY IN FIELD
EXT.	EXTERIOR	WIN	WINDOW
F.O.F.	FACE OF FINISH	W.T.	WEATHER THRESHOLD
F.F.	FINISH FLOOR	W/	WITH
FT	FOOT (FEET)	W/O	WITHOUT
FTG	FOOTING	WD	WOOD
FND	FOUNDATION		

CASCADE CHRISTIAN SCHOOLS DISTRICT OFFICE TI & ADDITION

Copy Right 2022 Jeff Brown Architecture
These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

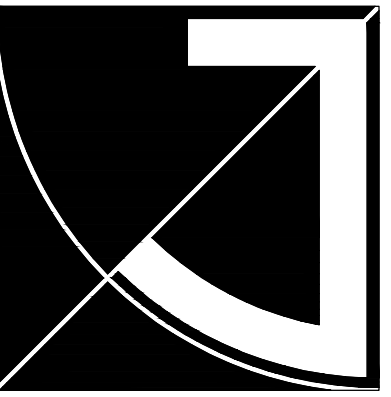
DATE	ISSUE	NO.
03.28.22	PERMIT	
09.07.22	REV01-CITY	

SHEET TITLE

GENERAL INFORMATION

SHEET #

G0.1



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrowncarchitecture.com

**City of Puyallup
Development & Permitting Services
ISSUED PERMIT**

Building	Planning
Engineering	Public Works
Fire	Traffic

**CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION**

815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture

These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

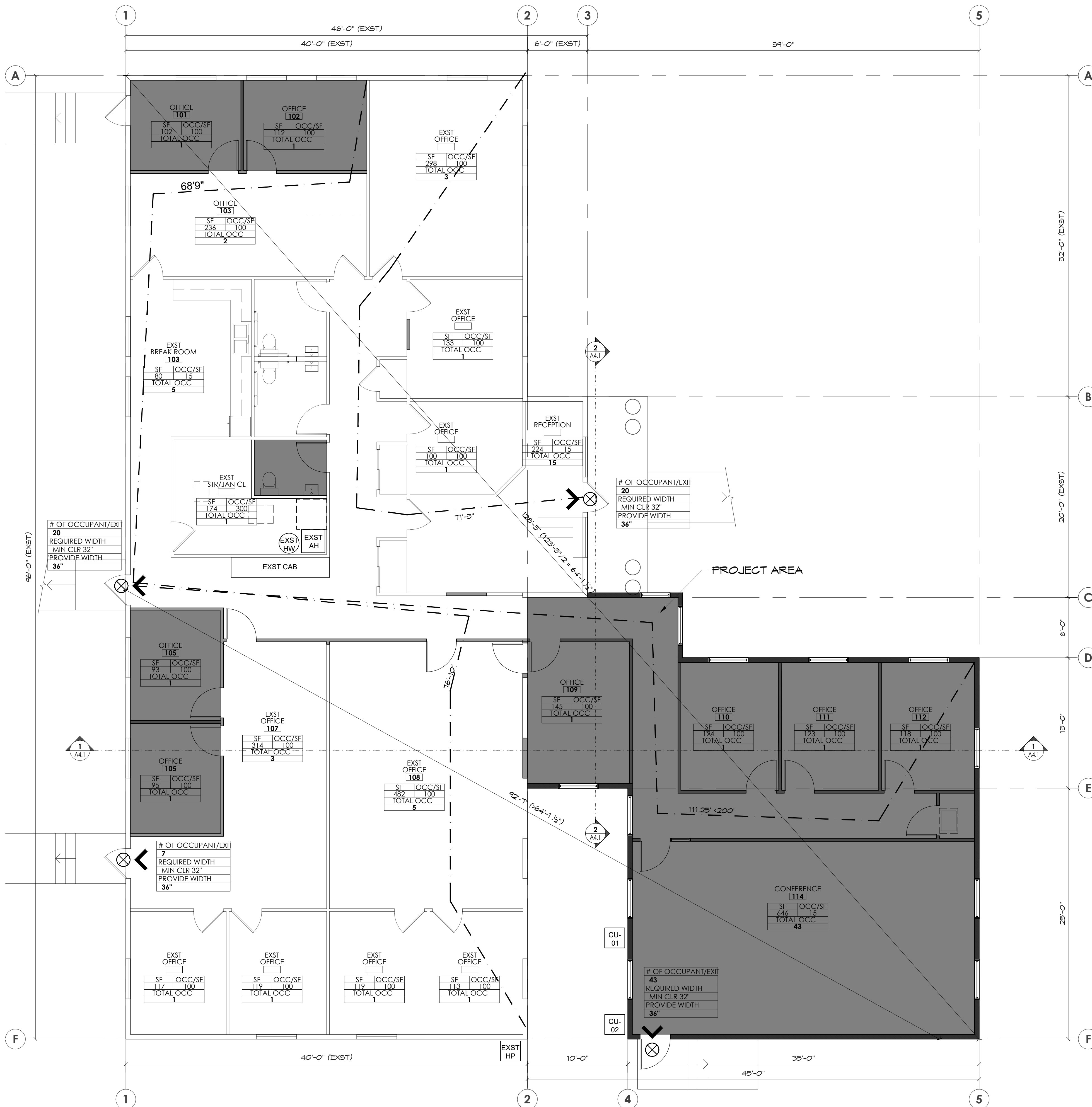
DATE	ISSUE	NO.
03.28.22		

SHEET TITLE

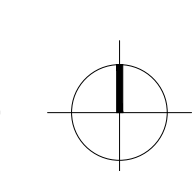
EXIT ACCESS CODE

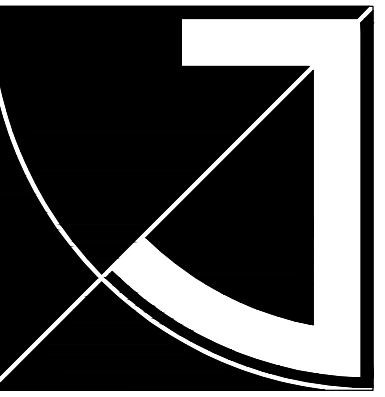
SHEET #

G0.2



EXIT ACCESS CODE
(11x17) SCALE: 3/32" = 1'-0"
(22x34) SCALE: 3/16" = 1'-0"





JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

PROJECT NAME/ADDRESS

CASCADE CHRISTIAN SCHOOLS DISTRICT OFFICE II & ADDITION

815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture
These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

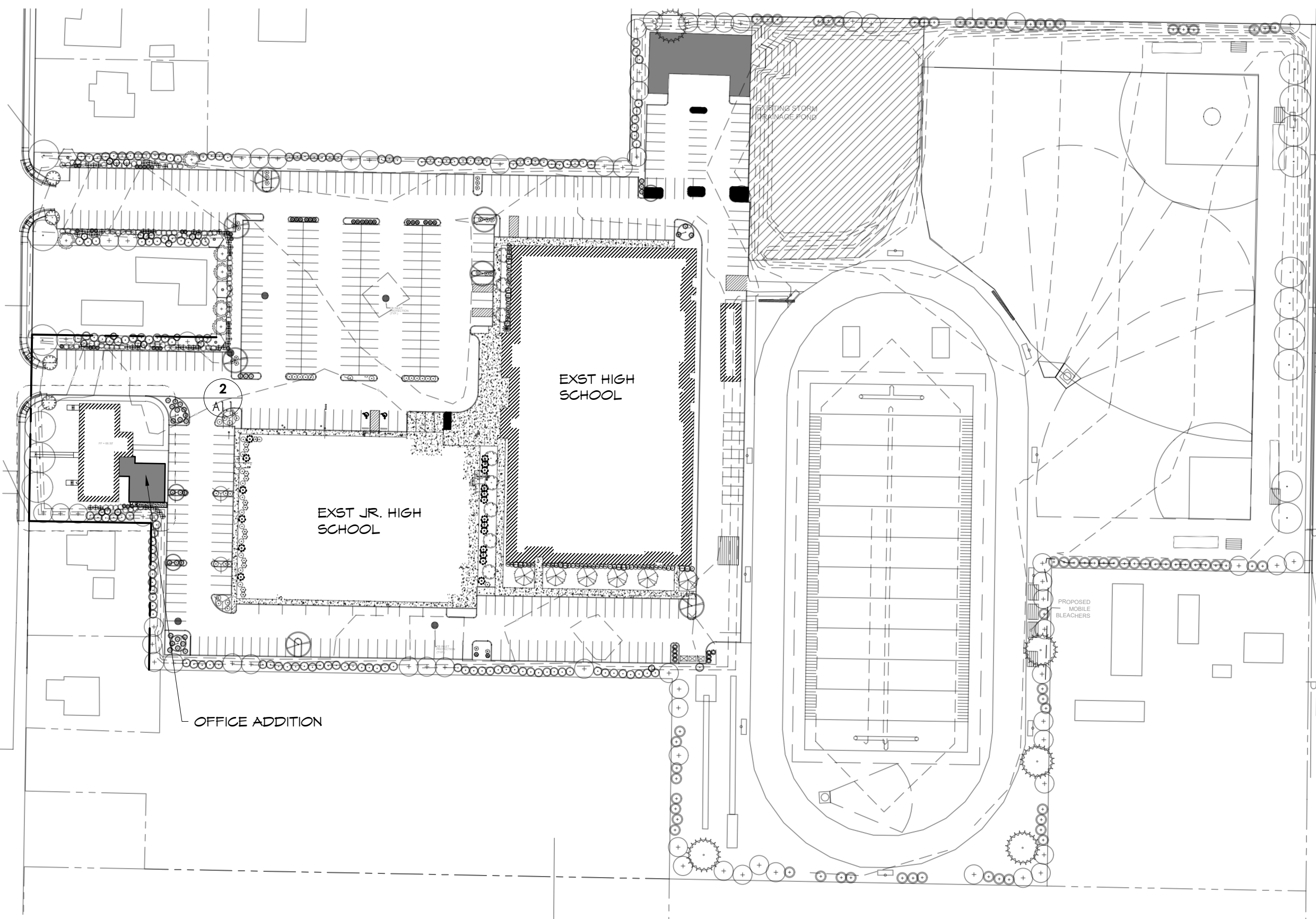
DATE	ISSUE	NO.
03.28.22		

SHEET TITLE

SITE PLAN

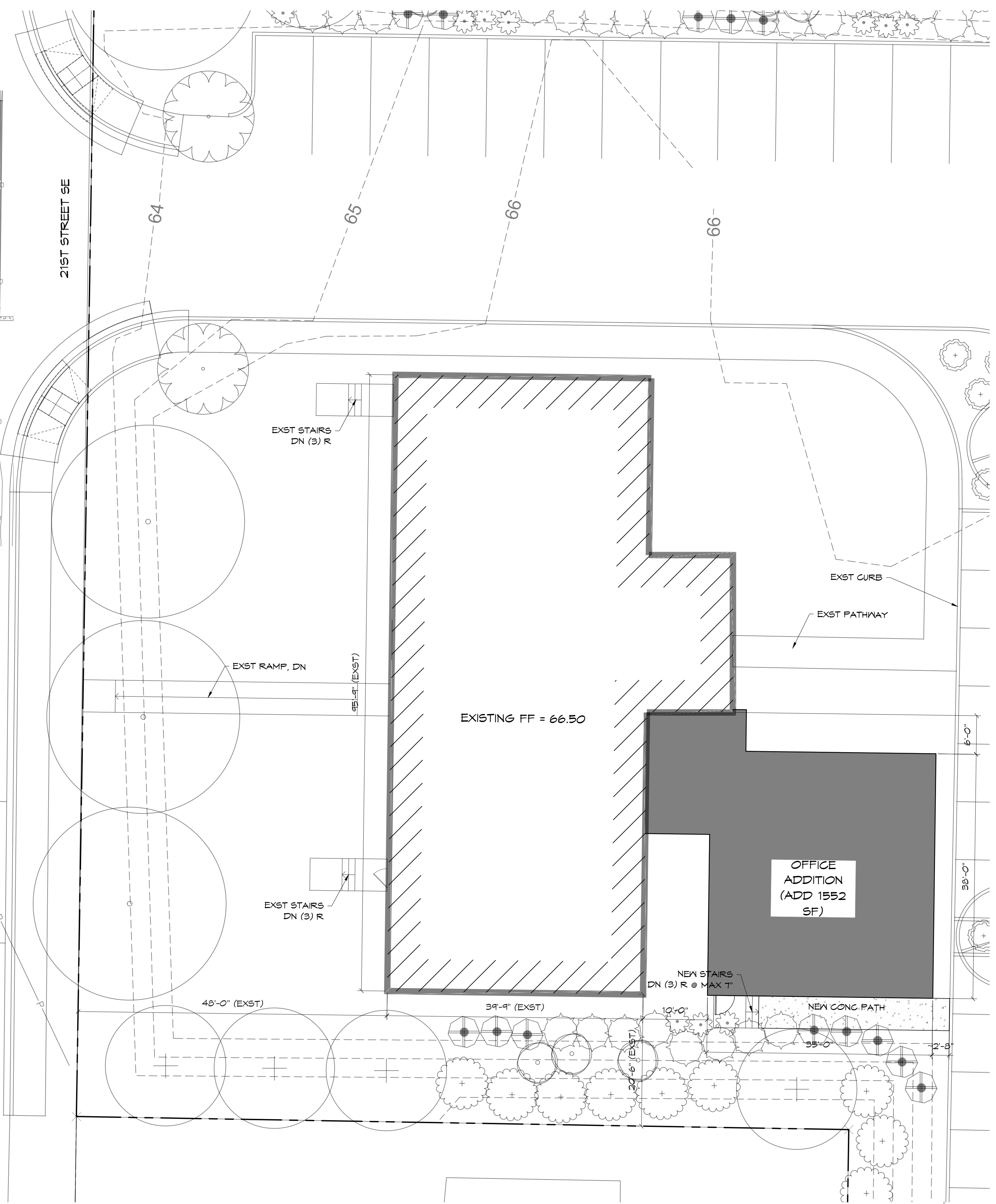
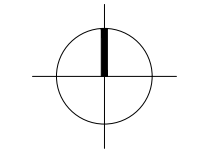
SHEET #

A1.1



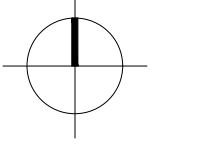
1 SITE PLAN

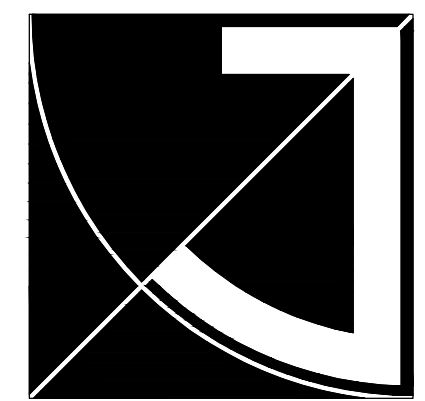
(11x17) SCALE: 1" = 200'
(22x34) SCALE: 1" = 100'



2 PARTIAL SITE PLAN

(11x17) SCALE: 1" = 20'
(22x34) SCALE: 1" = 10'

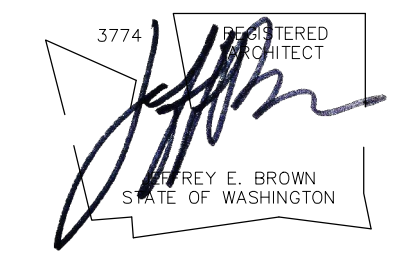




JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

**CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION**
815-21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2022 Jeff Brown Architecture
These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

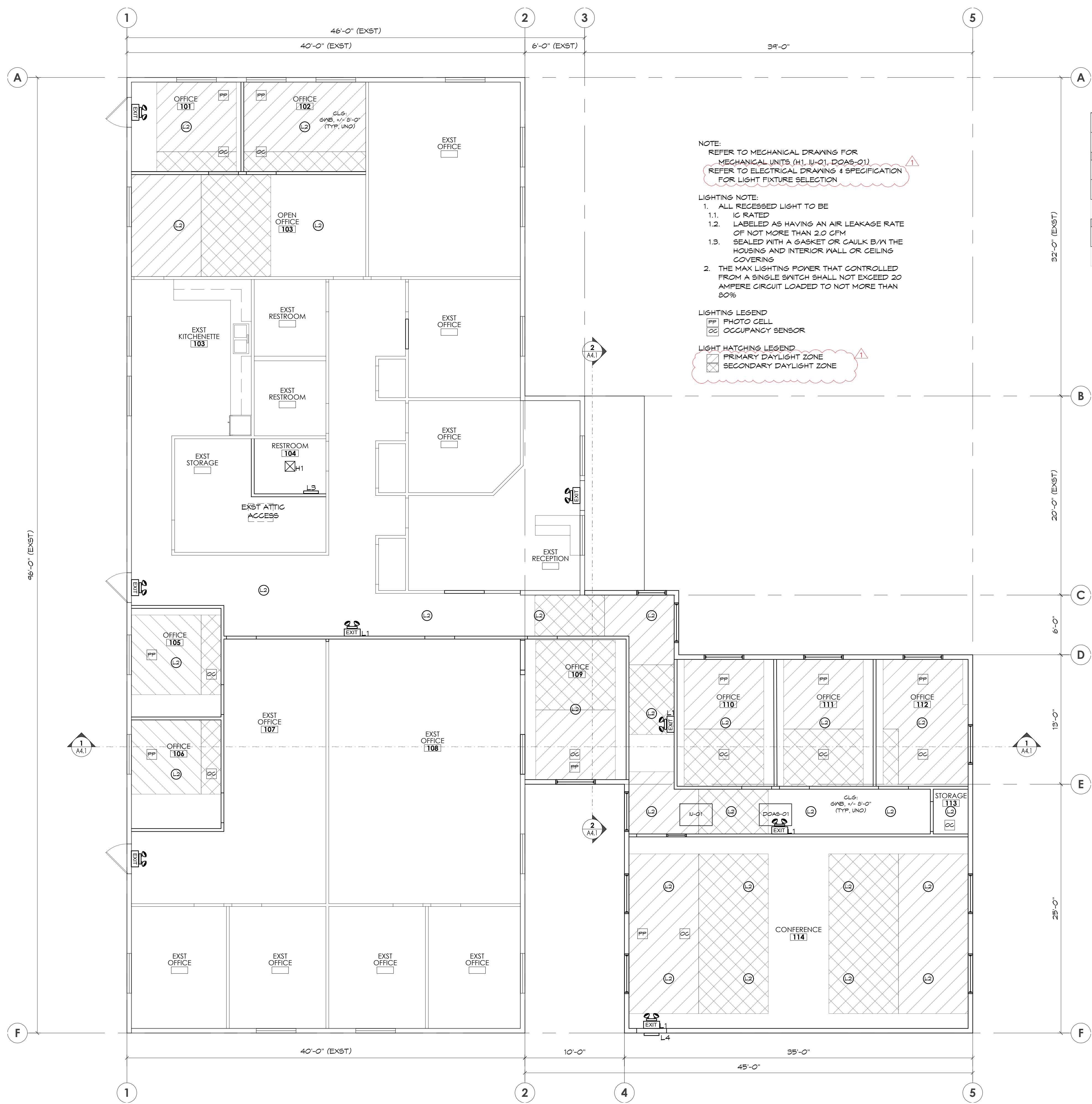
DATE	ISSUE	NO.
03.28.22	PERMIT	
09.07.22	REV01-CITY	▲

SHEET TITLE

RCP & LIGHTING SCHD

SHEET #

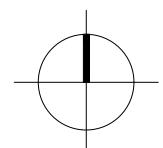
A2.2

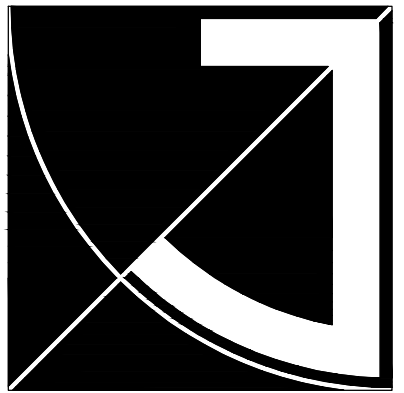
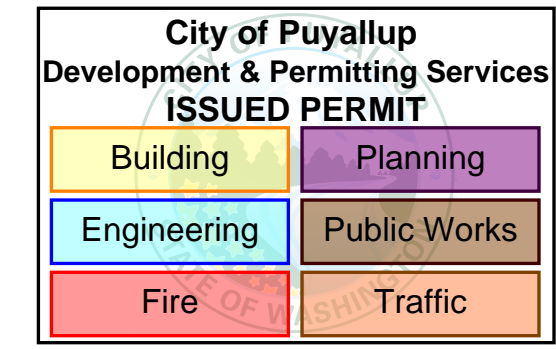


LIGHT #	QTY	DESCRIPTION	MANUFACTURE	MODEL #	LAMP	DIM	WATT	TOTAL WATT
L1	4	EXIT LIGHT	ERW LIGHTING	MX-B-G-U		NO	N/A	
INTERIOR								
L2	28	RECESSED CAN LIGHT	COOPER	H750ICATD010-ML5612935D010	35K	YES	20	560
L3	1	VANITY LIGHT	ADVANTAGE	LWV-35-S-PDR-W-2-VDO	35K	NO	14	14
							SUB TOTAL	574
EXTERIOR								
L4	1	EXIT DOOR LIGHT	STONCO	PW-30W-NW-G1-8-BZ	40K	NO	30	30
							SUB TOTAL	30

2 LIGHTING SCHD

1 REFLECTED CEILING PLAN
(11X17) SCALE: 3/32" = 1'-0"
(22X34) SCALE: 3/16" = 1'-0"



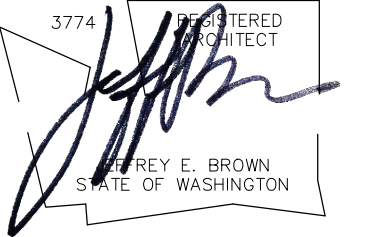


JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture

These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

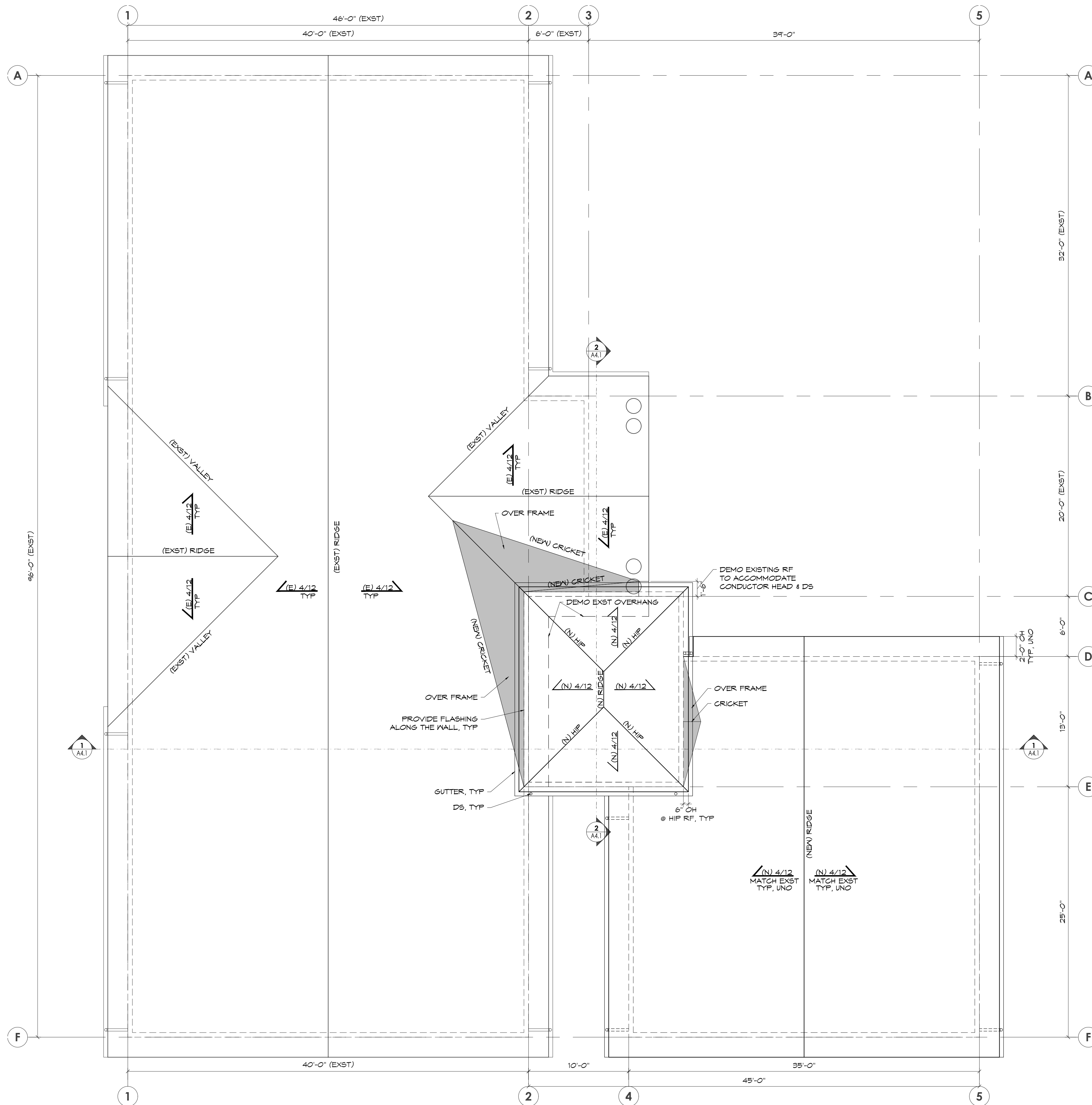
DATE	ISSUE	NO.
03.28.22		

SHEET TITLE

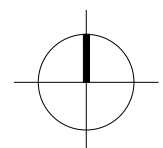
ROOF PLAN

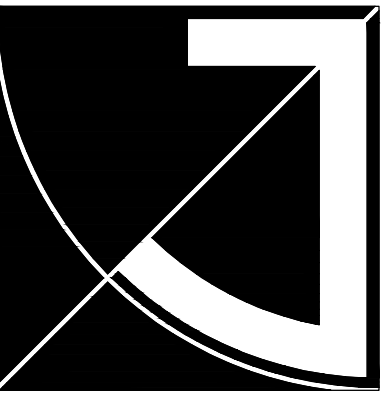
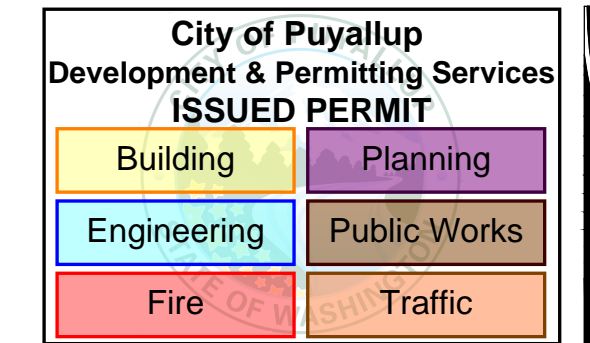
SHEET #

A2.3



ROOF PLAN
(11x17) SCALE: 3/32" = 1'-0"
(22x34) SCALE: 3/16" = 1'-0"



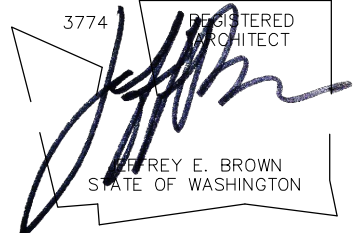


JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

**CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION**
815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture

These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

DATE ISSUE NO.

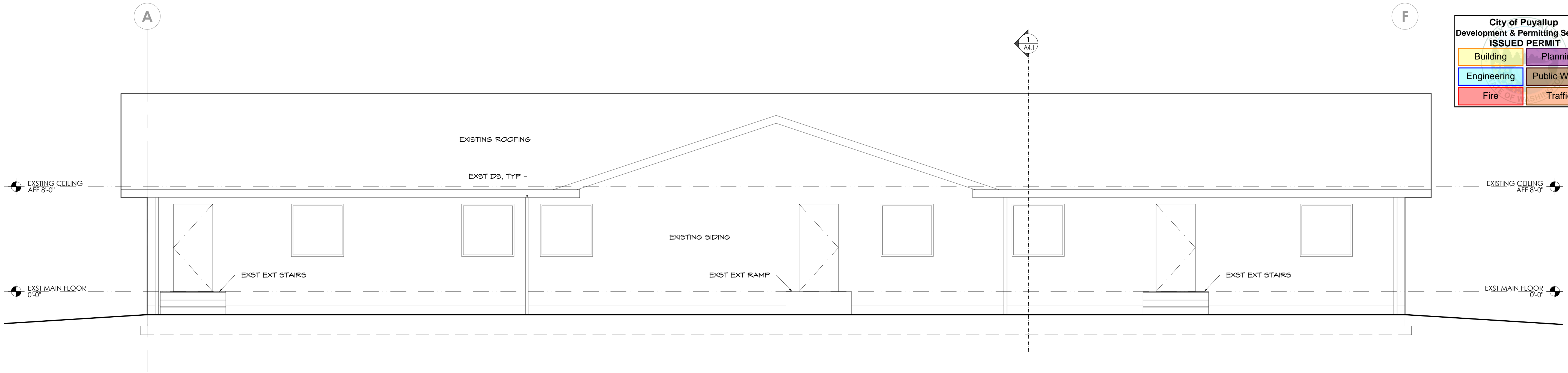
03.28.22

SHEET TITLE

BUILDING ELEVATIONS

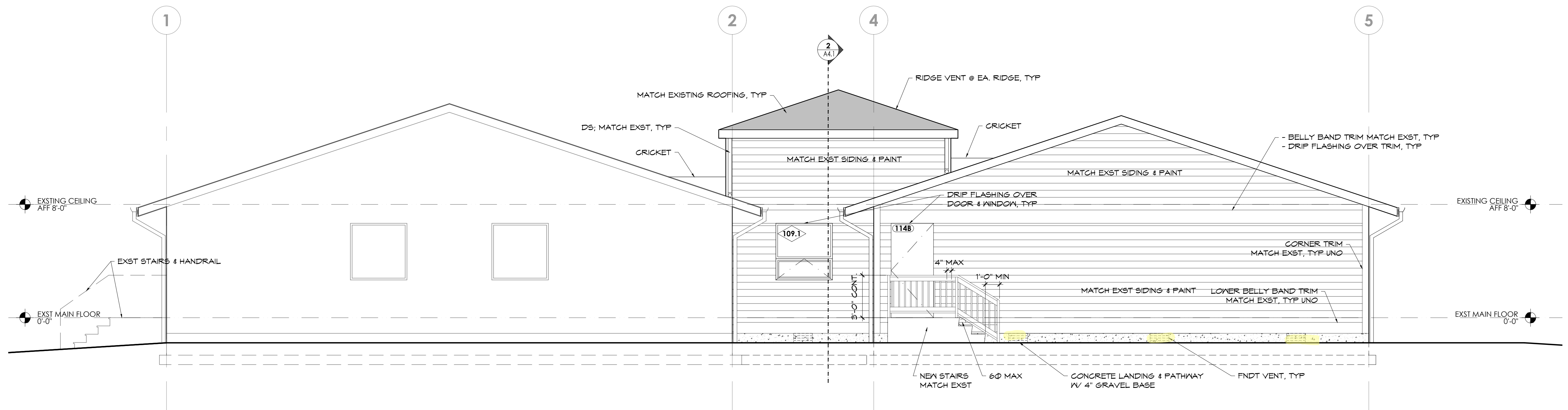
SHEET #

A3.1



1 WEST ELEVATION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"

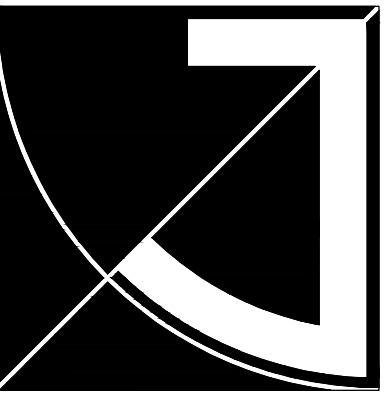


2 SOUTH ELEVATION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

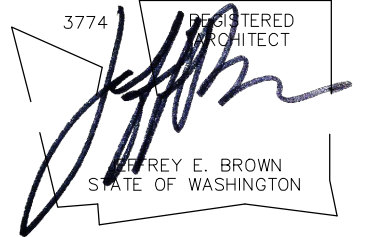


JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture

These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

DATE ISSUE NO.

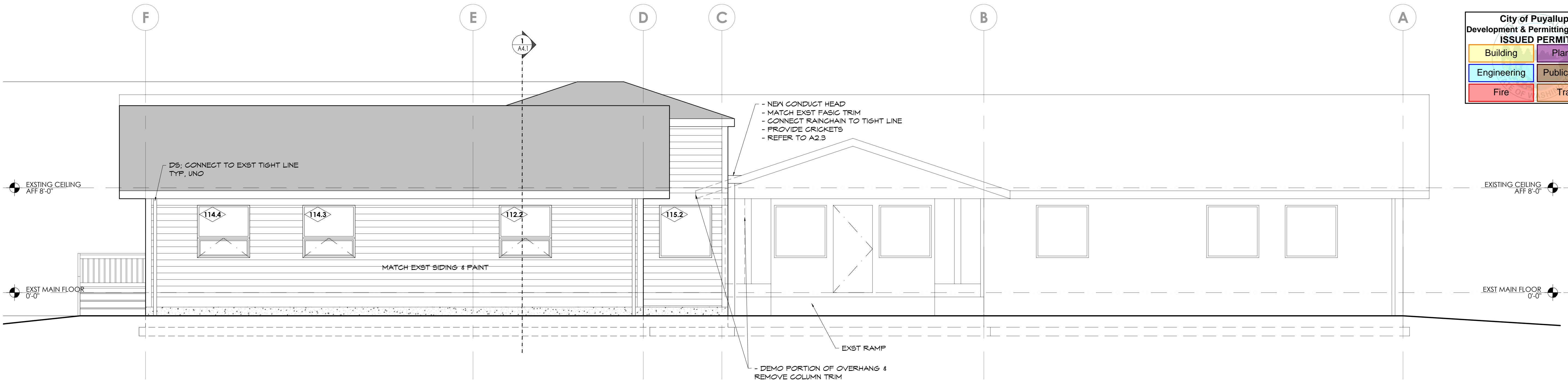
03.28.22 _____

SHEET TITLE

BUILDING ELEVATIONS

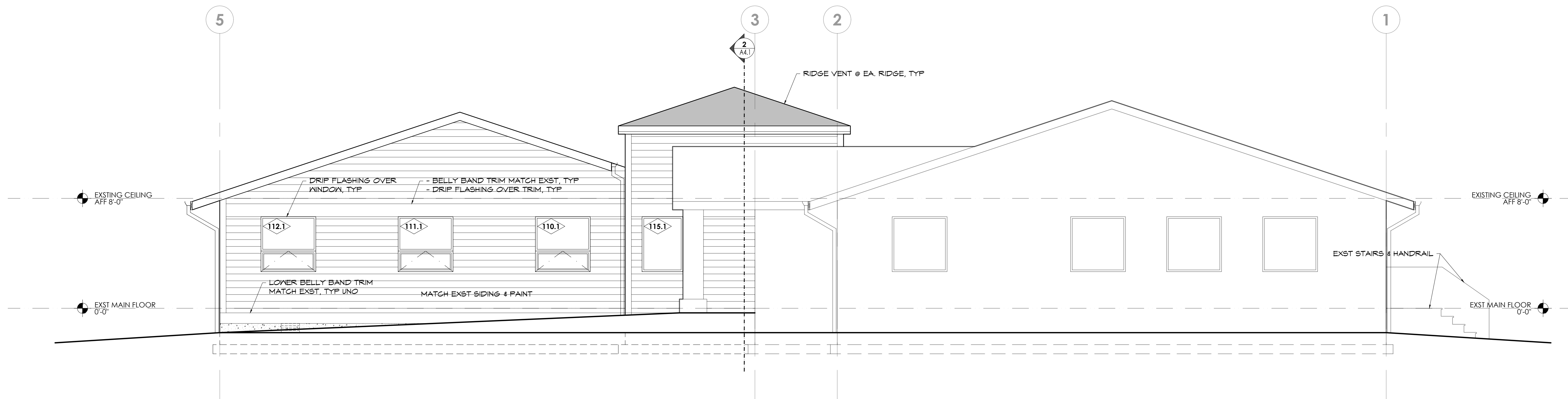
SHEET #

A3.2



1 EAST ELEVATION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"

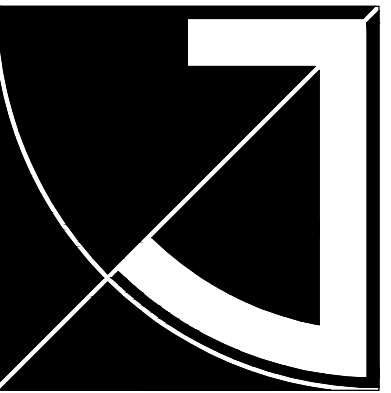


2 NORTH ELEVATION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

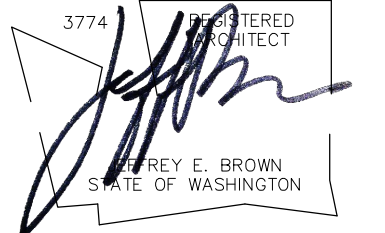


JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com



PROJECT NAME/ADDRESS

**CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION**
815-21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture

These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

DATE ISSUE NO.

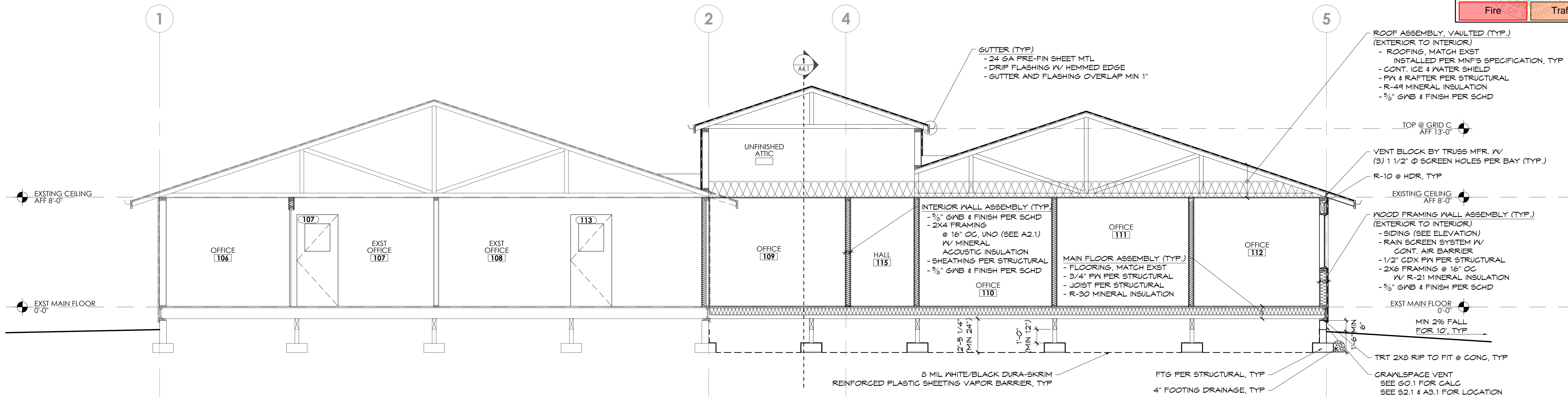
03.28.22 _____

SHEET TITLE

BUILDING SECTIONS

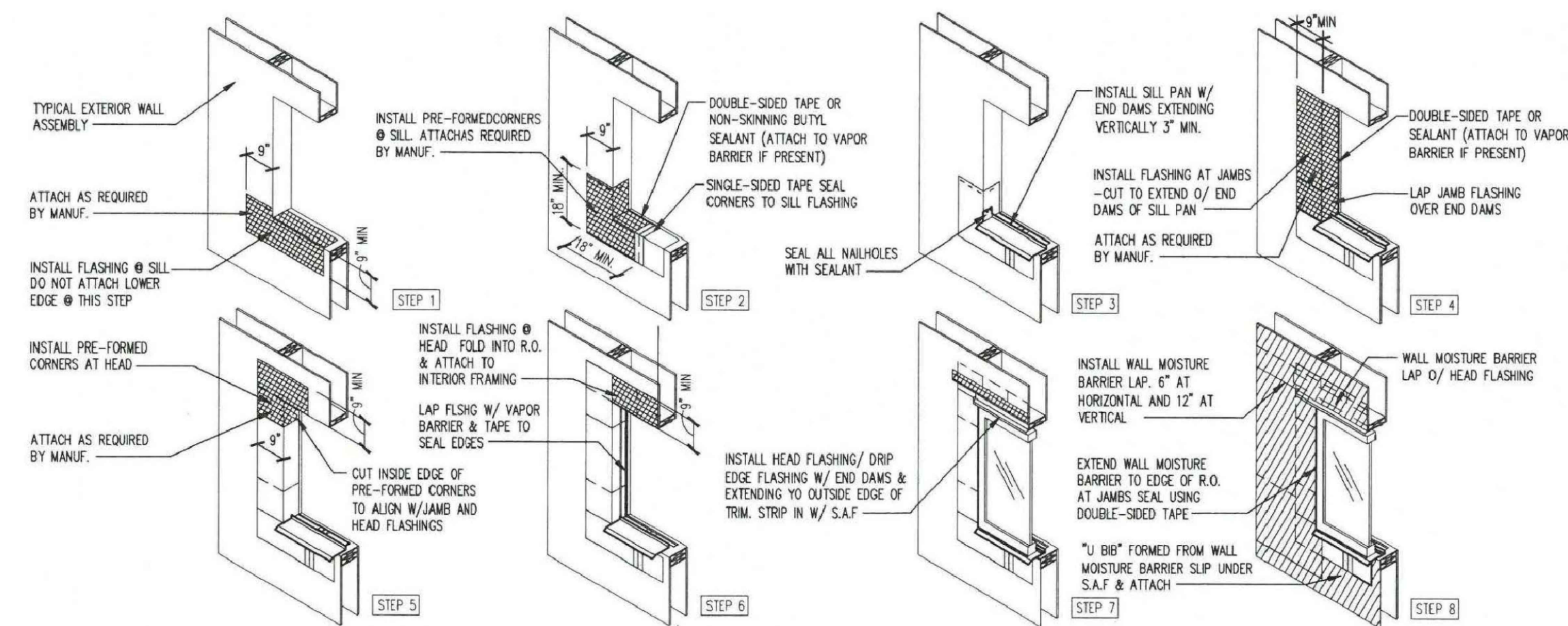
SHEET #

A4.1



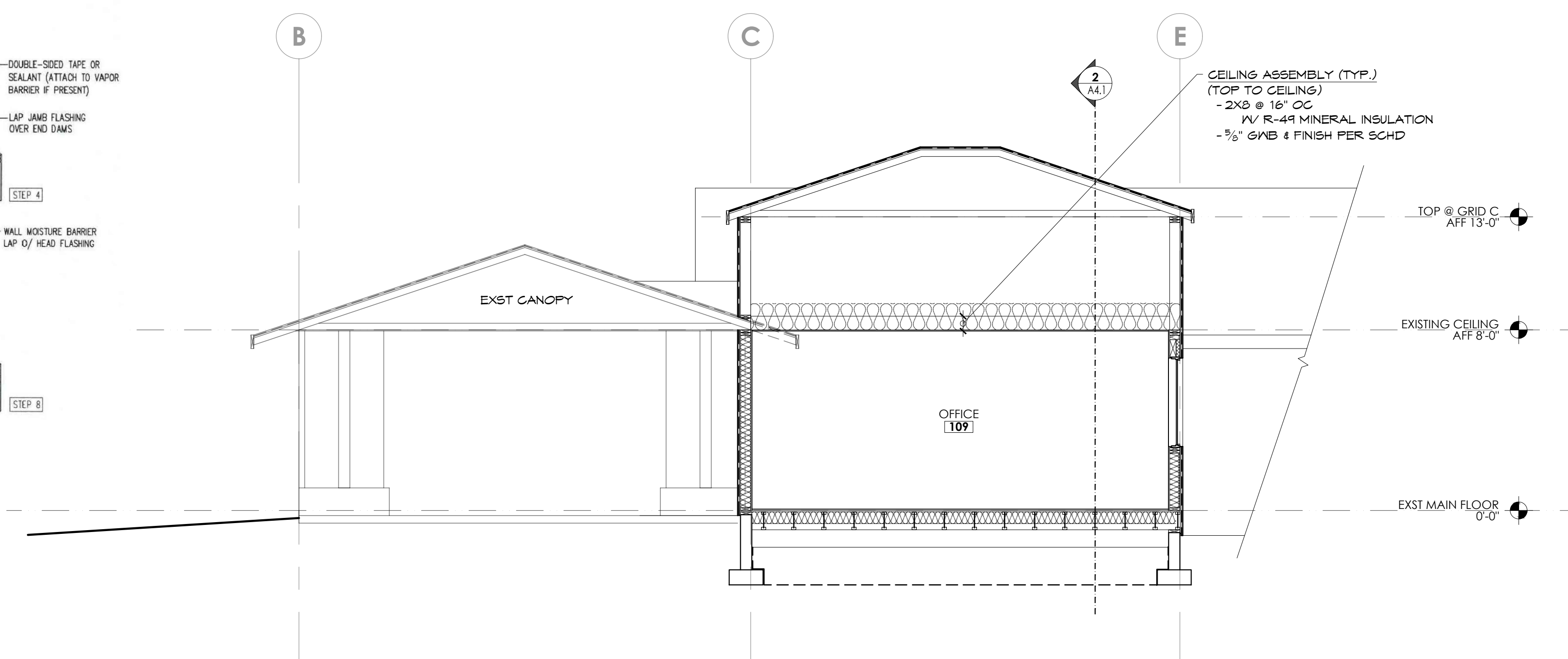
1 BUILDING SECTION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"



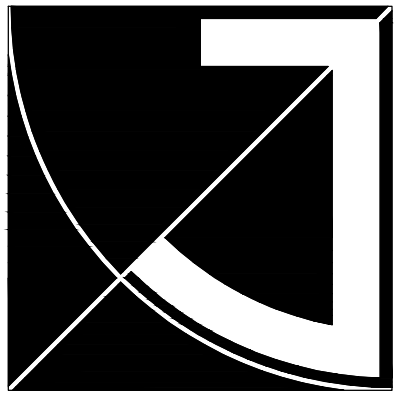
3 TYP. MIN OPNG FLASHING INSTALLATION

NTS



2 BUILDING SECTION

(11x17) SCALE: 1/8" = 1'-0"
(22x34) SCALE: 1/4" = 1'-0"



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

PROJECT NAME/ADDRESS

CASCADE CHRISTIAN SCHOOLS
DISTRICT OFFICE II & ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

Copy Right 2021 Jeff Brown Architecture
These documents have been prepared specifically for the above named project. They are not suitable for use on other projects or in other locations without the approval and participation of the Architect.

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

DATE	ISSUE	NO.
03.28.22		1

SHEET TITLE

DOOR SCHD & TYPE
WIN SCHD & TYPE

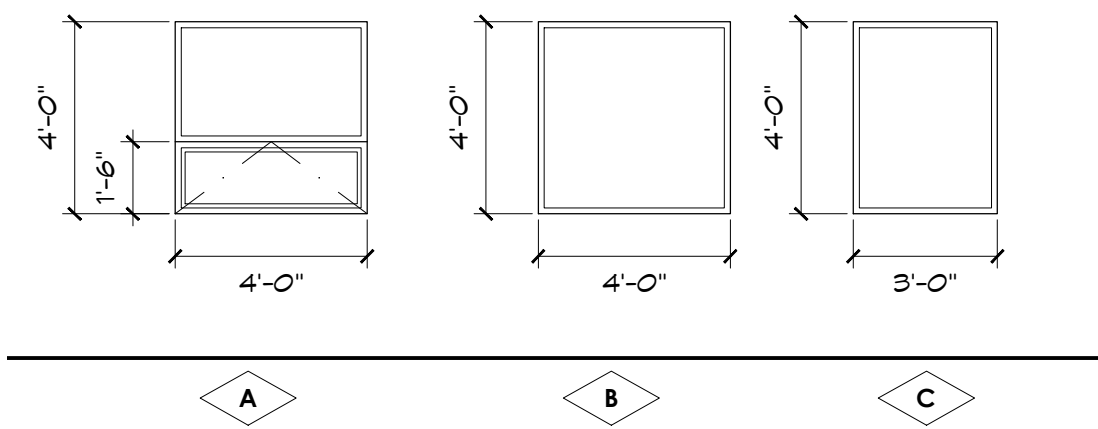
SHEET #

A7.1

MARK	TYPE	GLASS	REMARKS
EXTERIOR			
109.1	A	LOW E DBL	U=MAX0.3
110.1	A	LOW E DBL	U=MAX0.3
111.1	A	LOW E DBL	U=MAX0.3
112.1	A	LOW E DBL	U=MAX0.3
112.2	A	LOW E DBL	U=MAX0.3
114.1	A	LOW E DBL	U=MAX0.3 SAFETY GLAZING
114.2	A	LOW E DBL	U=MAX0.3
114.3	A	LOW E DBL	U=MAX0.3
114.4	A	LOW E DBL	U=MAX0.3
115.1	C	LOW E DBL	U=MAX0.3
115.2	B	LOW E DBL	U=MAX0.3
115.3	B	LOW E DBL	U=MAX0.3

4 WINDOW SCHEDULE

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



3 WINDOW TYPE

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"



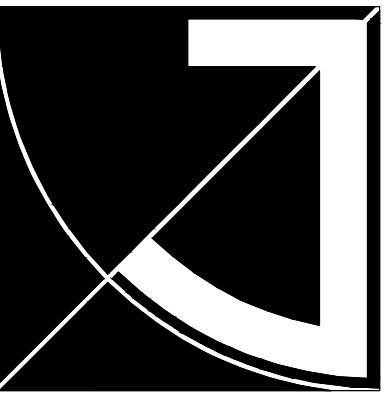
1 DOOR & FRAME TYPE

(11X17) SCALE: 1/8" = 1'-0"
(22X34) SCALE: 1/4" = 1'-0"

- NOTE:
1. ALL EXTERIOR OPNG BE SEALED, CAULKED, AND WEATHER-STRIPPED FOR ENERGY CODE
 2. ALL EXIT DOORS AND EGRESS DOORS TO HAVE PANIC EXIT HARDWARE. OTHER DOORS TO HAVE LEVER HANDLES
 3. FENESTRATION PRODUCTS SHALL BE LABELED W/ RATED U-FACTOR, SHGC, VT, AND LEAKAGE RATING
 4. ALL INTERIOR WOOD DOOR TO BE SOLID-CORE
 5. SG = SAFETY GLAZING
 6. DOOR SWING PER A2.1
 7. DOOR WIDTH AND HEIGHT PER SCHD, TYP

NO.	LOCATION	DOORS						FRAME			HDWR SET	REMARKS
		TYPE	WIDTH	HEIGHT	THICK	MAT	FINISH	TYPE	MAT	FINISH		
101	OFFICE	B	3'-0"	6'-8"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
102	OFFICE	B	6'-0"	4'-2"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
104	RESTROOM	A	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	PRIVACY LOCK	KICK PLATE
105	OFFICE	B	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
106	OFFICE	B	(2) 3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
107	EXST OFFICE	B	6'-0"	4'-2"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
108A	EXST OFFICE	B	3'-0"	6'-8"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
108B	EXST OFFICE	B	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
109	OFFICE	B	6'-0"	4'-2"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
110	OFFICE	B	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
111	OFFICE	B	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
112	OFFICE	B	6'-0"	4'-2"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
113	STORAGE	A	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	DOOR STOP
114A	CONFERENCE	B	3'-0"	7'-0"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	CLASSROOM LOCK	SAFETY GLAZING RELITE TO MATCH EXST DR KICK PLATE DOOR STOP
114B	CONFERENCE	A	6'-0"	4'-2"	1 3/4"	WD	MATCH EXST	F1	WD	MATCH EXST	ENTRY LOCK	WEATHER STRIPPING KICK PLATE

2 DOOR SCHEDULE



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
253.537.8128
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD

JEFFREY E. BROWN
253.406.8324
jeff@jebrownarchitecture.com

STRUCTURE ENGINEER

C. CHRISTIAN FYNBOE
253.537.8128
ccfynboe@cs.com



PROJECT NAME/ADDRESS

CASCADE CHRISTIAN JR. HIGH SCHOOL DISTRICT OFFICE TI & ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER

22003

DRAWING TYPE

PERMIT DOCUMENTS

ISSUE DATE ISSUE DESCRIP. NO.

03.29.22 _____

SHEET TITLE

GENERAL DETAILS

SHEET #

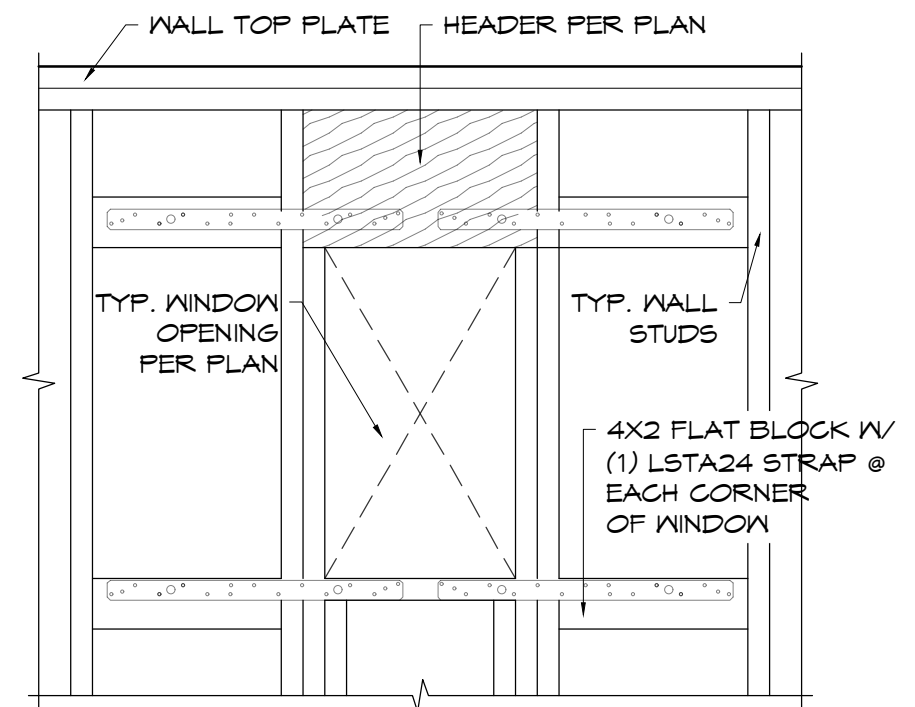
S1.2

SHEARWALL NAILING SCHEDULE				
MARK (SHEAR CAPACITY)	WALL TYPE	PANEL EDGE NAILING (1) AND (2)	INTERMEDIATE NAILING (2)	BOTT. PL. ANCHOR BOLTING OR NAILING (5)
◇ (200 lb/ft)	1/2" CDX PLY OR OSB, ONE SIDE	8d @ 6" O.C.	8d @ 12" O.C.	1/2" A.B. @ 48" O.C. OR 16d @ 1 1/2" O.C.
◇ (350 lb/ft)	1/2" CDX PLY OR OSB, ONE SIDE	8d @ 3 1/2" O.C.	8d @ 12" O.C.	5/8" A.B. @ 40" O.C. OR 16d @ 4" O.C.
◇ (100 lb/ft)	1/2" CDX PLY OR OSB, BOTH SIDES	8d @ 4" O.C. (4)	8d @ 12" O.C.	3/4" A.B. @ 34" O.C. OR 16d @ 2" O.C.

SHEAR WALL SCHED. NOTE:

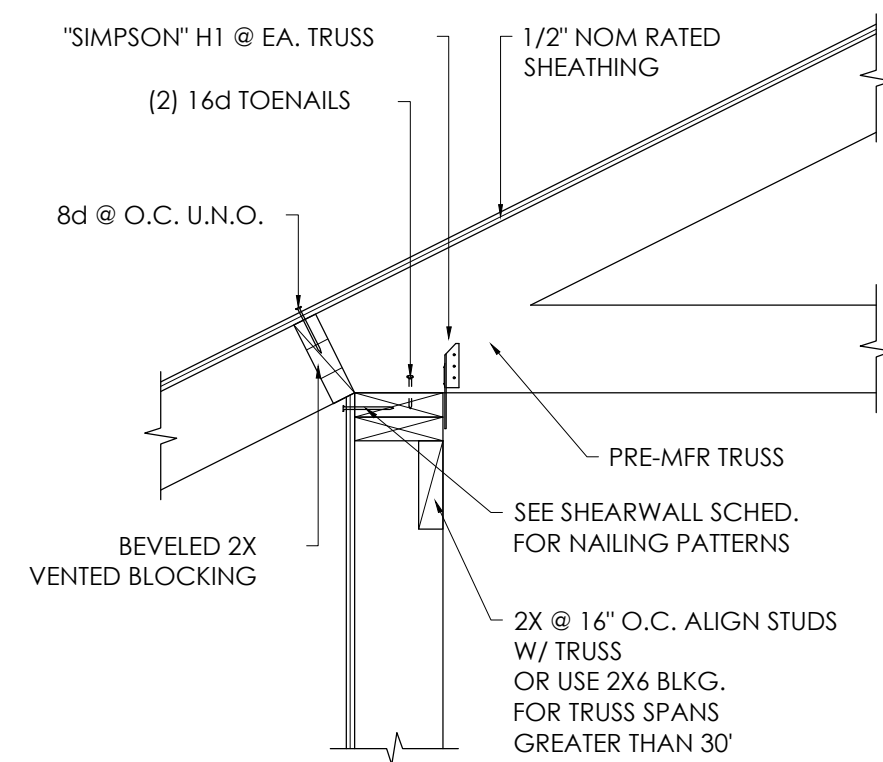
1. BLOCK ALL PANEL EDGES
2. SEE NAILS - MIN. REQUIREMENTS
3. 2X STUDS SHALL BE HF#2 OR BETTER, KINL-DRIED
4. USED 3X STUDS AND PLATES @ PANEL EDGES @ SHEARWALL 3 ONLY
5. ANCHOR BOLTS SHALL HAVE MIN. 3" BY 3" BY 1/4" THICK PL. WASHER
6. 7/16" OSB MAY BE SUBSTITUTED FOR 1/2" CDX

NAILS - MIN. REQUIREMENTS			
NAIL DESCRIPTION	MIN. WIRE DIAMETER	MIN. PENETRATION REQ'D FOR LATERAL STRENGTH	
8d COOLER	0.086"	1.12"	
6d	0.098"	1.25"	
8d	0.113"	1.25"	
10d	0.128"	1.50"	
16d	0.141"	1.75"	



NOTE: NAIL WALL SHEATHING TO BLOCKS AS FOR SHEARWALL EDGE NAILING

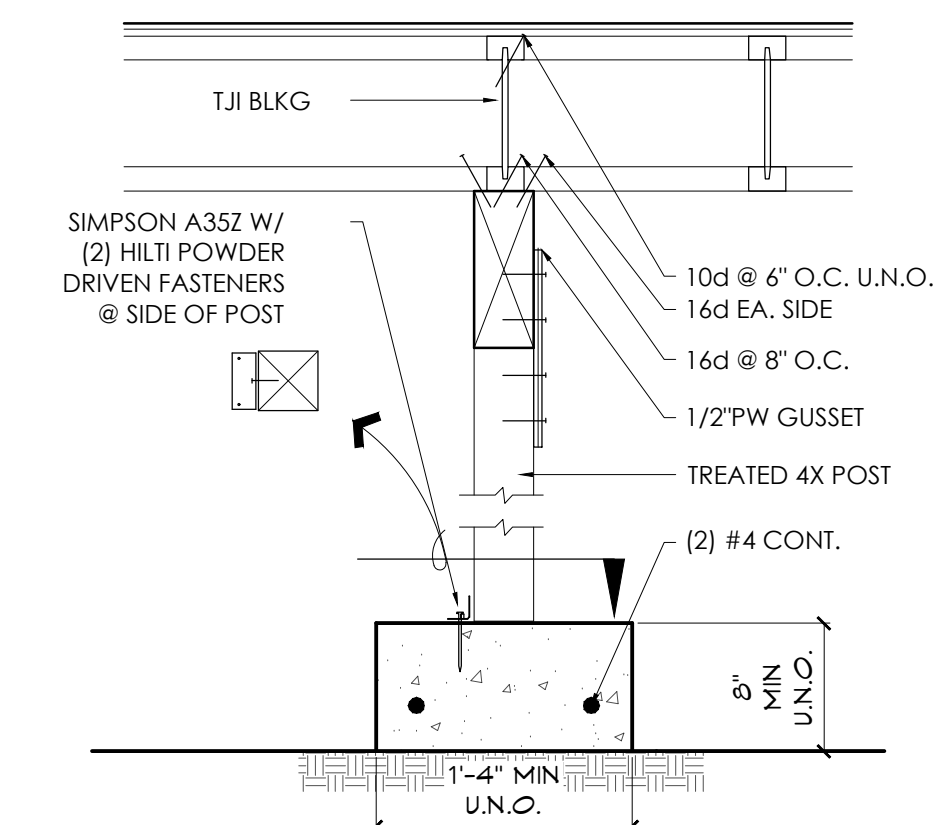
3 SHEAR WALL NAILING SCHEDULE



7 TYP. WALL CONSTRUCTION DETAIL

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"

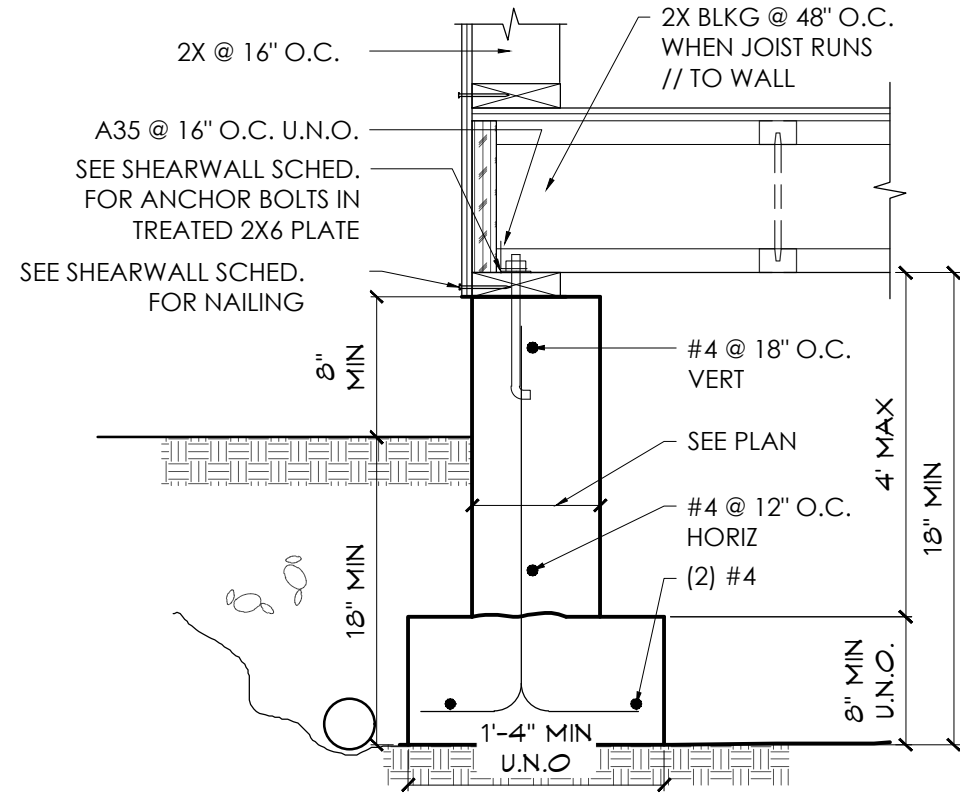
2 WINDOW STRAPPING DETAIL



6 FLOOR FRAMING DETAIL

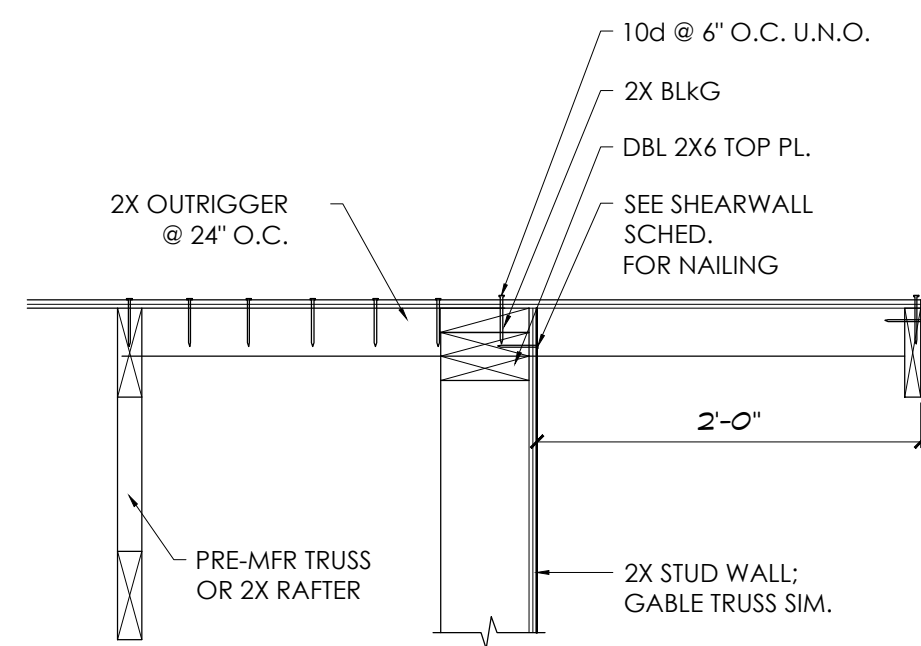
(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"

1 EXT & INT BEARING WA FRAM'G ELEV



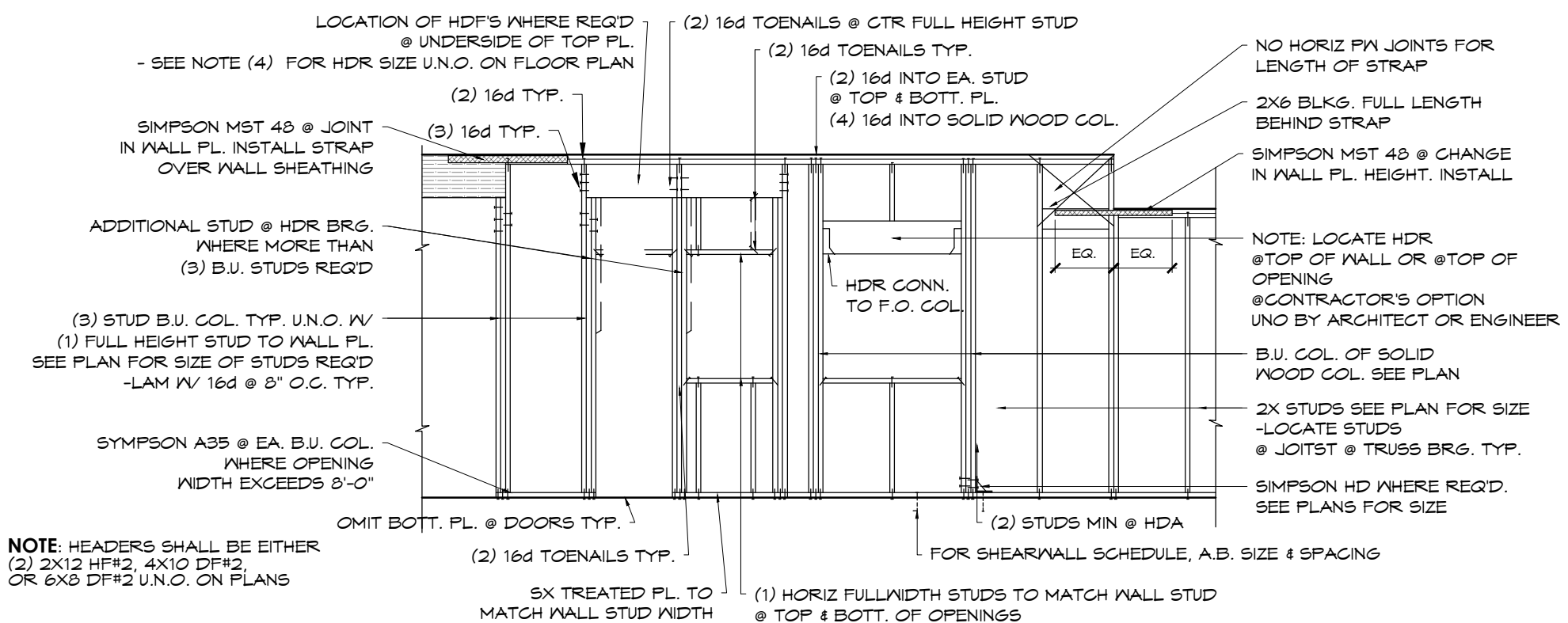
5 WALL CONSTRUCTION DETAIL

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"



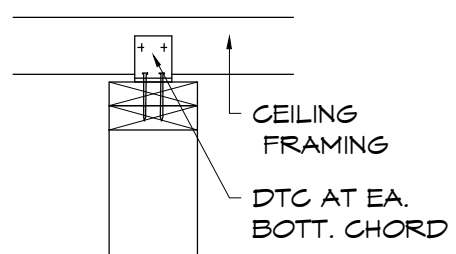
9 OUTLOOKER AT GABLE

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"

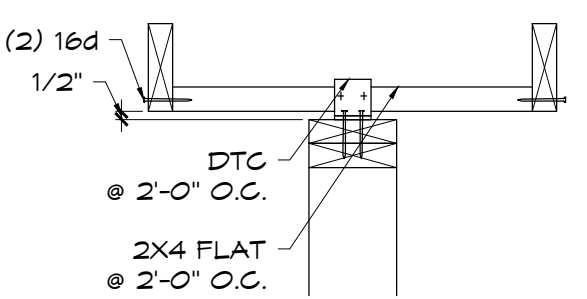


NOTE: HEADERS SHALL BE EITHER (2) 2X12 HF#2, 4X10 DF#2, OR 6X8 DF#2 U.N.O. ON PLANS

NOTE: I-JOIST MAY BE SUBSTITUTED FOR DIM. LUMBER. MFRS SHOP DRAWINGS MAY BE REQ'D FOR REVIEW PRIOR TO PERMITTING AS SPECIFIED IN THE WOOD STRUCTURAL NOTES ON THIS SHEET.



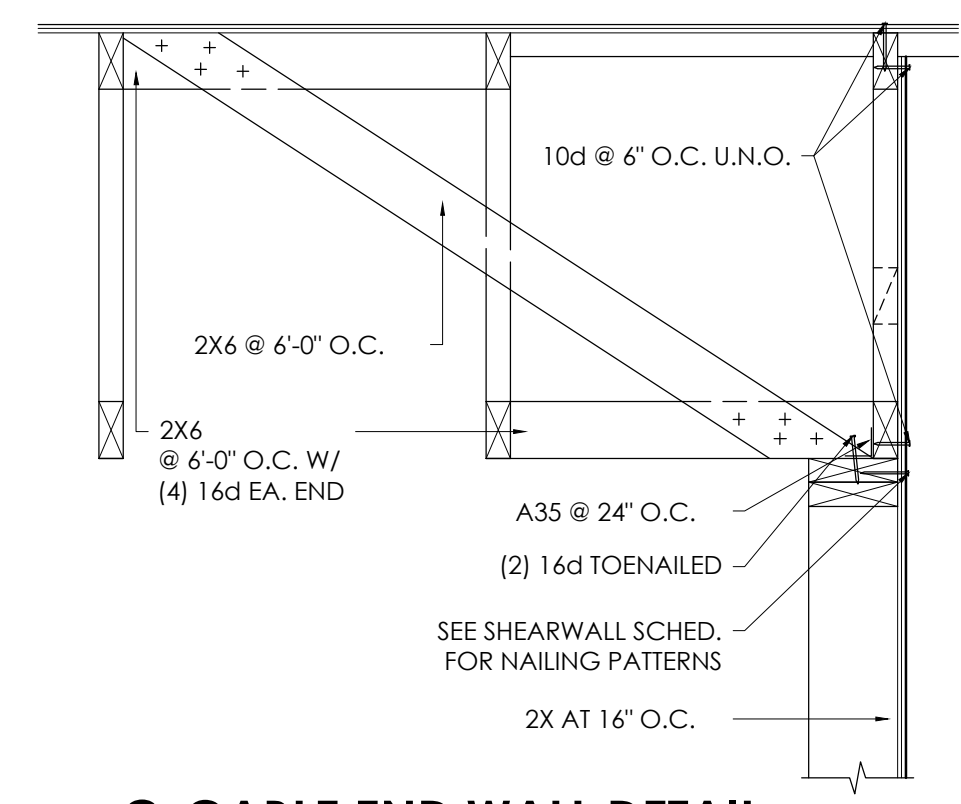
PERPENDICULAR TO FRAMING



PARALLEL TO FRAMING

4 PARTITION WALL SUPPORT

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"

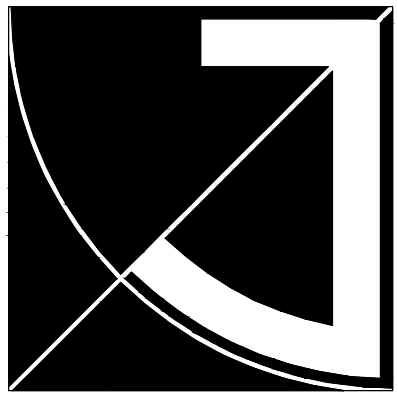
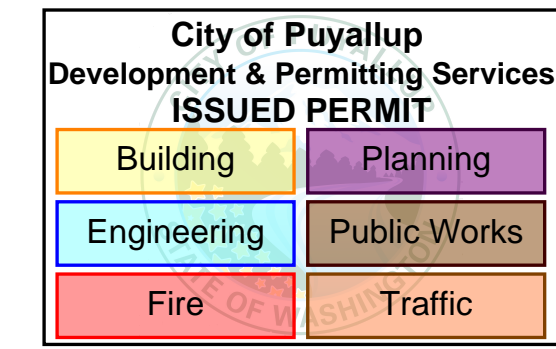


8 GABLE END WALL DETAIL

(11X17) SCALE: 1/2" = 1'-0"
(22X34) SCALE: 1" = 1'-0"

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic



JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrownarchitecture.com

STRUCTURE ENGINEER
C. CHRISTIAN FYNBOE
253.537.8128
ccfynboe@cs.com



PROJECT NAME/ADDRESS

CASCADE CHRISTIAN JR. HIGH SCHOOL
DISTRICT OFFICE TI & ADDITION
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

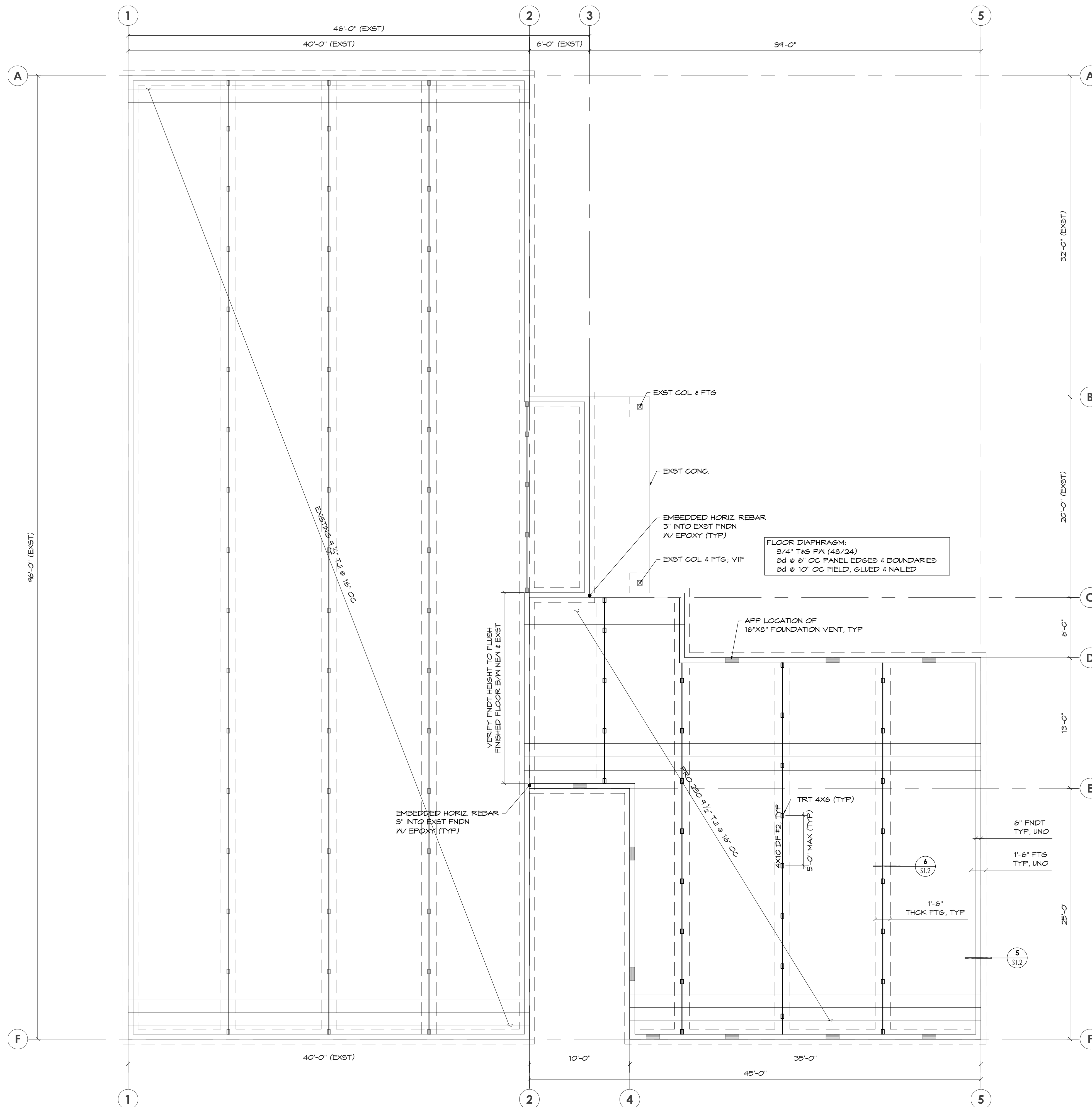
ISSUE DATE	ISSUE DESCRIP.	NO.
03.29.22		

SHEET TITLE

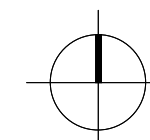
FOUNDATION & FLR FRM'G PLAN

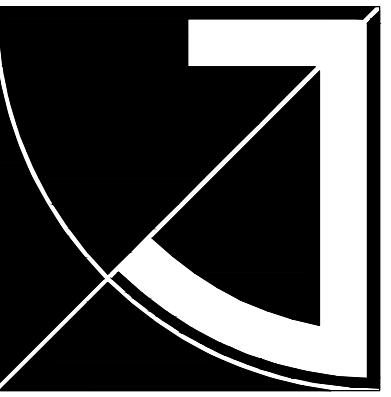
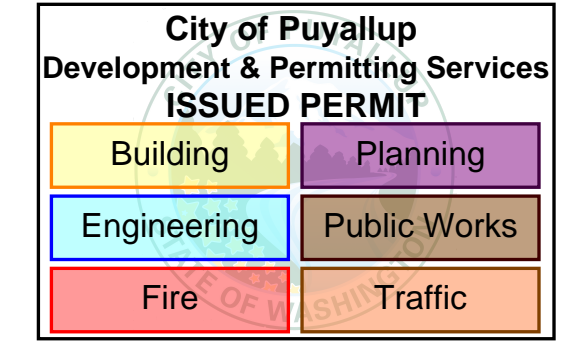
SHEET #

S2.1



FNDN & FLR FRM'G PLAN
(11x17) SCALE: 1/4" = 1'-0"
(22x34) SCALE: 1/8" = 1'-0"





JEFF BROWN ARCHITECTURE

JEFF BROWN ARCHITECTURE
12181 C STREET SOUTH
TACOMA, WA 98444

PROJECT LEAD
JEFFREY E. BROWN
253.606.8324
jeff@jeffbrowncarchitecture.com

STRUCTURE ENGINEER
C. CHRISTIAN FYNBOE
253.537.8128
ccfynboe@cs.com



PROJECT NAME/ADDRESS

**CASCADE CHRISTIAN JR. HIGH SCHOOL
DISTRICT OFFICE TI & ADDITION**
815 21ST STREET SE
PUYALLUP, WA 98372

PROJECT NUMBER
22003

DRAWING TYPE

PERMIT DOCUMENTS

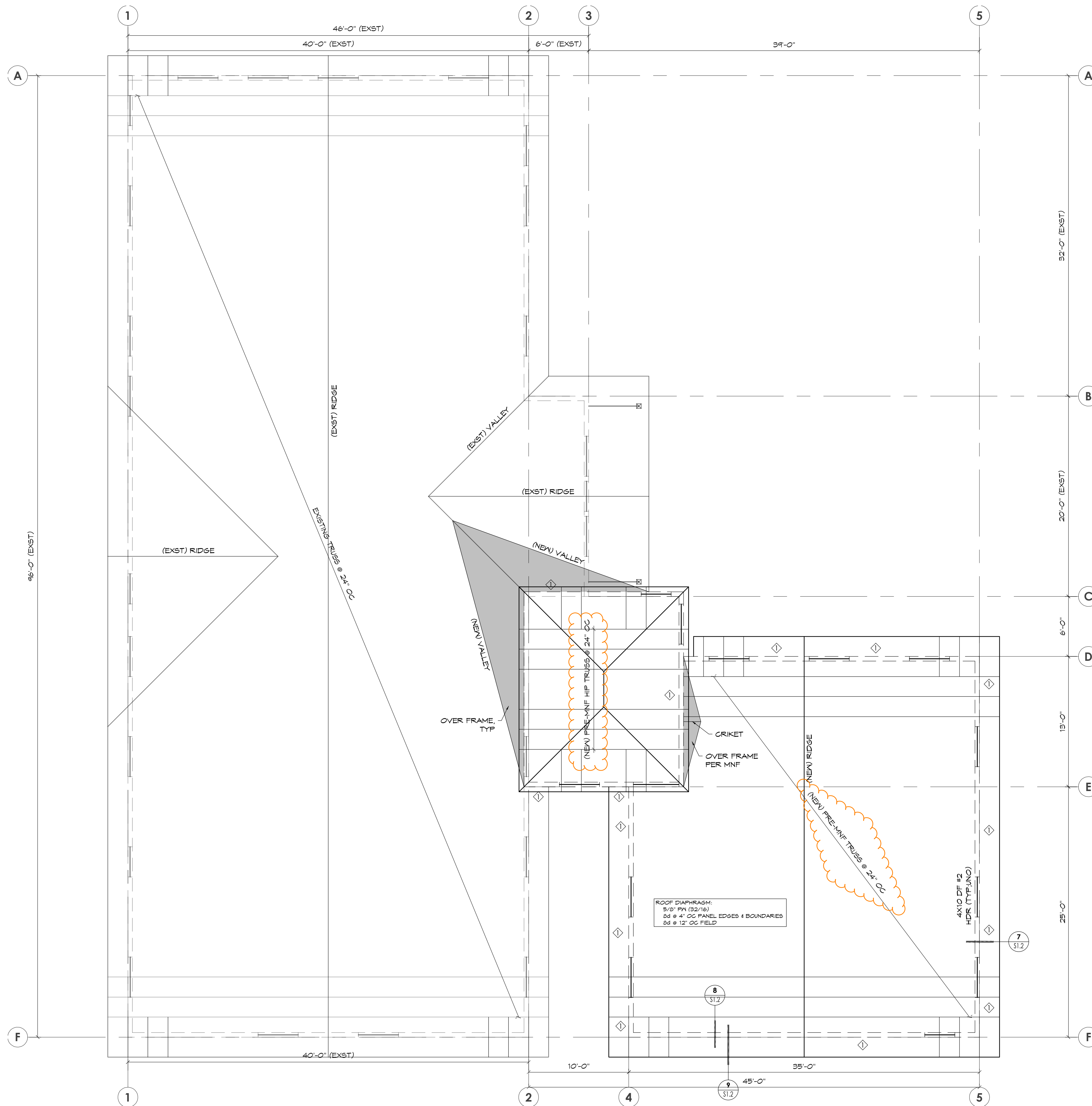
ISSUE DATE	ISSUE DESCRIP.	NO.
03.29.22		

SHEET TITLE

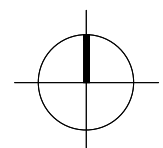
ROOF FRAMING PLAN

SHEET #

S2.2



ROOF FRAMING PLAN
(11x17) SCALE: 3/32" = 1'-0"
(22x34) SCALE: 3/16" = 1'-0"



GENERAL NOTES

- ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS.
- WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
- COORDINATE HVAC, PLUMBING, AND FIRE PROTECTION WORK PRIOR TO INSTALLATION. DUCTWORK AND EQUIPMENT ACCESS TAKES PRECEDENCE OVER ALL PIPING EXCEPT GRAVITY SYSTEMS FOR AVAILABLE SPACE.
- COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSE BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT. BEFORE SUBSTANTIAL COMPLETION, CLEAN EQUIPMENT, FIXTURES, EXPOSED DUCTS, PIPING AND SIMILAR ITEMS.
- PROVIDE EQUIPMENT THAT FITS INTO THE SPACE ALLOTTED AND ALLOWS ADEQUATE ACCEPTABLE CLEARANCE FOR INSTALLATION, REPLACEMENT, SERVICING, AND MAINTENANCE. COORDINATE WITH OTHER TRADES TO ENSURE NO CONFLICT WITH REQUIRED CLEARANCES.
- CONTRACTOR SHALL OBTAIN & PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- REFER TO TYPICAL DETAILS PROVIDED IN THIS DRAWING SET FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH DETAILS.
- A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
- ALL PIPING & DUCTWORK IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD LID CEILING.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
- ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.
- LOCATE VALVES, WATER HAMMER ARRESTERS, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER.
- ACCESS PANELS SHALL BE 16 GA. STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING. PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE. PROVIDE ACUDOR, ELMDOR, MILCOR, OR APPROVED.
- INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE.

PIPING:

- INSULATE PIPING PER WASHINGTON STATE ENERGY CODE SECTION C403.10.3.
- ALL PRESSURES LISTED ARE GAGE PRESSURES UNLESS OTHERWISE NOTED.
- PROVIDE COMPLETE CONDENSATE DRAINAGE SYSTEM FOR ALL [ENTER EQUIPMENT TYPES HERE]. FIELD ROUTE DRAINAGE PIPING FROM EQUIPMENT TO NEAREST DRAIN LOCATION (SUCH AS SERVICE SINK, FUNNEL DRAIN, ETC.). SLOPE NON-PRESSURIZED DRAIN PIPING TO DRAIN LOCATION. PIPING & FITTINGS SHALL BE PVC. MINIMUM PIPE SIZE SHALL BE 3/4". INCREASE PIPE SIZE WHERE APPLICABLE PER IMC 307.2.2
- VALVES SHALL BE INSTALLED SO THAT SYSTEM REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
- VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS UNLESS OTHERWISE NOTED.
- THE PROPOSED ROUTING FOR THE REFRIGERATION PIPING BETWEEN THE INDOOR AND OUTDOOR UNITS IS INDICATED AS A SINGLE LINE ON THE PLANS. THAT SINGLE LINE REPRESENTS ALL THE PIPING RUNS REQUIRED FOR THE SYSTEM DESIGNED. SIZE REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATION.

HVACSHEET METAL:

- THE FIRST FIGURE OF DUCT SIZE CALLOUTS INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS. PROVIDE ANY APPLICABLE DUCT LINING AND INSULATION PER THESE PLANS.
- DUCT SIZE NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UP STREAM SECTIONS USING SIMILAR ASPECT RATIOS.
- TOTAL STATIC PRESSURE NOTED IN SCHEDULES SHALL BE ASSUMED TO INCLUDE DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
- ALL SUPPLY AIR FILTERS SHALL BE MERV-8 RATED.
- AIR TERMINAL SIZES SHOWN ON PLANS ARE NECK SIZES. PROVIDE ADDITIONAL PANS, HARDWARE, ETC., REQUIRED TO INSTALL AIR TERMINAL IN CEILING SYSTEM.
- DUCTWORK SHALL BE 2.0" PRESSURE CLASS UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
- CONSTRUCT DUCTWORK ACCORDING TO WASHINGTON STATE ENERGY CODE SECTION C403.10.2. ALL DUCT WORK SHALL BE PRIMED GALVANIZED SHEET STEEL, LOCK FORMING QUALITY, FABRICATED IN ACCORDANCE TO SMACNA STANDARDS.
- PROVIDE TURNING VANES IN ALL MITERED RECTANGULAR DUCT ELBOWS & TEES.
- PROVIDE MOTORIZED DAMPERS ON OUTDOOR AIR SUPPLY, AND EXHAUST OPENINGS. DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM PER SQUARE FOOT AT 1" W.C.
- ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED AND SEALED PER WASHINGTON STATE ENERGY CODE SECTION C403.10.1.
- OUTSIDE AIR DUCTWORK SHALL BE INSULATED IN ACCORDANCE WITH C403.10.1.1.
- VENTILATION AND EXHAUST AIR IS PROVIDED IN ACCORDANCE WITH C403.2.2.
- PROVIDE EACH ZONE WITH THERMOSTATIC CONTROLS THAT PROVIDE A DEADBAND OF AT LEAST 5 DEGREES FAHRENHEIT IN WHICH HEATING OR COOLING ENERGY IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM. THERMOSTAT SHALL BE CAPABLE OF THERMOSTATIC SETBACK, AUTOMATIC SETBACK AND SHUTDOWN, AND AUTOMATIC START CAPABILITIES PER WASHINGTON STATE ENERGY CODE SECTION C403.4.
- PROVIDE TEMPORARY COVERS OVER OPEN ENDS OF EQUIPMENT AND DUCTWORK DURING CONSTRUCTION.
- PROVIDE MANUAL VOLUME DAMPER FOR EACH DIFFUSER, REGISTER, AND GRILLE. OPPOSED BLADE DAMPERS LOCATED AT THE DIFFUSER, REGISTER, AND GRILLE SHALL NOT BE USED FOR SYSTEM BALANCE.
- PROVIDE DUCT ACCESS DOORS AT DUCT SMOKE DETECTORS, BACKDRAFT DAMPERS, MOTORIZED CONTROL DAMPERS, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, DUCT MOUNTED COILS, DUCT AIRFLOW STATIONS AND LOUVER PLENUMS.

NON-STRUCTURAL MECHANICAL COMPONENTS:

- HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.

APPLICABLE CODES

AS ADOPTED BY THE CITY OF PUYALLUP

INTERNATIONAL MECHANICAL CODE, IMC 2018
 INTERNATIONAL BUILDING CODE, IBC 2018
 WASHINGTON STATE ENERGY CODE, WSEC 2018
 INTERNATIONAL FUEL GAS CODE, IFGC 2018
 UNIFORM PLUMBING CODE, UPC 2018

AND ASSOCIATED WASHINGTON ADMINISTRATIVE CODE AMENDMENTS

DESIGN CONDITIONS

OUTDOOR CONDITIONS (SEATA)
 COOLING: 81°F DB, 64°F WB (ASHRAE 1%)
 HEATING: 25°F DB (ASHRAE 99.6%)

INDOOR CONDITIONS
 COOLING: 75°F DB, 50% RH
 HEATING: 70°F DB

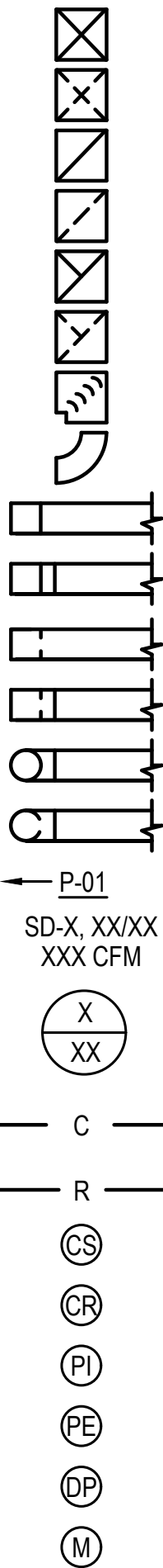
SCOPE OF WORK

- INSTALL DOAS AND DUCTED SPLIT SYSTEM HEAT PUMPS AS SHOWN ON PLANS.
- INSTALL EXHAUST FAN FOR NEW RESTROOM

ABBREVIATIONS

(E)	EXISTING
AABC	AMERICAN AIR BALANCE COUNCIL
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AG	AIR GAP
AGA	AMERICAN GAS ASSOCIATION
AHRI	AIR CONDITIONING, HEATING, & REFRIGERATION INSTITUTE
AMP	AMPERAGE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BAS	BUILDING AUTOMATION SYSTEM
BHP	BREAK HORSE POWER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
COND	CONDENSATE
CONFIG	CONFIGURATION
CSA	CANADIAN STANDARDS ASSOCIATION
DB	DRY BULB
DC	DOUBLE CHECK
DDC	DIRECT DIGITAL CONTROLS
DIA	DIAMETER
DN	DOWN
DOAS	DEDICATED OUTSIDE AIR SYSTEM
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRICALLY COMMUTATED MOTOR
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
ETC	ET CETERA
EX. SP.	EXTERNAL STATIC PRESSURE
FLA	FULL LOAD AMPS
FM	FACTORY MANUAL
FPM	FEET PER MINUTE
FT	FEET
GA	GAUGE
HP	HORSEPOWER
HR	HOUR
IBC	INTERNATIONAL BUILDING CODE
IFGC	INTERNATIONAL FUEL GAS CODE
IMC	INTERNATIONAL MECHANICAL CODE
IN	INCH
IU	INDOOR UNIT
LAT	LATERAL
LB/LBS/#	POUND/ POUNDS
LF	LINEAR FEET
LVL	LEVEL
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MCA	MAXIMUM CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MFG/MFR	MANUFACTURER
MIN	MINIMUM
MOCPI/MOP	MAXIMUM OVER CURRENT PROTECTION
MSS	MANUFACTURER'S STANDARDIZATION SOCIETY
NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OC	ON CENTER
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OSA	OUTSIDE AIR
PH	PHASE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RP	REDUCED PRESSURE
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SF	SQUARE FEET
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SPEC	SPECIFICATION
THRD	THREADED
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UPC	UNIFORM PLUMBING CODE
V	VENTI VOLT
VOLT	VOLTAGE
VRF	VARIABLE REFRIGERANT FLOW
VAV	VARIABLE AIR VOLUME
VERT	VERTICAL
W/	WITH
WIN	WINTER
WSEC	WASHINGTON STATE ENERGY CODE
WSFU	WATER SUPPLY FIXTURE UNITS

SYMBOL

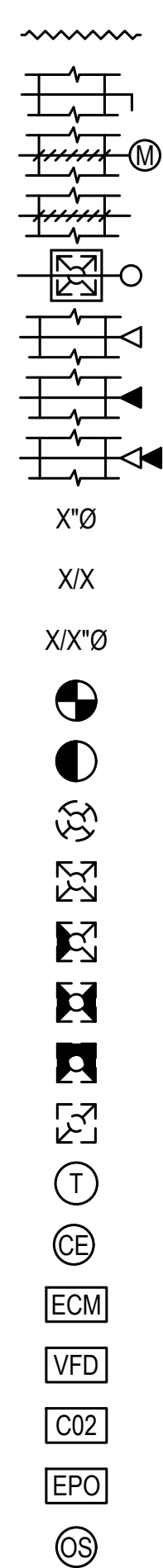


DESCRIPTION

SUPPLY DUCT, OSA DUCT UP
 SUPPLY DUCT, OSA DUCT DOWN
 RETURN, RELIEF, TRANSFER UP
 RETURN, RELIEF, TRANSFER DOWN
 EXHAUST AIR UP
 EXHAUST AIR DOWN
 RECTANGULAR ELBOW WITH TURNING VANES
 ROUND/ RECTANGULAR ELBOW
 RECTANGULAR DUCT SQUARE ELBOW UP
 RECTANGULAR DUCT, RADIUS ELBOW UP
 RECTANGULAR DUCT, SQUARE ELBOW DOWN
 RECTANGULAR DUCT, RADIUS ELBOW DOWN
 ROUND DUCT ELBOW UP
 ROUND DUCT ELBOW DOWN
 EQUIPMENT ABBREVIATION AND NUMBER (TAG)
 AIR TERMINAL TYPE, SIZE, AND CFM
 DETAIL NUMBER
 DRAWING NUMBER WHERE DRAWN
 CONDENSATE
 REFRIGERANT PIPING
 CURRENT SENSOR
 CURRENT RELAY
 PRESSURE INDICATOR
 PRESSURE ELEMENT
 DIFFERENTIAL PRESSURE ELEMENT
 MOTOR/ ACTUATOR

MECHANICAL LEGEND

SYMBOL



DESCRIPTION

FLEXIBLE DUCT
 VOLUME DAMPER (VD)
 MOTORIZED DAMPER
 BACKDRAFT DAMPER
 CEILING RADIATION DAMPER
 FIRE DAMPER
 SMOKE DAMPER
 COMBINATION FIRE/SMOKE DAMPER
 ROUND DUCT
 SQUARE DUCT
 OVAL DUCT
 POINT OF CONNECTION
 LIMIT OF DEMOLITION
 ROUND 4-WAY CEILING DIFFUSERS
 SQUARE 4-WAY CEILING DIFFUSERS
 SQUARE 3-WAY CEILING DIFFUSERS
 SQUARE 2-WAY CEILING DIFFUSERS
 SQUARE 1-WAY CEILING DIFFUSERS
 RETURN/ EXHAUST GRILLE
 THERMOSTAT (TSTAT)
 CONDUCTIVITY SENSOR
 ELECTRONICALLY COMMUTATED MOTOR
 VARIABLE FREQUENCY DRIVE
 CARBON DIOXIDE SENSOR
 EMERGENCY POWER OFF SWITCH
 OCCUPANCY SENSOR

PRCA20220680

MIDDLEBROOK ENGINEERING, LLC
 6216 174TH AVE SW
 LONGBRANCH, WA 98351
 253.765.6292

BRIAN SCOTT MIDDLEBROOK
 STATE OF WASHINGTON
 62770
 REGISTERED PROFESSIONAL ENGINEER
 3/30/2022

LEGEND, ABBREVIATIONS, AND GENERAL NOTES

CASCADE CHRISTIAN - OFFICE ADDITION
 811 21ST STREET SE
 PUYALLUP, WASHINGTON 98372

REVISIONS		
NO	DESCRIPTION	DATE
	PERMIT	3/31/2022

DRAWN BY:	RPG
CHECKED BY:	BSM
PROJECT MANAGER:	BSM

REUSE OF DOCUMENTS
 THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

SHEET

MH001

GENERAL NOTES

- DUCTWORK IS SCHEMATIC IN NATURE. CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.
- THIS DRAWING WAS CREATED FROM AS BUILT DOCUMENTATION AND FIELD NOTES AND MAY NOT REPRESENT ACTUAL AS BUILT CONDITIONS. CONTRACTOR TO VERIFY SCOPE PRIOR TO COMMENCING WORK.
- LINES AND EQUIPMENT SHOWN DARK IS NEW WORK. LINES AND EQUIPMENT SHOWN LIGHT IS EXISTING TO REMAIN.

PLAN NOTES

- ROUTE CONDENSATE TO PIPE DOWN IN WALL CAVITY AND PENETRATE EXTERIOR WALL 12" ABOVE GRADE. TERMINATE PIPE WITH DOWN TURNED ELBOW 6" ABOVE GRADE.
- 8"Ø EA UP TO RH-01.
- MECHANICAL EQUIPMENT LOCATED ON ROOF.
- 10"Ø RA DOWN TO RG-01

SHEET TITLE
MECHANICAL FLOOR PLAN

PROJECT
CASCADE CHRISTIAN - OFFICE ADDITION
 815 121ST STREET SE
 PUYALLUP, WASHINGTON 98372

REVISIONS

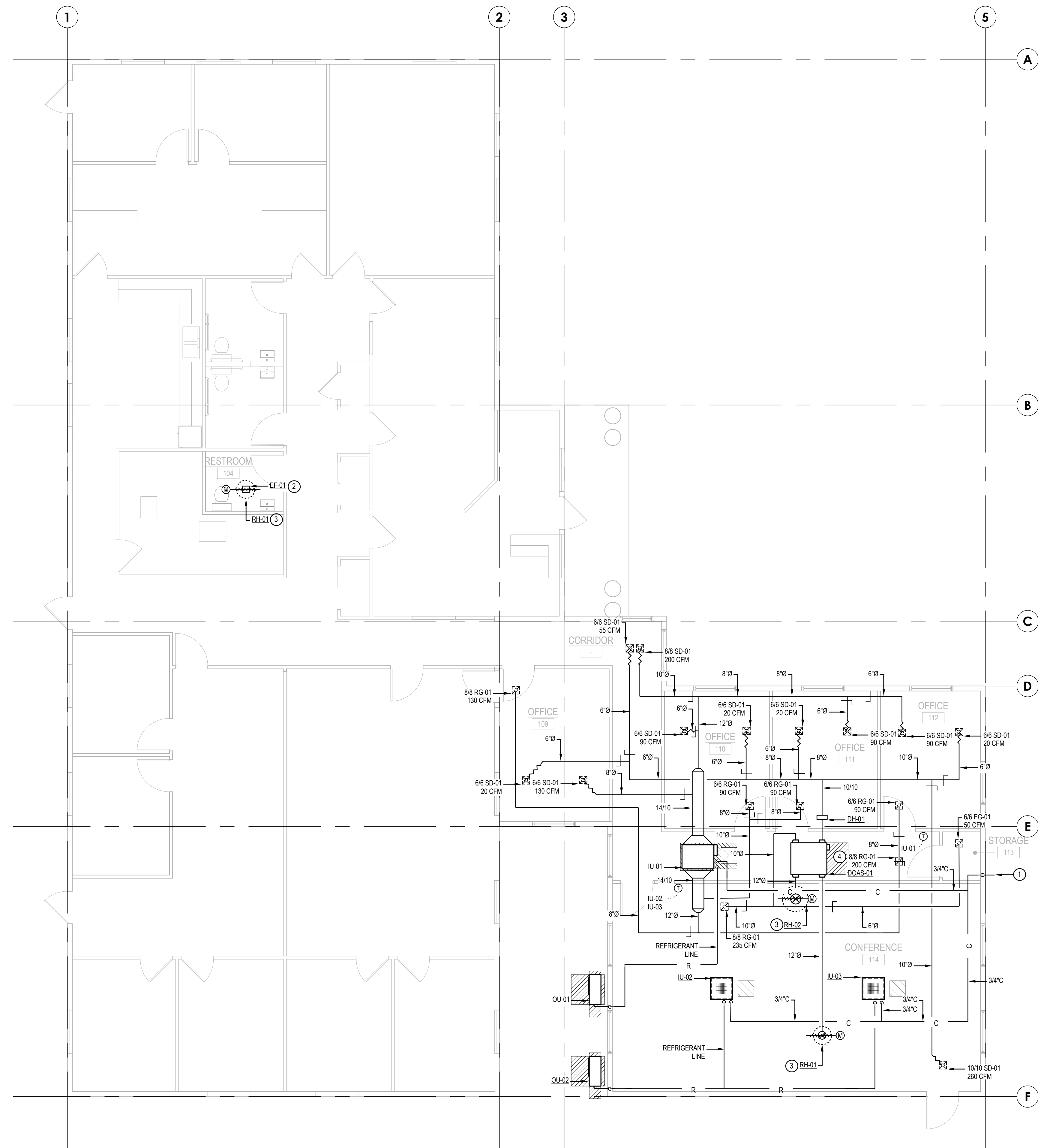
NO	DESCRIPTION	DATE

DRAWN BY: RPG
 CHECKED BY: BSM
 PROJECT MANAGER: BSM

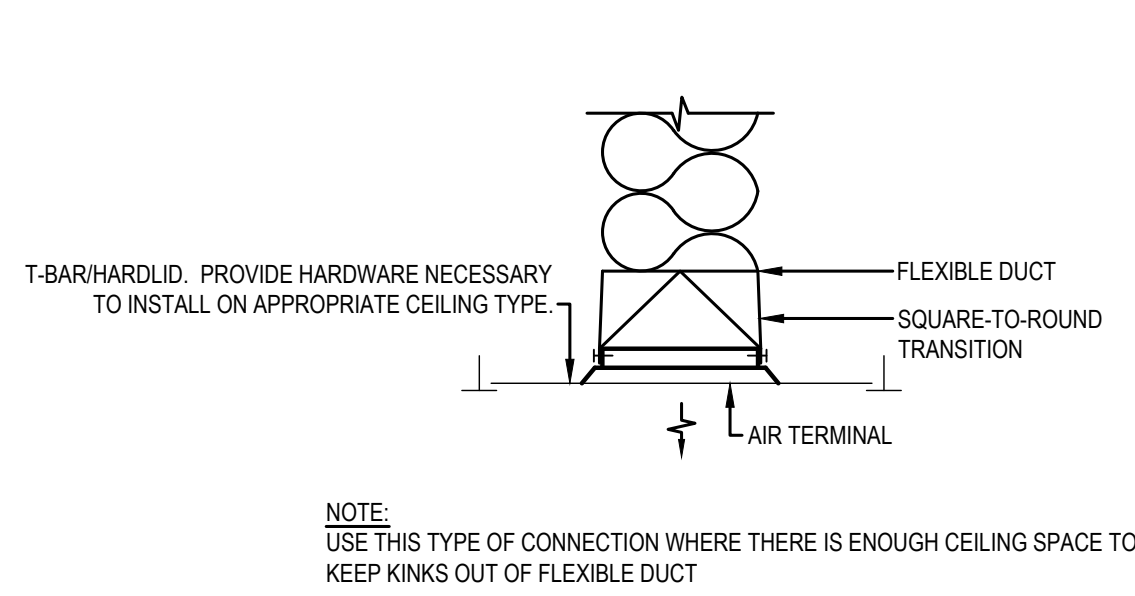
REUSE OF DOCUMENTS
THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup
 Development & Permitting Services
ISSUED PERMIT

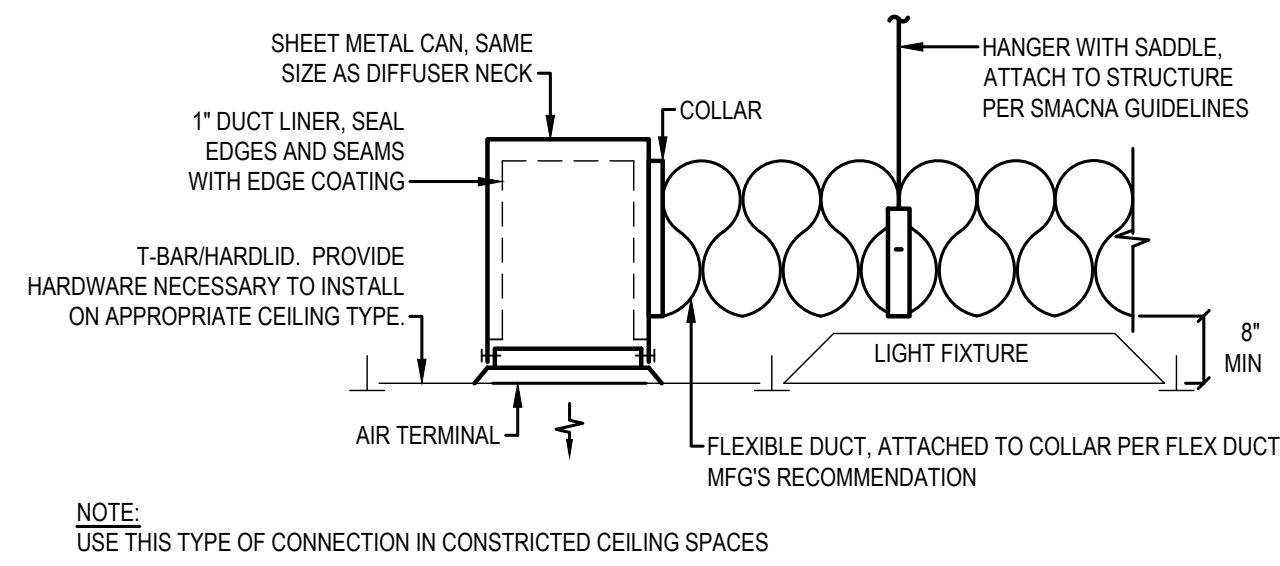
Building	Planning
Engineering	Public Works
Fire	Traffic



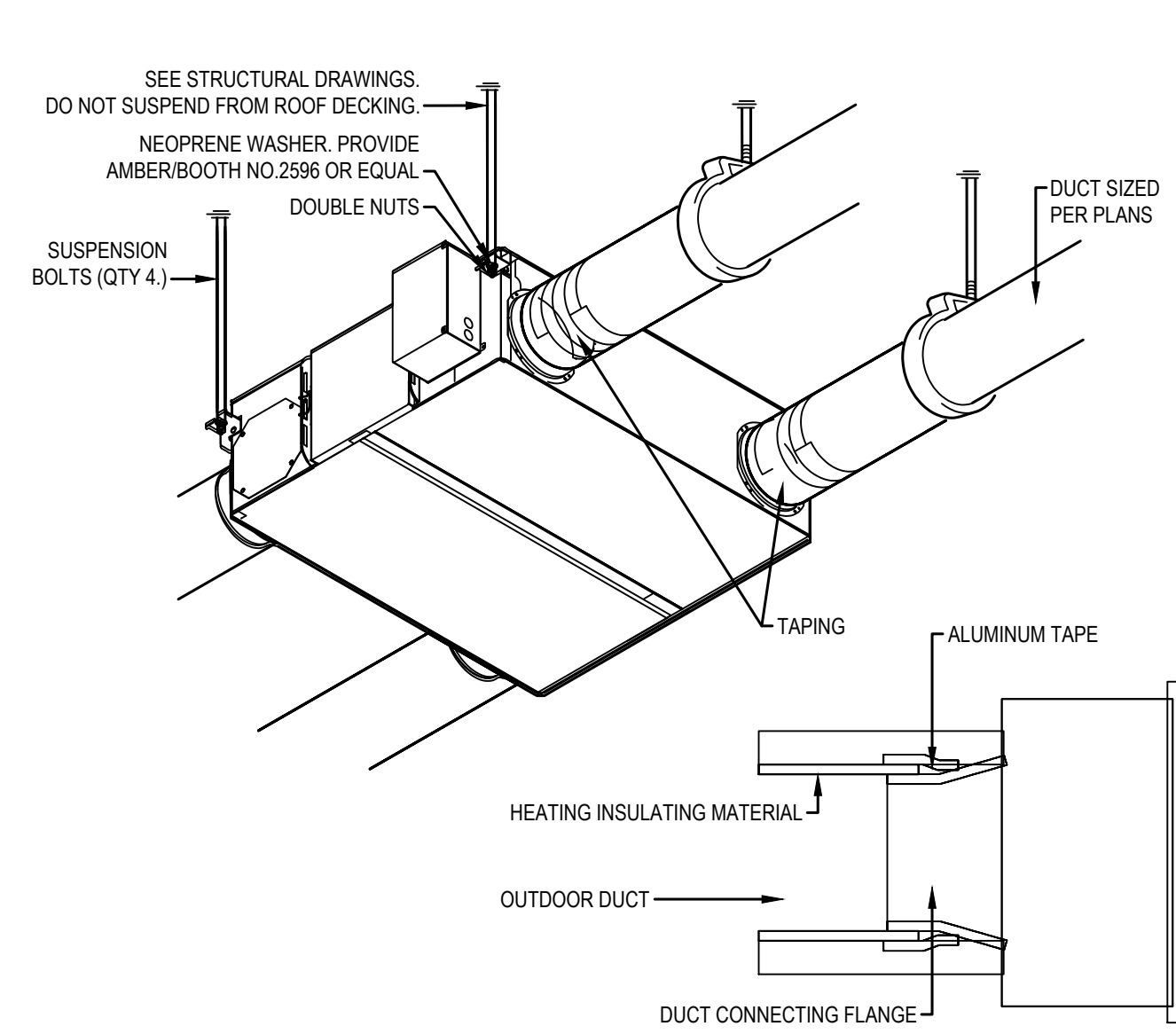
MECHANICAL PLAN
 SCALE: 3/16" = 1'-0"



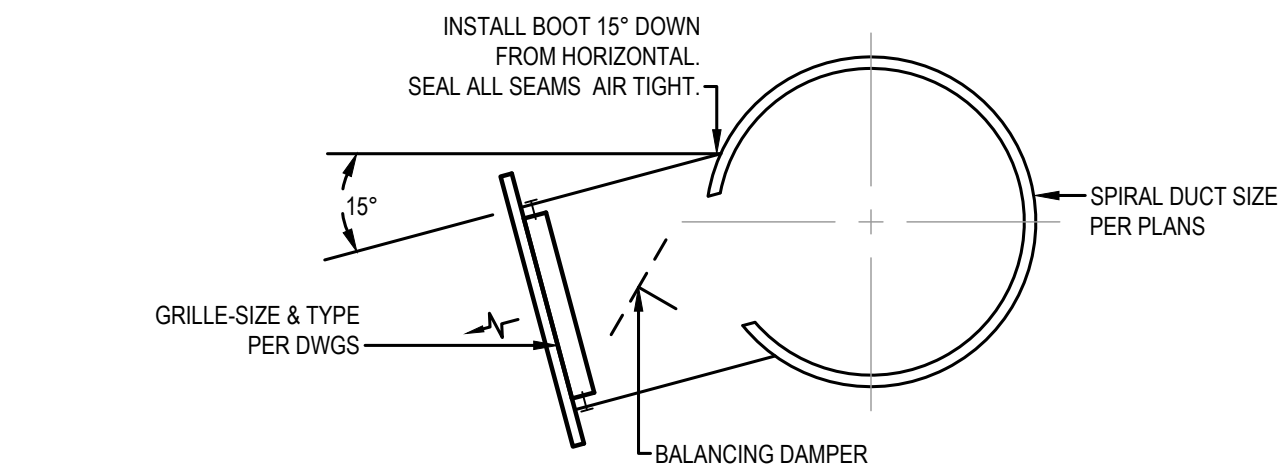
1 TYPICAL SUPPLY AIR TERMINAL INSTALLATION
SCALE: NTS



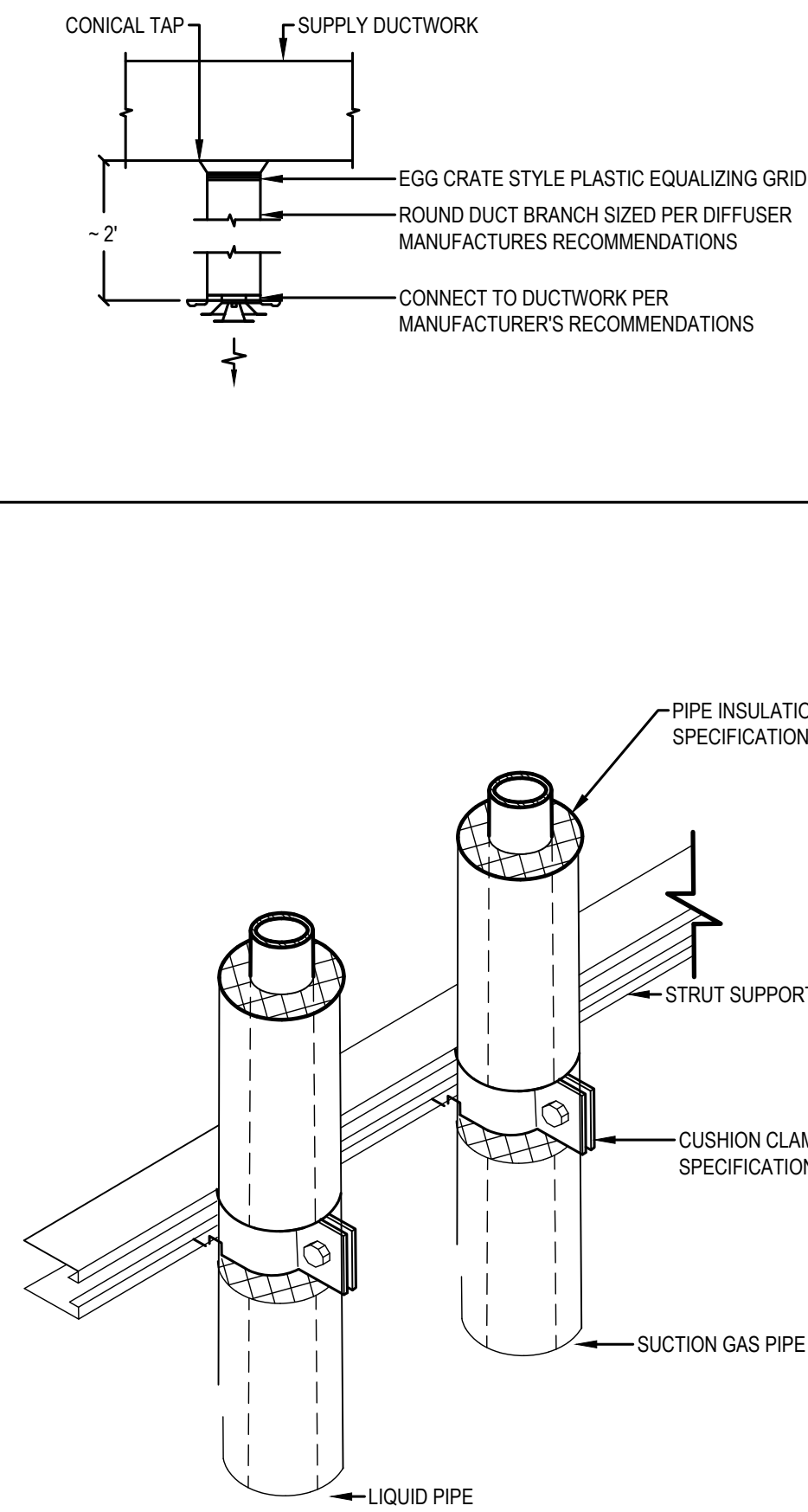
2 OUTDOOR CONDENSING UNIT MOUNTING DETAIL
SCALE: NTS



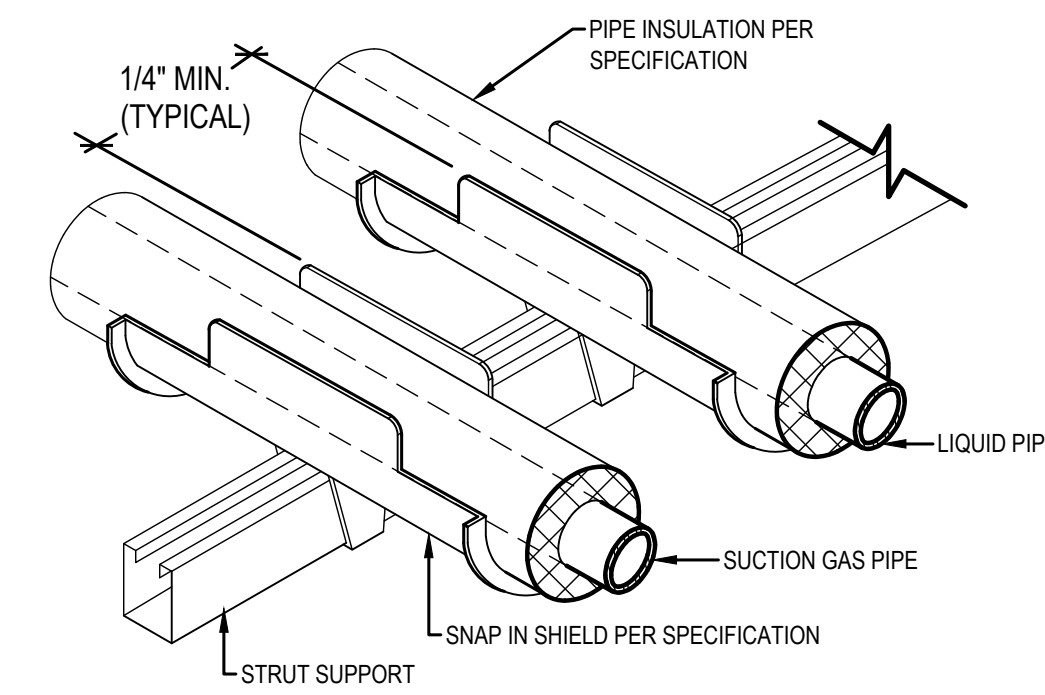
3 ERV MOUNTING DETAIL
SCALE: NTS



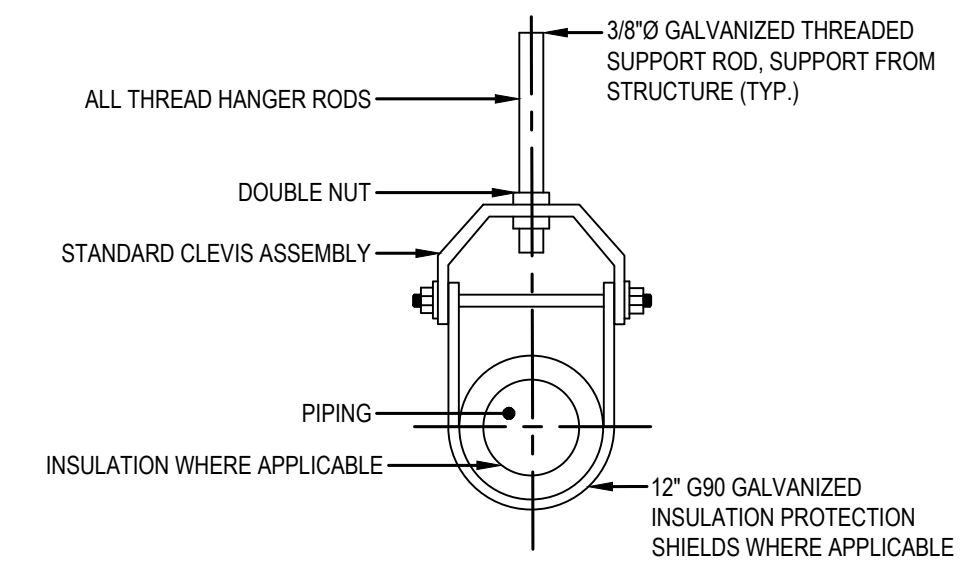
4 CEILING MOUNTED EXHAUST FAN INSTALLATION DETAIL
SCALE: NTS



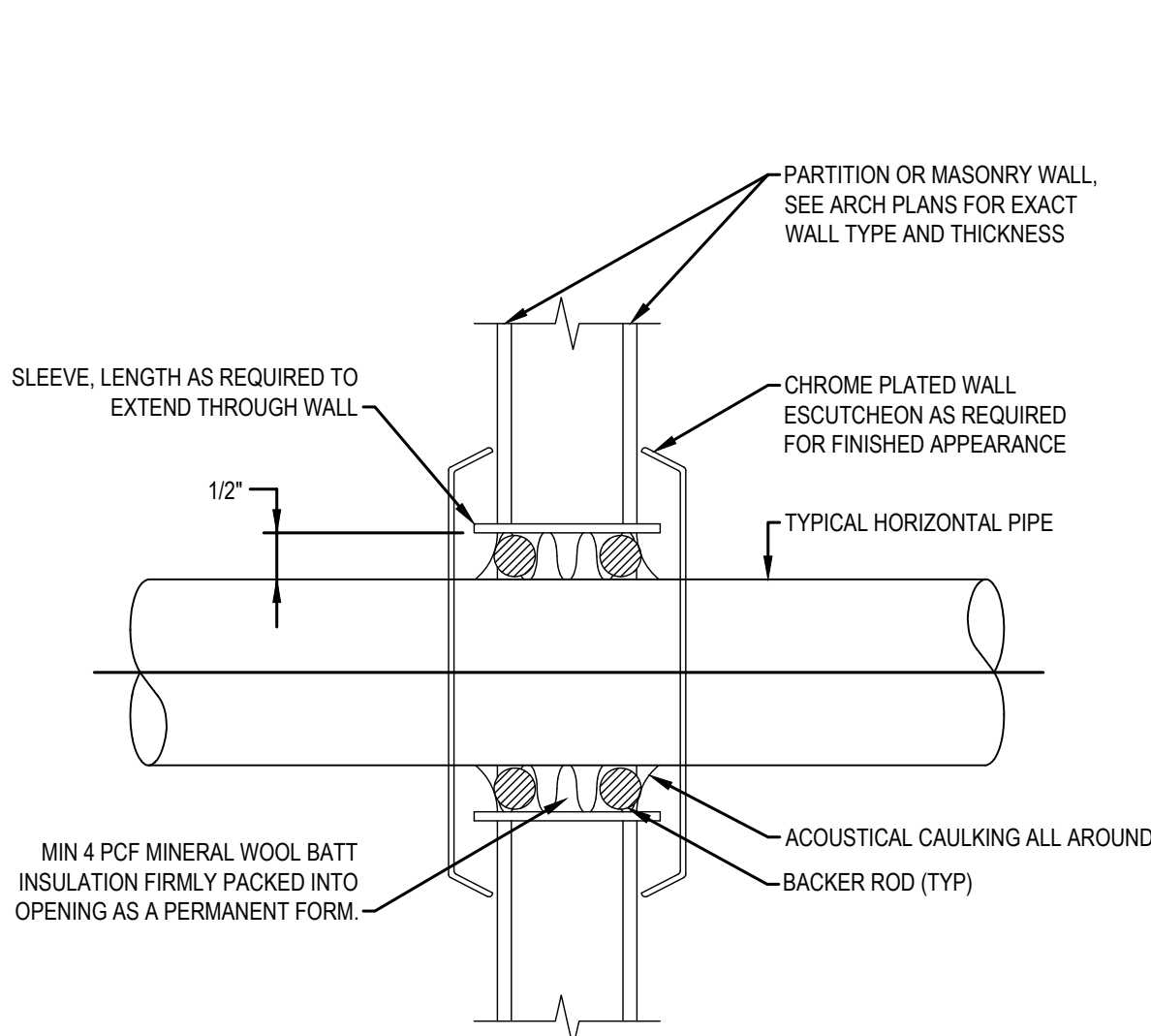
5 VERTICAL REFRIGERANT PIPE SUPPORT DETAIL
SCALE: NTS



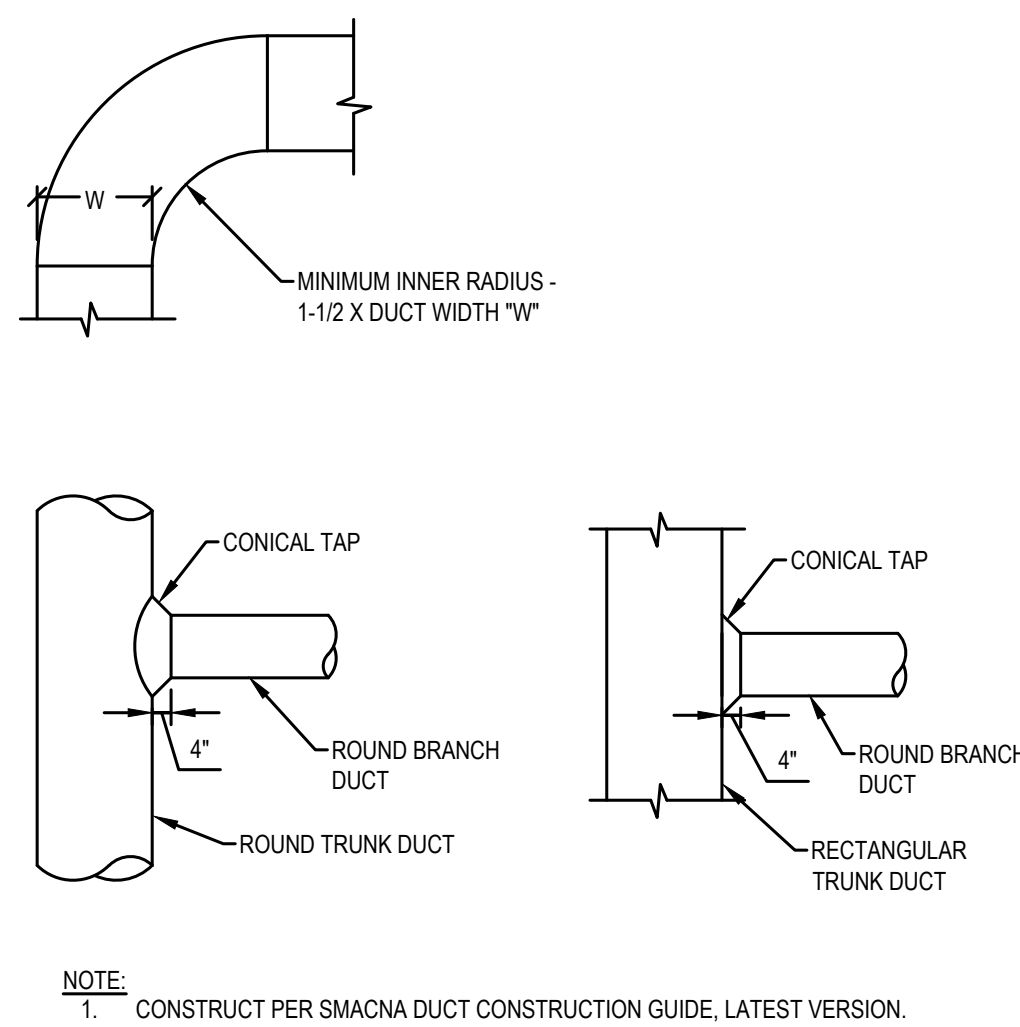
6 REFRIGERANT PIPE SUPPORT DETAIL
SCALE: NTS



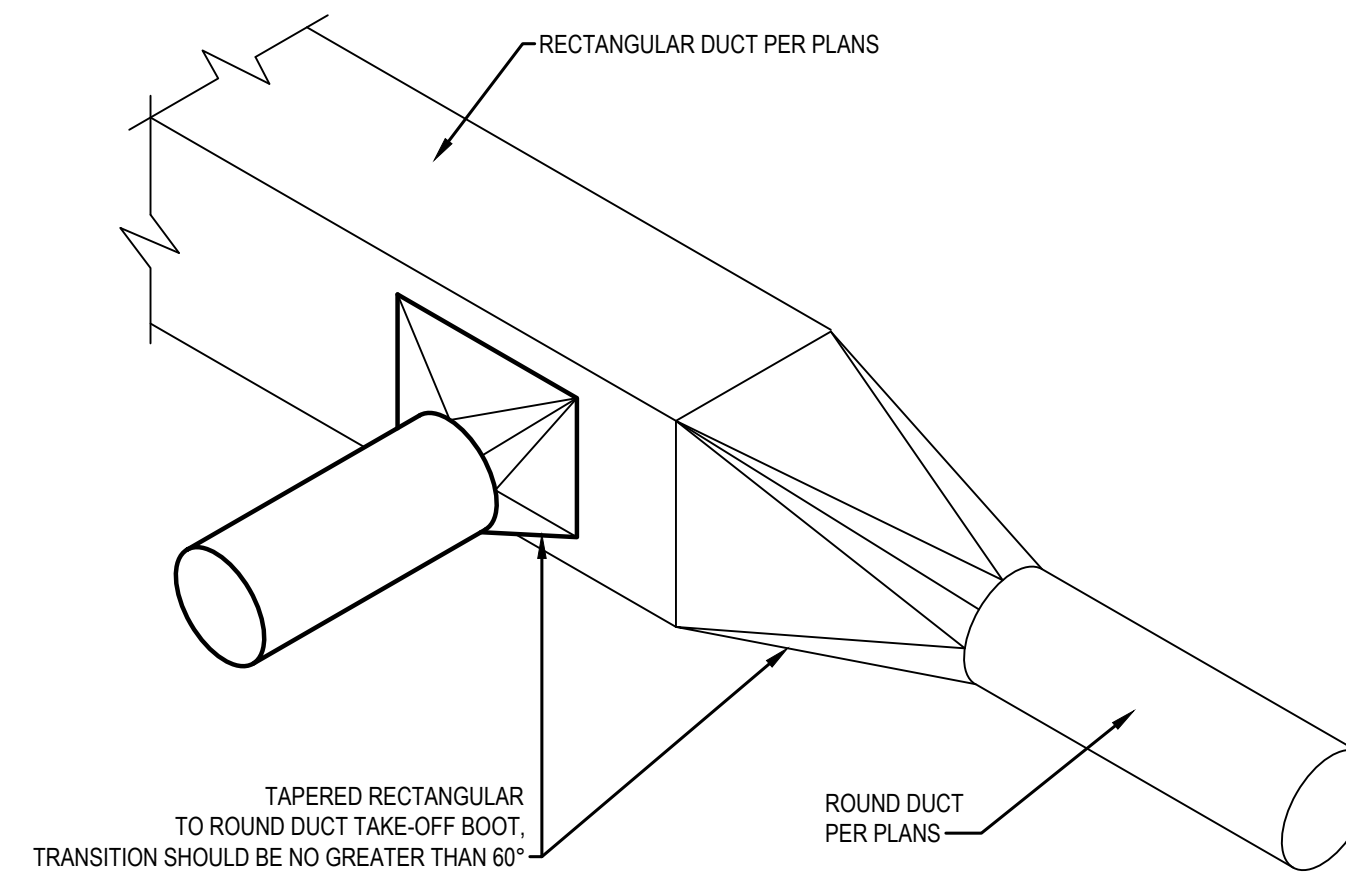
7 PIPE HANGER DETAIL
SCALE: NTS



8 WALL PENETRATION DETAIL
SCALE: NTS



9 TYPICAL DUCT ELBOW AND DUCT TEE DETAILS
SCALE: NTS



10 RECTANGULAR TO ROUND DUCT TRANSITION INSTALLATION DETAIL
SCALE: NTS

PRCA20220680

MIDDLEBROOK ENGINEERING, LLC
6216 174TH AVE SW
LONGBRANCH, WA 98351
253.765.6292

BRIAN SCOTT MIDDLEBROOK
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
52770
3/30/2022

DETAILS

SHEET TITLE

PROJECT
CASCADE CHRISTIAN - OFFICE ADDITION
811 21ST STREET SE
PUYALLUP, WASHINGTON 98372

REVISIONS

NO	DESCRIPTION	DATE
1	PERMIT	3/31/2022

DRAWN BY: RPG
CHECKED BY: BSM
PROJECT MANAGER: BSM

REUSE OF DOCUMENTS
THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

SHEET

MH501

SEQUENCE OF OPERATIONS

- GENERAL**
 - PROVIDE AND INSTALL ALL NECESSARY DEVICES INCLUDING BUT NOT LIMITED TO: ACTUATORS, RELAYS, SWITCHES, SENSORS, DAMPERS, CONDUIT, AND WIRING NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
- TIMING OF CONTROL WORK**
 - THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO BALANCING OF THE PROJECT. CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION FOR THE BALANCER. THE CONTROL SYSTEM SHALL BE COMPLETE PRIOR TO HVAC SYSTEM COMMISSIONING AND CONTROL PERSONNEL ARE TO ASSIST IN SYSTEM OPERATION AND TESTING DURING COMMISSIONING. THE CONTROL SYSTEM SHALL BE COMMISSIONED PRIOR TO OWNER OCCUPANCY.
- TYPICAL SYSTEM SCHEDULE:**
 - OFF HOURS ARE 6:00 PM TO 6:00 AM AND WEEKENDS, ADJUSTABLE.
 - MORNING WARM-UP IS TO BE STARTED AT AN "OPTIMAL START" TIME. OCCUPIED HOURS ARE 6:00 AM TO 6:00 PM MONDAY THROUGH FRIDAY, ADJUSTABLE.
- TYPICAL SETPOINTS (ADJUSTABLE):**
 - HEATING SPACE TEMPERATURE - 70 DEGREES FAHRENHEIT
 - COOLING SPACE TEMPERATURE - 75 DEGREES FAHRENHEIT
- FIRE ALARM SYSTEM SHUTDOWN**
 - PROVIDE ALL NECESSARY CONDUIT, WIRING, AND ACCESSORIES TO SHUTDOWN EACH UNIT UPON ACTIVATION OF THAT UNITS SMOKE DETECTORS (SMOKE DETECTORS WITH DPDT ARE PROVIDED AND INSTALLED BY OTHERS). CONNECTIONS SHALL BE HARDWIRED, INDEPENDENT OF ANY CONTROL SYSTEM LOGIC, SO THE FAILURE OF THE CONTROL SYSTEM OR LOSS OF CONTROL SYSTEM POWER WILL IN NO WAY PREVENT THE ALARMED SMOKE DETECTOR SHUTDOWN OF THE EQUIPMENT. UPON RESET OF ALARMED DEVICE, SYSTEM SHALL AUTOMATICALLY RETURN TO NORMAL OPERATION. PROVIDE A TIME DELAY FOR EQUIPMENT START-UP TO PREVENT EXCESS LOAD STARTING AT THE SAME TIME.

DEDICATED OUTDOOR AIR SYSTEM

- GENERAL**
- EXISTING ZONE SPACE TEMPERATURE SENSORS SHALL BE AUGMENTED TO INCLUDE A UNOCCUPIED OVERRIDE. REQUEST OVERRIDE RUNTIME SHALL BE 2 HOURS (ADJUSTABLE). DEDICATED OUTDOOR AIR UNITS SHALL SHARE OPERABILITY WITH EXISTING AIR HANDLING UNITS.
 - UNIT SHALL BE PROGRAMMED FOR START/STOP BASED ON DESIGNED OCCUPIED MODES WITH WEEKDAYS, WEEKEND, AND HOLIDAY SCHEDULES.

- SUPPLY FAN**
- SUPPLY FAN SHALL START VIA A SCHEDULE (ADJUSTABLE) OR OVERRIDE COMMAND (ADJUSTABLE). OVERRIDE COMMAND CAN BE TRIGGERED BY A ZONE SPACE TEMPERATURE SENSOR UNOCCUPIED OVERRIDE REQUEST.
 - OUTSIDE AIR DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPER SHALL FAIL CLOSED.
 - FAN ALARMS:
 - FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED.
 - HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM.

- EXHAUST FAN**
- EXHAUST FAN OPERATES WHENEVER THE SUPPLY FAN IS PROVEN ON.
 - EXHAUST DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPERS SHALL FAIL CLOSED.
 - FAN ALARMS:
 - FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED.
 - HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM.

SPLIT SYSTEM CONTROL SEQUENCE (DUCTED)

- GENERAL**
- SPLIT SYSTEMS INDOOR/OUTDOOR UNITS SHALL BE CONTROLLED BY LOCAL THERMOSTAT. UNITS SHALL OPERATE ON INTERNAL CONTROLS TO MAINTAIN ROOM SETPOINT.
 - SPACE STATS SHALL BE EQUIPPED WITH PUSHBUTTONS TO PROVIDE UNOCCUPIED OVERRIDE REQUEST AND SPACE TEMPERATURE SETPOINT ADJUSTMENT AS REQUIRED. OVERRIDE RUNTIME SHALL BE 2 HOURS (ADJUSTABLE). NIGHT SETBACK TEMPERATURE SETPOINT SHALL BE 55°F HEATING AND 85°F COOLING (ADJUSTABLE).
 - UNIT SHALL BE PROGRAMMED FOR START/STOP THROUGH THE LOCAL STAT BASED ON DESIGNED OCCUPIED MODES WITH WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES.

- SUPPLY FAN**
- SUPPLY FAN SHALL START VIA A SCHEDULE (ADJUSTABLE), WARM-UP MODE COMMAND (ADJUSTABLE) OR OVERRIDE COMMAND (ADJUSTABLE). WARM-UP MODE COMMAND IS GENERATED BY LOCAL STAT. OVERRIDE COMMAND IS TRIGGERED BY SPACE STAT UNOCCUPIED OVERRIDE REQUEST OR SPACE STAT CALLING FOR NIGHT SETBACK CONDITIONING.
 - FAN SHALL OPERATE AT CONSTANT SPEED AS DETERMINED BY THE AIR BALANCE CONTRACTOR. FAN SHALL OPERATE AT LOW SPEED BETWEEN DEADBAND.
 - OUTSIDE AIR DAMPER SHALL OPEN UPON ACTIVATION AND FAN SHALL START VIA DAMPER END SWITCH. DAMPER SHALL FAIL CLOSED.
 - FAN ALARMS:
 - FAN ALARM ACTIVATES IF FAN STATUS FAILS TO ACTIVATE AFTER FAN HAS BEEN STARTED. EMCS RECORDS FAN ALARM.
 - HARDWIRE FAN SHUTDOWN UPON ACTIVATION OF FIRE/SMOKE ALARM.

- HEAT PUMP HEATING**
- HEAT PUMP HEATING ENABLE IS OFF WHEN FAN STATUS IS OFF.
 - HEAT PUMP STAGES TO MAINTAIN SPACE TEMPERATURE SETPOINT.
 - AUXILIARY HEAT ACTIVATES ONLY IF HEAT PUMP IS UNABLE TO MAINTAIN ROOM SETPOINT.

- COOLING**
- DX COOLING ENABLE IS OFF WHEN FAN IS OFF.
 - DX COOLING ACTIVATES TO MAINTAIN SPACE TEMPERATURE SETPOINT AS THE SECOND STAGE OF COOLING. (STAGE COMPRESSOR WHERE AVAILABLE)

- TEMPERATURE SETPOINT**
- SPACE AIR TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL.
 - IDF ROOMS: SPACE AIR TEMPERATURE SETPOINT IS 75°F (ADJUSTABLE) FOR COOLING CONTROL.

- FIRE ALARM SHUTDOWN**
- UPON A GENERAL FIRE ALARM ALL AIR HANDLING EQUIPMENT SHALL SHUTDOWN. THE FIRE ALARM CONTROL PANEL SYSTEM SHALL COMMAND A SOFTWARE SHUTDOWN OF ALL HANDLING EQUIPMENT. THIS CONTRACTOR TO RUN WIRES FROM RELAYS PROVIDED BY THE FIRE ALARM CONTRACTOR TO THE AIR HANDLING UNITS. COORDINATE WITH FIRE ALARM CONTRACTOR AND DOCUMENTS FOR LOCATION OF RELAYS.

AIR TERMINAL SCHEDULE					
UNIT NO	MFR	MODEL	MOUNTING TYPE	STYLE	NOTES
SD-01	TITUS	MCD	SURFACE	LOUVER FACE	1, 2
RG-01	TITUS	50F	SURFACE	EGGCRATE	1, 2
EG-01	TITUS	50F	SURFACE	EGGCRATE	1, 2

NOTES:

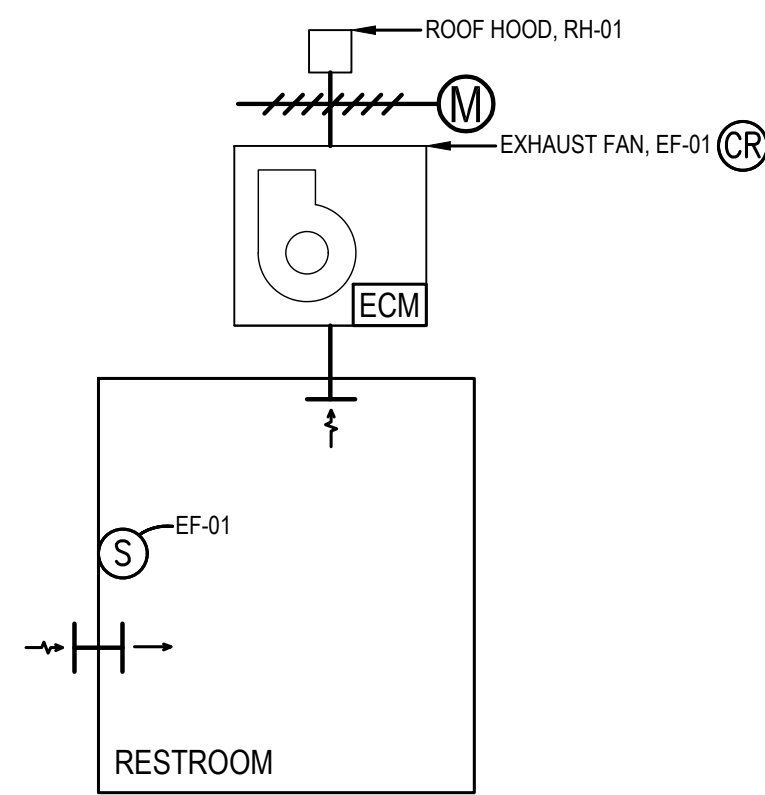
- PROVIDE AIR BALANCING DEVICE AT EACH AIR TERMINAL.
- COORDINATE FINISH WITH ARCHITECT.

SPLIT SYSTEM CONTROL SEQUENCE (DUCTLESS)

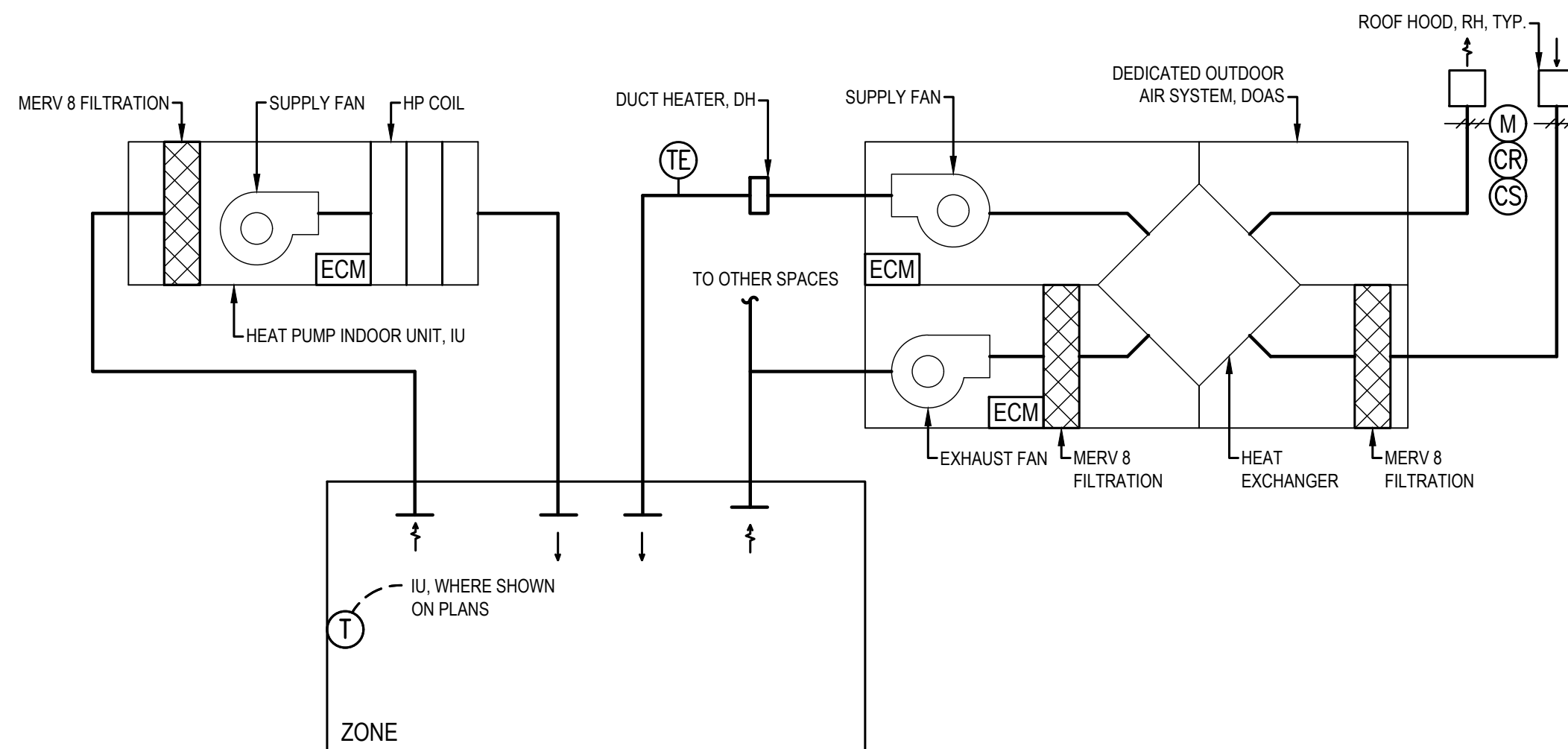
- GENERAL**
- SPLIT SYSTEMS INDOOR/OUTDOOR UNITS SHALL BE CONTROLLED BY LOCAL THERMOSTAT. UNITS SHALL OPERATE ON INTERNAL CONTROLS TO MAINTAIN ROOM SETPOINT.
- TEMPERATURE SETPOINT**
- SPACE AIR TEMPERATURE SETPOINT IS 70°F (ADJUSTABLE) FOR HEATING CONTROL AND 75°F (ADJUSTABLE) FOR COOLING CONTROL.

EXHAUST FANS

- GENERAL:**
- EXHAUST FAN (EF-01) OPERATES ON DAMPER END SWITCH AND OPERATES ON OCCUPANCY TIMER (ADJUSTABLE).



RESTROOM FLOW DIAGRAM
NOT TO SCALE



GENERAL SPACE FLOW DIAGRAM
NOT TO SCALE

DEDICATED OUTSIDE AIR UNIT SCHEDULE

PRCA20220680

UNIT NO	MFR	MODEL	LOCATION	CONFIG	SUPPLY FAN DATA			EXHAUST FAN DATA			HEAT EXCHANGER DATA				FILTER	WEIGHT LBS	ELECTRICAL				STARTER FURN BY	DISCON FURN BY	NOTES
					CFM	HP	ESP	CFM	HP	ESP	SUM EAT	SUM EFF	WIN EAT	WIN EFF			MCA	MOP	V	PH			
DOAS-01	MITSUBISHI	LGH-F470RVX-E	CORRIDOR	CROSS FLOW	395	-	0.56	285	-	0.56	95	40	35	64	MERV 8	110	6.1	15	208	1	MFG	EC	1, 2

NOTES:

- PROVIDE ACCESS PANEL UNDER UNIT. ACCESS PANEL SHALL BE SIZED SUFFICIENTLY TO ALLOW FOR UNIT MAINTENANCE.
- PROVIDE CONTROLS PER PLANS AND IMC 2018 WASHINGTON AMMENDMENTS.

FAN SCHEDULE

UNIT NO	MFR	MODEL	CONFIGURATION	AREA SERVED	PERFORMANCE			SPEED CONTROL	CONTROLLED BY OR INTERLOCKED WITH	WEIGHT LBS	ELECTRICAL				STARTER FURN BY	DISCONNECT FURN BY	REMARKS	
					CFM	EX. S.P.	RPM				HP	BHP	WATT	VOLTS				PH
EF-01	GREENHECK	SP-80-VG	CEILING	RESTROOM 104	70	0.28	935	CV	SWITCH	12	-	-	6.1	120	1	EC	EC	1, 2

- GENERAL NOTES:**
- PROVIDE ALL FANS WITH 70% OR GREATER EFFICIENCY MOTORS OR ELECTRONICALLY COMMUTATED MOTORS AS REQUIRED BY 2015 WSEC SECTION C408.8 FOR FRACTIONAL HORSEPOWER FAN MOTORS THAT ARE 1/2 HP AND LARGER.
 - EQUIPMENT MAY BE SUBSTITUTED UPON ENGINEER'S APPROVAL FOR EQUAL OR OTHER MFG/MODEL. REFER TO EQUIPMENT SCHEDULES FOR FINAL SELECTIONS.
- NOTES:**
- PROVIDE WITH ROUND OUTLET, BACKDRAFT DAMPER, GRILL AND ASSOCIATED MOUNTING KIT.
 - PROVIDE WITH INTERNAL FAN SPEED SWITCH.

INDOOR UNIT SCHEDULE

UNIT NO	MFR	MODEL	TYPE	AREA SERVED	AIRFLOW CFM	ESP IN. W.C.	COOLING (MBH)		HEATING (MBH) TOTAL	WEIGHT (LBS)	ELECTRICAL				STARTER FURN BY	DISCON FURN BY	NOTES	
							TOTAL	SENSIBLE			MCA	FLA	MOP	V				PH
IU-01	MITSUBISHI	PEAD-A18AA7	DUCTED	OFFICES	600	0.6	18	-	19	62	1.69	1.35	-	208	1	MFG	EC	1, 2, 3, 4, 5
IU-02	MITSUBISHI	PLA-A12EA7R1.TH	CEILING	CONFERENCE 114	400	-	12	-	14	46	1	0.26	-	208	1	MFG	EC	1, 2, 3, 4, 5
IU-03	MITSUBISHI	PLA-A12EA7R1.TH	CEILING	CONFERENCE 114	400	-	12	-	14	46	1	0.26	-	208	1	MFG	EC	1, 2, 3, 4, 5

- NOTES**
- PROVIDE WITH CONDENSATE DRAIN PAN AND CONDENSATE PUMP OPTION.
 - PROVIDE WITH ALL APPURTANANCES NECESSARY FOR A COMPLETE INSTALLATION.
 - SYSTEM INCLUDES A SINGLE POINT POWER CONNECTION; INDOOR UNIT WIRED FROM OUTDOOR UNIT.
 - SEE CORRESPONDING OUTDOOR UNIT SCHEDULE FOR EFFICIENCY DATA.
 - PROVIDE WITH BUILT UP, FULLY INTEGRATED, 100% CAPABLE FIXED DRY BULB ECONOMIZER.

OUTDOOR UNIT SCHEDULE

UNIT NO	MFR	MODEL	LOCATION	COOLING (MBH)			HEATING (MBH)		WEIGHT (LBS)	ELECTRICAL				STARTER FURN BY	DISCON FURN BY	NOTES
				TOTAL	SENSIBLE	IEER (SEER)	TOTAL	COP (HPSF)		MCA	MOP	V	PH			
OJ-01	MITSUBISHI	PUZ-A18NKA7	OUTDOORS	18	-	19.9	19	3.97	100	11	28	208	1	MFG	EC	1, 2, 3, 4, 5, 6
OJ-02	MITSUBISHI	PUZ-HA24NHA1	OUTDOORS	24	-	21.5	26	4.5	190	17	27	208	1	MFG	EC	1, 2, 3, 4, 5, 6

- NOTES**
- COOLING CAPACITY MBH AT 95 D.B. OUTDOOR AND 77 D.B./67 W.B. INDOOR.
 - HEATING CAPACITY AND EFFICIENCY AT 47 D.B. OUTDOOR AND 70 D.B. INDOOR.
 - PROVIDE ADDITIONAL REFRIGERANT CHARGE AS REQUIRED TO FULLY CHARGE SYSTEM.
 - PROVIDE WITH ALL APPURTANANCES NECESSARY FOR A COMPLETE INSTALLATION.
 - PROVIDE WITH R410-A REFRIGERANT.
 - PROVIDE ALL UNITS LOCATED OUTDOORS WITH LOCKING REFRIGERANT ACCESS PORT PER IMC 1101.10.

ROOF HOOD SCHEDULE

UNIT NO	MFR.	MODEL	SERVICE	CFM	THROAT SIZE			HEIGHT (IN)	WEIGHT (LBS)	FREE AREA (SF)	MAX PD (IN)	MAX VEL (FPM)	REMARKS
					L (IN)	W (IN)	DIA (IN)						
RH-01	GREENHECK	GRSR-8	RESTROOM 104 EXHAUST	70	-	-	8	20	15	-	0.004	169	1, 2, 3
RH-02	GREENHECK	GRSR-12	DOAS SUPPLY	395	-	-	12	22	15	1.00	0.039	482	1, 2, 3
RH-03	GREENHECK	GRSR-10	DOAS EXHAUST	285	-	-	10	20	15	1.00	0.046	623	1, 2, 3

- NOTES**
- PROVIDE WITH MANUFACTURER'S RECOMMENDED ROOF CURB SLOPED TO MATCH ROOF PITCH. INSTALL PER MANUFACTURER'S RECOMMENDATIONS
 - PROVIDE 24X24 GREENHECK SMD-201 SMOKE DAMPER, INSTALLED IN DUCT BENEATH THROAT. PROVIDE 120V POWER CONNECTION TO DAMPER.
 - PROVIDE WITH INSECT SCREEN.

ELECTRIC DUCT HEATER SCHEDULE

UNIT NO	MFR	MODEL	AREA SERVED	CFM	WEIGHT	ELECTRICAL				STARTER FURN BY	DISCON FURN BY	NOTES	
						KW	MCA	MOP	V				PH
DH-01	INDEECO	QUZ	CORRIDOR	395	-	6.5	-	-	208	1	MFG	EC	1, 2, 3

- NOTES**
- PROVIDE WITH CONTROL OPTION K, PROPORTIONAL CONTROLLER.
 - PROVIDE WITH DUCT THERMOSTAT.
 - PROVIDE WITH 2 STAGES.

MIDDLEBROOK ENGINEERING, LLC
6216 174TH AVE SW
LONGBRANCH, WA 98051
253.765.6292

BRIAN SCOTT MIDDLEBROOK
STATE OF WASHINGTON
62770 REGISTERED
PROFESSIONAL ENGINEER
3/30/2022

SCHEDULES

SHEET TITLE

CASCADE CHRISTIAN - OFFICE ADDITION
811 21ST STREET SE
PUYALLUP, WASHINGTON 98372

REVISIONS

NO	DESCRIPTION	DATE
PERMIT		3/31/2022

DRAWN BY: **RPG**
CHECKED BY: **BSM**
PROJECT MANAGER: **BSM**

REUSE OF DOCUMENTS
THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION.

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

SHEET

MH601

GENERAL CONTRACT REQUIREMENTS

- MECHANICAL, PLUMBING, AND CONTROLS SCOPE SHALL FALL UNDER THE ULTIMATE RESPONSIBILITY OF ONE CONTRACTOR, WHO IS RESPONSIBLE FOR UNDERSTANDING ALL MECHANICAL AND PLUMBING DOCUMENTS, DISTRIBUTING CONTRACT DOCUMENTS TO ALL SUBCONTRACTORS, AND SHALL BE RESPONSIBLE FOR CONTRACT COMPLETION.
- THE DRAWINGS ARE DIAGRAMMATIC. COORDINATE INSTALLATION WITH THE BUILDING, PROVIDE ALL NECESSARY OFFSETS, CHANGES IN DIRECTION, EXTENSIONS AND ASSOCIATED MATERIALS FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
- COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL, AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL PIPE OR DUCT OFFSETS WHERE REQUIRED TO COORDINATE INSTALLATION.
- LOCATIONS AND SIZES OF (FLOOR, WALL, AND ROOF OPENINGS) SHALL BE COORDINATED WITH OTHER TRADES INVOLVED. INCLUDE THE FOLLOWING IN THE COST OF MECHANICAL WORK: CUTTING, CORING, PATCHING AND PAINTING OF EXISTING WALLS, CEILINGS, FLOORS, AND ROOFS AS REQUIRED TO ACCOMMODATE WORK AS INDICATED IN THE MECHANICAL CONTRACT DOCUMENTS UNLESS SPECIFICALLY SHOWN ON ARCHITECTURAL DOCUMENTS.
- MAINTAIN A SET OF PLANS ON SITE. RECORD ALL CHANGES TO ACTUAL ARRANGEMENTS ON THESE PLANS. PROVIDE THIS SET OF PLANS TO THE OWNER'S REPRESENTATIVE WHEN WORK IS COMPLETE.
- ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- PROJECT SCHEDULING: COMPLY WITH OWNER'S REQUIREMENTS
- OPERATION AND MAINTENANCE MANUAL. PROVIDE COMPLETE OPERATIONS AND MAINTENANCE MANUAL IN HARD COVER. PROVIDE OPERATIONS, MAINTENANCE AND PARTS DATA ON ANY ITEM OF EQUIPMENT THAT HAS MOVING PARTS.
- PROVIDE THE FOLLOWING DOCUMENTS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. FINAL PAYMENT OF THE CONTRACT WILL BE CONTINGENT UPON RECEIVING THESE DOCUMENTS:
 - RECORD (AS-BUILT) DRAWINGS.
 - MAINTENANCE AND OPERATING INSTRUCTIONS (3 SETS).
 - EXTENDED WARRANTIES (OTHER THAN THE ONE-YEAR).
 - BALANCING LOSS (AIR AND HYDRONIC SYSTEMS) (3 SETS).
 - FINAL CERTIFICATES OF INSPECTION AND CODE COMPLIANCE.
 - COMMISSIONING DOCUMENTATION PER WSEC.
- WARRANTY PROVISIONS: THE CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND SYSTEMS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIAL, EQUIPMENT, OR POOR WORKMANSHIP, WHICH MAY SHOW ITSELF DURING THIS WARRANTY PERIOD.

SEISMIC AND VIBRATION REQUIREMENTS

- HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.
 - PROVIDE ALL SEISMIC RESTRAINT REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND THE APPLICABLE CODES.
 - EMPLOY A LICENSED STRUCTURAL ENGINEER, IF NECESSARY, TO ACHIEVE COMPLIANCE.
 - THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) SEISMIC RESTRAINT MANUAL. GUIDELINES MAY BE USED FOR PIPING AND DUCTWORK. INSURE THE PROPER HAZARD LEVEL IS EMPLOYED FOR THE AREA OF INSTALLATION.
- VIBRATION CRITERIA: PROVIDE VIBRATION ISOLATION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS (ASHRAE): APPLICATIONS HANDBOOK.

BASIC MATERIALS AND METHODS

- ALL MATERIALS AND EQUIPMENT SHALL BE LISTED OR LABELED BY A RECOGNIZED AGENCY: UL, AIA, FM, CSA, ARI, ETC.
- EQUIPMENT SHALL BE AS INDICATED ON THE DRAWING SCHEDULES. THE DRAWING SCHEDULES ESTABLISH THE LEVEL OF QUALITY. SUBSTITUTIONS WILL BE CONSIDERED, SUBMIT TECHNICAL DATA (PERFORMANCE AND CONSTRUCTION) TO THE OWNER'S REPRESENTATIVE FOR APPROVAL. ALLOW TWO WEEKS FOR TURN-AROUND.
- MECHANICAL SYSTEM PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE BUILDING CODE IN FORCE IN THE AUTHORITY HAVING JURISDICTION FOR THIS PROJECT. THIS INCLUDES PIPING, DUCTWORK, SUPPORTS, CONDUIT, AND ANY OTHER SYSTEM AND APPURTENANCE PROVIDED AS PART OF THE MECHANICAL WORK OF THIS CONTRACT. IN ADDITION, ALL THROUGH-PENETRATION SEALING METHODOLOGIES SHALL BE LISTED IN THE UNDERWRITERS' LABORATORIES (UL) FIRE RESISTANCE DIRECTORY, ISSUE CURRENT AT TIME OF BID.
- MOTORS SHALL COMPLY WITH THE WSEC.
- ALL MOTORS SHALL BE ELECTRONICALLY COMMUTATED UNLESS NOTED ON SCHEDULE.
- ELECTRICAL INSTALLATION SHALL COMPLY WITH THE NEC.
- PROTECT STORED MATERIALS. REPLACE DAMAGED MATERIALS PRIOR TO INSTALLATION.
- PROVIDE WATER-TIGHT SEAL FOR OPENINGS TO THE BUILDING THROUGH WHICH PIPE PASSES
- PROVIDE AND INSTALL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS) STANDARDS, SPECIFICALLY STANDARD SP-69, "PIPE HANGERS AND SUPPORTS- SELECTION AND APPLICATION" AND STANDARD SP-58, "PIPE HANGERS AND SUPPORTS- MATERIALS, DESIGN AND MANUFACTURE". PROVIDE PIPE SUPPORT SPACING IN ACCORDANCE WITH THE UPC OR IMC.
- TESTING: ALL WORK UNDER THIS CONTRACT SHALL BE THOROUGHLY AND SYSTEMATICALLY TESTED, BOTH DURING CONSTRUCTION AND AFTER COMPLETION. PIPE TESTING SHALL BE EITHER AS SPECIFIED IN THE APPROPRIATE SPECIFICATION SECTION, OR AS SPECIFIED IN THE APPLICABLE PLUMBING OR MECHANICAL CODE. DUCTWORK SHALL BE TESTED AS PART OF THE AIR BALANCING PROCESS. NOTIFY THE OWNER'S REPRESENTATIVE 48-HOURS IN ADVANCE OF ALL TESTS. TESTS SHALL BE MAINTAINED UNTIL APPROVED.
- START-UP, BALANCING AND COMMISSIONING.
 - EQUIPMENT STARTUP SHALL BE PERFORMED BY QUALIFIED PERSONNEL. THE TECHNICAL SPECIFICATION SECTIONS WILL DETAIL OTHER SPECIAL REQUIREMENTS, IF ANY. PROVIDE A STATEMENT OF THE STARTUP TECHNICIAN'S QUALIFICATIONS IF REQUESTED BY THE OWNER'S REPRESENTATIVE OR ELSEWHERE SPECIFIED.
 - BALANCE ALL AIR SYSTEMS. BALANCE IN ACCORDANCE WITH EITHER NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR AMERICAN AIR BALANCE COUNCIL (AABC) CRITERIA.
 - PROVIDE COMMISSIONING IN ACCORDANCE WITH THE WSEC. UNLESS ENHANCED COMMISSIONING IS REQUIRED. PROVIDE DOCUMENTATION OF COMMISSIONING.

AIR DISTRIBUTION SYSTEM - GENERAL

- PROVIDE PER THE IMC, THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) "DUCT CONSTRUCTION MANUAL, METAL AND FLEXIBLE" AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- IN ADDITION TO THE REQUIREMENTS ABOVE, INSTALL EQUIPMENT AND COMPONENTS IN ACCORDANCE WITH THE PUBLISHED MANUFACTURER'S INSTALLATION REQUIREMENTS.
- FIRE DAMPERS: UL LISTED FOR SERVICE INTENDED, INSTALL IN ACCORDANCE WITH THE LISTING. BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF THE PRODUCT.
- FLEXIBLE CONNECTIONS: PROVIDE AT EACH FAN AND AIR HANDLING UNIT CONNECTION TO DUCT.
- ACCESS PANELS: PROVIDE FOR MAINTENANCE OF ALL DUCT-MOUNTED EQUIPMENT (FIRE DAMPERS, CONTROL DAMPERS, COILS, ETC.).
- LOCATE VALVES, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE.
 - INSTALL TAG ON CEILING GRID FRAME TO INDICATE LOCATION AND TYPE OF EQUIPMENT THAT REQUIRES MAINTENANCE.
- PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER. ACCESS DOOR SHALL BE SIZED SO THAT ADJACENT EQUIPMENT IS ACCESSIBLE.
 - PROVIDE 16 GA. STEEL, FLUSH TYPE ACCESS DOOR WITH CONCEALED HINGE AND SLOT SCREWDRIVER TYPE CAM LATCH. PROVIDE FACTORY PRIMED IN PAINTED SURFACE AREAS FOR FIELD PAINTING.
 - PROVIDE STAINLESS STEEL FOR ALL OTHER AREAS. PROVIDE UL LISTED AND LABELED DOOR WHERE FIRE-RESISTANCE RATING IS INDICATED ON DRAWINGS.
 - PROVIDE DUCT ACCESS PANELS FOR FIRE DAMPER ACTUATOR ACCESS.

LOW PRESSURE STEEL DUCTWORK

- GALVANIZED CARBON STEEL PER SMACNA STANDARDS.
- FLEXIBLE DUCTWORK SHALL BE VINYL COATED SPRING STEEL HELIX BONDED TO A VINYL COATED FIBERGLASS MECH LINER WRAPPED WITH FIBERGLASS WOOL INSULATION. JACKET WITH A REINFORCED METALIZED MYLER/ NEOPRENE LAMINATE OUTER CASING.

AIR TERMINALS

- SCHEDULED GRILLES, REGISTERS, AND DIFFUSERS SHALL BE THE BASIS OF DESIGN. UNITS OF SIMILAR CONSTRUCTION AND CAPABILITIES MAY BE SUBMITTED FOR REVIEW. DEVICES SHALL DISTRIBUTE THE QUANTITY OF AIRFLOW UNIFORMLY THROUGHOUT THE INDICATED SPACE WITHOUT CAUSING NOTICEABLE NOISE OR DRAFTS.
- PROVIDE ALL DEVICES FOR COMPLETE INSTALLATION DEPENDING ON LOCATION OF INSTALLATION (IE: A.C.T OR HARD LID CEILINGS).
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND AS NOTED ON PLANS.

AIR BALANCING

- SCOPE OF WORK INCLUDES SETTING VOLUME (FLOW) AND SPEED ADJUSTMENTS TO HVAC. INSTRUMENTATION USED TO BALANCE THIS SYSTEM SHALL BE IN GOOD CONDITION AND MAINTAINED. IF REQUIRED BY THE OWNER, THE TESTS SHALL BE DONE IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE.
- THE BALANCER SHALL BE AN INDEPENDENT FIRM THAT SPECIALIZES IN BALANCING AND TESTING OF PUMPING SYSTEMS AND AIR MOVING EQUIPMENT/AIR DISTRIBUTION AND EXHAUST SYSTEMS. THE BALANCER SHALL PROVIDE PROOF OF HAVING SUCCESSFULLY COMPLETED FIVE PROJECTS OF SIMILAR SCOPE. TESTING AND ADJUSTING SHALL BE PERFORMED IN ACCORDANCE WITH NEBB OR AABC STANDARDS AND PROCEDURES.
- DAMAGE DONE TO THE SYSTEM BY THE BALANCER SHALL BY HIS/HER RESPONSIBILITY TO RECTIFY. NEATLY TYPED RECORDS SHALL BE MAINTAINED AT ALL STEPS, ADJUSTMENTS, AND BEGINNING AND FINAL READINGS. THE RECORDS SHALL ALSO INCLUDE MEASUREMENT LOCATIONS, DESIGN CAPACITIES, AND DATES AND NAMES OF PERSONNEL INVOLVED. FINAL SETTINGS SHALL BE CLEARLY MARKED ON EACH BALANCING DEVICE.
 - TEST AND ADJUST ENTIRE SYSTEM WITHIN SCOPE OF WORK. VOLUMES SHALL BE WITHIN 10% OF DESIGN REQUIREMENTS.
 - MEASURE TOTAL STATIC PRESSURE INCLUDING DUCT SYSTEM, TERMINAL UNITS, FILTERS, ETC.
 - ADJUST AND RECORD SYSTEM TO DESIGN RECIRCULATED AIR CFM.
 - DIFFUSERS, GRILLES AND REGISTERS SHALL BE ADJUSTED TO MINIMIZE DRAFTS IN ALL AREAS.
 - ALL FILTERS SHALL BE CLEAN AND IN PLACE BEFORE STARTING FANS.
 - DATA: RECORD AND CHECK THE FOLLOWING SYSTEMS AND EQUIPMENT.
 - AIR TERMINALS: SUPPLY, RETURN, OR EXHAUST IDENTIFICATIONS, CATALOGUE IDENTIFICATION, APPLICATIONS FACTORS, DESIGN AND RECORDED VELOCITIES AND AIR QUANTITIES, AND STATIC PRESSURES.
- CHECK OUT TEMPERATURE CONTROLS TO ASSURE PROPER CONTROL SEQUENCE, PROPER CONTROL SETTINGS, AND PROPER CONTROL CALIBRATION. REPORT MALFUNCTIONS IN LOGS UNDER "ADDITIONAL REMARKS."
- AIR BALANCE LOG:
 - TEST AND ADJUST ENTIRE SYSTEM WITHIN SCOPE OF WORK. VOLUMES SHALL BE WITHIN 10% OF DESIGN REQUIREMENTS.
 - MEASURE TOTAL STATIC PRESSURE INCLUDING DUCT SYSTEM, TERMINAL UNITS, FILTERS, ETC.
 - ADJUST AND RECORD SYSTEM TO DESIGN RECIRCULATED AIR CFM.
 - DIFFUSERS, GRILLES AND REGISTERS SHALL BE ADJUSTED TO MINIMIZE DRAFTS IN ALL AREAS.
 - ALL FILTERS SHALL BE CLEAN AND IN PLACE BEFORE STARTING FANS.
 - DATA: RECORD AND CHECK THE FOLLOWING SYSTEMS AND EQUIPMENT.
 - AIR TERMINALS: SUPPLY, RETURN, OR EXHAUST IDENTIFICATIONS, CATALOGUE IDENTIFICATION, APPLICATIONS FACTORS, DESIGN AND RECORDED VELOCITIES AND AIR QUANTITIES, AND STATIC PRESSURES.

FANS

- SCHEDULED FANS SHALL BE THE BASIS OF DESIGN. UNITS OF SIMILAR CONSTRUCTION AND CAPABILITIES MAY BE SUBMITTED FOR REVIEW.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND AS NOTED ON PLANS.
- PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

SPLIT SYSTEM UNITS

- BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNITS. MAJOR COMPONENTS INCLUDE:
 - EVAPORATOR AND CONDENSER UNITS.
 - CONTROLS - UNITS SHALL BE CONTROLLED BY MANUFACTURER'S PROPRIETARY TEMPERATURE CONTROL SYSTEM.
- INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

DEDICATED OUTDOOR AIR UNITS

- BASIS OF DESIGN SHALL REPRESENT THE QUALITY OF UNIT.
- CABINET SHALL INCLUDE FACTORY WIRING, CONTROLS, BLOWERS, FILTERS, INSTALLED INLET AIR THERMISTERS, AND ENTHALPIC HEAT EXCHANGER.
- APPROVED MANUFACTURER: LOSSNAY.
- PROVIDE ACOUSTIC LINING IN CONNECTING DUCTWORK 10' UPSTREAM AND DOWNSTREAM OF FAN, UNLESS OTHERWISE NOTED ON PLANS.

ROOF HOODS

- BASIS OF DESIGN SHALL REPRESENT QUALITY OF UNIT.
- PROVIDE CURBS SLOPED TO MATCH ROOF PITCH. CURBS SHALL BE AT LEAST 12" TALL.
- APPROVED MANUFACTURERS: GREENHECK

COPPER LINESET

- COPPER LINESET SHALL BE USED FOR REFRIGERANT PIPING.
- SIZE OF PIPING SHALL BE PER THE MANUFACTURER'S RECOMMENDATION AND REQUIREMENTS.
- MATERIALS FOR COPPER LINESET SHALL BE SOFT ANNEALED COPPER. CONTRACTOR TO SELECT END FINISHING TO SUIT INSTALLATION AND MANUFACTURER'S RECOMMENDATION.

PLASTIC PIPE, DWV & SEWER

- PVC PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS SHALL BE PER IAPMO INSTALLATION STANDARD (IS) 09-03, "PVC BUILDING DRAIN, WASTE, AND VENT PIPE AND FITTINGS."

VALVES

- VALVES SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. VALVES SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES ARE INSTALLED.
- LOCATE AND ORIENT VALVES TO PERMIT PROPER OPERATION AND ACCESS FOR MAINTENANCE OF PACKING, SEAT, AND DISK. GENERALLY, LOCATE VALVES IN OVERHEAD PIPING IN HORIZONTAL POSITION. PROVIDE A UNION ADJACENT TO ONE END OF EACH THREADED VALVE.

CONTROLS

- STAND ALONE CONTROL SYSTEMS
 - SCOPE: PROVIDE UNIT CONTROLS, ZONE TEMPERATURE CONTROLS AND ANY OTHER CONTROL ITEMS REQUIREMENT FOR A COMPLETE AND FUNCTIONAL SYSTEM. PROVIDE ALL REQUIRED WIRING, CONDUIT, COMPONENTS (RELAYS, TRANSFORMERS, ETC) AND EQUIPMENT. OBTAIN AND UNDERSTAND ALL MECHANICAL AND PLUMBING DOCUMENTS BEFORE BIDDING WORK.
 - APPROVED MANUFACTURERS ARE TRANE, MITSUBISHI, AND HONEYWELL. NO OTHER MANUFACTURER IS ACCEPTABLE UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE.
 - SPECIFIC REQUIREMENTS: EACH UNIT SHALL HAVE INDIVIDUAL STANDALONE CONTROLS THAT PERFORM THE FUNCTIONS LISTED IN THE DRAWINGS. PNEUMATIC CONTROLS ARE NOT ACCEPTABLE.
- ROOM TEMPERATURE SENSORS - ROOM TEMPERATURE SENSORS SHALL BE MOUNTED 54" AFF UNLESS OTHERWISE NOTED ON PLANS. VERIFY ALL LOCATIONS WITH OWNER'S REPRESENTATIVE.
- ACTUATION EQUIPMENT:
 - SPRING RETURN IS REQUIRED IN ALL EQUIPMENT EXPOSED TO OUTDOOR AIR AND/OR FAILSAFE CONDITIONS.
 - ALL AIR HANDLER AND DOAS DAMPER AND VALVE ACTUATION SHALL BE SPRING RETURN AND PROPORTIONALLY CONTROLLED.
 - ALL 120V ACTUATORS SHALL HAVE DISCONNECTS IN ACCORDANCE WITH ELECTRICAL STANDARDS.
 - ALL CONTROLS ACTUATORS SHALL BE SIZED CAPABLE OF CLOSING AGAINST THE MAXIMUM SYSTEM SHUTOFF PRESSURE.
- WIRING:
 - ALL CLASS 2 (24VAC OR LESS) CONTROLS WIRING SHALL BE CONCEALED IN CONDUIT, UNLESS CONCEALED IN ACCESSIBLE LOCATIONS.
 - WIRE SUPPORTS SHALL BE INSTALLED PER LOCAL WIRING CODE REQUIREMENTS. DEFAULT SUPPORT SPACING SHALL BE 5'. SUPPORTS SHALL HANG FROM THE BUILDING STRUCTURE AND BE DESIGNED FOR THIS APPLICATION.
 - PROVIDE FIRE STOPPING FOR ALL PENETRATIONS USED BY CONTROLS CONDUIT AND RACEWAYS.
 - WIRING SHALL NOT PENETRATE STRUCTURAL ELEMENTS.
- PROVIDE FULL COMMISSIONING OF THE CONTROL SYSTEM IN ACCORDANCE WITH THE WSEC.
- PROVIDE 2 HOURS OF SCHEDULED INSTRUCTION PERIOD TO THE OWNER. COST FOR TIME INVOLVED SHALL BE INCLUDED IN THE BID.
- INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS, THE NEC AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

PIPING SYSTEM SPECIALTIES

- SPECIALITY PIPE SYSTEMS SHALL BE CONSTRUCTED OF MATERIALS THAT ARE COMPATIBLE WITH THE TYPE OF PIPING MATERIAL AND FLUIDS IN THE SYSTEM. THEY SHALL BE RATED FOR THE TEMPERATURES AND PRESSURES OF THE SYSTEMS IN WHICH THE VALVES ARE INSTALLED.
- PROVIDE SENSORS WHERE INDICATED ON THE PLANS.

PIPE TESTING

- PIPING SHALL BE TESTED USING AIR, NITROGEN, OR CARBON DIOXIDE. TEST PRESSURE SHALL BE NOT LESS THAN 1.5 TIMES THE PROPOSED MAXIMUM WORKING PRESSURE, BUT NOT THAN 3 PSI IRRESPECTIVE OF THE DESIGN PRESSURE. TEST LENGTH SHALL BE NOT LESS THAN ONE HALF HOUR FOR EVERY 500 CUBIC FEET OF PIPE VOLUME OR FRACTION THEREOF. ALL GAS PIPING TESTING SHALL BE IN ACCORDANCE WITH IFGC 406.
- PIPING IS CONSIDERED "PASSED" IF THE PRESSURE REMAINS UNCHANGED FOR THE DURATIONS LISTED ABOVE.

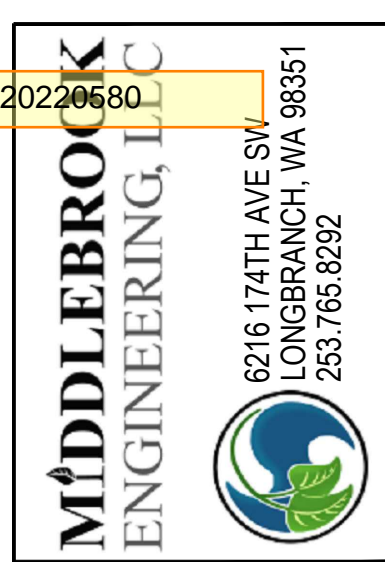
REFRIGERANT PIPE INSULATION

- RUBBER OR FLEXIBLE FOAM STYLE INSULATION FOR REFRIGERANT PIPING SYSTEMS SHALL BE PROVIDED WITH LINESET.
- PROVIDE PER THE WSEC AND THE MANUFACTURER'S PUBLISHED INSTRUCTIONS. INSULATION THICKNESSES SHALL COMPLY WITH WSEC.
- LINESET PIPING EXPOSED TO WEATHER SHALL BE PROTECTED FROM DAMAGE. PROVIDE ARMAFLEX SHIELD OR EQUAL IN AREAS THAT ARE EXTERIOR TO THE BUILDING ENVELOPE OR AREAS THAT ARE SUBJECT TO DAMAGE.

SUPPLY, RETURN, EXHAUST, AND RELIEF AIR DUCTWORK INSULATION SCHEDULE					
DUCT SYSTEM	DUCT LOCATION AND USE	CLIMATE ZONE	MINIMUM INSTALLED DUCT INSULATION R-VALUE	NOTES	
SUPPLY AIR OR RETURN AIR	OUTSIDE THE BUILDING (OUTDOORS AND EXPOSED TO WEATHER)*	4C	R-8	SEE SECTION C403.10.1.2 FOR DETAILS	
SUPPLY AIR OR RETURN AIR	OUTSIDE THE BUILDING (OUTDOORS AND EXPOSED TO WEATHER)*	5B	R-12	SEE SECTION C403.10.1.2 FOR DETAILS	
SUPPLY AIR OR RETURN AIR	UNCONDITIONED SPACE (ENCLOSED BUT NOT IN THE BUILDING CONDITIONED ENVELOPE)	4C AND 5B	R-5	SEE SECTION C403.10.1.2 FOR DETAILS	
SUPPLY AIR OR RETURN AIR	UNCONDITIONED SPACE WHERE THE DUCT CONVEYS AIR THAT IS WITHIN 15°F OF THE AIR TEMPERATURE OF THE SURROUNDING UNCONDITIONAL SPACE.	4C AND 5B	R-3.3	SEE IMC SECTION 603.12 FOR ADDITIONAL REQUIREMENTS FOR CONDENSATION CONTROL AT DUCTWORK	
SUPPLY AIR OR RETURN AIR	WHERE LOCATED IN A BUILDING ENVELOPE ASSEMBLY	4C AND 5B	R-16	DUCT OR PLENUM IS SEPARATED FROM BUILDING ENVELOPE ASSEMBLY WITH THE MINIMUM INSULATION VALUE	
SUPPLY AIR	WITHIN CONDITIONED SPACE WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS LESS THAN 55°F OR GREATER THAN 105°F	4C AND 5B	R-3.3	SEE SECTION C403.10.1.2 FOR DETAILS	
SUPPLY AIR	WITHIN CONDITIONED SPACE THAT DUCT DIRECTLY SERVES WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS LESS THAN 55°F OR GREATER THAN 105°F	4C AND 5B	NONE	SEE SECTION C403.10.1.2 FOR DETAILS	
SUPPLY AIR	WITHIN CONDITIONED SPACE WHERE THE SUPPLY DUCT CONVEYS AIR THAT IS LESS THAN 55°F OR GREATER THAN 105°F OR LESS	4C AND 5B	NONE		
RETURN OR EXHAUST AIR	WITHIN CONDITIONED SPACE, DOWNSTREAM OF AN ENERGY RECOVERY MEDIA, UPSTREAM OF AN AUTOMATIC SHUT OFF DAMPER.	4C	R-8		
RELIEF OR EXHAUST AIR	CONDITIONED SPACE DOWNSTREAM OF AN AUTOMATIC SHUT OFF DAMPER.	4C AND 5B	R-16		
GENERAL NOTES:					
1. INSULATION R-VALUES, MEASURED IN h · ft² · °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.					
2. SEE INTERNATIONAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUCT INSTALLATION REQUIREMENTS.					
3. INCLUDES ATTIC ABOVE INSULATED CEILINGS, PARKING GARAGES AND CRAWL SPACES.					

OSA DUCT INSULATION SCHEDULE					
DUCT SYSTEM	DUCT LOCATION AND USE	CLIMATE ZONE	AIRFLOW	MINIMUM INSTALLED DUCT INSULATION R-VALUE	NOTES
OUTDOOR AIR	INSIDE CONDITIONED SPACE AND UPSTREAM OF AUTOMATIC SHUT OFF DAMPER.	4C AND 5B	≥2800 CFM	4.5	SEE SECTION C403.10.1.1 FOR ADDITIONAL REQUIREMENTS
OUTDOOR AIR	INSIDE CONDITIONED SPACE AND DOWNSTREAM OF AUTOMATIC SHUT OFF DAMPER TO HVAC UNIT OR ROOM.	4C	≥2800 CFM	3.0	
OUTDOOR AIR	INSIDE CONDITIONED SPACE AND DOWNSTREAM OF AUTOMATIC SHUT OFF DAMPER TO HVAC UNIT OR ROOM.	5B	≥2800 CFM	2.5	
OUTDOOR AIR	INSIDE CONDITIONED SPACE	4C AND 5B	<2800	1.5	SEE EXCEPTION 1 TO SECTION C403.10.1.1 FOR ADDITIONAL DETAILS
GENERAL NOTES:					
1. INSULATION R-VALUES, MEASURED IN h · ft² · °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.					
2. SEE INTERNATIONAL MECHANICAL CODE SECTIONS 603.12 AND 604 FOR FURTHER DETAILS ON DUCT INSTALLATION REQUIREMENTS.					

PIPE INSULATION SCHEDULE							
FLUID OPERATING AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL OR TUBE SIZE (inches)				
	BTU · in./h · ft² · °F)	TEMPERATURE, °F	< 1	1 to 1-1/2	1-1/2 to < 4	4 to < 8	≥8
> 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	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:							
1. FOR PIPING SMALLER THAN 1-1/2 INCH (38mm) AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF THESE THICKNESSES BY 1 INCH (25mm) SHALL BE PERMITTED (BEFORE THICKNESSES REQUIRED IN FOOTNOTE b) NOT TO A THICKNESS LESS THAN 1 INCH (25mm).							
2. FOR INSULATION OUTSIDE THE STATED CONDUCTIVITY RANGE, THE MINIMUM THICKNESS (T) SHALL BE DETERMINED AS FOLLOWS:							
$T = r[(1 + t/r)^{k/n} - 1]$							
WHERE:							
T = MINIMUM INSULATION THICKNESS,							
r = ACTUAL OUTSIDE RADIUS OF 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/h · ft² · °F)							
k = THE UPPER VALUE OF THE CONDUCTIVITY RANGE LISTED IN THE TABLE FOR THE APPLICABLE FLUID TEMPERATURE.							
3. FOR DIRECT-BURIED HEATING AND HOT WATER SYSTEM PIPING, REDUCTION OF THESE THICKNESSES BY 1-1/2 INCHES (38mm) SHALL BE PERMITTED (BEFORE THICKNESS ADJUSTMENT REQUIRED IN FOOTNOTE b) BY NOT TO THICKNESS LESS THAN 1 INCH (25mm)							



SPECIFICATIONS

PROJECT: CASCADE CHRISTIAN - OFFICE ADDITION
811 21ST STREET SE
PUYALLUP, WASHINGTON 98372

REVISIONS		
NO	DESCRIPTION	DATE
1	PERMIT	3/31/2022

DRAWN BY:	RPG
CHECKED BY:	BSM
PROJECT MANAGER:	BSM

REUSE OF DOCUMENTS
THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION.

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

SHEET

MH801

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

DESIGN SET

BY	DATE	DESCRIPTION
SLF	5-25-21	DRAFT
		SUBMITTAL
		CONSTRUCTION
		AS BUILT

REVISIONS

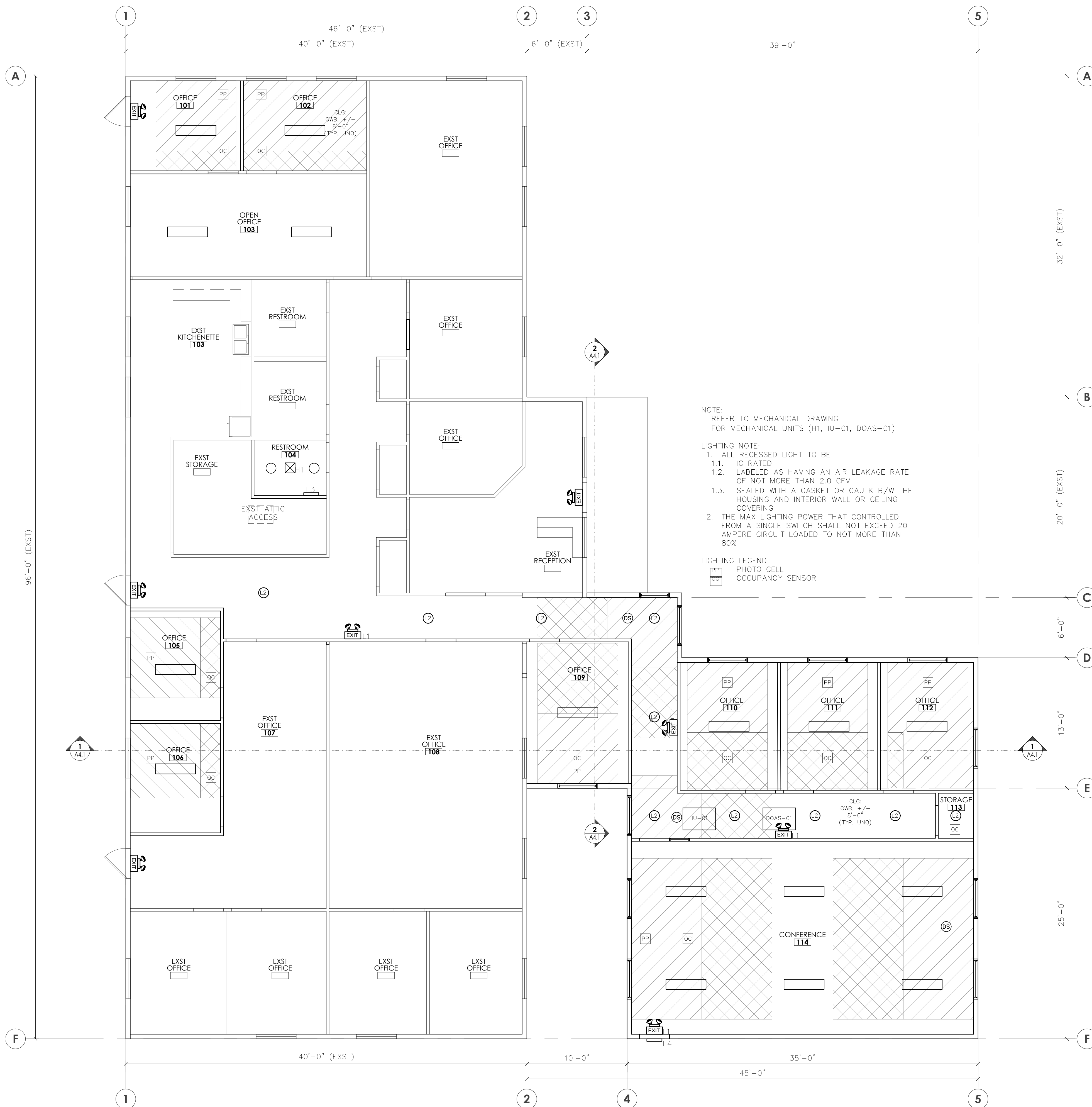
NO.	DATE	DESCRIPTION

JOB NO.- PC190002

FIRST FL CEILING

SHEET NO.

E2.2



LIGHT #	QTY	DESCRIPTION	MANUFACTURE	MODEL #	LAMP	DIM	WATT	TOTAL WATT
L1	4	EXT LIGHT	ERW LIGHTING	MXB-G-U		NO	N/A	
INTERIOR								
L2	12	RECESSED CAN LIGHT	COOPER	H750KATD010-ML5612935D010	35K	YES	20	240
L3	16	LED PANEL	RAB	EZPAN 1X4 30 YN D10	35K	YES	30	480
							SUB TOTAL	720
EXTERIOR								
L4	1	EXT DOOR LIGHT	STONCO	PW-30W-NW-G1-8-BZ	40K	NO	30	30
							SUB TOTAL	30

2 LIGHTING SCHD

NOTE:
REFER TO MECHANICAL DRAWING FOR MECHANICAL UNITS (H1, IU-01, DOAS-01)

LIGHTING NOTE:
1. ALL RECESSED LIGHT TO BE
1.1. IC RATED
1.2. LABELED AS HAVING AN AIR LEAKAGE RATE OF NOT MORE THAN 2.0 CFM
1.3. SEALED WITH A GASKET OR CAULK B/W THE HOUSING AND INTERIOR WALL OR CEILING COVERING
2. THE MAX LIGHTING POWER THAT CONTROLLED FROM A SINGLE SWITCH SHALL NOT EXCEED 20 AMPERE CIRCUIT LOADED TO NOT MORE THAN 80%

LIGHTING LEGEND
PP PHOTO CELL
OC OCCUPANCY SENSOR

1 REFLECTED CEILING PLAN
(11X17) SCALE: 3/32" = 1'-0"
(22X34) SCALE: 3/16" = 1'-0"

GENERAL NOTES

- ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, FUEL GAS, AND LOCAL CODES, WITH AMENDMENTS.
- WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- COORDINATE MECHANICAL WORK WITH ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL AND LANDSCAPE WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
- COORDINATE HVAC, PLUMBING, AND FIRE PROTECTION WORK PRIOR TO INSTALLATION. DUCTWORK AND EQUIPMENT ACCESS TAKES PRECEDENCE OVER ALL PIPING EXCEPT GRAVITY SYSTEMS FOR AVAILABLE SPACE.
- COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- CLEAN THE JOB SITE DAILY AND REMOVE FROM THE PREMISES ANY DIRT AND DEBRIS CAUSE BY THE PERFORMANCE OF THE WORK INCLUDED IN THIS CONTRACT. BEFORE SUBSTANTIAL COMPLETION, CLEAN EQUIPMENT, FIXTURES, EXPOSED DUCTS, PIPING AND SIMILAR ITEMS.
- PROVIDE EQUIPMENT THAT FITS INTO THE SPACE ALLOTTED AND ALLOWS ADEQUATE ACCEPTABLE CLEARANCE FOR INSTALLATION, REPLACEMENT, SERVICING, AND MAINTENANCE. COORDINATE WITH OTHER TRADES TO ENSURE NO CONFLICT WITH REQUIRED CLEARANCES.
- CONTRACTOR SHALL OBTAIN & PAY FOR ALL PERMITS AND CONSTRUCTION FEES. FURNISH FINAL CERTIFICATE TO OWNER SHOWING COMPLIANCE WITH CODE REQUIREMENTS.
- REFER TO TYPICAL DETAILS PROVIDED IN THIS DRAWING SET FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE WITH DETAILS.
- A SHORT DASH IN A SCHEDULE TABLE CELL INDICATES THAT THE COLUMN HEADING IS NOT USED OR NOT APPLICABLE TO THAT SCHEDULED ITEM.
- ALL PIPING & DUCTWORK IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD LID CEILING.
- LOCATE VALVES, WATER HAMMER ARRESTERS, CLEANOUTS, DAMPERS, CONTROLS AND SIMILAR COMPONENTS SO THAT THEY ARE ACCESSIBLE. PROVIDE ACCESS DOORS FOR MECHANICAL EQUIPMENT INSTALLED BEHIND WALLS, ABOVE INACCESSIBLE CEILINGS AND BELOW FLOORS. COORDINATE ACCESS DOOR LOCATIONS WITH ARCHITECT/ENGINEER.

PLUMBING:

- DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIAL TIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, PLUMBING FITTINGS AND ALL OTHER APPURTENANCES IN CONTACT WITH DRINKING WATER SHALL BE LEAD-FREE EXCEPT THOSE EXPLICITLY EXEMPTED IN SECTION 3874 OF THE SAFE WATER DRINKING ACT. LEAD-FREE SHALL MEAN (A) NOT CONTAINING MORE THAN 0.2 PERCENT LEAD WHEN USED WITH RESPECT TO SOLDER AND FLUX; AND (B) NOT MORE THAN A WEIGHTED AVERAGE OF 0.25 PERCENT LEAD WHEN USED WITH RESPECT TO WETTED SURFACES OF DOMESTIC WATER TUBE, PIPE, FITTINGS, JOINING MATERIALS, SPECIALTIES, PLUMBING EQUIPMENT, PLUMBING FIXTURES, AND PLUMBING FITTINGS.
- PROVIDE WATER HAMMER ARRESTORS IN DOMESTIC WATER PIPING IN ACCORDANCE WITH PDI-WH201.
- INSULATE HOT AND COLD WATER PER WASHINGTON STATE ENERGY CODE C403.10.3.
- ELECTRIC HEAT TRACE SYSTEMS SHALL COMPLY WITH IEEE 515.1. CONTROLS FOR HEAT TRACE TEMPERATURE MAINTENANCE SYSTEMS SHALL AUTOMATICALLY ADJUST THE INPUT ENERGY TO MAINTAIN THE DESIRED WATER TEMPERATURE IN THE PIPING IN ACCORDANCE WITH THE TIMES WHEN HEATED WATER IS USED IN THE OCCUPANCY. HEAT TRACE SHALL BE TURNED OFF AUTOMATICALLY WHEN THERE IS NO HOT WATER DEMAND.
- DISCHARGE TEMPERATURE OF PUBLIC LAVATORIES SHALL BE 110 DEGREES FAHRENHEIT.
- VALVES, EXPANSION FITTINGS/LOOPS, AND PIPING SPECIALTIES SHALL BE FULL SIZE OF PIPE UNLESS NOTED OTHERWISE.

NON-STRUCTURAL MECHANICAL COMPONENTS:

- HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.

APPLICABLE CODES

AS ADOPTED BY THE CITY OF PUYALLUP

INTERNATIONAL MECHANICAL CODE, IMC 2018
 INTERNATIONAL BUILDING CODE, IBC 2018
 WASHINGTON STATE ENERGY CODE, WSEC 2018
 INTERNATIONAL FUEL GAS CODE, IFGC 2018
 UNIFORM PLUMBING CODE, UPC 2018

AND ASSOCIATED WASHINGTON ADMINISTRATIVE CODE AMENDMENTS

DESIGN CONDITIONS

WATER PRESSURE
 57 PSI

SCOPE OF WORK

- INSTALL NEW FIXTURES AS SHOWN ON PLANS. TIE INTO EXISTING HOT WATER, COLD WATER, AND WASTE SYSTEMS.
- REINSULATE ALL DOMESTIC WATER PIPE IN CRAWL SPACE.
- INSTALL 3 W/LF HEAT TRACE ON HOT WATER PIPING TO NEW LAVATORY.
- DEMOLISH EXISTING UTILITY SINK.

ABBREVIATIONS

(E)	EXISTING
AABC	AMERICAN AIR BALANCE COUNCIL
AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AG	AIR GAP
AGA	AMERICAN GAS ASSOCIATION
AMP	AMPERAGE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BHP	BREAK HORSE POWER
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
C.I.	CAST IRON
CO	CLEANOUT
CONFIG	CONFIGURATION
CSA	CANADIAN STANDARDS ASSOCIATION
CW	COLD WATER
DB	DRY BULB
DC	DOUBLE CHECK
DDC	DIRECT DIGITAL CONTROLS
dF	DEGREES FAHRENHEIT
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DN	DOWN
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRICALLY COMMUTATED MOTOR
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
ETC	ET CETERA
EX. SP.	EXTERNAL STATIC PRESSURE
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FM	FACTORY MANUAL
FPM	FEET PER MINUTE
FS	FLOOR SINK
FT	FEET
GA	GAUGE
GAL	GALLON
GPF	GALLONS PER FLUSH
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HP	HORSEPOWER
HR	HOUR
HW	HOT WATER
HWC	HOT WATER CIRCULATING
IBC	INTERNATIONAL BUILDING CODE
IFGC	INTERNATIONAL FUEL GAS CODE
IMC	INTERNATIONAL MECHANICAL CODE
IN	INCH
IPS	IRON PIPE SIZE
LAT	LATERAL
LB/LBS/#	POUND/ POUNDS
LF	LINEAR FEET
LVL	LEVEL
MAX	MAXIMUM
MBH	MILLIONS OF BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MAXIMUM CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MFG/MFR	MANUFACTURER
MIN	MINIMUM
MOCPI/ MOP	MAXIMUM OVER CURRENT PROTECTION
MSS	MANUFACTURER'S STANDARDIZATION SOCIETY
NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
OC	ON CENTER
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NUMBER
NOM	NOMINAL
NPCW	NON-POTABLE COLD WATER
NPHW	NON-POTABLE HOT WATER
NPHWC	NON-POTABLE HOT WATER CIRC
NTS	NOT TO SCALE
PH	PHASE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PVC	POLYVINYL CHLORIDE
RP	REDUCED PRESSURE
RPM	REVOLUTIONS PER MINUTE
SD	STORM DRAIN
SF	SQUARE FEET
SPEC	SPECIFICATION
STM	STEAM
THRD	THREADED
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UPC	UNIFORM PLUMBING CODE
V	VENT/ VOLT
VOLT	VOLTAGE
VRF	VARIABLE REFRIGERANT FLOW
VTR	VENT TO ROOF
VERT	VERTICAL
W	WITH
W	WASTE
W.C.	WATER COLUMN
WCO	WALL CLEANOUT
WIN	WINTER
WSEC	WASHINGTON STATE ENERGY CODE
WSFU	WATER SUPPLY FIXTURE UNITS

SYMBOL

	P-01
	X XX
	→
	□
	CS
	S
	PI
	LW
	TI
	TE
	FI
	FE
	FS
	●
	■
	▲
	U

	---→
	---→
	---→

DESCRIPTION

EQUIPMENT ABBREVIATION AND NUMBER (TAG)
DETAIL NUMBER
DRAWING NUMBER WHERE DRAWN
WALL HYDRANT
FLOAT AND THERMOSTATIC STEAM TRAP
CURRENT SENSOR
SWITCH
PRESSURE INDICATOR
LOW WATER CUT OFF SWITCH
TEMPERATURE INDICATOR
TEMPERATURE ELEMENT
FLOW INDICATOR
FLOW ELEMENT
FLOW SWITCH
POINT OF CONNECTION
DOMESTIC COLD WATER (CW)
DOMESTIC HOT WATER (HW)
DOMESTIC HOT WATER CIRCULATING (HWC)

SYMBOL

	W
	V

	~

	○
	⊥
	⊥→
	○
	⊥
	○
	⊥
	⊥
	□
	●
	■
	▲
	U

DESCRIPTION

SOIL, WASTE (S, W)
VENT (V), OR HIDDEN BELOW WASTE
EXISTING PIPING
CROSSING LINES, NON CONNECTING
PIPE CONTINUATION
WASTE/ VENT UP, SURFACE/ FLOOR CLEANOUT (SCO/FCO)
WALL CLEANOUT
CLEANOUT (CO)
P-TRAP
PIPE DOWN
PIPE UP
BRANCH-TOP CONNECTION
BRANCH-BOTTOM CONNECTION
FLOOR DRAIN
FLOOR FUNNEL DRAIN
FLOOR SINK
TRAP PRIMER WITH ACCESS PANEL
DRAIN

PRCA20220680



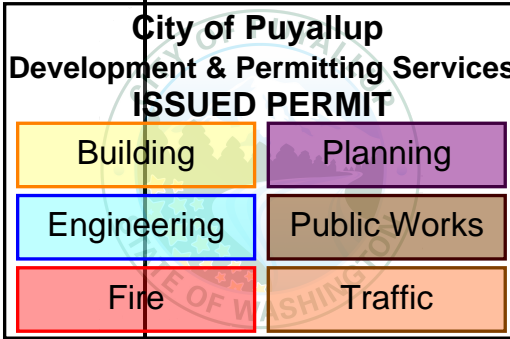
LEGEND, ABBREVIATIONS,
AND GENERAL NOTES

CASCADE CHRISTIAN - OFFICE ADDITION
 811 21ST STREET SE
 PUYALLUP, WASHINGTON 98372

REVISIONS		
NO	DESCRIPTION	DATE
	PERMIT	3/31/2022

DRAWN BY:	RPG
CHECKED BY:	BSM
PROJECT MANAGER:	BSM

REUSE OF DOCUMENTS
 THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION



SHEET

PP001

GENERAL NOTES

1. PIPING IS SCHEMATIC IN NATURE. CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.
2. THIS DRAWING WAS CREATED FROM AS BUILT DOCUMENTATION AND FIELD NOTES AND MAY NOT REPRESENT ACTUAL AS BUILT CONDITIONS. CONTRACTOR TO VERIFY SCOPE PRIOR TO COMMENCING WORK.
3. WASTE PIPING 4" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT. WASTE PIPING 3" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT.
4. LINES AND EQUIPMENT SHOWN DARK IS NEW WORK. LINES AND EQUIPMENT SHOWN LIGHT IS EXISTING TO REMAIN.

PLAN NOTES

1. CAP EXISTING 1/2" HW AND CW TO DEMOLISHED SERVICE SINK.
2. PROVIDE 3W LF HEAT TRACE ON NEW HOT WATER PIPING TO NEW LAV. PROVIDE CONTROLS PER WSEC C404.7.2 HEAT TRACE SYSTEMS.
3. REINSULATE ALL EXPOSED, EXISTING HOT WATER AND COLD WATER PIPING IN CRAWLSPACE PER WSEC REQUIREMENTS.

FOUNDATION PLAN

SHEET TITLE

PROJECT
 CASCADE CHRISTIAN - OFFICE ADDITION
 811 21ST STREET SE
 PUYALLUP, WASHINGTON 98372

REVISIONS

NO	DESCRIPTION	DATE
	PERMIT	3/31/2022
1	PERMIT REV	8/26/2022

DRAWN BY: RPG
 CHECKED BY: BSM
 PROJECT MANAGER: BSM

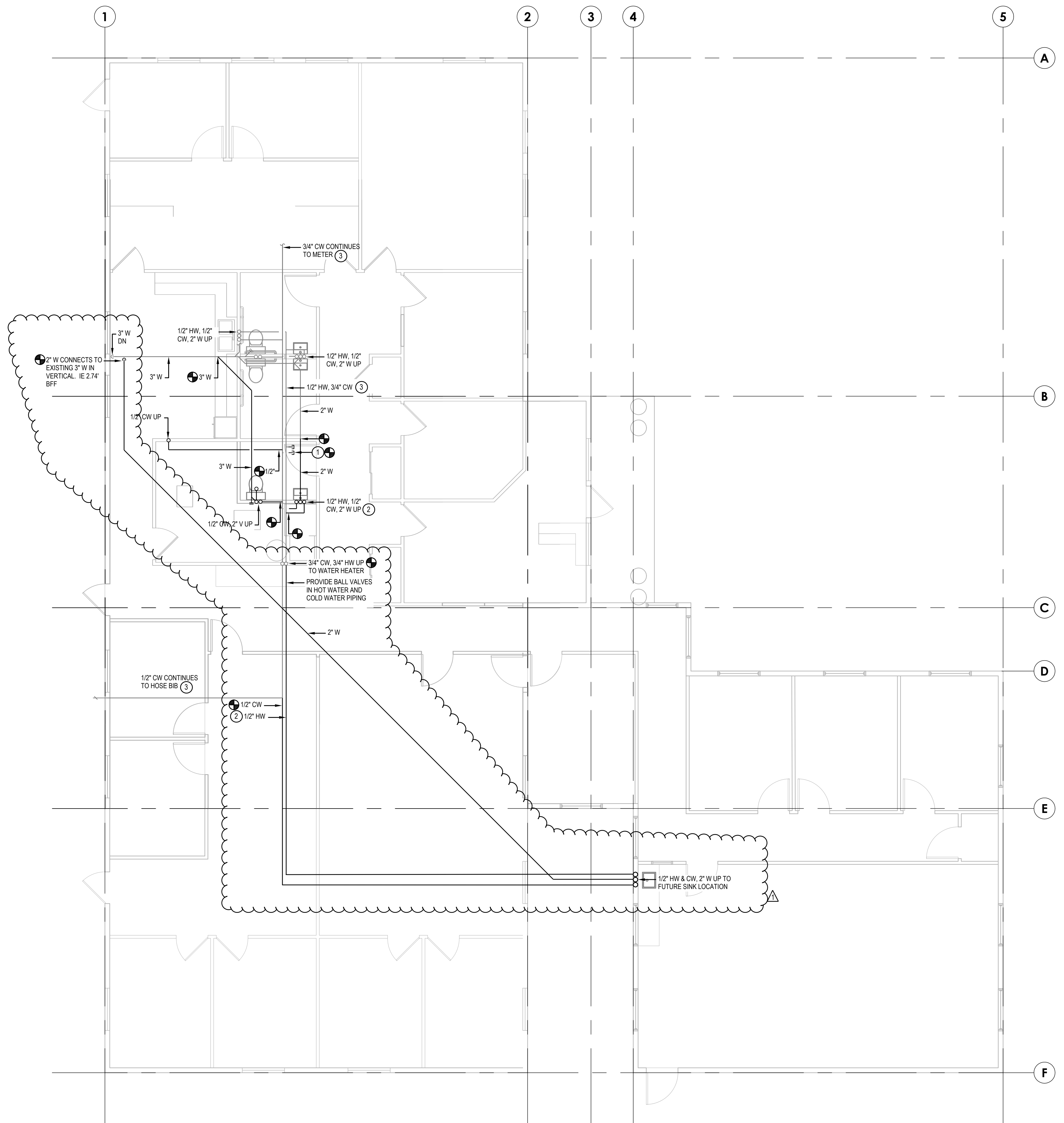
REUSE OF DOCUMENTS
 THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup
 Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

SHEET

PP101



FOUNDATION PLAN
 SCALE: 3/16" = 1'-0"

PRCA20220680

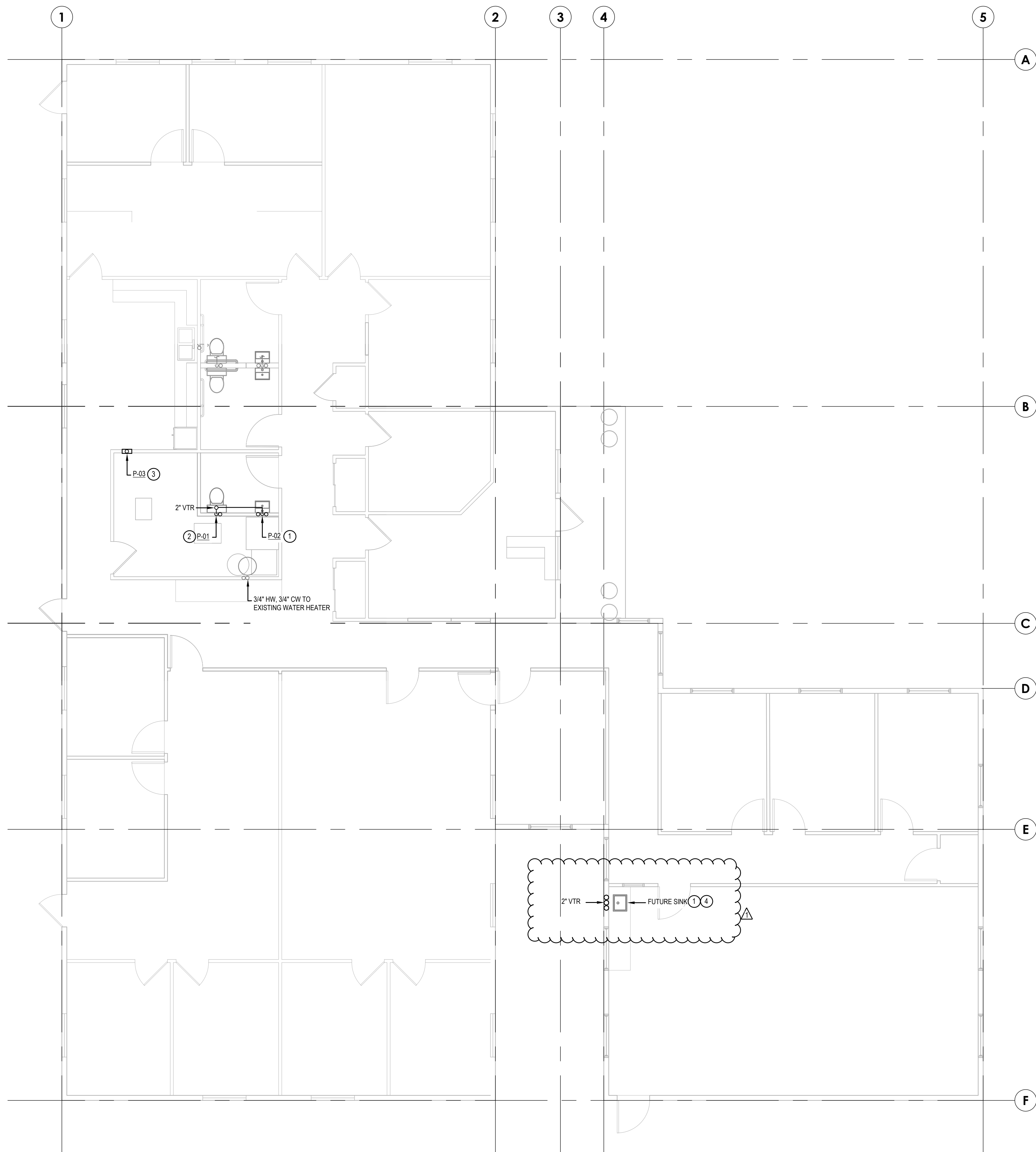


GENERAL NOTES

- 1. PIPING IS SCHEMATIC IN NATURE. CONTRACTOR TO PROVIDE ADDITIONAL FITTINGS AND OFFSETS AS REQUIRED TO INSTALL A COMPLETE AND FUNCTIONING SYSTEM.
- 2. THIS DRAWING WAS CREATED FROM AS BUILT DOCUMENTATION AND FIELD NOTES AND MAY NOT REPRESENT ACTUAL AS BUILT CONDITIONS. CONTRACTOR TO VERIFY SCOPE PRIOR TO COMMENCING WORK.
- 3. LINES AND EQUIPMENT SHOWN DARK IS NEW WORK. LINES AND EQUIPMENT SHOWN LIGHT IS EXISTING TO REMAIN.

PLAN NOTES

- ① 2" W, 1-1/2" V, 1/2" CW, 1/2" HW
- ② 3" W, 2" V, 1/2" CW
- ③ 1/2" CW
- ④ PROVIDE ROUGH IN FOR FUTURE FIXTURE. FIXTURE NOT PROVIDED UNDER THIS CONTRACT. CAP ALL PIPES AT FIXTURE LOCATION.



PLUMBING FLOOR PLAN

CASCADE CHRISTIAN - OFFICE ADDITION
811 21ST STREET SE
PUYALLUP, WASHINGTON 98372

REVISIONS		
NO	DESCRIPTION	DATE
	PERMIT	3/31/2022
1	PERMIT REV	8/26/2022

DRAWN BY: RPG
 CHECKED BY: BSM
 PROJECT MANAGER: BSM

REUSE OF DOCUMENTS
 THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup
 Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire Dept	Traffic

PP102

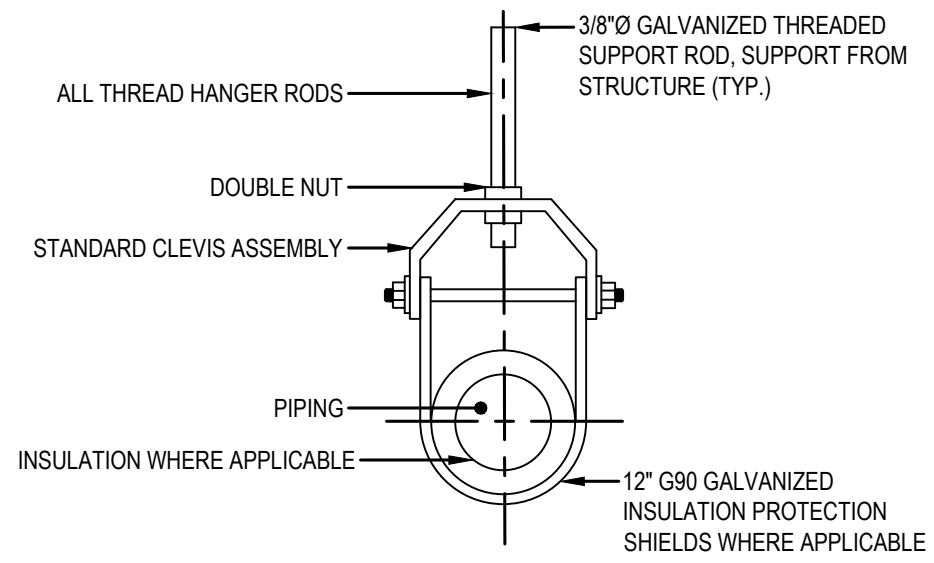
REVISIONS

NO	DESCRIPTION	DATE
	PERMIT	3/31/2022

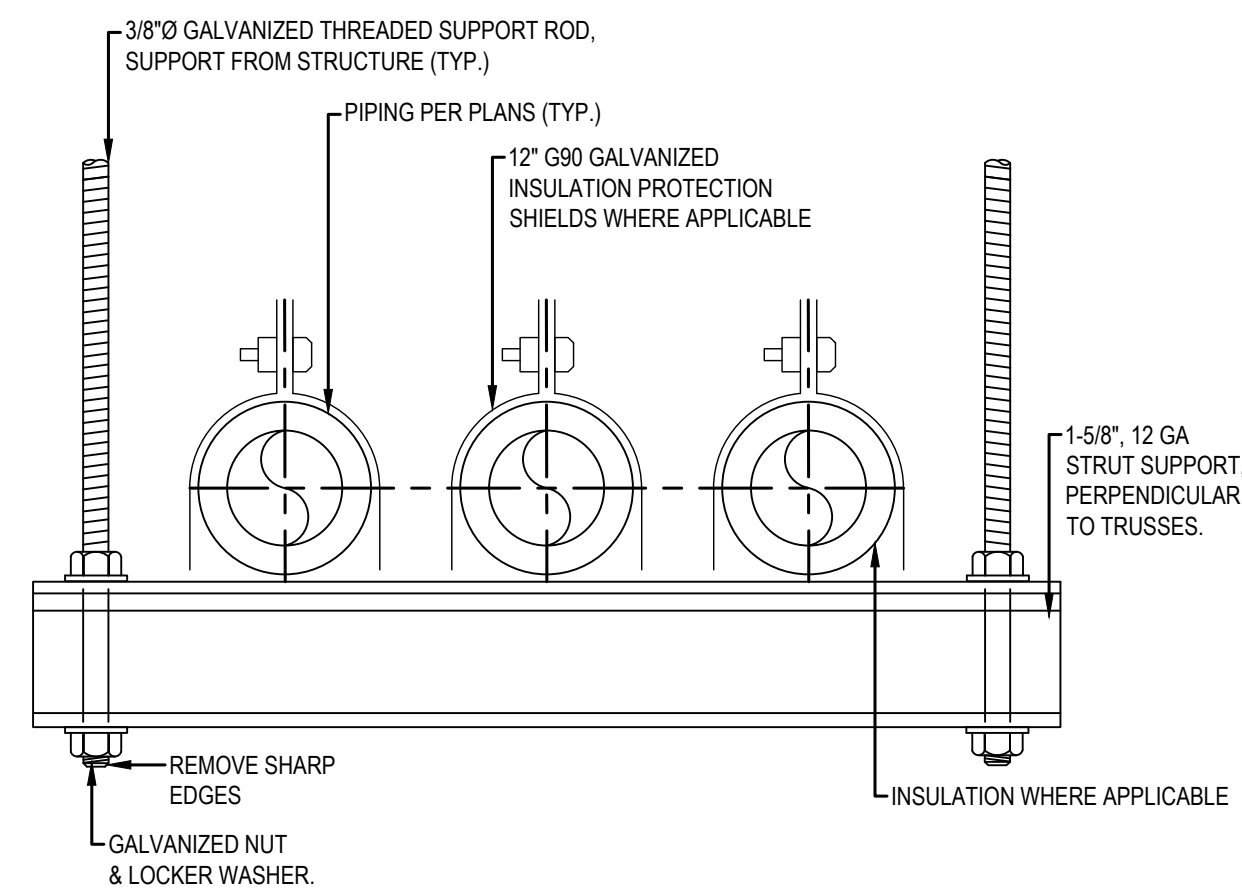
DRAWN BY:	RPG
CHECKED BY:	BSM
PROJECT MANAGER:	BSM

REUSE OF DOCUMENTS
THESE DOCUMENTS ARE THE PROPERTY OF MIDDLEBROOK ENGINEERING, LLC AND SHALL NOT BE COPIED, REPRODUCED WITHOUT WRITTEN PERMISSION

City of Puyallup Development & Permitting Services ISSUED PERMIT	
Building	Planning
Engineering	Public Works
Fire	Traffic

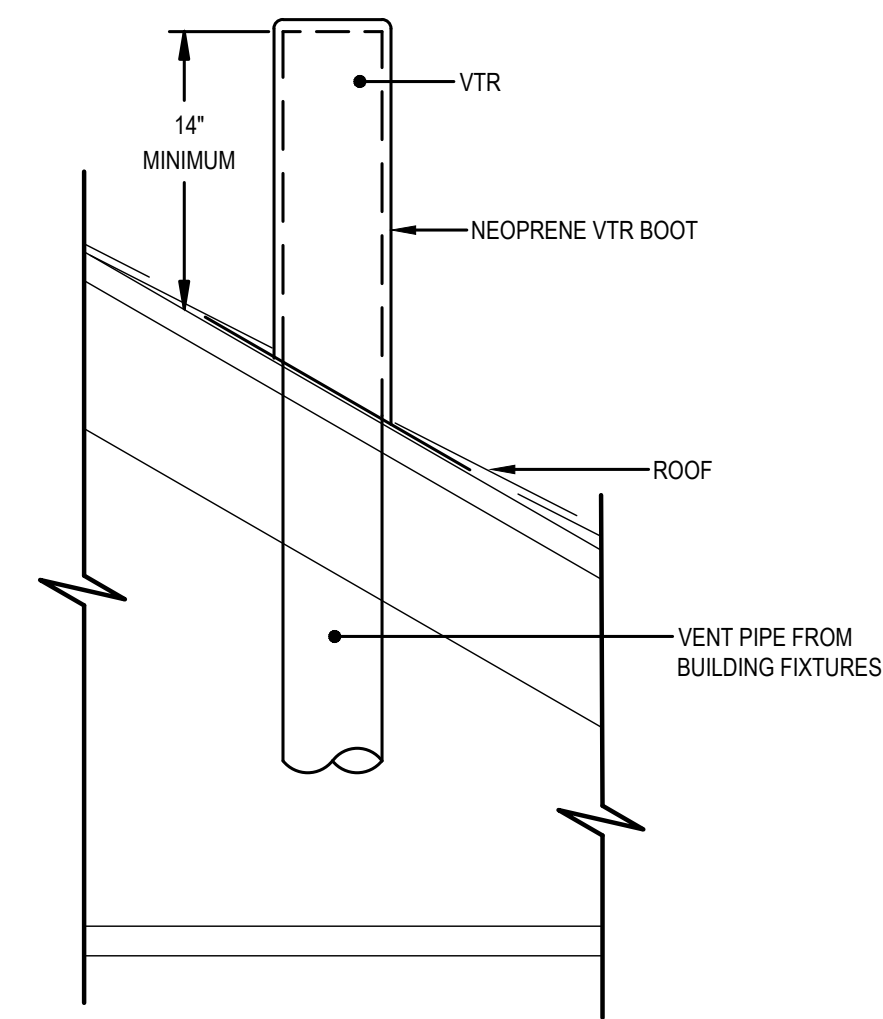


1 PIPE HANGER DETAIL
SCALE: NTS

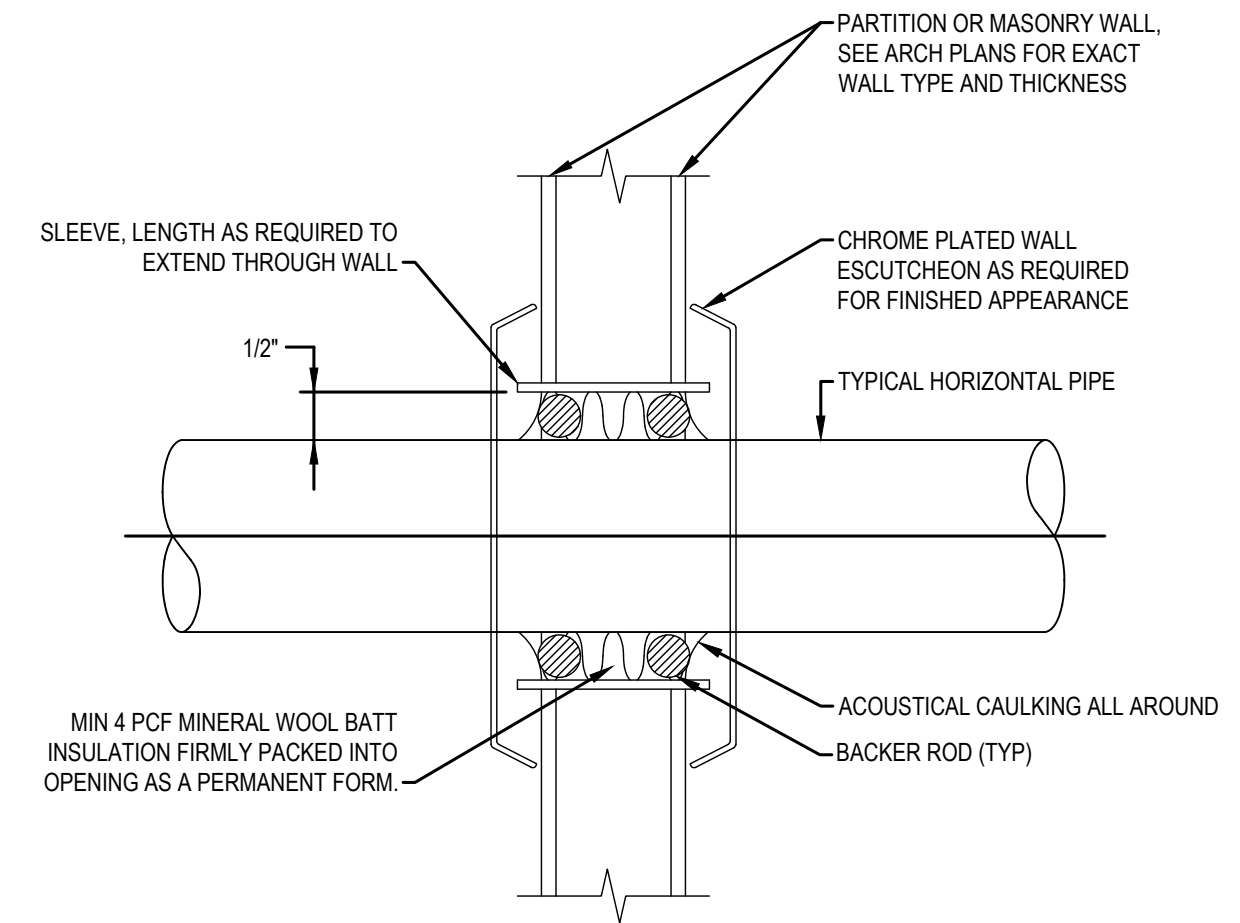


NOTE:
PROVIDE THREE SUPPORT RODS FOR STRUT LONGER THAN 24"

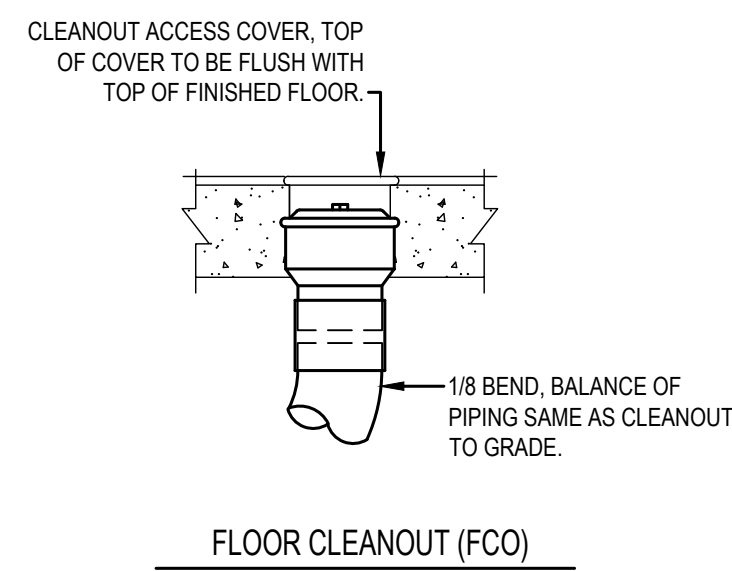
2 PIPE TRAPEZE DETAIL
SCALE: NTS



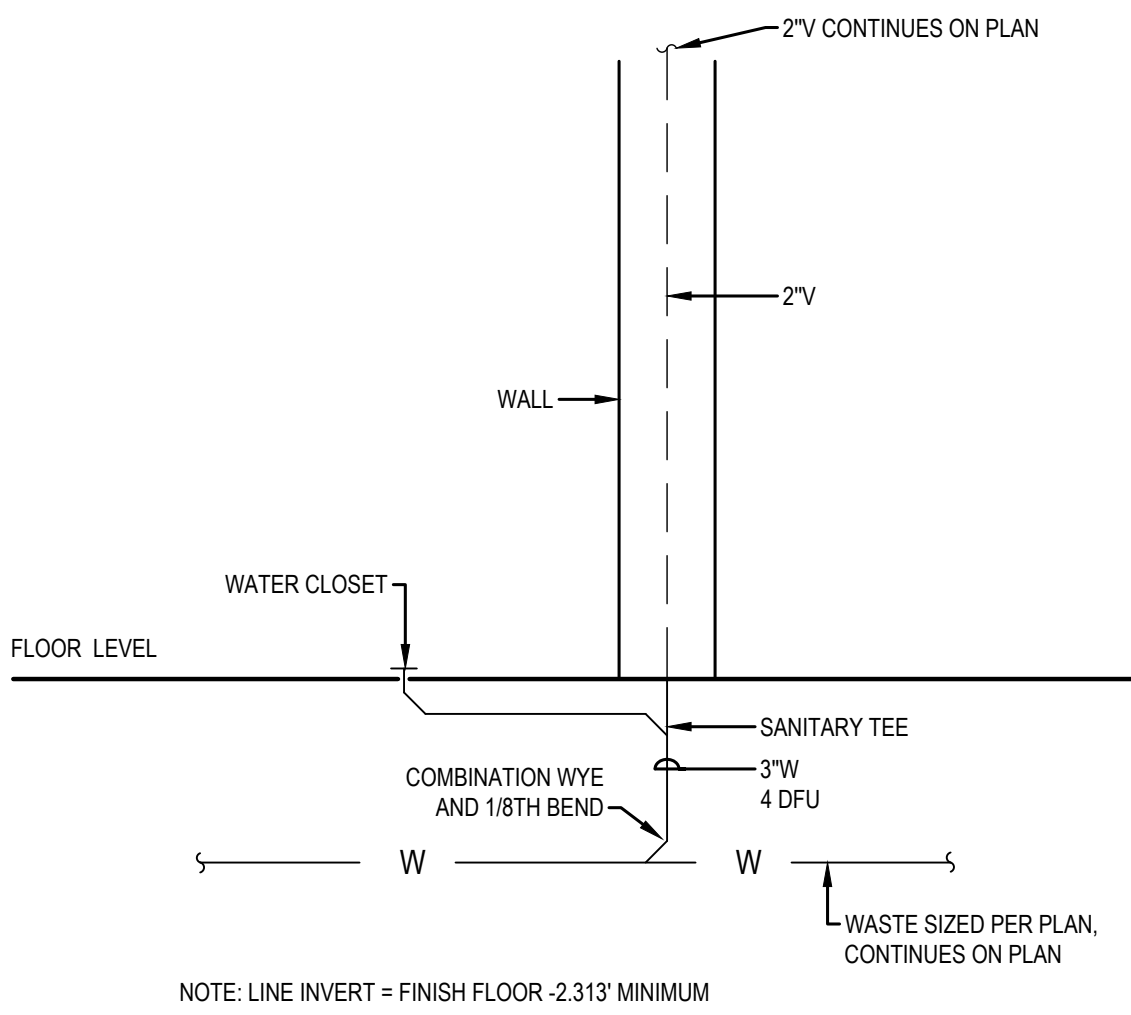
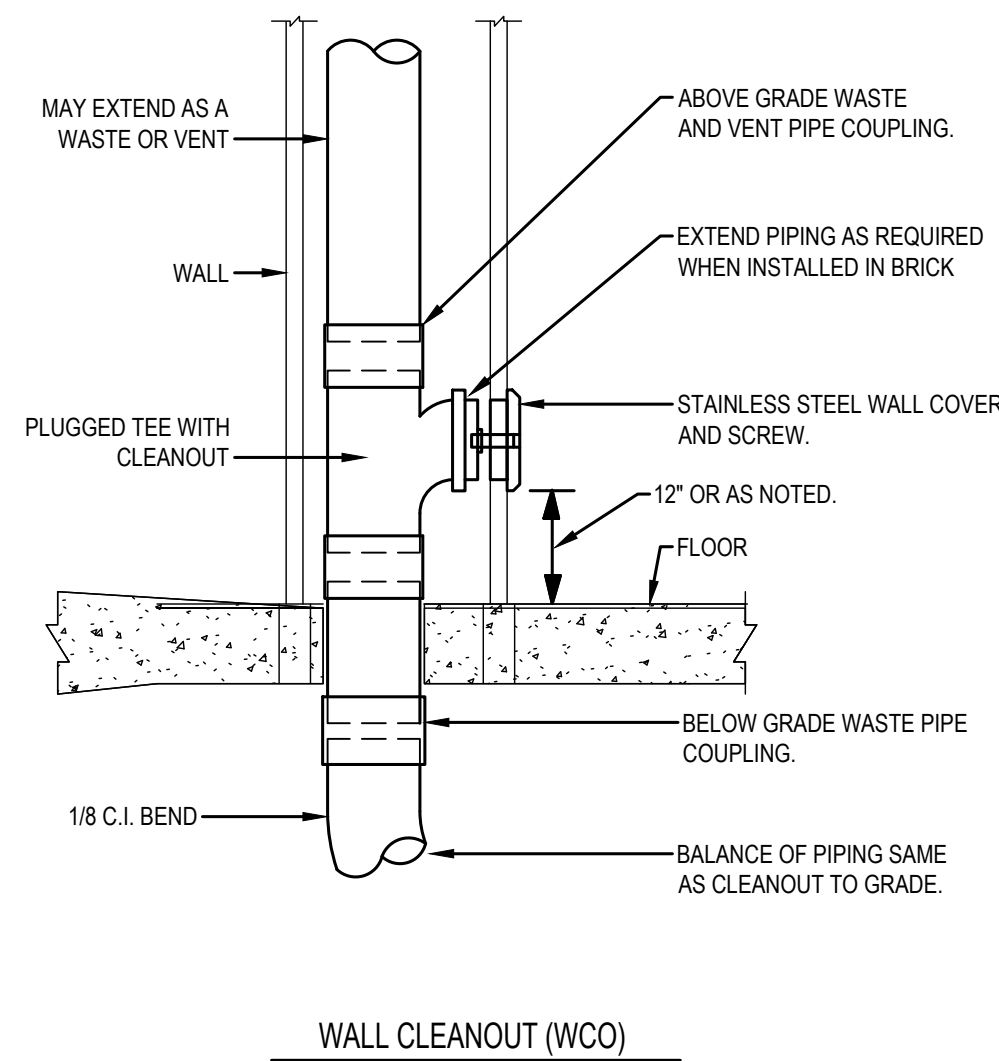
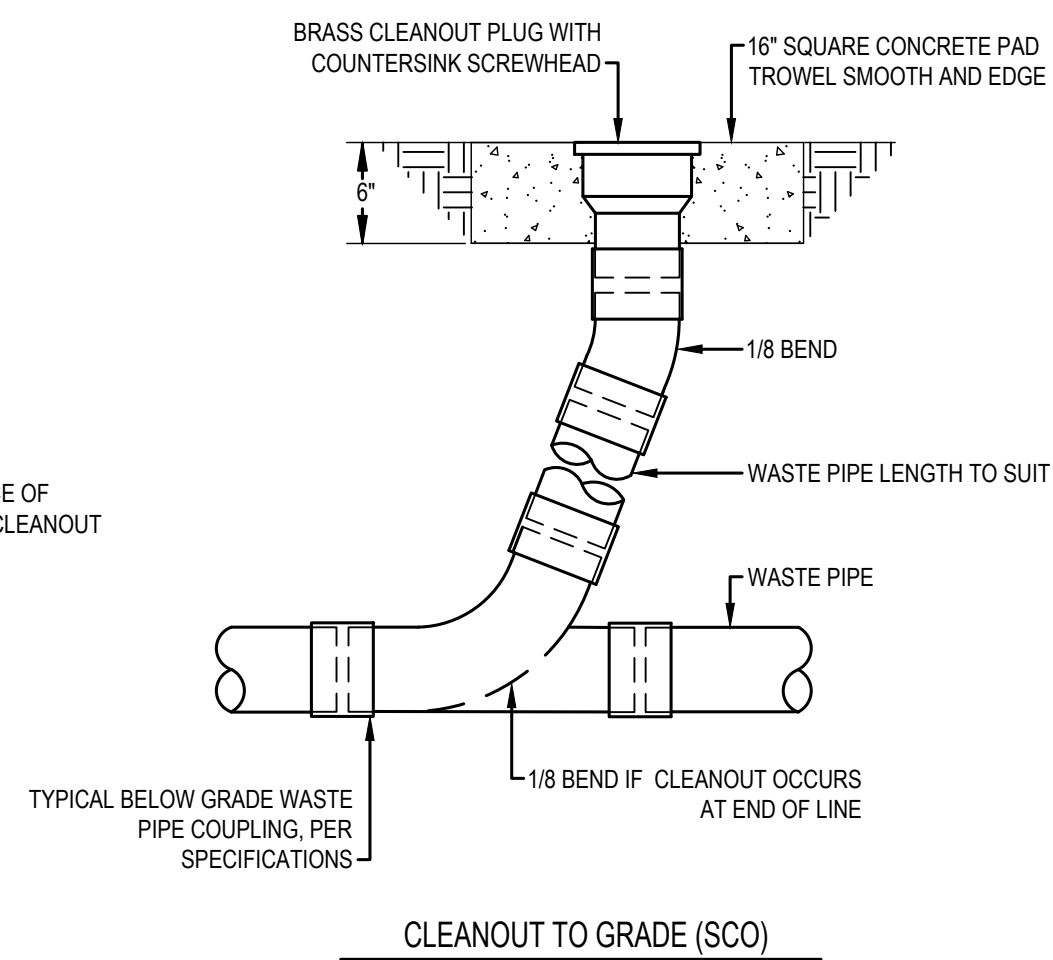
3 VENT THROUGH ROOF
SCALE: NTS



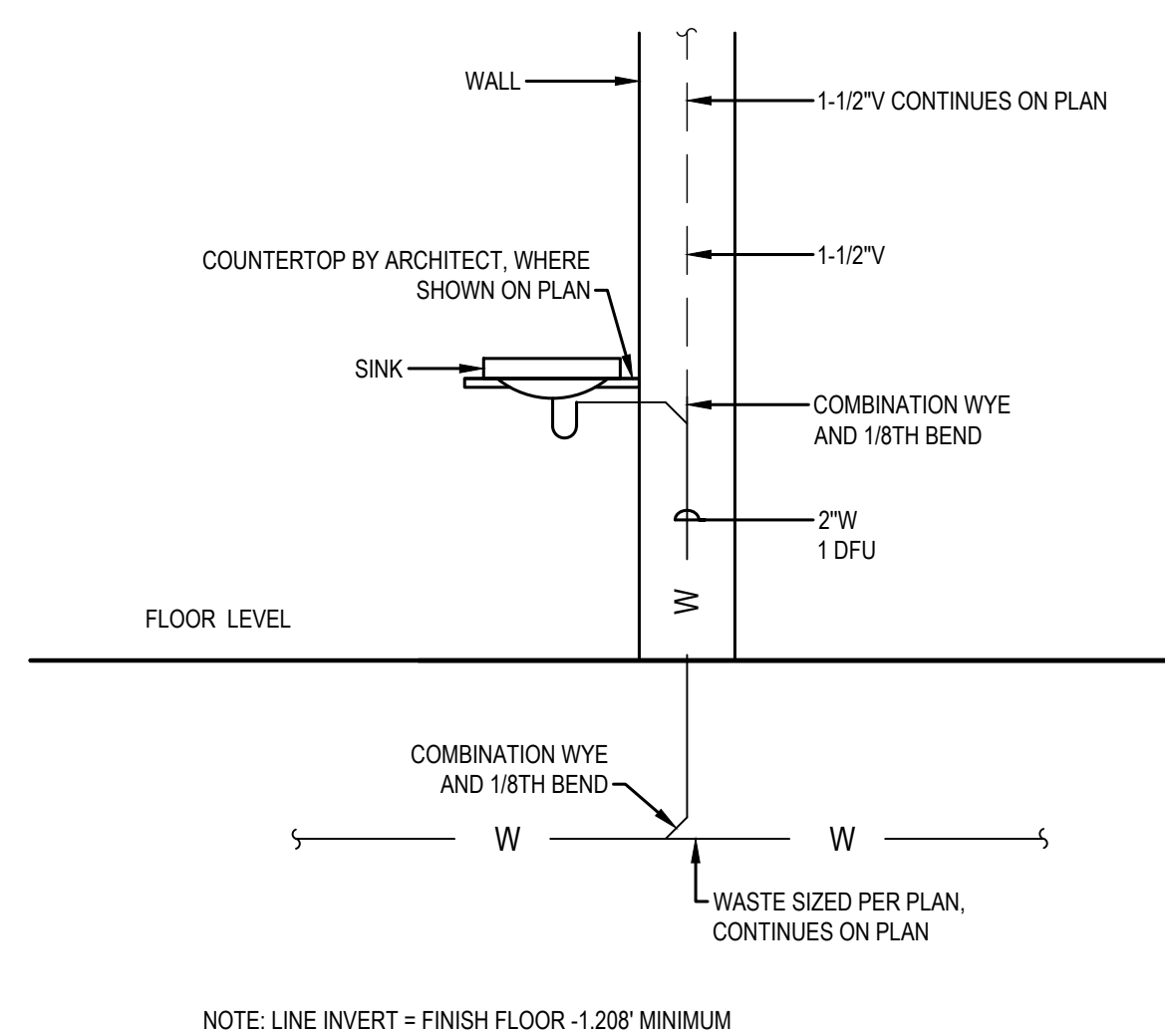
4 WALL PENETRATION DETAIL
SCALE: NTS



5 CLEANOUT DETAIL
SCALE: NTS



6 FLOOR MOUNTED WATER CLOSET WASTE RISER
SCALE: NTS



7 LAVATORY WASTE RISER
SCALE: NTS

