EAST TOWN CROSSING

BUILDING 'B'

City of Puyallup Development Engineering APPROVED

See permit for additional requirements.

Linda Lian
04/04/2024
11:11:45 AM

The applicant shall request a sediment control and erosion inspection with a City Engineering Inspector through the CityView portal at least 48 hours in advance of job start. Refer to the Stormwater Fact Sheet and City Standards 02.03.02 & 05.02.01

Sediment control and erosion procedures shall be practiced eliminating and preventing off site damage. Stormwater runoff originating upgrade of exposed areas shall be controlled to reduce erosion and sediment loss during the period of exposure. See civil permit PRCCP20230970 for specifications

Roof downspout control is required. Steps shall be taken to prevent drainage onto adjacent lots. See civil permit PRCCP20230970 for specifications

Call Before You Dig. It's the law.
Locate all utilities prior to starting work
Dial 811 or call 1-800-424-5555.

GENERAL PROJECT NOTES:

1. CONTRACTOR SHALL PERFORM ALL WORK WITHIN THIS SCOPE IN ACCORDANCE AND COMPLIANCE WITH ALL RELEVANT, CITY, COUNTY, STATE, AND/OR FEDERAL ORDINANCES, LAWS, REGULATIONS AND CODES. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS ESTABLISHED BY THE 2018 INTERNATIONAL BUILDING CODE (IBC) WITH THE STATE OF WASHINGTON AMENDMENTS.

2. THE CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH THE CONTENT OF THESE DRAWINGS PRIOR TO PROCEEDING WITH THE WORK. DO NOT SCALE THE DRAWINGS.

3. IN THE EVENT THE CONTRACTOR FINDS A CONFLICT OR DISCREPANCY WITH THESE DRAWINGS, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY IN WRITING. SHOULD THE CONTRACTOR PROCEED WITHOUT NOTIFYING THE ARCHITECT OF SUCH CONFLICT, THE CONTRACTOR SHALL BE PROCEEDING AT HIS OWN RISK & ASSOCIATED LIABILITY.

4. THESE DRAWINGS SERVE TO REPRESENT DESIGN INTENT AS DIRECTED BY THE OWNER & COMPLIANT WITH GOVERNING JURISDICTIONAL LAW. IN NO WAY SHALL THESE DRAWINGS SERVE TO DICTATE METHODS OF CONSTRUCTION RELATIVE TO ADHERENCE TO EITHER. IT IS THE CONTRACTOR'S & OWNER'S RESPONSIBILITY TO WORK WITHIN THE PARAMETERS OF THE AGENCY APPROVED DOCUMENTS TO MAINTAIN THE INTEGRITY OF THE DESIGN INTENT AND AGENCY COMPLIANCE. ANY ERRORS, OMISSIONS OR NONCOMPLIANCE WITH GOVERNING CODES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY. CHANGES, OMISSIONS OR SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.

6. THE DESIGN, ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC., IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, AND HAS NOT BEEN CONSIDERED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO THE COMPLETION OF ALL SHEAR WALLS, ROOF AND FLOOR DIAPHRAGMS AND FINISHED MATERIALS. THE CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE APPLICATION OF THE ABOVE MENTIONED COMPONENTS.

7. CONTRACTOR SHALL MAINTAIN THE JOBSITE IN A CLEAN AND PROFESSIONAL CONDITION. ANY DEBRIS GENERATED DURING CONSTRUCTION SHALL BE REMOVED FROM THE LOCAL JOBSITE CONTINUALLY. LOCAL JOBSITES SHALL BE LEFT IN A CLEAN AND NEAT CONDITION AT THE END OF EACH WORKDAY. DEBRIS REMOVAL FROM THE JOBSITE SHALL BE ONGOING. CONTRACTOR SHALL DISPOSE ALL MATERIALS AND DEBRIS IN A LEGAL MANNER. ALL PEDESTRIAN AND VEHICULAR ACCESS-WAYS SHALL BE MAINTAINED IN A CLEAN CONDITION THROUGHOUT THE PROJECT.

8. SPECIAL INSPECTION SHALL BE PROVIDED BY AND INDEPENDENT TESTING LABORATORY PER THE REQUIREMENTS OF IBC CHAPTER 17 AND THE LOCAL BUILDING OFFICIAL OR APPLICABLE JURISDICTION AND CONTRACT DOCUMENTS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND A FINAL SIGNED REPORT TO THE BUILDING OFFICIAL FOR THE ITEMS LISTED IN THE QUALITY ASSURANCE/SPECIAL INSPECTION SECTION:

9. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS REQUIRED FOR ALL EQUIPMENT, APPLIANCES, FIXTURES, CABINETS, DUCTWORK AND OPENINGS BEFORE FRAMING BEGINS. THE CONTRACTOR SHALL COORDINATE WITH THE SUBCONTRACTORS OF ALL TRADES TO VERIFY THE SIZES ABD LOCATIONS OF OPENINGS THROUGH THE FLOORS, WALLS, CEILINGS AND ROOFS FOR DUCTS, PIPES, CONDUITS AND EQUIPMENT. THE CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF WOOD BACKING, BLOCKING, FURRING AND STRIPPING AS REQUIRED FOR THE INSTALLATION AND ATTACHMENT OF WORK OF ALL TRADES.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SYSTEMS, INCLUDING, BUT NOT LIMITED TO, MECHANICAL, PLUMBING, ELECTRICAL WORK. WORK SHOWN IN THE DRAWINGS IS INTENDED TO ILLUSTRATE THE GENERAL DESIGN INTENT, SCOPE AND LOCATION OF WORK. ALL WORK NOT SPECIFICALLY DRAWN, BUT REQUIRED FOR A COMPLETE,LEGAL AND FUNCTIONING SYSTEM, SHALL BE PROVIDED AS PART OF THE WORK.

ABBREVIATIONS

A.F.F.	ABOVE FINISH FLOOR
A.S.F.	ABOVE SUBFLOOR
ABC	AGGREGATE BASE COURSE
ADJ.	ADJUSTABLE
ALUM	ALUMINUM
BD	BOARD
CPT	CARPET
CLG.	CEILING
℄	CENTERLINE
CLR.	CLEAR
CLO.	CLOSET
COL.	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
DTL.	DETAIL
DW	DISH WASHER
D	DRYER
DBL.	DOUBLE
DN	DOWN
D.S.	DOWNSPOUT
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.T.R.	EXISTING TO REMAIN
EXT.	EXTERIOR
F.D.	FLOOR DRAIN
F.O.E.W.	FACE OF EXISTING WALL
F.O.S.	FACE OF STUD
F.O.S.W.	FACE OF STEM WALL
GWB	GYPSUM WALL BOARD
HT.	HEIGHT
INSTAL.	INSTALLATION
MFR.	MANUFACTURER
MTL.	METAL
MTR.	MATERIAL
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.T.S.	OPEN TO STRUCTURE
PDC	PEDESTRIAN DECK COATING
P-LAM	PLASTIC LAMINATE
PR	PAIR
PT	PAINT
P.T.	PRESSURE TREATED
PWD	PLYWOOD
R	RANGE
REF.	REFRIGERATOR
REINF.	REINFORCED
RB	RUBBER BASE
SLR	SEALER
SIM.	SIMILAR
SF	SQUARE FEET
SG	SAFETY GLAZING
STL.	STEEL
STRUCT.	STRUCTURAL
TEXT	TEXTURE
TL	TILE
T & G	TONGUE & GROOVE
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
WC	WATER CLOSET
WH	WATER HEATER
WD	WOOD
W	WASHER
W/	WITH
WR	WATER RESISTANT

TABLE OF CONTENTS

PROJECT SCOPE

THE OVERALL ARCHITECTURAL SCOPE OF THIS PROJECT IS CONSTRUCT FIVE APARTMENT BUILDINGS, FIVE CARPORTS, A COVERED MAILBOX/BUS STOP STRUCTURE, FIVE CARPORTS AND RELATED SITE DEVELOPMENT.

REFER TO THE FOLLOWING APPLICATION NUMBERS:
SITE DEVELOPMENT: **PRCCP20230970**

N

VICINITY MAP (NOT TO SCALE)

BUILDING ENCLOSURE NOTE:

THE BUILDING ENCLOSURE DOCUMENTATION WITHIN THIS DRAWING SET SATISFIES THE REQUIREMENTS OF RCW 64.55.005 THROUGH 64.55.090. NOTE THAT A THIRD PARTY QUALIFIED INSPECTOR OR THE ARCHITECT WHO APPROVED THE BUILDING ENCLOSURE DESIGN SHALL INSPECT THE BUILDING ENCLOSURE DURING THE COURSE OF CONSTRUCTION FOR COMPLIANCE WITH THE BUILDING ENCLOSURE DESIGN DOCUMENTS. NOTE THAT UPON COMPLETION OF THE INSPECTIONS, THE QUALIFIED INSPECTOR SHALL SUBMIT A SIGNED LETTER OF CERTIFICATION TO THE CITY OF TACOMA REGARDING THE INSPECTION AND SUBSTANTIAL COMPLIANCE OF THE BUILDING CONSTRUCTION WITH THE BUILDING ENCLOSURE DESIGN DOCUMENTS. NOTE THAT IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE INSPECTOR IS NOTIFIED FOR REGULAR INSPECTIONS OF THE BUILDING ENCLOSURE INSTALLATION.

SYMBOL LEGEND

DETAIL SYMBOL
1 / A2.0 — DETAIL NO. OR LETTER / SHEET

SECTION SYMBOL
1 / A2.0 — DETAIL NO. OR LETTER / SHEET

INTERIOR ELEVATION SYMBOL
2, A, A4.0, 3, 4 — SPECIFIC DETAIL NO. / DRAWING NUMBER / SHEET

DOOR I.D. SYMBOL
100A — DOOR NUMBER, REFER TO SHEET A4.0.

ROOM I.D. SYMBOL
ROOM — ROOM NAME
100 — ROOM NUMBER

WALL TYPE SYMBOL
1A — WALL TYPE NO., REFER TO SHEET A2.0

FLOOR - CEILING ASSEMBLY TYPE SYMBOL
Z-# — ASSEMBLY TYPE NO., REFER TO SHEET AG.03

EXTERIOR WINDOW TYPE SYMBOL
— WINDOW TYPE LETTER

BUILDING REFERENCE NOTE SYMBOL
— WINDOW TYPE LETTER

PROJECT TEAM

OWNER'S:
ASH DEVELOPMENT, LLC
PUYALLUP, WA
c/o: GREG HELLE
253-318-5711
greg.helle@absherco.com

ARCHITECT :
SYNTHESIS 9, LLC
TACOMA, WA
c/o: BRETT LINDSAY
253-468-4117
blindsay@synthesis9.com

CIVIL ENGINEER:
McINNIS ENGINEERING
TACOMA, WA
c/o: JEFF McINNIS
253-414-1992
jeff@mcinnisengineering.com

STRUCTURAL ENGINEER:
PIERUCCIONI E&C,, LLC
TACOMA, WA
c/o: CHON PIERUCCINI
206-949-7866
pieruccioniengineering@gmail.com

LANDSCAPE ARCHITECT:
LYON LANDSCAPE ARCHITECTS
c/: ERIC J. WILLIAMS
TACOMA, WA
253-678-4173
eric@lyonla.com

PLUMBING & MECHANICAL & LIGHTING
ROBISON ENGINEERING INC.
19401 40TH AVE. W. SUITE 302
LYNNWOOD, WA 98036
c/o: JON ROBISON
206-364-3343
jrobison@robisonengineering.com

FIRE SPRINKLERS
SPRINX FIRE PROTECTION, INC.
c/o: JOE FAULKNER
253-853-7780
joe@sprinxfire.com

S9
SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

9251 REGISTERED ARCHITECT BRETT A. LINDSAY STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

REVISIONS

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	COVER SHEET
PROJECT # :	2016
SHEET:	AG1.0

AGENCY REVIEW | 24.03.11

BUILDING SUMMARY

PHASE 2 - BUILDING A

DESCRIPTION: 10 UNIT APARTMENT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, **NFPA 13R PER 903.3.1.2**
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 10 (PER BUILDING)
NUMBER OF (1) BEDROOMS = 8
NUMBER OF (3) BEDROOMS = 2
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 3

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING G:
MODIFICATIONS NOT NECESSARY

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES DECKS)

LEVEL 1:	3,840-sf
LEVEL 2:	3,824-sf
LEVEL 3:	3,702-sf
TOTAL:	15,206-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	19
LEVEL 2:	19
LEVEL 3:	19

PHASE 1 - BUILDING B

DESCRIPTION: 24 APARTMENT UNIT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, NFPA 13R PER 903.3.1.2
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24
NUMBER OF (1) BEDROOMS = 0
NUMBER OF (2) BEDROOMS = 12
NUMBER OF (3) BEDROOMS = 12
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING B:

TOTAL AREA:	36,750-sf
MAXIMUM AREA PER FLOOR:	12,250-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER POMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	10,572-sf
LEVEL 2:	10,571-sf
LEVEL 3:	10,297-sf
TOTAL:	31,440-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	50
LEVEL 2:	50
LEVEL 3:	50

PHASE 1 - BUILDING C

DESCRIPTION: 24 APARTMENT UNIT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, NFPA 13R PER 903.3.1.2
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24
NUMBER OF (1) BEDROOMS = 0
NUMBER OF (2) BEDROOMS = 24
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING C:

TOTAL AREA:	31,500-sf
MAXIMUM AREA PER FLOOR:	10,500-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	10,235-sf
LEVEL 2:	9,949-sf
LEVEL 3:	9,893-sf
TOTAL:	30,077-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	50
LEVEL 2:	50
LEVEL 3:	50

PHASE 1 - BUILDING D

DESCRIPTION: 24 APARTMENT UNIT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, NFPA 13R PER 903.3.1.2
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24
NUMBER OF (1) BEDROOMS = 0
NUMBER OF (2) BEDROOMS = 24

ACCESSIBLE TYPE A UNITS REQUIRED: 2
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 6

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING D:

TOTAL AREA:	34,650-sf
MAXIMUM AREA PER FLOOR:	11,550 sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	10,180-sf
LEVEL 2:	10,164-sf
LEVEL 3:	9,922-sf
TOTAL:	30,266-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	50
LEVEL 2:	50
LEVEL 3:	50

PHASE 2 - BUILDING E

DESCRIPTION: 24 APARTMENT UNIT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, NFPA 13R PER 903.3.1.2
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24
NUMBER OF (1) BEDROOMS = 0
NUMBER OF (2) BEDROOMS = 24
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING E:

TOTAL AREA:	33,180-sf
MAXIMUM AREA PER FLOOR:	11,060-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	9,869-sf
LEVEL 2:	10,138-sf
LEVEL 3:	9,922-sf
TOTAL:	29,929-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	50
LEVEL 2:	50
LEVEL 3:	50

PHASE 2 - BUILDING F

DESCRIPTION: 24 UNIT APARTMENT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, **NFPA 13R PER 903.3.1.2**
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24 (PER BUILDING)

NUMBER OF (1) BEDROOMS = 12
NUMBER OF (2) BEDROOMS = 12
ACCESSIBLE TYPE A UNITS REQUIRED: 2
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING F:

TOTAL AREA:	35,700-sf
MAXIMUM AREA PER FLOOR:	11,900-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	8,681sf
LEVEL 2:	8,642-sf
LEVEL 3:	8,416-sf
TOTAL:	25,739-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	43
LEVEL 2:	43
LEVEL 3:	42

APPLICABLE CODES

INTERNATIONAL BUILDING CODE (2018)
ANSI 117.1 (2009)
INTERNATIONAL MECHANICAL CODE (2018)
INTERNATIONAL FIRE CODE (2018)
INTERNATIONAL ELECTRICAL CODE (2018
UNIFORM PLUMBING CODE (2018)
WASHINGTON STATE ENERGY CODE (2018)
INTERNATIONAL FIRE CODE (2018)
PUYALLUP LAND USE CODE
WASHINGTON STATE AMENDMENTS (2018)

TOTAL ACCESSIBLE UNITS

DESCRIPTION: 179 UNITS IN 9 BUILDINGS
ACCESSIBLE TYPE 'A' UNITS REQUIRED: 5% = 179 X .05 = 9
REMAINING GROUND LEVEL UNITS SHALL BE **TYPE 'B'**

TYPE 'A' UNITS PROVIDED: 22 > 9 (COMPLIANT)

NUMBER OF UNITS / BEDROOMS SUMMA

PHASE 1

BLD'G B:	12 -TWO BEDROOM UNITS
	12 -THREE BEDROOM UNITS
BLD'G C:	12 -TWO BEDROOM UNITS
	12 -THREE BEDROOM UNITS
BLD'G D:	12 -TWO BEDROOM UNITS
	12 -THREE BEDROOM UNITS
BLD'G G:	12 -ONE BEDROOM UNITS
	12 -TWO BEDROOM UNITS
BLD'G H:	12 -ONE BEDROOM UNITS
	12 -TWO BEDROOM UNITS

TOTAL ONE BEDROOM UNITS:	24
TOTAL TWO BEDROOM UNITS:	60
TOTAL THREE BEDROOM UNITS:	36
TOTAL UNITS:	120
TOTAL BEDROOMS:	24+120+108 = 252

PHASE 2

BLD'G A:	8 -TWO BEDROOM UNITS
	2 -THREE BEDROOM UNITS
BLD'G E:	12 -TWO BEDROOM UNITS
	12 -THREE BEDROOM UNITS
BLD'G F:	6 -ONE BEDROOM UNITS
	12 -TWO BEDROOM UNITS
	6 -THREE BEDROOM UNITS
CLUBHOUSE:	1 -TWO BEDROOM UNIT

TOTAL ONE BEDROOM UNITS:	6
TOTAL TWO BEDROOM UNITS:	33
TOTAL THREE BEDROOM UNITS:	20
TOTAL UNITS:	59
TOTAL BEDROOMS:	6+66+60 = 132

TOTAL

TOTAL ONE BEDROOM UNITS:	30

PHASE 1 - BUILDING G

DESCRIPTION: 24 UNIT APARTMENT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, **NFPA 13R PER 903.3.1.2**
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24 (PER BUILDING)
NUMBER OF (1) BEDROOMS = 24
NUMBER OF (2) BEDROOMS = 0
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING G:

TOTAL AREA:	33,180-sf
MAXIMUM AREA PER FLOOR:	11,060-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	7,385-sf
LEVEL 2:	7,359-sf
LEVEL 3:	7,113-sf
TOTAL:	21,857-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:

LEVEL 1:	36
LEVEL 2:	36
LEVEL 3:	35

PHASE 1 - BUILDING H

DESCRIPTION: 24 UNIT APARTMENT BUILDING
APPLICABLE BUILDING CODE: 2018 **IBC**
OCCUPANCY: R2
TYPE OF CONSTRUCTION: VB
FIRE SPRINKLERS: YES, **NFPA 13R PER 903.3.1.2**
FIRE ALARM SYSTEM AND SMOKE ALARM: YES
ELEVATOR: NO
NUMBER OF APARTMENT UNITS: 24 (PER BUILDING)
NUMBER OF (1) BEDROOMS = 24
NUMBER OF (2) BEDROOMS = 0
ACCESSIBLE TYPE A UNITS REQUIRED: 1
ACCESSIBLE TYPE 'B' UNITS REQUIRED: 7

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
ALLOWABLE AREA: 7,000-sf
ALLOWABLE MAXIMUM HEIGHT: 60-ft
ALLOWABLE STORIES: 3

MODIFICATIONS TO THE BASE ALLOWABLE AREA
BUILDING H:

TOTAL AREA:	33,180-sf
MAXIMUM AREA PER FLOOR:	11,060-sf

**FOR SINGLE-OCCUPANCY, MULTI-STORY BUILDING
**SEE FRONTAGE CALCULATION FOR AREA INCREASE ON SHEET #AG1.2

PROPOSED HEIGHT: 36-ft MAX. PER PMC
PROPOSED STORIES: 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:
(INCLUDES COVERED DECKS)

LEVEL 1:	7,367-sf
LEVEL 2:	7,341-sf
LEVEL 3:	7,094-sf
TOTAL:	21,802-sf

OCCUPANT LOAD:
OCCUPANT LOAD FACTOR: 200 GROSS
OCCUPANT LOAD PER FLOOR:
LEVEL 1 EXERCISE: (50 gross)
LEVEL 1 UNCONCENTRATED ASSEMBLY: (15 net)
LEVEL 1 ACCESSORY: (300 gross)
LEVEL 2 RESIDENTIAL: (220 gross):

PHASE 2 - CLUBHOUSE

DESCRIPTION: 2 APARTMENT UNITS WITH LEASING OFFICE AND MISC. AMENITY SPACES

APPLICABLE BUILDING CODE: 2018 **IBC**
FIRE SPRINKLERS: YES, PER IBC 903.3.1.2 NFPA **R13**
FIRE ALARM SYSTEM AND SMOKE ALARM: YES PER 2015 IBC, SECTION 907.2.11.2
OCCUPANCY: LEVEL 1 = A-3 / B
LEVEL 2 = R-3
TYPE OF CONSTRUCTION: VB
NUMBER OF APARTMENT UNITS: 1
ACCESSIBLE UNITS REQUIRED: N/A

BASE ALLOWABLE BUILDING AREAS, HEIGHT AND STORIES:
NON-SEPARATED USE - MOST RESTRICTIVE APPLIES
ALLOWABLE AREA PER FLOOR:
LEVEL 1: B, NS = 9,000 sq ft
LEVEL 2: R-3, NS = UL
ALLOWABLE MAXIMUM HEIGHT:
B, NS = 40-FT
R, NS = 40-FT
ALLOWABLE STORIES:
B, NS = 2
R-3, NS = 3

TOTAL PROPOSED GROSS AREA ALL LEVELS:

LEVEL 1 AMENITY :	2,507-sf
LEVEL 2 RESIDENCE:	1,200-sf
TOTAL:	3,707-sf

LEVEL 2 DECK: 191-sf

APARTMENT UNIT TO HAVE EMERGENCY ESCAPE AND RESCUE OPENINGS

This note references the 2015 IBC.
[CONSTRUCTION PLAN SET - Bldg B, sheet AG1.1]

APARTMENTS BUILDING EGRESS

NUMBER OF EXITS REQUIRED PER FLOOR: 2
EACH EXIT SERVING NO MORE THAN FOUR UNITS PER TABLE 1006.3.2(1)
NUMBER OF EXITS PROPOSED PER FLOOR: 2

MAXIMUM ALLOWED EXIT ACCESS TRAVEL DISTANCE with SPRINKLERS: 125-LF

NOTE: PER TABLE 1006.3.2(1), EACH HALF OF THE BUILDING IS CONSIDERED A SINGLE EXIT SPACE REQUIRING EACH APARTMENT UNIT TO HAVE EMERGENCY ESCAPE AND RESCUE OPENINGS IN ACCORDANCE WITH SECTION 1030 OF 2015 IBC.

FIRE PROTECTION FOR APARTMENT BUILDINGS

FIRE ALARM SYSTEM AND SMOKE ALARM: YES PER 2015 IBC, SECTION 907.2.9
** A MANUAL FIRE ALARM SYSTEM THAT ACTIVATES THE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH SECTION 907.5 IS REQUIRED UNLESS THE AUTOMATIC FIRE SPRINKLER SYSTEM IS INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2 AND THE OCCUPANT NOTIFICATION APPLIANCES AUTOMATICALLY ACTIVATE THROUGHOUT THE NOTIFICATION ZONES UPON A SPRINKLER WATERFLOW.
** SMOKE ALARMS SHALL BE INSTALLED AND MAINTAINED ON THE CEILING OR WALL OUTSIDE EACH SEPARATE SLEEPING AREA AND IN EACH ROOM USED FOR SLEEPING PURPOSES.

FIRE SEPARATION BETWEEN APARTMENT DWELLING UNITS: YES, PER 2015 IBC SECTION 420, 708 AND 711
SEPARATION WALLS: 1-HR FIRE PARTITION PER 708.3 2015 1BC
HORIZONTAL SEPARATION: 1-HR HORIZONTAL ASSEMBLY PER 711.3

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS PER IBC (2015) TABLES 601 AND 602:
PRIMARY STRUCTURAL FRAME:
EXTERIOR BEARING WALLS: 0-HR

INTERIOR BEARING WALLS: 0-HR
NONBEARING EXTERIOR WALL AND PARTITIONS: 0-HR
NONBEARING INTERIOR WALL AND PARTITIONS: 0-HR
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0-HR
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0-HR

DRAFTSTOPPING REQUIREMENTS PER IBC 718.4.2
DRAFT-STOPPING SHALL BE PROVIDED IN ATTICS OR OTHER CONCEALED ROOF SPACES OF GROUP R-2 BUILDINGS. DRAFTSTOPPING SHALL BE INSTALLED ABOVE, AND IN LINE WITH, SLEEPING UNIT AND DWELLING UNIT SEPARATION WALLS THAT DO NOT EXTEND TO THE UNDERSIDE OF THE ROOF SHEATHING ABOVE.

There are several notes that reference the 2015 IBC. Please revise these notes so they conform to the 2018 Washington State Codes.
[CONSTRUCTION PLAN SET - Bldg B, sheet AG1.1]

PHASE 1 - ACCESSIBLE UNITS

DESCRIPTION: 120 UNITS IN 5 BUILDINGS
ACCESSIBLE TYPE 'A' UNITS REQUIRED: 5% = 120 X .05 = 6
REMAINING GROUND LEVEL UNITS SHALL BE TYPE 'B'

BUILDING B: (4) TYPE 'A'
BUILDING C: (3) TYPE 'A'
BUILDING D: (4) TYPE 'A'
BUILDING G: (2) TYPE 'A'
BUILDING H: (2) TYPE 'A'

TYPE 'A' UNITS PROVIDED: 15 > 6 (COMPLIANT)

PHASE 1 - ACCESSIBLE PARKING

ACCESSIBLE TYPE 'A' UNITS REQUIRED: 259 x 0.02 = 5
(PER 1106.2, FOR GROUP R-2, AT LEAST 2% OF EACH TYPE OF PARKING SPACE PROVIDED SHALL BE ACCESSIBLE.)

NUMBER OF ACCESSIBLE STALLS PROVIDED: 16 ≥ 5
(COMPLIANT WITH EXCESS OF 12 ACCESSIBLE STALLS)

PHASE 2 - ACCESSIBLE UNITS

DESCRIPTION: 59 UNITS IN 3 BUILDINGS
ACCESSIBLE TYPE 'A' UNITS REQUIRED: 5% = 59 X .05 = 3
REMAINING GROUND LEVEL UNITS SHALL BE **TYPE 'B'**

BUILDING A: (2) TYPE 'A'
BUILDING E: (2) TYPE 'A'
BUILDING F: (3) TYPE 'A'
CLUBHOUSE: (0) TYPE 1 **NO GROUND LEVEL UNITS

TYPE 'A' UNITS PROVIDED: 7 > 3 (COMPLIANT)

PHASE 2 - ACCESSIBLE PARKING

ACCESSIBLE TYPE 'A' UNITS REQUIRED: 123 x 0.02 = 3
(PER 1106.2, FOR GROUP R-2, AT LEAST 2% OF EACH TYPE OF PARKING SPACE PROVIDED SHALL BE ACCESSIBLE.)

NUMBER OF ACCESSIBLE STALLS PROVIDED: 8 ≥ 3
(COMPLIANT WITH EXCESS OF 16 ACCESSIBLE STALLS)

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REGISTERED ARCHITECT
9251
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

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PROJECT # :	2016
SHEET:	AG1.1

AGENCY REVIEW | 24.03.11

LAND USE & WSEC INFORMATION

PARCEL SUMMARY

P/N 0420264021:
TAX DESCRIPTION - Section 26 Township 20 Range 04 Quarter 44 : & 35 20 4E D 1/21 BEG INTER S LI SEC 26 WITH E 1/16 LI SD SEC TH S ALG 1/16 LI SEC 35 95.4 FT TH E 258.26 FT TH N TO SLY LI CO RD TH NWLY ALG SD SLY LI CO RD TO E 1/16 LI SEC 26 TH S ALG SD 1/16 LI TO BEG EXC
AREA - 95,396 SF, 2.190 ACRES

P/N 0420351030:
TAX DESCRPITION - BEG AT 1/16 SEC COR 1321.48 FT W OF COR COM TO SECS 25, 26, 35 & 36 TH S ALG 1/16 LI 95.4 FT TO POB TH E 258.26 FT TH S 100 FT TH W 258.26 FT TH N 100 FT TO POB EXC RDS
AREA - 25,700 SF, 0.590 ACRES

P/N 0420351029:
TAX DESCRIPTION - Section 35 Township 20 Range 04 Quarter 11 : COM 1/16 SEC COR 1321.48 FT W OF COR MON COMMON TO SECS 25, 26, 35 & 36 TH S ALG 1/16 SEC LI 195.4 FT TO POB TH E 258.26 FT TH S 100 FT TH W 258.26 FT TH N 100 FT TO POB EXC RDS EXC SHAW CO RD
AREA - 25,265 SF, 0.58 ACRES

P/N 0420351026:
TAX DESCRIPTION - Section 35 Township 20 Range 04 Quarter 11 : COM AT 1/16 COR 1321.48 FT W OF COR MON COMMON TO SECS 25, 26, 35 & 36 TH S ALG 1/16 SEC LI 295.4 FT TO POB TH E 258.35 FT TH S 100 FT TH W 258.35 FT TH N 100 FT TO POB EXC W 15 FT CO RD EXC SHAW CO RD
AREA - 25,265 SF, 0.58 ACRES

P/N 0420264053:
TAX DESCRIPTION - Section 35 Township 20 Range 04 Quarter 11 Section 26 Township 20 Range 04 Quarter 44 L 4 OF DBLR 2003-03-31-5001 DESC AS FOLL THAT POR OF SE OF SE & NE OF NE OF SEC 35 DESC AS COM AT NE COR OF W 1/2 OF SD NE OF NE PT BEARS N 88 DEG 32 MIN 51 SEC
AREA - 202,648 SF, 4.652 ACRES

P/N 0420351066:
TAX DESCRIPTION - Section 35 Township 20 Range 04 Quarter 11 L 3 OF DBLR 2003-03-31-5001 DESC AS FOLL THAT POR OF NE OF NE DESC AS COM AT NE COR OF W 1/2 OF NE OF NE PT BEARS N 88 DEG 32 MIN 51 SEC W 640.11 FT FROM MON OF NE COR TH S 01 DEG 15 MIN 04 SEC W 491.43 FT T
AREA - 58,789 SF, 1.35 ACRES

P/N 0420264054:
TAX DESCRIPTION - Section 26 Township 20 Range 04 Quarter 44 L 5 OF DBLR 2003-03-31-5001 DESC AS FOLL THAT POR OF SE OF SE & NE OF NE OF SEC 35 DESC AS BEG AT NE COR OF W 1/2 OF SD NE OF NE PT BEARS N 88 DEG 32 MIN 51 SEC W 640.11 FT FROM MON OF NE COR SD SEC 35 TH S
AREA - 43,335 SF, 0.995 ACRES

ZONING

DESIGNATION: RM-20, HIGH DENSITY MULTI-FAMILY RESIDENTIAL

USE: DWELLING, MULTIPLE-FAMILY
MINIMUM LOT AREA: 4,000 SF
MINIMUM LOT DIMENSIONS: 40 FT X 70 FT
MINIMUM SETBACKS: 20 FT FRONT, 25 FT MAJOR ARTERIAL, 20 FT REAR, 15 FT SIDE
MAXIMUM HEIGHT: 36 FT
BASE DENSITY: 16 du/ac, BONUS UP TO 22 du/ac (193 units / 8.66 ac = 21.9 du/ac)
MAXIMUM LOT COVERAGE: 55%
MAXIMUM FAR: 3

NUMBER OF BUILDINGS:
PHASE 1: 5
PHASE 2: 4
TOTAL: 9

RESIDENTIAL VEHICLE PARKING ANALYSIS

DIMENSIONS:
STANDARD: ~~9' x 20'~~ 8' x 18'
COMPACT: ~~8' x 17'~~ 7' x 15'

PHASE 1
PHASE 1 REQUIRED: 2 STALLS PER UNIT = 120 x 2 = 240
PHASE 1 PROVIDED = 242
EXCESS STALLS: 240 - 242 = 2

COMPACT MIN. = 30% OF REQUIRED **= 240 x 0.30 = 72**
COMPACT MAX. = 50% OF REQUIRED = 240 x 0.50 = 120
COMPACT PROVIDED: 75

PHASE 2
PHASE 2 REQUIRED: 2 STALLS PER UNIT = 59 x 2 = 116
PHASE 2 PROVIDED = 125
EXCESS STALLS: 125 - 116 = 9

COMPACT MIN. = 30% OF REQUIRED = 116 x 0.30 = 35
COMPACT MAX. = 50% OF REQUIRED = 116 x 0.50 = 58
COMPACT STALLS PROVIDED: 32

TOTAL - PHASE 1 & PHASE 2
REQUIRED: 2 STALLS PER UNIT = 179 x 2 = 358
ON-SITE VEHICLE STALLS PROVIDED: 259 + 125 = 384
EXCESS STALLS: 384-358 = 26

COMPACT MIN. = 30% OF REQUIRED = 358 x 0.30 = 107
COMPACT MAX. = 50% OF REQUIRED = 358 x 0.50 = 179
COMPACT STALLS PROVIDED: 135

TOTAL ACCESSIBLE STALL REQUIREMENT

PHASE 1 ACCESSIBLE STALLS
PHASE 1 REQUIRED: 259 x 0.02 = 5
PHASE 1 PROVIDED: 22 > 5 (COMPLIANT)
PHASE 1 VAN REQUIRED: 3 (1 PER EVERY 6 ACCESSIBLE STALLS)
PHASE 1 VAN PROVIDED: 5 > 3

PHASE 2 ACCESSIBLE STALLS
PHASE 2 REQUIRED: 125 x 0.02 = 3
PHASE 2 PROVIDED: 12 > 3
PHASE 2 VAN REQUIRED: 1 (1 PER EVERY 6 ACCESSIBLE STALLS)
PHASE 2 VAN PROVIDED: 3 > 1

TOTAL ACCESSIBLE STALLS
TOTAL REQUIRED: 389 x 0.02 = 8
TOTAL PROVIDED: 34 > 8
PHASE 2 VAN REQUIRED: 4 (1 PER EVERY 6 ACCESSIBLE STALLS)
PHASE 2 VAN PROVIDED: 8 > 4

COMMERCIAL VEHICLE PARKING ANALYSIS

LOT No.1
TENANT IMPROVEMENT SPACE 'T.I.1' = 5000/300 = 17 REQUIRED
PROPOSED PARKING STALLS: 30
STANDARD STALLS: 16
COMPACT STALLS: 14
ADA REQUIRED: 2 (1 VAN)

Lot No. 2
TENANT IMPROVEMENT SPACE 'T.I..2' = 2172/300 = 07
TENANT IMPROVEMENT SPACE 'T.I..3' = 1872/100 = 19
TENANT IMPROVEMENT SPACE 'T.I..4' = 1800/100 = 18
34 REQUIRED
PROPOSED PARKING STALLS: 44
STANDARD STALLS: 27
COMPACT STALLS: 15
ADA REQUIRED: 2 (1 VAN)

T.I.3 USE:
(22) Restaurants, bars, taverns and other similar establishments whose primary business is the on-site sale and consumption of food and beverages: one space for each 100 square feet of gross floor area;

T.I.1 and T.I.2 USE:
(23) Retail commercial, general sales, personal service, shopping centers, malls and other similar establishments shall provide one space for each 300 square feet of gross floor area

EV CHARGING STATIONS

WAC 51-50-0427 ELECTRIC VEHICLE CHARGING INFRASTRUCTURE:
REQUIRED: 2 (10% of stall provided)

PHASE 1 EV CHARGING STATIONS STALLS
PHASE 1 REQUIRED: 259 x 0.10 = 26
PHASE 1 PROVIDED: 26 ≥ 26 (COMPLIANT)
PHASE 1 ADA REQUIRED: 22 x 0.10 = 2
PHASE 1 ADA PROVIDED: 12 ≥ 2 (COMPLIANT)

PHASE 2 EV CHARGING STATIONS STALLS
PHASE 2 REQUIRED: 125 x 0.10 = 13
PHASE 2 PROVIDED: 12 > 13 (COMPLIANT)
PHASE 2 ADA REQUIRED: 12 x 0.10 = 1
PHASE 2 ADA PROVIDED: 4 > 1 (COMPLIANT)

WSEC

BUILDING ENVELOPE REQUIREMENTS

ZONE	4C - MARINE
PATH	PRESCRIPTIVE
ROOFS - ATTIC AND OTHER	R-VALUE = 49
FENESTRATION	U-FACTOR = 0.30
FENESTRATION SHGC	NO REQUIREMENTS
SKYLIGHTS	U-FACTOR = N/A
WOOD FRAMED WALLS	R-VALUE = 21 INT
MASS WALL R-VALUE	N/A
FLOOR	R-VALUE: 30
SLAB, R-VALUE & DEPTH	10, 2-FT

APPLICABLE 2018 WSEC BUILDING ENVELOPE NOTES :
1. AN IDENTIFICATION MARK SHALL BE APPLIED TO ALL INSULATION MATERIALS PER C303.1.
2. ALL FENESTRATION PRODUCTS SHALL BE LABELED WITH RATED U-FACTOR, SHGC, VT, LEAKAGE RATIING PER C303.1.3 AND C402.4.3.

REFER TO TABLE R402.4.1.1 OF THE 2018 RESIDENTIAL WSEC FOR AIR BARRIER AND INSULATION INSTALLATION INSTALLATION REQUIREMENTS.

ENERGY CREDITS

NOTE: EACH RESIDENCE QUALIFIES AS A SMALL DWELLING UNIT WITH 4.5 CREDITS REQUIRED PER THE 2018 WSEC. THE FOLLOWING CREDITS HAVE BEEN SELECTED.

FUEL NORMALIZATION CREDITS - Option #2 = 1.0
For an initial heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(1)C or C403.3.2(2)

3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS = 3.0
3.6 - Ductless split system heat pumps with no electric resistance heating in the primary living areas. A ductless heat pump system with a minimum HSPF of 10 shall be sized and installed to provide heat to entire dwelling unit at the design outdoor air temperature.

5. EFFICIENT WATER HEATING OPTIONS = 2.5
5.5 - For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification, shall supply domestic hot water to all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-8 minimum pipe insulation.

TOTAL: 6.5 credits

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LEVEL 3 WALL AREA: 582
GLAZING AREA: 10+34+44+14+10 = 112 sq ft
PERCENT OPEN: 112/582 = 19%

LEVEL 2 WALL AREA: 652 sq ft
GLAZING AREA: 10+34+44+14+10 = 112 sq ft
PERCENT OPEN: 112/652 = 17%

LEVEL 1 WALL AREA: 652 sq ft
OPENING AREA: 10+34+44+14+12 = 114 sq ft
PERCENT OPEN: 114/652 = 17%

IBC SEPARATION DISTANCE: 15' TO LESS THAN 20'
UP, NS OPENING LIMITATION: 25%

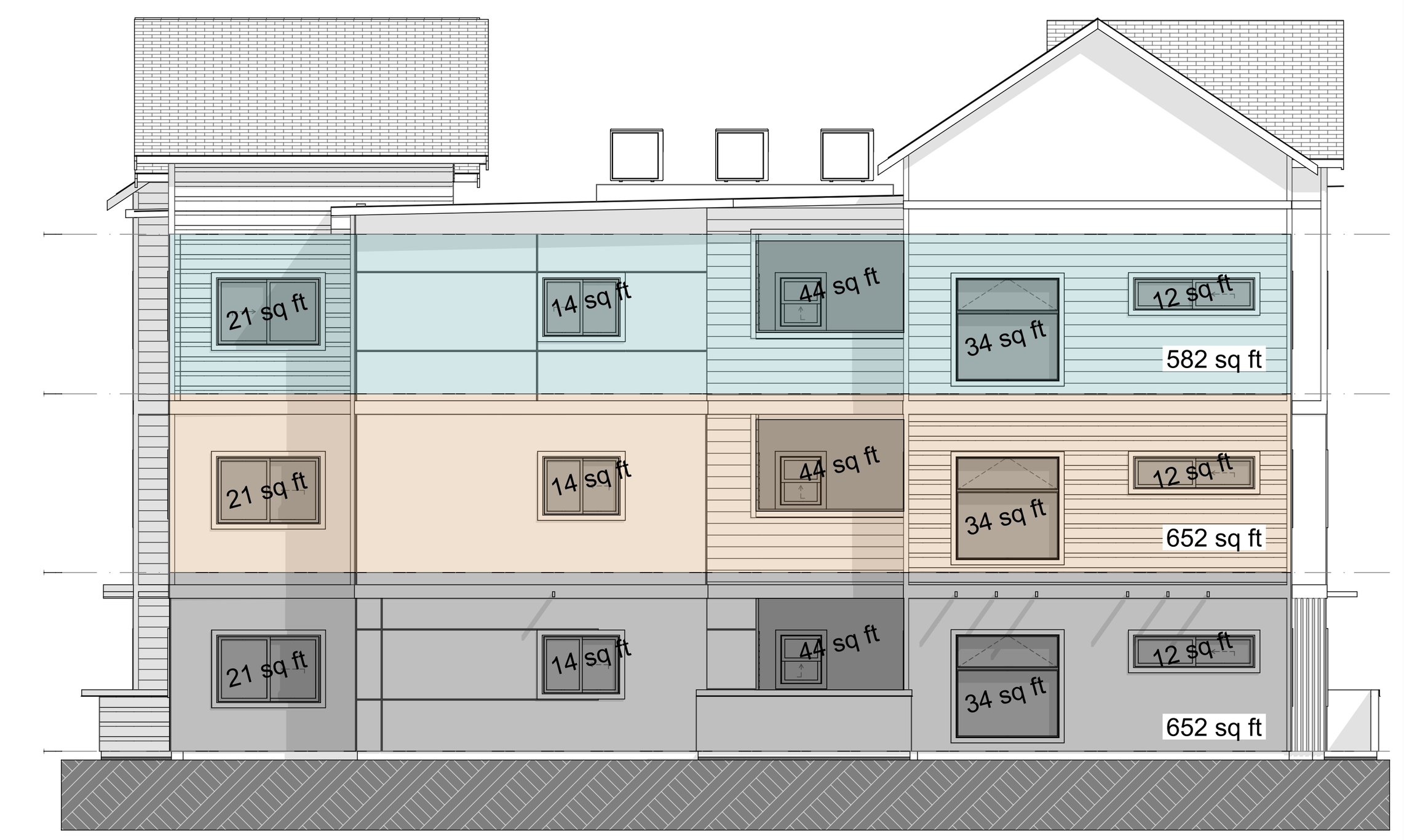
2 SOUTH ELEVATION TRANSPARENCY
SCALE: 3/32" = 1'-0"

IBC SEPARATION DISTANCE: 15' TO LESS THAN 20'
UP, NS OPENING LIMITATION: 25%

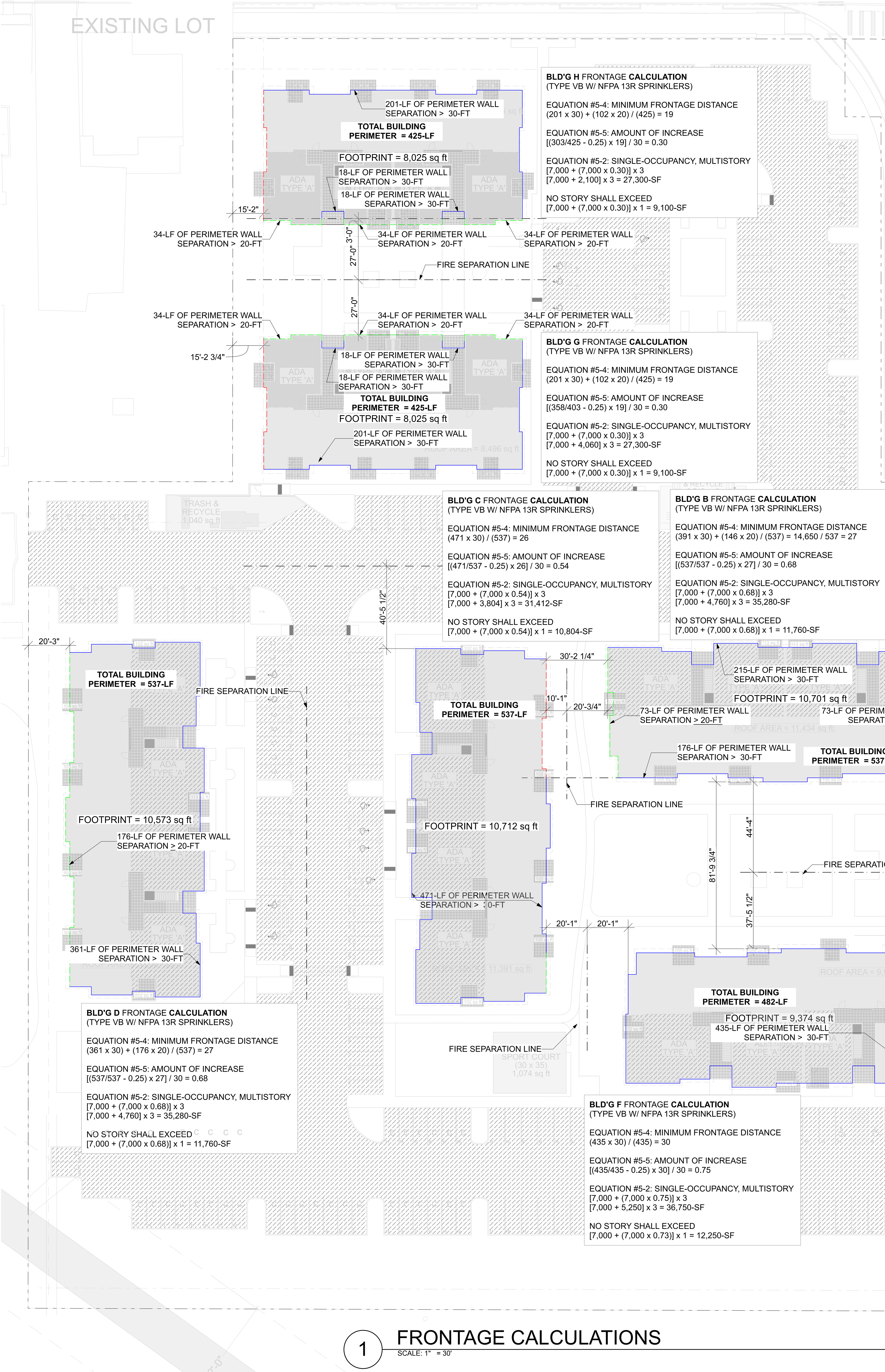
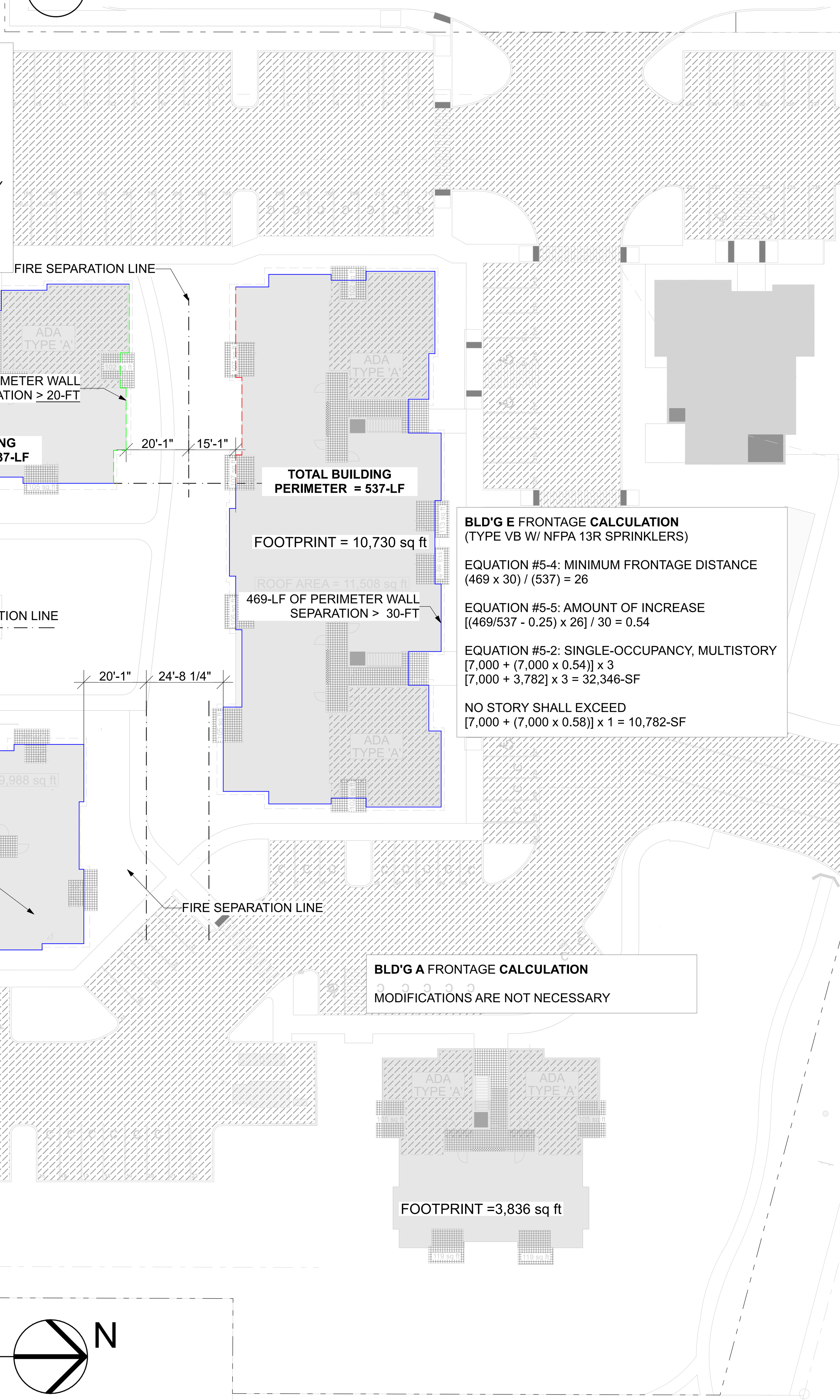
LEVEL 3 WALL AREA: 582 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/582 = 21%

LEVEL 2 WALL AREA: 652 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/652 = 19%

LEVEL 1 WALL AREA: 652 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/652 = 19%



3 NORTH ELEVATION TRANSPARENCY
SCALE: 3/32" = 1'-0"

BLD'G H FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(201 x 30) + (102 x 20) / (425) = 19

EQUATION #5-5: AMOUNT OF INCREASE
[(303/425 - 0.25) x 19] / 30 = 0.30

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.30)] x 3
[7,000 + 2,100] x 3 = 27,300-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.30)] x 1 = 9,100-SF

BLD'G G FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(201 x 30) + (102 x 20) / (425) = 19

EQUATION #5-5: AMOUNT OF INCREASE
[(358/403 - 0.25) x 19] / 30 = 0.30

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.30)] x 3
[7,000 + 4,060] x 3 = 27,300-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.30)] x 1 = 9,100-SF

BLD'G C FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(471 x 30) / (537) = 26

EQUATION #5-5: AMOUNT OF INCREASE
[(471/537 - 0.25) x 26] / 30 = 0.54

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.54)] x 3
[7,000 + 3,804] x 3 = 31,412-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.54)] x 1 = 10,804-SF

BLD'G B FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(391 x 30) + (146 x 20) / (537) = 14,650 / 537 = 27

EQUATION #5-5: AMOUNT OF INCREASE
[(537/537 - 0.25) x 27] / 30 = 0.68

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.68)] x 3
[7,000 + 4,760] x 3 = 35,280-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.68)] x 1 = 11,760-SF

BLD'G E FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(469 x 30) / (537) = 26

EQUATION #5-5: AMOUNT OF INCREASE
[(469/537 - 0.25) x 26] / 30 = 0.54

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.54)] x 3
[7,000 + 3,782] x 3 = 32,346-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.58)] x 1 = 10,782-SF

BLD'G D FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(361 x 30) + (176 x 20) / (537) = 27

EQUATION #5-5: AMOUNT OF INCREASE
[(537/537 - 0.25) x 27] / 30 = 0.68

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.68)] x 3
[7,000 + 4,760] x 3 = 35,280-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.68)] x 1 = 11,760-SF

BLD'G F FRONTAGE CALCULATION
(TYPE VB W/ NFPA 13R SPRINKLERS)

EQUATION #5-4: MINIMUM FRONTAGE DISTANCE
(435 x 30) / (435) = 30

EQUATION #5-5: AMOUNT OF INCREASE
[(435/435 - 0.25) x 30] / 30 = 0.75

EQUATION #5-2: SINGLE-OCCUPANCY, MULTISTORY
[7,000 + (7,000 x 0.75)] x 3
[7,000 + 5,250] x 3 = 36,750-SF

NO STORY SHALL EXCEED
[7,000 + (7,000 x 0.73)] x 1 = 12,250-SF

BLD'G A FRONTAGE CALCULATION
MODIFICATIONS ARE NOT NECESSARY

1 FRONTAGE CALCULATIONS
SCALE: 1" = 30'

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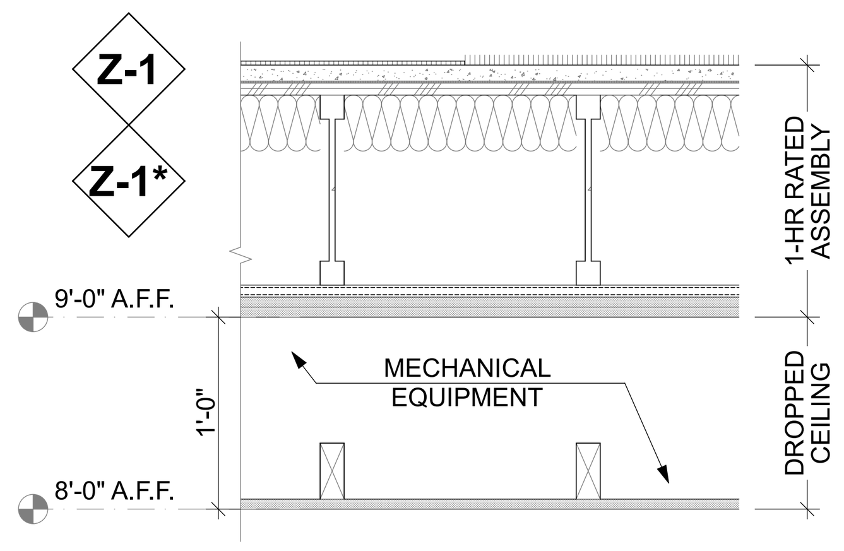
PROJECT #:	2016
SHEET:	

AG1.3

FLOOR | CEILING | ROOF ASSEMBLIES

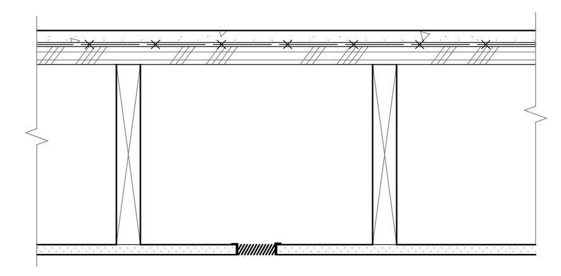


TYPICAL INTERIOR ASSEMBLY
1-HR FIRE RATED & **STC 50** (MINIMUM) ASSEMBLY
REFER TO **GA FILE No. FC 5112 (PROPRIETARY)**

FLOOR COVERING PER ASSEMBLY OPTIONS
1 1/4" PROPRIETARY FLOOR TOPPING
1/8" PROPRIETARY SOUND REDUCTION MAT
PLYWOOD SHEATHING PER STRUCTURAL
FLOOR I-JOISTS PER STRUCTURAL @ 16" O.C.
3-1/2" (MIN.) GLASS FIBER BATTS @ TOP OF CAVITY
1/2" RESILIENT FURRING CHANNELS @ 16" O.C.
(RUN PERPENDICULAR TO JOISTS)
(2) LAYERS 5/8" PROPRIETARY TYPE "X" GWB
(W.R.IN WET AREAS)

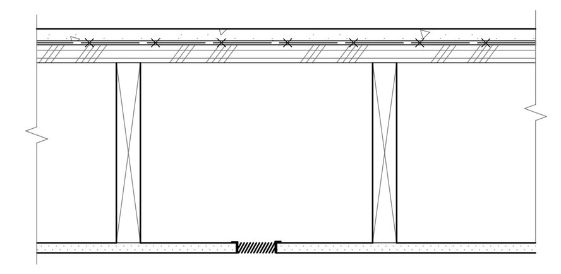
*** DROPPED CEILING ADD**
AIR SPACE
2X FRAMING @ 16" O.C.PER STRUCTURAL
- TO ACCOMMODATE MECHANICAL EQUIPMENT.
1/2" G.W.B.

NOTE: SEE REFLECTED CEILING PLANS FOR ADDITIONAL DROPPED CEILING AREAS



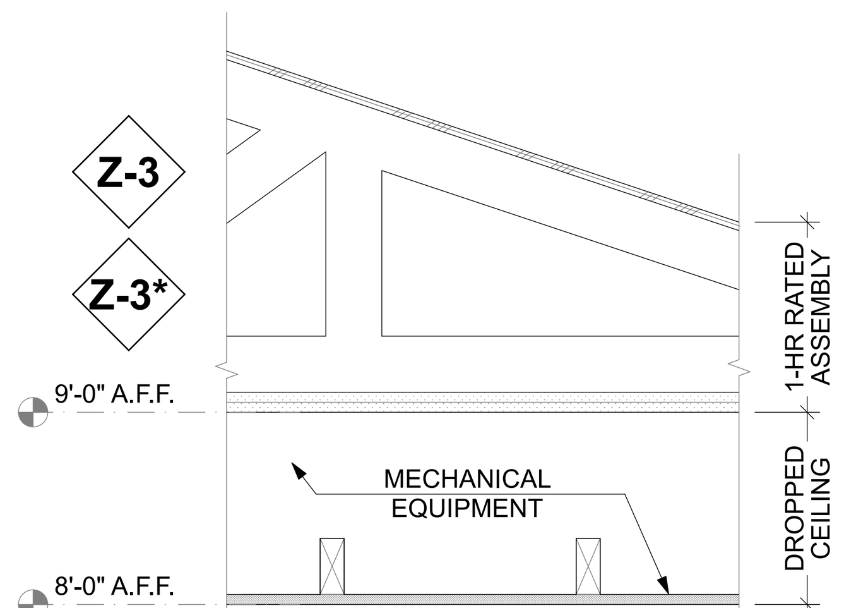
TYPICAL EXTERIOR DECK ASSEMBLY
1-HR FIRE RATED
REFER TO **ICC-ES EVALUATION REPORT #ESR-2201**

DECK COATING SYSTEM; SLOPE 1/4" PER FOOT, MINIMUM
(ALX By WESTCOAT)
3/4" PLYWOOD SHEATHING PER STRUCTURAL
(SOLID BLOCK ALL JOINTS FOR DECK COATING)
2 x FLOOR JOISTS PER STRUCTURAL @ 16" O.C.
(CROSS VENTILATED AIR SPACE)
CEMENT BOARD SOFFIT AT LANDINGS



TYPICAL EXTERIOR BREEZEWAY LANDING ASSEMBLY
REFER TO **ICC-ES EVALUATION REPORT #ESR-2201**

DECK COATING SYSTEM; SLOPE 1/4" PER FOOT, MINIMUM
(ALX By WESTCOAT)
3/4" PLYWOOD SHEATHING PER STRUCTURAL
(SOLID BLOCK ALL JOINTS FOR DECK COATING)
2 x FLOOR JOISTS PER STRUCTURAL @ 16" O.C.
(CROSS VENTILATED CAVITY IF ENCLOSED)
CEMENT BOARD SOFFIT AT LANDINGS (OPTIONAL)

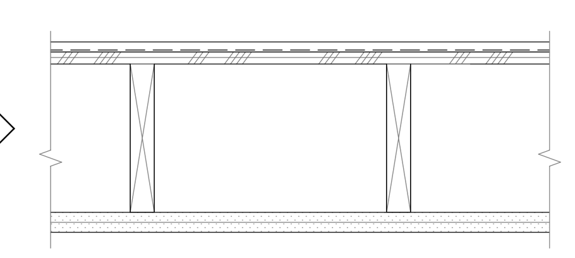


TYPICAL ROOF CEILING ASSEMBLY
1-HR FIRE RATED
REFER TO **GA FILE No. FC RC2602**

ROOFING PER ROOF PLAN
UNDERLAYMENT PER ROOFING SYSTEM
1/2" SHEATHING PER STRUCTURAL
PRE-MFR WOOD TRUSSES PER STRUCTURAL @ 16" O.C.
R-49 BATT INSULATION
(2) LAYERS 5/8" TYPE "X" GWB (W.R.IN WET AREAS)

*** DROPPED CEILING ADD**
AIR SPACE
2X FRAMING @ 16" O.C.PER STRUCTURAL
- TO ACCOMMODATE MECHANICAL EQUIPMENT.
1/2" G.W.B.

NOTE: SEE REFLECTED CEILING PLANS FOR ADDITIONAL DROPPED CEILING AREAS



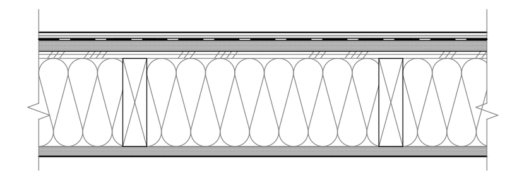
FLOOR / CEILING ASSEMBLY
1-HR FIRE RATED ASSEMBLY
REFER TO **GA FILE No. FC 5529**

SINGLE-PLY ROOF MEMBRANE SYSTEM
1/2" PLYWOOD
2x10 JOISTS @ 16" O.C.
(2) LAYERS 5/8", W.R., TYPE "X" GWB

WALL ASSEMBLIES

**** SEE ASSEMBLY NOTES ON THIS SHEET & A6.6 FOR FIRE STOP DETAILS AT PENETRATIONS THROUGH RATED ASSEMBLIES. DOUBLE 2x BASE PLATE WITH GYPCRETE TO THE TOP OF THE FIRST PLATE.**

1A

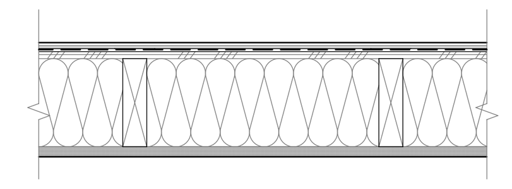


NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTE #10 ON THIS SHEET

EXTERIOR WALL | FIRE BARRIER
1-HR FIRE RATED ASSEMBLY;
REFER TO GA. NO. WP 8105 (ON THIS SHEET)

CLADDING
WATER RESISTANT BARRIER
5/8" DENSGLASS
1/2" SHEATHING, WHEN APPLICABLE PER STRUCTURAL
2 X 6 WOOD STUDS @ 16" O.C. WITH R-21 BATT INSULATION
5/8" TYPE "X" GWB (W.R. IN WET AREAS)
VAPOR BARRIER PAINT

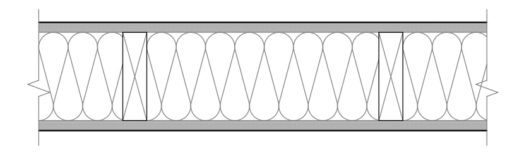
2A



EXTERIOR WALL

CLADDING
WATER RESISTANT BARRIER
1/2" SHEATHING, PER STRUCTURAL
2 X 6 WOOD STUDS @ 16" O.C. WITH R-21 BATT INSULATION
5/8" TYPE "X" GWB (W.R. IN WET AREAS)
VAPOR BARRIER PAINT

3A

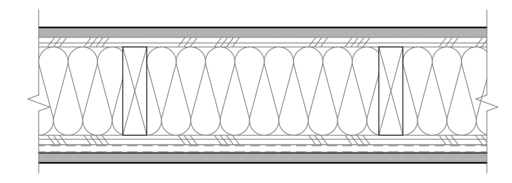


NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTE #10 ON THIS SHEET

1-HR FIRE RATED ASSEMBLY
REFER TO **GA. NO. WP 3605** (ON THIS SHEET)

5/8" TYPE "X" GWB (W.R. @ WET AREAS)
2 x 6 WOOD STUDS @ 16" O.C. WITH R-21 BATT INSULATION
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

4A

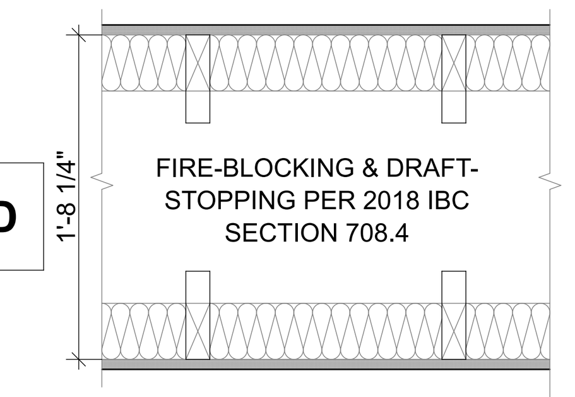


NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTES ON THIS SHEET

APARTMENT UNIT DEMISING WALL | FIRE PARTITION
1-HR FIRE RATED & STC 50 (MIN.) ASSEMBLY;
REFER TO **GA. NO. WP 3242** (ON THIS SHEET)

5/8" TYPE "X" GWB (W.R. @ WET AREAS)
1/2" SHEATHING PER STRUCTURAL, WHEN APPLICABLE
2 x 6 WOOD STUDS @ 16" O.C. w/ 5-1/2" SOUND BATTS
1/2" SHEATHING PER STRUCTURAL, WHEN APPLICABLE
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

4D

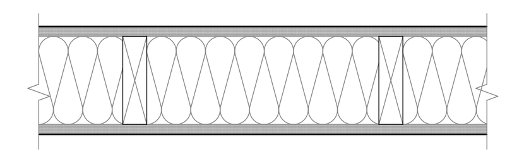


NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTES ON THIS SHEET

APARTMENT UNIT DEMISING WALL | FIRE PARTITION
1-HR FIRE-RATED ASSEMBLY W/ STC 50 OR BETTER
REFER TO **GA. NO. WP 5512** (ON THIS SHEET)

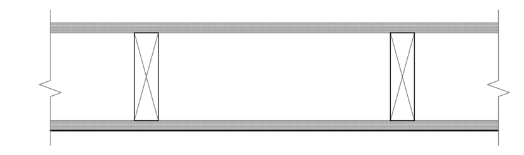
5/8" TYPE "X" GWB (W.R. @ WET AREAS)
5-1/2" ROCK WOOL OR SOUND BATTS
2 x 6 WOOD STUDS @ 24" O.C.
9.25" AIR SPACE
2 x 6 WOOD STUDS @ 24" O.C.
5-1/2" ROCK WOOL OR SOUND BATTS
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

4E



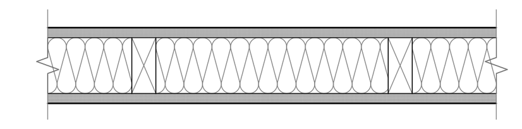
5/8" TYPE "X" GWB (W.R. @ WET AREAS)
2 x 6 WOOD STUDS @ 16" O.C.
WITH 5-1/2" SOUND BATTS
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

4F



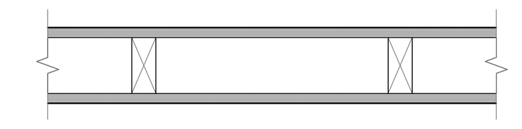
5/8" TYPE "X" GWB (W.R. @ WET AREAS)
2 x 6 WOOD STUDS @ 16" O.C.
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

5A



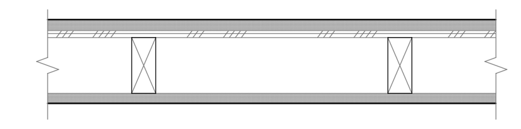
5/8" TYPE "X" GWB (W.R. @ WET AREAS)
2 x 4 WOOD STUDS @ 16" O.C.
WITH 3-1/2" SOUND BATTS
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

5B



5/8" TYPE "X" GWB (W.R. @ WET AREAS)
2 x 4 WOOD STUDS @ 16" O.C.
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

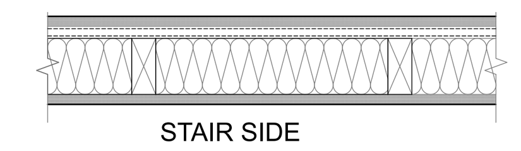
5C



5/8" TYPE "X" GWB (W.R. @ WET AREAS)
1/2" PLYWOOD PER STRUCTURAL
2 x 4 STUDS @ 16" O.C.
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

6A

APARTMENT UNIT SIDE



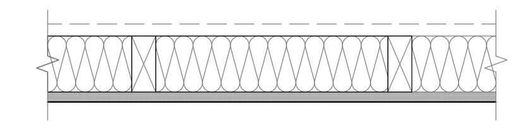
STAIR SIDE

1-HR FIRE RATED & **STC 50** (MIN.) ASSEMBLY;
REFER TO GA. NO. WP 3241, 3242 or 3243

5/8" TYPE "X" GWB (W.R. @ WET AREAS)
1/2" RESILIENT FURRING CHANNELS @ 16" O.C.
2 x 4 WOOD STUDS @ 16" O.C.
WITH 3-1/2" ROCK WOOL
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

7A

OTHER PROPOSED WALL SIDE



APARTMENT UNIT SIDE

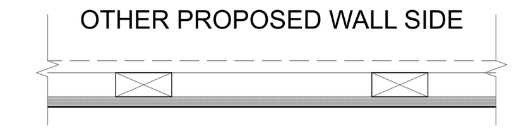
NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTE #11 ON THIS SHEET

INTERIOR PLUMBING WALL
FURRING ADDED TO PROPOSED WALL

OTHER PROPOSED WALL
AIR SPACE; SEPARATE AS NECESSARY
2 x 4 WOOD STUDS @ 16" O.C.
WITH 3-1/2" ROCK WOOL
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

7B

OTHER PROPOSED WALL SIDE



NOTE: SEE WALL TYPE & RATED ASSEMBLY NOTE #11 ON THIS SHEET

INTERIOR WALL
FURRING ADDED TO PROPOSED WALL

OTHER PROPOSED WALL
AIR SPACE; SEPARATE AS NECESSARY
2 x 4 WOOD STUDS @ 16" O.C.;
LAY FLAT OR RIP AS NEEDED
5/8" TYPE "X" GWB (W.R. @ WET AREAS)

ASSEMBLY NOTES

1. WALLS, PARTITIONS AND FLOOR/CEILING ASSEMBLIES ENCLOSING THE APARTMENT UNITS SHALL HAVE A SOUND TRANSMISSION CLASS (STC) OF NOT LESS THAT 50 FOR AIR-BORNE NOISE WHEN TESTED IN ACCORDANCE WITH ASTM E90. PENETRATIONS OR OPENINGS IN CONSTRUCTION ASSEMBLIES FOR PIPING, ELECTRICAL DEVICES, RECESSED CABINETS, BATHTUBS SOFFITS OR HEATING, VENTILATING OR EXHAUST DUCTS SHALL BE SEALED, LINED, INSULATED OR OTHERWISE TREATED TO MAINTAIN THE REQUIRED STC. UNIT ENTRY DOORS SHALL BE TIGHT-FITTING TO THE FRAME AND SILL.

2. REFER TO THE "FIRE-RESISTANCE-RATED CONSTRUCTION NOTES ON SHEET #AG1.2.

3. REFER TO THE 'FIRE RATED ASSEMBLY' DIAGRAM ON SHEET **#AG1.2** FOR INFORMATION ON WHICH WALLS ARE SPECIFICALLY REQUIRED TO HAVE A FIRE-RATING. AS NOTED IN THAT DIAGRAM, NOT ALL WALLS ARE REQUIRED TO HAVE A FIRE RATING EVEN THOUGH THE WALL TYPE ASSEMBLY HAS THE SAME GENERAL CONFIGURATION OF COMPONENTS.

4. ELECTRICAL OUTLET BOXES SHALL NOT BE PLACED BACK-TO-BACK AND SHALL BE OFFSET BY NOT LESS THAN 12-INCHES FROM OUTLETS IN THE OPPOSITE WALL SURFACE. THE BACK AND THE SIDES OF BOXES SHALL BE SEALED WITH 1/8-INCH RESILIENT SEALANT AND BACKED BY AT LEAST 2-INCH THICK MATERIAL FIBER INSULATION PER IBC 1207.3.

5. SPACES OR SHAFTS CONTAINING VENTILATING EQUIPMENT OR OTHER MECHANICAL EQUIPMENT SHALL BE SEPARATED BOTH VERTICALLY AND HORIZONTALLY FROM THE ADJOINING DWELLING UNIT BY CONSTRUCTION DESIGNED TO PROVIDE A MINIMUM STC RATING OF 50.

6. DESIGN AND MATERIALS FOR SOUND TRANSMISSION CONTROL SHALL NOT IMPAIR THE FIRE-RESISTANT INTEGRITY OF SEPARATING WALLS OR FLOOR/CEILING ASSEMBLIES.

7. WRAP ALL PLUMBING PIPE WITH SOUND ATTENUATION BATTS.

8. ROOF ASSEMBLIES TO INCLUDE CLASS C ROOF COVERING THROUGHOUT AND FIRE-RETARDANT-TREATED WOOD SHEATHING FOR A DISTANCE OF 4 FEET OF THE EXTERIOR WALL.

9. IN GENERAL, THE CONTRACTOR SHALL REVIEW SECTION 1, GENERAL EXPLANATORY NOTES OF THE GYPSUM ASSOCIATION - 600 - 2009 FIRE RESISTANCE DESIGN MANUAL (19TH EDITION) OR LATER.

10. PER IBC 718.2.2 FIRE-BLOCKING SHALL BE PROVIDED IN ALL FURRED SPACES: VERTICALLY AT CEILING AND FLOOR LEVELS, AND HORIZONTALLY AT INTERVALS NOT EXCEEDING 10 FEET.

11. PER SECTION 1, GENERAL EXPLANATORY NOTE #22 OF THE GYPSUM ASSOCIATION - 600 - 2009 FIRE RESISTANCE DESIGN MANUAL (19TH EDITION) NOTE THE FOLLOWING: WHEN NOT SPECIFIED AS A COMPONENT OF A FIRE-RESISTANCE RATED WALL OR PARTITION SYSTEM, WOOD STRUCTURAL PANELS SHALL BE PERMITTED TO BE ADDED TO ONE OR BOTH SIDES. SUCH PANELS SHALL BE PERMITTED TO BE APPLIED EITHER AS A BASE LAYER DIRECTLY TO THE FRAMING (UNDER THE GYPSUM BOARD), AS A FACE LAYER (OVER THE FACE LAYER OF GYPSUM BOARD), OR BETWEEN LAYERS OF GYPSUM BOARD IN MULTI-LAYER SYSTEMS. WHEN SUCH PANELS ARE APPLIED UNDER THE GYPSUM BOARD OR BETWEEN LAYERS OF GYPSUM BOARD, THE LENGTH OF THE FASTENERS SPECIFIED FOR THE ATTACHMENT OF THE GYPSUM BOARD APPLIED OVER THE WOOD STRUCTURAL PANELS SHALL BE INCREASED BY NOT LESS THAT THE THICKNESS OF THE WOOD STRUCTURAL PANELS. FASTENER SPACING FOR THE GYPSUM BOARD AND THE NUMBER OF LAYERS OF GYPSUM BOARD SHALL BE AS SPECIFIED IN THE SYSTEM DESCRIPTION.

12. PER SECTION 1, GENERAL EXPLANATORY NOTE #15 OF THE GYPSUM ASSOCIATION - 600 - 2009 FIRE RESISTANCE DESIGN MANUAL (19TH EDITION) NOTE THE FOLLOWING: GREATER STUD SIZES (DEPTHS) SHALL BE PERMITTED TO BE USED IN METAL- OR WOOD-STUD SYSTEMS. METAL STUDS OF HEAVIER GAGE THAN THOSE TESTED SHALL BE PERMITTED, THE ASSIGNED RATING OF ANY LOAD-BEARING SYSTEM SHALL ALSO APPLY TO THE SAME SYSTEM USED A NON-LOAD-BEARING SYSTEM. INDICATED STUD SPACINGS ARE MAXIMUMS.

AGENCY REVIEW | 24.03.11

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

REVISIONS

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	ASSEMBLY TYPES
PROJECT #:	2016
SHEET:	AG1.4

PRIVATE DECK FLOOR/CEILING ASSEMBLY

ICC EVALUATION SERVICE
Most Widely Accepted and Trusted

ICC-ES Evaluation Report **ESR-2201**

Reissued May 2014

This report is subject to renewal July 1, 2016.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 18 13—Pedestrian Traffic Coatings

REPORT HOLDER:

WESTCOAT
770 GATEWAY CENTER DRIVE
SAN DIEGO, CALIFORNIA 92102
(800) 250-4519
www.westcoat.com

EVALUATION SUBJECT:

WESTCOAT ALX STANDARD AND CUSTOM SYSTEMS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2012, 2009 and 2006 *International Residential Code®* (IRC)

Properties evaluated:

- Durability
- Wind resistance
- Fire classification
- Fire resistance

2.0 USES

WestCoat ALX Standard and Custom Systems are cementitious coating systems for use as walking deck and classified roof covering systems over plywood substrates. The systems, as described in Section 4.4 of this report, provide a Class A roof covering fire classification. The systems, as described in Section 4.5 of this report, are used as a component of a one-hour fire-resistance-rated assembly.

3.0 DESCRIPTION

3.1 General:

The ALX Standard and Custom Systems are walking deck and roof covering systems applied over plywood. The ALX Standard system consists of the materials described in Section 4.2 and the ALX Custom system consists of the material described in Section 4.3.

3.2 Materials:

3.2.1 Plywood Substrate: Plywood substrates must be exterior grade, $^{5}/_{8}$-inch-thick (15.9 mm) plywood complying with U.S. DOC PS-1 or PS-2.

3.2.2 Metal Lath: The metal lath must be 2.5 lb/yd^2 (1.36 kg/m^2), hot-dipped galvanized, expanded metal lath, complying with ASTM C847. The Westcoat part number is WP-25 Metal Lath.

3.2.3 Staples: Staples must be corrosion-resistant, minimum No. 16 gauge staples with 1-inch-wide (25 mm) crowns and $^{5}/_{8}$-inch-long (15.9 mm) legs, complying with ASTM F1667. The Westcoat part number is WP-10 Staples.

3.2.4 WP-40 Sheet Membrane: The WP-40 Sheet Membrane is a self-adhering, nominally 40-mil-thick [0.04 inch (1.02 mm)] membrane recognized in ESR-3585.

3.2.5 WP-81 Cement Modifier: The WP-81 Cement Modifier is a liquid admixture that is used with TC-1 Basecoat Cement, TC-2 Smooth Texture Cement, TC-3 Medium Texture Cement, and TC-5 Grout Texture Cement. Shelf life is one year when stored at temperatures between 40°F and 100°F (4.4°C and 37.8°C) and in a dry place.

3.2.6 TC-1 Basecoat Cement: The TC-1 Basecoat Cement is a proprietary dry-blend mixture including portland cement and silica sand. The product is packaged in 50-pound (22.5 kg) bags. Shelf life is one year when stored in dry conditions.

3.2.7 TC-2 Smooth Texture Cement: The TC-2 Smooth Texture Cement is a proprietary dry-blend mixture including portland cement and silica sand. The product is packaged in 50-pound (22.5 kg) bags. Shelf life is one year when stored in dry conditions.

3.2.8 TC-3 Medium Texture Cement: The TC-3 Medium Texture Cement is a proprietary dry-blend mixture including portland cement and silica sand. The product is packaged in 50-pound (22.5 kg) bags. Shelf life is one year when stored in dry conditions.

3.2.9 TC-5 Grout Texture Cement: The TC-5 Grout Texture Cement is a proprietary dry-blend mixture including portland cement and silica sand. The product is packaged in 50-pound (22.5 kg) bags. Shelf life is one year when stored in dry conditions.

3.2.10 SC-10 Acrylic Topcoat: The SC-10 Acrylic Topcoat is a proprietary, water-based liquid sealant used as the topcoat of the WestCoat ALX system. This product is packaged in 1- or 5-gallon pails (3.78 or 18.9 L). Shelf life is two years when stored at temperatures between 40°F and 100°F (4.4°C and 37.8°C) and in a dry place.

3.2.11 SC-35X Water-Based Stain: The SC-35X Water-Based Stain is a proprietary blend of water-based acrylic

and pigments, used to stain the TC-2 Smooth Texture Cement. The product is packaged in 1- or 5-gallon pails (3.78 or 18.9 L). Shelf life is three years when stored in dry conditions.

3.2.12 TC-40 Liquid Colorant: TC-40 Liquid Colorant is a proprietary iron oxide slurry formulated with high pigment levels used in the ALX Custom system to integrally color the TC-2 Smooth Texture Cement. The product is packaged in 10-ounce bottles. The shelf life is three years when stored at temperatures between 40°F and 100°F (4.4°C and 37.8°C) in a dry place.

3.2.13 SC-70 Stone Glaze: The SC70 Stone Glaze is a proprietary acrylic lacquer sealant. The product is packaged in 1- or 5-gallon pails (3.78 or 18.9 L). The shelf life is five years when stored at temperatures between 40°F and 100°F (4.4°C and 37.8°C) in a dry place.

4.0 INSTALLATION

4.1 General:

Installation of the WestCoat ALX Standard and Custom Systems must be in accordance with the manufacturer's published installation instructions, the applicable code and this report. The manufacturer's installation instructions must be available on the jobsite during application. The system must be installed only when the ambient temperature is between 55°F and 90°F (13°C and 32°C). Materials must not be applied if precipitation is occurring or expected.

4.1.1 Preparation of Plywood Substrate: Plywood must be clean, dry, and free from dirt or foreign materials that may prevent adhesion of the base coat, and must be installed to framing in accordance with the requirements of the applicable code at a maximum framing spacing of 16 inches (406 mm) on center. All plywood edges must be blocked with nominally 2-by-4 wood members, or panel edges must be tongued and grooved. All through-penetrations and terminations of the sheathing must be protected with metal flashing in accordance with the applicable code. Adequate drainage must be provided in accordance with the applicable code.

4.1.2 WP-40 Sheet Membrane: The WP-40 Sheet Membrane must be applied over all plywood joints in 6- or 12-inch-wide (152 or 305 mm) strips or may be applied over the entire plywood deck. When installed in accordance with Section 4.5, installation is limited to use over all plywood joints in 6- or 12-inch-wide (152 or 305 mm) strips.

4.1.3 Metal Lath: The metal lath, as described in Section 3.2.2, must be installed with lath edges parallel to plywood substrate joints and offset from the substrate joints by a minimum of 2 inches (51 mm). The lath must be held back $^{1}/_{2}$ inch (12.7 mm) from all deck edges and stapled to the plywood substrate with no less than 16 staples per square foot (174 staples per square meter). Lath must be lapped 1 to 2 inches (25 to 51 mm) at seams and stapled to the plywood substrate every 1 to 2 inches (25.4 to 50.8 mm).

4.1.4 Base Coat: The base coat mixture consists of one 50-pound (22.5 kg) bag of TC-1 Basecoat Cement combined with 1$^{1}/_{4}$ gallons (4.73 L) of WP-81 Cement Modifier and up to 1 quart of water (946.4 mL), then mixed until uniform consistency is achieved. The mixture results in a 4.5-gallon (17 L) batch. The base coat mixture must be applied onto the lath at a rate of 40 square feet (3.68 square meters) per 4.5-gallon (17 L) batch. The minimum dry thickness of the base coat must be 0.142 inch (3.6 mm). Prior to the application of the slurry coat, the base coat must be smoothed with a trowel and allowed to cure until firm.

4.1.5 Slurry Coat:

The slurry coat mixture consists of one bag of TC-1 Basecoat Cement, 1 gallon (3.78 L) of WP-81 Cement Modifier, and up to $^{1}/_{2}$ gallon (1.89 L) of water, mixed until uniform consistency is achieved. The slurry coat mixture must be applied onto the cured base coat at a rate of 100 to 150 square feet (9.2 to 13.9 m^2) per 4.5-gallon (17.0 L) batch, to result in a minimum dry thickness of the slurry coat of 0.063 inch (1.60 mm). The slurry coat must be smoothed with a trowel and allowed to cure until firm.

4.2 ALX Standard System: Following installation in accordance with Section 4.1:

4.2.1 Texture Coat: The texture coat mixture consists of one bag of TC-3 Medium Texture Cement, 1 gallon (3.78L) of WP-81 Cement Modifier and $^{1}/_{2}$ gallon (1.89 L) of water, mixed until uniform consistency is achieved. The texture coat must be applied with a hopper gun onto the slurry coat at a rate of 150 to 200 square feet (13.9 to 18.6 m^2) per batch, to result in a minimum dry thickness of 0.047 inch (1.2 mm). The texture coat must be leveled with a trowel and allowed to cure until firm.

4.2.2 Top Coat: The SC-10 Acrylic TopCoat must be applied over the cured texture coat with a roller in one or two applications, for a total coverage rate of 125 square feet per gallon (3.04 m^2/L), to a minimum thickness of 6 mils (0.152 mm). The coating must be allowed to cure until dry.

4.3 ALX Custom system: Following installation in accordance with Section 4.1;

4.3.1 Grout Coat: The grout coat mixture consists of one 50-pound (22.5 kg) bag of TC-5 Grout Texture Cement combined with 1 gallon (3.78 L) of WP-81, and up to $^{1}/_{2}$ gallon (1.89 L) of water, then mixed until uniform consistency is achieved. The mixture results in a 4.5- gallon (3.78 L) batch. The grout coat mixture must be applied onto the slurry coat at a rate of 200 square feet (18.6 m^2) per 4.5 gallon (17.0 L) batch. The minimum dry thickness of the grout coat must be 0.047 inch (1.2 mm). Prior to application of the texture coat, the grout coat must be smoothed with a trowel and allowed to cure until firm.

4.3.2 Texture Coat: The texture coat mixture consists of one bag of TC-2 Smooth Texture Cement combined with 1 gallon (3.78 L) of WP-81 Cement Modifier and up to $^{1}/_{2}$ gallon (1.89 L) of water mixed until uniform consistency is achieved. Up to 4 ounces (0.118 L) of TC-40 Liquid Colorant may be added and mixed until color is uniform. The mixture results in a 4.5-gallon (17.0 L) batch. The color coat mixture must be applied onto the grout coat at a rate of 175 to 200 square feet (16.3 to 18.6 m^2) per 4.5- gallon (3.78 L) batch. The minimum dry thickness of the texture coat must be 0.047 inch (1.2 mm). Prior to the application of the stain, the texture coat must be smoothed with a trowel and allowed to cure until firm.

4.3.3 Stain: SC-35X Water-Based Stain must be applied over the texture coat with a sprayer, brush, or broom at a coverage rate of 200 to 400 square feet (18.6 to 37.2 m^2) per gallon (3.79 L). The SC-35X Water-Based Stain must be allowed to completely dry before application of the next coat.

4.3.4 Top Coat: The top coat consists of SC-70 Stone Glaze that must be applied over the stain with a sprayer, brush, or roller in two applications, for a total coverage rate of 125 square feet (11.6 m^2) per gallon (3.79 L). The top coat must be allowed to cure until dry.

4.4 Class A Roof Covering over Plywood Deck:

When the WestCoat ALX Standard and Custom Systems are applied over a minimum $^{5}/_{8}$-inch-thick (15.9 mm)

plywood substrate with all edges blocked and installed in accordance with Section 4.0 at a maximum roof slope of $^{1}/_{4}$ inch per 1 foot (2% slope), the system provides a Class A roof classification.

4.5 One-hour Fire-resistance-rated Construction:

When the WestCoat ALX Standard and Custom systems are installed in accordance Section 4.0, except that the WP-40 Sheet Membrane is only applied over all plywood joints in 6- or 12-inch-wide (152 or 305 mm) strips (see Section 4.1.2), over $^{5}/_{8}$-inch-thick (15.9 mm) exterior-grade plywood complying with PS-1, with nominally 2-by-8 wood joists spaced at a maximum of 16 inches (406 mm) on center, and all plywood joints blocked, the assembly can be recognized as an alternative for the double wood floor described in Item 13 of Table 721.1(3) of the 2012 IBC [Table 720.1(3) of the 2009 and 2006 IBC]. The design bending stress must be limited to 78 percent of the code-prescribed design values for the wood joist.

4.6 Wind Resistance:

Installation must be limited to buildings with a maximum height of 40 feet (12.2 m) above grade, in Exposure B areas, with either an ultimate design wind speed of 130 mph (209 km/h) under the 2012 IBC or a maximum 3-second-gust basic wind speed of 100 miles per hour (161 km/h) under the 2009 and 2006 IBC and the 2012, 2009 and 2006 IRC. The plywood and its attachment to support framing must be adequate to resist the required wind load.

4.7 Method of Repair:

The damaged area must be completely removed, including the base coat and lath. New metal lath must be stapled to the clean, dry substrate, and the system reapplied as described in Sections 4.1 through 4.6 of this report. If substrate damage occurs, the retention of the strength properties of the system must be investigated.

5.0 CONDITIONS OF USE

The WestCoat ALX Standard and Custom Systems described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Materials must be manufactured and applied in accordance with this report, the applicable code, and the manufacturer's published installation instructions. In the event of conflict between this report and the manufacturer's installation instructions, this report governs.

5.2 The WP-81 Cement Modifier, TC-1 Basecoat Cement, TC-2 Smooth Texture Cement, TC-3 Medium Texture Cement, TC-5 Grout Texture Cement, SC-10 Acrylic Topcoat, SC-35X Water-Based Stain, TC-40 Liquid Colorant and SC-70 Stone Glaze products are produced under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Walking Decks (AC39), dated April 2011 (editorially revised October 2012).

7.0 IDENTIFICATION

The WP-81 Cement Modifier, TC-1 Basecoat Cement, TC-2 Smooth Texture Cement, TC-3 Medium Texture Cement, TC-5 Grout Texture Cement, SC-10 Acrylic Topcoat, SC-35X Water-Based Stain, TC-40 Liquid Colorant and SC-70 Stone Glaze products must be labeled with the WestCoat name and the manufacturing address, the date of manufacture, the shelf life, and the lot number or production number. In addition to the above, the products are labeled with the ICC-ES report number (ESR-2201).

FLOOR/CEILING/ROOF ASSEMBLIES

ROOF-CEILING SYSTEMS

GA FILE NO. RC 2603	PROPRIETARY	1 HOUR FIRE	

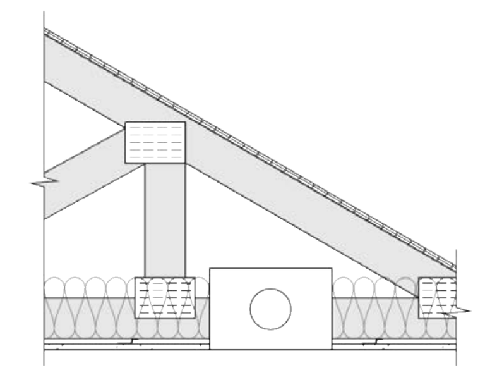
WOOD TRUSSES, RESILIENT CHANNELS, INSULATION, DAMPER, GYPSUM BOARD

Fire Design:
One layer 5/8″ proprietary type X gypsum board or gypsum veneer base applied at right angles to resilient channels 12″ o.c. with 1-1/8″ Type S screws 8″ o.c. Gypsum board end joints attached with screws 8″ o.c. to additional pieces of channel 60″ long located 3″ back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24″ o.c. with 1-1/4″ Type S or W screws. Optional glass fiber or mineral wool batt or loose fill insulation applied directly over gypsum board. Trusses supporting 15/32″ plywood or OSB roof sheathing applied at right angles to trusses with construction adhesive and 6d ring shank nails 12″ o.c.

Optional ceiling damper.

PROPRIETARY GYPSUM BOARD

National Gypsum Company
– 5/8″ Gold Bond® Fire-Shield C™ Gypsum Board



Approx. Ceiling Weight: 3 psf (Fire)
Fire Test: UL R3501, 00NK42686, 8-16-01, UL Design P533

FLOOR-CEILING SYSTEMS, WOOD FRAMED

GA FILE NO. FC 5112	PROPRIETARY*	1 HOUR FIRE	50 to 54 STC SOUND

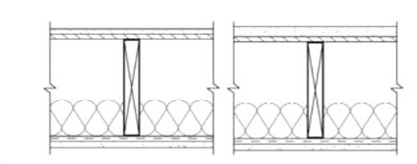
WOOD JOISTS, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, INSULATION, GYPSUM PANELS

Fire Design:
One layer 5/8" proprietary type X gypsum panel or gypsum veneer base applied at right angles to resilient channels 24" o.c. (16" o.c. when batt insulation is used; 12" o.c. when loose fill insulation is used) with 1" Type S screws 12" o.c. Gypsum panel end joints located midway between continuous channels and attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to 2 x 10 wood joists spaced a maximum of 24" o.c. with 1-1/4" Type S screws. Glass or mineral fiber batt insulation stapled to subfloor or loose fill insulation applied directly over gypsum panel. Wood joists supporting 15/32" wood structural panel subfloor applied at right angles to joists with construction adhesive and 6d ring shank nails 12" o.c. Minimum 1/2" proprietary gypsum floor topping applied over subfloor.

Sound Design:
STC and IIC rated with both joists and resilient channels spaced 16" o.c., 3-1/2" glass fiber insulation in joist spaces, 1" proprietary gypsum floor topping poured over 1/4" proprietary sound reduction mat, and with finish flooring of C&P, sheet vinyl, engineered wood laminate, and ceramic tile.

PROPRIETARY GYPSUM COMPONENTS

United States Gypsum Company................................5/8" Sheetrock® Brand Firecode® C Gypsum Panels
Levelrock® Brand Floor Underlayment

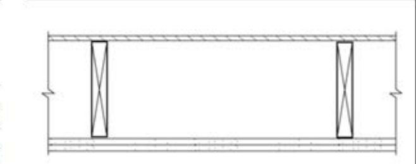


Approx. Ceiling Weight: 3 psf (Fire and Sound)
Fire Test: UL R1319, 05NK04589, 2-4-05; UL R1319, 05NK09496, 3-31-05; UL Design L569
Sound Test: RAL TL04-31 & 32, 2-11-04; RAL TL04-33 & 34, 2-22-04; RAL TL04-67, 3-19-04
IIC & Test: (51 generic sheet vinyl), RAL IN04-004, 4-22-04; (77 generic C&P) RAL IN04-005, 4-22-04; (54 cushion sheet vinyl) RAL IN04-006, 4-26-04; (55 engineered wood laminate) RAL IN04-007, 4-26-04; (52 ceramic tile) RAL IN04-009, 4-26-04

GA FILE NO. FC 5529	GENERIC	1 HOUR FIRE	

WOOD JOISTS, GYPSUM WALLBOARD

Fire Design:
Base layer 5/8" type X gypsum wallboard applied at right angles to 2 x 10 wood joists 24" o.c. with 1-1/4" Type W or S screws 24" o.c. **Face** layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to joists with 1-7/8" Type W or S screws 12" o.c. at joints and intermediate joists and 1-1/2" Type G screws 12" o.c. placed 2" back on either side of end joints. Wood joists supporting 1/2" plywood with exterior glue applied at right angles to joists with 8d nails.
Joints offset 24" from **base** layer joints.



Approx. Ceiling Weight: 5 psf (Fire)
Fire Test: FM FC 172, 2-25-72; ITS, 8-6-98

WALLS ASSEMBLIES

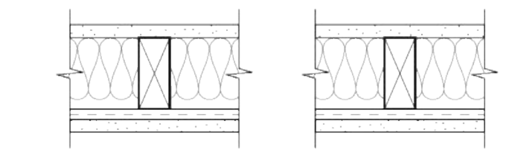
WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

GA FILE NO. WP 3242	GENERIC	1 HOUR FIRE	50 to 54 STC SOUND

GYPSUM WALLBOARD, RESILIENT CHANNELS, INSULATION, WOOD STUDS

Fire Design:
Resilient channels 16″ o.c. attached at right angles to ONE SIDE of 2 × 4 wood studs 24″ o.c. with 1-1/4″ Type S screws. **One** layer 5/8″ type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1″ Type S screws 8″ o.c. with vertical joints located midway between studs. 3″ mineral or glass fiber insulation in stud cavity.
OPPOSITE SIDE: **One** layer 5/8″ type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 6d cement coated nails, 1-7/8″ long, 0.0915″ shank, 15/64″ heads, 7″ o.c.
Vertical joints staggered 24″ on opposite side. **(LOAD-BEARING)**

Sound Design:
Sound tested as constructed for fire.

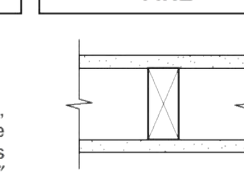


Thickness: 5-3/8″ (Fire and Sound)
Approx. Weight: 7 psf (Fire and Sound)
Fire Test: Based on UL R14196, 05NK05371, 2-15-05, UL Design U309
Sound Test: NRCC TL-93-098, IRC-IR-761, 3-98

GA FILE NO. WP 3605	GENERIC	1 HOUR FIRE	

GYPSUM WALLBOARD, WOOD STUDS

Fire Design:
One layer 5/8″ type X plain or predecorated gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to each side of 2 × 4 wood studs 16″ o.c. with 6d coated nails, 1-7/8″ long, 0.0915″ shank, 1/4″ heads, 7″ o.c. Joints of square edge, bevel edge or predecorated wallboard may be left exposed.
Joints staggered 16″ on opposite sides. **(LOAD-BEARING)**



Thickness: 4-7/8″ (Fire)
Approx. Weight: 7 psf (Fire)
Fire Test: UL R1319-4, -6, 6-17-52, UL R2717-39, 1-20-66, UL R3501-52, 3-15-66, UL Design U305, ULC Design W301

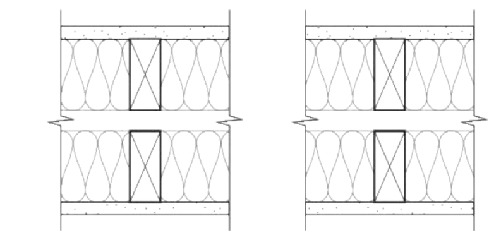
CHASE WALLS, WOOD FRAMED

GA FILE NO. WP 5512	GENERIC	1 HOUR FIRE	50 to 54 STC SOUND

GYPSUM WALLBOARD, WOOD STUDS, INSULATION

Fire Design:
One layer 5/8″ type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of double row of 2 × 4 wood studs 16″ o.c. on separate plates 1″ apart with 2″ Type W screws 7″ o.c. Two layers 3-1/2″ unfaced glass fiber insulation friction fit in stud cavity.
Joints staggered 16″ on opposite sides. Horizontal bracing required at mid-height. **(LOAD-BEARING)**

Sound Design:
Sound tested as constructed for fire.

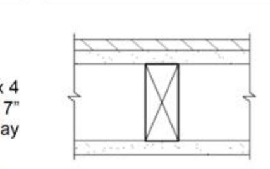


Thickness: Minimum 9-1/4″ (Fire and Sound)
Approx. Weight: 7.1 psf (Fire and Sound)
Fire Test: UL Design U341, UL R4024, 10-31-68
Sound Test: NOAL 17-0837, 8-25-17

GA FILE NO. WP 8105	GENERIC	1 HOUR FIRE	

GYPSUM WALLBOARD, GYPSUM SHEATHING, WOOD STUDS

Fire Design:
EXTERIOR SIDE: **One** layer 48" wide 5/8" type X gypsum sheathing applied parallel to 2 x 4 wood studs 24" o.c. with 1-3/4" galvanized roofing nails 4" o.c. at vertical joints and 7" o.c. at intermediate studs and top and bottom plates. Joints of gypsum sheathing may be left untreated. Exterior cladding to be attached through sheathing to studs.
INTERIOR SIDE: **One** layer 5/8" type X gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, 1-7/8" long, 0.0915" shank, 1/4" heads, 7" o.c. **(LOAD-BEARING)**



Thickness: Varies (Fire)
Approx. Weight: 7 psf (Fire)
Fire Test: See WP 3510 (UL R3501-47, -48, 9-17-65, UL Design U309; UL R1319-129, 7-22-70, UL Design U314)

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BUILDING 'B'
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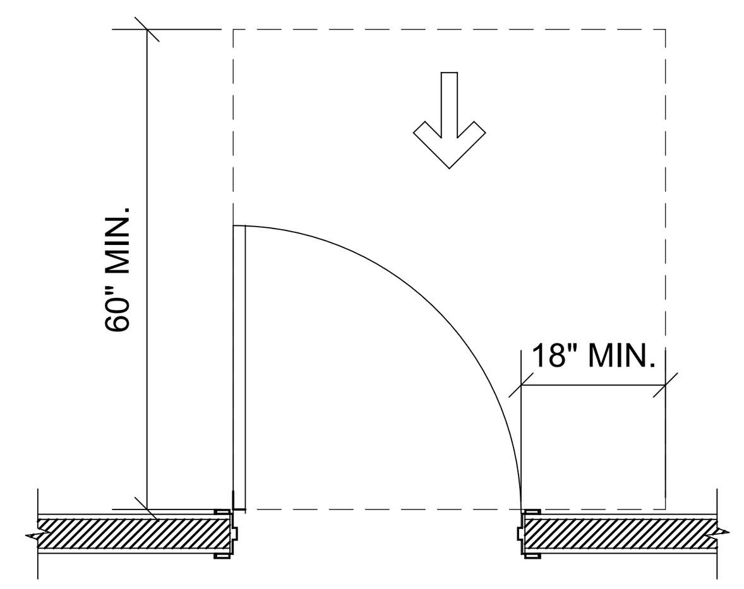
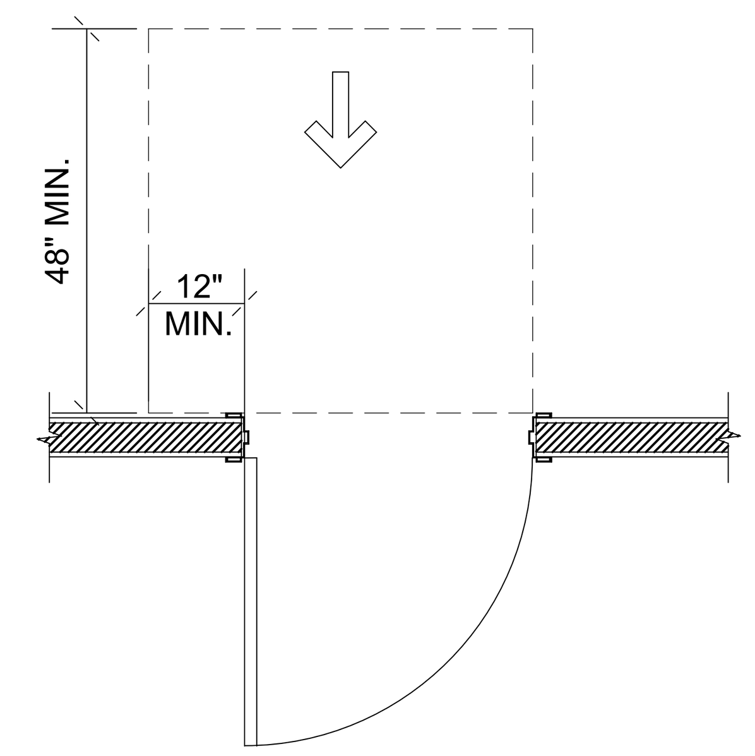
DATE:	24.03.11
TITLE:	ASSEMBLY REFERENCES
PROJECT # :	2016
SHEET:	AG1.5

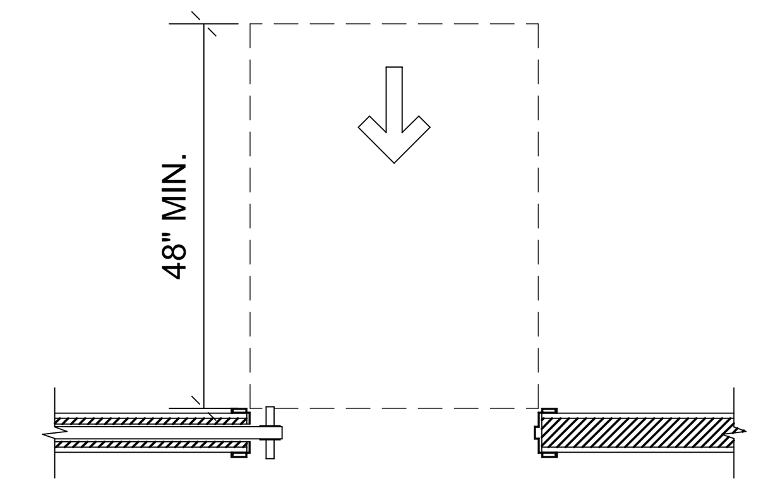
ACCESSIBLE DOOR CLEARANCE



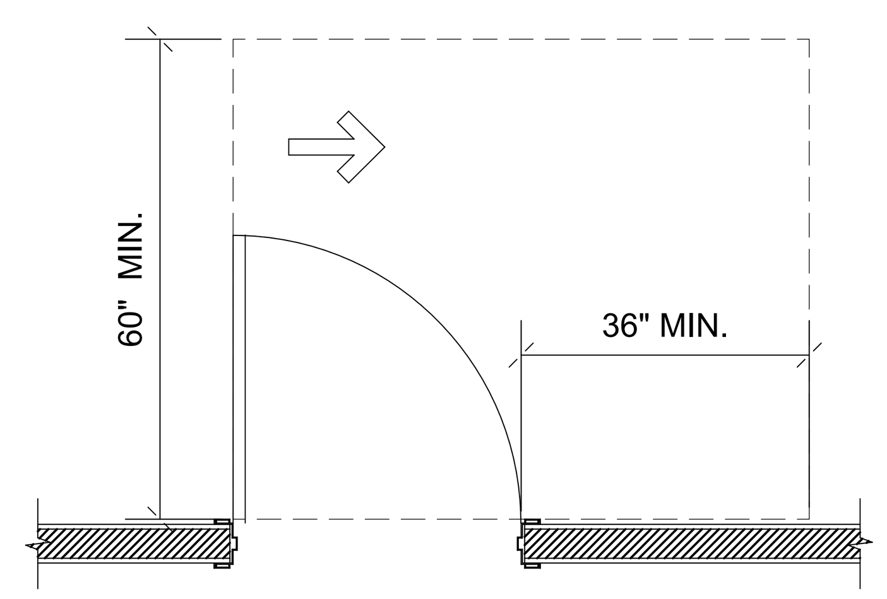
FRONT APPROACH, PULL SIDE



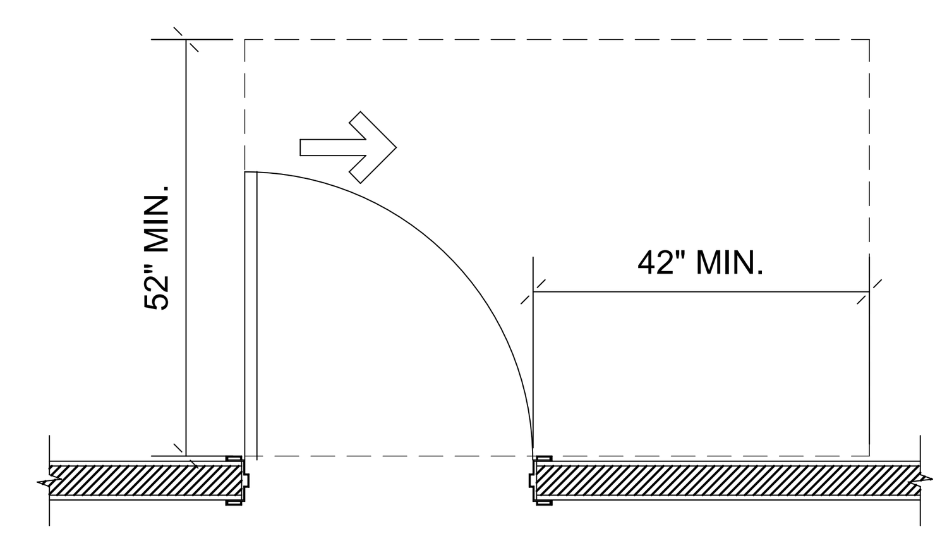
FRONT APPROACH, PUSH SIDE



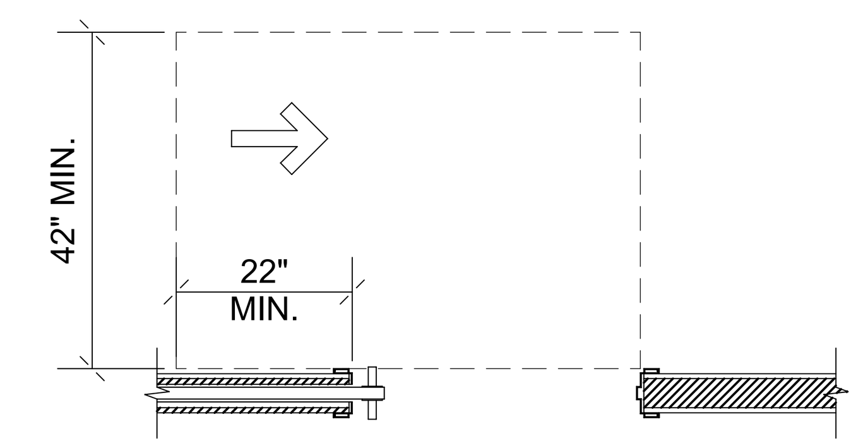
FRONT APPROACH, POCKET



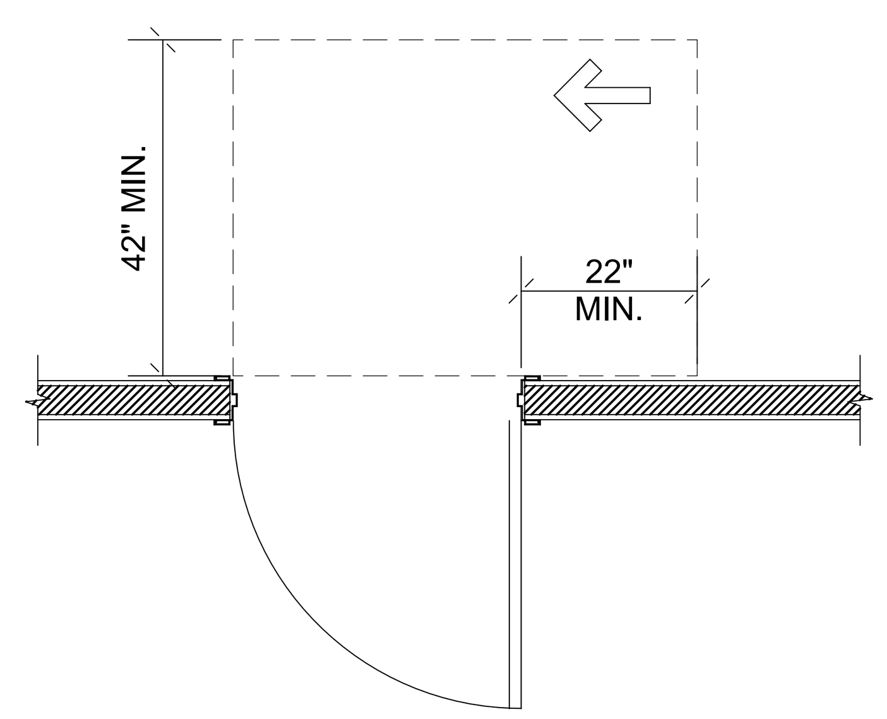
HINGE APPROACH, PULL SIDE



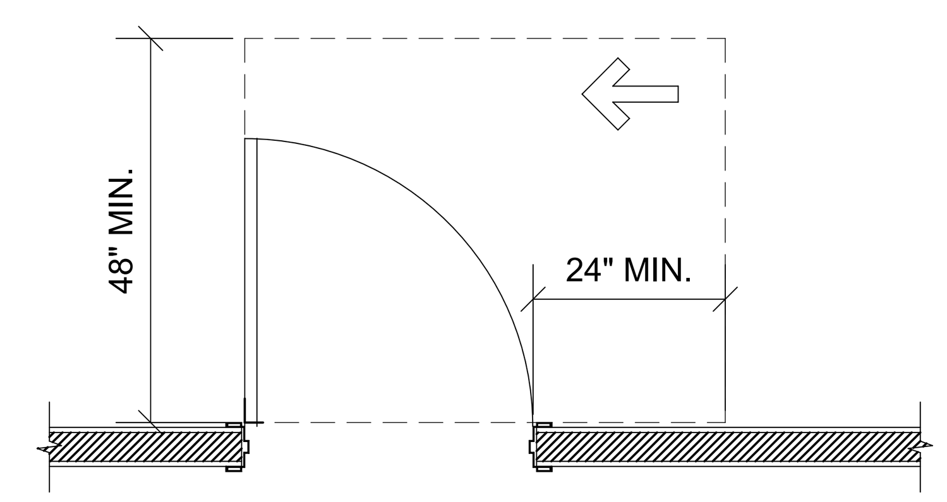
HINGE APPROACH, PULL SIDE



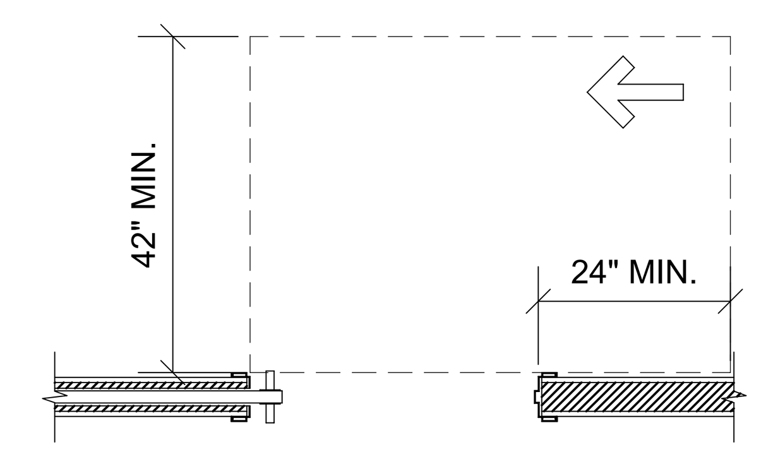
POCKET OR HINGE APPROACH



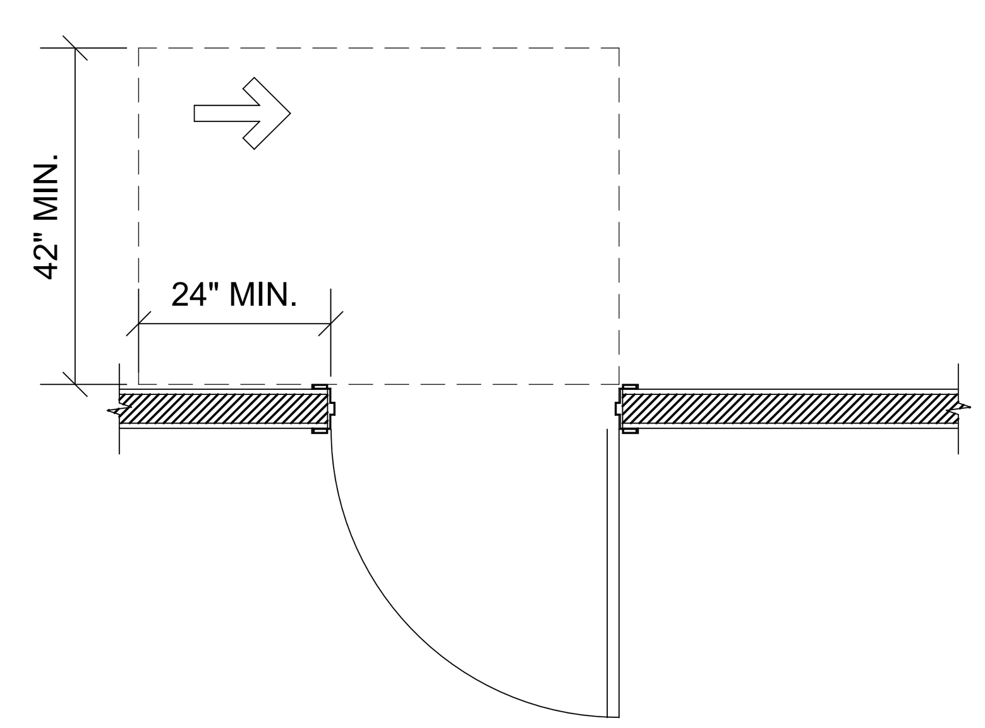
HINGE APPROACH, PUSH SIDE



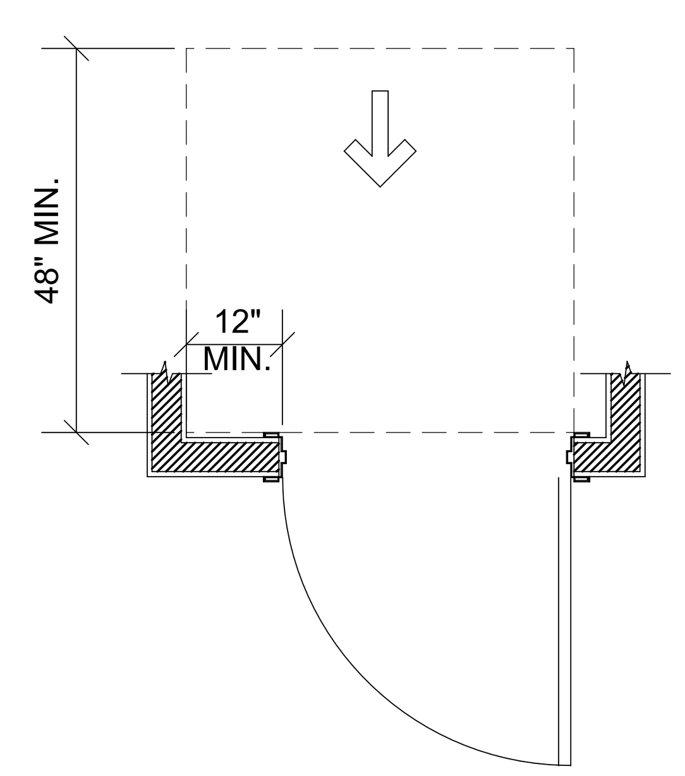
LATCH APPROACH, PULL SIDE



STOP OR LATCH APPROACH



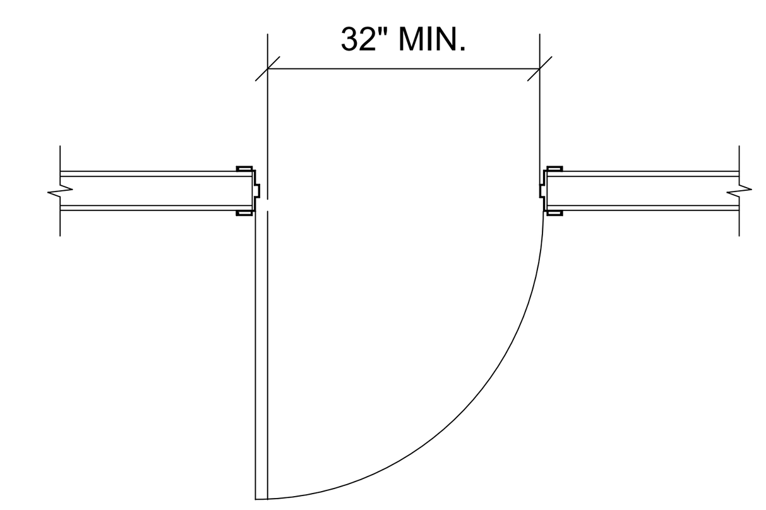
LATCH APPROACH, PUSH SIDE



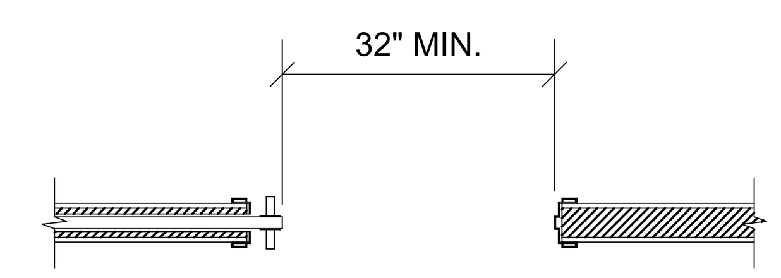
PUSH SIDE, W/ CLOSER & LATCH

402.2.2 CLEAR WIDTH
DOORWAYS SHALL HAVE A CLEAR OPENING WIDTH OF 32 INCHES MINIMUM. CLEAR OPENING WIDTH OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND STOP, WITH THE DOOR OPEN 90 DEGREES. OPENINGS MORE THAN 24 INCHES IN DEPTH AT DOORS AND DOORWAYS WITHOUT DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF 36 INCHES MINIMUM. THERE SHALL BE NO PROJECTIONS INTO THE CLEAR OPENING WIDTH LOWER THAN 34 INCHES ABOVE THE FLOOR. PROJECTIONS INTO THE CLEAR OPENING WIDTH BETWEEN 34 INCHES AND 80 INCHES ABOVE THE FLOOR SHALL NOT EXCEED 4 INCHES.

EXCEPTIONS:
1. DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES MINIMUM ABOVE THE FLOOR.
2. IN ALTERATIONS, A PROJECTION OF 5/8" MAXIMUM INTO THE REQUIRED CLEAR OPENING WIDTH SHALL BE PERMITTED FROM THE LATCH SIDE STOP.



(A) HINGE DOOR



(B) SLIDING DOOR

CLEAR WIDTH OF OPENINGS

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BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

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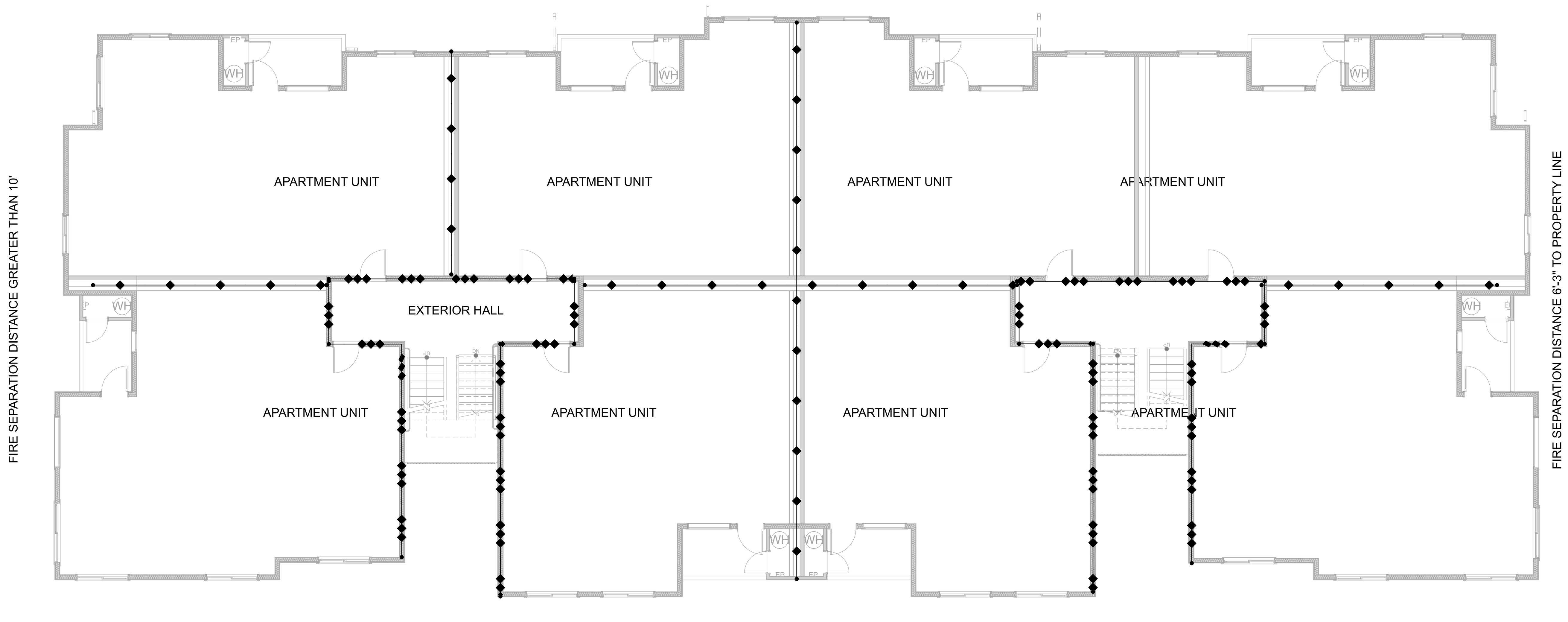
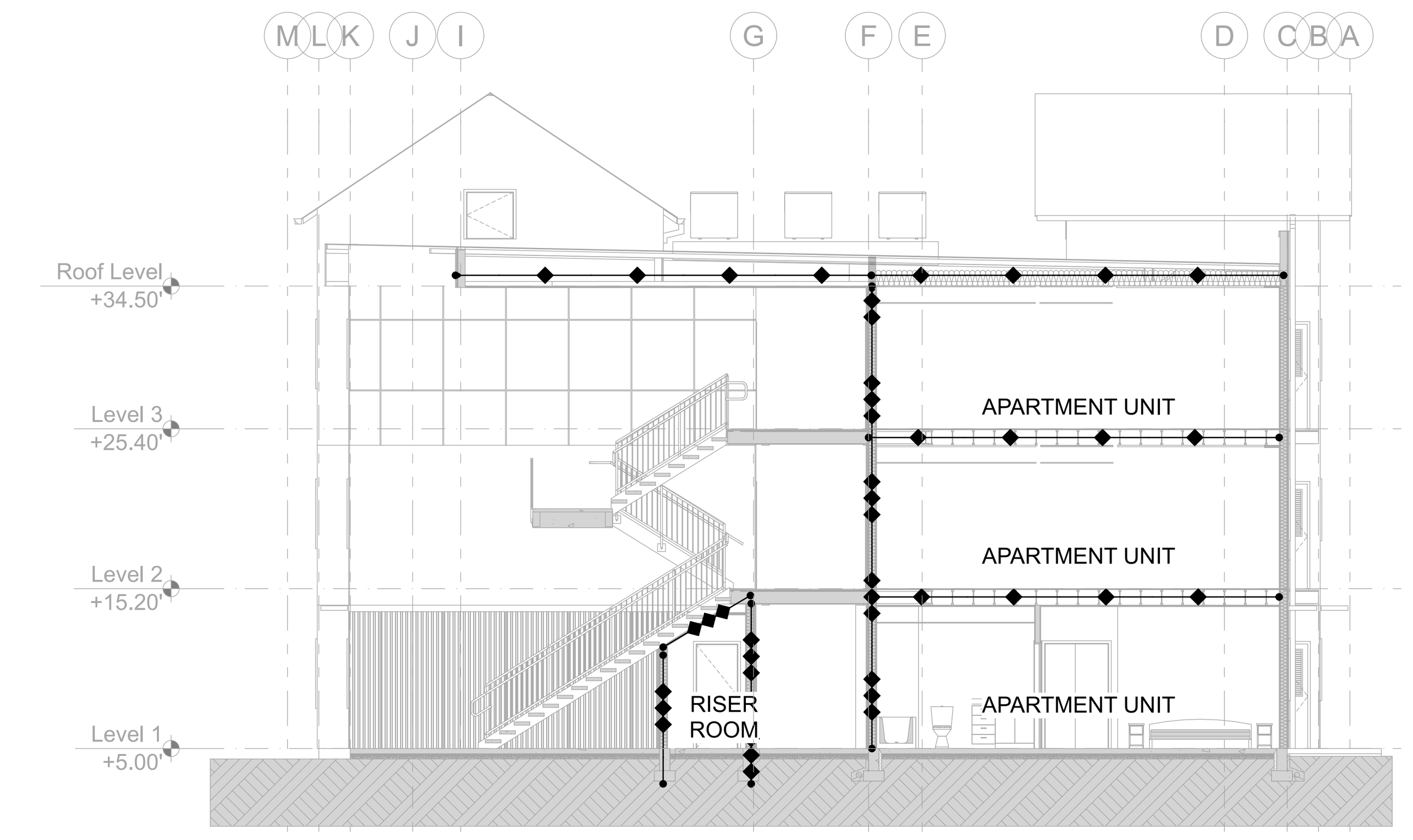
DATE:	24.03.11
TITLE:	ACCESSIBLE ENTRANCES
PROJECT #:	2016
SHEET:	AG1.6



1 RATED WALLS LEVEL 2 & 3

SCALE: 3/32" = 1'-0"

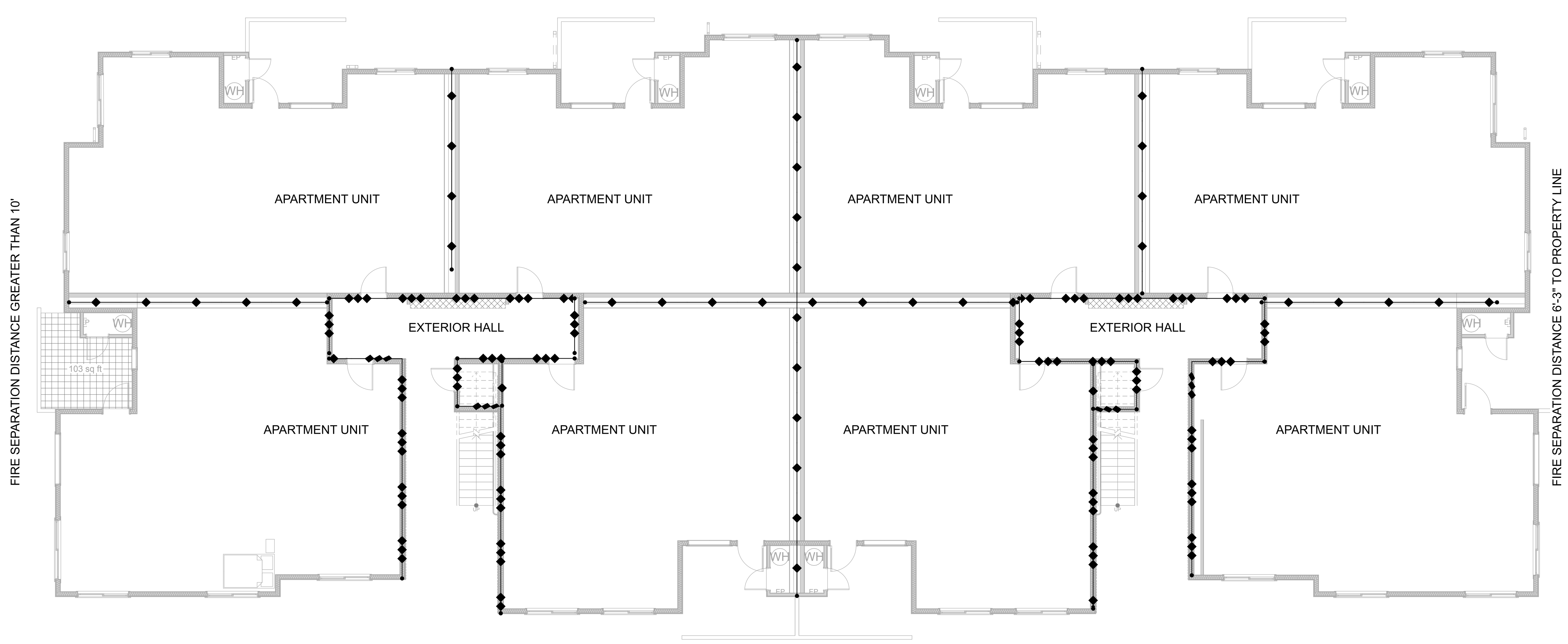


3 RATED ASSEMBLIES SECTION

SCALE: 3/32" = 1'-0"

RATED ASSEMBLY DIAGRAM LEGEND

•—◆——◆—•	1-HR RATED PARTITION WALL ASSEMBLY AND/OR 1-HR RATED FLOOR/CEILING ASSEMBLY OR 1-HR CEILING/ROOF ASSEMBLY
•—◆◆——◆◆—•	EXTERIOR WALL 1-HR RATED WALL ASSEMBLY WITH OPENINGS LIMITED TO 10% WHEN DISTANCE TO PROPERTY LINE IS BETWEEN 5-FT TO 10-FT, NO OPENINGS WHEN DISTANCE LESS THAN 5-FT; WALL SHALL BE RATED FOR EXPOSURE TO FIRE FROM BOTH SIDES
•—◆◆◆——◆◆◆—•	EXIT PASSAGEWAY 1-HR RATED, FIRE BARRIER, CONTINUOUS TO FLOOR DECKS WITH 1-HR RATED OPENINGS & 1-HR RATED CEILING/.ROOF ASSEMBLY



2 RATED WALLS LEVEL 1

SCALE: 3/32" = 1'-0"

S9

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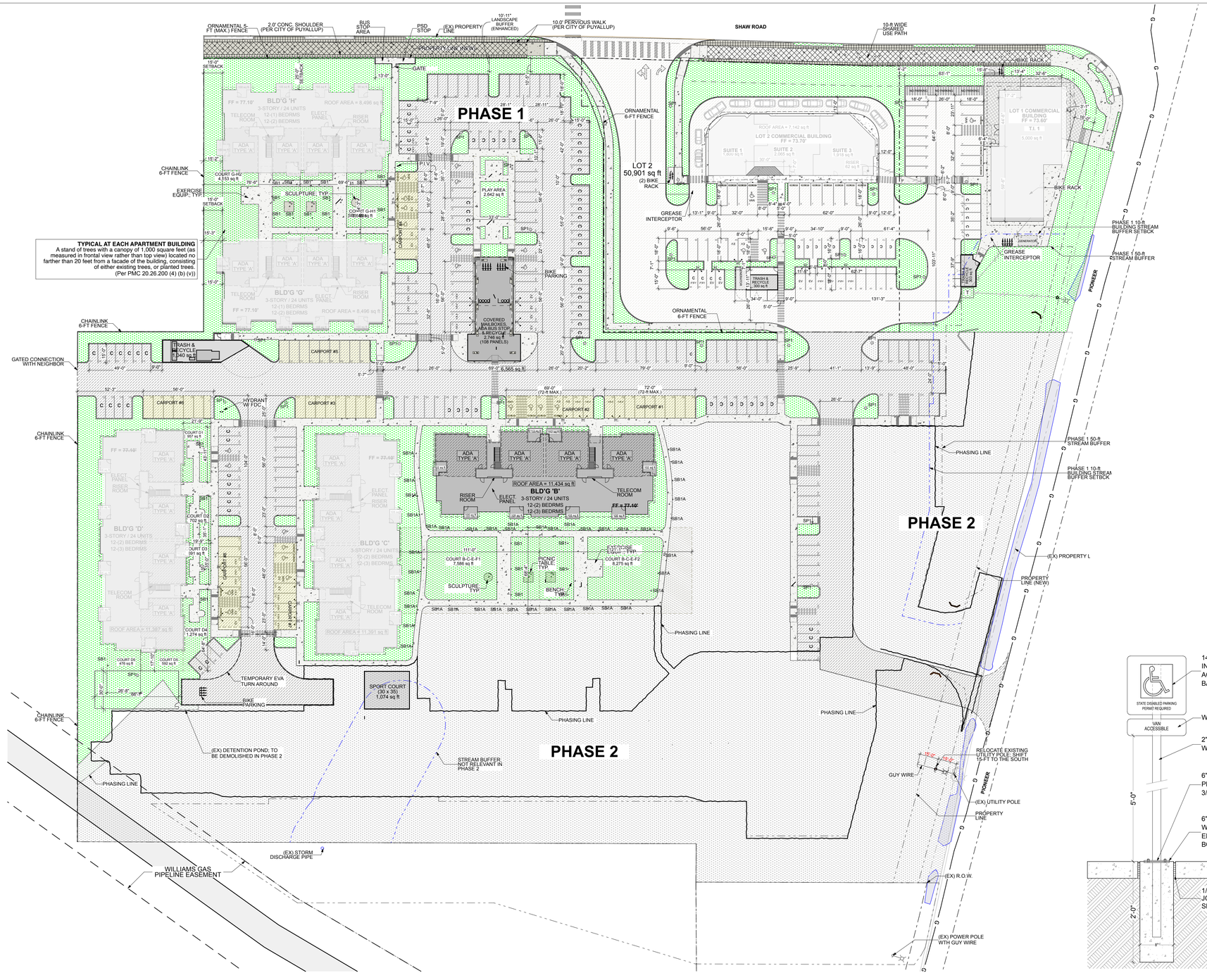
DATE:	24.03.11
TITLE:	CODE DIAGRAMS
PROJECT #:	2016
SHEET:	

AG1.7



1 OVERALL SITE PLAN - PHASE 1

SCALE: 1" = 40'

N

Multiple Site Plans were submitted. The Building inspector must be provided with the Site Plan that has the Planning Department's stamp during inspection.

ACCESSIBLE MAILBOX REQUIREMENTS

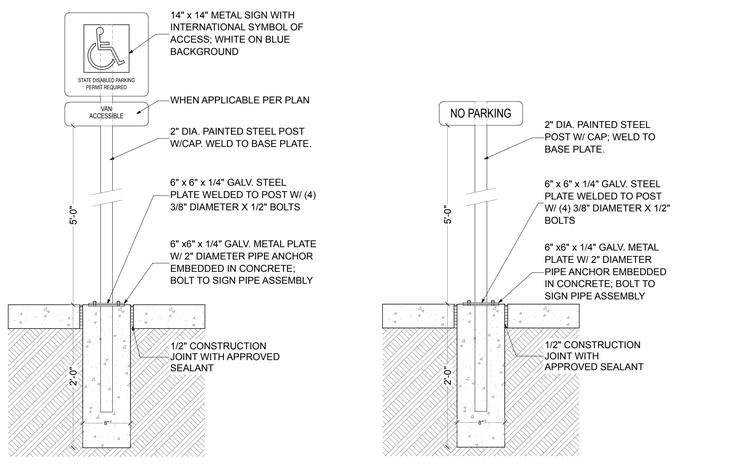
905.1 General. Accessible storage facilities shall comply with ICC A117.1, Section 905.
905.2 Clear Floor Space. A clear floor space complying with ICC A117.1, Section 305 shall be provided.
905.3 Height. Accessible storage elements shall comply with at least one of the reach ranges specified in ICC A117.1, Section 308.
905.4 Operable Parts. Operable parts of storage facilities shall comply with ICC A117.1, Section 309.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5.0 pounds maximum.

308.2 Forward Reach.
308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the floor.
308.3 Side Reach.
308.3.1 Unobstructed. Where a clear floor space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the floor.

LAND USE SITE LIGHTING REQUIREMENTS

1. Light trespass. Light trespass from sites in non-residential zoning districts shall not exceed 3 lux (0.3 foot candles) at parcel boundaries with residential zoning districts. This luminance value shall be measured at the eye in a plane perpendicular to the line-of-sight when looking at the brightest source in the field of view at any point on the property line of any residential parcel.
2. Residential light pollution. To ensure control of and to minimize glare, any lighting within 100 feet of an R District shall use luminaries which meet the Illuminating Engineering Society's cutoff light distribution specification.
3. General light pollution. To control and minimize glare, all other luminaries for area and/or off-street parking shall meet the Illuminating Engineering Society's semi-cutoff light distribution specification. Lighting shall be directed toward the site, with cutoff shields or other means, to prevent spillover glare to adjacent properties or vehicular traffic. Luminaires with a light source not greater than 1800 lumens (100 watt incandescent) are exempt from this requirement.



2 SITE SIGNAGE

SCALE: 1" = 1'-0"

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9251 REGISTERED ARCHITECT BRIAN LANKFORD STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

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CHECKED BY:	BL
DATE:	24.03.11
TITLE:	SITE PLAN *REF. ONLY
PROJECT # :	2016
SHEET:	AS1.0

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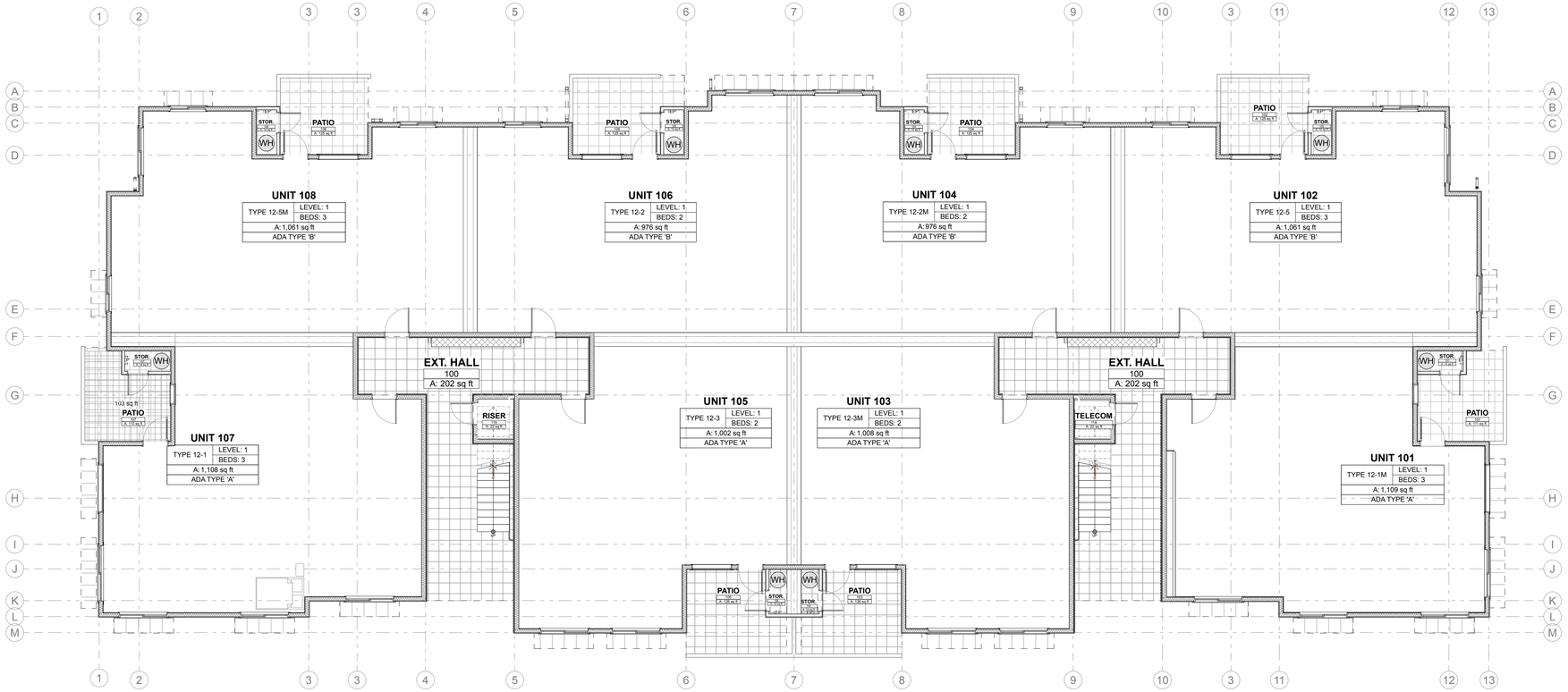

1 LEVEL 1 - OVERALL PLAN
SCALE: 1/8" = 1'-0"

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

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PROJECT # :	2016
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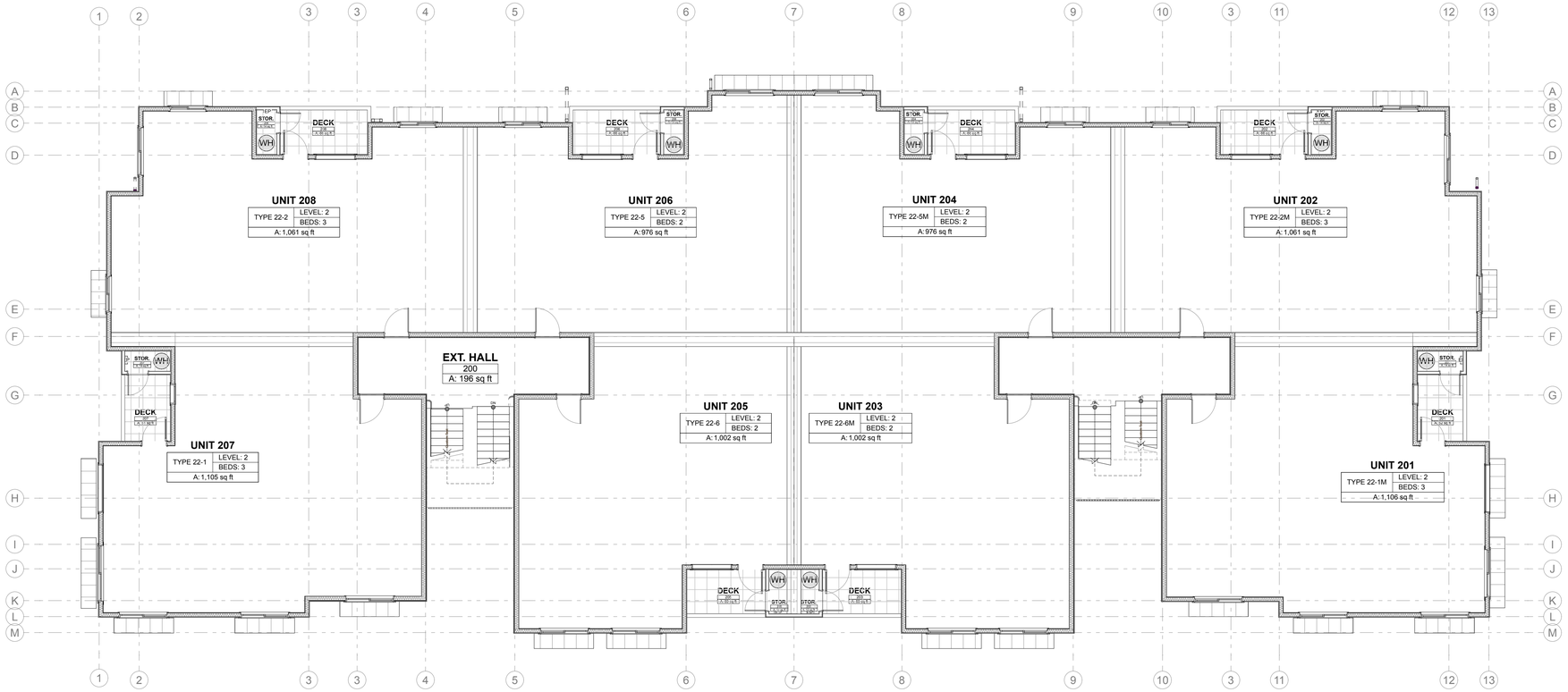

1 LEVEL 2 - OVERALL PLAN
SCALE: 1/8" = 1'-0"

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TACOMA, WA 98403

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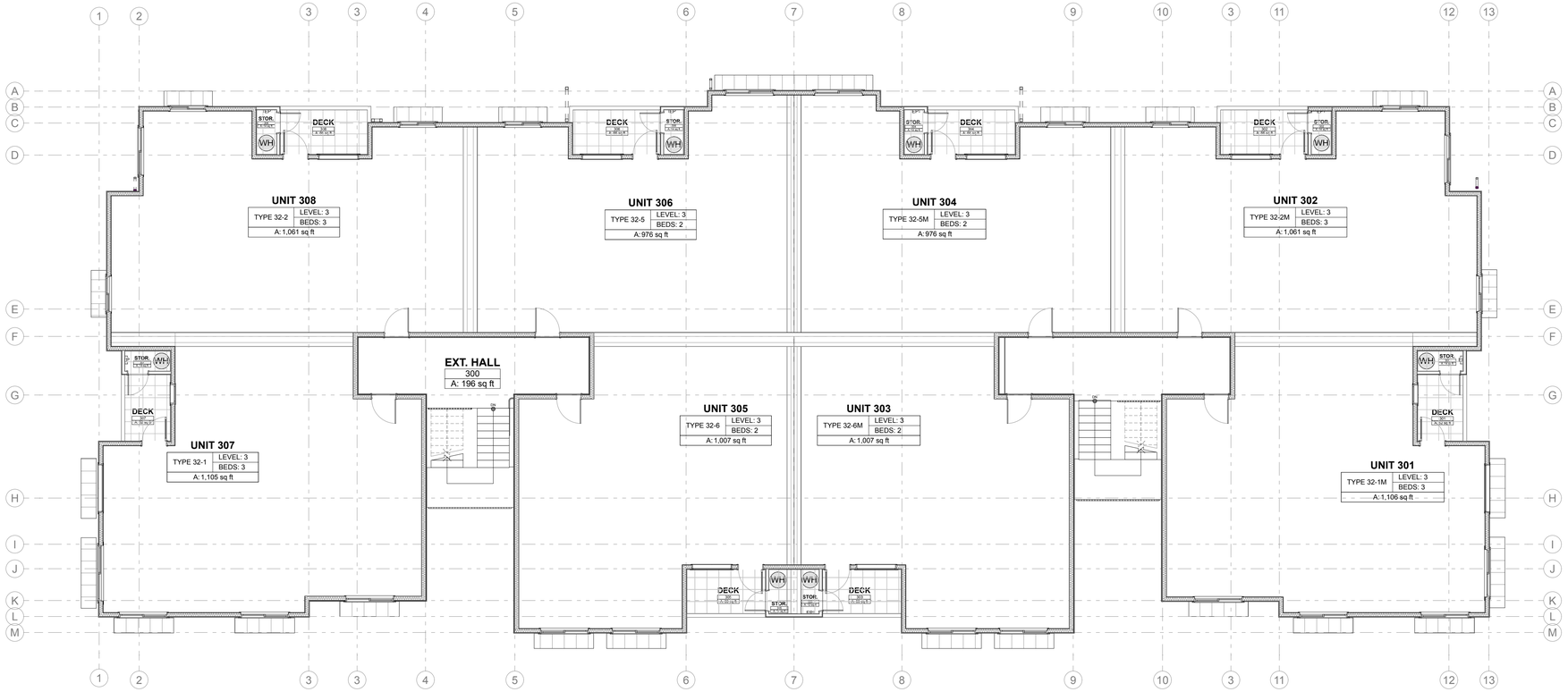
TITLE:	LEVEL 2 - OVERALL PLAN
PROJECT # :	2016
SHEET:	A1.1



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

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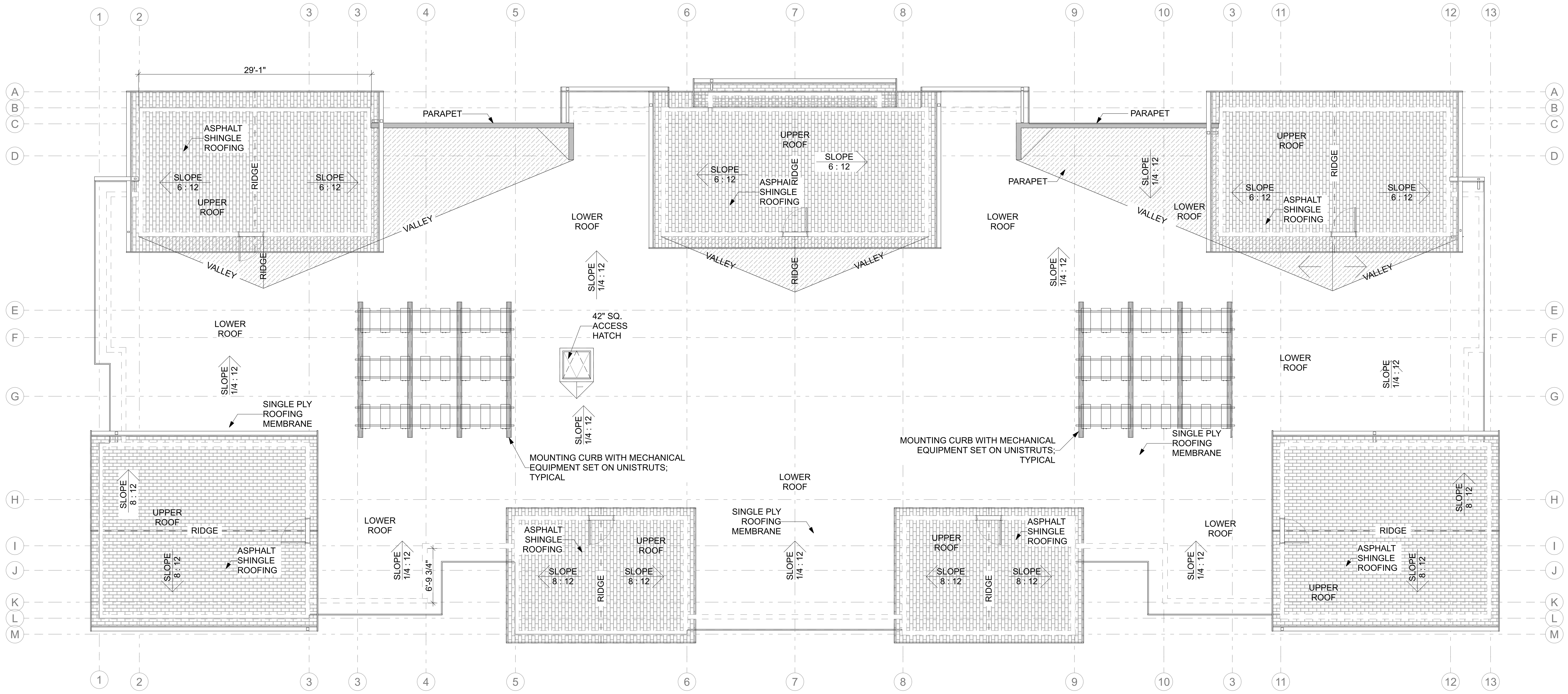

1 ROOF - OVERALL PLAN

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

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TITLE:	ROOF - OVERALL PLAN
PROJECT #:	2016
SHEET:	

A1.3

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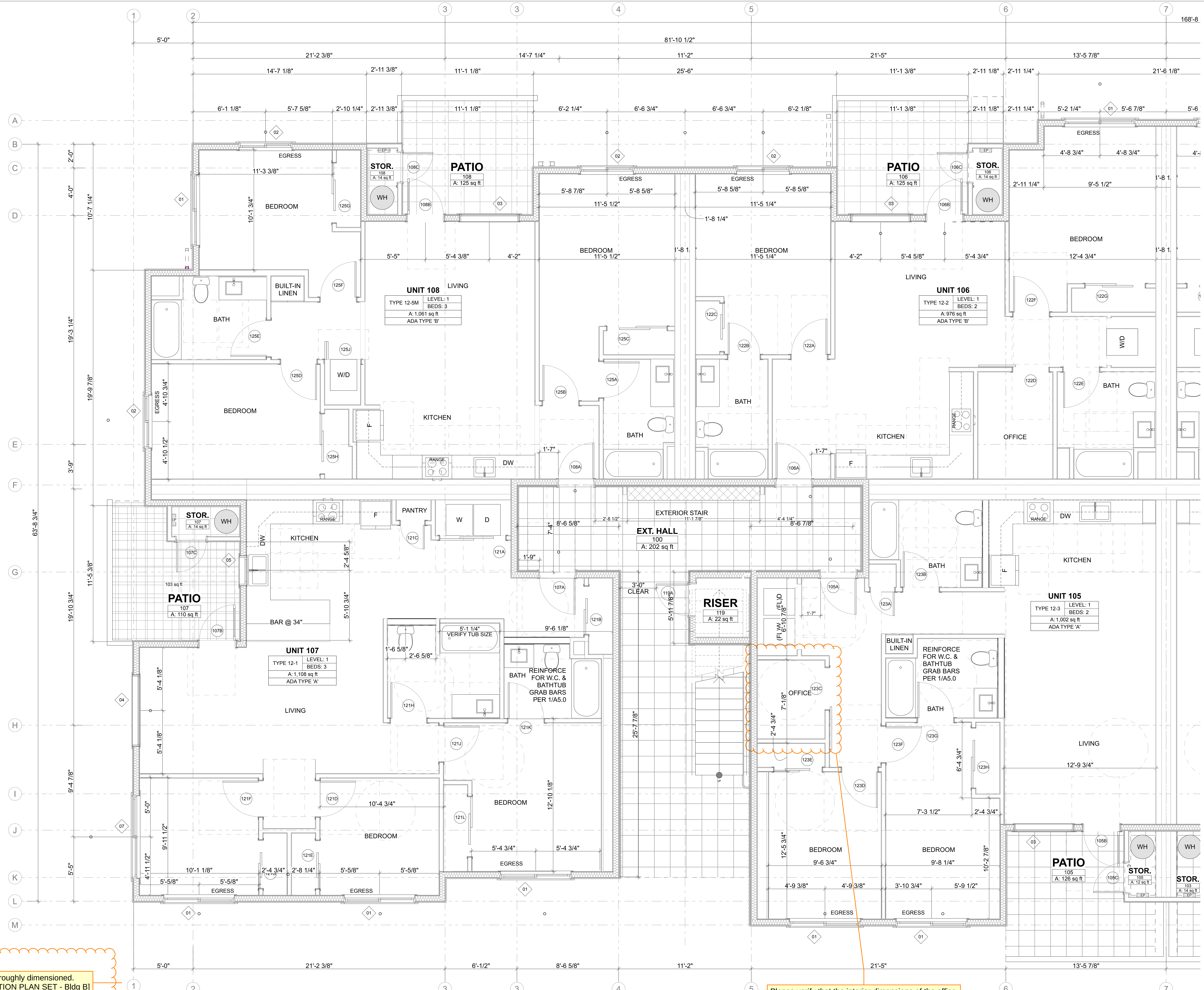

Please ensure the interior space is throughly dimensioned. Typical all plan sheets. [CONSTRUCTION PLAN SET - Bldg B]

Please verify that the interior dimensions of the office complies with section 1207.1 of the 2018 Washington State Building Code. Typical at similar. [CONSTRUCTION PLAN SET - Bldg B]

1 LEVEL 1 PLAN - ENLARGED

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

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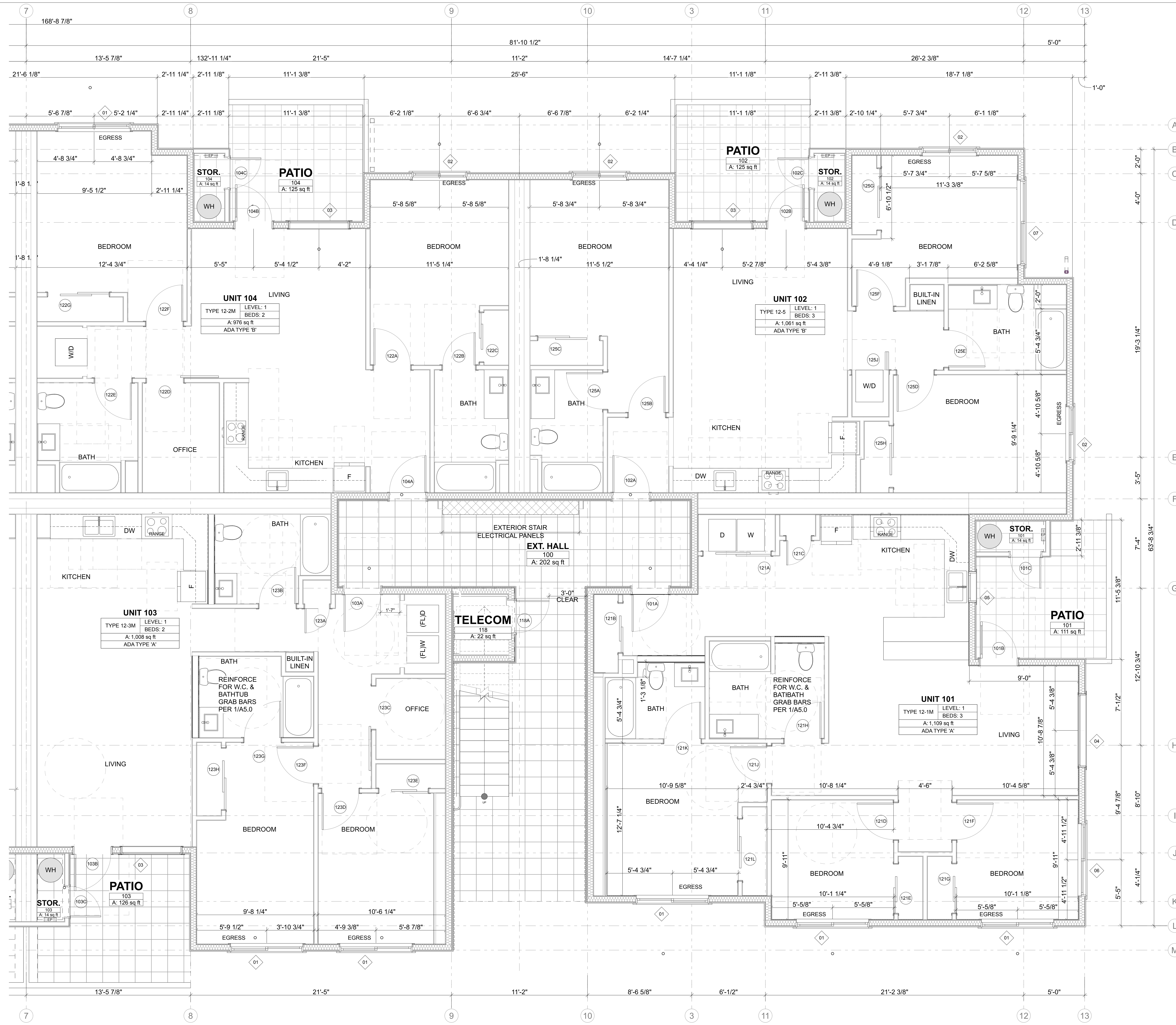
A1.4



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

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SHEET:	

A1.5

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

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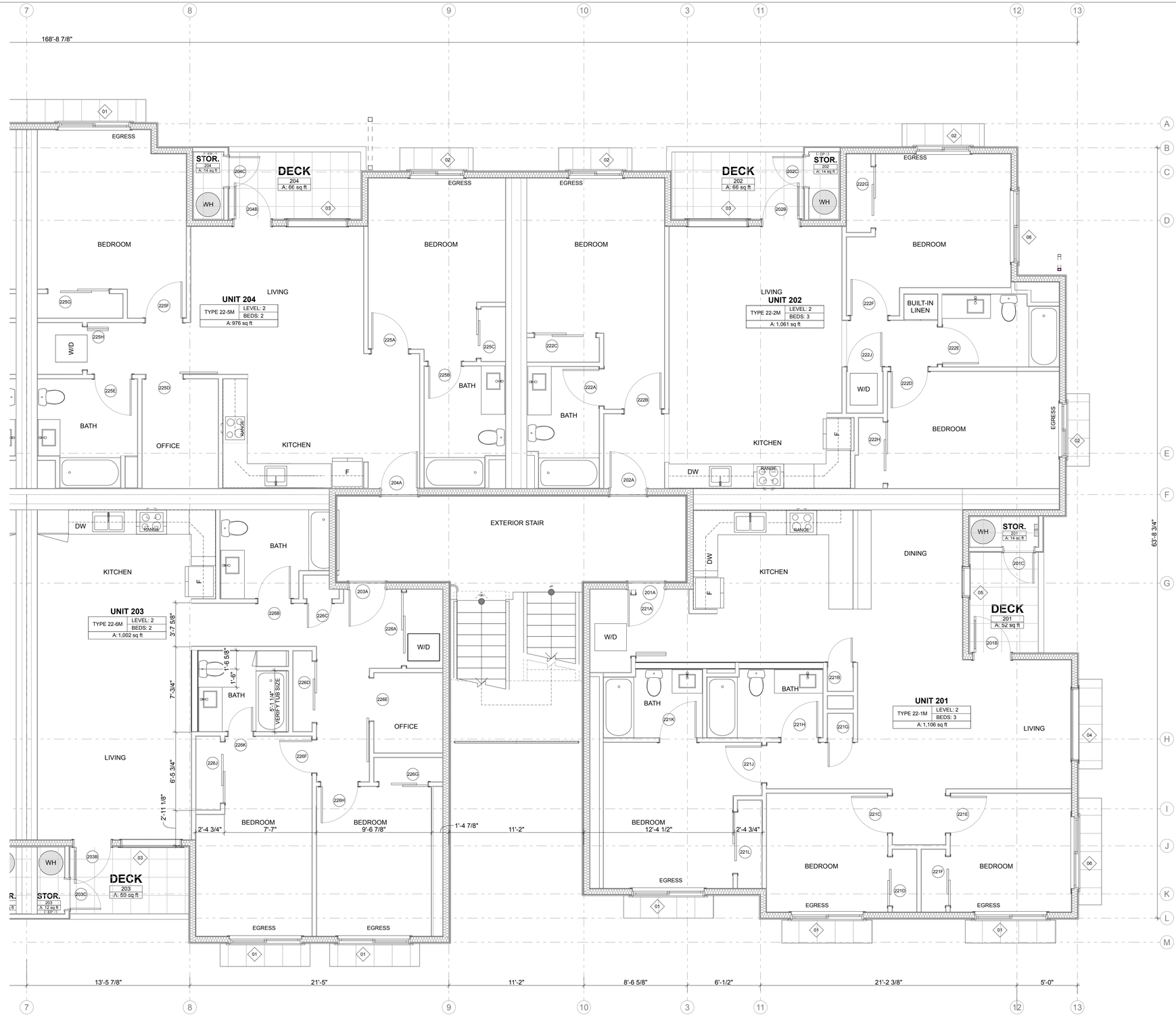
SHEET:	A1.6



1 LEVEL 2 PLAN - ENLARGED

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

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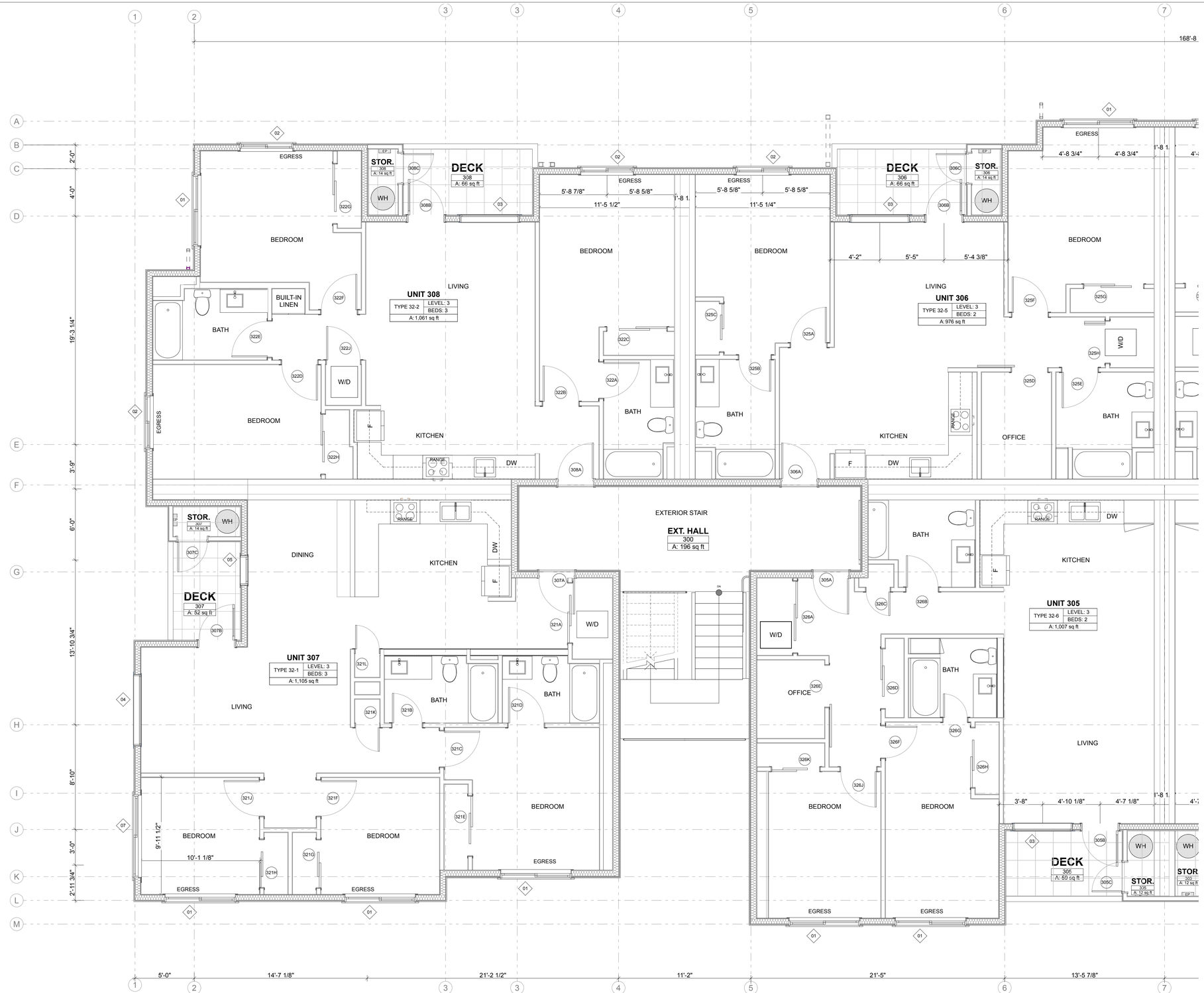

1 LEVEL 3 PLAN - ENLARGED

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

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SHEET:	A1.8

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1 LEVEL 3 PLAN - ENLARGED

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

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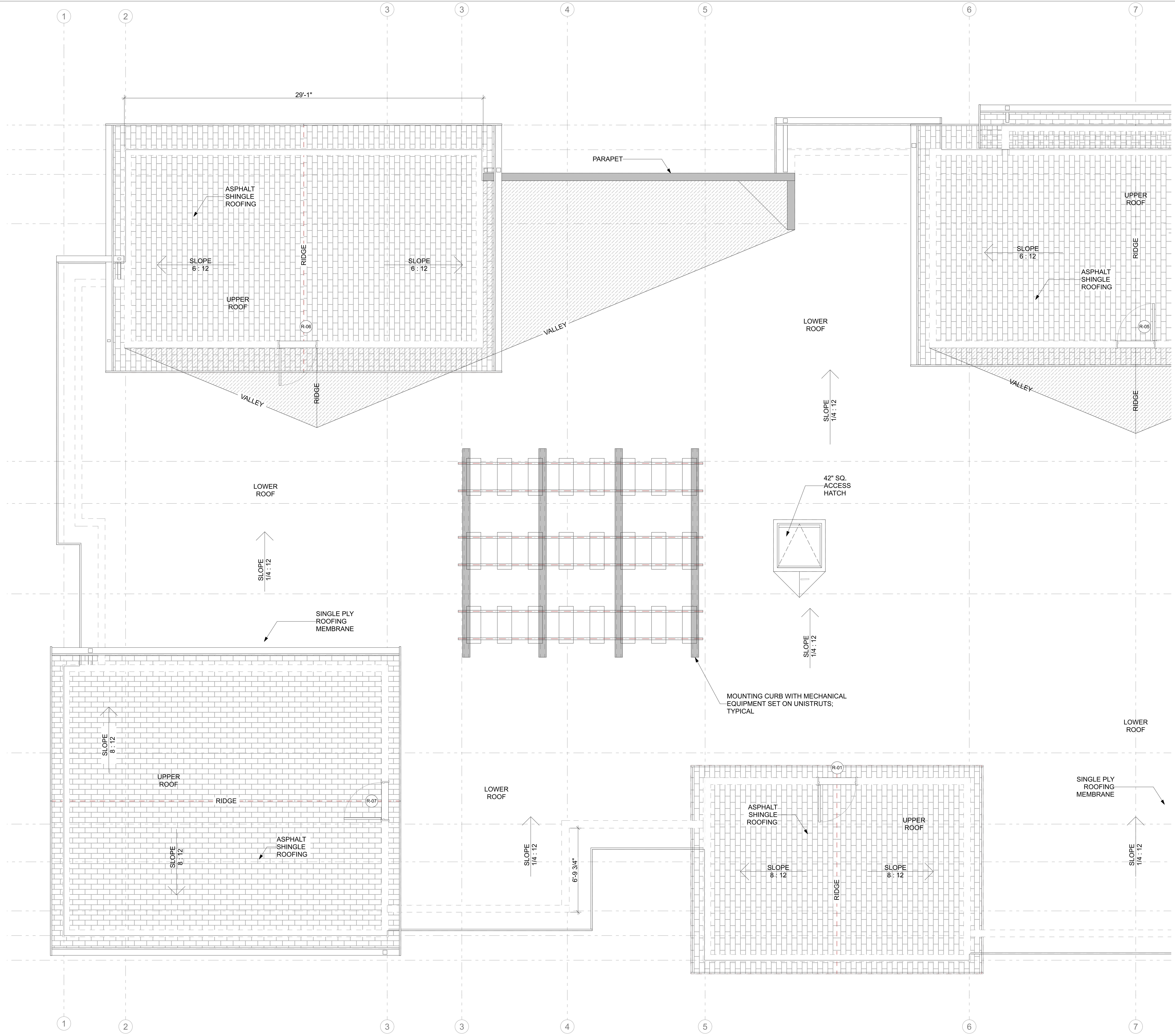
PROJECT # :	2016
SHEET:	A1.9



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

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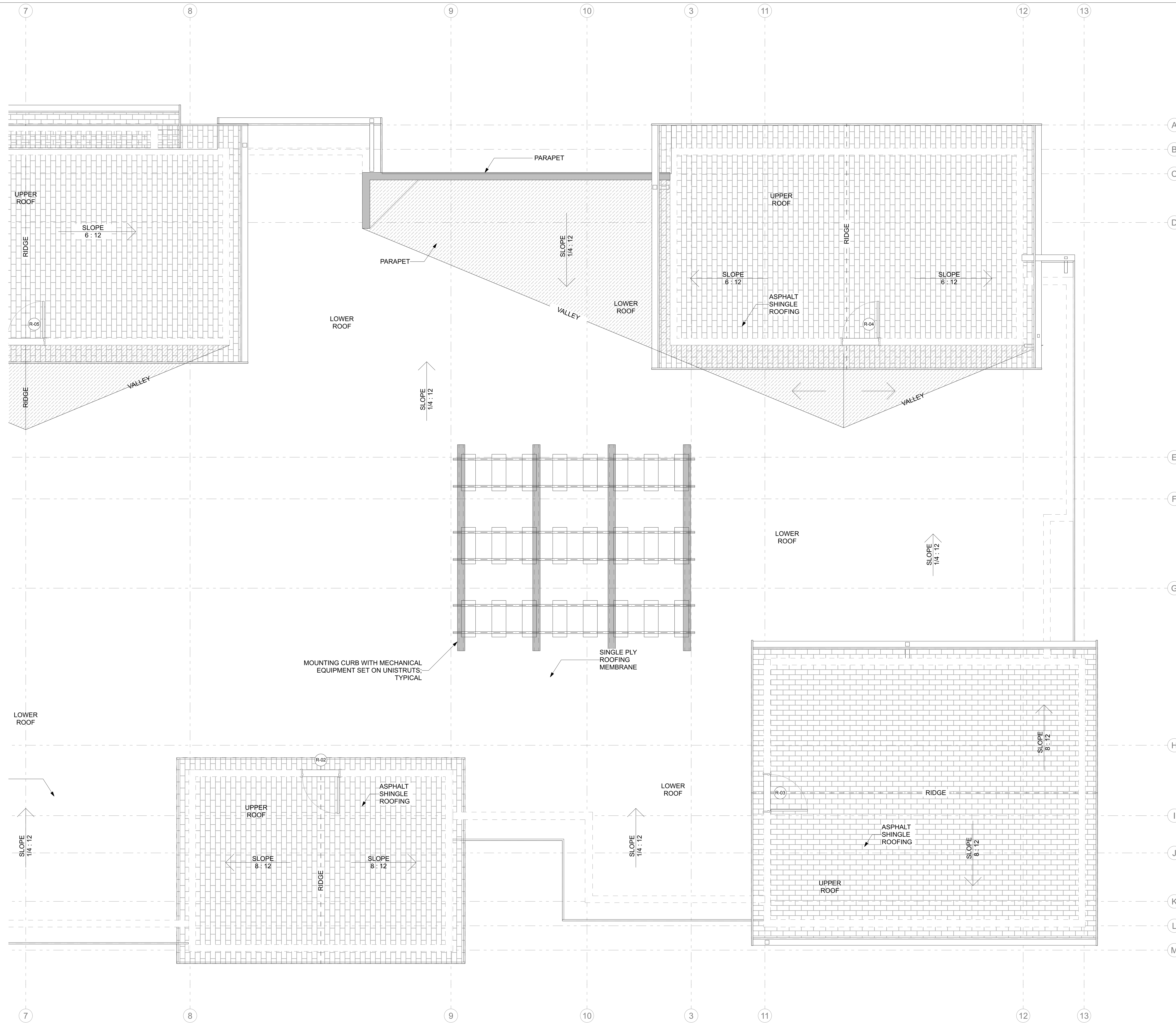
TITLE:	ROOF PLAN - ENLARGED LEFT
PROJECT #:	2016
SHEET:	

A1.10



1 ROOF - ENLARGED

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

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PROJECT #:	2016
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A1.11

1 LEVEL 1 REFLECTED CEILING PLAN

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

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PROJECT #:	2016
SHEET:	A1.12

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

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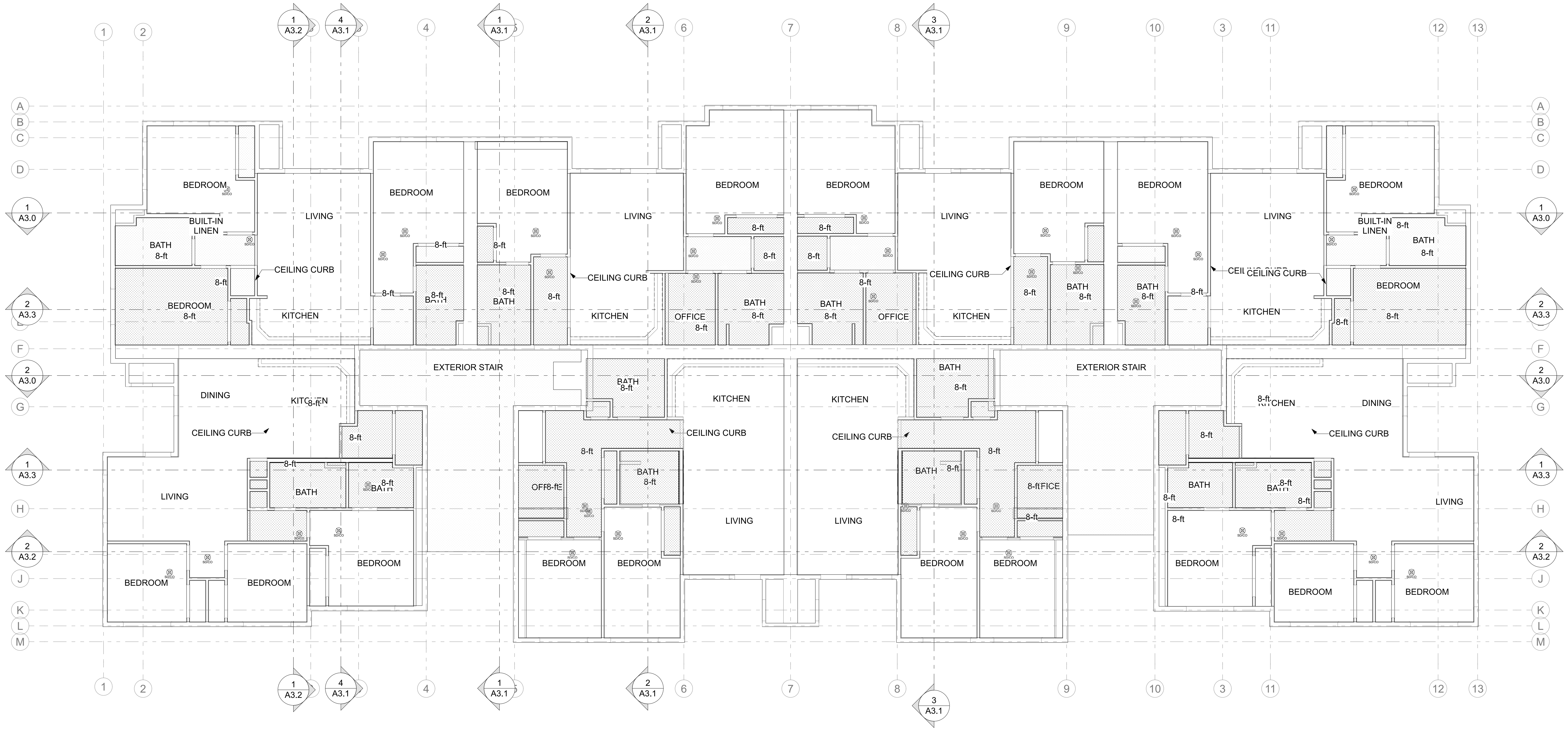
A1.13



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

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TITLE:	LEVEL 3 REFLECTED CEILING PLAN
PROJECT #:	2016
SHEET:	

A1.14

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

LEVEL 3 WALL AREA: 582
GLAZING AREA: 10+34+44+14+10 = 112 sq ft
PERCENT OPEN: 112/582 = 19%

LEVEL 2 WALL AREA: 652 sq ft
GLAZING AREA: 10+34+44+14+10 = 112 sq ft
PERCENT OPEN: 112/652 = 17%

LEVEL 1 WALL AREA: 652 sq ft
OPENING AREA: 10+34+44+14+12 = 114 sq ft
PERCENT OPEN: 114/652 = 17%

IBC SEPARATION DISTANCE: 15' TO LESS THAN 20'
UP, NS OPENING LIMITATION: 25%

3 SOUTH ELEVATION TRANSPARENCY
SCALE: 3/32" = 1'-0"

BUILDING REFERENCE NOTES

- 01 WINDOW OR DOOR ASSEMBLY; PROVIDE FIRE-RATED ASSEMBLIES WHERE REQUIRED.
- 02 ASPHALT SHINGLES OVER UNDERLAYMENT
- 03 EXTERIOR CLADDING; NOTE ALL EXTERIOR WALL ASSEMBLIES INCORPORATE A 'RAINSCREEN' SYSTEM
  - 03-A HARDIE-PLANK WITH 7" EXPOSURE
  - 03-B HARDIE-PANEL WITH PRIMED-TO-BE-PAINTED ALUMINUM REVEALS (OR APPROVED SUBSTITUTE) COLOR 1
  - 03-C HARDIE-PANEL WITH PRIMED-TO-BE-PAINTED ALUMINUM REVEALS (OR APPROVED SUBSTITUTE) COLOR 2
- 04 WINDOW TREATMENT - WINDOWS SET IN CEMENT FIBERBOARD CLADDING SHALL HAVE 4" WIDE (MINIMUM) CEMENT BOARD WINDOW AND DOOR TRIM
- 05 42" TALL, PRE-FINISHED ALUMINUM GUARDRAILS W/ FACE-MOUNT CONNECTION TO STRUCTURE
- 06 LONG-TERM BICYCLE PARKING STALL; WITH WALL MOUNT BRACKET; SEE PRODUCT INFORMATION DETAILS
- 07 6" C.I.P. CONCRETE SLAB; SET ON 6 MIL PLASTIC VAPOR BARRIER AND 4" (MIN.) AGGREGATE BASE COARSE; SEE STRUCTURAL FOR RELATED INFORMATION
- 08 SINGLE-PLY ROOFING MEMBRANE
- 09 PRIMED, TO BE PAINTED, GUTTER / DOWNSPOUT
- 10 PEDESTRIAN DECK-COATING SYSTEM
- 11-A NOT USED
- 11-B NOT USED
- 12 BAFFLED RIDGE VENT OR BAFFLED SIDEWALL VENT

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

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PROJECT #:	2016
SHEET:	A2.0

1 EAST ELEVATION

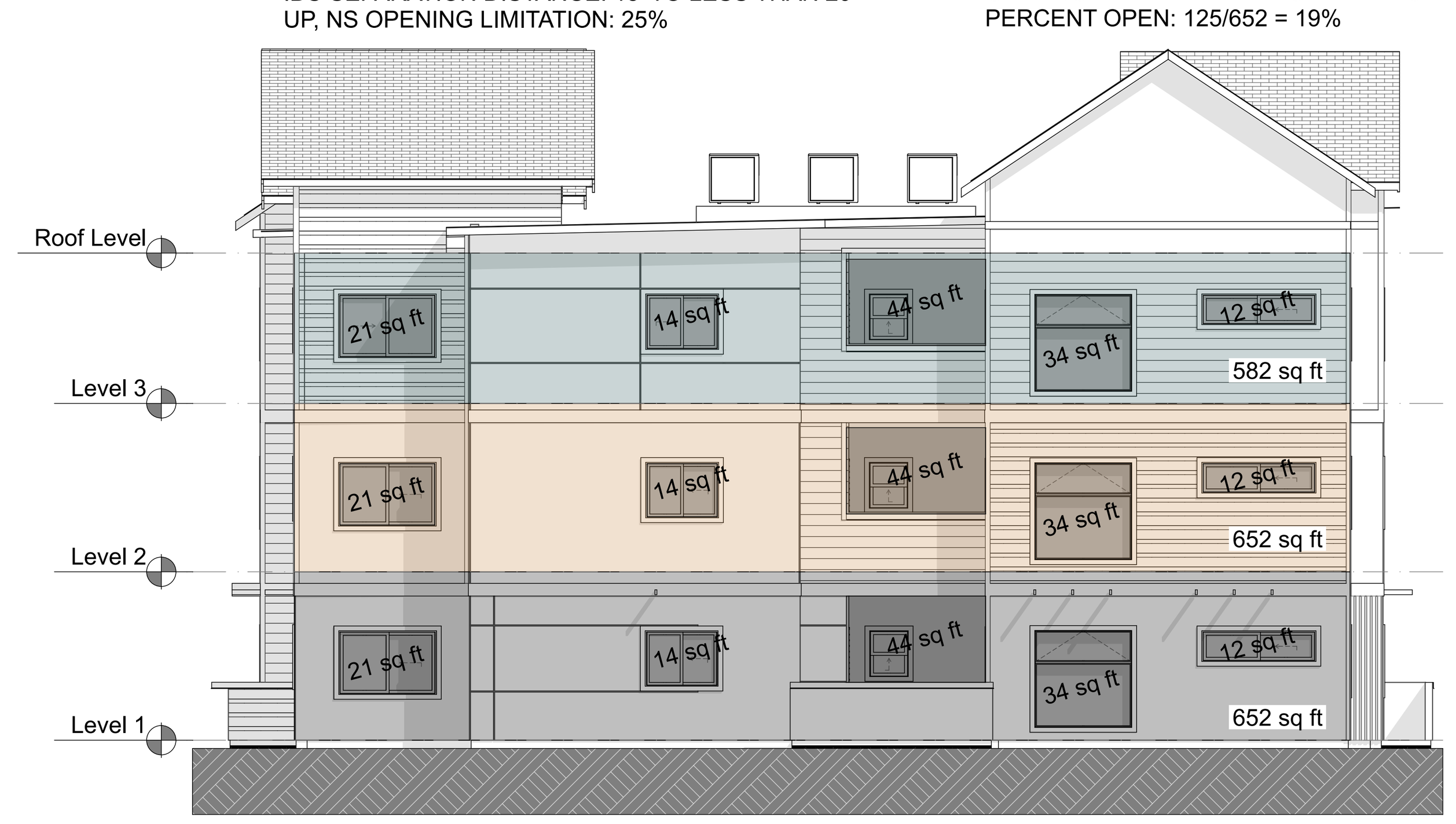
SCALE: 1/8" = 1'-0"

LEVEL 3 WALL AREA: 582 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/582 = 21%

LEVEL 2 WALL AREA: 652 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/652 = 19%

LEVEL 1 WALL AREA: 652 sq ft
GLAZING AREA: 21+14+44+34+12 = 125
PERCENT OPEN: 125/652 = 19%

IBC SEPARATION DISTANCE: 15' TO LESS THAN 20'
UP, NS OPENING LIMITATION: 25%



3 NORTH ELEVATION TRANSPARENCY

SCALE: 3/32" = 1'-0"

BUILDING REFERENCE NOTES

- 01 WINDOW OR DOOR ASSEMBLY; PROVIDE FIRE-RATED ASSEMBLIES WHERE REQUIRED.
- 02 ASPHALT SHINGLES OVER UNDERLAYMENT
- 03 EXTERIOR CLADDING; NOTE ALL EXTERIOR WALL ASSEMBLIES INCORPORATE A 'RAINSCREEN' SYSTEM
  - 03-A HARDIE-PLANK WITH 7" EXPOSURE
  - 03-B HARDIE-PANEL WITH PRIMED-TO-BE-PAINTED ALUMINUM REVEALS (OR APPROVED SUBSTITUTE) COLOR 1
  - 03-C HARDIE-PANEL WITH PRIMED-TO-BE-PAINTED ALUMINUM REVEALS (OR APPROVED SUBSTITUTE) COLOR 2
- 04 WINDOW TREATMENT - WINDOWS SET IN CEMENT FIBERBOARD CLADDING SHALL HAVE 4" WIDE (MINIMUM) CEMENT BOARD WINDOW AND DOOR TRIM
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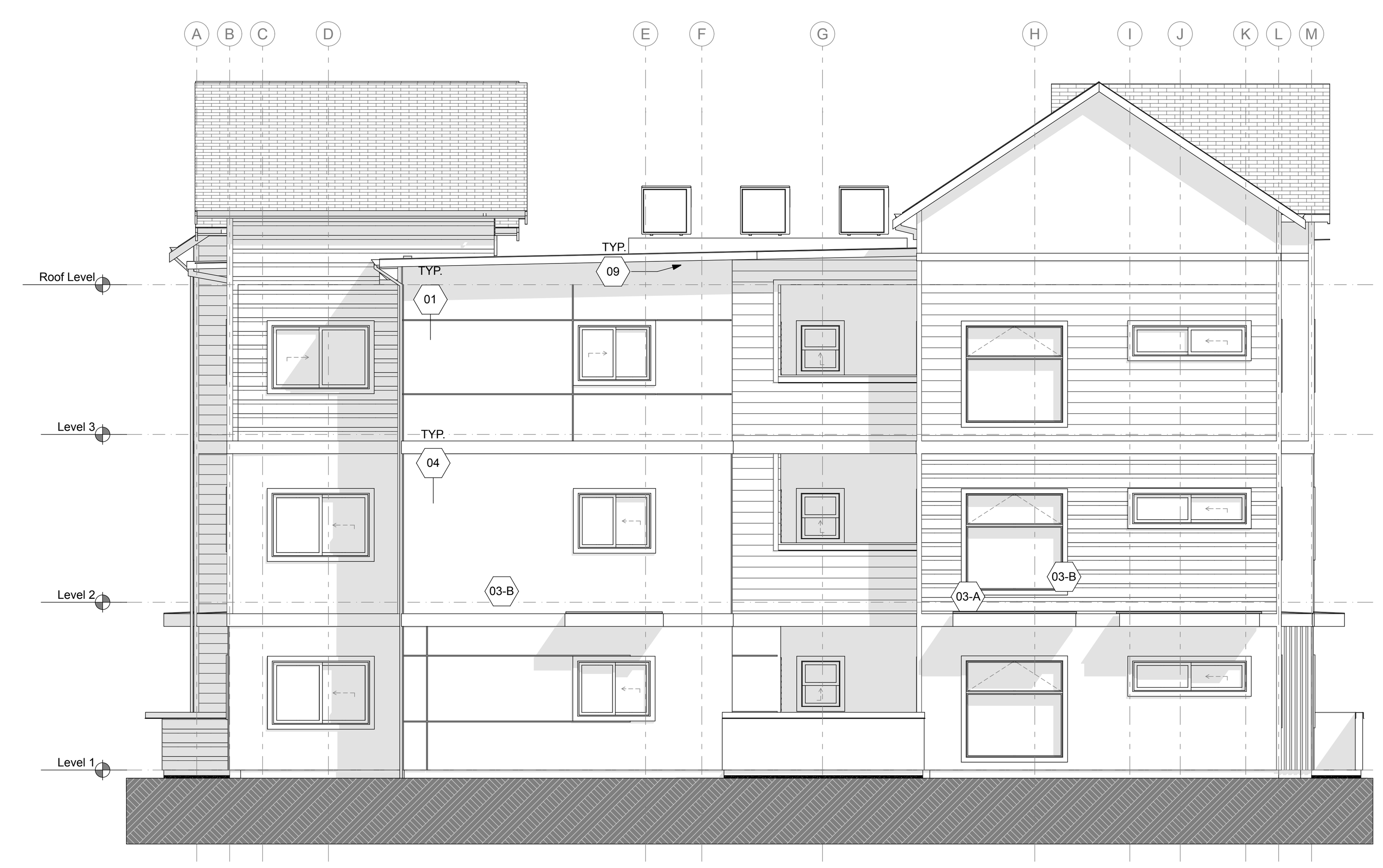
- 07 6" C.I.P. CONCRETE SLAB; SET ON 6 MIL PLASTIC VAPOR BARRIER AND 4" (MIN.) AGGREGATE BASE COARSE; SEE STRUCTURAL FOR RELATED INFORMATION
- 08 SINGLE-PLY ROOFING MEMBRANE
- 09 PRIMED, TO BE PAINTED, GUTTER / DOWNSPOUT
- 10 PEDESTRIAN DECK-COATING SYSTEM
- 11-A NOT USED
- 11-B NOT USED
- 12 BAFFLED RIDGE VENT OR BAFFLED SIDEWALL VENT



2 NORTH ELEVATION

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

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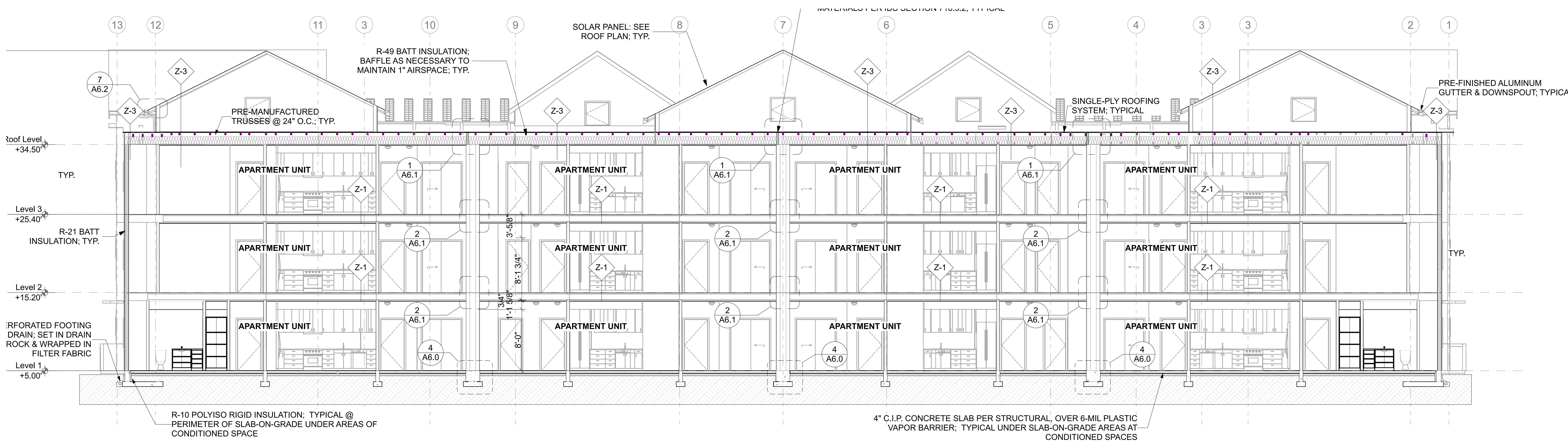
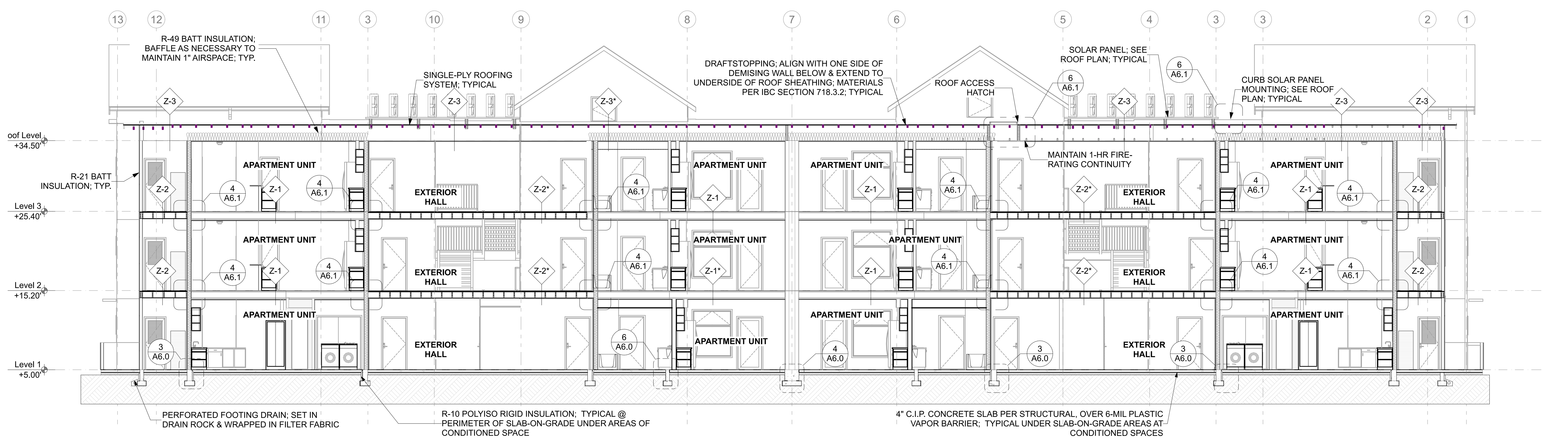
PROJECT #:	2016
SHEET:	A2.1



1 **BUILDING SECTION 1**
SCALE: 1/8" = 1'-0"



2 **BUILDING SECTION 2** **SEE ALL SECTIONS FOR CALL OUTS IN COMMON.
SCALE: 1/8" = 1'-0"

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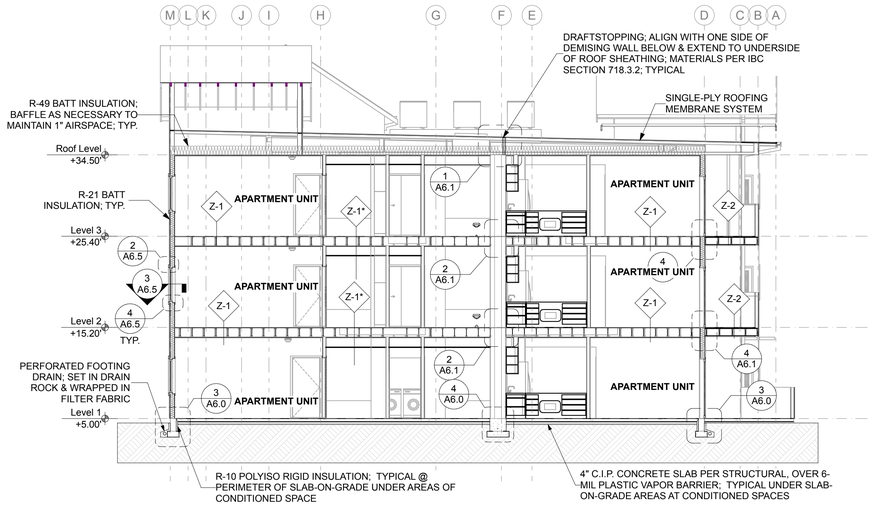
SHEET:	

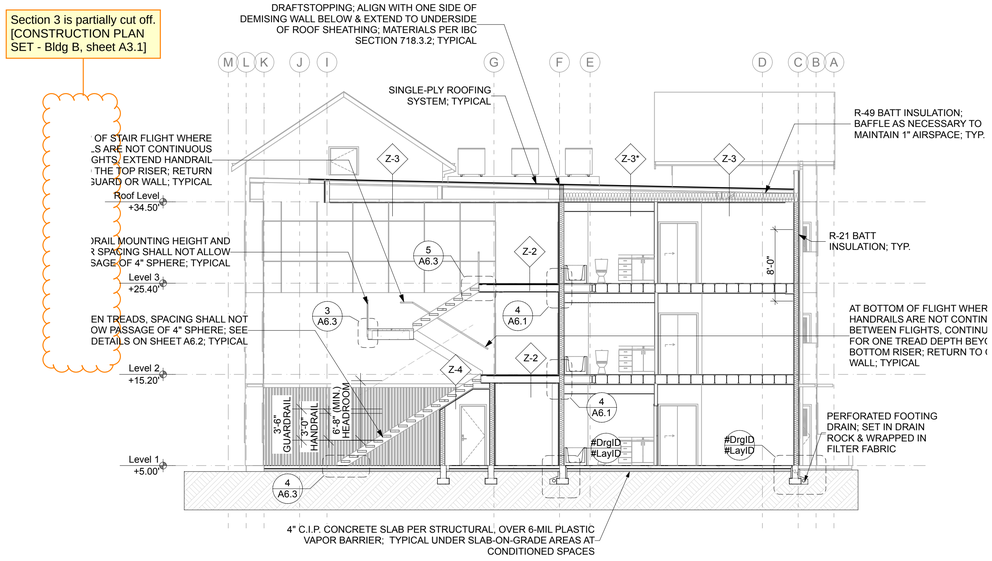
A3.0



2 BUILDING SECTION 4

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

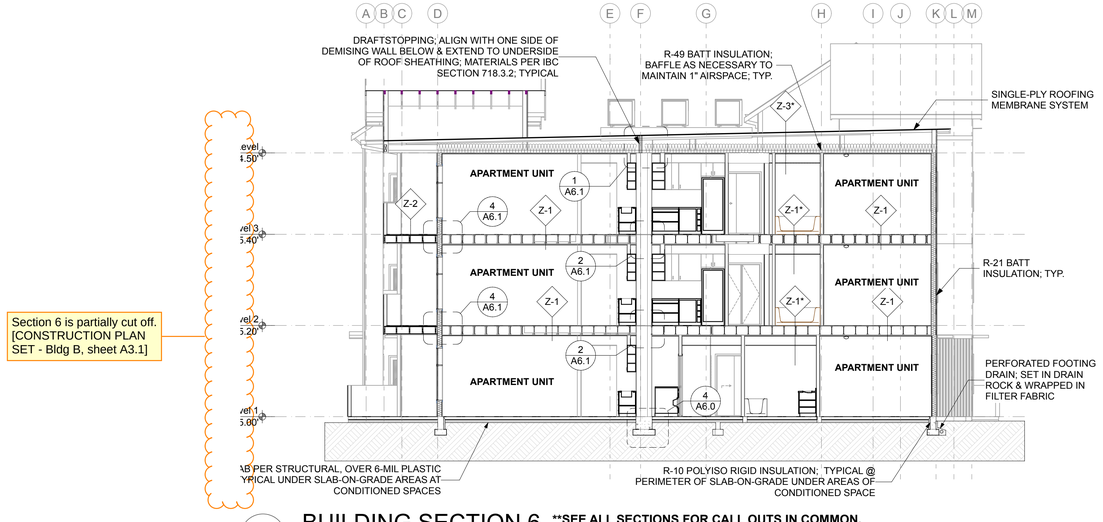
****SEE ALL SECTIONS FOR CALL OUTS IN COMMON.**



1 BUILDING SECTION 3

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

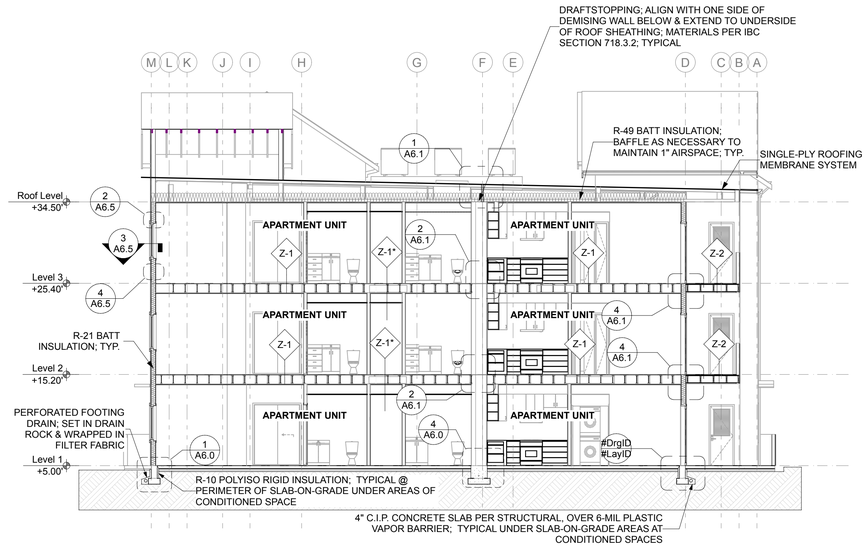
****SEE ALL SECTIONS FOR CALL OUTS IN COMMON.**



4 BUILDING SECTION 6

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

****SEE ALL SECTIONS FOR CALL OUTS IN COMMON.**



3 BUILDING SECTION 5

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

****SEE ALL SECTIONS FOR CALL OUTS IN COMMON.**

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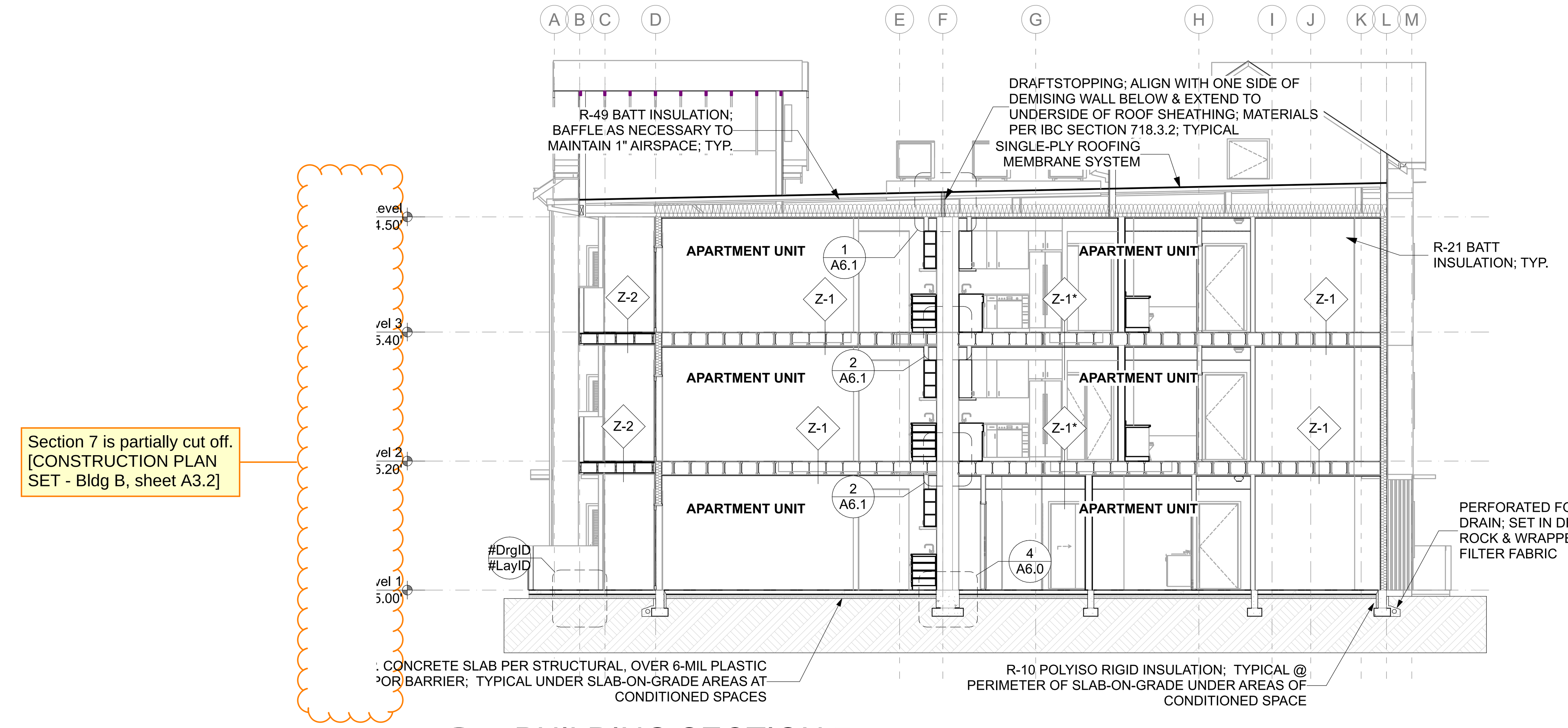
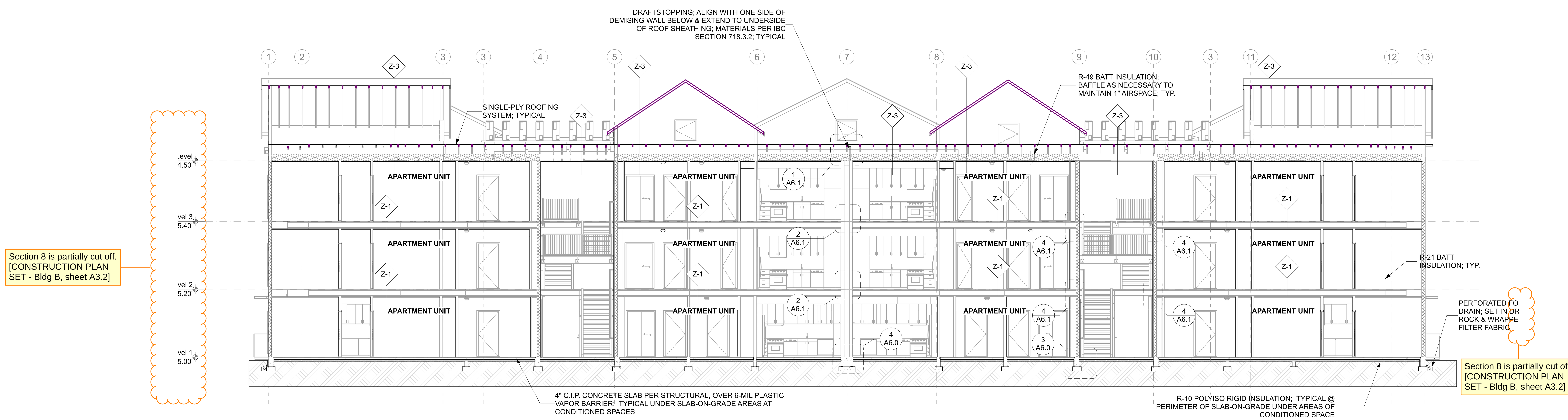


1 **BUILDING SECTION 7** **SEE ALL SECTIONS FOR CALL OUTS IN COMMON.

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



2 **BUILDING SECTION 8** **SEE ALL SECTIONS FOR CALL OUTS IN COMMON.

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

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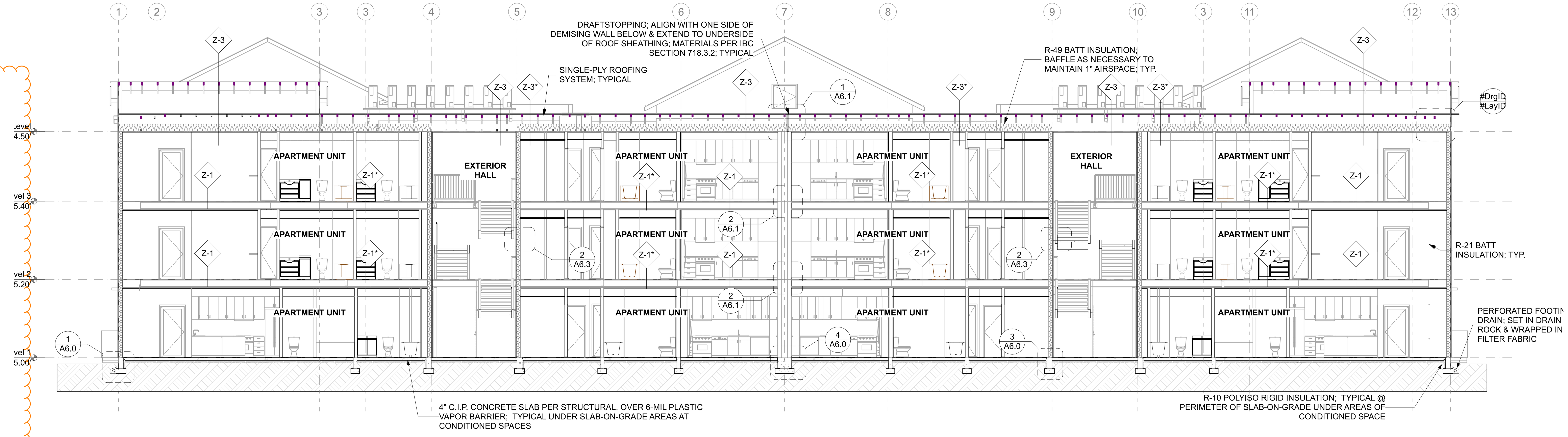
PROJECT #:	2016
SHEET:	A3.2

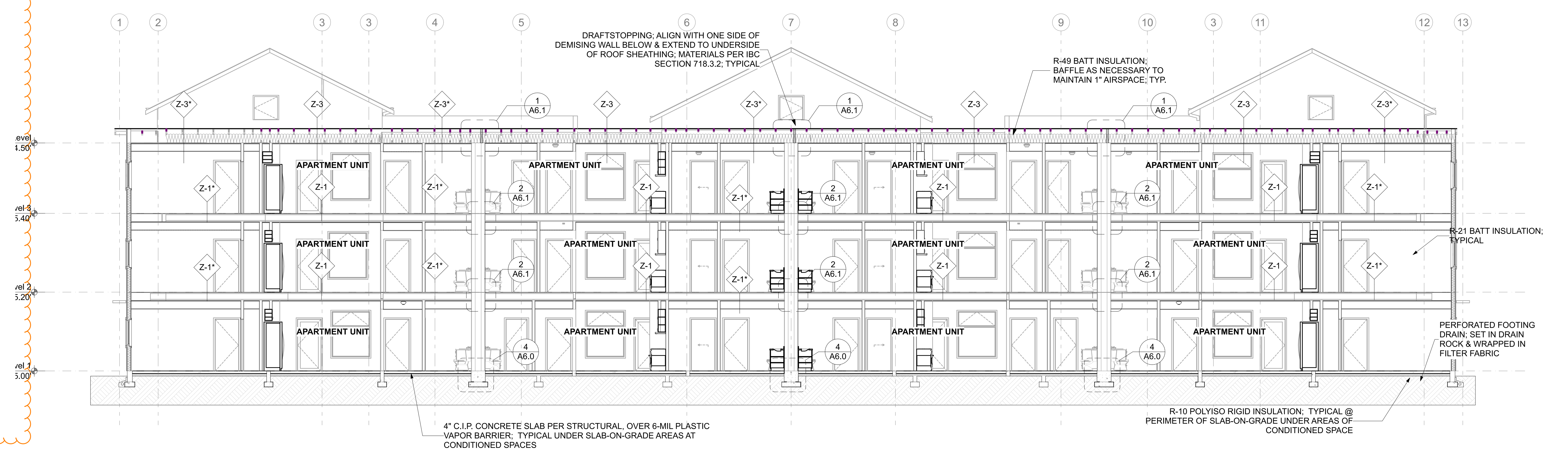
Sections 9 and 10 are partially cut off. [CONSTRUCTION PLAN SET - Bldg B, sheet A3.3]



1 BUILDING SECTION 9

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

**SEE ALL SECTIONS FOR CALL OUTS IN COMMON.



2 BUILDING SECTION 10

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

**SEE ALL SECTIONS FOR CALL OUTS IN COMMON.

AGENCY REVIEW | 24.03.11

S9

SYNTHESIS 9, LLC

523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

REVISIONS

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	BUILDING SECTIONS
PROJECT #:	2016
SHEET:	

A3.3

EXTERIOR DOOR SCHEDULE

DOOR No.	TYPE	ROOM	DOOR W x HT	NOTES
101A	A	UNIT 101	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
101B	B	UNIT 101	3'-0"×6'-8"	
101C	C	UNIT 101 STORAGE	2'-6"×6'-8"	
102A	A	UNIT 102	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
102B	B	UNIT 102	3'-0"×6'-8"	
102C	C	UNIT 102 STORAGE	2'-6"×6'-8"	
103A	A	UNIT 103	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
103B	B	UNIT 103	3'-0"×6'-8"	
103C	C	UNIT 103 STORAGE	2'-6"×6'-8"	
104A	A	UNIT 104	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
104B	B	UNIT 104	3'-0"×6'-8"	
104C	C	UNIT 104 STORAGE	2'-6"×6'-8"	
105A	A	UNIT 105	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
105B	B	UNIT 105	3'-0"×6'-8"	
105C	C	UNIT 105 STORAGE	2'-6"×6'-8"	
106A	A	UNIT 106	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
106B	B	UNIT 106	3'-0"×6'-8"	
106C	C	UNIT 106 STORAGE	2'-6"×6'-8"	
107A	A	UNIT 107	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
107B	B	UNIT 107	3'-0"×6'-8"	
107C	C	UNIT 107 STORAGE	2'-6"×6'-8"	
108A	A	UNIT 108	3'-0"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
108B	B	UNIT 108	3'-0"×6'-8"	
108C	C	UNIT 108 STORAGE	2'-6"×6'-8"	
118A	J	TELECOM	2'-8"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
119A	J	RISER ROOM	2'-8"×6'-8"	CLOSER; ACCESSIBLE THRESHOLD; 60-MINUTE RATED
201A	A	UNIT 201	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
201B	B	UNIT 201	3'-0"×6'-8"	
201C	C	UNIT 201 STORAGE	2'-6"×6'-8"	
202A	A	UNIT 202	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
202B	B	UNIT 202	3'-0"×6'-8"	
202C	C	UNIT 202 STORAGE	2'-6"×6'-8"	
203A	A	UNIT 203	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
203B	B	UNIT 203	3'-0"×6'-8"	
203C	C	UNIT 203 STORAGE	2'-6"×6'-8"	
204A	A	UNIT 204	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
204B	B	UNIT 204	3'-0"×6'-8"	
204C	C	UNIT 204 STORAGE	2'-6"×6'-8"	
205A	A	UNIT 205	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
205B	B	UNIT 205	3'-0"×6'-8"	
205C	C	UNIT 205 STORAGE	2'-6"×6'-8"	
206A	A	UNIT 206	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
206B	B	UNIT 206	3'-0"×6'-8"	
206C	C	UNIT 206 STORAGE	2'-6"×6'-8"	
207A	A	UNIT 207	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
207B	B	UNIT 207	3'-0"×6'-8"	
207C	C	UNIT 207 STORAGE	2'-6"×6'-8"	
208A	A	UNIT 208	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
208B	B	UNIT 208	3'-0"×6'-8"	
208C	C	UNIT 208 STORAGE	2'-6"×6'-8"	
301A	A	UNIT 301	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
301B	B	UNIT 301	3'-0"×6'-8"	
301C	C	UNIT 301 STORAGE	2'-6"×6'-8"	
302A	A	UNIT 302	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
302B	B	UNIT 302	3'-0"×6'-8"	
302C	C	UNIT 302 STORAGE	2'-6"×6'-8"	
303A	A	UNIT 303	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
303B	B	UNIT 303	3'-0"×6'-8"	
303C	C	UNIT 303 STORAGE	2'-6"×6'-8"	
304A	A	UNIT 304	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
304B	B	UNIT 304	3'-0"×6'-8"	
304C	C	UNIT 304 STORAGE	2'-6"×6'-8"	
305A	A	UNIT 305	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
305B	B	UNIT 305	3'-0"×6'-8"	
305C	C	UNIT 305 STORAGE	2'-6"×6'-8"	
306A	A	UNIT 306	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
306B	B	UNIT 306	3'-0"×6'-8"	
306C	C	UNIT 306 STORAGE	2'-6"×6'-8"	
307A	A	UNIT 307	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
307B	B	UNIT 307	3'-0"×6'-8"	
307C	C	UNIT 307 STORAGE	2'-6"×6'-8"	
308A	A	UNIT 308	3'-0"×6'-8"	CLOSER; 60-MINUTE RATED
308B	B	UNIT 308	3'-0"×6'-8"	
308C	C	UNIT 308 STORAGE	2'-6"×6'-8"	
R-01	D	ATTIC ACCESS	3'-0"×3'-0"	
R-02	D	ATTIC ACCESS	3'-0"×3'-0"	
R-03	D	ATTIC ACCESS	3'-0"×3'-0"	
R-04	D	ATTIC ACCESS	3'-0"×3'-0"	
R-05	D	ATTIC ACCESS	3'-0"×3'-0"	
R-06	D	ATTIC ACCESS	3'-0"×3'-0"	
R-07	D	ATTIC ACCESS	3'-0"×3'-0"	

DOOR SCHEDULE NOTES

1. DOOR OPERATIONS PER 1008.1.9 - EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
2. DOOR HARDWARE PER 1008.1.9.1 - DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE BY CHAPTER 11 SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.
3. HARDWARE HEIGHT PER 1008.1.9.2 - DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL BE INSTALLED 34 INCHES MINIMUM AND 48 INCHES MAXIMUM ABOVE THE FINISHED FLOOR. LOCKS USED ONLY FOR SECURITY PURPOSES AND NOT USED FOR NORMAL OPERATION ARE PERMITTED AT ANY HEIGHT.
4. ACCESSIBLE THRESHOLDS PER ICC A117.1-2009 SECTION 303 - THRESHOLDS AT DOORWAYS SHALL BE 1/2" MAXIMUM IN HEIGHT.
5. DOOR CLOSERS PER ICC A117.1-2009 - DOOR CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THROUGH THE DOOR TO AN OPEN POSITION OF 12 DEGREES SHALL BE 5 SECONDS.
6. DOOR-OPENING FORCE PER ICC A117.1-2009 - THE FORCE FOR PUSHING OR PULLING OPEN DOORS SHALL BE 10.0 POUNDS MAXIMUM PER WASHINGTON STATE AMMENDMENT.

DOOR HARDWARE LOCKSETS and DEFINITIONS

SECURITY LOCKSET - THE LATCHBOLT IS RETRACTED BY THE GRIP ON EITHER SIDE UNLESS THE OUTSIDE GRIP IS LOCKED BY THE OUTSIDE KEY. OPERATING THE INSIDE GRIP ALWAYS RETRACTS THE LATCHBOLT.

ACCESSIBLE SECURITY LOCKSET - THE LATCHBOLT IS RETRACTED BY THE GRIP ON EITHER SIDE UNLESS THE OUTSIDE GRIP IS LOCKED BY EITHER THE INSIDE KEY OR THE OUTSIDE KEY. OPERATING THE INSIDE GRIP ALWAYS RETRACTS THE LATCHBOLT. ALL COMPONENTS OF THE DOOR HARDWARE TO MEET ACCESSIBILITY REQUIREMENTS OF SECTION 1008.1.9 OF THE 2012 IBC.

OFFICE LOCKSET - THE LATCHBOLT IS RETRACTED BY THE GRIP ON EITHER SIDE UNLESS THE OUTSIDE GRIP IS LOCKED BY THE TOGGLE OR OUTSIDE KEY. OPERATING THE INSIDE GRIP DOES NOT UNLOCK THE OUTSIDE GRIP.

PASSAGE LOCKSET - THE LATCHBOLT IS ALWAYS RETRACTED BY THE GRIP ON EITHER SIDE. BOTH GRIPS ARE ALWAYS FREE.

PRIVACY LOCKSET - THE LATCHBOLT IS RETRACTED BY THE GRIP ON EITHER SIDE UNLESS THE OUTSIDE GRIP IS LOCKED BY THE INSIDE THUMB-TURN, BUTTON OR KEY. OPERATING THE INSIDE GRIP UNLOCKS THE OUTSIDE GRIP. AN EMERGENCY RELEASE TOOL UNLOCKS THE OUTSIDE GRIP. THE OUTSIDE GRIP IS ALSO UNLOCKED WHEN THE DOOR IS CLOSED. DOOR CAN ONLY BE LOCKED FROM THE INSIDE WHEN THE DOOR IS CLOSED.

PUBLIC RESTROOM LOCKSET - THE LATCHBOLT IS RETRACTED BY THE INSIDE GRIP OR AN OUTSIDE KEY. THE LATCHBOLT IS RETRACTED BY THE OUTSIDE GRIP INLESS THE GRIP IS LOCKED BY A KEY FROM THE INSIDE. THE LATCHBOLT / OUSIDE GRIP CANNOT BE LOCKET BY A KEY FROM THE OUTSIDE. ALL COMPONENTS OF THE DOOR HARDWARE GROUP TO MEET ACCESSIBILITY REQUIREMENTS OF SECTION 1008.1.9 OF THE 2012 IBC.

STOREROOM LOCKSET - THE LATCHBOLT IS RETRACTED BY THE INSIDE GRIP OR OUTSIDE KEY.

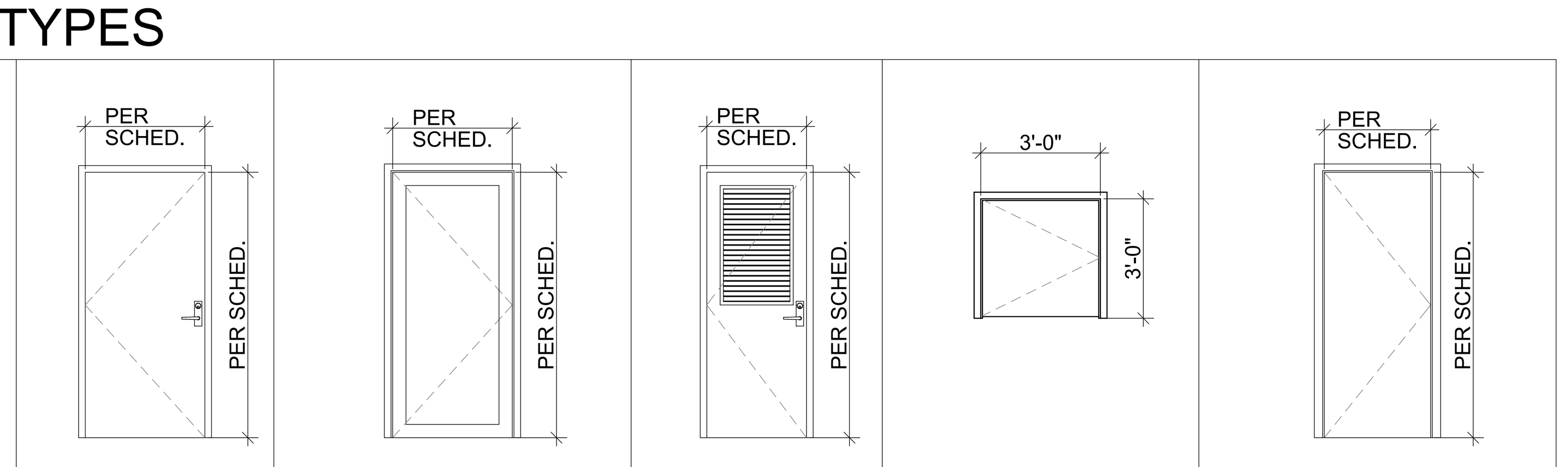
CLOSET LOCKSET - THE LATCHBOLT IS RETRACTED BY THE OUTSIDE AND THE INSIDE GRIP AND THE GRIP CANNOT BE LOCKED.

GLAZING NOTES

1. GLAZING IN A FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BIFOLD DOORS SHALL BE CONSIDERED HAZARDOUS LOCATIONS.
2. GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE OF THE GLAZING US WITHIN A 24-INCH ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAT 60 INCHES ABOVE THE WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION.
3. GLAZING IN INDIVIDUAL FIXED OR OPERABLE PANEL OF A WINDOW THAT MEETS ALL OF THE FOLLOWING FOUR CONDITIONS SHALL BE CONSIDERED A HAZARDOUS LOCATION: 1. THE EXPOSED AREA OF AN INDIVIDUAL PANE OS GREATER THAN 9 SQAURE FEET; 2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES ABOVE THE FLOOR; 3. THE TOP EDGE OF THE GLAZING IS GREATER THAN 36 INCHES ABOVE THE FLOOR; AND 4. ONE OR MORE WALKING SURFACE(S) ARE WITHIN 36 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE PLANE OF THE GLAZING

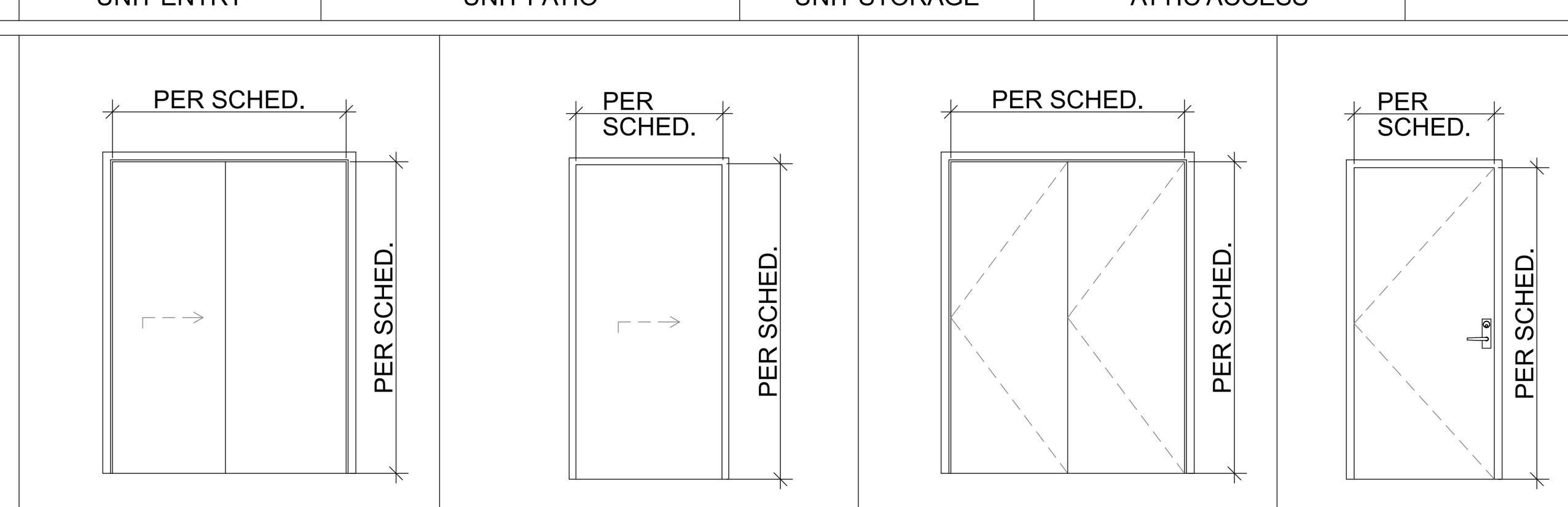
DOOR TYPES

ELEVATION



DOOR TYPE	A	B	C	D	E
FUNCTION	EXTERIOR SWINGING	EXTERIOR SWINGING	EXTERIOR SWINGING	EXTERIOR SWINGING	INTERIOR SWINGING
PANEL	INSULATED HM DOOR	SAFETY GLAZED	HM DOOR W/ LOUVER	HM DOOR	FLUSH HCW PANEL
FRAME	HM FRAME	HM FRAME	HM FRAME	HM FRAME	WOOD FRAME
NOTES	UNIT ENTRY	UNIT PATIO	UNIT STORAGE	ATTIC ACCESS	

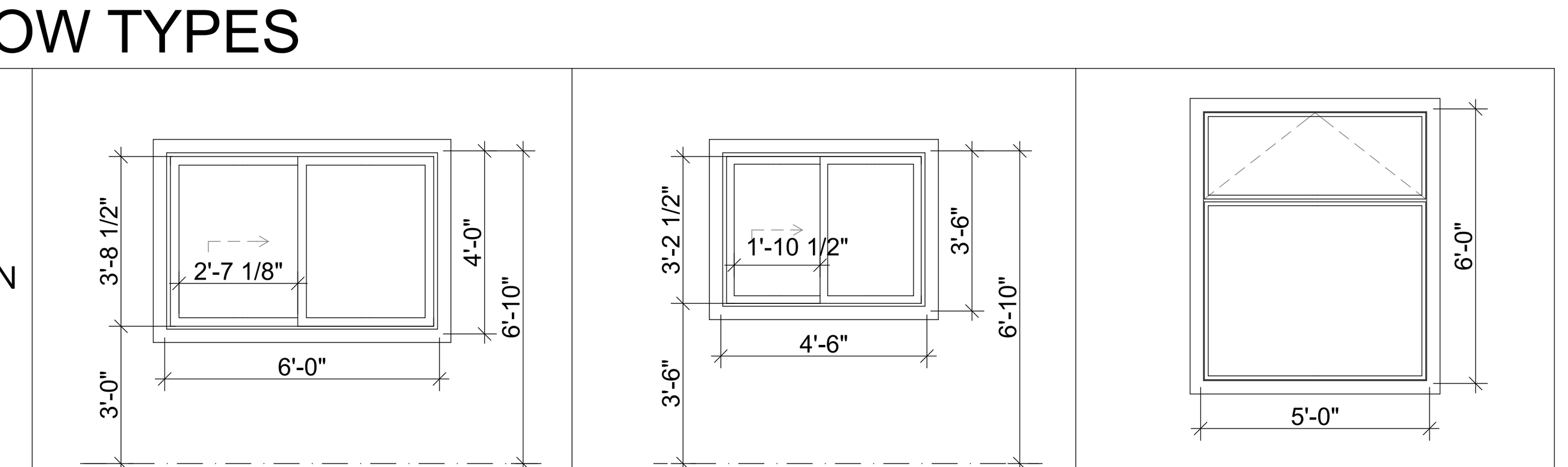
ELEVATION



DOOR TYPE	F	G	H	J
FUNCTION	SLIDING CLOSET	BARN DOOR SLIDER	BIFOLD	EXTERIOR SWINGING
PANEL	FLUSH HCW PANEL	FLUSH HCW PANEL	FLUSH HCW PANEL	HM DOOR
FRAME	WOOD FRAME	WOOD FRAME	WOOD FRAME	HM FRAME
NOTES				

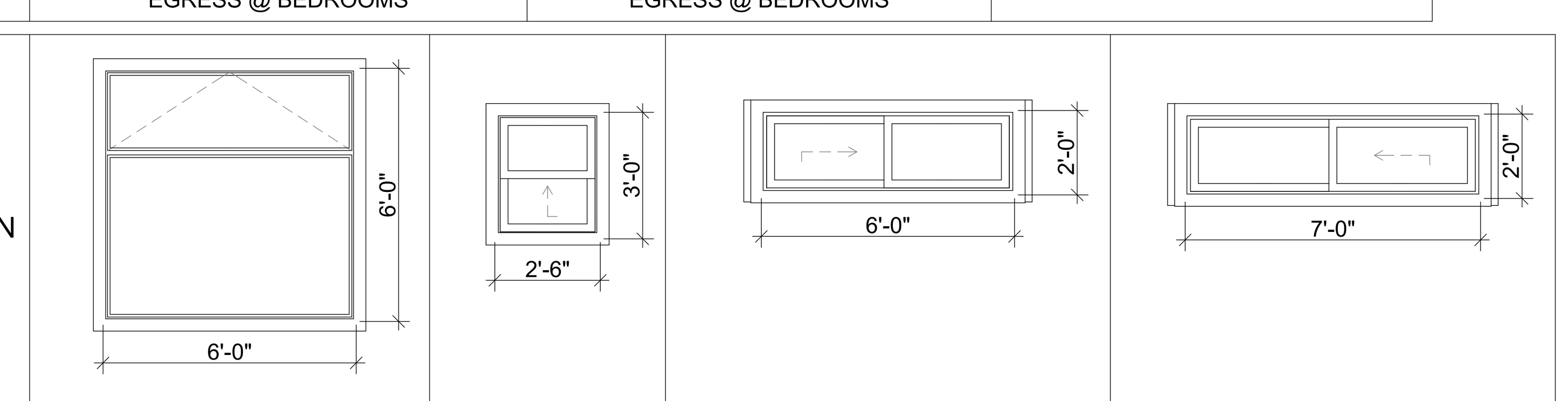
WINDOW TYPES

ELEVATION



TYPE	01	02	03
SIZE (W x H)	6'-0"×4'-0"	4'-6"×3'-6"	5'-0"×6'-0"
QUANTITY	39	24	18
NOTES	EGRESS @ BEDROOMS	EGRESS @ BEDROOMS	

ELEVATION



TYPE	04	05	06	07
SIZE (W x H)	6'-0"×6'-0"	2'-6"×3'-0"	6'-0"×2'-0"	7'-0"×2'-0"
QUANTITY	6	6	5	4
NOTES				

UNIT DOOR SCHEDULE

DOOR No.	TYPE	ROOM	DOOR W x HT	NOTES
121A	F	LAUNDRY	5'-6"×6'-8"	
121B	F	CLOSET	4'-0"×6'-8"	
121C	E	CLOSET	2'-0"×6'-8"	
121D	E	BEDROOM	3'-0"×6'-8"	
121E	F	CLOSET	4'-0"×6'-8"	
121F	E	BEDROOM	3'-0"×6'-8"	
121G	F	CLOSET	4'-0"×6'-8"	
121H	E	BATHROOM	3'-0"×6'-8"	
121J	E	BEDROOM	3'-0"×6'-8"	
121K	E	BATHROOM	3'-0"×6'-8"	
121L	F	CLOSET	5'-0"×6'-8"	
122A	E	BEDROOM	3'-0"×6'-8"	
122B			2'-8"×6'-8"	
122C	F	CLOSET	4'-0"×6'-8"	
122D	G	OFFICE	3'-0"×6'-8"	
122E	E	BATHROOM	3'-0"×6'-8"	
122F	E	BEDROOM	3'-0"×6'-8"	
122G	F	CLOSET	5'-0"×6'-8"	
123A	E	CLOSET	2'-0"×6'-8"	
123B	E	BATHROOM	3'-0"×6'-8"	
123C	G	OFFICE	3'-6"×6'-8"	
123D	E	BEDROOM	3'-0"×6'-8"	
123E	F	CLOSET	4'-0"×6'-8"	
123F	E	BEDROOM	3'-0"×6'-8"	
123G	E	BATHROOM	3'-0"×6'-8"	
123H	F	CLOSET	5'-0"×6'-8"	
125A	E	BATHROOM	3'-0"×6'-8"	
125B	E	BEDROOM	3'-0"×6'-8"	
125C	F	CLOSET	5'-0"×6'-8"	
125D	E	BEDROOM	3'-0"×6'-8"	
125E	E	BATHROOM	3'-0"×6'-8"	
125F	E	BEDROOM	3'-0"×6'-8"	
125G	F	CLOSET	5'-0"×6'-8"	
125H	F	CLOSET	5'-0"×6'-8"	
125J	H	LAUNDRY	3'-0"×6'-8"	
221A	H	LAUNDRY	5'-0"×6'-8"	
221B	E	CLOSET	2'-0"×6'-8"	
221C	E	BEDROOM	3'-0"×6'-8"	
221D	F	CLOSET	4'-0"×6'-8"	
221E	E	BEDROOM	3'-0"×6'-8"	
221F	F	CLOSET	4'-0"×6'-8"	
221G	E	CLOSET	2'-0"×6'-8"	
221H	E	BATHROOM	3'-0"×6'-8"	
221J	E	BEDROOM	3'-0"×6'-8"	
221K	E	BATHROOM	3'-0"×6'-8"	
221L	F	CLOSET	5'-0"×6'-8"	
222A	E	BATHROOM	3'-0"×6'-8"	
222B	E	BEDROOM	3'-0"×6'-8"	
222C	F	CLOSET	5'-0"×6'-8"	
222D	E	BEDROOM	3'-0"×6'-8"	
222E	E	BATHROOM	3'-0"×6'-8"	
222F	E	BEDROOM	3'-0"×6'-8"	
222G	F	CLOSET	5'-0"×6'-8"	
222H	F	CLOSET	5'-0"×6'-8"	
222J	E	LAUNDRY	2'-10"×6'-8"	
225A	E	BEDROOM	3'-0"×6'-8"	
225B	E	BATHROOM	2'-8"×6'-8"	
225C	F	CLOSET	4'-0"×6'-8"	
225D	G	OFFICE	3'-0"×6'-8"	
225E	E	BATHROOM	3'-0"×6'-8"	
225F	E	BEDROOM	3'-0"×6'-8"	
225G	F	CLOSET	5'-0"×6'-8"	
225H	H	LAUNDRY	3'-6"×6'-8"	
226A	F	LAUNDRY	6'-0"×6'-8"	
226B	E	BATHROOM	2'-8"×6'-8"	
226C	E	CLOSET	2'-0"×6'-8"	
226D	F	CLOSET	5'-0"×6'-8"	
226E	G	OFFICE	3'-6"×6'-8"	
226F	E	BEDROOM	2'-8"×6'-8"	
226G	F	CLOSET	4'-0"×6'-8"	
226H	E	BEDROOM	3'-0"×6'-8"	
226J	F	CLOSET	5'-0"×6'-8"	
226K	E	BATHROOM	2'-0"×6'-8"	
321A	F	LAUNDRY	5'-0"×6'-8"	
321B	E	BATHROOM	2'-6"×6'-8"	
321C	E	BEDROOM	3'-0"×6'-8"	
321D	E	BATHROOM	3'-0"×6'-8"	
321E	F	CLOSET	5'-0"×6'-8"	
321F	E	BEDROOM	3'-0"×6'-8"	
321G	F	CLOSET	4'-0"×6'-8"	
321H	F	CLOSET	4'-0"×6'-8"	
321J	E	BEDROOM	3'-0"×6'-8"	
321K	E	CLOSET	2'-0"×6'-8"	
321L	E	CLOSET	2'-0"×6'-8"	
322A	E	BATHROOM	3'-0"×6'-8"	
322B	E	BEDROOM	3'-0"×6'-8"	
322C	F	CLOSET	5'-0"×6'-8"	
322D	E	BEDROOM	3'-0"×6'-8"	
322E	E	BATHROOM	3'-0"×6'-8"	
322F	E	BEDROOM	3'-0"×6'-8"	
322G	F	CLOSET	5'-0"×6'-8"	
322H	F	CLOSET	5'-0"×6'-8"	
322J	E	LAUNDRY	2'-10"×6'-8"	
325A	E	BEDROOM	3'-0"×6'-8"	
325B	E	BATHROOM	2'-8"×6'-8"	
325C	F	CLOSET	4'-0"×6'-8"	
325D	G	OFFICE	3'-0"×6'-8"	
325E	E	BATHROOM	3'-0"×6'-8"	
325F	E	BEDROOM	3'-0"×6'-8"	
325G	F	CLOSET	5'-0"×6'-8"	
325H	H	LAUNDRY	3'-6"×6'-8"	
326A	F	LAUNDRY	6'-0"×6'-8"	
326B	E	BATHROOM	2'-8"×6'-8"	
326C	E	CLOSET	2'-0"×6'-8"	
326D	F	CLOSET	5'-0"×6'-8"	
326E	G	OFFICE	3'-6"×6'-8"	
326F	E	BEDROOM	2'-8"×6'-8"	
326G	E	BATHROOM	2'-0"×6'-8"	
326H	F	CLOSET	5'-0"×6'-8"	
326J	E	BEDROOM	3'-0"×6'-8"	
326K	F	CLOSET	4'-0"×6'-8"	

S9

SYNTHESIS 9, LLC
523 N. D ST
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

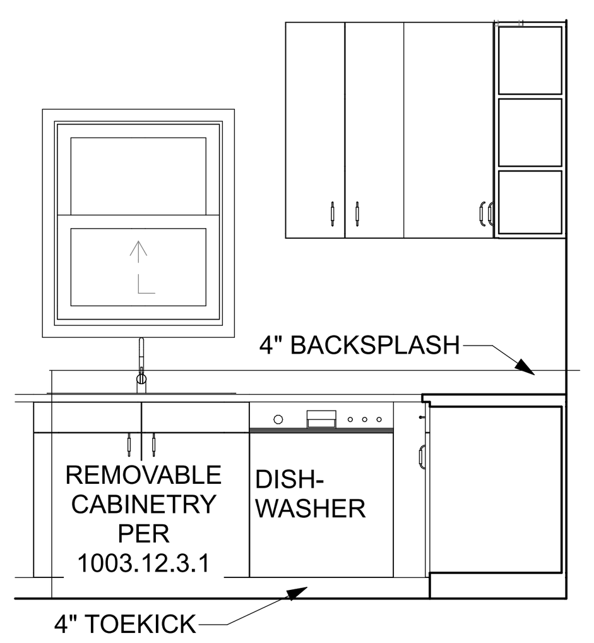
REVISIONS

REVISIONS

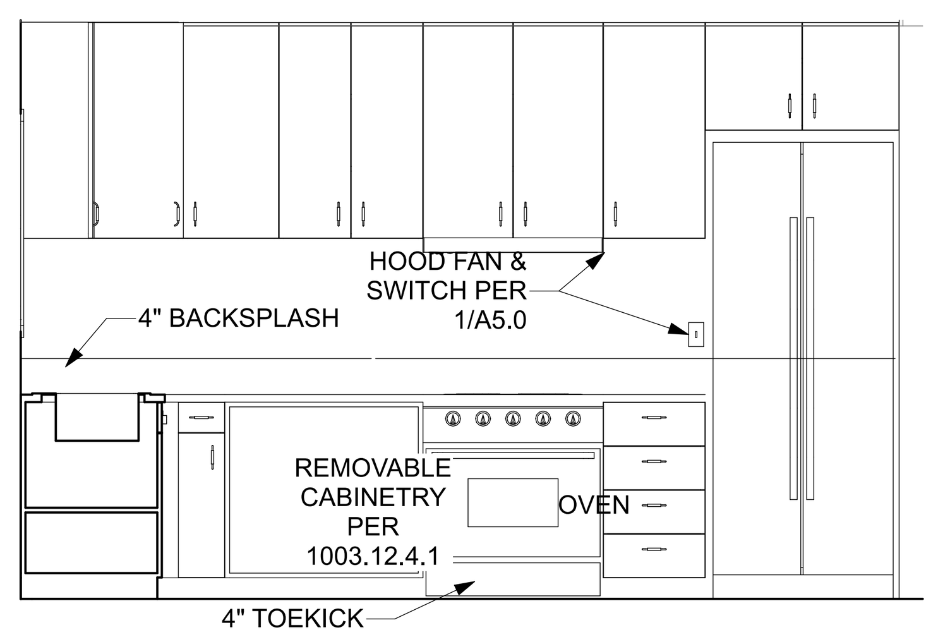
AGENCY REVIEW | 24.03.11

DRAWN BY: BL / CM
CHECKED BY: BL
DATE: 24.03.11
TITLE: DOORS & WINDOWS
PROJECT #: 2016
SHEET:

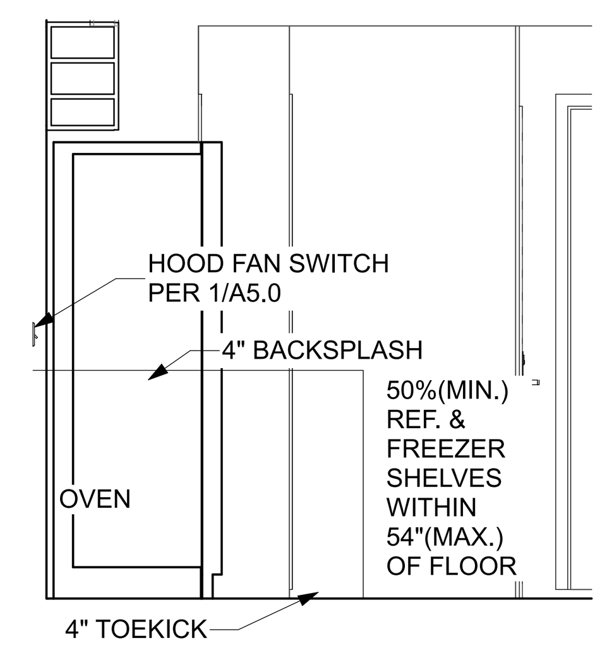
A4.0



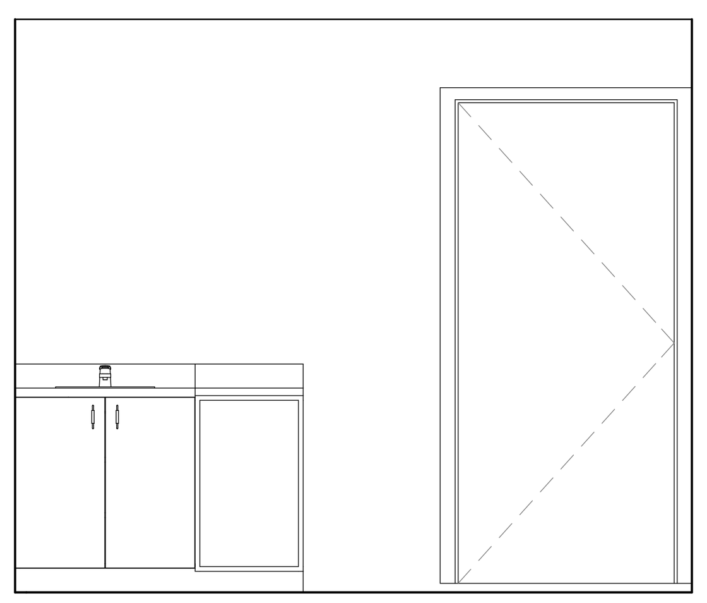
4 TYPE 12-1 KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'



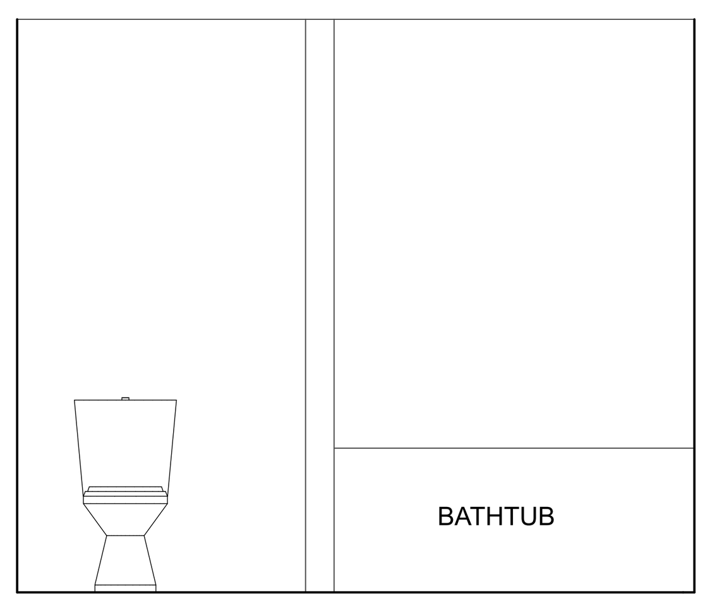
3 TYPE 12-1 KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'



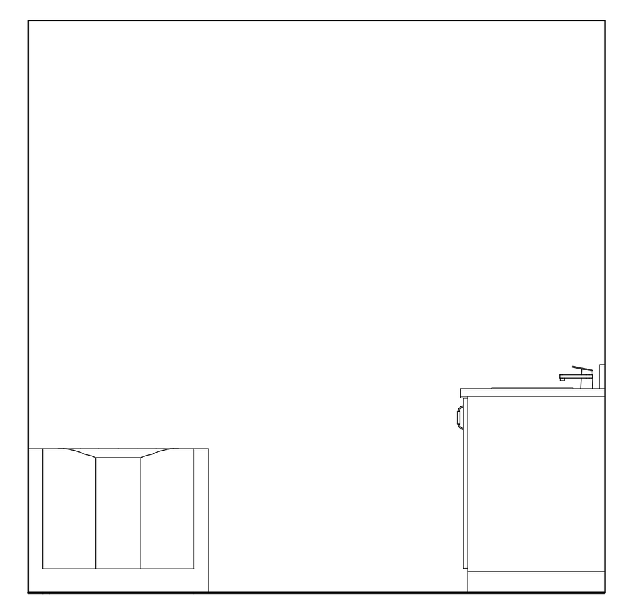
2 TYPE 12-1 KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'



7 TYPE 12-1 BATH
SCALE: 3/8" = 1'-0"



6 TYPE 12-1 BATH
SCALE: 3/8" = 1'-0"



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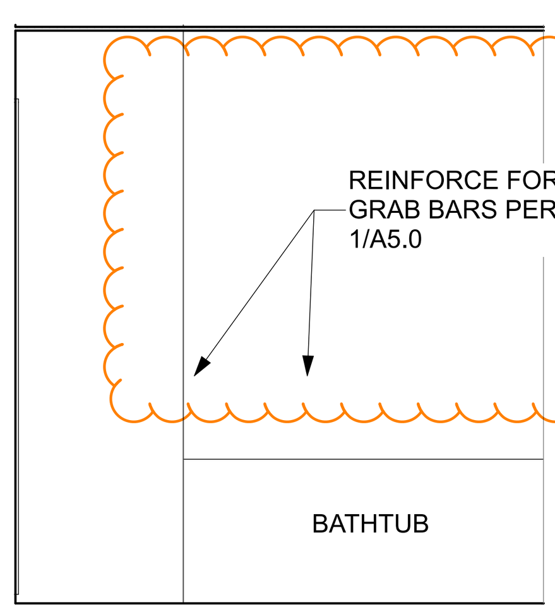
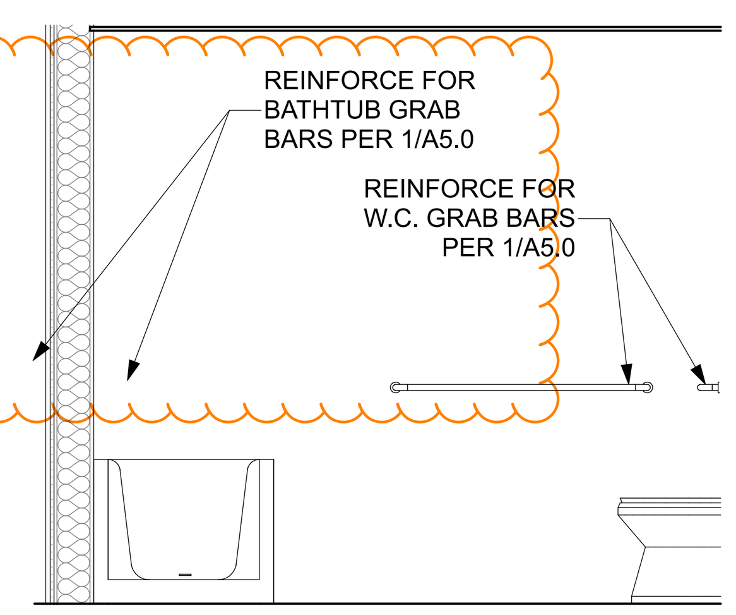
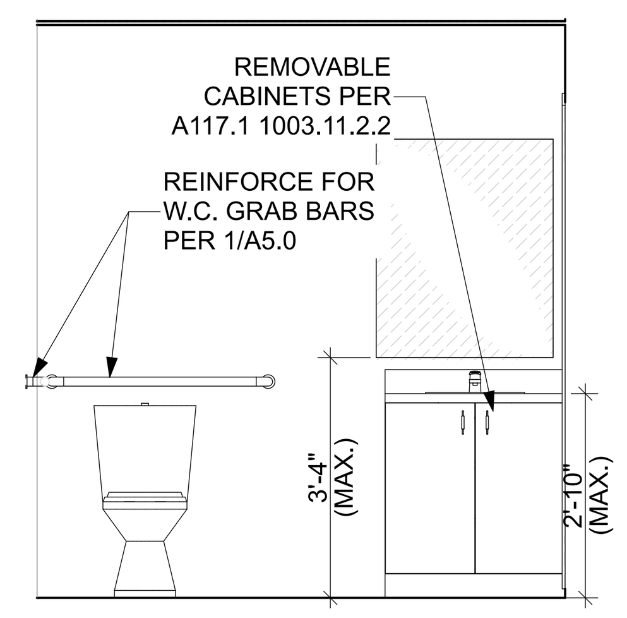


Please fix these details. [CONSTRUCTION PLAN SET - Bldg B, sheet A5.0]

10 TYPE 12-3 BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'



9 TYPE 12-3 BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'



8 TYPE 12-3 BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'A'

DWELLING UNIT ACCESSIBILITY NOTES:

1. THE ACCESSIBLE PRIMARY ENTRANCE SHALL BE ON AN ACCESSIBLE ROUTE FROM PUBLIC AND COMMON AREAS. WITHIN THE UNIT, AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ALL SPACES AND ELEMENTS. THE ACCESSIBLE ROUTE SHALL HAVE A CLEAR WIDTH OF AT LEAST 36-INCHES, EXCEPT THAT SEGMENTS LESS THAN 24-INCHES IN LENGTH MAY HAVE A CLEAR WIDTH OF 32-INCHES.

2. IN THE TYPE 'A' UNIT, TURNING SPACES SHALL BE REQUIRED IN ALL ROOMS. TURNING SPACE SHALL BE 60-INCH IN DIAMETER.

3. THE CORRIDOR SIDE OF THE PRIMARY ENTRANCE DOOR TO TYPE 'B' UNITS SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH ANSI 404, ICC A117.1.

4. IN TYPE 'A' UNITS, ALL DOORWAYS INTENDED FOR PASSAGE SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH ANSI 404, ICC A117.1.

5. CHANGES IN LEVEL OF 1/4-INCH OR LESS ARE PERMITTED TO BE VERTICAL. CHANGES IN LEVEL BETWEEN 1/4-INCH AND 1/2-INCH SHALL BE BEVELED WITH A SLOPE OF 1:2. THRESHOLDS SHALL NOT BE GREATER THAN 1/2-INCH, EXCEPT THAT THEY MAY BE 3/4-INCH AT EXTERIOR SLIDING DOORS.

6. IN TYPE 'A' UNITS, LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, APPLIANCE CONTROLS, OPERATING HARDWARE FOR OPERABLE WINDOWS, PLUMBING FIXTURE CONTROLS, AND USER CONTROLS FOR SECURITY OR INTERCOM SYSTEMS SHALL BE PROVIDED WITH A CLEAR FLOOR SPACE AND BE PLACED WITHIN ONE OF THE REACH RANGES SPECIFIED IN SECTION 308, ICC A117.1. THEY SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE MAXIMUM FORCE REQUIRED TO ACTIVATE THE PARTS SHALL BE 5-POUNDS.

7. IN TYPE 'B' UNITS, LIGHTING CONTROLS, ELECTRICAL SWITCHES AND RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, APPLIANCE CONTROLS, OPERATING HARDWARE FOR OPERABLE WINDOWS, PLUMBING FIXTURE CONTROLS, AND USER CONTROLS FOR SECURITY OR INTERCOM SYSTEMS SHALL BE PROVIDED WITH A CLEAR FLOOR SPACE AND SHALL BE PLACED EITHIN ONE OF THE REACH RANGES SPECIFIED IN ANSI 308, ICC 117.1.

8. "CLEAR FLOOR SPACE" IS 30-INCHES BY 48-INCHES PER ANSI 305.3. BATHROOMS AND KITCHENS REQUIRE CLEAR FLOOR SPACES, CLEARANCES AROUND, BETWEEN AND ADJACENT TO FIXTURES, APPLIANCES, CABINETS, COUNTERS AND WALLS, AND OTHER ITEMS SHOWN IN THE DRAWINGS.

9. OPERABLE PARTS SHALL BE PLACED BETWEEN 15-INCHES AND 48-INCHES ABOVE THE FLOOR IN AN AREA WITH UNOBSTRUCTED FORWARD OR SIDE REACH. WHEN THERE IS AN OBSTRUCTION OF 24-INCHES MAXIMUM WIDTH AND 34-INCHES MAXIMUM HEIGHT, THE OPERABLE PARTS SHALL BE NO HIGHER THAN 46-INCHES ABOVE THE FLOOR. WHEN THERE IS AN OBSTRUCTION OF 25-INCHES MAXIMUM WIDTH IN A SPACE ALLOWING FORWARD APPROACH, THE OPERABLE PARTS SHALL BE NO HIGHER THAN 44-INCHES ABOVE THE FLOOR PER ANSI 308, ICC A117.1

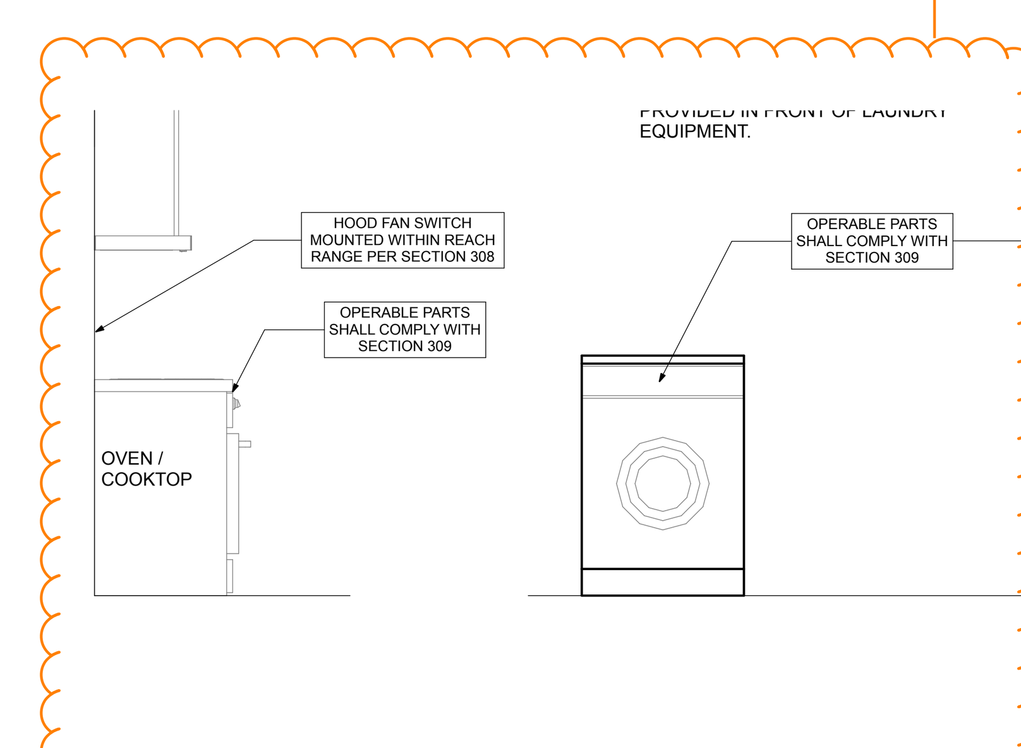
11. IN TYPE 'A' UNITS, WASHING MACHINES AND CLOTHES DRYERS REQUIRE A CLEAR FLOOR SPACE, POSITIONED FOR PARALLEL APPROACH, CENTERED ON EACH APPLIANCE. ALL OPERABLE PARTS SHALL COMPLY WITH SECTION 309, ICC A117.1, INCLUDING THE REACH RANGES SPECIFIED IN ANSI 308, ICC 117.1. TOP LOADING MACHINES SHALL HAVE THE DOOR TO THE LAUNDRY COMPARTMENT 36-INCHES MAXIMUM ABOVE THE FLOOR. FRONT LOADING MACHINES SHALL HAVE THE BOTTOM OF THE OPENING TO THE LAUNDRY COMPARTMENT BETWEEN 15-INCHES AND 34-INCHES ABOVE THE FLOOR.

12. IN TYPE 'B' UNITS, WASHING MACHINES AND CLOTHES DRYERS REQUIRE A CLEAR FLOOR SPACE, POSITIONED FOR PARALLEL APPROACH, CENTERED ON EACH APPLIANCE.

13. CABINETRY IS PERMITTED UNDER WORK SURFACES & SINK WHEN THE CABINETRY CAN BE REMOVED WITHOUT THE REMOVAL OR REPLACEMENT OF WORK SURFACE OR SINK, FLOOR FINISH EXTENDS UNDER CABINETRY AND WALLS BEHIND AND SURROUNDING CABINETRY ARE FINISHED.

14. TYPE 'B' UNIT BATHROOMS ARE OPTION A.

Please provide these reference sections on the plan set. [CONSTRUCTION PLAN SET - Bldg B, sheet A5.0]



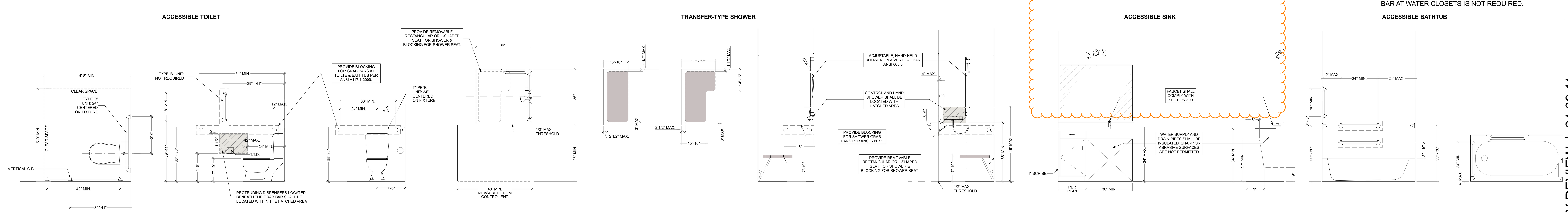
3. CABINETRY IS PERMITTED UNDER WORK SURFACE SINK WHEN THE CABINETRY CAN BE REMOVED WITHOU REMOVAL OR REPLACEMENT OF WORK SURFACE OR SIN FLOOR FINISH EXTENDS UNDER CABINETRY AND WALLS BEHIND AND SURROUNDING CABINETRY ARE FINISHED.

4. WHEN BASE CABINETS ARE TO BE REMOVED AT LOWERED WORK SURFACES AND SINKS, KNEE AND TOE CLEARANCES SHALL BE PROVIDED.

5. IN TYPE 'B' UNITS, REINFORCEMENT FOR A 24" REAR WAI GRAB BAR, CENTERED ON THE FIXTURE, AT WATER CLO: WHEN THERE IS INSUFFICIENT WALL SPACE FOR THE 36' BAR.

6. IN TYPE 'B' UNITS, REINFORCEMENT FOR A SWING UP GF BAR PER ANSI A117.1 1004.11.1.1 WHERE A SIDE WALL IS I AVAILABLE FOR A 42-INCH GRAB BAR.

7. IN TYPE 'B' UNITS, REINFORCEMENT FOR A VERTICAL GR BAR AT WATER CLOSETS IS NOT REQUIRED.



1 TYPE A & B BATHROOM FIXTURES & APPLIANCES
SCALE: 3/8" = 1'-0"

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TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

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AGENCY REVIEW | 24.03.11

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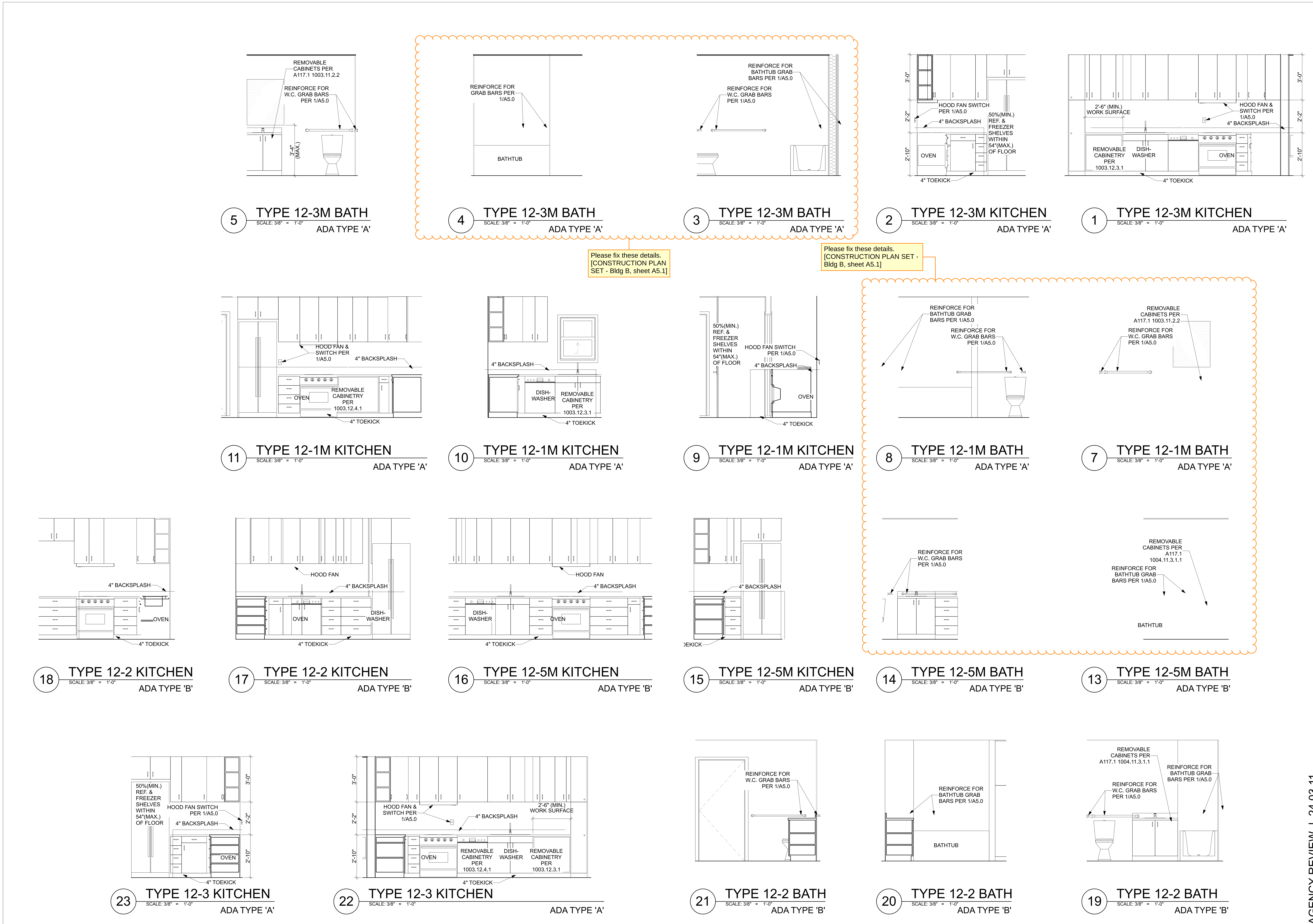
TITLE:	INTERIOR ELEVATIONS
PROJECT #:	2016
SHEET:	A5.0



S9

SYNTHESIS 9, LLC

REGISTERED ARCHITECT 9251 BRETT ALLEN LINDSAY STATE OF WASHINGTON

EAST TOWN CROSSING

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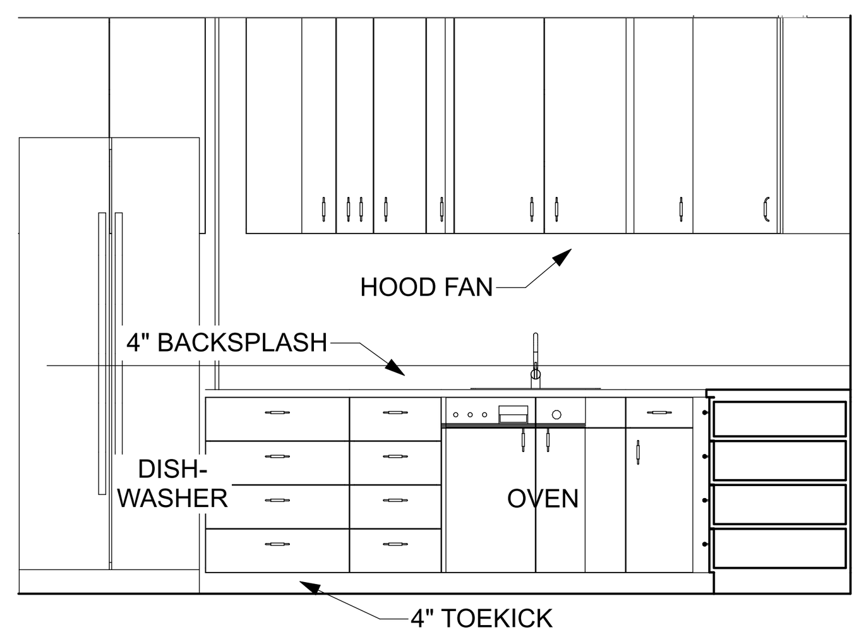
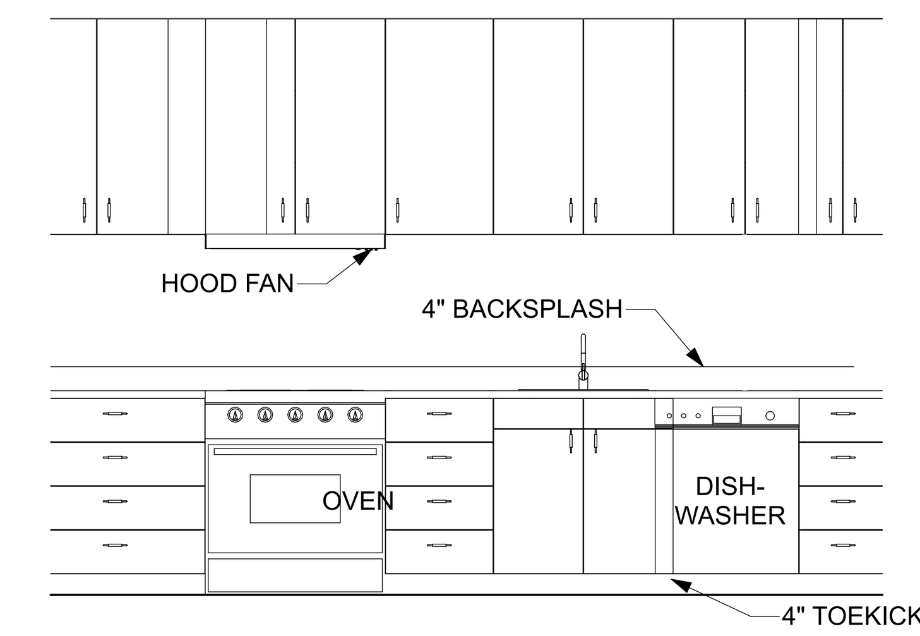
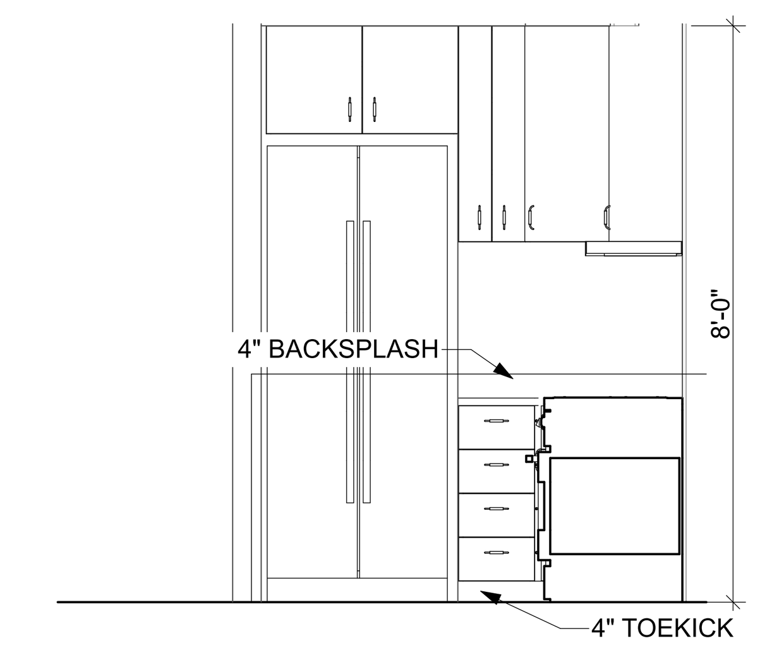


6 TYPE 12-2M KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'

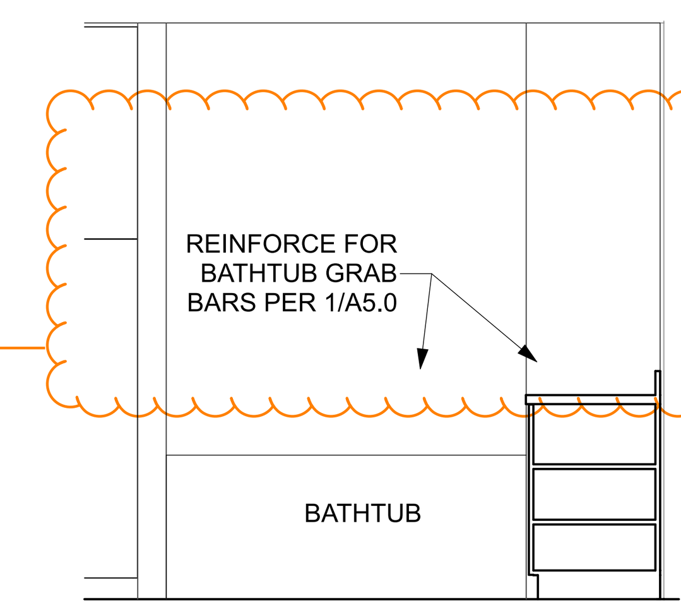


2 TYPE 12-5 KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'

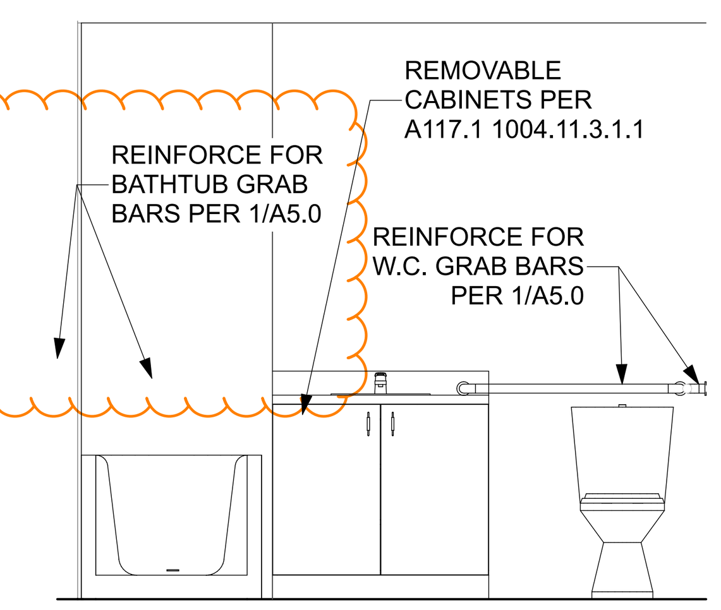


1 TYPE 12-5 KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'

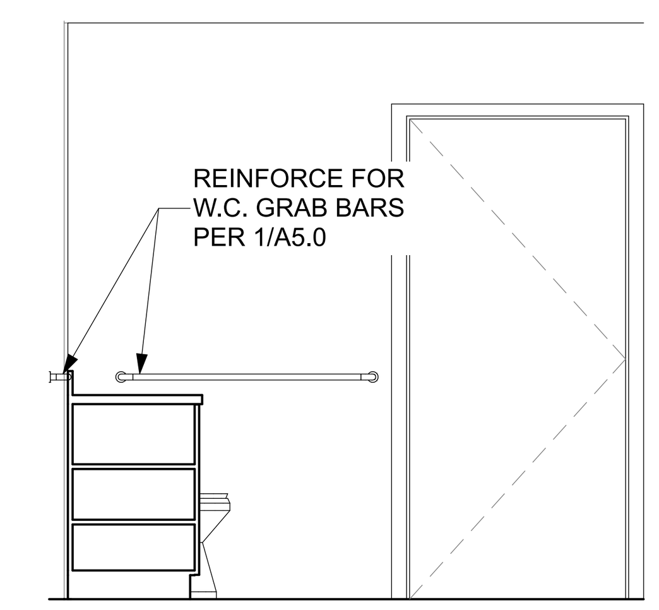
Please fix these details. [CONSTRUCTION PLAN SET - Bldg B, sheet A5.2]



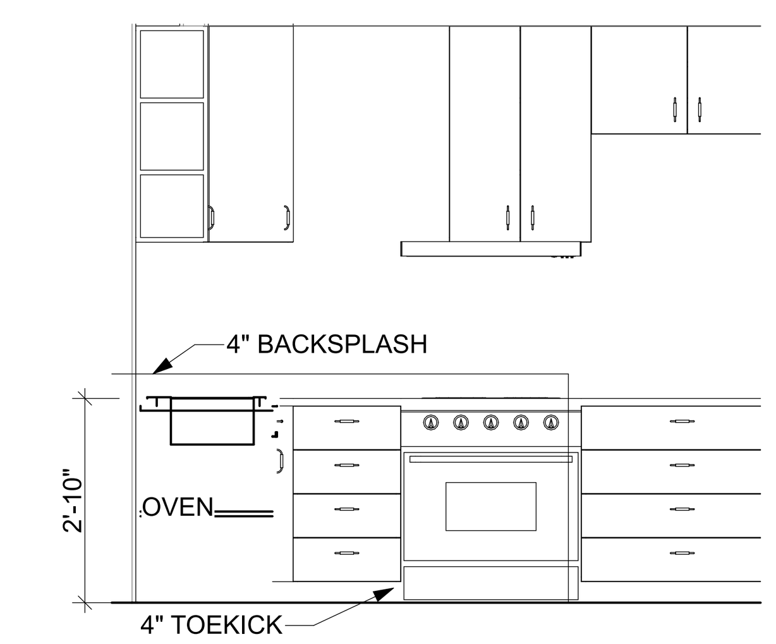
10 TYPE 12-2M BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'



9 TYPE 12-2M BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'



8 TYPE 12-2M BATH
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'



7 TYPE 12-2M KITCHEN
SCALE: 3/8" = 1'-0"
ADA TYPE 'B'

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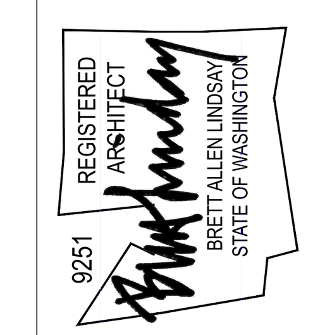

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

AGENCY REVIEW | 24.03.11

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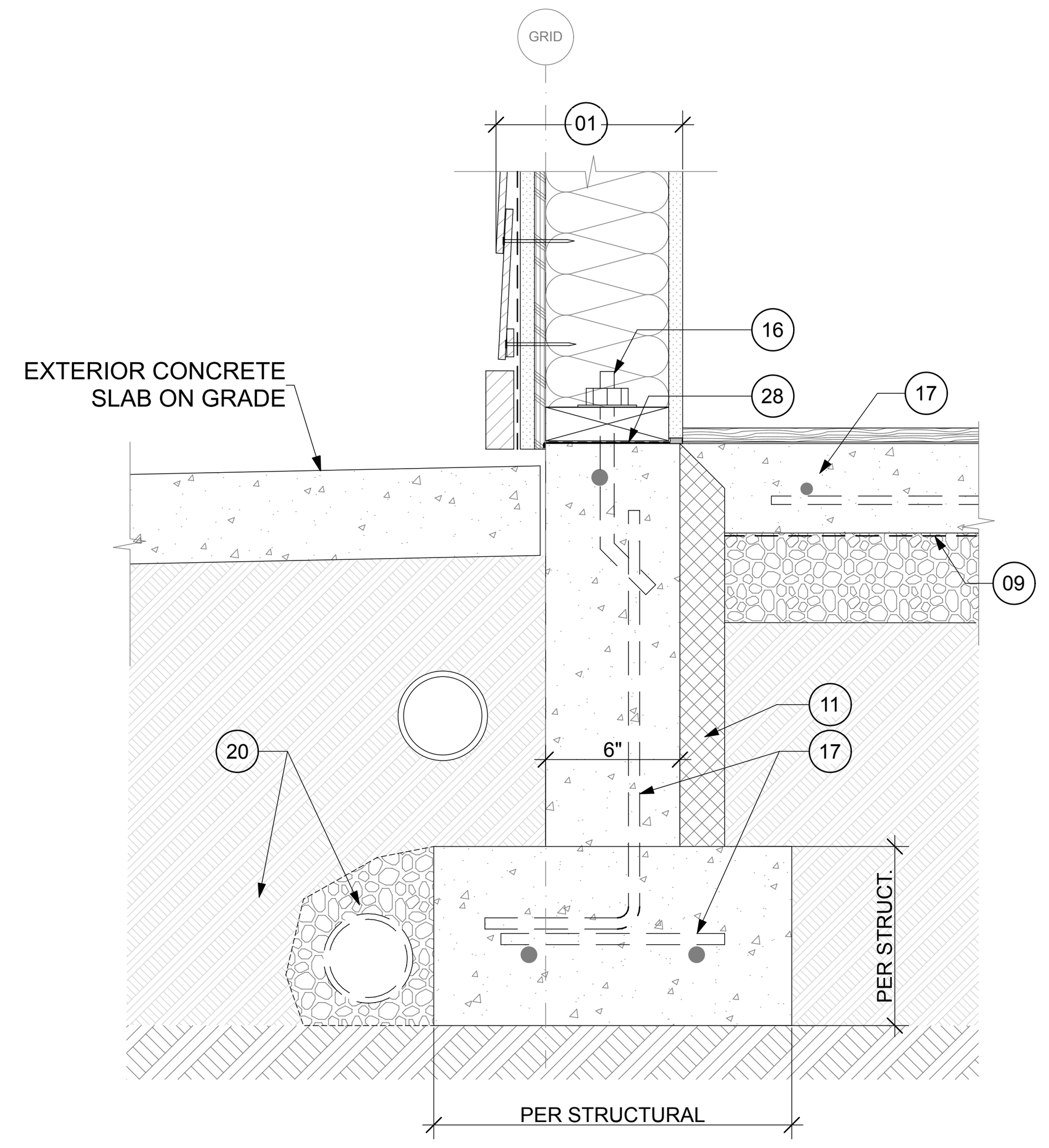
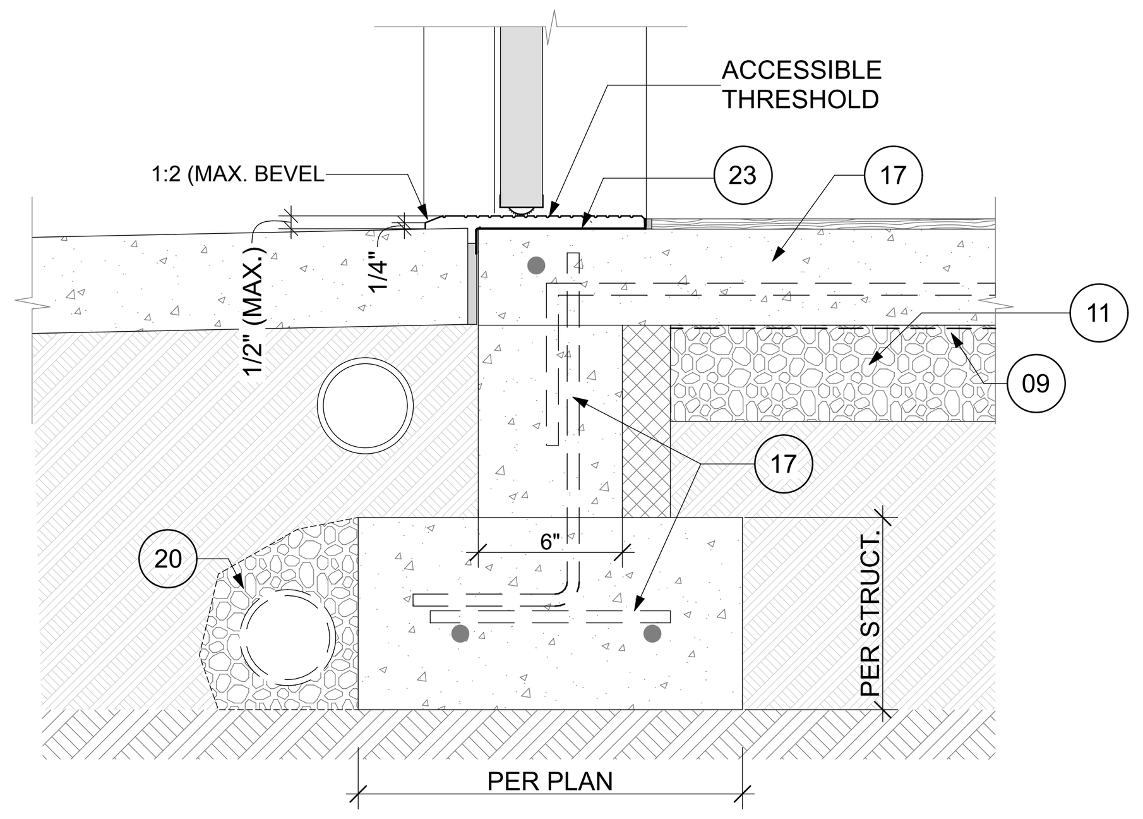
PROJECT #:	2016
SHEET:	A5.2

FOUNDATION DETAIL REFERENCE NOTES

01	WALL PER PLAN
02	VAPOR PERMEABLE AIR BARRIER / W.R.B. FIELD MEMBRANE
03	CONTINUOUS, SELF-ADHERED MEMBRANE (S.A.M.) ALONG TOP EDGE OF METAL FLASHING
04	BELOW GRADE WATER-PROOFING SYSTEM W/ DRAINAGE MAT AND FILTER FABRIC PROTECTION LAYER
05	22 GAUGE, SHEET METAL FLASHING, W/ HEMMED EDGE; SET ON SEALANT & EXTEND 6" UP UNDER W.R.B. OR TO WINDOW OPENING
06	FILTER FABRIC OVER MINIMUM 1/2-INCH DRAINAGE MATRIX
07	METAL LATHE WITH BOND & SCRATCH COAT
08	NOT USED
09	6 MIL PLASTIC VAPOR BARRIER
10	NOT USED
11	R-10 POLYISO INSULATION: UNDER ENTIRE SLAB AT CONDITIONED AREAS AND CONFIGURED AS SHOWN TO TOP OF FOOTING OR 2-FT IN LENGTH.
12	NOT USED
13	CEMENT FIBERBOARD PANEL OR LAP-SIDING SIDING - HARDIE PANEL OR APPROVED SUBSTITUTE
14	NOT USED
15	NOT USED
16	ANCHOR BOLT & TREATED SILL PLATE(S) PER STRUCTURAL
17	CONCRETE & REINFORCING PER STRUCTURAL (TYPICAL)
18	12-INCH WIDE GRACE VYCOR SILL PAN / FLASHING W/ END DAMS. AT EACH SILL CORNER, INSTALL VYCORNERS AND CORNER PATCHES PER THE MFR'S RECOMMENDATIONS; WRAP UP THE STEEL ANGLE TO CREATE A DAM.
19	CONT. BACK DAM ANGLE, MIN. 1-INCH TALL WITH VINYL ASSEMBLY FASTENED THROUGH ANGLE PER MFR. RECOMMENDATIONS.
20	4" PERF. FOOTING DRAIN AND 4" TIGHT-LINE DRAIN; SET IN DRAIN ROCK AND WRAP IN FILTER FABRIC; SEE CIVIL DRAWINGS FOR RELATED INFORMATION
21	3/8" SEALANT JOINT WITH BACKER ROD.
22	PRIMED COUNTER-FLASHING ABOVE TRIM; PROVIDE 1/4-INCH PER FOOT SLOPE TO HEMMED EDGE
23	GALV. METAL SILL PAN AT ANY DOOR WITH A THRESHOLD
24	VINYL WINDOW FRAME W/ FLANGE
25	PRIMED COUNTER-FLASHING ABOVE TRIM; PROVIDE 1/4-INCH PER FOOT SLOPE TO HEMMED EDGE
26	INSTALL PLASTIC HORSESHOE SHIMS @ EACH SILL FLANGE FASTENER
27	1/4-INCH WITH CAULK (ONE PART URETHANE SEALANT)
28	VYCOR-PLUS BY GRACE AT MUD SILL W/ 1/4-INCH DOWNTURN ON EXTERIOR SIDE WHEN FEASIBLE



3 FOUNDATION DETAIL - 03
SCALE: 1 1/2"= 1'-0"



2 FOUNDATION DETAIL - 02
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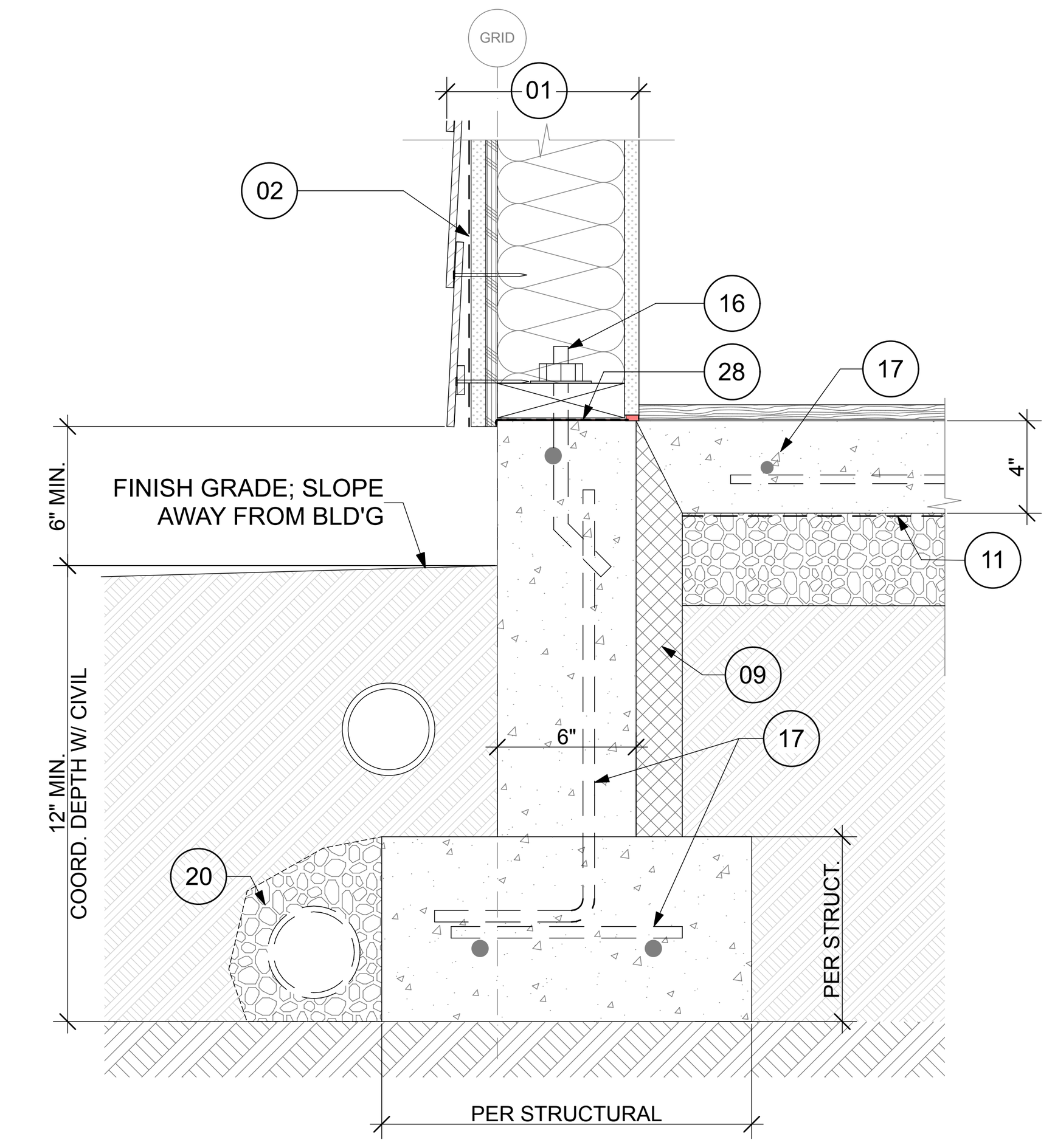

1 FOUNDTION DETAIL - 01
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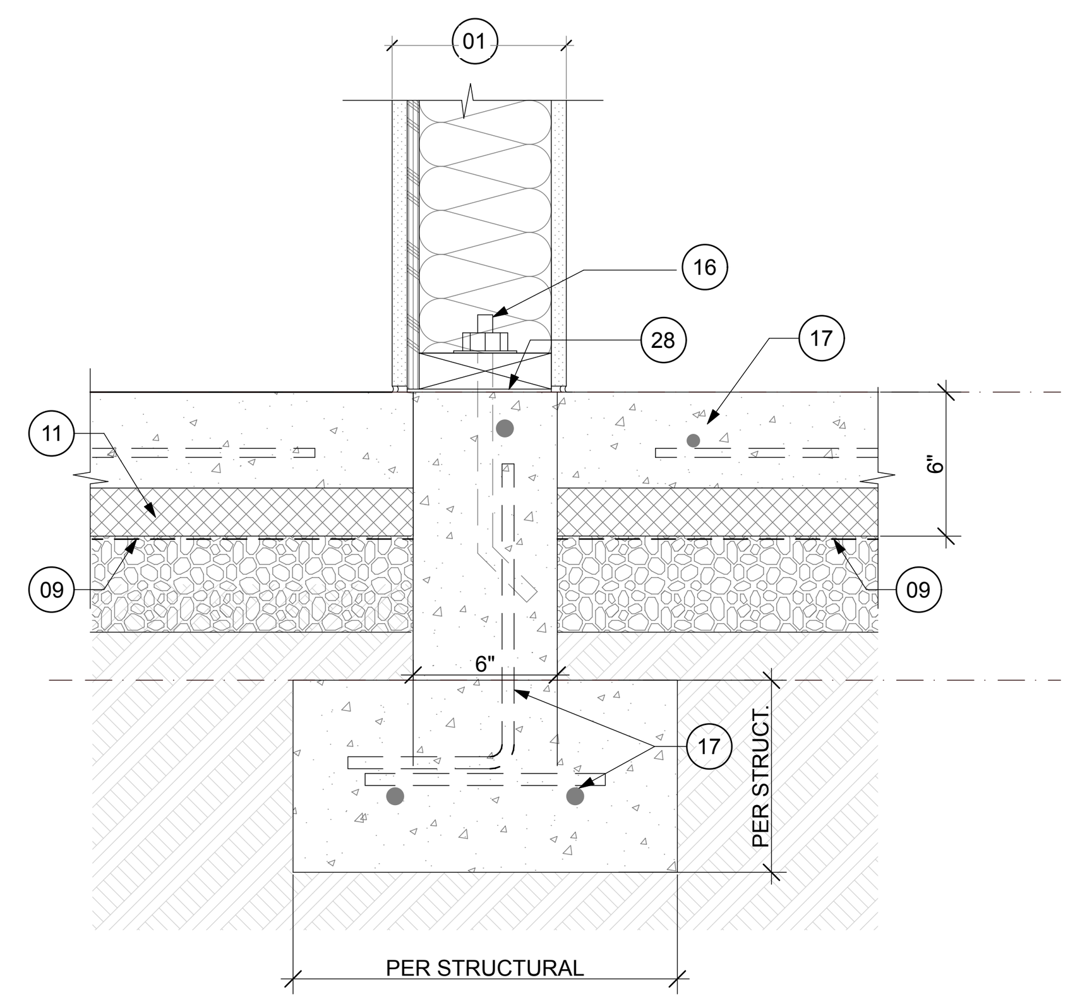
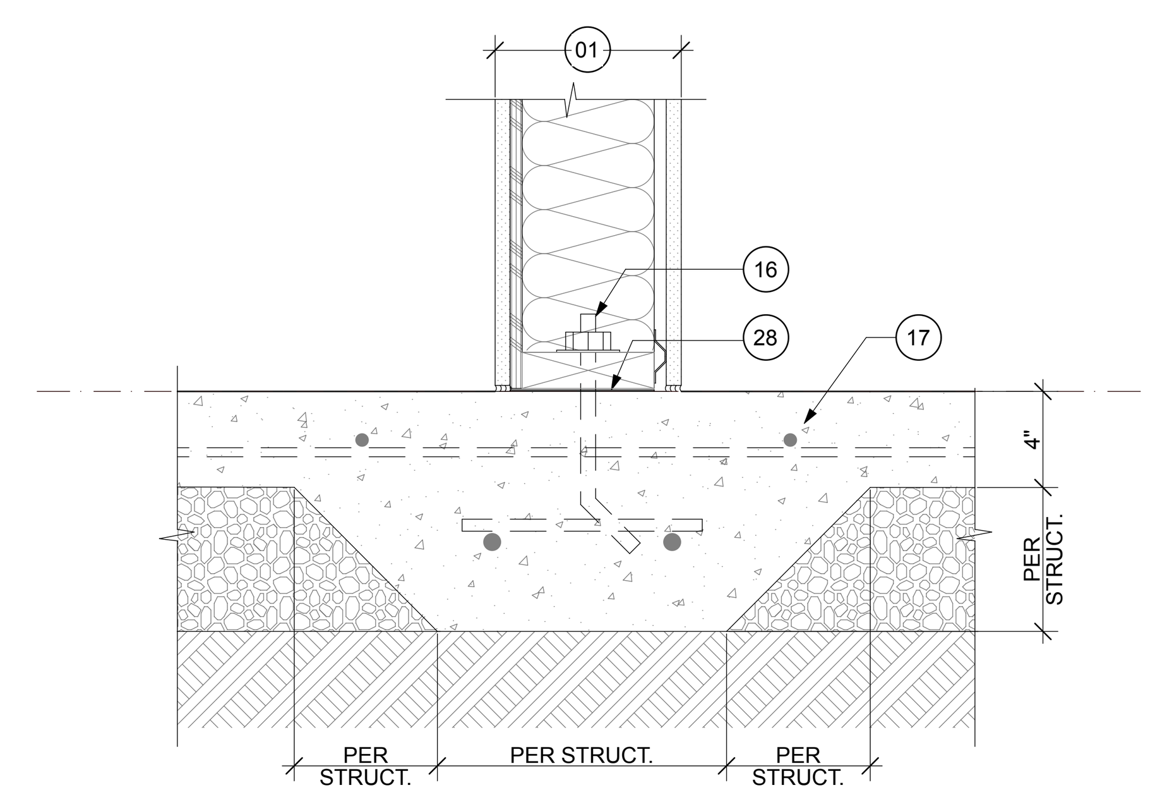
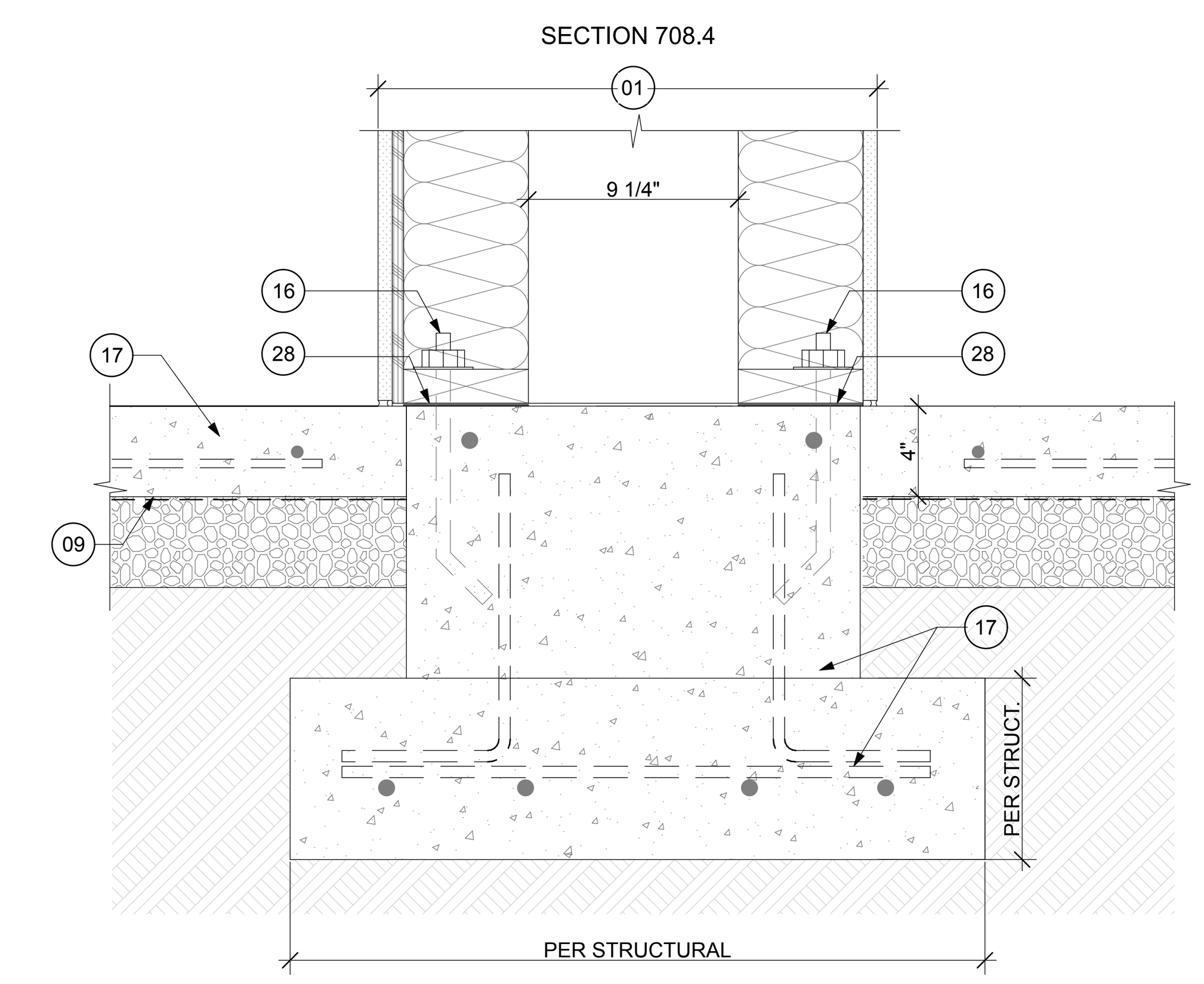


6 FOUNDATION DETAIL - 06
SCALE: 1 1/2"= 1'-0"



5 FOUNDATION DETAIL - 05
SCALE: 1 1/2"= 1'-0"



4 FOUNDATION DETAIL - 04
SCALE: 1 1/2"= 1'-0"

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EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

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AGENCY REVIEW | 24.03.11

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TITLE:	DETAILS
PROJECT #:	2016
SHEET:	

A6.0

DETAIL REFERENCE NOTES

01 WALL PER PLAN

02 VAPOR PERMEABLE AIR BARRIER / WATER RESISTANT BARRIER FIELD MEMBRANE

03 AIR BARRIER / WATER RESISTANT BARRIER PRESTRIP WITH CONTINUOUS A.B. / W.R.B. SEALANT BETWEEN FIELD MEMBRANE (AS SHOWN)

04 FLOOR / CEILING ASSEMBLY PER PLAN

05 PRE-FINISHED ALUMINUM OR VINYL, CONTINUOUS STRIP VENT; SEE REFLECTED CEILING PLANS FOR LOCATIONS AND LENGTHS

06 1-1/4" x 5-1/2" CEMENT FIBERBOARD TRIM AROUND OPENING - HARDIE TRIM OR APPROVED SUBSTITUTE; NOTE THAT 4" WIDE MINIMUM TRIM REQUIRED AT ALL WINDOWS U.N.O. PER TMC.

07 NOT USED

08 VINYL WINDOW OR SLIDING DOOR FRAME WITHOUT FLANGE AND ON 1/4-INCH INTERMITTENT SHIMS FOR DRAINAGE.

09 CEMENT FIBERBOARD CLADDING PER ELEVATIONS; LAP W/ 7-1/4" EXPOSURE **OR** PANEL WITH REVEAL ACCESSORIES - HARDIE PLANK OR APPROVED SUBSTITUTE

10 NOT USED

11 CORRUGATED, PRE-FINISHED METAL SIDING; EXPOSED FASTENERS WITH NEOPRENE GASKETS; NU-WAVE BY AEPSPAN

12 NOT USED

13 FLEXIBLE, SELF-ADHERED A.B. / W.R.B. SILL MEMBRANE; PER INSTALLATION INSTRUCTIONS ON SHEET A6.4.

14 CONT. BACK DAM ANGLE, MIN. 1-INCH TALL WITH VINYL ASSEMBLY FASTENED THROUGH ANGLE PER MFR. RECOMMENDATIONS.

15 ONE PART URETHANE SEALANT OVER BACKER ROD; FOAM BACKER ROD W/ BOND BREAKER JACKET - OVERSIZE ROD 25% LARGER THAN WIDTH OF JOINT; CLEAN SUBSTRATE USING A "TWO CLOTH" METHOD PER SEALANT MANUFACTURER - PRIME PER MFR ONLY WHERE REQUIRED.

16 CONTINUOUS AIR BARRIER SEALANT OVER BACKER ROD (WHEN SHOWN) TIED TO CONTINUOUS SEAL AT WINDOW PERIMETER.

17 1/4-INCH WITH PAINTABLE CAULK

18 NOT USED

19 NOT USED

20 PRIMED COUNTER-FLASHING ACCESSORY ABOVE TRIM or RIP SLOPE IN TOP OF TRIM AND 1/4-INCH CAULK AT JOINT; PROVIDE 1/4-INCH PER FOOT SLOPE.

21 PRE-FINISHED SHEET METAL SILL FLASHING W/ 1/2-INCH HEMMED DRIP EDGE WITH END DAMNS INTO BED JOINT AT JAMB VENEER TRIM BEYOND

22 PRIMED SHEET METAL HEAD FLASHING W/ 1/2" HEMMED DRIP EDGE & END DAMS. EXTEND 6-INCHES MINIMUM UP UNDER THE A.B. / W.R.B. AND OVERLAP JAMB TRIM

23 PRE-FINISHED SHEET METAL JAMB FLASHING TRIM

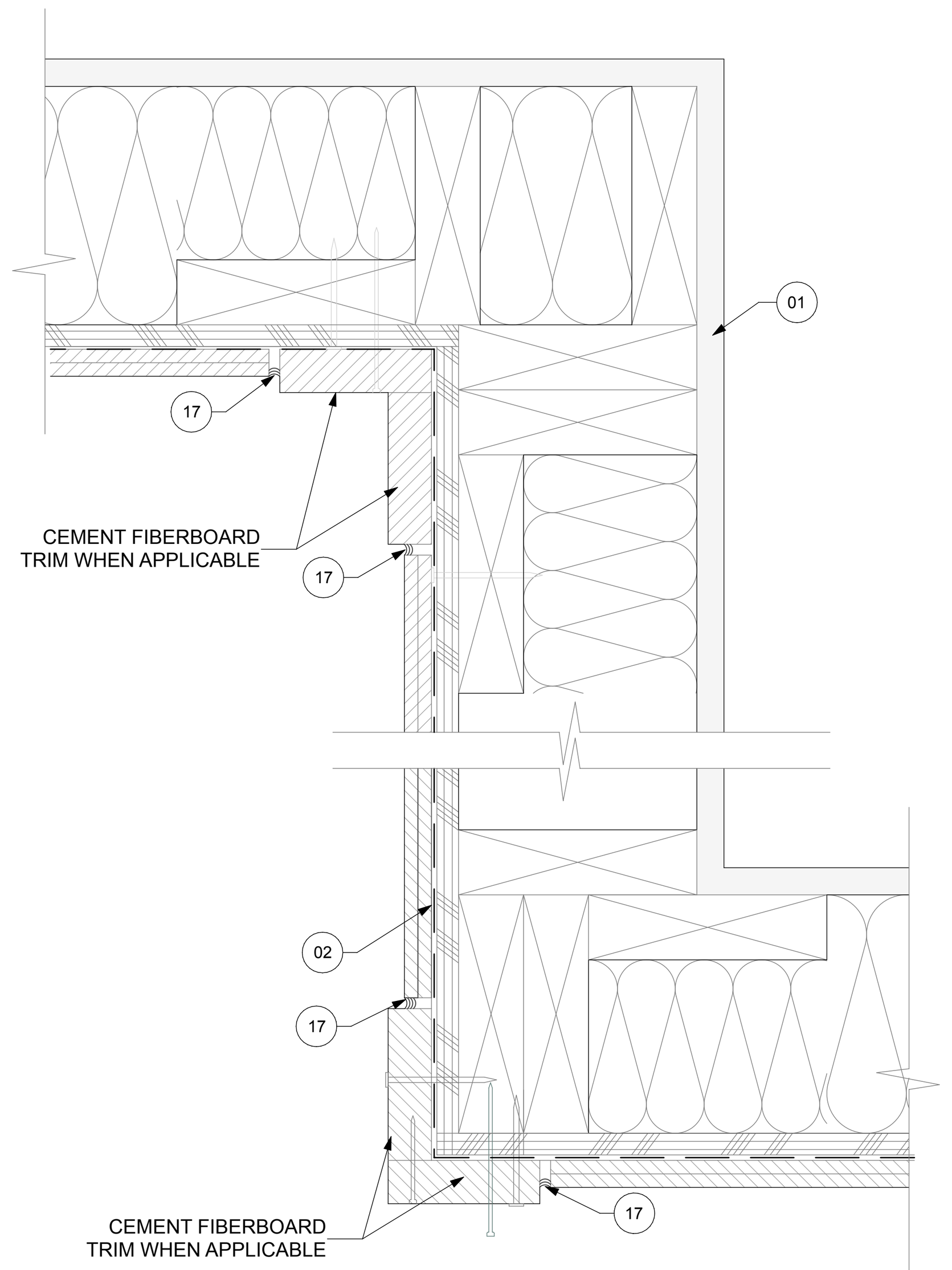
24 EXTRUDED ALUMINUM HORIZONTAL TRIM ACCESSORY (BY EXTREMETRIM OR APPROVED); PAINT PER MFR'S RECOMMENDATIONS; APPROXIMATE CONFIGURATION AS SHOWN.

25 5 x 5 x 5/16" x 5" TALL GALV. STEEL ANGLE CLIP; (2) AT EACH SIDE OF GUARDRAIL ASSEMBLY; NOTE THAT THE ATTACHMENT TO THE WALL STRUCTURE SHALL BE CONCEALED BEHIND CLADDING.

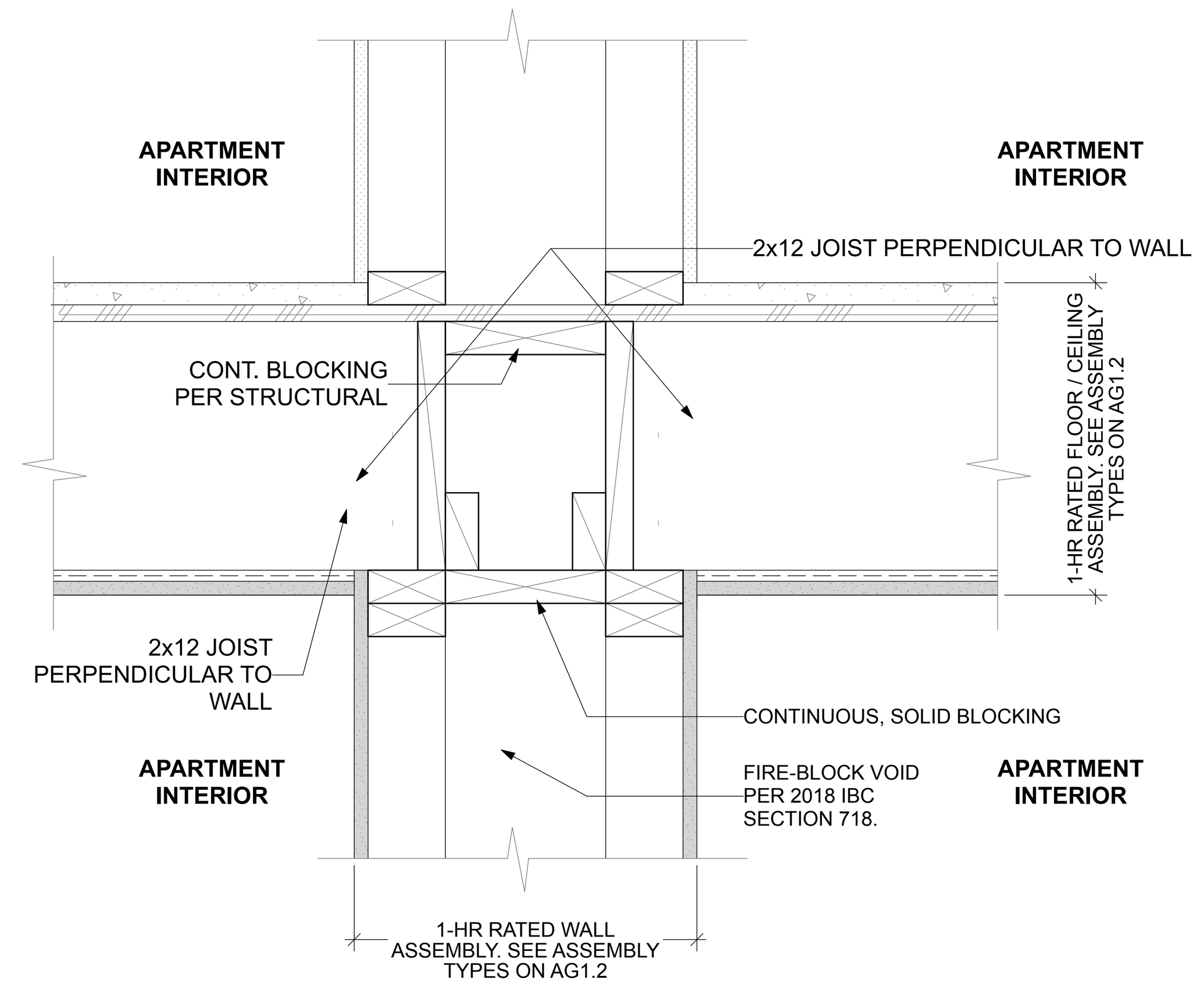
26 1/4" THICK NEOPRENE PAD BETWEEN VERTICAL ALUMINUM GUARDRAIL POST AND GALV. STEEL CLIP.

27 PRE-FINISHED ALUMINUM GUARDRAIL ASSEMBLY; FACE-MOUNT ATTACHMENT PER STRUCTURAL

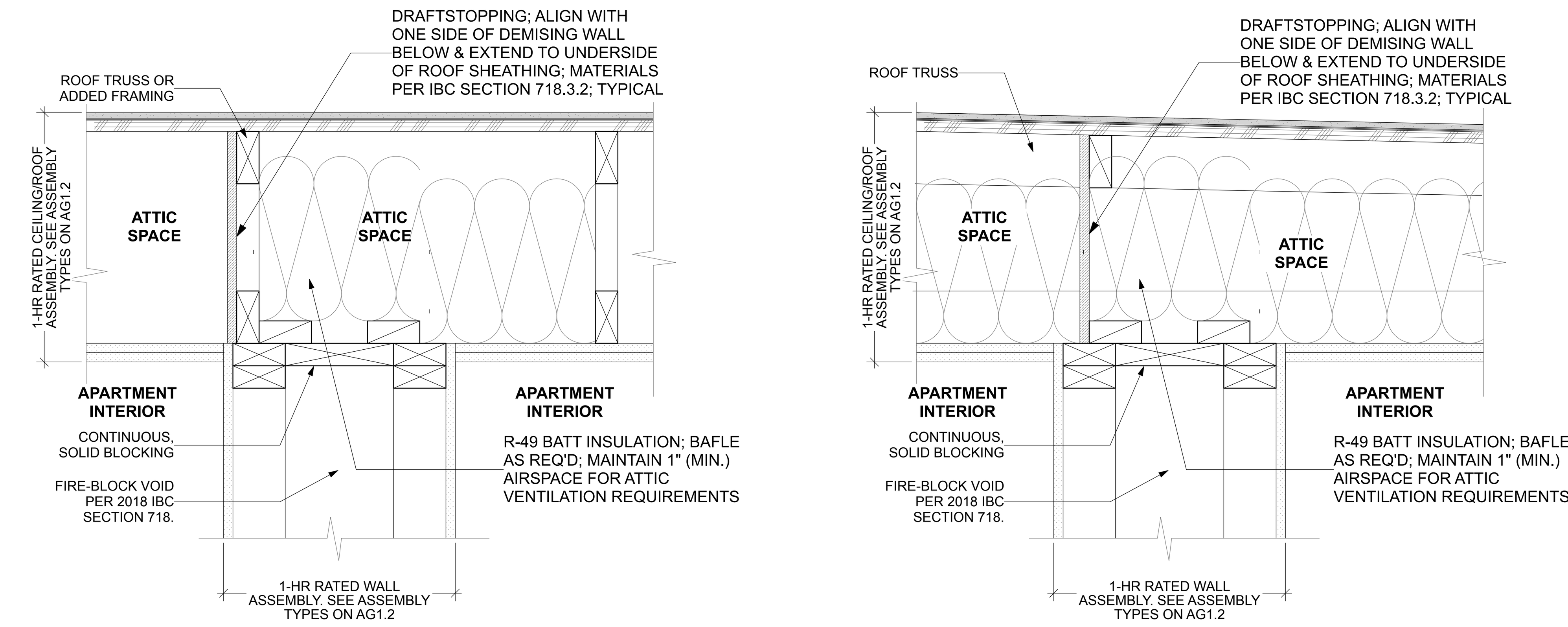
28 FLEXIBLE, SELF-ADHERED A.B. / W.R.B. MEMBRANE; USE 12-INCH WIDE GRACE VYCOR SILL PAN/FLASHING W/ END DAMS. WRAP UP SIDEWALL 4" MIN. ABOVE TOP OF FINISH FLOOR



3 SIDING TRANSITION DETAIL
SCALE: 3" = 1'-0"

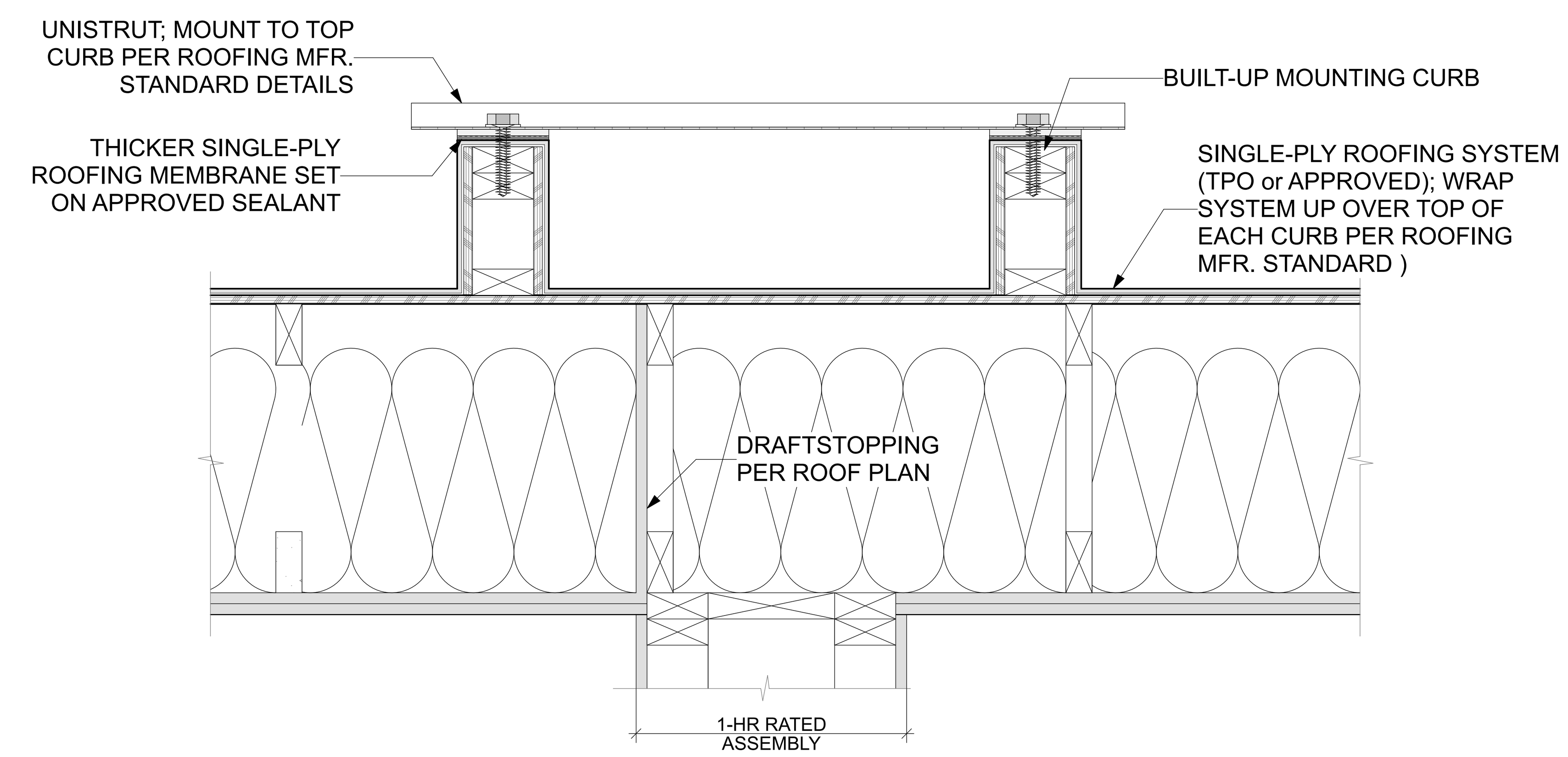


2 FLOOR-CEILING ASSEMBLY CONTINUITY
SCALE: 1 1/2"= 1'-0"

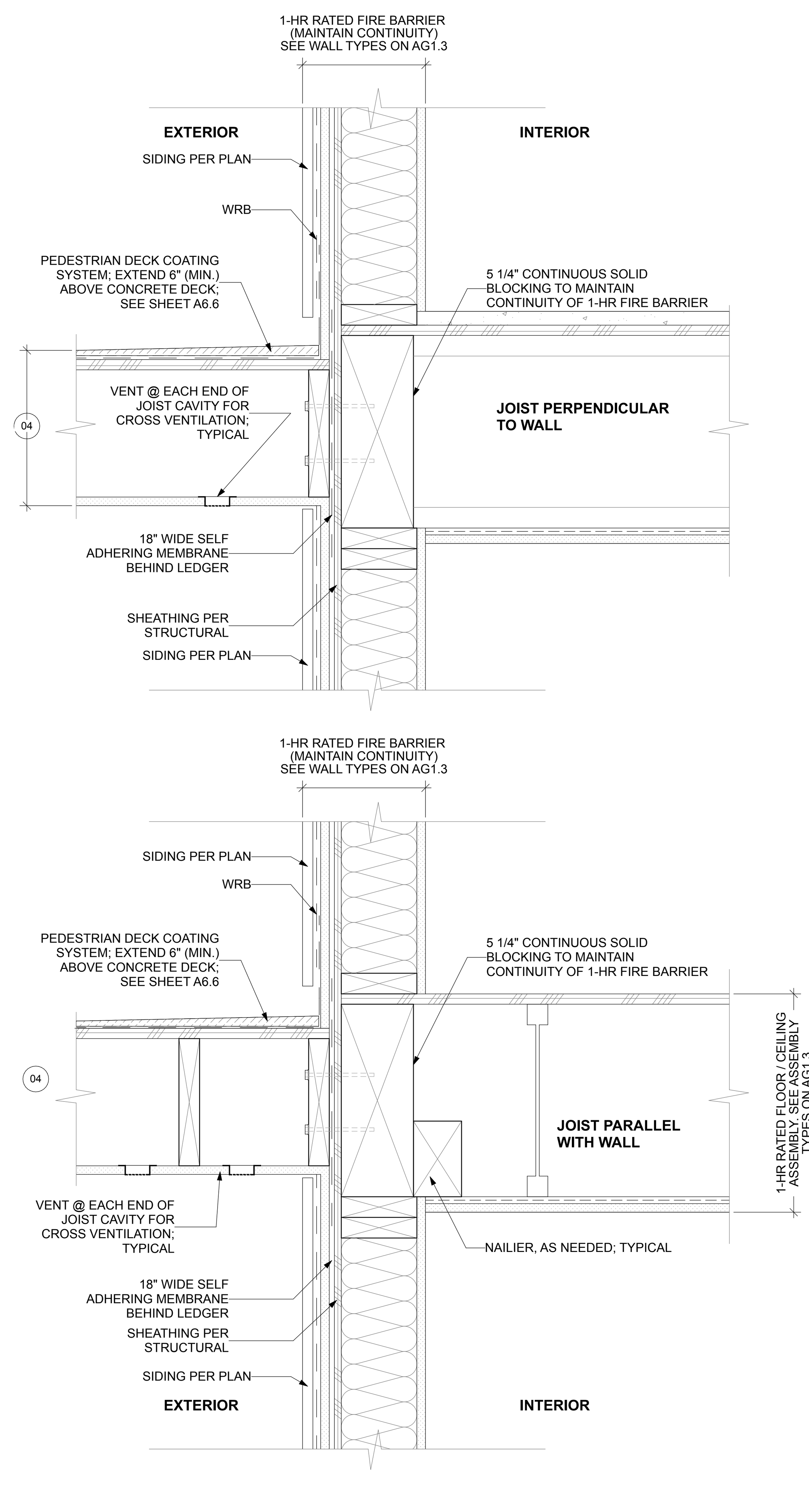


DRAFTSTOPPING PARALLEL TO FRAMING **DRAFTSTOPPING PERPENDICULAR TO FRAMING**

1 TYPICAL DRAFT STOP
SCALE: 1 1/2"= 1'-0"



5 ROOFTOP EQUIPMENT MOUNT CURB
SCALE: 1 1/2"= 1'-0"



4 FIRE RATING CONTINUITY
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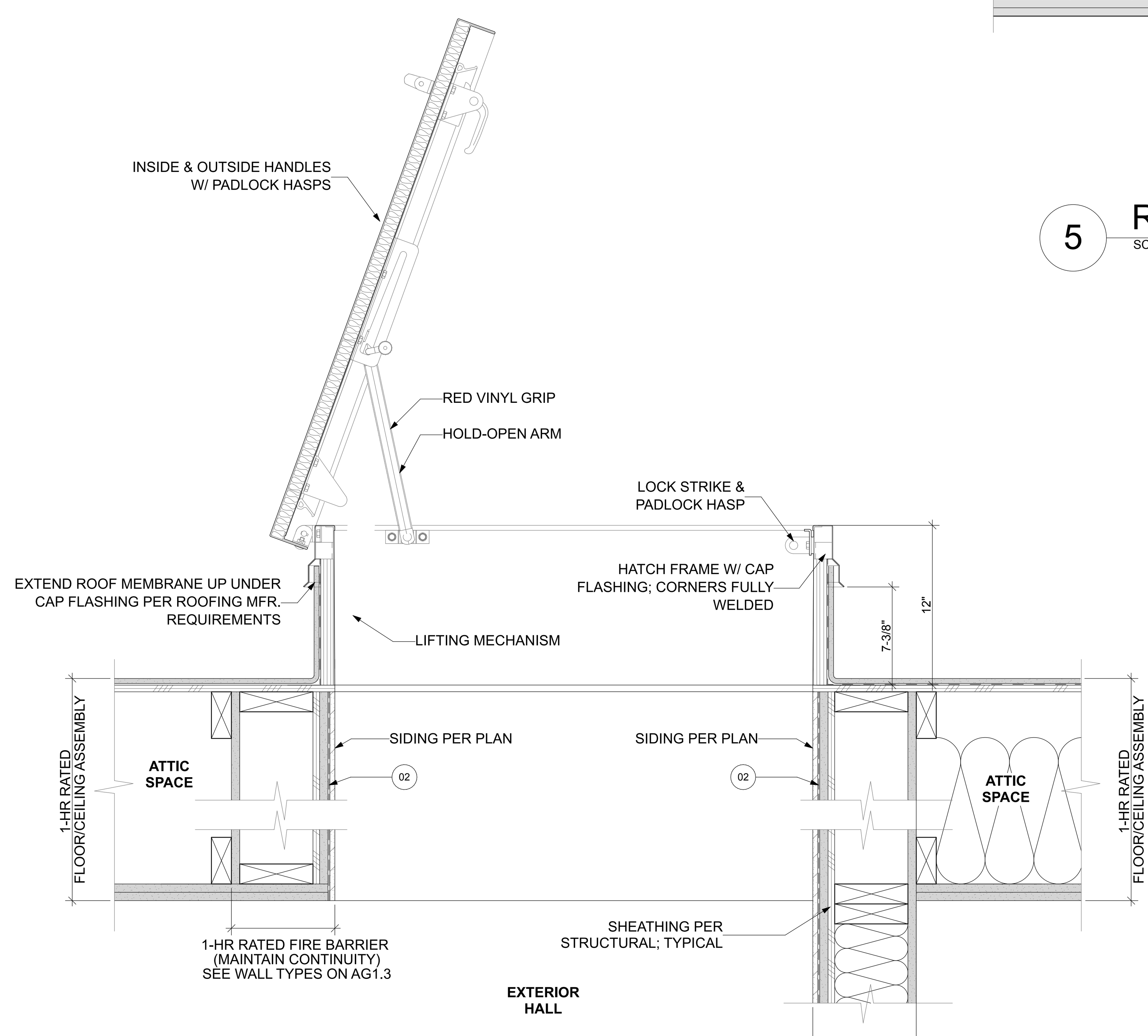

6 ROOF ACCESS DETAIL
SCALE: 1 1/2"= 1'-0"

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SHEET:	

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ROOF | CEILING DETAIL REFERENCE NOTES

01 WALL PER PLAN; COORDINATE FIRE RATING & SHEAR WALL REQUIREMENTS WITH CODE REQUIREMENTS AS NOTED ON SHEET A0.01

02 W.R.B. (TYVEK OR APPROVED SUBSTITUTE)

03 CONTINUOUS, SELF-ADHERED MEMBRANE (S.A.M.) ALONG TOP EDGE OF METAL FLASHING

04 NOT USED

05 ROOF FASCIA - 1.5" X 5.5" CEMENT FIBERBOARD TRIM

06 ROOF FASCIA - 1.5" X 7.25" CEMENT FIBERBOARD TRIM

07 2" ⌀ SCREENED VENTING AT BLOCKING; (3) PER TRUSS BAY (MIN.) FOR VENTILATION

08 PRIMED TO-BE-PAINTED, ALUMINUM GUTTER & DOWNSPOUT

09 22 GAUGE, SHEET METAL EDGE FLASHING, W/ HEMMED EDGE; AT EAVE, EXTEND UP UNDER ROOFING UNDERLAYMENT 6" MINIMUM; AT RAKE OVERLAP THE ROOFING UNDERLAYMENT 4" MINIMUM.

10 ASPHALT SHINGLE ROOFING OVER ROOFING UNDERLAYMENT

11 MAINTAIN 1" MINIMUM AIRSPACE

12 1/4-INCH WITH CAULK (ONE PART URETHANE SEALANT)

13 CEMENT FIBERBOARD PANEL OR LAP-SIDING SIDING - HARDIE PANEL OR APPROVED SUBSTITUTE

14 NOT USED

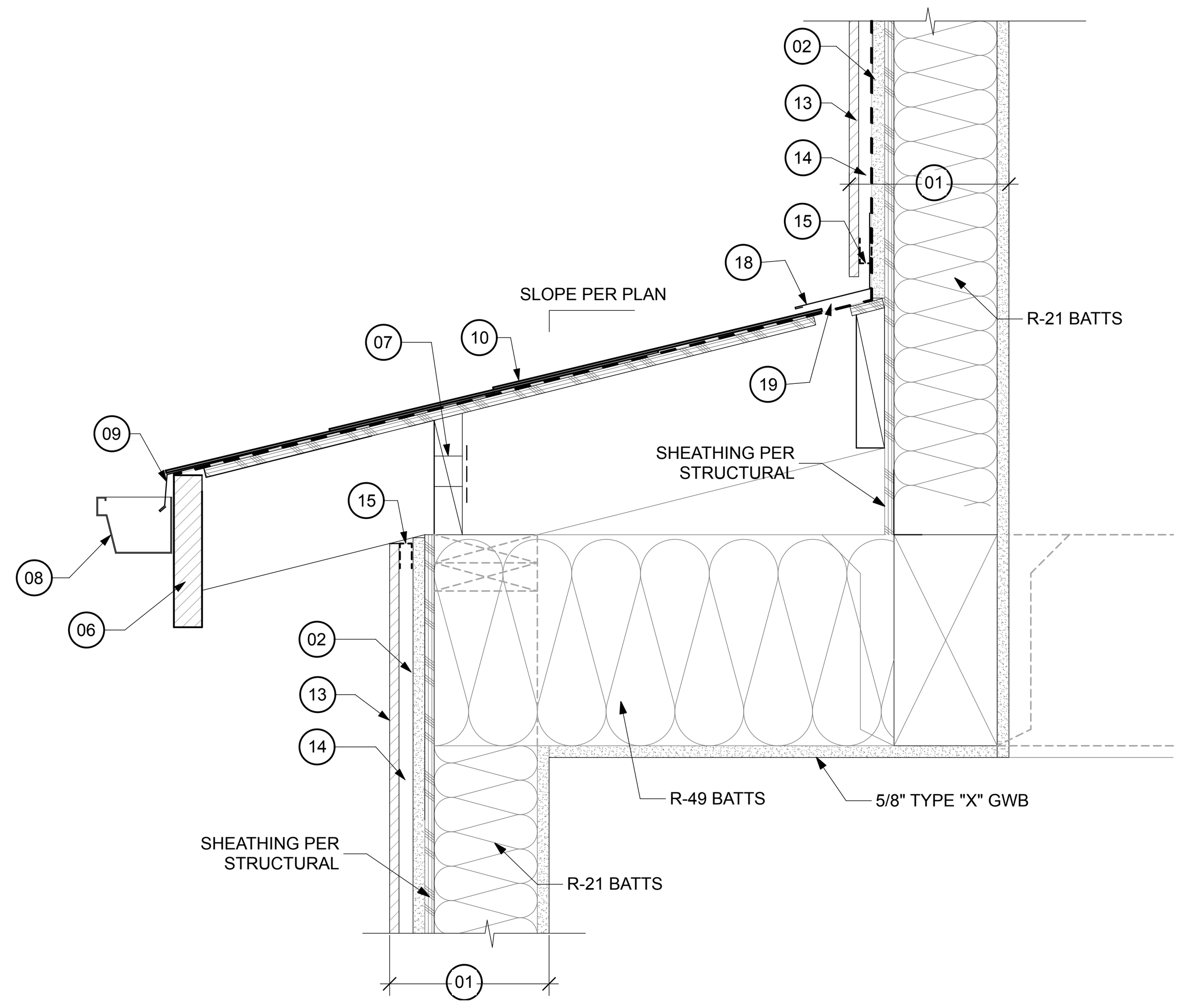
15 2" ⌀ SCREENED VENTING AT 8" O.C.

16 3/8" SEALANT JOINT WITH BACKER ROD.

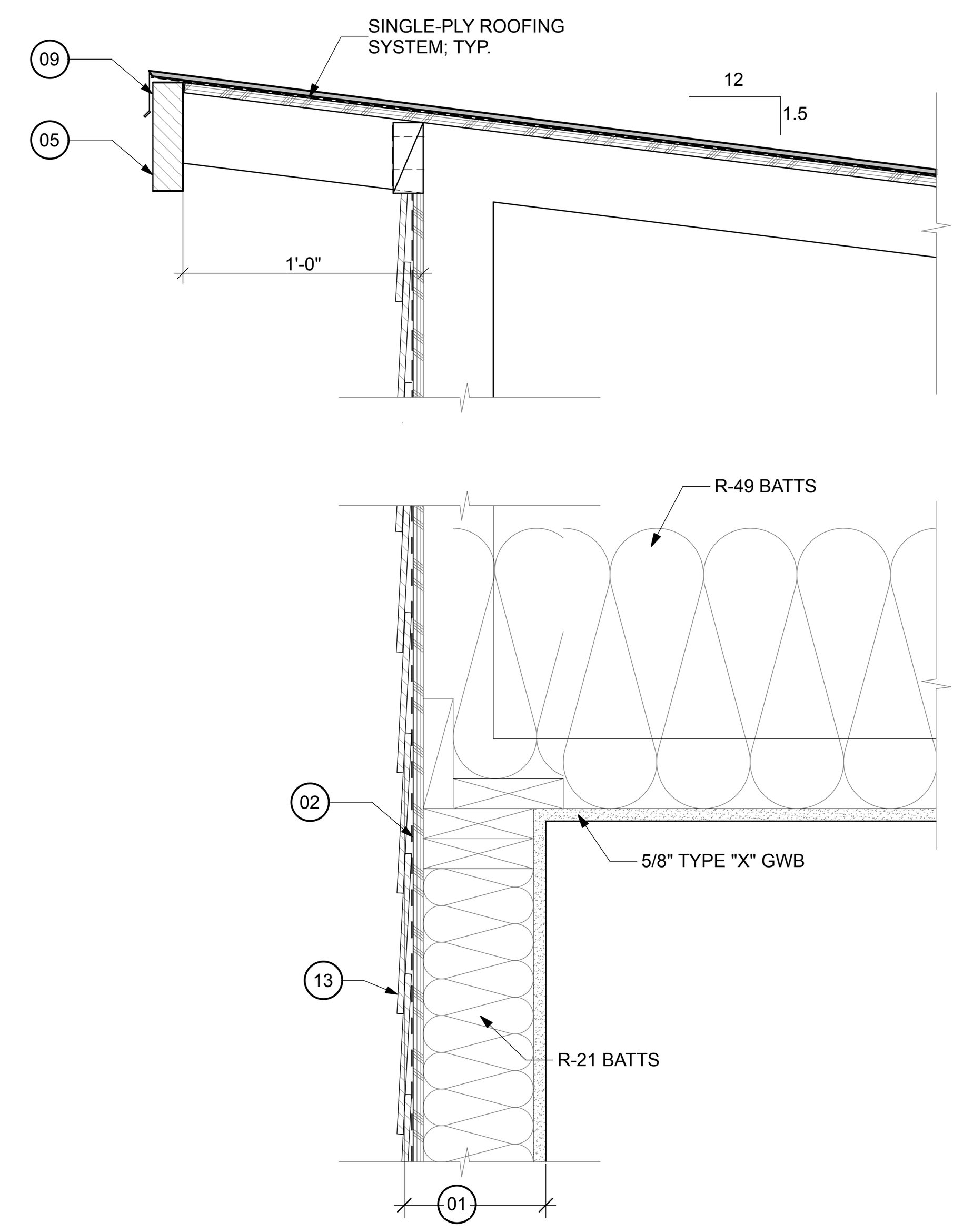
17 PRE-FINISHED ALUMINUM OR VINYL, CONTINUOUS STRIP VENT; SEE REFLECTED CEILING PLANS FOR LOCATIONS AND LENGTHS

18 PRE-FINISHED, SIDEWALL SHEET METAL FLASHING; EXTEND 6" MINIMUM UP UNDER W.R.B.

19 BAFFLED SIDEWALL VENT W/ 9 sq. in. PER LINEAR FOOT VENTILATION OR BAFFLED RIDGE VENT W/ 18 sq. in. PER LINEAR FOOT VENTILATION



8 ROOF DETAIL - 08
SCALE: 1 1/2"= 1'-0"



2 ROOF DETAIL - 02
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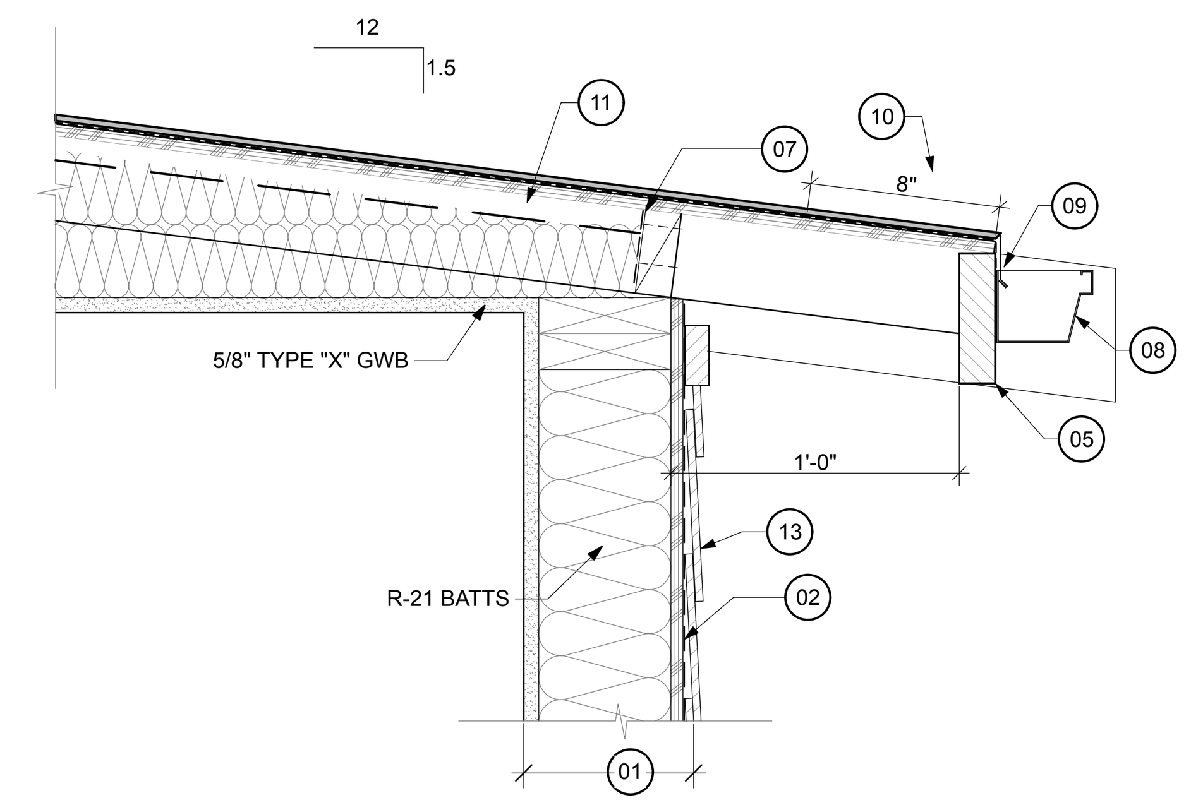

1 ROOF DETAIL - 01
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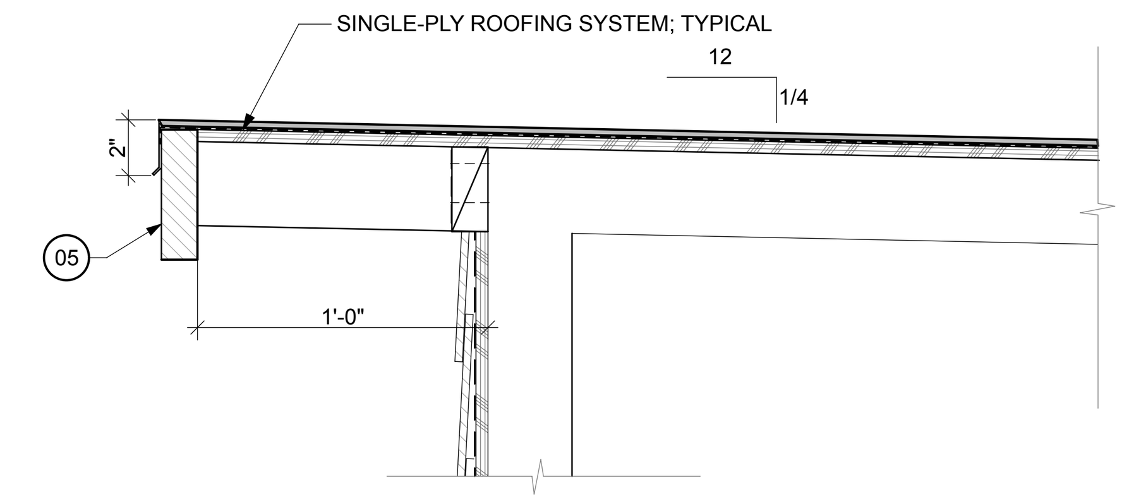

4 ROOF DETAIL - 04
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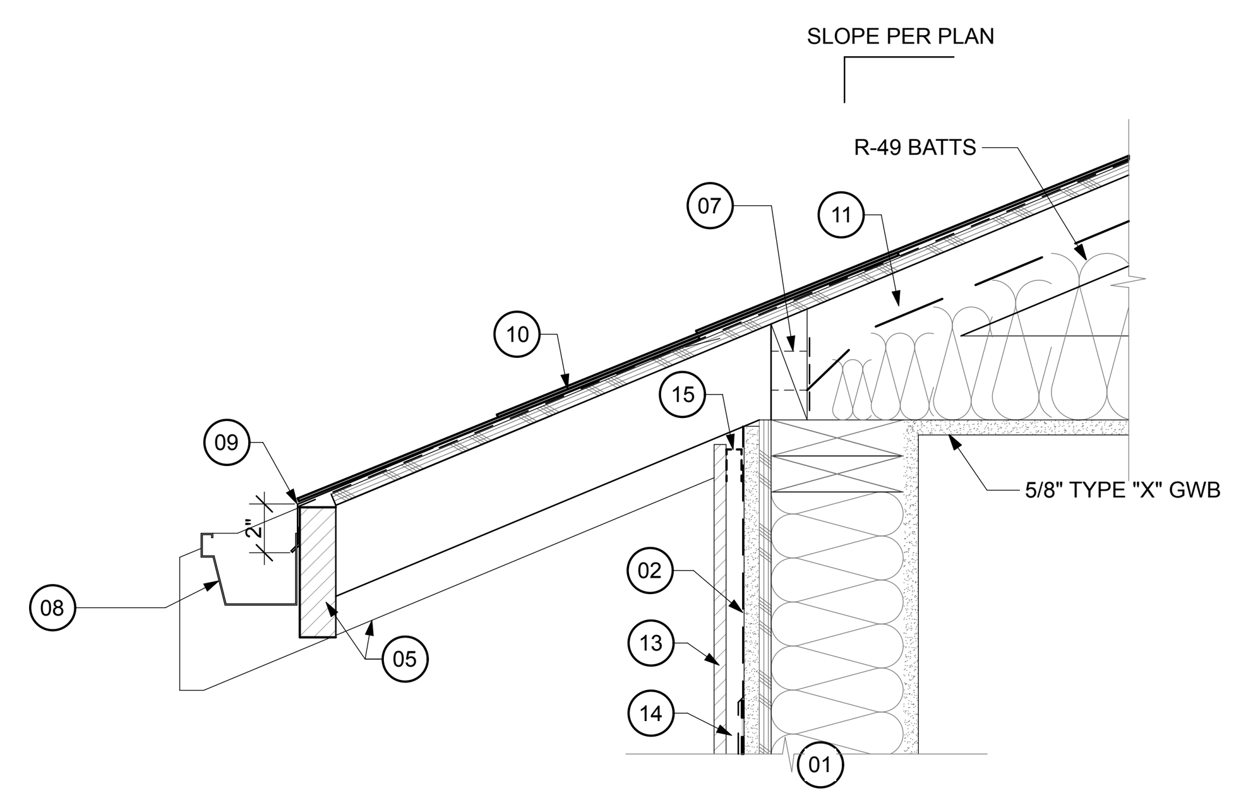

7 ROOF DETAIL - 07
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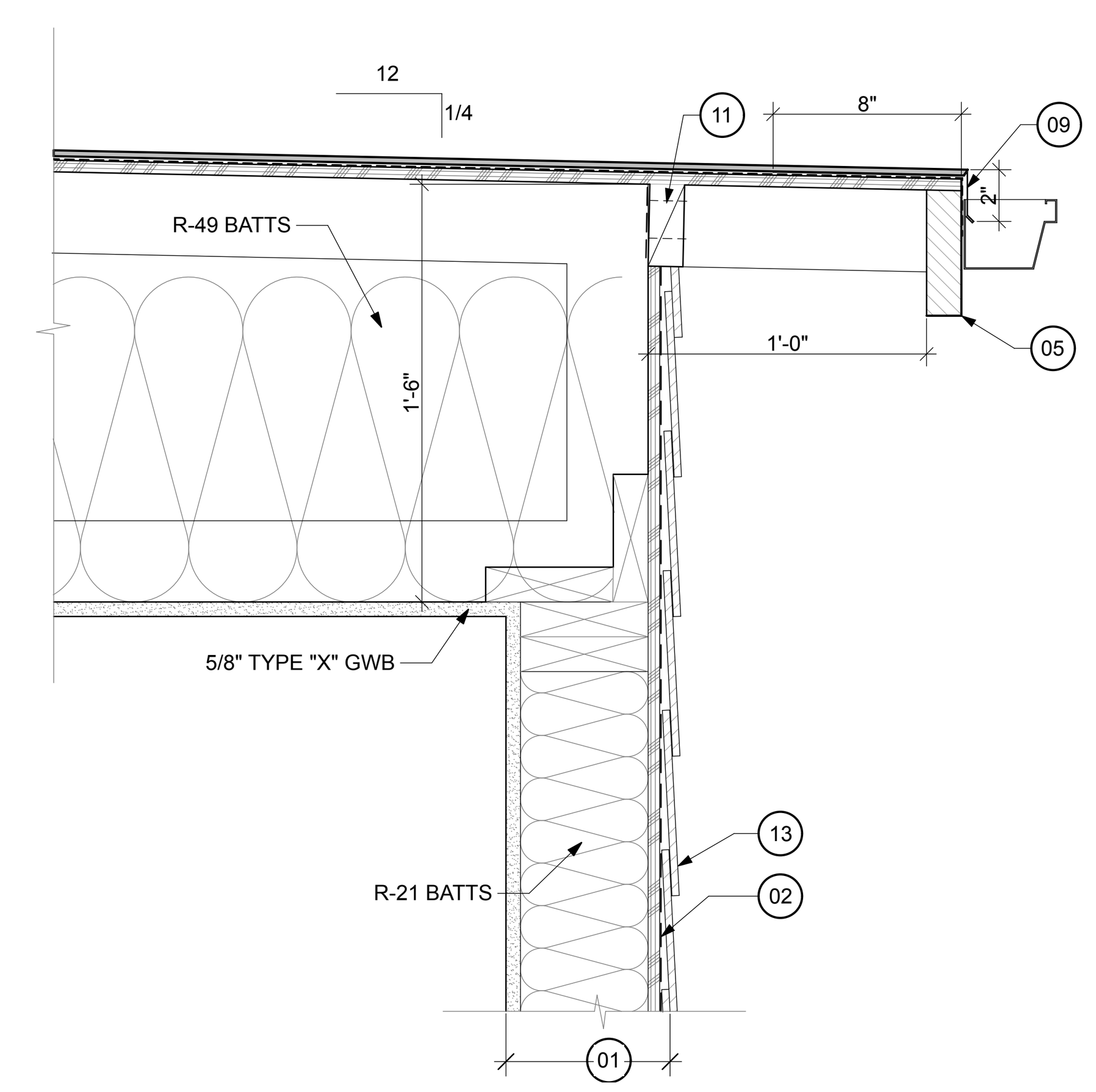

3 ROOF DETAIL - 03
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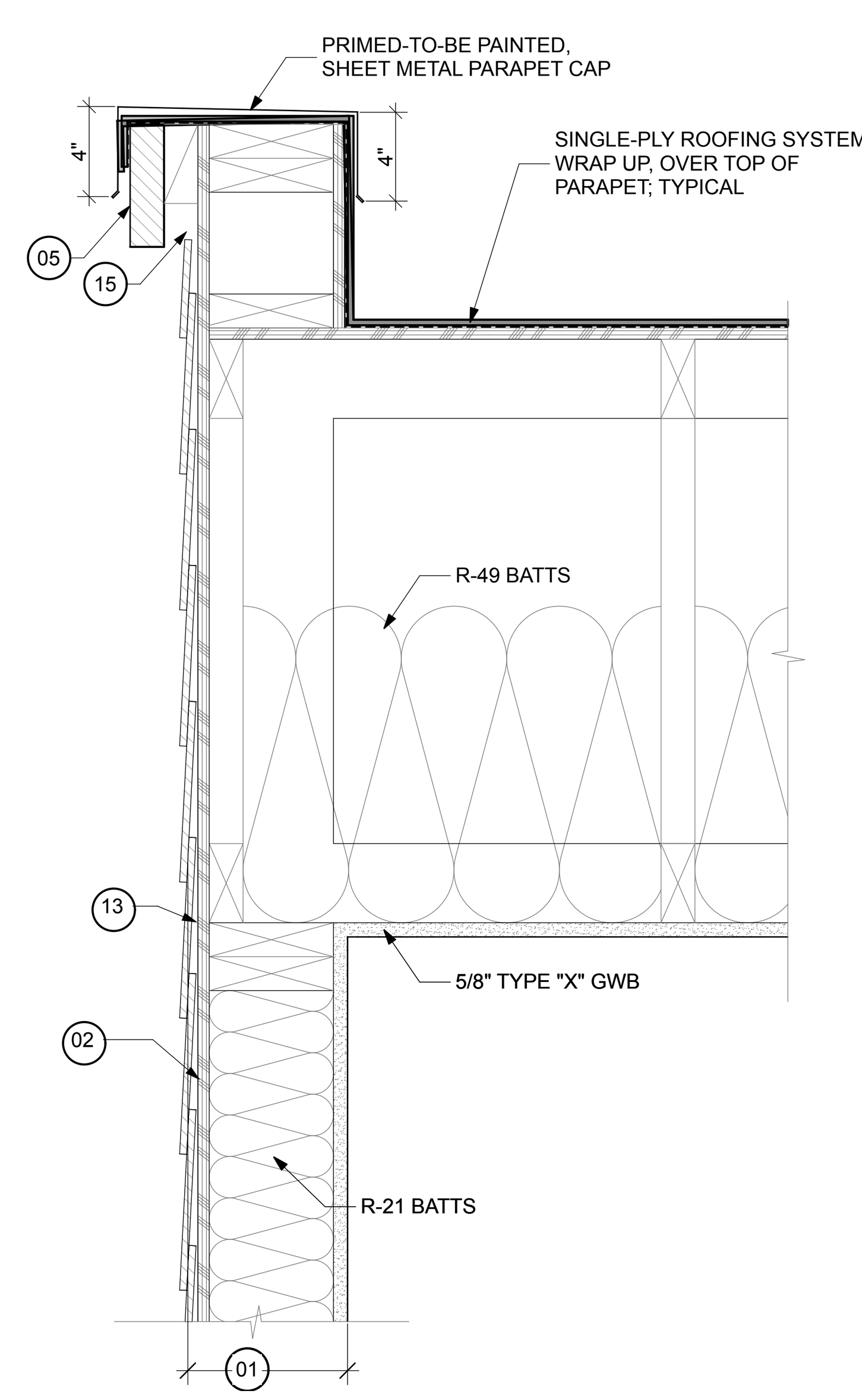

6 ROOF DETAIL - 06
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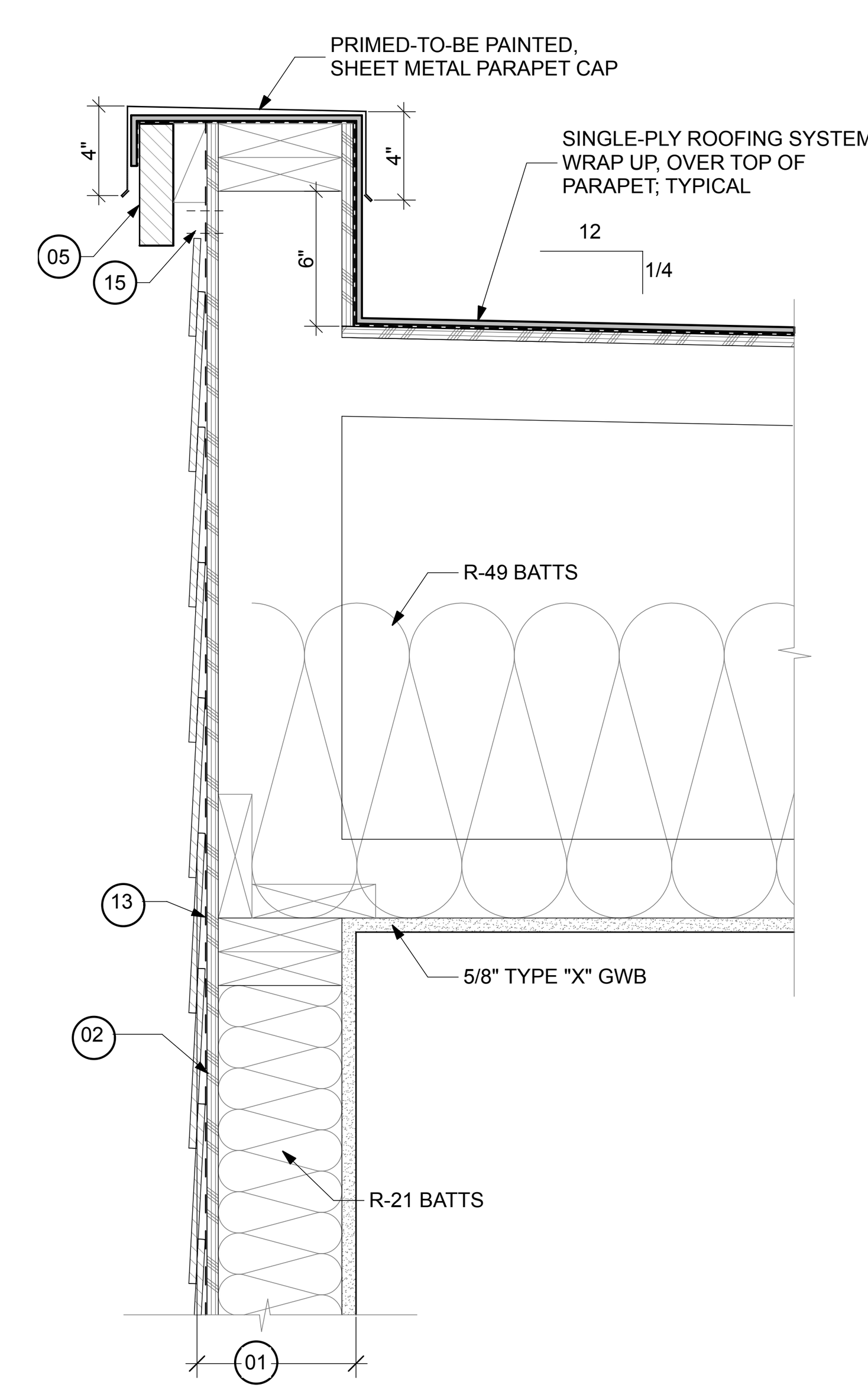


5 ROOF DETAIL - 05
SCALE: 1 1/2"= 1'-0"

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

AGENCY REVIEW | 24.03.11

REVISIONS

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	DETAILS
PROJECT #:	2016
SHEET:	A6.2

DETAIL REFERENCE NOTES

01 WALL PER PLAN

02 VAPOR PERMEABLE AIR BARRIER / WATER RESISTANT BARRIER FIELD MEMBRANE

03 AIR BARRIER / WATER RESISTANT BARRIER PRESTRIP WITH CONTINUOUS A.B. / W.R.B. SEALANT BETWEEN FIELD MEMBRANE (AS SHOWN)

04 FLOOR / CEILING ASSEMBLY PER PLAN

05 PRE-FINISHED ALUMINUM OR VINYL, CONTINUOUS STRIP VENT; SEE REFLECTED CEILING PLANS FOR LOCATIONS AND LENGTHS

06 1-1/4" x 5-1/2" CEMENT FIBERBOARD TRIM AROUND OPENING - HARDIE TRIM OR APPROVED SUBSTITUTE; NOTE THAT 4" WIDE MINIMUM TRIM REQUIRED AT ALL WINDOWS U.N.O. PER TMC.

07 NOT USED

08 VINYL WINDOW OR SLIDING DOOR FRAME WITHOUT FLANGE AND ON 1/4-INCH INTERMITTENT SHIMS FOR DRAINAGE.

09 CEMENT FIBERBOARD CLADDING PER ELEVATIONS; LAP W/ 7-1/4" EXPOSURE **OR** PANEL WITH REVEAL ACCESSORIES - HARDIE PLANK OR APPROVED SUBSTITUTE

10 NOT USED

11 CORRUGATED, PRE-FINISHED METAL SIDING; EXPOSED FASTENERS WITH NEOPRENE GASKETS; NU-WAVE BY AEPSPAN

12 NOT USED

13 FLEXIBLE, SELF-ADHERED A.B. / W.R.B. SILL MEMBRANE; PER INSTALLATION INSTRUCTIONS ON SHEET A6.4.

14 CONT. BACK DAM ANGLE, MIN. 1-INCH TALL WITH VINYL ASSEMBLY FASTENED THROUGH ANGLE PER MFR. RECOMMENDATIONS.

15 ONE PART URETHANE SEALANT OVER BACKER ROD; FOAM BACKER ROD W/ BOND BREAKER JACKET - OVERSIZE ROD 25% LARGER THAN WIDTH OF JOINT; CLEAN SUBSTRATE USING A "TWO CLOTH" METHOD PER SEALANT MANUFACTURER - PRIME PER MFR ONLY WHERE REQUIRED.

16 CONTINUOUS AIR BARRIER SEALANT OVER BACKER ROD (WHEN SHOWN) TIED TO CONTINUOUS SEAL AT WINDOW PERIMETER.

17 1/4-INCH WITH PAINTABLE CAULK

18 NOT USED

19 NOT USED

20 PRIMED COUNTER-FLASHING ACCESSORY ABOVE TRIM or RIP SLOPE IN TOP OF TRIM AND 1/4-INCH CAULK AT JOINT; PROVIDE 1/4-INCH PER FOOT SLOPE.

21 PRE-FINISHED SHEET METAL SILL FLASHING W/ 1/2-INCH HEMMED DRIP EDGE WITH END DAMNS INTO BED JOINT AT JAMB VENEER TRIM BEYOND

22 PRIMED SHEET METAL HEAD FLASHING W/ 1/2" HEMMED DRIP EDGE & END DAMS. EXTEND 6-INCHES MINIMUM UP UNDER THE A.B. / W.R.B. AND OVERLAP JAMB TRIM

23 PRE-FINISHED SHEET METAL JAMB FLASHING TRIM

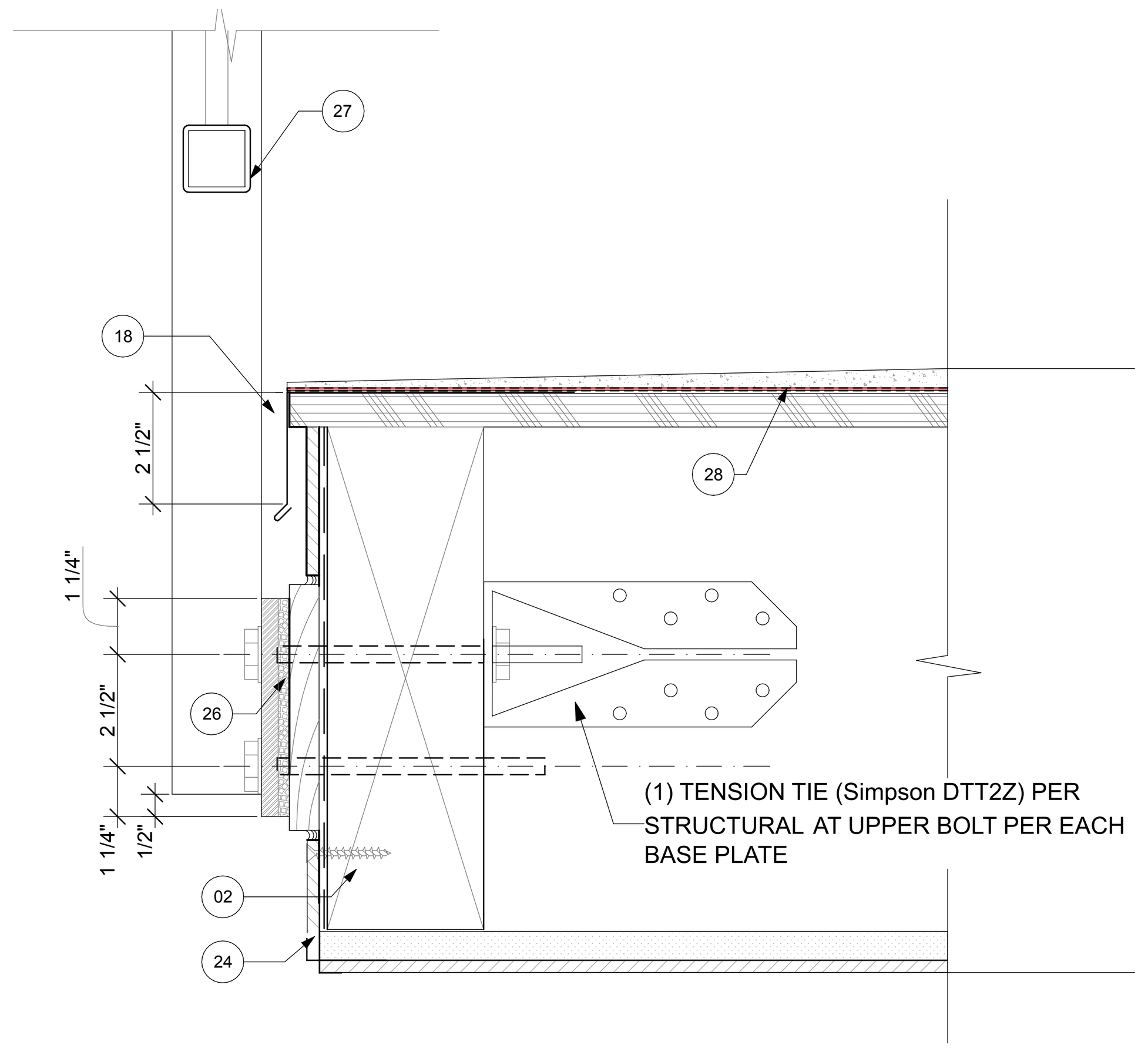
24 EXTRUDED ALUMINUM HORIZONTAL TRIM ACCESSORY (BY EXTREMETRIM OR APPROVED); PAINT PER MFR'S RECOMMENDATIONS; APPROXIMATE CONFIGURATION AS SHOWN.

25 5 x 5 x 5/16" x 5" TALL GALV. STEEL ANGLE CLIP; (2) AT EACH SIDE OF GUARDRAIL ASSEMBLY; NOTE THAT THE ATTACHMENT TO THE WALL STRUCTURE SHALL BE CONCEALED BEHIND CLADDING.

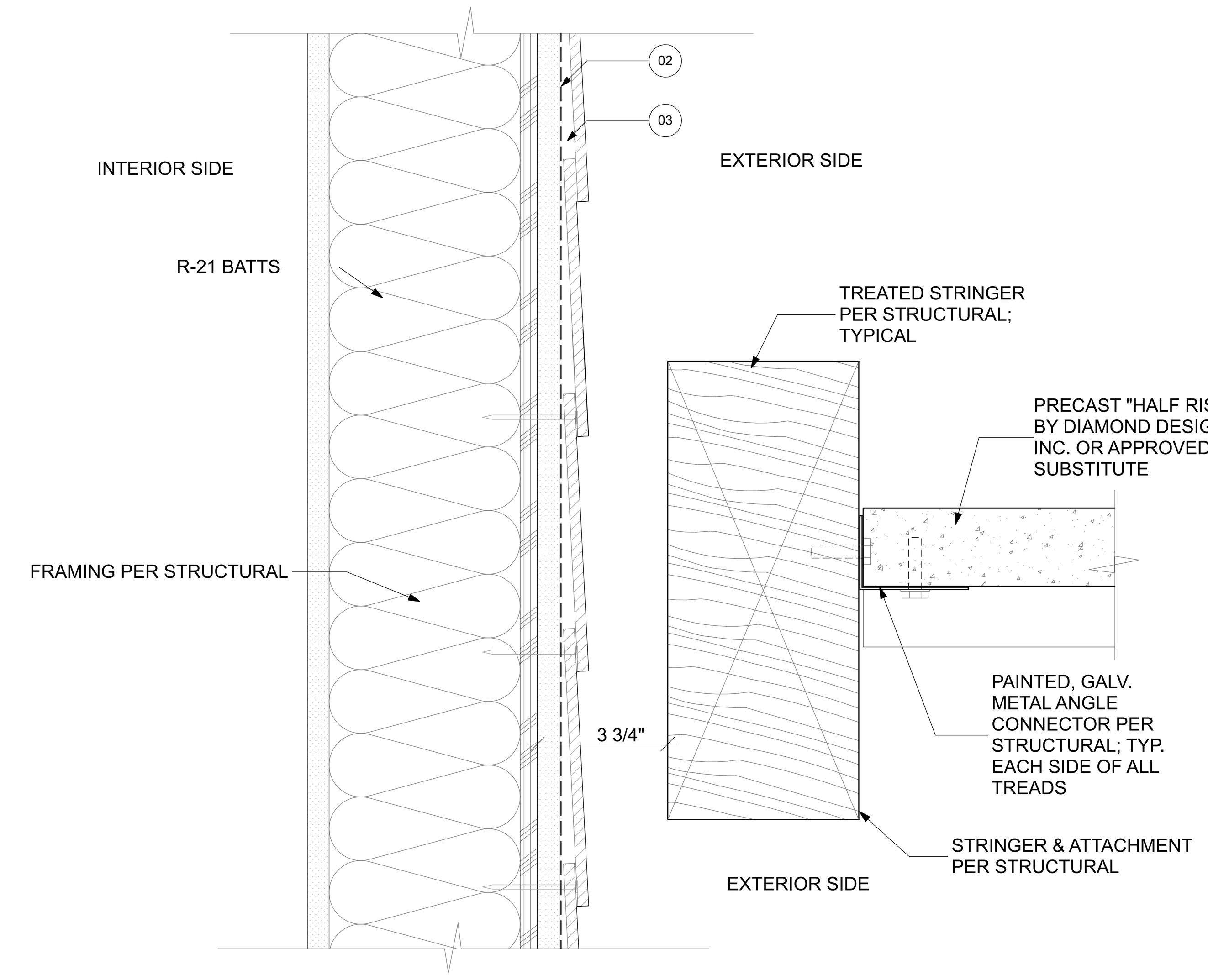
26 1/4" THICK NEOPRENE PAD BETWEEN VERTICAL ALUMINUM GUARDRAIL POST AND GALV. STEEL CLIP.

27 PRE-FINISHED ALUMINUM GUARDRAIL ASSEMBLY; FACE-MOUNT ATTACHMENT PER STRUCTURAL

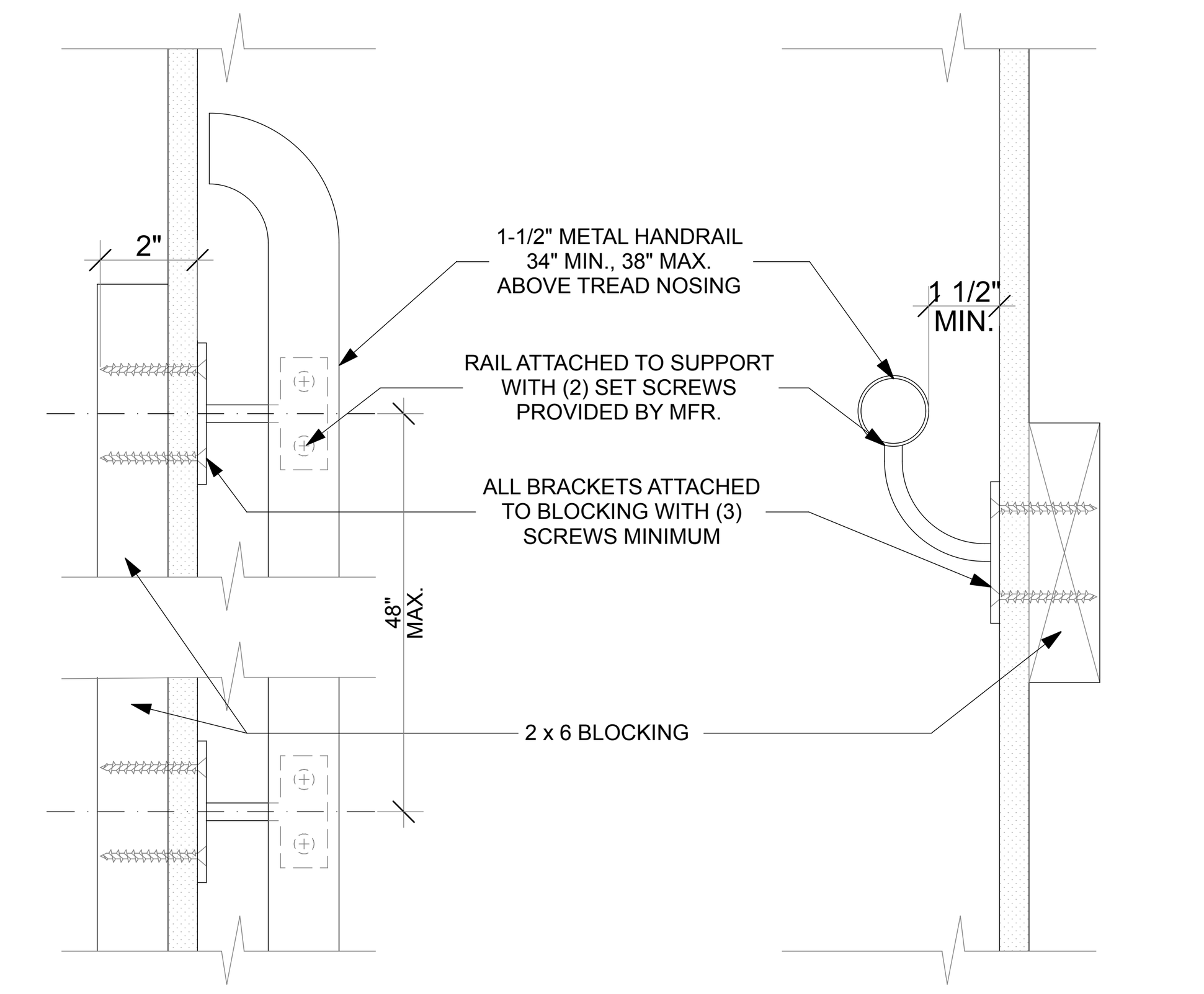
28 FLEXIBLE, SELF-ADHERED A.B. / W.R.B. MEMBRANE; USE 12-INCH WIDE GRACE VYCOR SILL PAN/FLASHING W/ END DAMS. WRAP UP SIDEWALL 4" MIN. ABOVE TOP



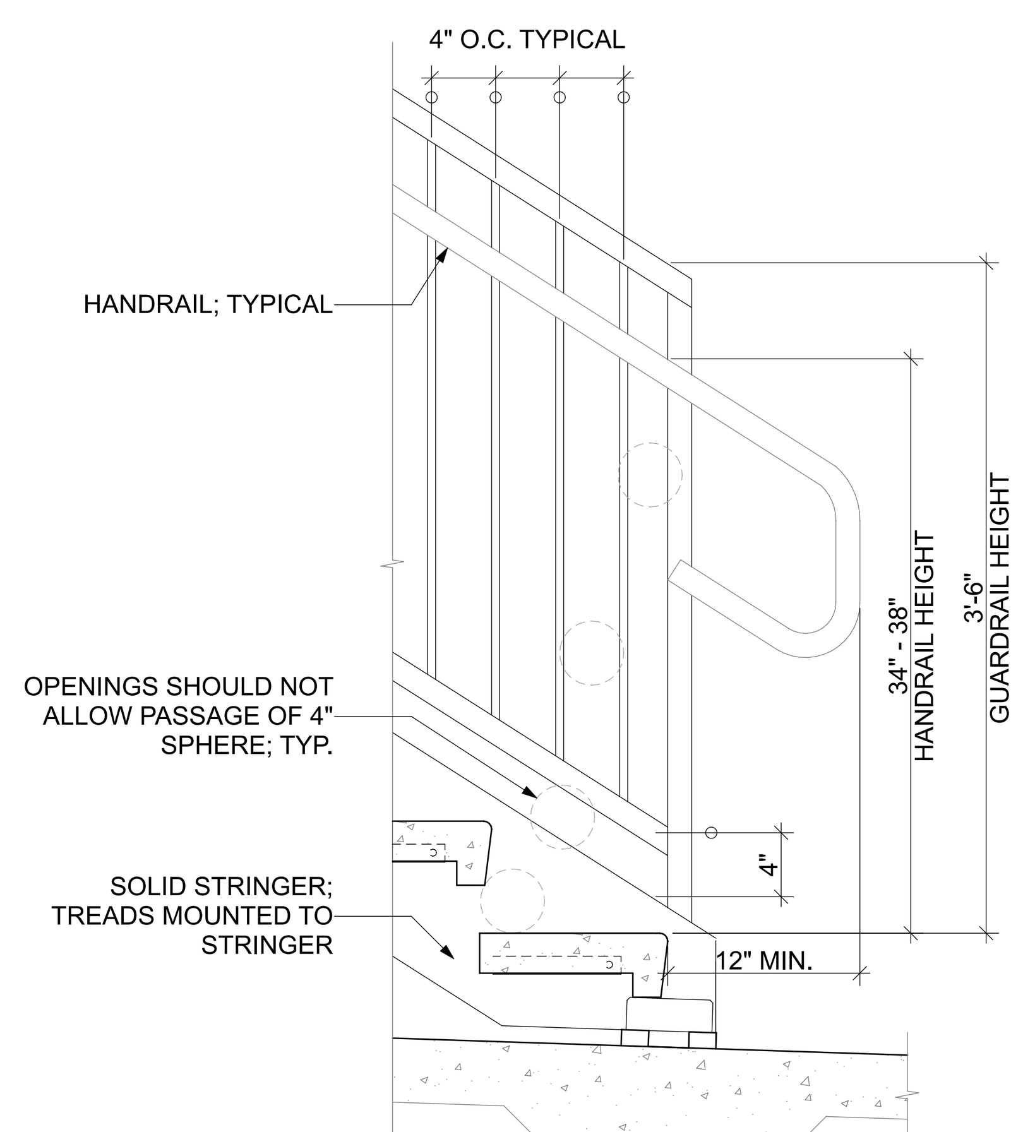
3 GUARDRAIL MOUNT DETAIL
SCALE: 3" = 1'-0"



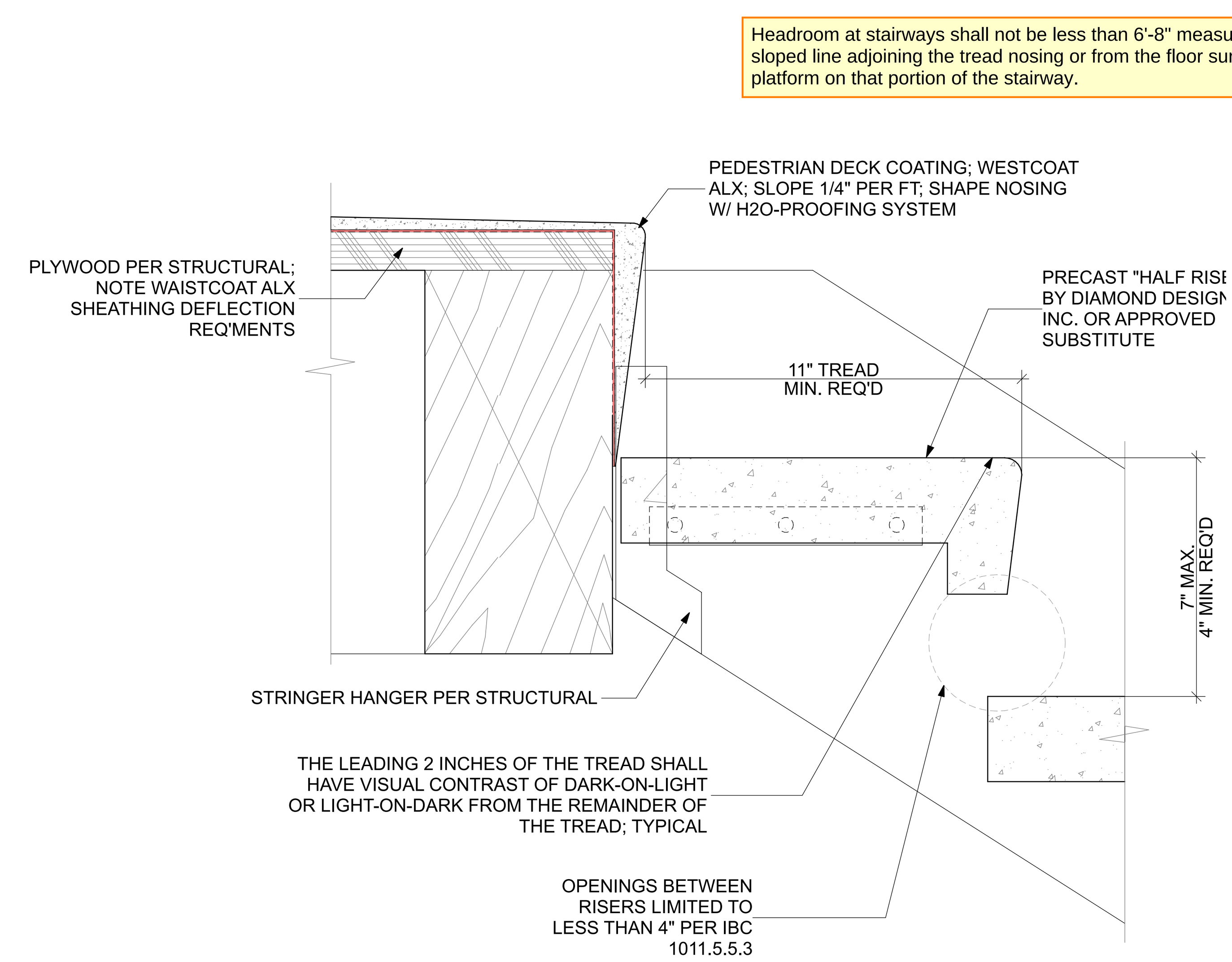
2 STAIR DETAIL
SCALE: 3" = 1'-0"



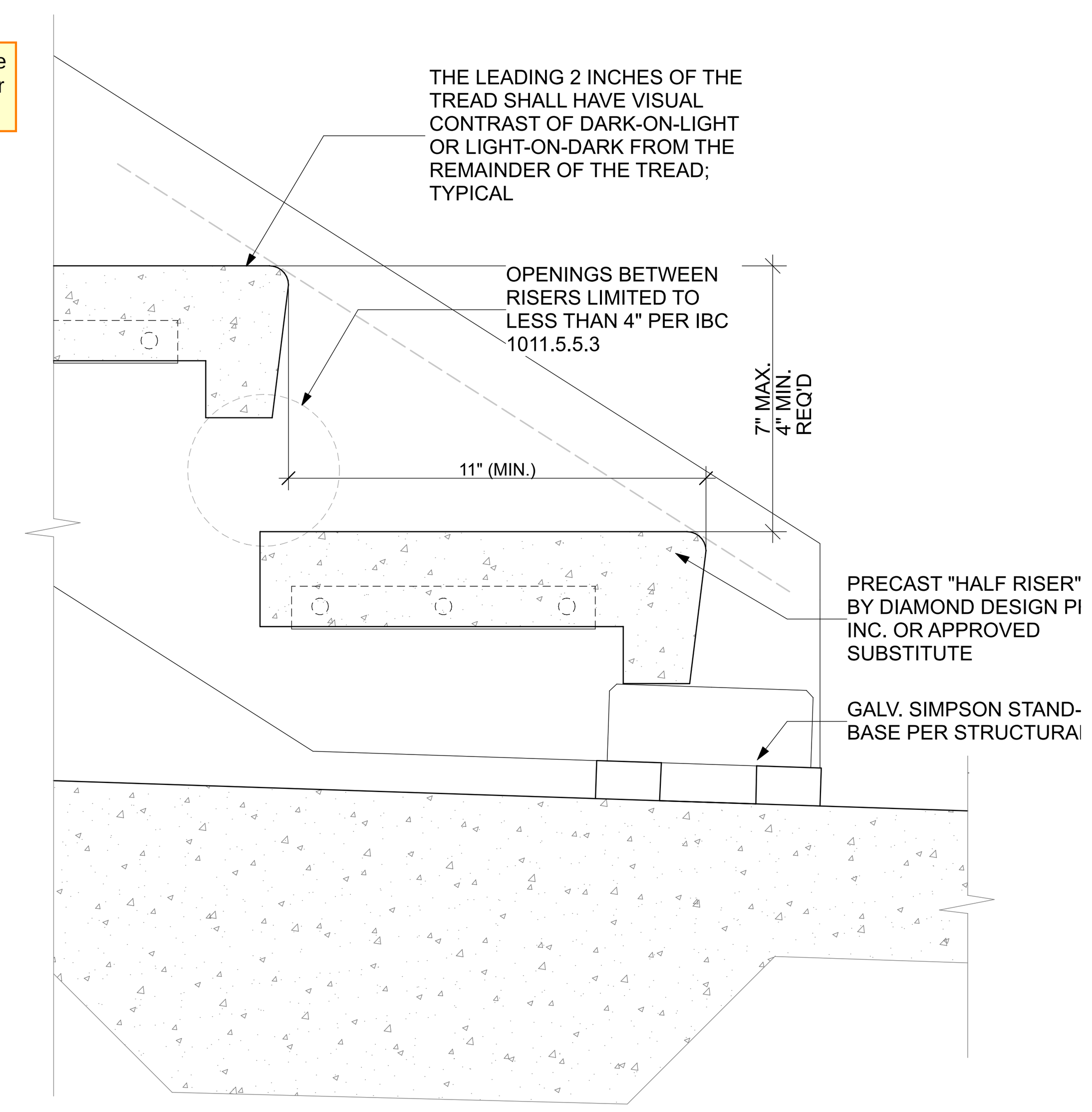
1 TYPICAL HANDRAIL PLAN & SECTION
SCALE: 3" = 1'-0"



6 GUARDRAIL AT STAIR
SCALE: 1" = 1'-0"



5 STAIR DETAIL
SCALE: 3" = 1'-0"



4 STAIR DETAIL
SCALE: 3" = 1'-0"

S9

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REUSE OF DOCUMENTS
THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS INSTRUMENTS OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF SYNTHESIS 9, LLC AND ARE NOT TO BE USED OR REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN AUTHORIZATION OF SYNTHESIS 9, LLC.

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

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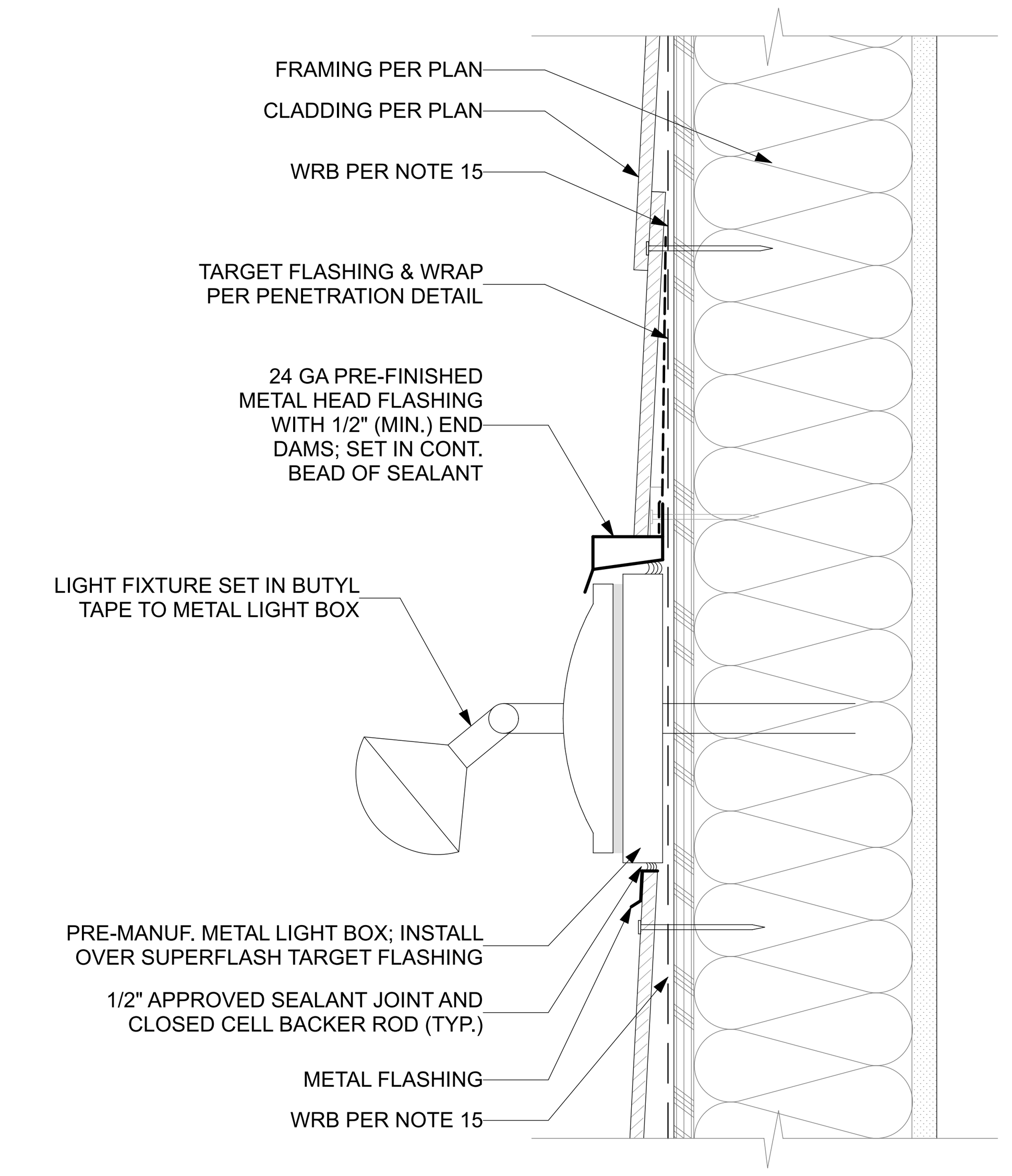
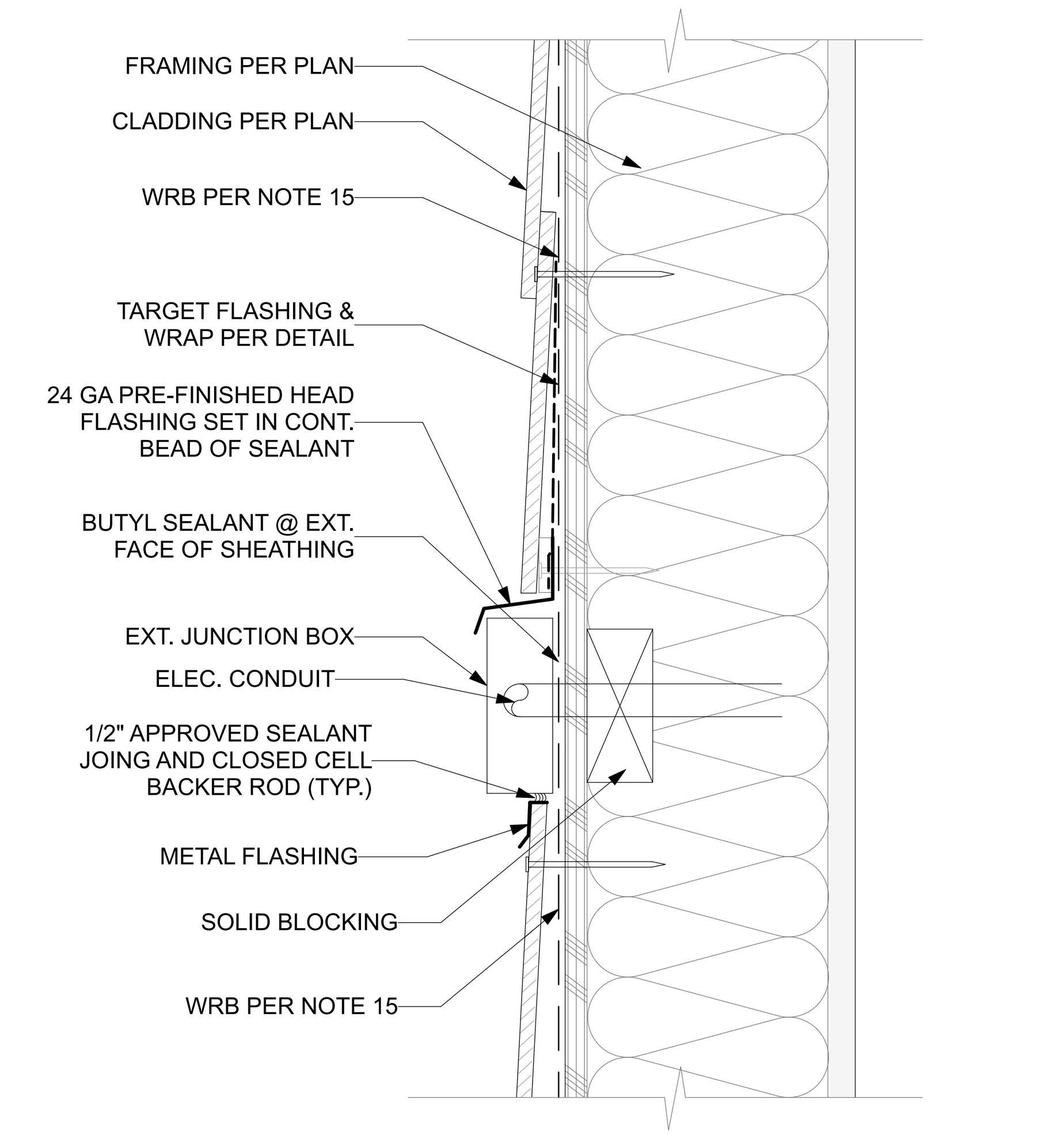
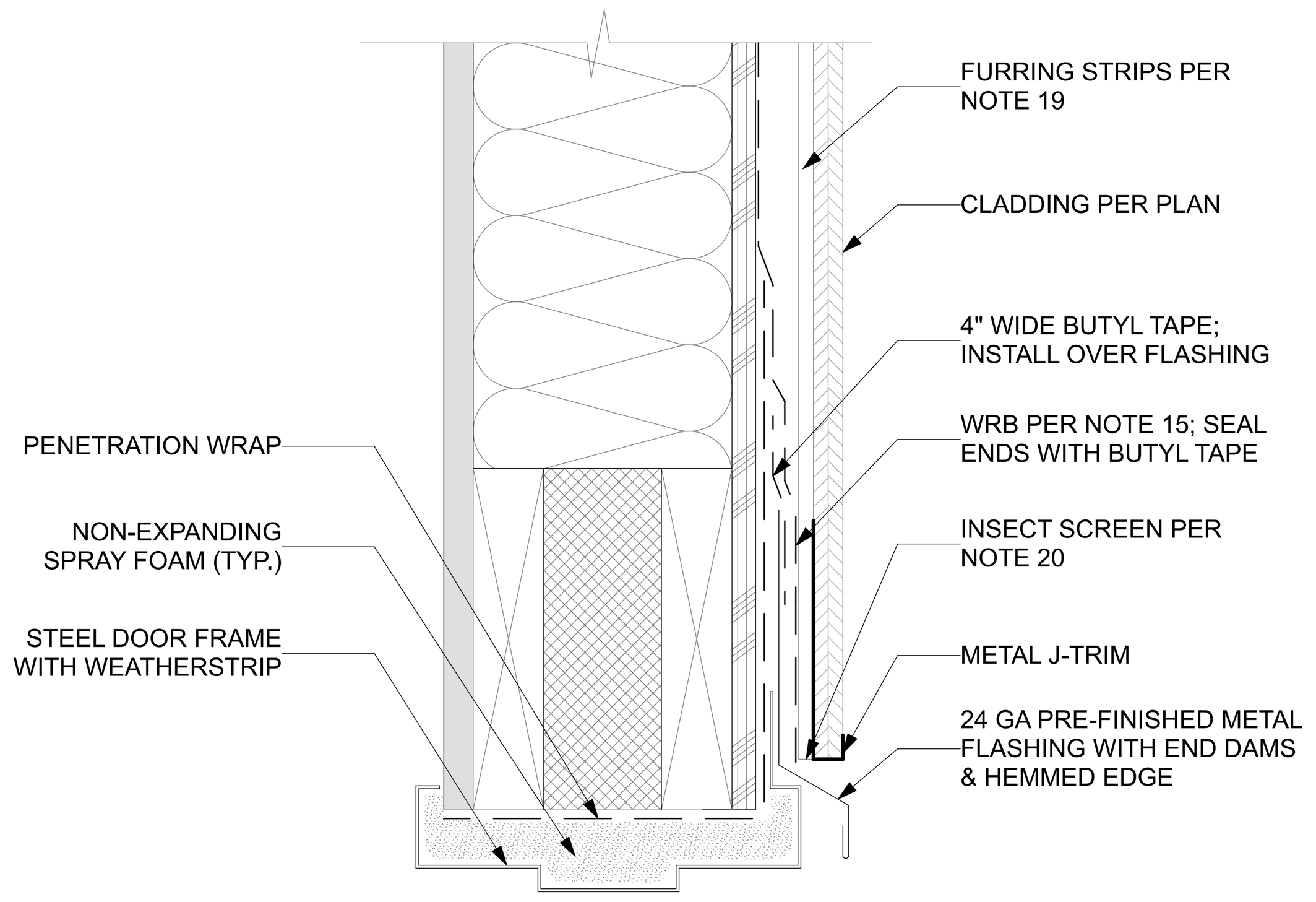
A6.3



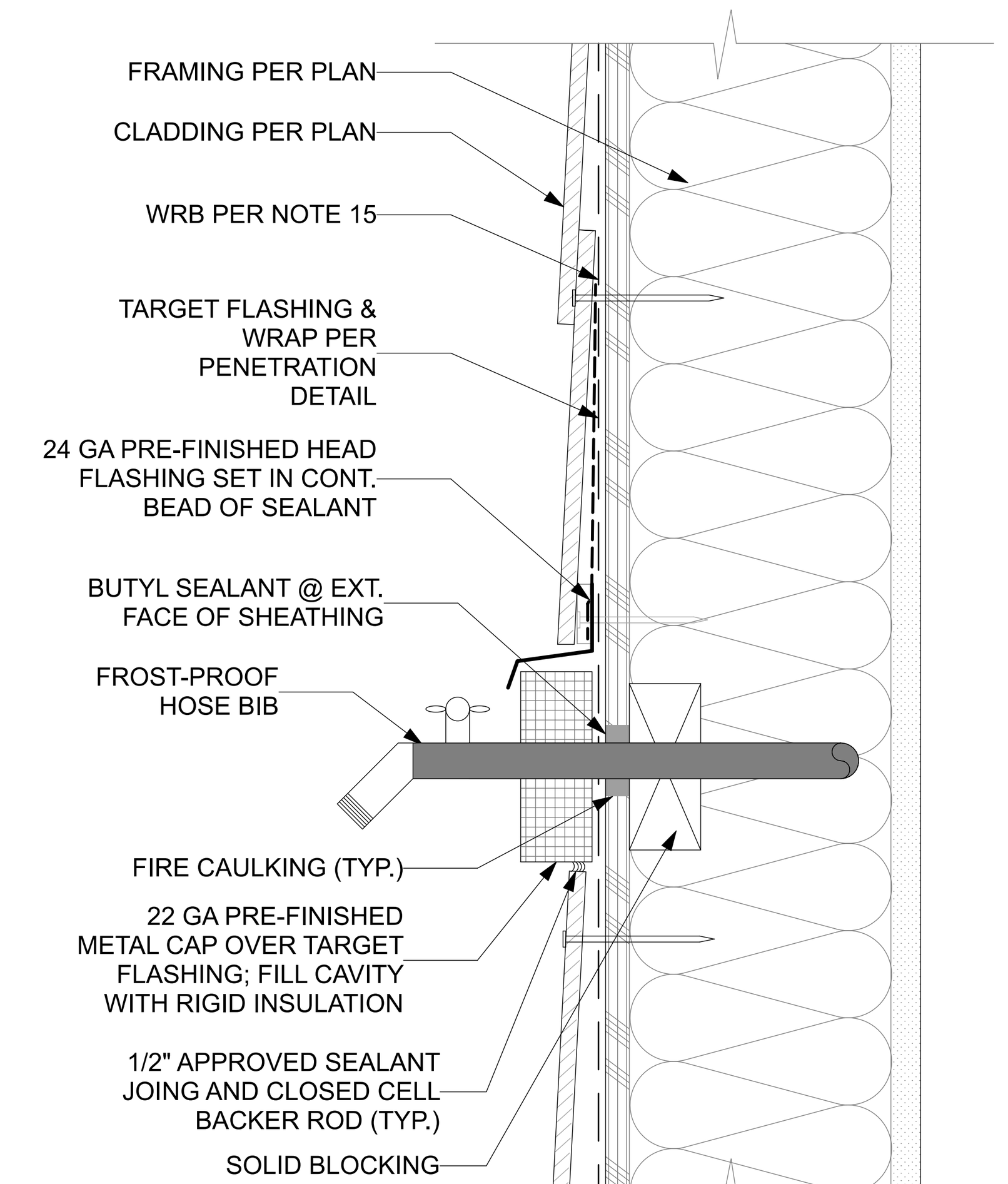
3 FLASHING @ LIGHT FIXTURE
SCALE: 3" = 1'-0"



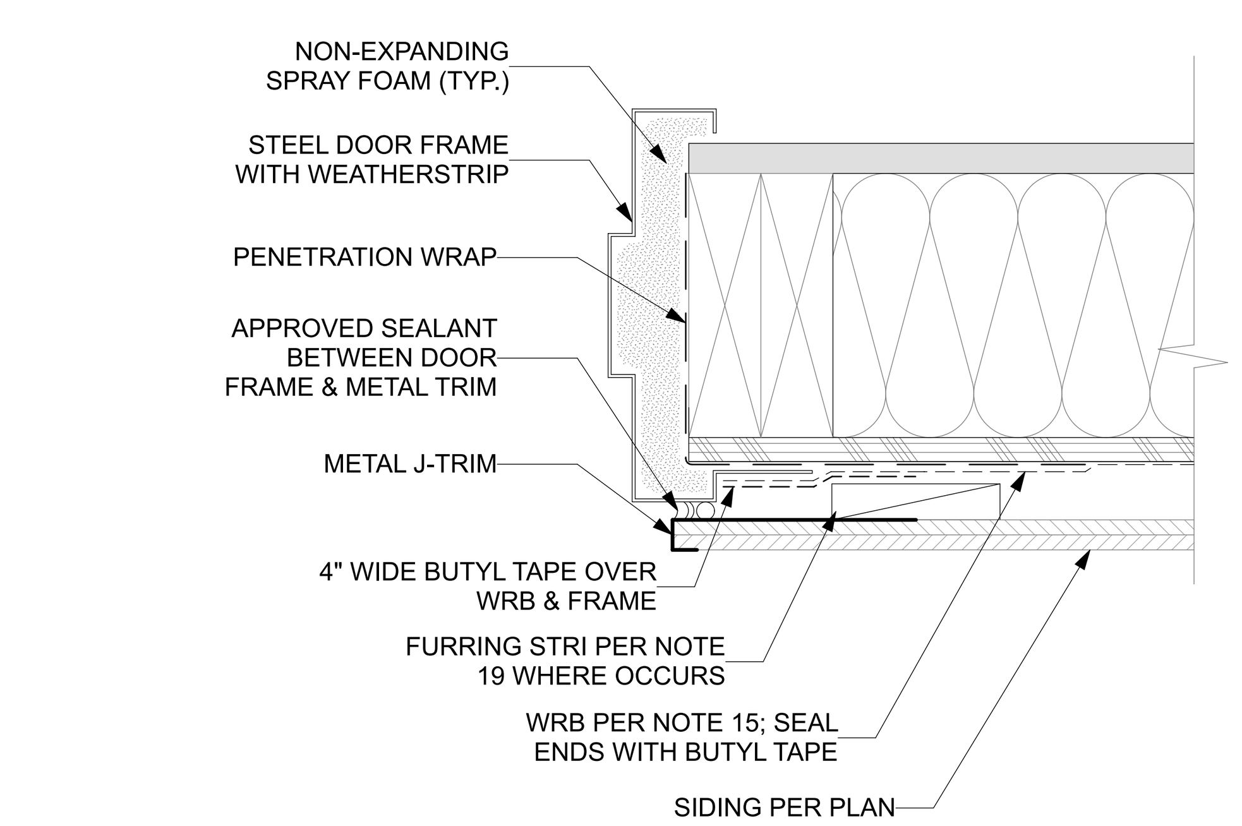
2 JUNCTION BOX PENETRATION
SCALE: 3" = 1'-0"



5 DOOR HEAD AT EXTERIOR WALL
SCALE: 3" = 1'-0"



4 FLASHING AT HOSE BIB
SCALE: 3" = 1'-0"



6 DOOR JAMB AT EXTERIOR WALL
SCALE: 3" = 1'-0"

GENERAL WATERPROOFING NOTES:

1. CONTRACTOR SHALL FOLLOW SYNTHESIS 9, LLC SPECIFIED WATERPROOFING SYSTEMS AND INCORPORATION THEREOF. CONTRACTOR SHALL VERIFY THE MATERIAL COMPATIBILITY OF ALL WATERPROOFING COMPONENTS, SUCH AS SEALANTS, CLOSED-CELL BAKER ROD, SELF-ADHERING MEMBRANE, ETC., UTILIZED IN CONJUNCTION WITH OTHER WATERPROOFING OR BUILDING SYSTEM COMPONENTS, SHOULD THE CONTRACTOR DECIDE TO REQUEST MATERIAL SUBSTITUTION FROM THOSE SPECIFIED BY SYNTHESIS 9, LLC.

2. PRIOR TO PURCHASING AND ERECTION, THE CONTRACTOR SHALL PROVIDE SYNTHESIS 9, LLC FOR THEIR APPROVAL, SHOP DRAWINGS AND SPECS FOR ALL METAL FLASHINGS AND COUNTER-FLASHINGS IN AN ATTEMPT TO DEMONSTRATE THEIR UNDERSTANDING OF THE DETAILS.

3. CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY CONTROL AND ASSURANCE OF THE WORK PERFORMED BY THE CONTRACTOR, ITS AGENTS, EMPLOYEES, OR ANY SUBCONTRACTOR EMPLOYED OR OTHERWISE PAID BY THE CONTRACTOR. CONTRACTOR IS FURTHER RESPONSIBLE FOR PROPER INTEGRATION OF BUILDING COMPONENTS TO PROVIDE A WEATHER-RESISTIVE BUILDING SYSTEM AS INTENDED BY THE DETAILS PROVIDED BY SYNTHESIS 9, LLC.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF WORK AND SHALL CARRY OUT ALL WORK IN COMPLIANCE WITH THE BEST INDUSTRY STANDARDS AND IN COMPLIANCE WITH PUBLISHED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND STANDARDS REFERENCED IN THE SPECIFICATIONS.

5. MOCKUP OF ALL BUILDING ENVELOPE COMPONENTS SUCH AS WINDOWS, DOORS, WRB, CLADDING, AND PENETRATION INSTALLATIONS MUST BE CARRIED OUT PRIOR TO COMMENCEMENT OF EXTERIOR ENVELOPE WORK.

6. SYNTHESIS 9, LLC DETAILS MAY NOT BE MODIFIED, REVISED, OR ELIMINATED BY THE CONTRACTOR WITHOUT PRIOR WRITTEN CONSENT OF SYNTHESIS 9, LLC.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY AND SCHEDULE SYNTHESIS 9, LLC PERSONNEL FOR INSPECTION AND APPROVAL OF THE WORK PERFORMED WITH RESPECT TO EACH OF THE WATERPROOFING COMPONENTS.

8. UNLESS OTHERWISE NOTED, ALL EXPOSED METAL FLASHINGS AND COUNTER-FLASHINGS SHALL BE MADE OF MINIMUM 24 GA PRE-FINISHED SHEET METAL. METAL FLASHING SHALL CONFORM TO SMACNA, NRCA, BUILDING CODE AND OTHER RELEVANT CODES AND INDUSTRY STANDARDS. THE VERTICAL LEGS OF SAID FLASHINGS SHALL BE MINIMUM SIX INCHES LONG. THE JOINTS OF PRE-FINISHED METAL FLASHINGS SHALL BE BENT IN PLACE SUCH AS TO PREVENT MOISTURE MIGRATION PAST THE END DAMS. ALL CONCEALED METAL FLASHING AND COUNTER-FLASHING PIECES SHALL BE 24 GA G-90 GALVANIZED SHEET METAL OR SCHEDULE 307 STAINLESS STEEL. JOINTS OF ALL FLASHING PIECES OTHER THAN PRE-FINISHED METAL MUST BE WELDED OR SOLDERED. ALL METAL FLASHING SYSTEMS SHALL BE MANUFACTURED & INSTALLED IN ACCORDANCE WITH THE ARCHITECTURAL SHEET METAL MANUAL PUBLISHED BY SMACNA. UNLESS OTHERWISE NOTED, ALL METAL HEAD FLASHINGS SHALL HAVE A MINIMUM 1/2"-TALL END-DAMS. UNLESS OTHERWISE NOTED, ALL SILL PAN FLASHINGS SHALL HAVE END- AND BACK-DAMS. UNLESS OTHERWISE NOTED, ALL FLASHINGS AND COUNTER FLASHINGS (METAL AND OTHERWISE) SHALL BE SET IN A CONTINUOUS BEAD OF NON-SKINNING BUTYL SEALANT OR APPROVED EQUAL.

9. UNLESS OTHERWISE NOTED, ENGINEERED SEALANT JOINTS SHALL BE 1/2-INCH MINIMUM WIDE BY 1/4-INCH MINIMUM DEEP IN AN ATTEMPT TO MAINTAIN A 2:1 RATIO. SEALANTS SHALL BE ONE-PART SILICONE SEALANT & SINGLE-PART POLYURETHANE FOR SURFACE APPLICATION AND NON-SKINNING BUTYL FOR INSTALLATION BETWEEN CONCEALED MATERIAL INTERFACES. ACCEPTABLE SEALANTS INCLUDE BUT NOT LIMITED TO DOW CORNING 790 AND 795 SILICONE BUILDING SEALANT, SIKAFLEX 15 LM, AND SONOLASTIC 150 VLM.

10. WEATHER-RESISTIVE BARRIER (WRB) SHALL BE COMPRISED OF (1) LAYER OF HIGH-PERFORMANCE VAPROSHIELD-WRAPSHIELD BREATHABLE UNDERLAYMENT MANUFACTURED BY VAPROSHIELD, LLC. NO SUBSTITUTION IS ALLOWED WITHOUT PRIOR APPROVAL FROM SYNTHESIS 9, LLC AND THE OWNER.

11. WINDOW AND DOOR UNITS INSTALLED WITHIN THE EXTERIOR WALL SYSTEM MAY NEED TO E FURRED OUT TO ALLOW FOR PROPER DRAINAGE. IF THIS IS THE CASE, THE FURRING MATERIAL SHALL BE PVC BATTENS OR PRESSURE-TREATED SOLID BLOCKING.

12. THE ROUGH OPENING FOR WINDOWS MUST BE 1/2" WIDER AND 1/2"+ TALLER THAN THE WIDTH & HEIGHT OF THE WINDOW UNIT AS THE SILL PAN WILL LEFT THE WINDOW UNITS BY APPROXIMATELY 1/8" to 1/4" OFF THE SILL.

13. UNLESS OTHERWISE NOTED ON THE PLANS, ALL WOOD BLOCKINGS SHALL BE PRESSURE-TREATED LUMBER IF SUCH MATERIAL IS CUT ONSITE, CUT ENDS MUST BE TREATED WITH STANDARD WOOD PRIMERS IMMEDIATELY.

14. FURRING BATTENS SHALL BE EITHER 1X4 CEDAR OR BORATE-TREATED LUMBER OR 3/4" BY 1-7/8" PVC VAPROBATTEN MANUFACTURED BY VAPROSHIELD LLC. FURRING BATTENS SHALL ONLY BE INSTALLED VERTICALLY. FURRING BATTENS MUST BE INSTALLED DIRECTLY OVER STUDS SPACED NO MORE THAN 16" O.C. FURRING BATTENS MUST BE SECURELY ATTACHED TO THE STUDS USING APPROVED FASTENERS. ENSURE THAT THE FASTENERS FOR SIDING INSTALLATION ARE LONG ENOUGH TO PENETRATE THROUGH THE FURRING BATTENS, SHEATHING(S) AND INTO STUDS A MINIMUM OF 1/2". WHERE DISSIMILAR MATERIALS ABUT, INSTALL FURRING BATTENS DIRECTLY BEHIND MATERIAL TRANSITIONS. CUT ENDS OF BORATE TREATED LUMBER MUST BE TREATED WITH STANDARD WOOD PRIMERS IMMEDIATELY.

15. INSECT SCREENS SHALL BE PROVIDED AT TOP & BOTTOM OF THE WALLS AS WELL AS TOP & BOTTOM OF ANY AND ALL WALL PENETRATIONS. IT SHALL BE EITHER 3/4" MINIMUM VAPROVENT STRIP / VAPROVENT HOOK STRIP OR METAL BUG SCREEN. THE SCREEN / STRIP MUST BE INSTALLED CONTINUOUSLY.

16. WINDOW AND DOOR PENETRATION WRAPS SHALL CONSIST OF VAPROSHIELD-WRAPSHIELD MANUFACTURED BY VAPROSHIELD LLC. INSTALL PENETRATION WRAPS PER MANUFACTURER'S RECOMMENDATIONS AS WELL AS THE WATERPROOFING DETAILS. USE FACTORY PRE-FORMED CORNERS. USE APPROPRIATE PRIMER FOR APPLICATIONS AT EXTERIOR SHEATHING OR WHERE THE SURFACE TEMPERATURE IS BELOW 40-DEGREE FAHRENHEIT PURSUANT TO THE MANUFACTURER'S INSTRUCTIONS.

17. UNLESS OTHERWISE NOTED, SELF-ADHERING MEMBRANE (S.A.M.) SHALL BE MINIMUM OF 9" WIDE WRAPSHIELD S.A.M. MANUFACTURED BY VAPROSHIELD LLC; OR THERMFLASH. USE APPROPRIATE PRIMER FOR APPLICATIONS AT EXTERIOR SHEATHING OR WHERE THE SURFACE TEMPERATURE IS BELOW 40-DEGREES FAHRENHEIT PER MANUFACTURER'S RECOMMENDATIONS.

18. WHERE THROUGH WALL PENETRATIONS OCCUR (e.g., HOSE BIBS, PIPES, ELECTRICAL BOXES, LIGHT FIXTURES, ETC.) INSTALL 30-MIL THERM FLASH PENETRATION WRAP & BUTYL TAPE AS WELL AS WRB APRONS PER WATERPROOFING DETAILS.

17. AT ALL CONSTRUCTION & COLD JOINTS, APPLY APPROVED BENTONITE WATERSTOP. BASIS OF DESIGN IS CETCO VOLCLAY RX-101 WATERSTOP. CONCRETE SHALL BE TOOLED, CLEANED, AND PRIMED BEFORE INSTALLING WATERSTOP MEDIUM.

18. THE ROOFING FOR LOW-SLOPE ROOF SHALL BE A 60 MIL PVC, SINGLE-PLY ROOFING SYSTEM. BASIS OF DESIGN IS **JOHNS-MANVILLE**. INSTALL CRICKETS ON ROOF SURFACES WHERE NEEDED TO ALLOW FOR PROPER SLOPE AND DRAINAGE. WHERE PARAPET WALLS OCCUR, ROOF MEMBRANE SHALL WRAP OVER TOP PLATE AND WRAP OVER WRB 5" MINIMUM. INSTALL MEMBRANE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS & NRCA ROOFING, AS WELL AS WATERPROOFING DETAILS PROVIDED. INSTALL FLASHINGS & COUNTER-FLASHINGS AT ALL TRANSITIONS AND JUNCTIONS IN ACCORDANCE WITH THE WATERPROOFING DETAIL PROVIDED HEREIN AS WELL AS NRCA, SMACNA AND THE BUILDING CODE REQUIREMENTS.

19. THE ROOFING FOR SLOPED ROOF AREAS SHALL BE AN ASPHALT SHINGLE OVER UNDERLAYMENT ROOFING SYSTEM. BASIS OF DESIGN IS **GAF, TIMBERLINE NS SHINGLE**. INSTALL CRICKETS ON ROOF SURFACES WHERE NEEDED TO ALLOW FOR PROPER SLOPE AND DRAINAGE. INSTALL SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, NRCA ROOFING, AS WELL AS WATERPROOFING DETAILS PROVIDED. INSTALL FLASHINGS & COUNTER-FLASHINGS AT ALL TRANSITIONS AND JUNCTIONS IN ACCORDANCE WITH THE WATERPROOFING DETAIL PROVIDED HEREIN AS WELL AS NRCA, SMACNA AND THE BUILDING CODE REQUIREMENTS.

20. COPING FLASHING SHALL BE ATTACHED WITH CONTINUOUS CLEAT ON THE OUTSIDE FACE OF PARAPET WHICH WILL BE ATTACHED TO THE PLATE @ 24" O.C. NO PENETRATION IS ALLOWED IN TOP OF COPINGS. ALL SEAM JOINTS MUST BE 3/4" TALL STANDING SEAM. ALL COPINGS SHALL BE MINIMUM 24 GA PREFINISHED SHEET METAL UNLESS OTHERWISE NOTED. COORDINATE DIMENSIONS & SLOPES OF COPING WITH OTHER DETAILS AND PLANS.

21. FIBER-CEMENT SIDING SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF JAMES HARDIE INSTALLATION INSTRUCTIONS OR AS PER THE OTHER F.C. MANUFACTURER'S REQUIREMENTS AS WELL AS WATER PROOFING DETAILS PROVIDED HEREIN. INSTALL A LAYER OF APPROVED PROTECTION MEMBRANE (e.g., FLASHING SHEET OR W.R.B.) BEHIND ALL BUTT JOINTS.

22. METAL ROOF PANELS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ROOF PANELS SHALL BE INSTALLED OVER ONE LAYER OF 30# ROOF FELT AND ONE LAYER OF HIGH-TEMP GRACE ULTRA.

23. ALL FASTENERS SHALL BE EITHER STAINLESS STEEL OR DOUBLE-DIPPED, HOT-DIPPED OR HEAVY-DIPPED GALVANIZED CONFORMING TO ASTM A153. ELECTRO-GALVANIZED FASTENERS MUST NOT BE USED UNDER ANY CIRCUMSTANCES.

24. UNDER SLAB VAPOR BARRIER SHALL BE A CLASS B 15 MIL GEOMEMBRANE CONFORMING TO ASTM E-1745. BASIS OF DESIGN IS STEGO WRAP 15MIL WITH STEGO TAPE, MANUFACTURED BY STEGO INDUSTRIES.

25. MAINTAIN A MINIMUM OF 6" SEPARATION BETWEEN FINISH GRADE AND UNTREATED FRAMING MATERIALS.

38. SLOPE ALL DECKS, WALKS, AND PATIOS AWAY FROM THE BUILDING WITH A MINIMUM SLOPE OF 1/4" PER FOOT. INSTALL CRICKETS ON DECK SURFACES WHERE NEEDED TO ALLOW FOR PROPER SLOPE AND DRAINAGE. AT A MINIMUM 1/4" PER 1' SLOPE MUST BE PROVIDED TOWARD ROOF GUTTERS, DRAINS OR SCUPPERS.

26. ANY DISCREPANCY NOTED BY THE CONTRACTOR MUST BE BROUGHT TO THE ATTENTION OF SYNTHESIS 9, LLC IMMEDIATELY. WHERE DISCREPANCY OCCURS BETWEEN VARIOUS CONTRACT DOCUMENTS, CONTRACTOR SHALL FOLLOW THE MOST STRINGENT REQUIREMENT FOR EACH CATEGORY.

27. CONTRACTOR SHALL SUPPLY AND INSTALL FLASHINGS AND COUNTER-FLASHINGS AT ALL TRANSITIONS AND JUNCTIONS PURSUANT TO THE REQUIREMENTS OF THE BUILDING CODE, INDUSTRY STANDARDS INCLUDING SMACNA, EVEN IF SUCH FLASHING IS NOT SPECIFICALLY CALLED OUT FOR IN A DETAIL PROVIDED FOR HEREIN.

28. IT IS ASSUMED THAT THE EXTERIOR ENVELOPE SYSTEM IS A NON-AIR-BARRIER SYSTEM.

29. WEATHER EXPOSED CONCRETE WALLS & BRICK VENEER UNITS SHALL BE TREATED AS PER PLANS WITH ONE OF THE FOLLOWING PRODUCTS: (A) WATER REPELLANT: BASF – HYDROZO CLEAR 40 VOC; (B) NON-SACRIFICIAL GRAFFITI RESIST. COATING: PERMASHIELD; (C) SACRIFICIAL GRAFFITI RESIST. COATING: VS-I 200 VANDAL SHIELD. APPLY SEALERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

AGENCY REVIEW | 24.03.11

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

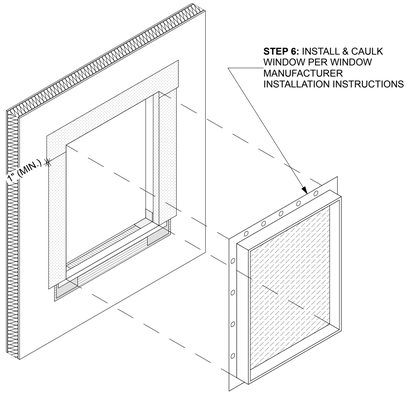
REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

REVISIONS	

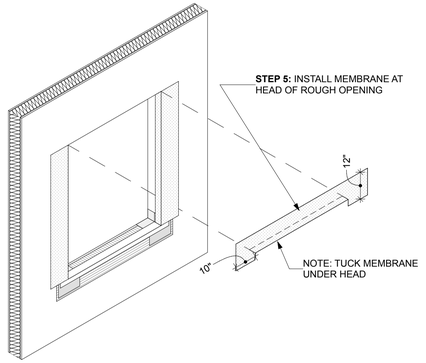
REVISIONS

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	DETAILS
PROJECT #:	2016
SHEET:	

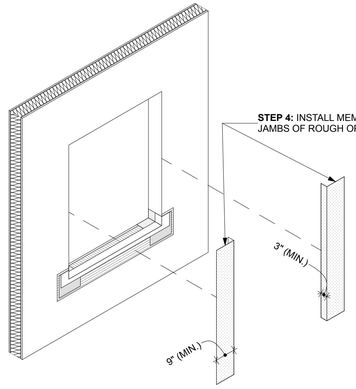
A6.4



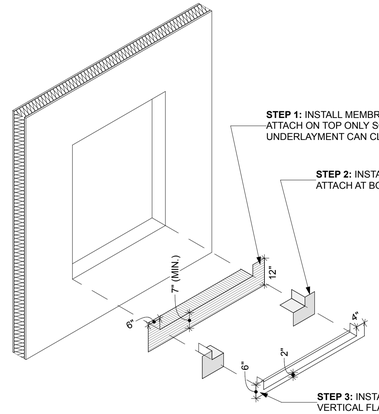
STEP 6: INSTALL & CAULK WINDOW PER WINDOW MANUFACTURER INSTALLATION INSTRUCTIONS



STEP 5: INSTALL MEMBRANE AT HEAD OF ROUGH OPENING



STEP 4: INSTALL MEMBRANE AT JAMBS OF ROUGH OPENING



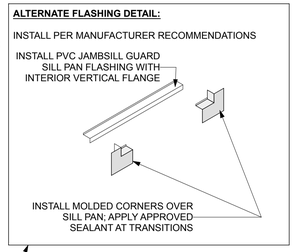
STEP 1: INSTALL MEMBRANE AT SILL; ATTACH ON TOP ONLY SO WALL UNDERLAYMENT CAN CLIP UP AND UNDER

STEP 2: INSTALL PRE-FORMED CORNERS; ATTACH AT BOTTOM JAMB & FACE

STEP 3: INSTALL SILL PAN WITH INTERIOR VERTICAL FLANGE; ATTACH AT JAMBS

ALTERNATE FLASHING DETAIL:

INSTALL PER MANUFACTURER RECOMMENDATIONS

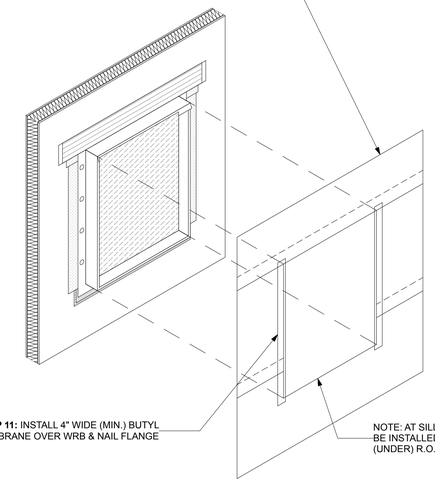


SILL PLAN NOTES:

1. ALL PANS AT MASONRY TO BE STAINLESS STEEL OR 24 GA GALV. PRE-FINISHED.
2. RESIDENTIAL WINDOW WALL SYSTEMS TO HAVE ALUMINUM PANS & FLASHINGS PER DETAILS TO MATCH WINDOW FRAME COLORS.
3. SEAL OR SOLDER JOINTS AT END- & BACK DAMS TO FORM A WATERTIGHT PAN ASSEMBLY; SEAL BACK TO END DAM TRANSITIONS.
4. COORDINATE BACK DAM HEIGHT WITH THRESHOLD AND/OR INTERIOR FINISHES PER ARCH. PLANS.
5. PROVIDE HEMMED EDGE AT ALL EXPOSED EDGES.

WRAP & WRB NOTE:

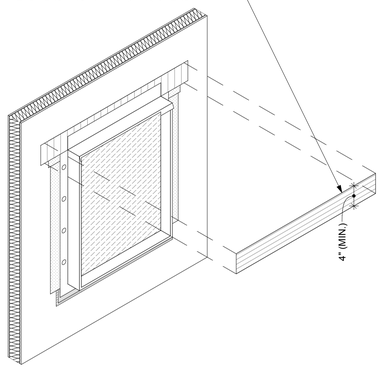
1. FASTEN WINDOW / DOOR WRAP & WRB PER WATERPROOFING DETAILS PROVIDED HEREIN WITH STAINLESS STEEL STAPLES WITH 7/16" CROWNS.
2. WHERE STEEL STUD FRAMING OCCURS, USE APPROVED ADHESIVE TO PROPERLY ATTACHED WINDOW / DOOR WRAP THERETO.
3. WHERE CONCRETE SURFACES OCCUR, USE VAPROSHIELD SELF-ADHERING MEMBRANE FOR WINDOW / DOOR WRAPS AND WRB.



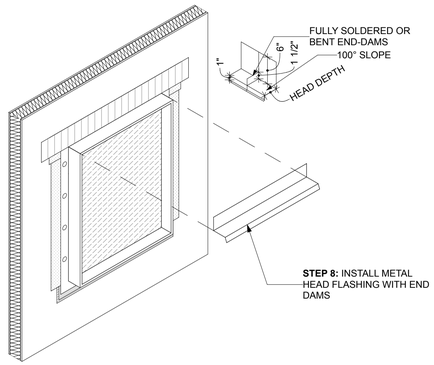
STEP 10: INSTALL WRB PER DETAIL

STEP 11: INSTALL 4" WIDE (MIN.) BUTYL MEMBRANE OVER WRB & NAIL FLANGE

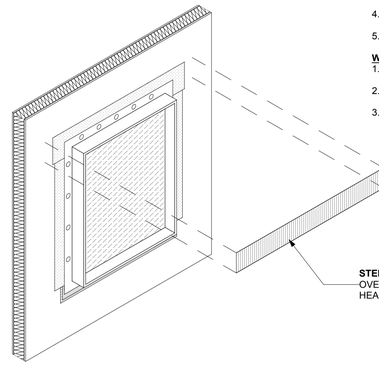
NOTE: AT SILL, WRB MUST BE INSTALLED BEHIND (UNDER) R.O. MEMBRANE



STEP 9: INSTALL 4" WIDE (MIN.) BUTYL MEMBRANE OVER HEAD FLASHING WITH 2" (MIN.) OVERLAP



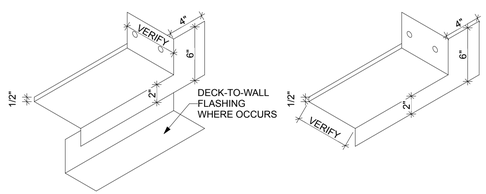
STEP 8: INSTALL METAL HEAD FLASHING WITH END DAMS



STEP 7: APPLY MEMBRANE OVER NAIL FLANGE AT HEAD ONLY

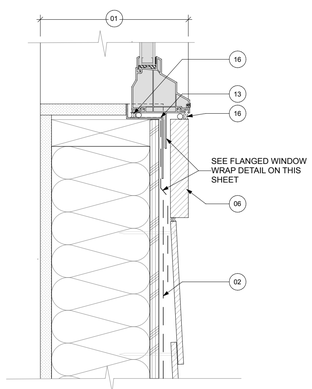
1 FLANGED WINDOW WRAP

SCALE: 3/8" = 1'-0"



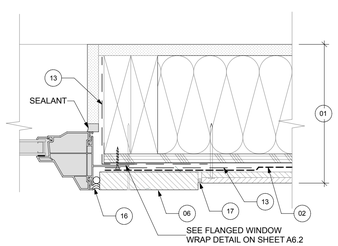
5 SILL PAN DETAIL

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



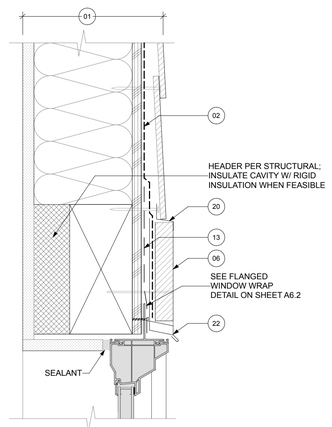
4 TYPICAL WINDOW SILL

SCALE: 3" = 1'-0"



3 TYPICAL WINDOW JAMB

SCALE: 3" = 1'-0"



2 TYPICAL WINDOW HEAD

SCALE: 3" = 1'-0"

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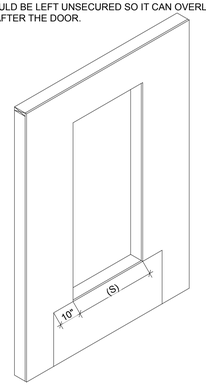
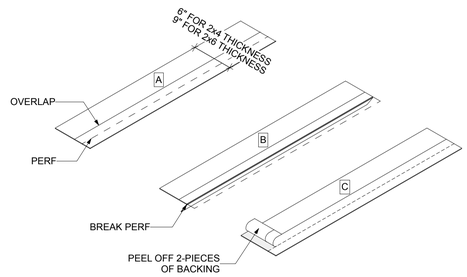
NON-FLANGED DOOR BEFORE WATER-RESISTIVE BARRIER (WRB) IS INSTALLED

STEP 1
ATTACH APRON WRB UNDER SILL (S). APRON SHOULD EXTEND AT LEAST 10" BEYOND SIDES OF ROUGH OPENING JAMBS (OR TO FIRST STUD IN OPEN STUD CONSTRUCTION), AND FAR ENOUGH BELOW THE ROUGH OPENING TO OVERLAP THE SILL PLAN OR THE WRB BELOW. THE TOP OF THE APRON SHOULD BE SECURELY ATTACHED TO THE WALL AND THE BOTTOM OF THE APRON SHOULD BE LEFT UNSECURED SO IT CAN OVERLAP THE WRB WHICH WILL BE INSTALLED AFTER THE DOOR.

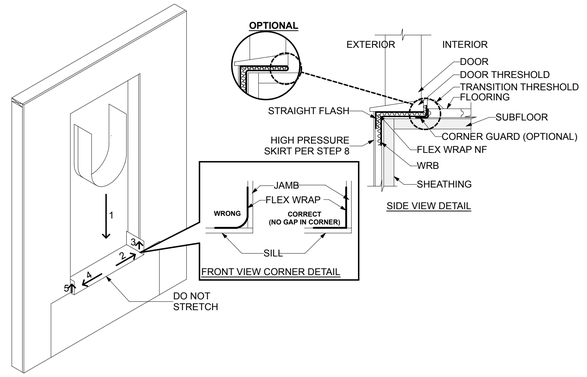


STEP 2
A. CUT PIECE OF FLEX WRAP NF AT LEAST 12" LONGER THAN THE WIDTH OF THE SILL (S).
B. FLEX WRAP NF HAS PERFORATED RELEASE PAPER TO HELP WITH THE FORMATION OF THE BACK DAM. TO ENSURE THAT THE PERFORATION TEARS CLEANLY, FOLD THE PERFORATION 180 DEGREES AND CREASE THE FLASHING.
C. REMOVE THE TWO WIDEST PIECES OF RELEASE PAPER LEAVING THE NARROWEST RELEASE PAPER ON THE FLASHING. WHEN THE FINISHED FLOOR IS APPLIED, THE RELEASE PAPER CAN BE REMOVED AND THE BACK DAM CAN BE COMPLETED.

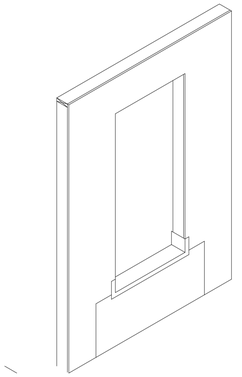


STEP 3 (OPTIONAL BACK DAM)
INSTALL THE SILL FLASHING AS INDICATED LEAVING 1" OF FLEX WRAP NF WITH RELEASE PAPER EXTENDING IT PAS THE DOOR THRESHOLD ON THE INSIDE. WHEN THE 1" OF RELEASE PAPER IS REMOVED, THERE SHOULD BE 3/4" OF FLASHING TO FORM THE BACK DAM.

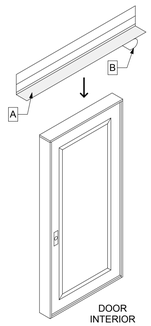
OPTION 2: SOME FLOORING CANNOT ACCOMMODATE A BACK DAM. IN THAT CASE FOLD THE 1" BACK DAM ON TOP OF FLEX WRAP NF IN THE SILL. DOOR WILL BE INSTALLED ON TOP OF THE 1" FOLD TO CREATE A BACK DAM.



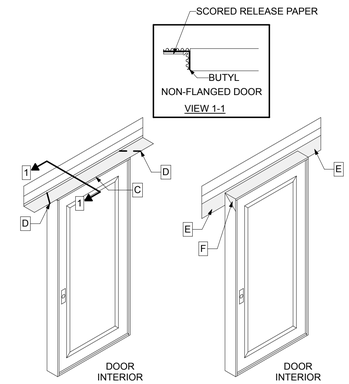
STEP 4
FAN OUT FLEX WRAP NF AT BOTTOM CORNERS ONTO THE FACE OF THE WALL. COVERAGE OF FLEX WRAP NF SHOULD BE 2" TO 3" ONTO THE FACE OF THE WALL.



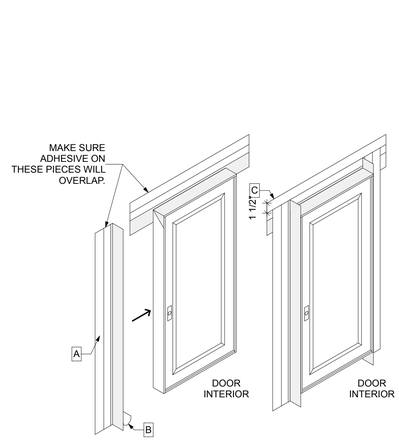
STEP 5 FOR NON-FLANGED DOORS
A. PREPARE HEAD FLASHING BY CUTTING A PIECE OF STRAIGHT FLASH VF AT LEAST 12" LONGER THAN THE HEAD LENGTH.
B. REMOVE THE RELEASE PAPER FROM ONE SIDE OF STRAIGHT FLASH VF.
C. CENTER THE STRAIGHT FLASH VF ALONG THE LENGTH OF THE DOOR AND POSITION SO THAT IT CONTACTS THE DOOR FRAME.
D. BEGINNING AT THE JUNCTION OF THE JAMB AND HEAD AND AWAY FROM THE CORNERS CUT THE STRAIGHT FLASH VF ALONG THE CORNER AT A 45 DEGREE ANGLE.
E. FOLD THE NEWLY CREATED FLASHING FLAPS DOWN PARALLEL TO THE DOOR FRAME.
F. FOLD REMAINING HEAD FLASHING ONTO THE JAMB.

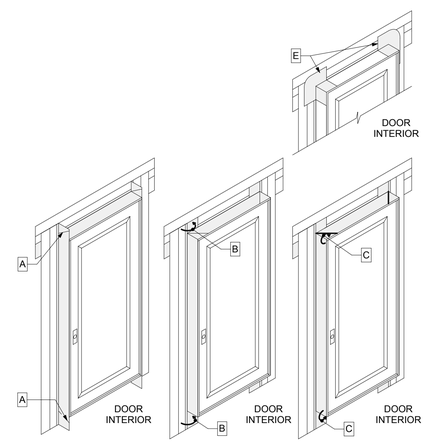


STEP 6
A. PREPARE JAMB FLASHING BY CUTTING A PIECE OF STRAIGHT FLASH VF AT LEAST 6" LONGER THAN THE JAMB LENGTH.
B. REMOVE THE RELEASE PAPER FROM ONE SIDE OF STRAIGHT FLASH VF.
C. POSITION SO THAT THE STRAIGHT FLASH VF CONTACTS THE DOOR FRAME UP TO THE EXTERIOR FACE OF THE DOOR. ENSURE THAT THE JAMB FLASHING IS POSITIONED 1 1/2" BELOW TOP OF HEAD FLASHING. JAMB FLASHING ADHESIVE MUST COME IN CONTACT WITH HEAD FLASHING ADHESIVE AND OVERLAP BY ONE INCH.
D. REPEAT ON OPPOSITE JAMB.

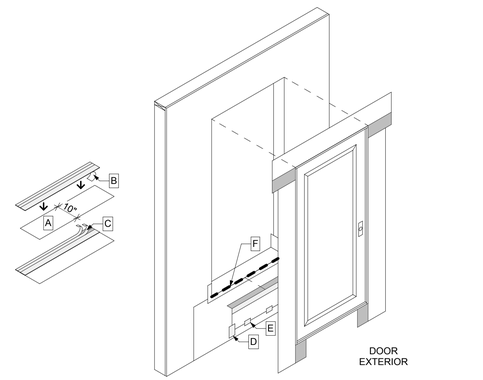


STEP 7
A. BEGINNING AT THE JUNCTION OF THE JAMB AND HEAD AND AT THE SILL AND JAMB AND AWAY FROM THE CORNERS, CUT THE STRAIGHT FLASH VF ALONG THE CORNERS AT A 45 DEGREE ANGLE AND FOLD IT OVER FLAT TO ADHERE IT AGAINST THE HEAD FLASHING.
B. FOLD NEWLY CREATED FLAP DOWN PARALLEL TO THE DOOR FRAME.
C. FOLD FLASHING FLAPS TO THE DOOR FRAME AND ADHERE.
D. REPEAT ON OPPOSITE JAMB.
E. CUT TWO 3" x 3 FLEX WRAP NF SQUARES AND ADD PATCHES TO CORNER OF THE DOOR. STAPLE PATCHES IN CORNERS TO SECURE THE WOODEN HEAD AND JAMBS.

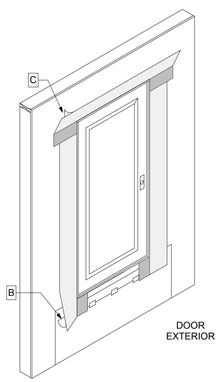




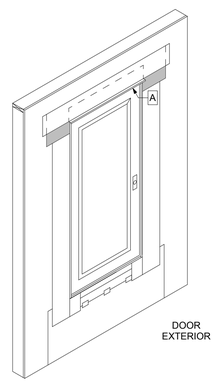
STEP 8 (OPTIONAL - HIGH PRESSURE SKIRT)
A. CREATE THE HIGH PRESSURE SKIRT BY CUTTING A PIECE OF WRB 1" WIDER THAN THE WIDTH OF THE DOOR OPENING AND APPROXIMATELY 10" IN HEIGHT.
B. CUT A PIECE OF STRAIGHT FLASH VF TO THE SAME WIDTH OF SKIRT. REMOVE RELEASE PAPER FROM ONE SIDE OF STRAIGHT FLASH VF AND ADHERE TO WRB. THE SKIRT MAY BE MADE WITH STRAIGHT FLASH VF OR FLASHING TAPE.
C. REMOVE THE RELEASE PAPER FROM THE OTHER SIDE OF STRAIGHT FLASH VF AND ADHERE TO BUTYL ADHESIVE AT THE SILL SKIRT TO THE UNDERSIDE OF THE DOOR THRESHOLD BEHIND THE JAMB FLASHING.
D. SECURE EDGES OF THE OPTIONAL SKIRT WITH TWO 4" PIECES OF STRAIGHT FLASH OR FLASHING TAPE.
E. TAPE THE BOTTOM OF THE OPTIONAL SKIRT TO ALLOW FOR DRAINAGE AND TO MINIMIZE WIND DAMAGE DURING CONSTRUCTION.
F. IF SEALANT IS APPLIED TO THE SILL, INSURE (2) 2" GAPS TO ALLOW FOR DRAINAGE FOR EVERY 4' OF DOOR USING RECOMMENDED SEALANT.



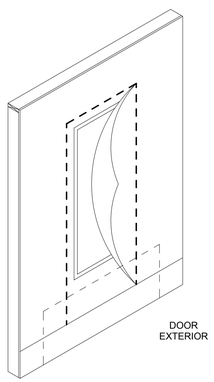
STEP 9
A. INSTALL DOOR ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
B. REMOVE THE REMAINING RELEASE PAPER FROM THE STRAIGHT FLASH VF JAMB FLASHING AND PRESS FIRMLY TO ADHERE TO THE WRB.
C. REMOVE THE RELEASE PAPER AT THE HEAD AND ADHERE IT TO THE EXTERIOR SHEATHING OR FRAMING MEMBERS.
OPTIONAL: COVER EXPOSED BUTYL WITH STRAIGHT FLASH, FLASHING TAPE, OR TYVEK TAPE.



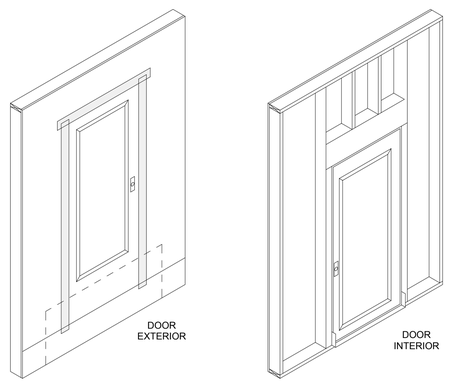
STEP 10 (OPTIONAL - RECOMMENDED BEST PRACTICE)
A. CUT A PIECE OF METAL OR VINYL DRIP CAP SLIGHTLY LONGER THAN THE WIDTH OF THE DOOR AND PLACE A BEAD OF RECOMMENDED SEALANT ON THE REAR SIDE. INSTALL THE DRIP CAP TIGHT AGAINST THE DOOR HEAD AND COVER THE TOP EDGE WITH FLASHING TAPE.



STEP 11
AFTER INSTALLING WRB, CUT AS SHOWN TO EXPOSE DOOR AND APRON. **DO NOT CUT THROUGH THE FLASHING SYSTEMS PRODUCTS OR APRON.**

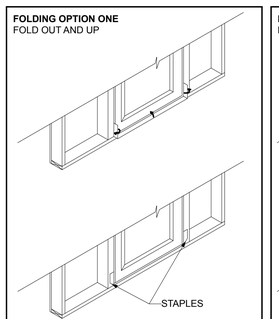


STEP 12
A. TAPE SEAMS AS SHOWN. **DO NOT TAPE AT BOTTOM OF OPENING**. AT THE HEAD, CONTINUOUS TAPE SEAMS AS SHOWN WITH TYVEK TAPE. SKIP-TAPING AT THE HEAD IS ACCEPTABLE IF AN AIR BARRIER IS NOT REQUIRED OR IF ADDITIONAL DRAINAGE IS DESIRED.
B. LAP BOTTOM OF APRON AND THE WRB OVER BUILDING MATERIALS FOR PROPER SHINGLING.

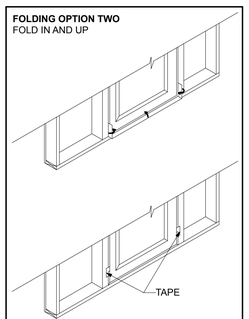


STEP 13
A. WHEN THE INTERIOR FLORING IS READY TO INSTALL, REMOVE RELEASE PAPER AND USE FOLDING OPTION ONE OR TWO TO FORM THE BACK DAM.
B. INSTALL RECOMMENDED SEALAND (AND BACKER ROD AS NECESSARY) AROUND THE OPENING AT THE INTERIOR. IT IS ALSO ACCEPTABLE TO USE RECOMMENDED FOAM. THE SEAL CREATED BY THE SEALANT (AND BACKER ROD AS NECESSARY) OR FOAM WILL ALSO SERVE AS A BACK DAM. SEALANT SHOULD BE TOOLED FLAT TO ALLOW THE NATURAL URING PROCESS TO CREATE A CONCAVE SHAPE. BE SURE THAT HTE SEALANT PENETRATES THE GROVES OF THE FLEX WRAP NF AROUND THE SILL

FOLDING OPTION ONE
FOLD OUT AND UP



FOLDING OPTION TWO
FOLD IN AND UP



1 DOOR INSTALLATION DETAILS
SCALE: 3/8" = 1'-0"

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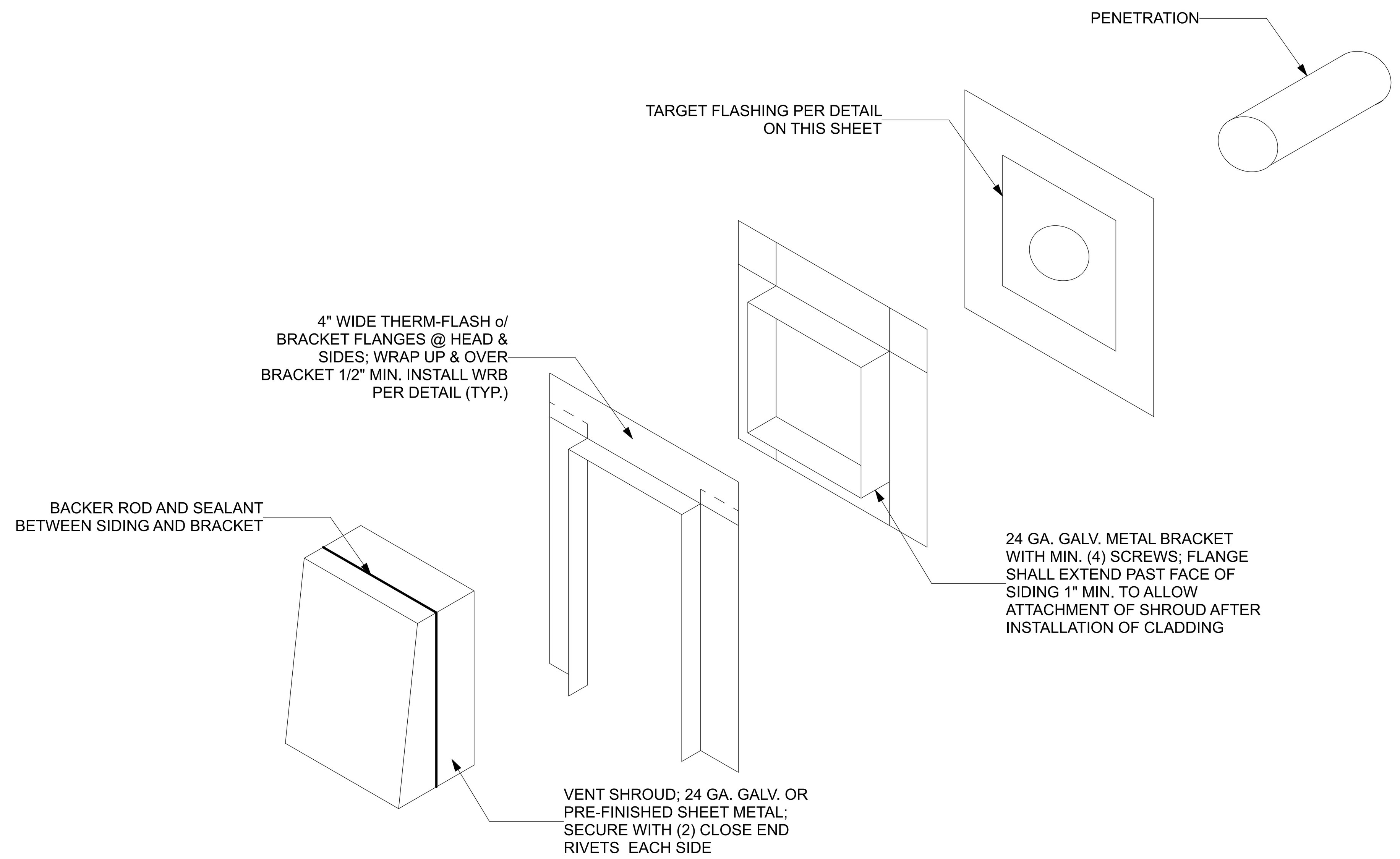
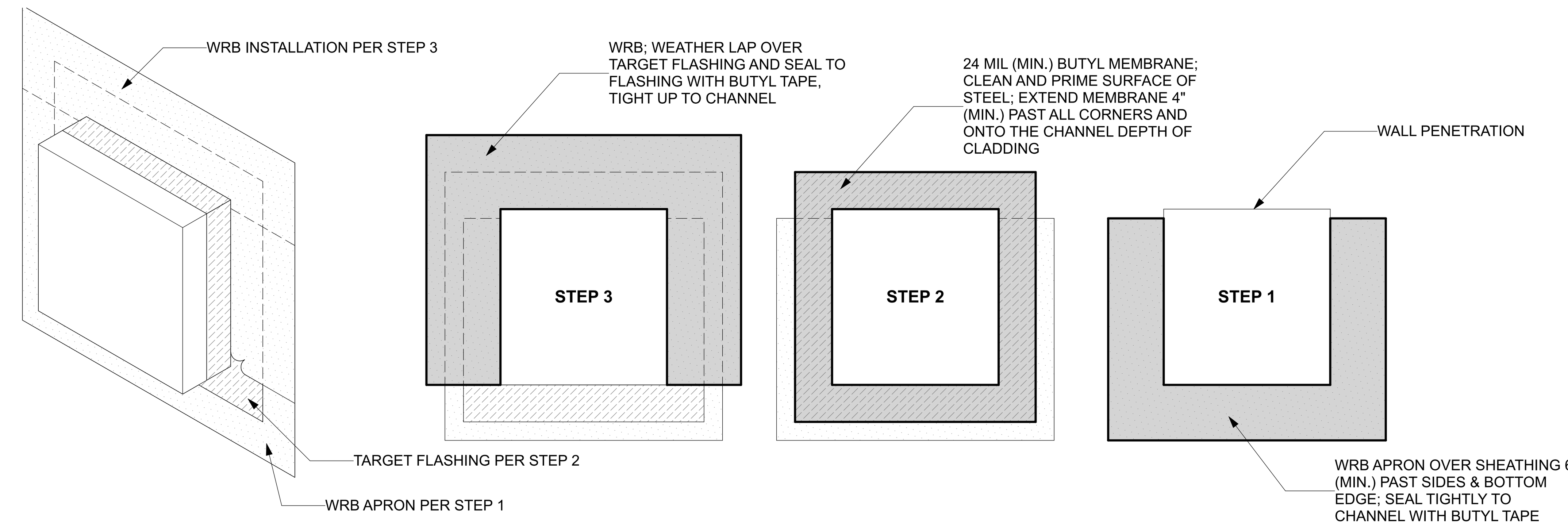
AGENCY REVIEW | 24.03.11



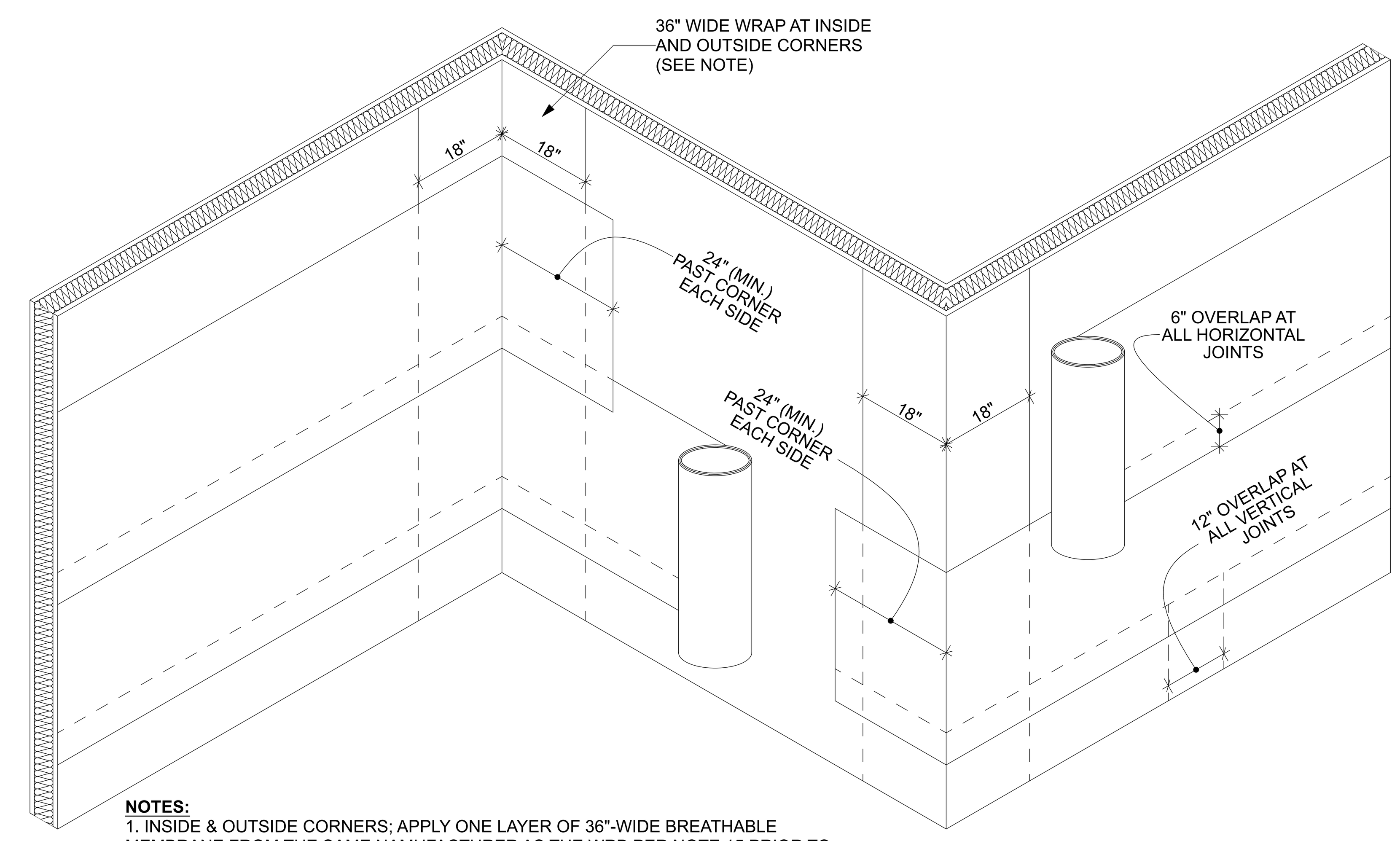
3 VENT PENETRATIONS

SCALE: 3/8" = 1'-0"



1 TARGET FLASHING INSTALLATION FOR PENETRATIONS > 6"

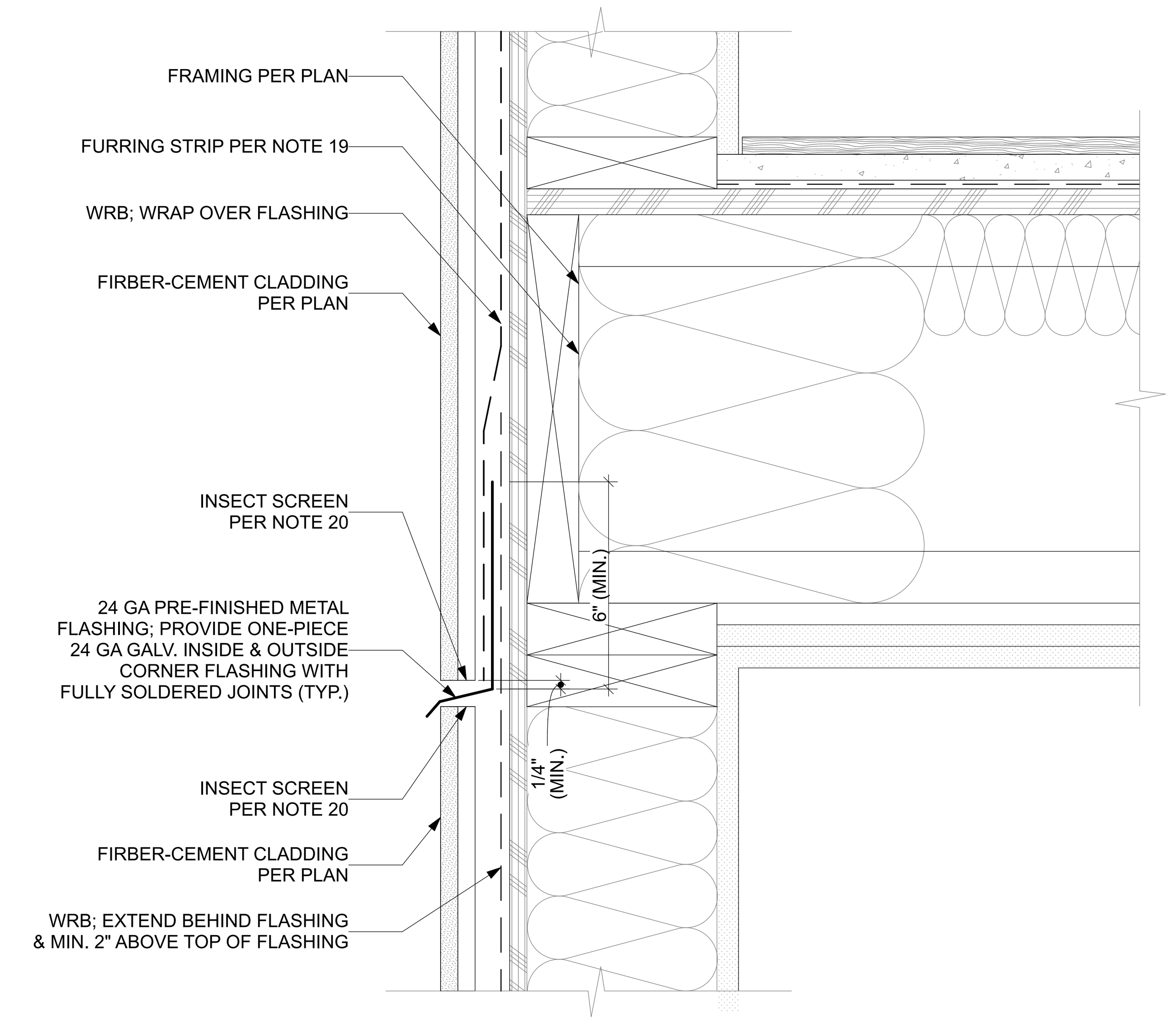
SCALE: 1" = 1'-0"



NOTES:
1. INSIDE & OUTSIDE CORNERS; APPLY ONE LAYER OF 36"-WIDE BREATHABLE MEMBRANE FROM THE SAME NAMUFACTURER AS THE WRB PER NOTE 15 PRIOR TO INSTALLATION OF FIELD WRB.
2. INSTALL WEATHER RESISTIVE BARRIER PER NOTE 15 IN WEATHERBOARD FASHION STARTING FROM THE BOTTOM OF THE WALL. ENSURE THAT THE EDGES OF THE LAYERS OF WRB ARE STAGGERED AT LEAST 6".
3. WHERE CONCRETE SURFACES OCCUR, INSTALL VAPROSHIELD S.A.M. THROUGHOUT.

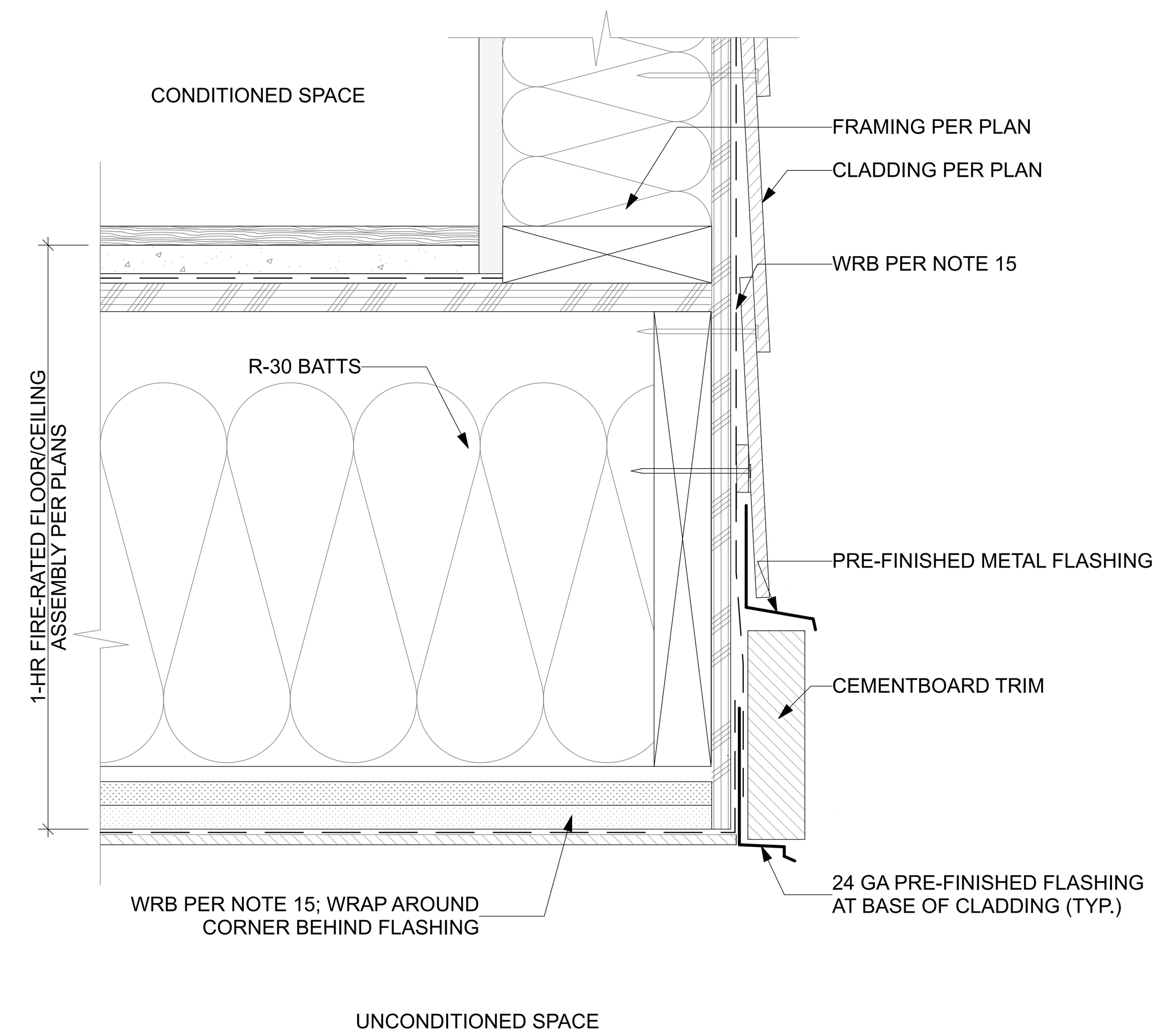
2 WRB INSTALLATION

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



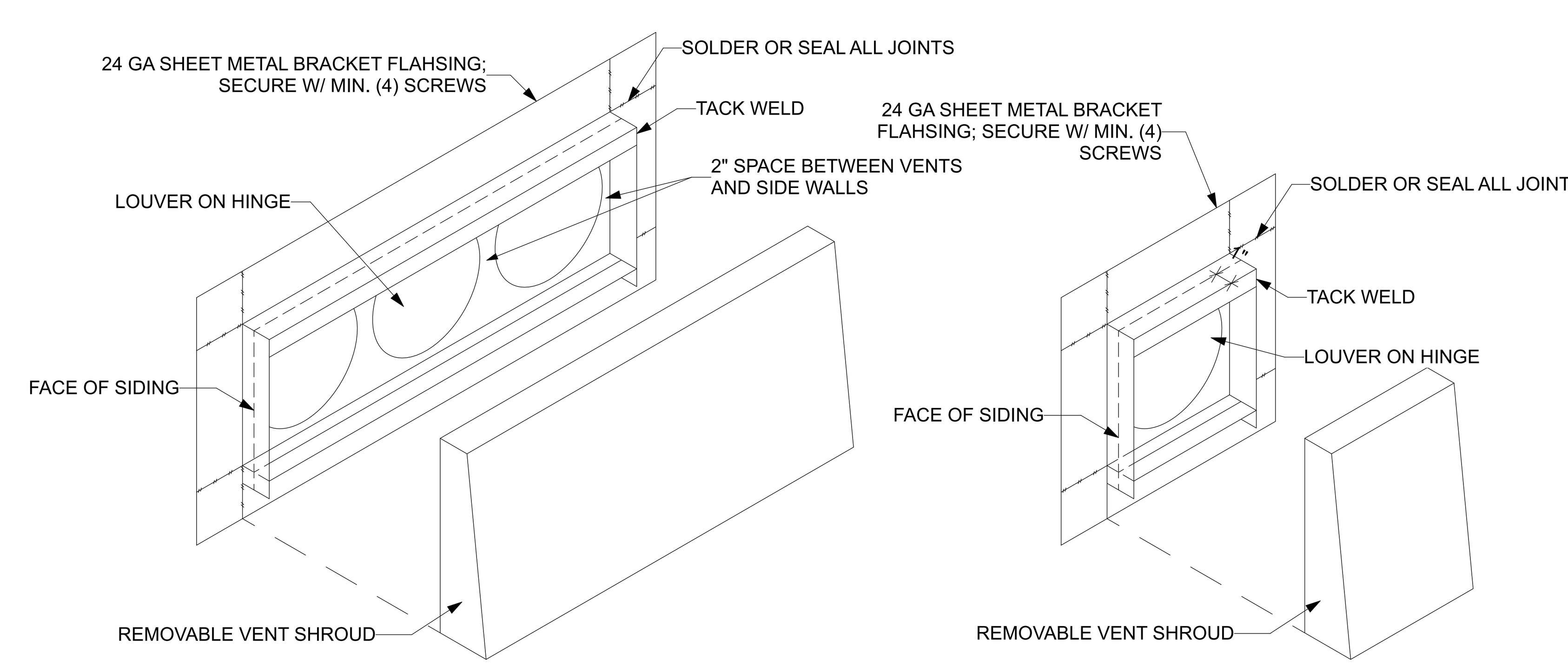
6 THROUGH WALL FLASHING

SCALE: 3" = 1'-0"



5 BUILDING OVERHANG

SCALE: 3" = 1'-0"



4 VENT SHROUDS

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

SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

REVISIONS

AGENCY REVIEW | 24.03.11

DRAWN BY:	BL / CM
CHECKED BY:	BL
DATE:	24.03.11
TITLE:	DETAILS
PROJECT #:	2016
SHEET:	

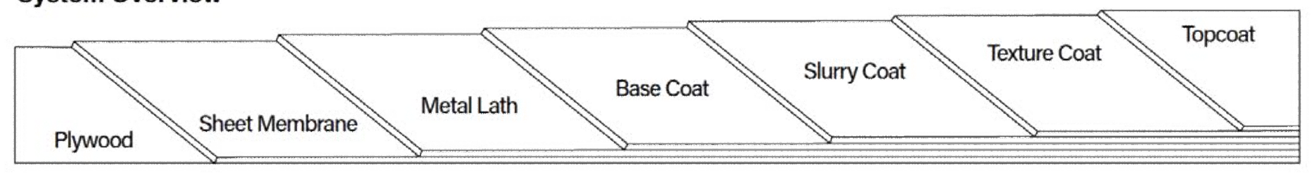
A6.7

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Description
Westcoat ALX™ Standard is a waterproof walking deck system. It is reinforced with metal lath and is installed with a series of three separate polymer-modified cementitious applications and sealed with Westcoat's SC-10 Acrylic Topcoat. The finished product weighs approximately 2½ lbs per square foot. This system gives plywood the look and feel of concrete with a decorative appeal.

Uses
ALX™ is designed for use on plywood. It is recommended for the discriminating architect, contractor or building owner that demands the finest in design, strength and durability. ALX™ is ideal for areas with heavy traffic or in cases where elimination of the appearance of plywood seams is essential. ALX™ has been designed for balconies, corridors, stairs and landings. It is regularly specified for hotels, condominiums, apartments and office buildings. ALX™ can be stapled through most old deck systems to provide an excellent method for the rehabilitation of problem surfaces.

System Overview



System Data

Coverages	Base Coat	Slurry Coat	Texture Coat	Top Coat
	40 ft² per batch	100-150 ft² per batch	150-200 ft² per batch	200-300 ft² per gallon

Components	Shelf Life
WP-10 Staples	N/A
WP-47A Seam Tape	1 year
WP-25 Metal Lath	N/A
WP-40 Sheet Membrane	1 year
WP-51 Polyurethane Sealant	1-2 years
WP-81 Cement Modifier	2 years
SC-10 Acrylic Topcoat	2 years
TC-1 Basecoat Cement	1 year
TC-3 Medium Texture Cement	1 year

ER-587 IAPMO ES

Certifications
IAPMO ER-587
Meets Class A Fire Test ASTM E-108
Meets One-Hour Fire Rating ASTM E-119
Meets Class I Vapor Retarder ASTM E96 (when WP-40 is installed over entire deck)
Meets 2020 City of Los Angeles Building and Residential Code (LABC & LARC)
Meets Wildland Urban Interface (W.U.I) Requirements
Meets the Requirements of Decking SFM 12-7A-4 Parts A & B

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Advantages
Fast Access After Installation • Available Manufacturer's Warranty • Excellent Sound Reduction Qualities • Tough Final Coat is UV Resistant • Covers Rough Plywood and Seams • Skid Resistant Textured Finish • Decorative Finishes Available • Unmatched Strength and Durability

Inspection
For installation of the ALX™ system, plywood must be minimum ⅝ inch (¾ inch preferred) CDX or exterior grade. Pressure-Treated plywood should not be used with metal lath systems. Slope must be a minimum of ¼ inch per linear foot and shall provide for proper drainage. Decks should meet local building codes. The deck shall be tongue and groove, properly blocked and nailed (glued and screwed is best). Plywood shall have a maximum joist span of 16 inches. Deflection should be less than L/360. OSB is not a suitable substrate for this material. Moisture vapor commonly collects in areas below a vapor barrier, such as the waterproofing membrane of the deck covering system. Venting must be added to help relieve moisture vapor transmission. Please refer to all local building codes regarding venting requirements.

Preparation
Be sure the surface is clean, dry and free of grease, paint, oil, dust or any foreign material that may prevent proper adhesion. "Dry" plywood is typically defined as having less than a 10% moisture reading or by showing no moisture with a plastic sheeting test. Applicator is responsible for ensuring that the substrate is acceptable for application. Do not apply to wet plywood.

Sheet Membrane
Westcoat requires the installation of 6 inch WP-40 Sheet Membrane to all plywood seams for reinforcement. WP-40 may also be installed behind or on top of the flashing as a backup waterproofing measure. For increased adhesion, WP-43 Sheet Membrane Primer may be used prior to applying the Sheet Membrane. WP-40 may not be left exposed to the sun for more than 7 days. See WP-40 Sheet Membrane and WP-43 Sheet Membrane Primer Product Specification Sheets for additional information.

Flashing
Westcoat requires a minimum of 26-gauge bonderized sheet metal. Use 4 x 4 inch 'L' flashing at the junction of the wall and deck. Use 2 x 4 inch drip edge flashing for fascia edge. Overlap all ends at least four inches. Apply two beads of WP-51 Polyurethane Sealant to all seams. Nail flashing every 4-6 inches. (Note: If the flashing is not bonderized, it must be prepared in accordance with SSPC-SP11 surface preparation standards, in order for the coating to adhere properly).

Metal Lath
Prior to installing the Metal Lath, WP-47A Seam Tape should be applied ½ inch from all deck edges, leaving ½ inch of flashing exposed. Place the WP-25 Metal Lath on the plywood and cut it to fit the area, making sure the edge of the lath is offset two inches from any parallel plywood seams. The lath should run across the grain of the plywood (across the long seams) when possible. The lath has a grain and it should be placed so that it curves down at the edge of the deck. The metal lath should be held back 1.5 inches from all deck edges, leaving 1 inch of seam tape and ½ inch of flashing exposed. With the lath in place, start in the center working your way out, stapling the lath using 16-20 staples per square foot (minimum 1 inch crown x ⅝ inch long, 16-gauge non-corrosive Senco P10). Overlap the lath 1-2 inches and staple every 1-2 inches along the seam. With a hammer, pound down any seams or staples that are higher than the lath.

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Base Coat
Pour 1¼ gallons of WP-81 Cement Modifier and desired water (up to one quart) into a clean mixing bucket and then add one bag of TC-1 Basecoat Cement. Mix until uniform with a mechanical mixer at a low rpm. Pour the mixture (4½ gallons total) onto the lath and with trowel on edge, smooth to the top of the lath at the rate of 40 square feet per batch. Trowel and brush the base coat up to the seam tape edge, leaving ½ inch of flashing exposed. For best results, tape off the flashing. Use a paintbrush to spread the base coat into all corners. Tap the deck with a hammer to help in smoothing out trowel ridges. As soon as it is dry, usually 1 to 2 hours at 70 degrees, scrape off any high spots or ridges that may prevent a smooth slurry coat.

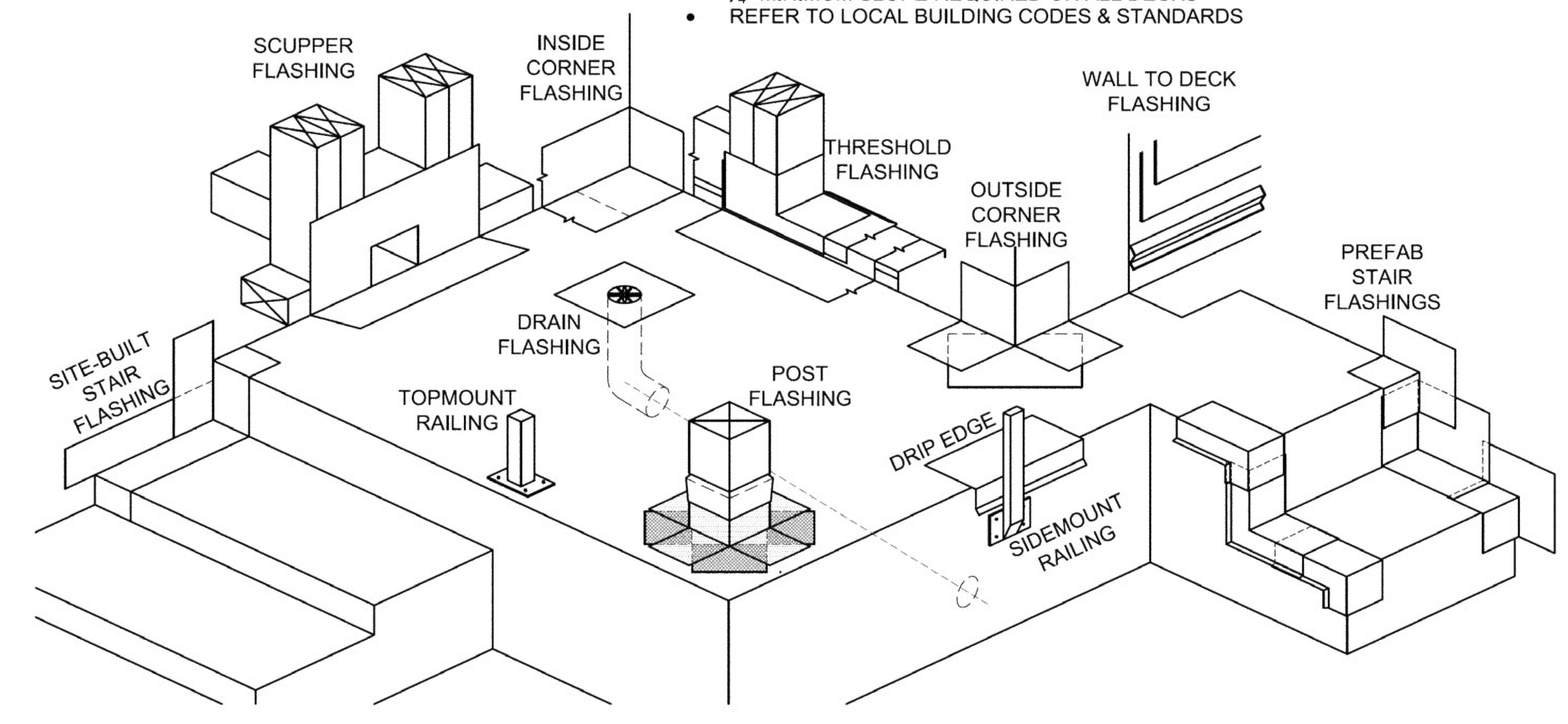
Slurry Coat
Create the slurry coat by adding one gallon of WP-81 Cement Modifier and up to ½ gallon of water into a clean mixing bucket and add one bag of TC-1 Basecoat Cement. Mix until uniform with a mechanical mixer at a low rpm. Trowel the slurry mix over the surface to achieve a smooth finish. Coverage of the slurry coat is between 100-150 square feet per batch. The Slurry Coat will be applied right up to all of the deck's edges. Using a brush, wet with water, feather all outside edges. After surface is dry (usually 30 minutes to 2 hours at 70 degrees), scrape or grind off any ridges or trowel marks.

Texture Coat
Pour one gallon of WP-81 Cement Modifier in a clean mixing bucket and add one bag of TC-3 Medium Texture Cement. Mix thoroughly with a mechanical mixer at a low rpm. Add up to ½ gallon of water to achieve the desired consistency. Using an acoustical hopper gun, spray the texture onto the deck with a circular motion to achieve approximately 70% coverage at a rate of about 150 to 200 square feet per batch. Spray continuously, do not stop in the middle of the deck. After a few moments, depending on the temperature, the texture must be "knocked down". Use a rounded pool trowel for best results. Wipe the trowel clean with a wet rag as needed. For an Orange Peel Texture, increase the air pressure and reduce the hole size on the hopper gun. Spray texture evenly at an 80% to 90% coverage rate. If you are unsatisfied with the results, immediately scrape off and re-spray. After the texture has dried (30 minutes to 1 hour at 70 degrees), lightly scrape any trowel marks and vacuum the surface prior to sealing.

Topcoat
Mix all containers of SC-10 Acrylic Topcoat to ensure a consistent color. The material may be thinned by adding up to a maximum of one quart of water per gallon to avoid streaks (especially in hot weather). Roll two thin applications of SC-10 using a ¾ inch roller at a rate of 200-300 square feet per gallon. Roll the material in two directions to achieve a uniform finish. Coverage will vary according to texture. For small areas or in locations with cool temperatures, one coat of SC-10 may be applied at 125 square feet per gallon. For best results, allow SC-10 4-6 hours drying time at 70 degrees before permitting light pedestrian traffic or additional coats are applied. Allow 24 hours to cure before heavy traffic is permitted. Allow 48 hours before heavy objects are placed on the surface.

WESTCOAT MULTIPLE FLASHING DETAILS
NOT TO SCALE

NOTES:
- APPLY WP-51 ON ALL FLASHING SEAMS AND OVERLAPS. STANDARD OVERLAP IS BOTTOM TO TOP WITH A 4" OVERLAP.
- 2500 PSI MINIMUM FOR CONCRETE SUBSTRATES
- ⅝" EXTERIOR GRADE MINIMUM FOR PLYWOOD SUBSTRATE
- ¼" MINIMUM SLOPE REQUIRED ON ALL DECKS
- REFER TO LOCAL BUILDING CODES & STANDARDS



westcoat
800-250-4519 www.westcoat.com
770 GATEWAY CENTER DRIVE SAN DIEGO, CA. 92102

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Optional Materials
Sheet Membrane
- WP-40 36 inch can be installed to the entire deck when maximum protection is required.
- WP-43 Sheet Membrane Primer may be used when increased adhesion is desired.

Cements
- If a smoother finish with finer texture is required, TC-2 Smooth Texture Cement or TC-5 Grout Texture Cement can be used.

Cement Additives
- CA-15 Cement Accelerator can be added to Westcoat cements to help reduce dry times.
- CA-16 Cement Decelerator can be added to Westcoat cements to increase working time during periods of hot weather.

Low Odor Cement Modifier
- If a lower odor cement modifier is required, WP-82 Cement Modifier Low Odor can be used in lieu of WP-81.

Skid Resistance
- CA-29 Mini Safe Grip, CA-30 Small Safe Grip or CA-31 Large Safe Grip can be added to the SC-10 Acrylic Topcoat for added skid resistance.

WP Wrap
- Westcoat's WP Wrap can be used with the ALX System to provide additional waterproofing with reinforcement, along the perimeter of the deck.

Deck Drain
- If a drain is required, Westcoat's WP-35 ALX™ Deck Drain may be installed between the Sheet Membrane and Metal Lath steps in the application instructions. Please read the WP-35 ALX™ Deck Drain Product Specification Sheet for detailed instructions.

Sloping
- Westcoat Slope Technique may be used if additional sloping is required. Slope Technique should be applied after the Base Coat and prior to the Slurry Coat.

* Please refer to Product and System Specification Sheets for additional information.

Clean Up
Uncured material can be removed with soap and warm water. If cured, material can be removed mechanically or with an environmentally-safe solvent.

Maintenance
Exterior surfaces can be swept daily with water and a broom. For tougher dirt or grease, use degreaser diluted with water 20:1 and a soft bristle brush or broom. Be sure to rinse well. To remove calcium or lime build up, brush diluted 100 grain vinegar onto the surface; be sure to rinse any residue.

The ALX™ System should be inspected for wear every 2 to 4 years. The system should be resealed with the appropriate Westcoat sealer every 3 to 5 years depending upon traffic and UV exposure. Contact the original installer of Westcoat for complete re-coating instructions.

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Health Precautions
Inhalation of vapor or mist can cause headache, nausea, irritation of nose, throat and lungs. Prolonged or repeated skin contact can cause slight skin irritation. Cements contain silicas; dust mask or respirator should be used when mixing, sanding or grinding.

Solvent based products are extremely flammable, extinguish all pilot lights and sources of ignition such as electrical motors. Be sure to have adequate cross ventilation prior to installing.

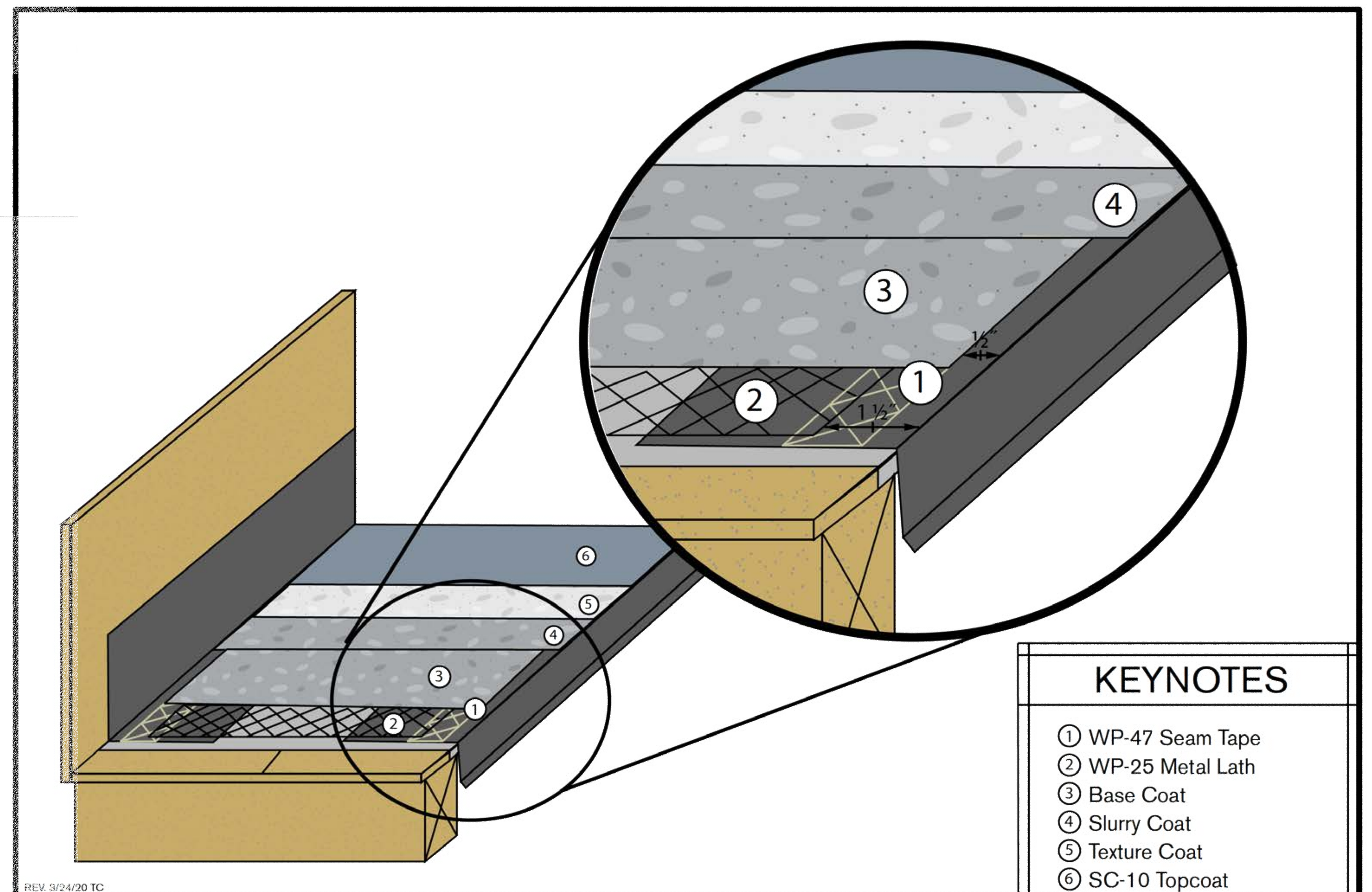
Limitations
- This system is designed for professional use only.
- Read Product Specification Sheets for every product you will be using before beginning the project.
- Do not apply at temperatures below 50°F or above 90°F.
- Rain will wash away uncured Westcoat acrylic products.
- If inclement weather threatens, cover deck to protect new application.
- Sealers will make the surface slippery, please be aware the texture of the surface and how the sealer will affect the look, feel and skid resistance.
- Approval and verification of proposed colors, textures and slip resistance is recommended.
- Do not allow Westcoat products to freeze.
- Moisture vapor commonly collects in areas below a vapor barrier, such as the waterproofing membrane of the deck covering system. Venting must be added to help relieve moisture vapor transmission. Please refer to all local building codes regarding venting requirements.

Slip Precaution
Westcoat Specialty Coatings Systems highly recommends the use of a slip-resistant additive to all coatings/systems that may be exposed to wet, oily, greasy or slippery conditions. It is the end user's responsibility to provide a flooring system that meets current safety standards. Westcoat and its distributors will not be responsible for injury incurred during a slip and fall incident. For the current coefficient of friction requirements, please consult your local building codes.

westcoat® SPECIALTY COATING SYSTEMS | SYSTEM SPECIFICATION
WP WATERPROOF RELIABLE MOISTURE BARRIERS | ALX™ Standard Finish

Test Data

Test	ALX™ Standard WP-40 On Seams	ALX™ Standard WP-40 Full Coverage
Accelerated Aging ASTM D-756	Pass	Pass
Fire-Retardant Roof Covering ASTM E-108	Class A	Class A
One-Hour Fire Test ASTM E-119	Pass	Pass
Flame Spread ASTM E-84	NFPA Class B	NFPA Class B
Fire-Test-Response of Deck Structures to Burning Brands ASTM 2726-12a	Pass	Pass
Under-Deck Fire Test Response of Deck Materials ASTM E2632	Pass	Pass
Water Vapor Transmission of Materials ASTM E96	--	Class I Vapor Retarder (0.1 perm or less)
Bond Strength (Control) ASTM C-297	143 psi	Pass
Bond Strength (Accel. Aging) ASTM-C297	Pass	Pass
Bond Strength (Freeze-Thaw) ASTM C-297	Pass	Pass
Abrasion ASTM D-1242	.023 inches	.023 inches
Water Absorption ASTM D-570	7.5%	7.5%
Chemical Resistance ASTM D-2299	Pass	Pass
Freeze-Thaw ASTM C-67	.5%	.5%
Concentrated Load AC-39 Section 4.12	Pass	Pass
Wind Uplift FM 1-52	Pass	Pass
Impact Resistance ASTM D-3746	Pass	Pass



KEYNOTES
1. WP-47 Seam Tape
2. WP-25 Metal Lath
3. Base Coat
4. Slurry Coat
5. Texture Coat
6. SC-10 Topcoat

ALX STANDARD - EDGE DETAIL
DIVISION 07 18 13
Pedestrian Traffic Coatings
SCALE : NTS
westcoat SPECIALTY COATING SYSTEMS
4007 Lockridge Street • San Diego, CA • 92102
800.250.4519 • westcoat.com

1 DECK COATING DETAILS
SCALE: 1" = 1'-0"

S9
SYNTHESIS 9, LLC
523 N. D ST.
TACOMA, WA 98403

REGISTERED ARCHITECT
BRETT ALLEN LINDSAY
STATE OF WASHINGTON
9251

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

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AGENCY REVIEW | 24.03.11

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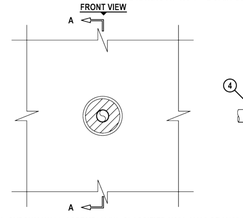

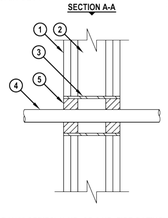

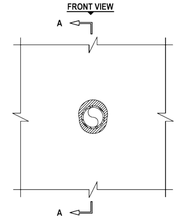

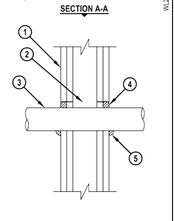

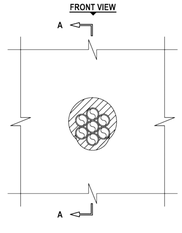

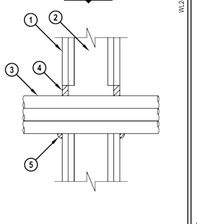

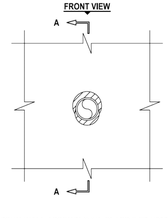

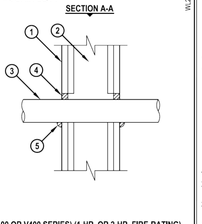

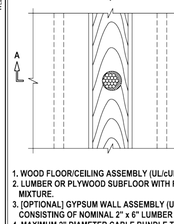

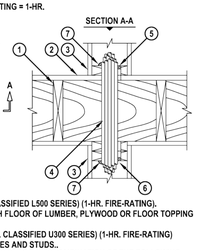

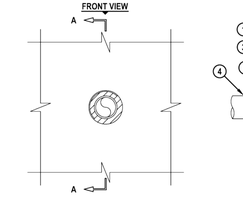

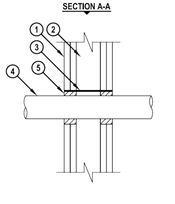

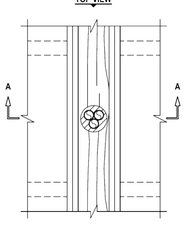

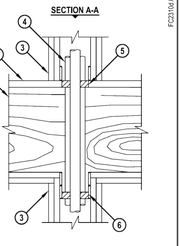

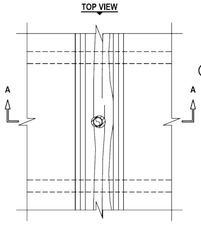

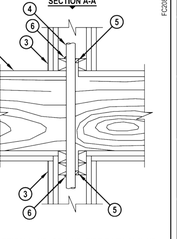

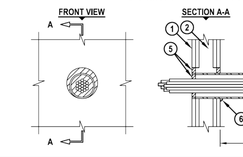

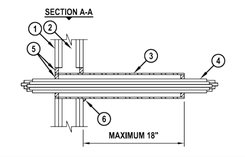

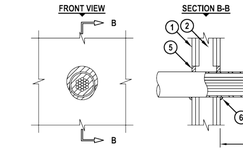

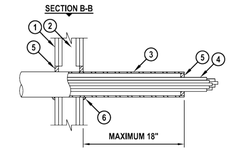

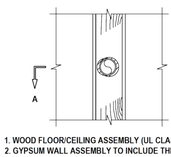

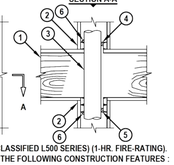

UL SYSTEM NO. W-L-2186

PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 1/2-HR. OR 1-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT
L-RATING AT 400°F = 2 CFM / SQ FT

WL2186e.011215

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF 2" x 4" LUMBER. STEEL STUDS TO BE MIN. 2-1/2" WIDE.
3. [OPTIONAL] MAXIMUM 3" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR LIGHTER).
4. MAXIMUM 1" NOMINAL DIAMETER SDR 9 CROSS-LINKED POLYETHYLENE (PEX) TUBING (CLOSED PIPING SYSTEM).
5. HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT :
   - A. MINIMUM 5/8" DEPTH, FOR A 1-HR. FIRE-RATING.
   - B. MINIMUM 1-1/4" DEPTH, FOR A 2-HR. FIRE-RATING.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 1/2", MAXIMUM 1-3/8".
3. WHEN A STEEL SLEEVE IS PROVIDED FOR ASSEMBLIES WITH L-RATINGS, APPLY HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT AROUND PERIPHERY OF OPENING TO COVER EXPOSED ENDS OF SLEEVE AND TO LAP MINIMUM 1/4" ONTO GYPSUM BOARD ON EACH SIDE OF WALL.
4. WHEN A STEEL SLEEVE IS NOT PROVIDED, PENETRANT MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45° FROM PERPENDICULAR.

Hilti Firestop Systems
HILTI, Inc.
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Sheet 1 of 1
Scale 7/32" = 1"
Date Jan. 12, 2015
Drawing No. WL 2186e
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2244

PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 1-HR. OR 2-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT
L-RATING AT 400°F = 2 CFM / SQ FT

WL2244e.011215

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   - A. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40 OR HEAVIER) (CELLULAR OR SOLID CORE) (CLOSED PIPING SYSTEM ONLY).
   - B. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 11 OR SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 5/8".

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Sheet 1 of 1
Scale 3/16" = 1"
Date Jan. 12, 2015
Drawing No. WL 2244e
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2467

MULTIPLE PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR. OR 1-HR.

WL2467b.011215

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE.
3. MAXIMUM 4" DIAMETER BUNDLE CONSISTING OF MAXIMUM 1" NOMINAL DIAMETER PEX TUBE (SDR 9) (CLOSED PIPING SYSTEM).
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 5".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".

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Scale 3/16" = 1"
Date Jan. 12, 2015
Drawing No. WL 2467b
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UL SYSTEM NO. W-L-2474

PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.
L-RATING AT AMBIENT = LESS THAN 1 CFM /SQ FT
L-RATING AT 400°F = 4 CFM / SQ FT

WL2474d.011315

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300, U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   - A. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40 OR HEAVIER) (CELLULAR OR SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
   - B. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
   - C. MAXIMUM 2" NOMINAL DIAMETER PEX TUBING (SDR 9) (CLOSED PIPING SYSTEM ONLY).
   - D. MAXIMUM 2" NOMINAL DIAMETER RNC-PVC CONDUIT (SCHEDULE 40).
4. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. DIAMETER OF OPENING SHALL BE 1" LARGER THAN NOMINAL PIPE DIAMETER.
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 5/8".

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Scale 3/16" = 1"
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Drawing No. WL 2474d
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UL/cUL SYSTEM NO. F-C-3071

CABLE BUNDLE THROUGH WOOD FLOOR/CEILING ASSEMBLY

F-RATING = 1-HR.
T-RATING = 1-HR.

FC3071d.092707

1. WOOD FLOOR/CEILING ASSEMBLY (UL/cUL CLASSIFIED L500 SERIES) (1-HR. FIRE-RATING).
2. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE.
3. [OPTIONAL] GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300 SERIES) (1-HR. FIRE-RATING) CONSISTING OF NOMINAL 2" x 6" LUMBER PLATES AND STUDS..
4. MAXIMUM 2" DIAMETER CABLE BUNDLE TO CONSIST OF ANY COMBINATION OF THE FOLLOWING:
   - A. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE WITH PVC JACKET.
   - B. MAXIMUM 3/C (+GROUND) 2/0 ALUMINUM SER CABLE WITH PVC JACKET.
   - C. MAXIMUM 3/C NO. 8 AWG STEEL CLAD CABLE.
   - D. MAXIMUM 3/C (+GROUND) NO. 10 AWG (ROMEX) CABLE WITH PVC JACKET.
   - E. TYPE RG 59/4 COAXIAL CABLE WITH PVC JACKET.
   - F. MAXIMUM 1" DIAMETER METAL CLAD TEK CABLE WITH PVC JACKET.
5. MINIMUM 1/2" DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT INSTALLED FLUSH WITH TOP SURFACE OF SOLE PLATE OR SUBFLOOR.
6. MINIMUM 5/8" DEPTH HILTI CP 606 FLEXIBLE FIRESTOP SEALANT INSTALLED FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.
7. MINIMUM 1/2" BEAD HILTI CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AT POINT OF CONTACT ON BOTTOM SURFACE OF SUBFLOOR OR TOP SURFACE OF SOLE PLATE AND BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
3. CABLES TO FILL A MAXIMUM 45% OF CROSS-SECTIONAL AREA OF OPENING.

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Sheet 1 of 1
Scale 1/8" = 1"
Date Sep. 27, 2007
Drawing No. FC 3071d
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2128

PLASTIC PIPE THROUGH GYSPUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR.

WL2128g.011215

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. [OPTIONAL] SHEET METAL PIPE SLEEVE (MAXIMUM 3-1/2" DIAMETER, MINIMUM 28 GA. THICKNESS, WITH MINIMUM 1-1/4" LAP ALONG LONGITUDINAL SEAM).
4. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   - A. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40) (CELLULAR OR SOLID CORE) (CLOSED OR VENTED PIPING SYSTEM).
   - B. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
5. HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT :
   - A. MINIMUM 5/8" DEPTH OF SEALANT FOR 1-HR. FIRE-RATING.
   - B. MINIMUM 1-1/4" DEPTH OF SEALANT FOR A 2-HR. FIRE-RATING.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3-1/2".
2. ANNULAR SPACE = MINIMUM 1/4", MAXIMUM 11/16".
3. PIPE MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45° FROM PERPENDICULAR.

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Sheet 1 of 1
Scale 3/16" = 1"
Date Jan. 12, 2015
Drawing No. WL 2128g
Saving Lives through Innovation and Education

UL SYSTEM NO. F-C-2310

MULTIPLE PLASTIC PEX TUBING THROUGH WOOD FLOOR/CEILING ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 1-HR. OR 1-1/2-HR.

FC2310d.010715

1. WOOD FLOOR/CEILING ASSEMBLY (UL CLASSIFIED L500 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD, OR FLOOR TOPPING MIXTURE.
3. [OPTIONAL] GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) CONSISTING OF NOMINAL 2" x 4" LUMBER PLATES AND STUDS.
4. MAXIMUM 1" NOMINAL DIAMETER CROSS-LINKED POLYETHYLENE (PEX) SDR 9 TUBING (CLOSED OR VENTED PIPING SYSTEM) (MAXIMUM QUANTITY = 3).
5. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE.
6. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE BETWEEN TUBING AND OPENING = MINIMUM 3/16", MAXIMUM 1".
3. ANNULAR SPACE BETWEEN TUBING = MINIMUM 0", MAXIMUM 1/4".

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Sheet 1 of 1
Scale 11/64" = 1"
Date Jan. 07, 2015
Drawing No. FC 2310d
Saving Lives through Innovation and Education

UL SYSTEM NO. F-C-2081

PLASTIC PEX TUBING THROUGH WOOD FLOOR/CEILING ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 1-HR. OR 2-HR.

FC2081f.012415

1. WOOD FLOOR/CEILING ASSEMBLY (UL CLASSIFIED L500 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD, OR FLOOR TOPPING MIXTURE.
3. [OPTIONAL] GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) CONSISTING OF NOMINAL 2" x 4" LUMBER PLATES AND STUDS.
4. MAXIMUM 1" NOMINAL DIAMETER CROSS-LINKED POLYETHYLENE (PEX) SDR 9 TUBING (CLOSED OR VENTED PIPING SYSTEM).
5. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE OF CHASE WALL, AND FLUSH WITH BOTTOM SURFACE OF CEILING OR LOWER TOP PLATE.
6. MINIMUM 1/4" BEAD HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 1-1/2".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/2".

Hilti Firestop Systems
HILTI, Inc.
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Sheet 1 of 1
Scale 5/32" = 1"
Date Jan. 24, 2015
Drawing No. FC 2081f
Saving Lives through Innovation and Education

Firestop Schedule of Through Penetration Systems. Basis of Design: Hilti, Inc.

TYPE OF PENETRANT	F-RATING (HR)	CONCRETE FLOORS	CONCRETE OR BLOCK WALLS	GYPSUM WALLS	WOOD FLOORS	Hilti Products
		BASIS OF DESIGN UL SYSTEM		BASIS OF DESIGN UL SYSTEM		
CIRCULAR BLANK OPENINGS	1	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	--	CP 680, CP 618, FS One Max, Firestop Block (CFS-BL)
	2	F-A-0006, C-AJ-0055, C-AJ-0090	C-AJ-0055, C-AJ-0090	--	--	
	3	F-A-0006, C-AJ-0055, C-AJ-0086, F-A-0014	C-AJ-0055, C-AJ-0086	--	--	
METAL PIPES OR CONDUIT	1	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020	W-L-1054, W-L-1058, W-L-1164, W-L-1506	F-C-1009, F-C-1059, F-C-1168	CP 680, FS One Max, CP 606, CFS-S SIL GG, CFS-D, Mineral Wool
	2	C-AJ-1226, F-A-1028, F-A-1017	C-AJ-1226, W-J-1067, W-J-1020, W-J-1248	W-L-1054, W-L-1058, W-L-1164, W-L-1506	F-C-1009, F-C-1059, F-C-1168	
	3	C-AJ-1226, F-A-1017	C-AJ-1226, W-J-1041, W-J-1068	--	--	
	4	C-BJ -1037, C-BJ-1034	C-BJ-1034, C-BJ-1037, W-J-1041, W-J-1042, W-J-1068	W-L-1110, W-L-1111, W-L-1165	--	
NON-METALLIC PIPE OR CONDUIT (I.E. PVC, CPVC, ABS, FRP, ENT)	1	F-A-2053, F-A-2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	F-C-2232, F-C-2030, F-C-2160, F-C-2389	CP 680, CP 643N, Mineral Wool, CP 644, FS One Max, CFS-S SIL SL, CFS-S SIL GG, CP 648
	2	F-A 2053, F-A 2025, C-AJ-2109, C-AJ-2098, C-AJ-2271, C-AJ-2167, C-BJ-2021, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2167, C-AJ-2371, C-AJ-2342	W-L-2078, W-L-2075, W-L-2128	F-C-2029, F-C-2030, F-C-2128, F-C-2160	
	3	F-A-2054, C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342	C-AJ-2109, C-AJ-2098, C-AJ-2371, C-AJ-2342	--	--	
	4	C-BJ-2016, C-AJ-2017	W-J-2057, W-J-2091	W-L-2184, W-L-2245	--	
SINGLE OR BUNDLED CABLES	1	F-A-3007,C-AJ-3095,C-AJ-3180, C-AJ-3283	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	F-C-3012, F-C-3110, F-C-3044	CP 680, CP 653, FS One Max, CP 618, CP 606, CFS-D, CFS-CC
	2	F-A-3007,C-AJ-3095,C-AJ-3334, F-A-3060	W-J-3036, C-AJ-3095, C-AJ-3180, W-J-3060, W-J-3167, W-J-3189	W-L-3065, W-L-3111, W-L-3112, W-L-3334, W-L-3414, W-L-3396	F-C-3012, F-C-3110	
	3	F-A-3007, C-AJ 3095, C-AJ-3285	C-AJ-3095, C-AJ-3180, W-J-3167	--	--	
	4	N/A**	W-J-3050	W-L-3139, W-L-3334	--	
CABLE TRAY	1	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	--	Firestop Block (CFS-BL), FS One Max, Foam (CP 620), CP 618
	2	C-AJ-4034, C-AJ-4035	W-J-4027, C-AJ-4034, C-AJ-4035	W-L-4011, W-L-4019, W-L-4081	--	
	3	C-AJ-4034, C-AJ-4035	C-AJ-4034, C-AJ-4035	W-L-3385, W-L-3277	--	
	4	N/A**	W-J-8007	W-L 8014	--	
INSULATED PIPES	1	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090, C-AJ-5048	C-AJ-5090, C-AJ-5091, C-AJ 5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	F-C-5004, F-C-5037, F-C-5036	CP 680, FS One Max, Mineral Wool
	2	F-A 5015, F-A 5017, C-AJ-5090, C-AJ-5091, C-AJ-5090	C-AJ-5090, C-AJ-5091, C-AJ-5061, W-J-5042	W-L-5028, W-L-5029, W-L-5047	F-C-5004, F-C-5037	
	3	F-A 5016, C-AJ-5090, F-A-5018	C-AJ-5090, C-AJ-5061	--	--	
	4	C-BJ-5006	C-BJ-5006, W-J-5028	W-L-5073	--	
ELECTRICAL BUSWAY	1	C-AJ-6006, C-AJ-6017, F-A-6002, C-AJ-6036	C-AJ-6006, C-AJ-6017, C-AJ-6036	--	--	CP 637, FS One Max, CP 620, Firestop Block (CFS-BL), Mineral Wool, CFS-S Sil GG, CFS-S SIL SL
	2	C-AJ-6006, C-AJ-6017, F-A 6042, C-AJ-6036	C-AJ-6006, C-AJ-6017, C-AJ-6036	--	--	
	3	C-AJ-6006, C-AJ-6017	C-AJ-6006, C-AJ-6017	--	--	
MECHANICAL DUCTWORK WITHOUT DAMPERS (NON-INSULATED)	1	C-AJ-7046, C-AJ-7051, C-AJ-7084	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022	W-L-7017, W-L-7040, W-L-7042, W-L-7155	F-C-7013	CFS-S SIL GG, CP 606, FS One Max
	2	C-AJ-7046, C-AJ-7051, C-AJ-7085	C-AJ-7046, C-AJ-7051, W-J-7021, W-J-7022	W-L-7040, W-L-7042, W-L-7155	--	
	3	C-AJ-7046, C-AJ-7051	C-AJ-7046, C-AJ-7051	--	--	
MECHANICAL DUCTWORK WITHOUT DAMPERS (INSULATED)	1	N/A**	W-J-7029, W-J-7124	W-L-7059, W-L-7153, W-L-7156, W-L-7151	N/A**	FS One Max, Mineral Wool
	2	N/A**	W-J-7091, W-J-7112, W-J-7124	W-L-7059, W-L-7153, W-L-7156, W-L-7151	N/A**	
MIXED PENETRANTS	1	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ-8099, C-AJ-8056, W-J-8007, C-AJ-8143	W-L-1095, W-L-8013	F-C-8009, F-C-8014, F-C-8026	FS One Max, Firestop Block (CFS-BL), CP 620, CP 618
	2	C-AJ-8099, C-AJ-8056, C-AJ-8143	C-AJ 8099, C-AJ-8056, W-J-8007, C-AJ-8143	W-L-1095, W-L-8013	--	
	3	C-AJ-8099, C-AJ-8056	C-AJ-8041, C-AJ-8056, W-J-8007, C-AJ-8099	--	--	
	4	C-AJ-8095	C-AJ-8095, W-J-8007	W-L-8014	--	

**CONTACT HILTI FOR CURRENT UL-CLASSIFIED SYSTEM OR ENGINEER JUDGMENT DRAWING: 800-879-6000

NOTES:

1. Jobsite conditions of each through-penetration firestop system must meet ALL details of the UL-Classified System selected.
2. If jobsite conditions do not match any UL-classified systems in the schedules above, contact Hilti for alternative systems or Engineer Judgment Drawings - 800-879-8000
3. Where more than one applicable UL-Classified System is listed in the schedules, choose the UL System which is most economical for each through-penetration firestop system.
4. Coordinate work with other trades to assure that penetration opening sizes are appropriate for penetrant locations, and vice versa.

UL/cUL SYSTEM NO. W-L-3065

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR. OR 3/4-HR.
L-RATING AT AMBIENT = 15 CFM / SQ FT
L-RATING AT 400° F = 8 CFM / SQ FT

WL3065ad.041316

1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, OR V400) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. [OPTIONAL] MAXIMUM 4" NOMINAL DIAMETER EMT, STEEL PIPE (SCHEDULE 5 OR HEAVIER) OR 28 GA. GALVANIZED STEEL SLEEVE (SEE NOTE NO. 6 BELOW).

Hilti Firestop Systems
HILTI, Inc.
Plano, Texas USA (800) 879-8000
Sheet 1 of 2
Scale 7/64" = 1"
Date Apr. 13, 2016
Drawing No. WL 3065ad
Saving Lives through Innovation and Education

UL/cUL SYSTEM NO. W-L-3065

CABLE BUNDLE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR. OR 3/4-HR.
L-RATING AT AMBIENT = 15 CFM / SQ FT
L-RATING AT 400° F = 8 CFM / SQ FT

WL3065ad.041316

4. CABLE BUNDLE TO CONSIST OF ANY COMBINATION OF THE FOLLOWING (SEE NOTE NO. 5 BELOW) :
   - A. MAXIMUM 7/C NO. 12 AWG POWER CABLE WITH PVC JACKET.
   - B. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
   - C. MAXIMUM 1/2" DIAMETER RG/U COAXIAL CABLE WITH PVC JACKET.
   - D. MAXIMUM 3/C NO. 8 AWG METAL-CLAD CABLE.
   - E. MAXIMUM 3/C (+GROUND) NO. 8 AWG COPPER CONDUCTOR CABLE (ROMEX).
   - F. MAXIMUM 5/8 DIAMETER FIBER-OPTIC CABLE WITH PVC JACKET.
   - G. MAXIMUM 3/4" DIAMETER COPPER GROUND CABLE WITH OR WITHOUT PVC JACKET.
   - H. MAXIMUM 1-1/4" DIAMETER SINGLE OR MULTIPLE CONDUCTOR TYPE MI CABLE (SEE NOTE NO. 4 BELOW).
   - I. ANY CABLES, METAL-CLAD CABLES, OR ARMORED CABLES CURRENTLY LISTED UNDER THE THROUGH PENETRATING PRODUCTS CATEGORY.
   - J. MAXIMUM 4/C (+GRND) NO. 300 KCMIL ALUMINUM SER CABLE.
   - K. MAXIMUM 4 PAIR NO. 22 AWG CAT 5 OR CAT 6 CABLE.
   - L. MAXIMUM RG 6/U COAXIAL CABLE WITH FLUORINATED ETHYLENE JACKET.
5. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT, OR CP 618 FIRESTOP PUTTY STICK.
6. MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, CP 606 FLEXIBLE FIRESTOP SEALANT, OR CP 618 FIRESTOP PUTTY STICK APPLIED AT WALL/SLEEVE INTERFACE WHEN STEEL SLEEVE EXTENDS BEYOND ONE OR BOTH SIDES OF WALL.

NOTES : 1. MAXIMUM DIAMETER OF OPENING WITH SLEEVE = 5-1/2".
2. MAXIMUM DIAMETER OF OPENING WITHOUT SLEEVE = 4".
3. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
4. A MINIMUM 1/8" SEPARATION SHOULD BE MAINTAINED BETWEEN MI CABLES AND ANY OTHER TYPES OF CABLE.
5. CABLES TO FILL MAXIMUM 45% OF CROSS-SECTIONAL AREA OF OPENING.
6. WHEN SCHEDULE 5 STEEL PIPE OR EMT IS USED, OPEN ENDED SLEEVE MAY EXTEND UP TO 18" BEYOND WALL SURFACE. AS AN OPTION, SCHEDULE 5 STEEL PIPE OR EMT SLEEVE MAY EXTEND CONTINUOUSLY BEYOND ONE WALL SURFACE.
7. WHEN SLEEVE IS CONTINUOUS ON ONE SIDE OF WALL, THE CABLE FILL MAY BE 0% TO 45% AND THE MAXIMUM ANNULAR SPACE IS NOT LIMITED.
8. [OPTIONAL - NOT SHOWN] MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED TO ACCOMMODATE FIRESTOP SEALANT OR PUTTY MAY BE USED AS BACKING MATERIAL.

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HILTI, Inc.
Plano, Texas USA (800) 879-8000
Sheet 2 of 2
Scale -
Date Apr. 13, 2016
Drawing No. WL 3065ad
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UL SYSTEM NO. F-C-2389

PLASTIC PIPE THROUGH WOOD FLOOR/CEILING ASSEMBLY

F-RATING = 1-HR.
T-RATING = 3/4-HR. OR 1-HR.

FC2389e.081519

1. WOOD FLOOR/CEILING ASSEMBLY (UL CLASSIFIED L500 SERIES) (1-HR. FIRE-RATING).
2. GYPSUM WALL ASSEMBLY TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
   - A. WOOD PLATES AND STUDS TO CONSIST OF NOMINAL 2" x 4" OR 2" x 6" LUMBER (SPACED MAXIMUM 16" OC).
   - B. MINIMUM 1/2" THICK RATED OR NON-RATED GYPSUM WALLBOARD.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   - A. MAXIMUM 3" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
   - B. MAXIMUM 3" NOMINAL DIAMETER CPVC PLASTIC PIPE (CLOSED PIPING SYSTEM ONLY).
   - C. MAXIMUM 3" NOMINAL DIAMETER ABS PLASTIC PIPE (CELLULAR OR SOLID CORE).
   - D. MAXIMUM 2" NOMINAL DIAMETER ENT.
4. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH TOP SURFACE OF FLOOR OR TOP SURFACE OF SOLE PLATE.
5. MINIMUM 3/4" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT FLUSH WITH BOTTOM SURFACE OF LOWER TOP PLATE.
6. MINIMUM 1/2" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT OR OUT TO MAXIMUM 1/8" ANNULAR SPACE.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 5/8".
3. CLOSED OR VENTED PIPING SYSTEM (PVC, ABS = SCHEDULE 40; CPVC = SDR 13.5).
4. WHEN LUMBER PLATES ARE DISCONTINUOUS, ATTACH MINIMUM 1-1/2" WIDE STEEL STRAP (MIN. 20 GA.) AT SOLE PLATE AND MINIMUM 3" WIDE STEEL STRAP AT TOP PLATES TO BRIDGE OPENING. STRAPS TO OVERLAP PLATES MINIMUM 2" ON EACH SIDE OF OPENING AND SECURED WITH MINIMUM OF 2 NAILS OR SCREWS ON EACH SIDE.
5. T-RATING IS 3/4-HR. WHEN PVC OR CPVC PIPE IS USED AND 1-HR. WHEN ABS PIPE OR ENT IS USED.

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HILTI, Inc.
Plano, Texas USA (800) 879-8000
Sheet 1 of 1
Scale 3/32" = 1"
Date Aug. 15, 2019
Drawing No. FC 2389e
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1 FIRESTOP PENETRATIONS

SCALE: 1:1.43

Please reference this sheet and the relevant detail(s) on the plan set.
[CONSTRUCTION PLAN SET - Bldg B, sheet A6.9]

S9

SYNTHESIS 9, LLC
523 N. D ST
TACOMA, WA 98403

REGISTERED ARCHITECT
9251
BRETT ALLEN LINDSAY
STATE OF WASHINGTON

EAST TOWN CROSSING
BUILDING 'B'
PIONEER & SHAW PUYALLUP WA

REVISIONS

REVISIONS

AGENCY REVIEW | 24.03.11

DRAWN BY: BL / CM
CHECKED BY: BL
DATE: 24.03.11
TITLE: DETAILS
PROJECT #: 2016
SHEET: A6.9

DESIGN CRITERIA

BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE LOCAL JURISDICTION.

VERTICAL LOADS

ROOF LIVE LOAD:	25 PSF (SNOW)
ROOF DEAD LOAD:	25 PSF
RESIDENTIAL FLOOR LIVE LOAD:	40 PSF (REDUCIBLE) : 60 PSF (FOR DECKS)
STAIRWAY LANDING AREAS:	150 PSF (INCLUDING Ip=1.5)
FLOOR DEAD LOAD:	30 PSF (INCLUDES 1 ½" GYP TOPPING)

SNOW DESIGN DATA (ASCE 7-16)

FLAT SNOW LOAD: N/A
SNOW EXPOSURE FACTOR, Ce=1.0,
SNOW IMPORTANCE FACTOR, Is=1.0,
THERMAL FACTOR, Ct=1.1

WIND DESIGN DATA (ASCE 7-16)

BASIC WIND SPEED (ASD) V= 85MPH
ULTIMATE WIND SPEED V= 110MPH
RISK CATEGORY: II EXPOSURE: B
IMPORTANCE FACTOR, Iw= 1.0
TOPOGRAPHIC FACTOR, Kzt= 1.0

SEISMIC DESIGN DATA (ASCE7-16)

SEISMIC RESPONSE SYSTEM: WOOD SHEARWALLS
EQUIVALENT LATERAL FORCE PROCEDURE (ASCE 7-16)
RISK CATEGORY: II SEISMIC IMPORTANCE FACTOR, Ie= 1.0
MAPPED SPECTRAL RESPONSE ACCELERATION: Ss=1.24, S1=0.476
DESIGN SPECTRAL RESPONSE ACCELERATION: Sds=0.831, Sd1=0.476
SITE CLASS: D SEISMIC DESIGN CATEGORY: D
SEISMIC RESPONSE COEFFICIENT: Cs= 0.091
DESIGN BASE SHEAR: 111,513#

SOIL PROPERTIES:
BEARING CAPACITY: 2,000 PSF
LATERAL CAPACITY: 250 PSF/FT

Please provide the geotechnical report from Krazan & Asspcoates that supports the 2,000psf allowable soil bearing capacity. [CONSTRUCTION PLAN SET - Bldg B, sheet S1.0]

GENERAL REQUIREMENTS

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER PROJECT DRAWINGS BY OTHER DISCIPLINES. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CODES LISTED ABOVE.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS RELATING TO EXISTING CONDITIONS BY MAKING FIELD SURVEYS AND MEASUREMENTS PRIOR TO COMMENCING FABRICATION OR CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION METHODS USED WILL NOT CAUSE DAMAGE TO ADJACENT BUILDINGS, UTILITIES, OR OTHER PROPERTY. THIS REQUIREMENT IS PARTICULARLY IMPORTANT DURING FOUNDATION INSTALLATION.
4. THE GENERAL CONTRACTOR IS ADVISED TO CONSIDER PERFORMING PHOTOGRAPHIC SURVEYS AND OTHER DOCUMENTATION OF THE CONDITION OF ADJACENT BUILDINGS AND OTHER STRUCTURES BEFORE THE START OF CONSTRUCTION.
5. THE GENERAL CONTRACTOR SHALL OBTAIN COPIES OF THE LATEST CONTRACT DOCUMENTS, INCLUDING ALL ADDENDA, AND PROVIDE THE RELEVANT PORTIONS TO ALL SUB-CONTRACTORS AND SUPPLIERS PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND FABRICATION AND ERECTION OF STRUCTURAL MEMBERS.
6. THE GENERAL CONTRACTOR SHALL COMPARE AND COORDINATE THE DRAWINGS OF ALL DISCIPLINES AND REPORT ANY DISCREPANCIES BETWEEN THE DRAWINGS TO THE ARCHITECT AND ENGINEER.
7. DETAILS LABELED "TYPICAL" SHALL APPLY TO ALL SITUATIONS THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. SEE DETAIL TITLES FOR APPLICABILITY OF A PARTICULAR DETAIL. TYPICAL DETAILS SHALL APPLY WHETHER OR NOT THEY ARE SPECIFICALLY KEYED AT EACH LOCATION. THE ENGINEER SHALL HAVE FINAL AUTHORITY TO DETERMINE APPLICABILITY OF TYPICAL DETAILS.
8. WHERE CONFLICTS EXIST BETWEEN STRUCTURAL DOCUMENTS THE STRICTEST REQUIREMENTS, AS INDICATED BY THE STRUCTURAL ENGINEER SHALL GOVERN.
9. THE GENERAL CONTRACTOR SHALL REVIEW AND DETERMINE THAT DIMENSIONS ARE COORDINATED BETWEEN ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO FABRICATION OR START OF CONSTRUCTION.
10. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED OR OTHERWISE REDUCED IN STRENGTH UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
11. THE GENERAL CONTRACTOR SHALL COORDINATE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS. NOTIFY THE ARCHITECT / ENGINEER OF ANY DISCREPANCIES.

CONSTRUCTION RESPONSIBILITY

1. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE, AND ARE NOT INTENDED TO INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND FOR JOB SAFETY.
2. THE ENGINEER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. PERIODIC SITE OBSERVATION VISITS MAY BE PROVIDED BY THE STRUCTURAL ENGINEER. THE SOLE PURPOSE OF THESE OBSERVATIONS IS TO REVIEW THE GENERAL CONFORMANCE OF THE CONSTRUCTION WITH THE STRUCTURAL CONTRACT DOCUMENTS. THESE LIMITED OBSERVATIONS SHOULD NOT BE CONSTRUED AS CONTINUOUS OR EXHAUSTIVE TO VERIFY THAT ALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR		
CLR.	CLEAR	N.T.S.	NOT TO SCALE
℄	CENTERLINE	O.C.	ON CENTER
CONC.	CONCRETE	PT	PRESSURE TREATED
CONT.	CONTINUOUS	REINF.	REINFORCEMENT
C.J.	CONTROL JOINT	SIM	SIMILAR
E.W.	EACH WAY	SF	SQUARE FEET
GLB	GLULAM BEAM	S.O.G.	SLAB ON GRADE
LBW	LOAD BEARING WALL	STL.	STEEL
HD	HOLD DOWN	T&G	TONGUE AND GROOVE
MFR.	MANUFACTURER	TYP.	TYPICAL
MIN.	MINIMUM	U.N.O.	UNLESS NOTED OTHERWISE
MTL.	METAL	W/	WITH
N.T.S.	NOT TO SCALE		

DEFERRED SUBMITTALS

THE FOLLOWING IS A LIST OF ITEMS THAT ARE NOT INCLUDED IN THIS PLAN AND SHOULD BE PROVIDED BY THE BUILDER AT TIME OF APPLICATION FOR PERMIT OR AS A DEFERRED SUBMITTAL ITEM:

- ALTERNATIVE I-JOIST/BEAM MANUFACTURER PLANS
- PRE-ENGINEERED TRUSS DESIGNS AND LAYOUTS

SITE WORK

PER KRAZAN & ASSOCIATES, INC. REPORT DATED APRIL 11, 2019, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 2,000 PSF. EXTERIOR FOOTINGS SHALL BEAR 18" & INTERIOR FOOTINGS SHALL BEAR 12" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS OR ON STRUCTURAL FILL PER THE GEOTECHS RECOMMENDATIONS.

CONCRETE

ITEM	DESIGN f'c (PSI)	MAX. W/C RATIO	MAX. AGGREGATE SIZE	MIN. CEMENT (SACKS/YARD)
FOUNDATIONS	2,500 @28 DAYS	0.45	¾"	
STEM WALLS	3,000 @28 DAYS	0.45	¾"	
SLAB ON GRADE	3,000 @28 DAYS	0.45	¾"	

- REINFORCING STEEL SHALL BE ASTM A615 GRADE 40 FOR #4 BARS AND SMALLER AND GRADE 60 FOR #5 BARS AND LARGER.
- MINIMUM SPLICE LENGTHS SHALL BE: 24" FOR #4, 30" FOR #5, 42" FOR #6
- CONCRETE COVER SHALL BE: 3" CAST AGAINST EARTH, 2" EXPOSED TO EARTH/WEATHER, ¾" NOT EXPOSED TO EARTH/WEATHER.
- CORNER BARS ARE REQUIRED FOR ALL HORIZONTAL BARS IN FOOTINGS AND WALLS.
- All CONCRETE HAS BEEN DESIGNED FOR 2,500 PSI CONCRETE SO NO SPECIAL INSPECTION IS REQUIRED.

FRAMING

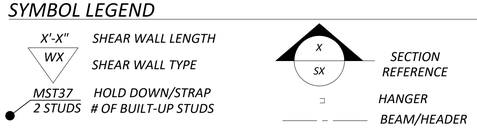
- ALL NAILING TO COMPLY WITH REQUIREMENTS OF IBC 2303.6 AND FASTENED PER TABLE 2304.10.1.
- ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED. FIELD CUT ENDS, NOTCHES, AND DRILLED HOLES OF PRESSURE TREATED LUMBER SHALL BE RETREATED IN THE FIELD IN ACCORDANCE WITH AWPA M4.
- FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER.
- MAINTAIN 8" MINIMUM CLEARANCE BETWEEN WOOD AND EARTH.
- MAINTAIN 12" MINIMUM CLEARANCE BETWEEN FLOOR BEAMS AND EARTH.
- MAINTAIN 18" MINIMUM CLEARANCE BETWEEN FLOOR JOISTS AND EARTH.

LUMBER GRADES

FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN PRODUCTS ASSOCIATION OR THE WEST COAST LUMBER INSPECTION BUREAU. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED LUMBER GRADING AGENCY AND SHALL HAVE THE FOLLOWING UNADJUSTED DESIGN MINIMUM PROPERTIES:

JOISTS:	WOOD TYPE:
2X4	HF #2 - Fb=850 PSI, FV=75 PSI, Fc=1300 PSI, E=1200000 PSI
2X6 OR LARGER	HF #2 - Fb=850 PSI, Fv=75 PSI, Fc=1300 PSI, E=1200000 PSI
BEAMS:	WOOD TYPE:
4X	DF-L#2 - Fb=900 PSI, FV=95 PSI, Fc=1350 PSI, E=1600000 PSI
6X OR LARGER	DF-L #2 - Fb=875 PSI, Fv=85 PSI, Fc=600 PSI, E=1300000 PSI
STUDS:	WOOD TYPE:
2X4	HF #2 - Fb=850 PSI, FV=75 PSI, Fc=1300 PSI, E=1200000 PSI
2X6 OR LARGER	HF #2 - Fb=850 PSI, Fv=75 PSI, Fc=1300 PSI, E=1200000 PSI
POSTS:	WOOD TYPE:
4X4	HF #2 - Fb=900 PSI, FV=95 PSI, Fc=1350 PSI, E=1600000 PSI
4X6 OR LARGER	HF #2 - FB=900 PSI, FV=95 PSI, FC=1350 PSI, E=1600000 PSI
6X6 OR LARGER	DF-L #1 - FB=700 PSI, FV=85 PSI, FC=475 PSI, E=1300000 PSI
6X6 OR LARGER	DF-L #2 - FB=700 PSI, FV=85 PSI, FC=475 PSI, E=1300000 PSI

SYMBOL LEGEND



FASTENERS

ALL NAILS SPECIFIED ON THIS PLAN SHALL BE COMMON OR GALVANIZED BOX (UNLESS NOTED OTHERWISE) OF THE DIAMETER AND LENGTH LISTED BELOW OR AS PER APPENDIX L OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS). ALL FASTENERS PLACE IN PRESSURE TREATED OR FIRE TREATED LUMBER/SHEATHING SHALL BE GALVANIZED.

- 8D COMMON (0.131" DIA., 2-1/2" LENGTH
- 8D BOX (0.113" DIA., 2-1/2" LENGTH
- 10D COMMON (0.148" DIA., 3" LENGTH
- 10D BOX (0.128" DIA., 3" LENGTH
- 16D COMMON (0.162" DIA., 3-1/2" LENGTH
- 16D SINKER (0.148" DIA., 3-1/4" LENGTH
- 5D COOLER (0.086" DIA., 1-5/8" LENGTH
- 6D COOLER (0.092" DIA., 1-7/8" LENGTH

SHEATHING

TYPICAL ROOF SHEATHING SHALL BE APA RATED 7/16" SHEATHING WITH A SPAN INDEX OF 24/16. FLOOR SHEATHING SHALL BE APA RATED ¾" T&G SHEATHING WITH A SPAN INDEX OF 48/24 UNLESS NOTED OTHERWISE. STAGGER END LAPS AT ROOF AND FLOOR SHEATHING. WALL SHEATHING SHALL BE APA RATED 7/16" SHEATHING WITH A SPAN INDEX OF 24/0 UNLESS NOTED OTHERWISE.

GLULAM BEAMS (GLB)

GLULAM BEAMS SHALL BE 24F-V4 FOR SINGLE SPANS AND 24F-V8 FOR CONTINUOUS OR CANTILEVER SPANS WITH THE FOLLOWING MINIMUM PROPERTIES:
Fb=2400 PSI, Fv=240 PSI, Fc=650 PSI (PERPENDICULAR), E=1,800,000 PSI.

ENGINEERED WOOD BEAMS AND I-JOIST

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SPECIFICATIONS FOR APPROVAL BY BUILDING OFFICIAL. DESIGN, FABRICATION AND ERECTION IN ACCORDANCE WITH THE LATEST ICC EVALUATION REPORT.
BEAMS DESIGNATED AS "PSL" SHALL HAVE THE MINIMUM PROPERTIES:
Fb=2900 PSI, Fv=290 PSI, Fc=750 PSI (PERPENDICULAR), E=2,000,000 PSI.
BEAMS DESIGNATED AS "LVL" SHALL HAVE THE MINIMUM PROPERTIES:
Fb=2600 PSI, Fv=285 PSI, Fc=750 PSI (PERPENDICULAR), E=1,900,000 PSI.
BEAMS DESIGNATED AS "LSL" SHALL HAVE THE MINIMUM PROPERTIES:
Fb=1700 PSI, Fv=400 PSI, Fc=680 PSI (PERPENDICULAR), E=1,300,000 PSI.

PRE-ENGINEERED ROOF TRUSSES

PRE-ENGINEERED ROOF TRUSSES IS A DEFERRED SUBMITTAL ITEM AND IS TO BE DESIGNED, FABRICATED AND INSTALLED PER THE LATEST TRUSS PLATE INSTITUTE STANDARDS, AND IBC SECTION 2303.4. PREFABRICATED ITEMS TO BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER. THE FABRICATOR SHALL PROVIDE ALL CONNECTION DESIGN, DETAILS AND INSTALLATION INSTRUCTIONS, WHICH SHALL BE AVAILABLE ON SITE FOR INSPECTION. WHERE TRUSSES ARE NOT PROVIDED TO COMPLETE THE ROOF SYSTEM, OVERFRAMING MEMBERS AND CONNECTIONS SHALL BE PROVIDED. OVERFRAMING DETAILS SHALL BE INCLUDED IN THE TRUSS SHOP DRAWINGS IN ORDER TO PROVIDE LOADING CONDITIONS CONSISTENT WITH THE MODELING OF THE TRUSSES. THE OVERFRAMING AND RELATED DETAILS SHALL BE DESIGNED BY THE TRUSS ENGINEER. TRUSSES (OR DRAG TRUSSES) ALIGNING WITH SHEAR WALLS SHALL BE SPECIAL TRUSSES THAT HAS BEEN DESIGNED TO TRANSFER THE SPECIFIC WIND AND SEISMIC LOADS SHOWN ON THE PLANS.THE TRUSS SHALL BE DESIGNED TO TRANSFER THE LOAD BETWEEN THE ROOF SHEATHING AND THE SHEAR WALL BELOW. THE TRUSS SHALL BE DESIGNED TO TRANSFER A MINIMUM OF 100 PLF ALONG THE LENGTH OF THE TRUSS. TEMPORARY AND PERMANENT BRACING REQUIRED FOR THE STABILITY OF THE TRUSS ELEMENTS UNDER GRAVITY LOADS AND IN-PLANE WIND OR SEISMIC LOADS SHALL BE DESIGNED BY THE TRUSS ENGINEER WHERE THE TOP CHORD IS NOT DIRECTLY ATTACHED TO THE ROOF SHEATHING. THE TRUSS ENGINEER SHALL DESIGN AND SHOW THE PLACEMENT OF ALL REQUIRED TOP CHORD BRACING AND CONNECTIONS ON THE TRUSS SHOP DRAWINGS. ANY BRACING LOADS TRANSFERRED TO THE MAIN BUILDING SYSTEM SHALL BE IDENTIFIED AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER OF RECORD PRIOR TO SUBMITTING TO THE BUILDING OFFICIAL FOR APPROVAL. ROOF TRUSS TOP CORD MUST BE HF#2 OR BETTER.

SPECIAL INSPECTIONS

SOILS (PER IBC 1705.6):
CONTINUOUS SPECIAL INSPECTION SHALL BE REQUIRED FOR MATERIAL, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED STRUCTURAL FILL AND
PERIODIC SPECIAL INSPECTION IS REQUIRED TO VERIFY SHALLOW FOUNDATIONS BEARING MATERIAL MEETS DESIGNED BEARING CAPACITY, VERIFYING EXCAVATION ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL, PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIAL AND TO INSPECT SUBGRADE MATERIAL PRIOR TO COMPACTED FILL PLACEMENT TO VERIFY THE SITE HAS BEEN PREPARED PROPERLY.

WOOD CONSTRUCTION (PER IBC 1705.5) AND WIND RESISTANCE (PER IBC 1705.11):
PERIODIC SPECIAL INSPECTION IS REQUIRED TO VERIFY NAILING, BOLTING, ANCHORING AND OTHER FASTENING OF ELEMENTS OF SHEAR WALLS WITH NAIL SPACING 4" AND LESS, DRAG STRUTS, BRACES AND HOLD DOWNS.

POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD (EOR) PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSINGS OR MISPLACED ANCHORS.
2. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REINFORCING WHEN DRILLING HOLES. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACING INDICATED IN THE MANUFACTURER'S LITERATURE.
3. SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL ADHESIVE AND MECHANICAL ANCHOR INSTALLATIONS AS REQUIRED BY THE EOR. INDEPENDENT ON-SITE PROOF LOAD TESTING SHALL BE PERFORMED AS REQUIRED BY THE EOR. CONTACT EOR FOR NUMBER OF ANCHORS REQUIRED TO BE TESTED AND REQUIRED PROOF LOAD MAGNITUDE.
4. UNLESS NOTED OTHERWISE ON DOCUMENTS, ACCEPTABLE PRODUCTS SHALL BE AS LISTED BELOW:
   - A. MECHANICAL ANCHORS INTO CONCRETE:
     1. USE THE FOLLOWING (UNO):
        - A. SIMPSON TITEN HD (ICC-ES AC193 AND ACI 355.2) FOR CRACKED & UNCRACKED CONCRETE PER (ICC-ES ESR-2713)
        - B. HILTI KWIK BOLT TZ CARBON AND STAINLESS STEEL ANCHORS (ICC-ES ESR1917)
        - C. RED HEAD TRUBOLT + WEDGE ANCHORS (ICC-ES ESR2427)
        - D. SIMPSON STRONG-TIE STRONG-BOLT (STB) (ICC-ES ESR1771)(FL8668)
     2. USE THE FOLLOWING ONLY WHERE SPECIFICALLY CALLED OUT ON THE DOCUMENTS:
        - A. HILTI HDA (ICC-ES ESR1546)
        - B. HILTI HSL-3 ANCHOR (ICC-ES ESR1545)
        - C. SIMPSON STRONG-TIE TITEN HD (THD) (ICC-ES ESR2713)(FL2304)
   - B. MECHANICAL ANCHORS INTO MASONRY LINTELS OR GROUT FILLED CELLS:
     1. USE THE FOLLOWING (UNO):
        - A. SIMPSON TITEN HD (ICC-AC AC106) FOR MASONRY PER (ICC-ES ESR-1056)
        - B. HILTI KWIK BOLT 3 MASONRY ANCHORS (ICC-ES ESR1385)
        - C. SIMPSON STRONG-TIE WEDGE-ALL ANCHOR(WA) (ICBO-ES ER-3631) (FL5415)
     2. USE THE FOLLOWING ONLY WHERE SPECIFICALLY CALLED OUT ON THE DOCUMENTS:
        - A. HILTI HUS-H SCREW ANCHOR (ICC-ES ESR2369)
        - B. SIMPSON STRONG-TIE TITEN HD (THD) (ICC-ES ESR1056)(FL2304)
   - C. ADHESIVE ANCHORS INTO CONCRETE:
     1. USE THE FOLLOWING (UNO):
        - A. HILTI HIT-RE 500-SD ADHESIVE (ICC-ES ESR2322)
        - B. RED HEAD EPCON G5 ADHESIVE (ICC-ES ESR1137)(FL6582)
        - C. SIMPSON STRONG-TIE SET-XP EPOXY-TIE ADHESIVE (SETXP) (ICC-ES ESR2508)
     2. USE THE FOLLOWING ONLY WHERE SPECIFICALLY CALLED OUT ON THE DOCUMENTS:
        - A. HILTI HIT HY 150 MAX ADHESIVE (ICC-ES ESR2262)
   - D. ADHESIVE ANCHORS INTO MASONRY LINTELS OR GROUT FILLED CELLS:
     1. USE THE FOLLOWING (UNO):
        - A. HILTI HIT HY-150 MAX ADHESIVE (ICC-ES ESR1967)
        - B. SIMPSON STRONG-TIE SET EPOXY-TIE ADHESIVE (SET) (ICC-ES ESR1772)(FL5550)

PIERUCCIONI E&C, LLC
CHON PIERUCCIONI, PE
3128 N. BENNETT ST.
TACOMA, WA 98407

EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

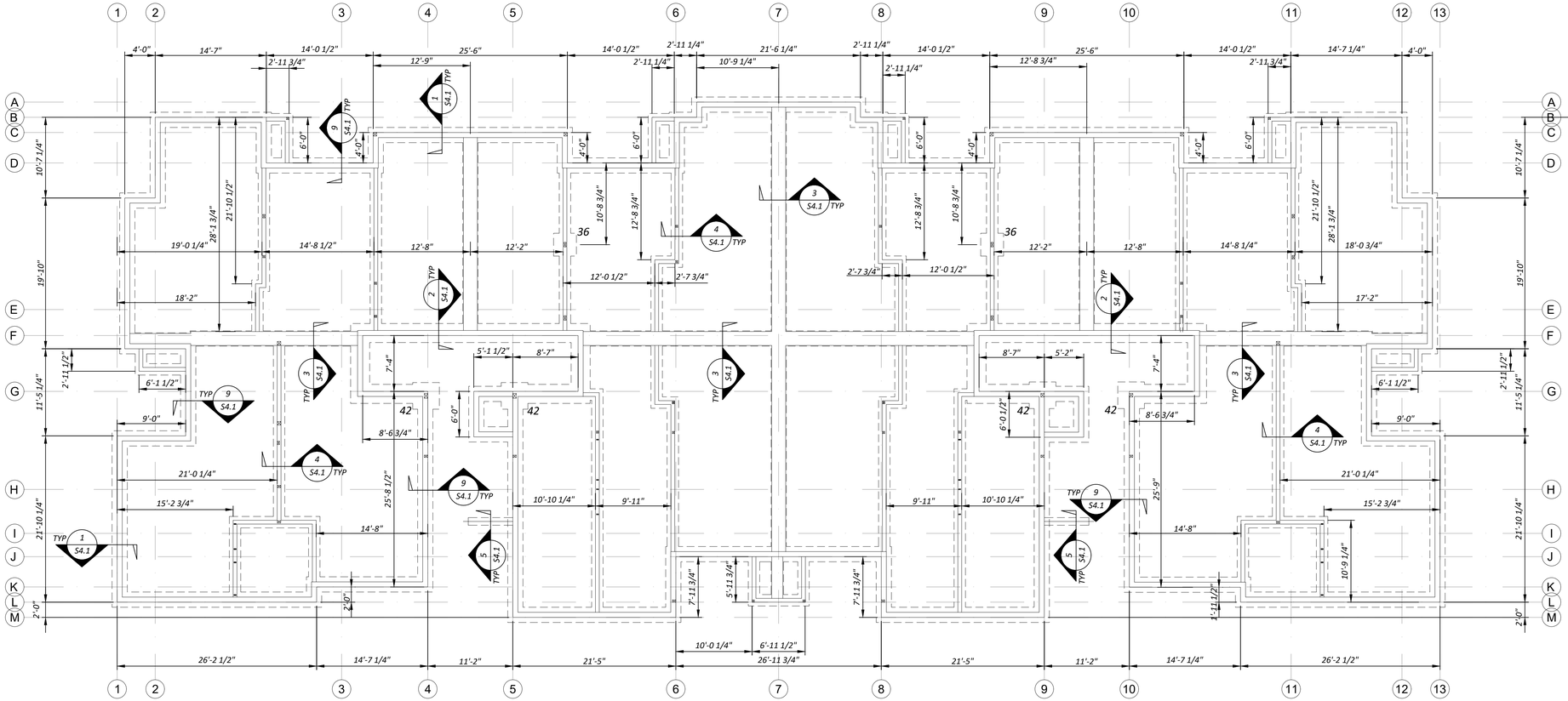
REVISIONS

01	----

REVISIONS

DRAWN BY: CP
CHECKED BY: CP
DATE: 2024.01.12
TITLE: STRUCTURAL NOTES
PROJECT # : ----
SHEET:

S1.0



FOOTING SCHEDULE

36	POST ON 36" SQUARE X 8" THICK CONC. FOOTING W/ 4-#4 BARS E.W.
42	POST ON 42" SQUARE X 8" THICK CONC. FOOTING W/ 5-#4 BARS E.W.

NOTES:
1. USE MIN. 6" WIDE POST BELOW BEAM SPLICES
2. USE 4X4 POST BELOW 4X BEAMS, U.N.O.
3 USE 6X6 POST BELOW 6X BEAMS, U.N.O.
4. PT POST SHALL BE USED IN EXTERIOR CONDITIONS

NOTES:
1. PER KRAZAN & ASSOCIATES, INC. REPORT DATED APRIL 11, 2019, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 2,000 PSF. EXTERIOR FOOTINGS SHALL BEAR 18" & INTERIOR FOOTINGS SHALL BEAR 12" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS OR ON STRUCTURAL FILL PER THE GEOTECHS RECOMMENDATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT THE SITE SOILS PROVIDE THIS MINIMUM BEARING CAPACITY.
2. EXTERIOR FOOTINGS TO BE A MINIMUM OF 18" BELOW FINISHED GRADE BEARING ON NATIVE UNDISTURBED SOIL OR STRUCTURAL FILL.
3. INTERNAL FOOTINGS TO BE A MINIMUM OF 12" BELOW FINISHED GRADE BEARING ON NATIVE UNDISTURBED SOIL OR STRUCTURAL FILL.
4. INTERIOR S.O.G. SHALL BE 4" THICK SLAB ON GRADE OVER INSULATION (PER ARCH.), OVER VAPOR BARRIER (PER ARCH.) OVER 4" COMPACTED SAND OR GRAVEL. SLAB SHALL BE REINFORCED WITH 6X6 W2.9XW2.9 WELDED WIRE, #3 BARS @ 24" O.C., OR HELIX FABRIC (5# PER CUBIC YARD).
5. EXTERIOR SLAB SHALL BE 4" THICK SLAB ON GRADE SLOPED AT 1% AWAY FROM BUILDING..
6. CONTROL JOISTS SHALL BE 15' O.C. MAX.
7. SEE SHEAR WALL PLAN ON SHEET S4.6 FOR HOLD DOWN AND ANCHOR BOLT LOCATIONS NOT SHOWN HERE.

Shear wall plans are on sheet S3.6, S3.7, an S3.8. [CONSTRUCTION PLAN SET - Bldg B, sheet S3.1]

FOUNDATION PLAN
1/8" = 1'-0"

SPECIAL INSPECTION IS REQUIRED FOR FOUNDATION SOIL BEARING

PIERUCCIONI E&C, LLC
CHON PIERUCCIONI, PE
3139 N. BENNETT ST.
TACOMA, WA 98407

EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

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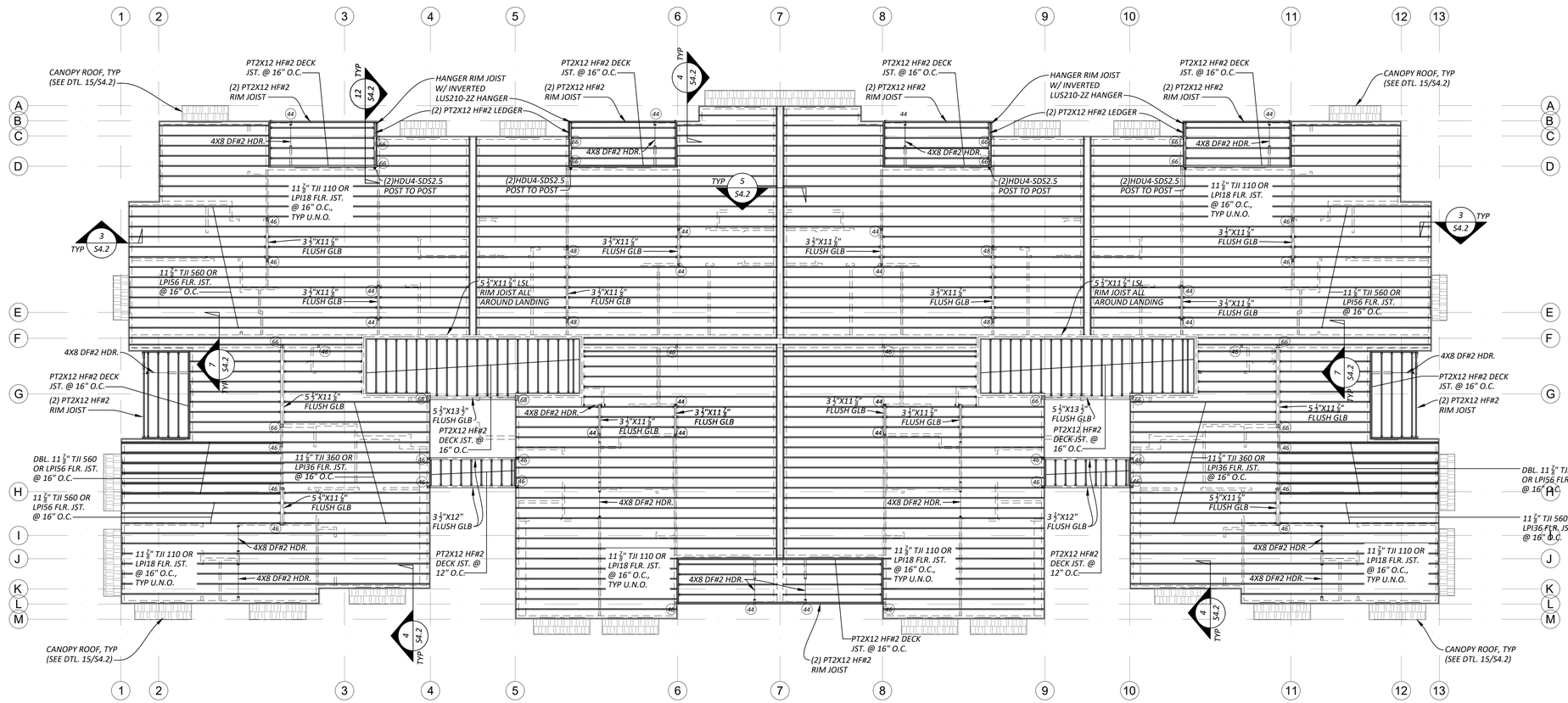
TITLE:	FOUNDATION PLAN
PROJECT # :	----
SHEET:	S3.1



POST SCHEDULE

POST NUMBER	POST TYPE	ALTERNATIVE BUILT-UP POST
(44)	4X4 DF#2	(3) 2X4 DF#2 STUDS
(46)	4X6 DF#2	(3) 2X6 DF#2 STUDS
(48)	4X8 DF#2	(5) 2X4 DF#2 STUDS
(64)	4X6 DF#2	(4) 2X4 DF#2 STUDS
(66)	6X6 DF#2	(4) 2X6 DF#2 STUDS
(68)	6X8 DF#2	(5) 2X6 DF#2 STUDS

NOTES:
1. USE MIN. 6" WIDE POST BELOW BEAM SPLICES
2. USE 4X4 DF#2 POST BELOW 4X BEAMS, U.N.O.
3 USE 6X6 DF#2 POST BELOW 6X BEAMS, U.N.O.

NOTES:
1. ALL COLUMNS NOT SPECIFIED OR OTHERWISE NOTED ON THE PLANS ARE LAMINATED TOGETHER PER "TYPICAL BUILT-UP COLUMN DETAIL" ON SHEET S4.2. SOLID WOOD COLUMNS MAY BE SUBSTITUTED FOR BUILT-UP COLUMNS BY PROVIDING AN EQUIVALENT CROSS SECTIONAL AREA.
2. ALL BEAMS SHALL HAVE A MINIMUM OF 3X BUILT-UP COLUMN WITH CONTINUOUS LOAD PATH TO FOUNDATION.
4. ALL HEADERS UNLESS SPECIFIED ON THE PLANS ARE TO BE 4X10 DF-L #2 WITH AT LEAST ONE CRIPPLE AND ONE STUD FOR EACH END FOR OPENINGS LESS THAN OR EQUAL TO 5'-0" WIDE AND TWO CRIPPLES AND ON KING STUD FOR ALL OTHERS.
5. ALL TJI FLOOR JOIST HUNG FROM FLUSH BEAMS SHALL BE HUNG WITH IUS SERIES HANGERS.
6. ALL RIM JOIST SHALL BE 1 1/4" X 11 7/8" LSL U.N.O. SEE SHEAR WALL TABLE TO AREAS REQUIRING THICKER RIM JOIST.
7. FLOOR SHEATHING SHALL BE 3/4" T&G (48/24) GLUED AND NAILED WITH 10d @ 4" O.C. ALONG PANEL EDGES AND 12" O.C. FIELD. STAGGER END LAPS. NAILS SHALL EMBED 1 1/2" MINIMUM INTO FLOOR JOIST. THIS LEVEL REQUIRES BLOCKING AT ALL SHEATHING PANEL EDGES.
8. SHORT MID LANDING STAIR STRINGERS SHALL BE PT4X12 HF#2.
9. LONG GROUND FLOOR STAIR STRINGERS SHALL BE PT3 1/2"X12" GLB.
10. EXTERIOR WALLS TO BE 2X6 AT 16" O.C., U.N.O.
11. INTERIOR PARTITIONS TO BE 2X4 AT 16" O.C. (2X6 @ PLUMBING WALLS OR PER ARCH.) U.N.O.
12. FLOOR JOISTS AND BEAMS OF EQUAL OR BETTER CAPACITY MAY BE SUBSTITUTED FOR THOSE SHOWN ON THIS PLAN, "EQUAL" IS DEFINED AS HAVING MOMENT CAPACITY, SHEAR CAPACITY, AND STIFFNESS WITHIN 3% OF THE SPECIFIED JOISTS OR BEAMS.

SEE SHEAR WALL PLANS FOR HOLD DOWN LOCATIONS THAT REQUIRE DF#2 STUDS

LEVEL 2 FRAMING PLAN
1/8" = 1'-0"

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DATE: 2024.01.12
TITLE: FRAMING PLAN
PROJECT # : ----
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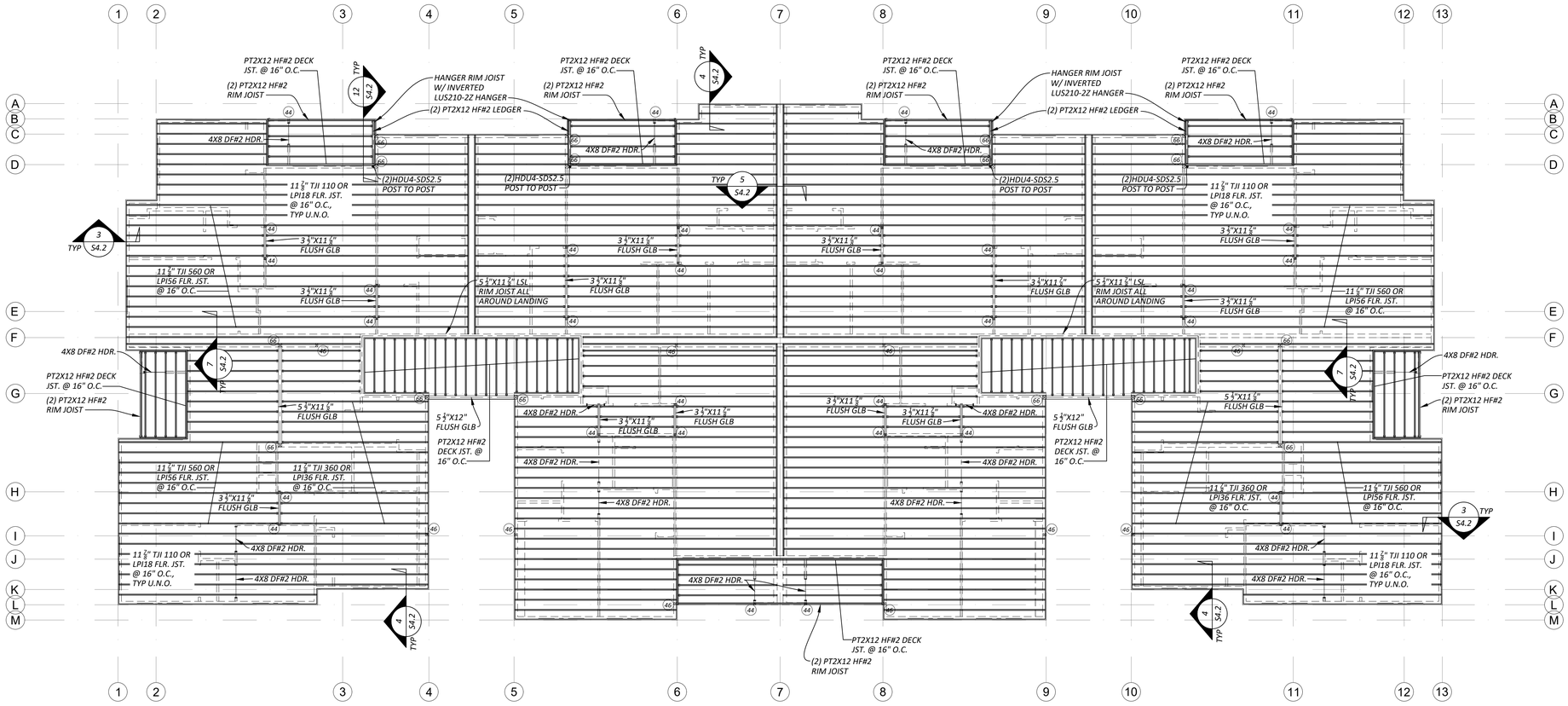

POST SCHEDULE

POST NUMBER	POST TYPE	ALTERNATIVE BUILT-UP POST
(44)	4X4 DF#2	(3) 2X4 DF#2 STUDS
(46)	4X6 DF#2	(3) 2X6 DF#2 STUDS
(64)	4X6 DF#2	(4) 2X4 DF#2 STUDS
(66)	6X6 DF#2	(4) 2X6 DF#2 STUDS
(68)	6X8 DF#2	(5) 2X6 DF#2 STUDS

NOTES:
1. USE MIN. 6" WIDE POST BELOW BEAM SPLICES
2. USE 4X4 DF#2 POST BELOW 4X BEAMS, U.N.O.
3 USE 6X6 DF#2 POST BELOW 6X BEAMS, U.N.O.

NOTES:
1. ALL COLUMNS NOT SPECIFIED OR OTHERWISE NOTED ON THE PLANS ARE LAMINATED TOGETHER PER "TYPICAL BUILT-UP COLUMN DETAIL" ON SHEET S4.2. SOLID WOOD COLUMNS MAY BE SUBSTITUTED FOR BUILT-UP COLUMNS BY PROVIDING AN EQUIVALENT CROSS SECTIONAL AREA.
2. ALL BEAMS SHALL HAVE A MINIMUM OF 3X BUILT-UP COLUMN WITH CONTINUOUS LOAD PATH TO FOUNDATION.
4. ALL HEADERS UNLESS SPECIFIED ON THE PLANS ARE TO BE 4X10 DF-L #2 WITH AT LEAST ONE CRIPPLE AND ONE STUD FOR EACH END FOR OPENINGS LESS THAN OR EQUAL TO 5'-0" WIDE AND TWO CRIPPLES AND ON KING STUD FOR ALL OTHERS.
5. ALL TJI FLOOR JOIST HUNG FROM FLUSH BEAMS SHALL BE HUNG WITH IUS SERIES HANGERS.
6. ALL RIM JOIST SHALL BE 1 1/4" X 11 7/8" LSL U.N.O. SEE SHEAR WALL TABLE TO AREAS REQUIRING THICKER RIM JOIST.
7. FLOOR SHEATHING SHALL BE 3/4" T&G (48/24) GLUED AND NAILED WITH 10d @ 6" O.C. ALONG PANEL EDGES AND 12" O.C. FIELD. STAGGER END LAPS. NAILS SHALL EMBED 1 1/2" MINIMUM INTO FLOOR JOIST.
8. SHORT MID LANDING STAIR STRINGERS SHALL BE PT4X12 HF#2.
9. LONG GROUND FLOOR STAIR STRINGERS SHALL BE PT3 1/2"X12" GLB.
10. EXTERIOR WALLS TO BE 2X6 AT 16" O.C., U.N.O.
11. INTERIOR PARTITIONS TO BE 2X4 AT 16" O.C. (2X6 @ PLUMBING WALLS OR PER ARCH.) U.N.O.
12. FLOOR JOISTS AND BEAMS OF EQUAL OR BETTER CAPACITY MAY BE SUBSTITUTED FOR THOSE SHOWN ON THIS PLAN, "EQUAL" IS DEFINED AS HAVING MOMENT CAPACITY, SHEAR CAPACITY, AND STIFFNESS WITHIN 3% OF THE SPECIFIED JOISTS OR BEAMS.

LEVEL 3 FRAMING PLAN
1/8" = 1'-0"

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EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

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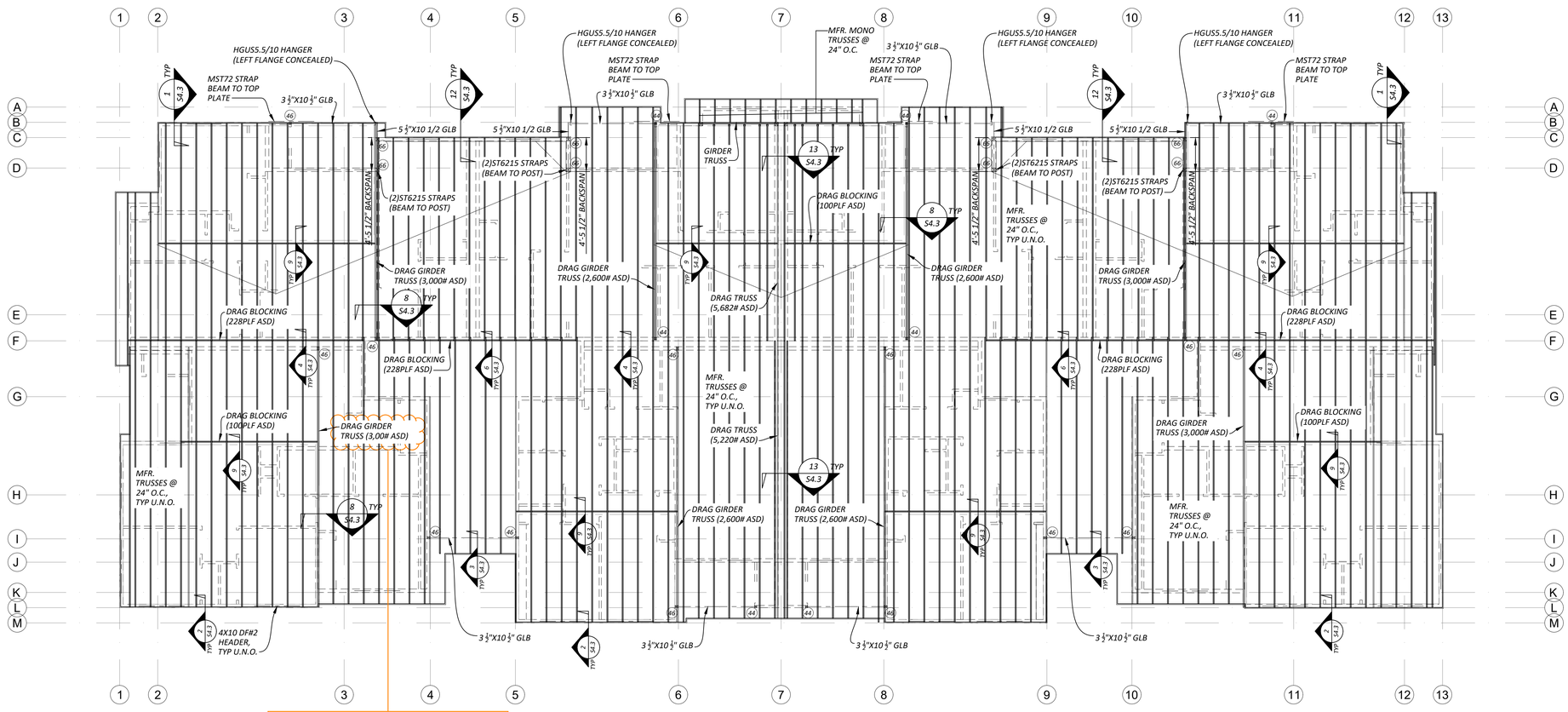

POST SCHEDULE

POST NUMBER	POST TYPE	ALTERNATIVE BUILT-UP POST
(44)	4X4 DF#2	(3) 2X4 DF#2 STUDS
(46)	4X6 DF#2	(3) 2X6 DF#2 STUDS
(64)	4X6 DF#2	(4) 2X4 DF#2 STUDS
(66)	6X6 DF#2	(4) 2X6 DF#2 STUDS
(68)	6X8 DF#2	(5) 2X6 DF#2 STUDS

NOTES:
1. USE MIN. 6" WIDE POST BELOW BEAM SPLICES
2. USE 4X4 DF#2 POST BELOW 4X BEAMS, U.N.O.
3 USE 6X6 DF#2 POST BELOW 6X BEAMS, U.N.O.

NOTES:
1. ALL COLUMNS NOT SPECIFIED OR OTHERWISE NOTED ON THE PLANS ARE LAMINATED TOGETHER PER "TYPICAL BUILT-COLUMN DETAIL" ON SHEET S4.2. SOLID WOOD COLUMNS MAY BE SUBSTITUTED FOR BUILT-UP COLUMNS BY PROVIDING AN EQUIVALENT CROSS SECTIONAL AREA.
2. ALL HEADERS UNLESS SPECIFIED ON THE PLANS ARE TO BE 4X10 DF-L #2 WITH AT LEAST ONE CRIPPLE AND ONE STUD FOR EACH END FOR OPENINGS LESS THAN OR EQUAL TO 5'-0" WIDE AND TWO CRIPPLES AND ON KING STUD FOR ALL OTHERS.
3. ROOF SHEATHING SHALL BE $\frac{7}{16}$" CDX OR $\frac{7}{16}$" OSB NAILED WITH 8d @6" O.C. ALONG PANEL EDGES, AND 12" O.C. FIELD. SPAN INDEX SHALL BE 24/0. STAGGER END LAPS. NAILS SHALL MINIMUM 1 $\frac{1}{2}$" EMBED INTO ROOF STRUCTURE BELOW.
4. BEARING WALLS ARE INDICATED AS SHADED WALLS
5. PROVIDE VENTED BLOCKING AT REQUIRED TRUSS/RAFTER BAYS
5. SHADED AREAS INDICATE OVERFRAMING. ROOF OVER FRAMING (IRC SECTION R802.3): RAFTERS SHALL BE FRAMED TO 2X RIDGE BOARD PER PLAN. RIDGE BOARD SHALL NOT BE LESS IN DEPTH THAN THE CUT END OF THE RAFTER. AT ALL VALLEYS AND HIPS THERE SHALL BE A 2X VALLEY OR HIP RAFTER AND NOT LESS IN DEPTH THAN THE CUT END OR THE RAFTER. (FULL COVERAGE AT RIDGE, HIPS AND VALLEYS).
6. ALL MANUFACTURED TRUSSES:
* SHALL NOT BE FIELD ALTERED WITHOUT ENGINEER'S APPROVAL
* SHALL HAVE DESIGN DETAILS AND DRAWINGS ON SITE FOR FRAMING INSPECTION
* SHALL BE INSTALLED AND BRACED TO MANUFACTURER'S SPECIFICATION
* SHALL CARRY MANUFACTURER'S STAMP ON EACH TRUSS
7. IF AN ENGINEERED ROOF FRAMING LAYOUT IS PROVIDED BY THE TRUSS SUPPLIER, THAT TRUSS LAYOUT SHALL SUPERCEDE THE TRUSS LAYOUT INDICATED IN THE PLANS.PROVIDE TRUSS LAYOUT AND SPECS ON SITE FOR INSPECTION.
8. PROVIDE SOLID FRAMING EQUAL TO THE WIDTH OF THE MEMBER BEING SUPPORTED (U.N.O.)

LOWER ROOF FRAMING PLAN
1/8" = 1'-0"

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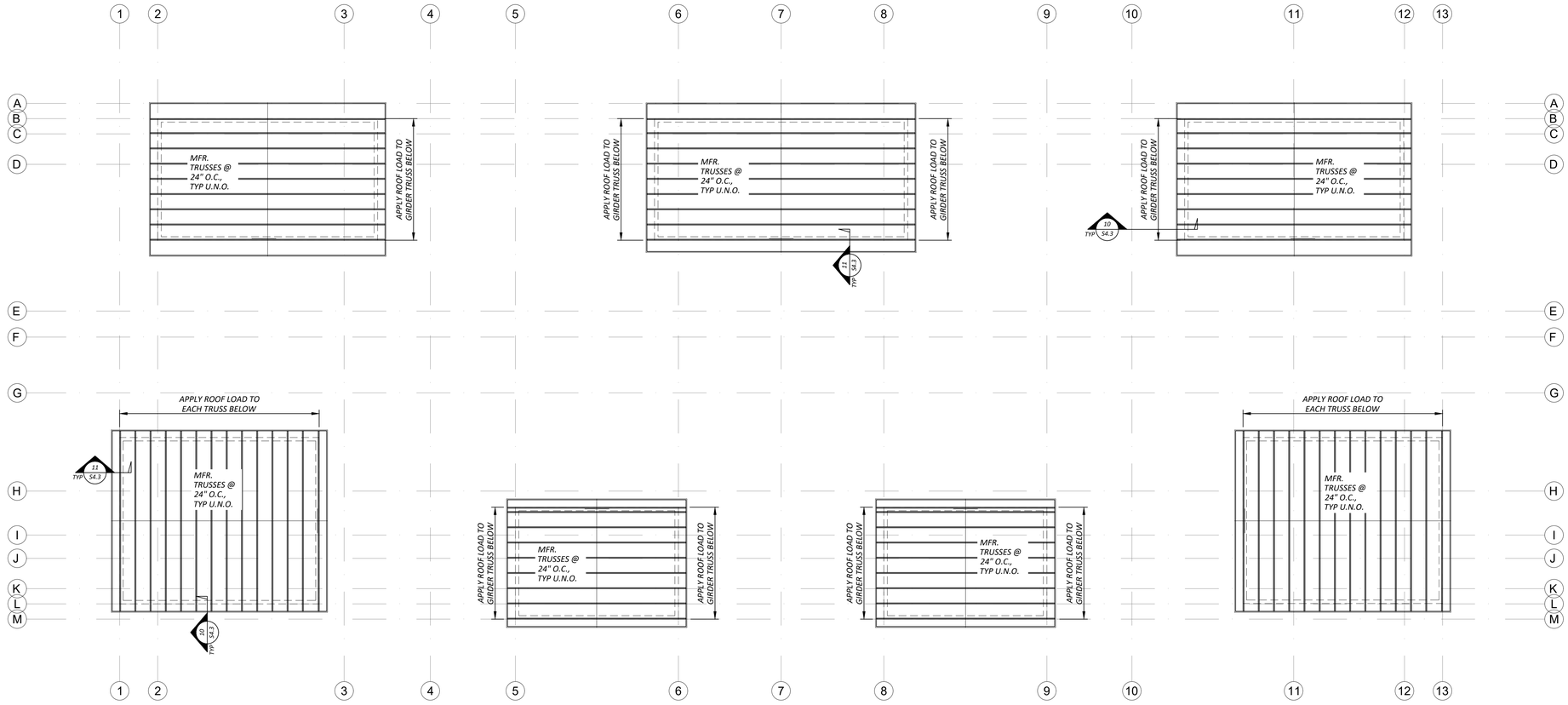

UPPER ROOF FRAMING PLAN

1/8" = 1'-0"

NOTES:

1. *ALL COLUMNS NOT SPECIFIED OR OTHERWISE NOTED ON THE PLANS ARE LAMINATED TOGETHER PER "TYPICAL BUILT-COLUMN DETAIL" ON SHEET S4.2. SOLID WOOD COLUMNS MAY BE SUBSTITUTED FOR BUILT-UP COLUMNS BY PROVIDING AN EQUIVALENT CROSS SECTIONAL AREA.*
2. *ALL HEADERS UNLESS SPECIFIED ON THE PLANS ARE TO BE 4X10 DF-L #2 WITH AT LEAST ONE CRIPPLE AND ONE STUD FOR EACH END FOR OPENINGS LESS THAN OR EQUAL TO 5'-0" WIDE AND TWO CRIPPLES AND ON KING STUD FOR ALL OTHERS.*
3. *ROOF SHEATHING SHALL BE $\frac{1}{2}$" CDX OR $\frac{7}{16}$" OSB NAILED WITH 8d @6" O.C. ALONG PANEL EDGES, AND 12" O.C. FIELD. SPAN INDEX SHALL BE 24/0. STAGGER END LAPS. NAILS SHALL MINIMUM 1 $\frac{1}{2}$" EMBED INTO ROOF STRUCTURE BELOW.*
4. *BEARING WALLS ARE INDICATED AS SHADED WALLS*
5. *PROVIDE VENTED BLOCKING AT REQUIRED TRUSS/RAFTER BAYS*
6. *ALL MANUFACTURED TRUSSES:*

* *SHALL NOT BE FIELD ALTERED WITHOUT ENGINEER'S APPROVAL*
* *SHALL HAVE DESIGN DETAILS AND DRAWINGS ON SITE FOR FRAMING INSPECTION*
* *SHALL BE INSTALLED AND BRACED TO MANUFACTURER'S SPECIFICATION*
* *SHALL CARRY MANUFACTURER'S STAMP ON EACH TRUSS*

5. *IF AN ENGINEERED ROOF FRAMING LAYOUT IS PROVIDED BY THE TRUSS SUPPLIER, THAT TRUSS LAYOUT SHALL SUPERCEDE THE TRUSS LAYOUT INDICATED IN THE PLANS.PROVIDE TRUSS LAYOUT AND SPECS ON SITE FOR INSPECTION.*
6. *PROVIDE SOLID FRAMING EQUAL TO THE WIDTH OF THE MEMBER BEING SUPPORTED (U.N.O.)*

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EAST TOWN CROSSING
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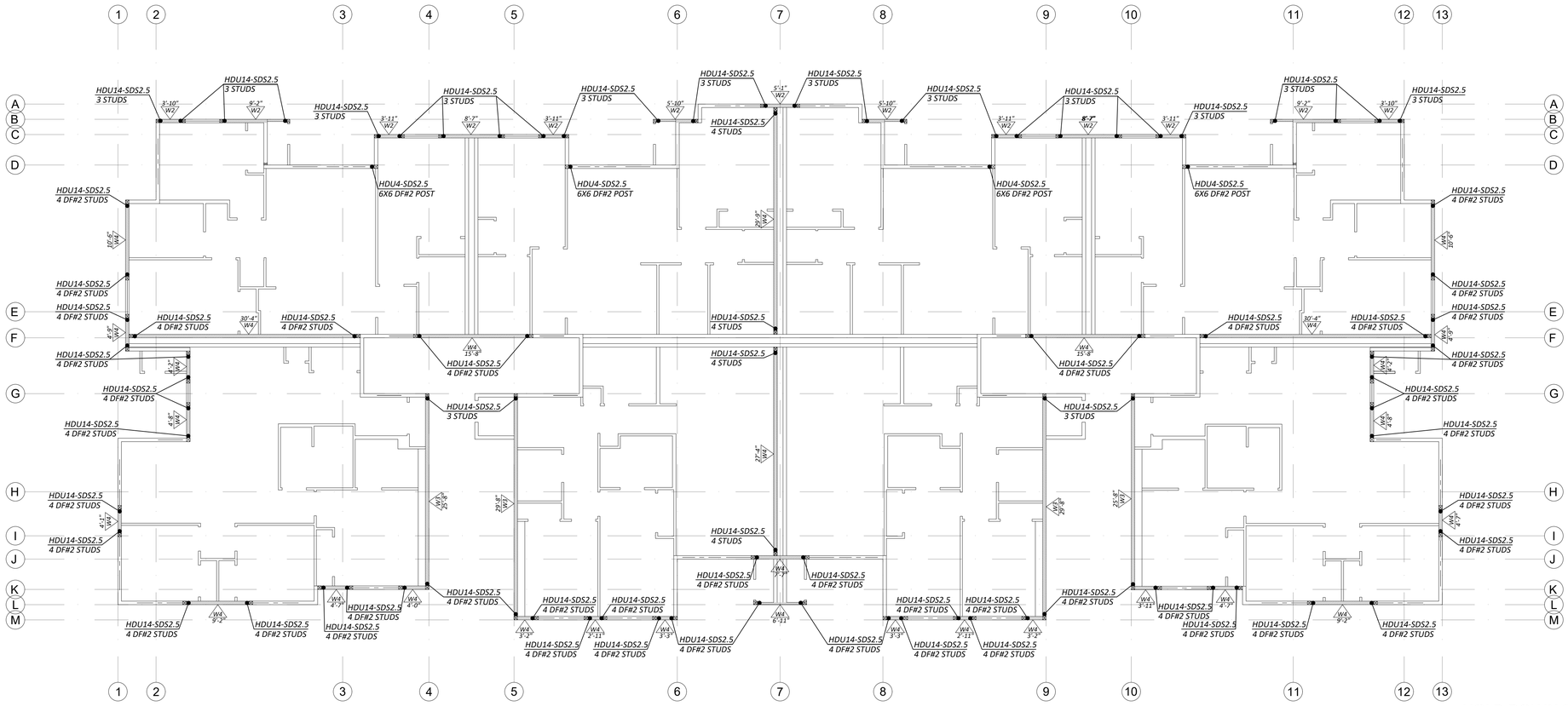

SPECIAL INSPECTIONS ARE REQUIRED FOR SHEAR WALLS: W2 W3 W4

LEVEL 1 SHEAR WALL PLAN

1/8" = 1'-0"

NOTES:

1. ALL EXTERIOR WALL SHALL BE SHEAR WALL TYPE W1 UNLESS NOTED OTHERWISE.

HOLD DOWN SCHEDULE

SIMPSON PRODUCT	FASTENERS		ANCHOR BOLTS
	SCREWS OR BOLTS	NAILS	
HDU4-SDS2.5	(10) ¼" X 2 ½" SDS INTO POST PER PLAN	--	SB ⅝X24 (18" EMBED)
HDU14-SDS2.5	(36) ¼" X 2 ½" SDS INTO POST PER PLAN	--	SB 1X30 (24" EMBED)

SHEAR WALL AND ANCHOR TABLE

WALL TYPE	APA RATED SHEATHING (b), (c)	MINIMUM NOMINAL THICKNESS (IN)	MINIMUM NAIL PENTRATION IN FRAMING (IN) (i)	STUD & BLOCKING SIZE @ ADJOINING EDGES (k)	REQUIRED RIM JOIST THICKNESS	EDGE NAIL SIZE AND SPACING, COMMON OR GALV. BOX (d)	RIM JOIST OR BLOCK CONNECTION TO TOP PLATE (e), (f)	2x BOTTOM PLATE ATTACHMENT TO WOOD BELOW (g), (i)	ANCHOR BOLT SILL PLATE ATTACHMENT TO CONCRETE BELOW (h)	CAPACITY (PLF) SEISMIC/WIND
W1	OSB	7/16 (j)	1 3/8	2x	2x OR 1 ¾"LSL	8d@6" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @ 20" O.C. OR A35 @ 16" O.C.	(1) 16d @ 8" O.C.	⅝" @ 48" O.C.	242/339
W2	OSB	7/16 (j)	1 3/8	2x	2x OR 1 ¾"LSL	8d@4" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @14" O.C. OR A35 @ 11" O.C	(1) 16d @ 6" O.C.	⅝" @ 36" O.C.	353/495
W3	OSB	7/16 (j)	1 3/8	2x	2x OR 1 ¾"LSL	8d@3"O.C. EDGE 8d@12" O.C. FIELD	LTP4 @11" O.C. OR A35 @ 8" O.C	(1) 16d @ 4" O.C.	⅝" @ 24" O.C.	456/637
W4 (a)	OSB	7/16 (j)	1 3/8	3x	3x OR 1 ¾" LSL	8d@2" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @ 8" O.C. OR A35 @ 6" O.C	(2) 16d @ 6" O.C.	⅝" @ 24" O.C.	595/832

(a) FRAMING AT ADJACENT PANELS SHALL BE 3" NOMINAL OR GREATER AND NAILS SHALL BE STAGGERED.
(b) WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDE ARE NOT LOCATED ON THE SAME STUDS.
(c) BLOCKING IS REQUIRED AT ALL PANEL EDGES
(d) PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY EXTERIOR OF THE BUILDING, CORRIDORS, WINDOW, OR DOORWAYS OR AS DESIGNATED ON THE PLANS. SEE PLANS FOR HOLD DOWN POSTS. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD DOWN POSTS.
(e) BASED ON 0.131X 1 ½" LONG NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131x 2 ½" NAILS WHERE INSTALLED OVER SHEATHING. USE A35 OR RBC CLIPS IN LIEU OF LTP'S FOR ROOF BLOCKING TO TOP PLATE.
(f) LTP4'S ARE NOT REQUIRED WHERE THE LOWER WALL SHEATHING IS OVERLAPPED ONTO THE RIM JOIST A MINIMUM OF 1 ½" AND NAILED TO THE RIM JOIST PER THE SHEAR WALL PERIMETER NAIL SPACING. LTP4'S MAY BE SUBSTITUTED W/ A35'S.
(g) CONTINUOUS SHEATHING IS REQUIRE OVER THE BOTTOM PLATE TO THE BOTTOM OF THE RIM JOIST OR SILL PLATE WITH EDGE NAILING AT EACH. WHERE TWO ROWS OF NAILING ARE REQUIRED AT RAISED FLOORS, PROVIDE BLOCKING PER PLAN, AND ATTACH WITH LTP4 PER SCHEDULE.
(h) ANCHOR BOLTS SHALL BE PROVIDED WITH STEEL PLATE WASHERS 0.229"x3"x3". EMBED ANCHOR BOLTS MINIMUM 7" INTO THE CONCRETE. PLATE WASHERS SHALL EXTEND TO WITHIN ½" OF THE SILL PLATE EDGE ON THE SHEATHED WALL FACE.
(i) PRESSURE TREATED MATERIALS CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTROPLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS.
(j) ALL SHEAR WALL STUDS MUST BE SPACED NO MORE THAN 16" O.C.
(k) 3X MEMBERS MAY BE SUBSTITUTED WITH 2 STUDS NAILED TOGETHER PER TYPICAL BUILT-UP COLUMN DETAIL (SEE DETAILS).

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EAST TOWN CROSSING
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TITLE: SHEAR WALL PLAN
PROJECT # : ----
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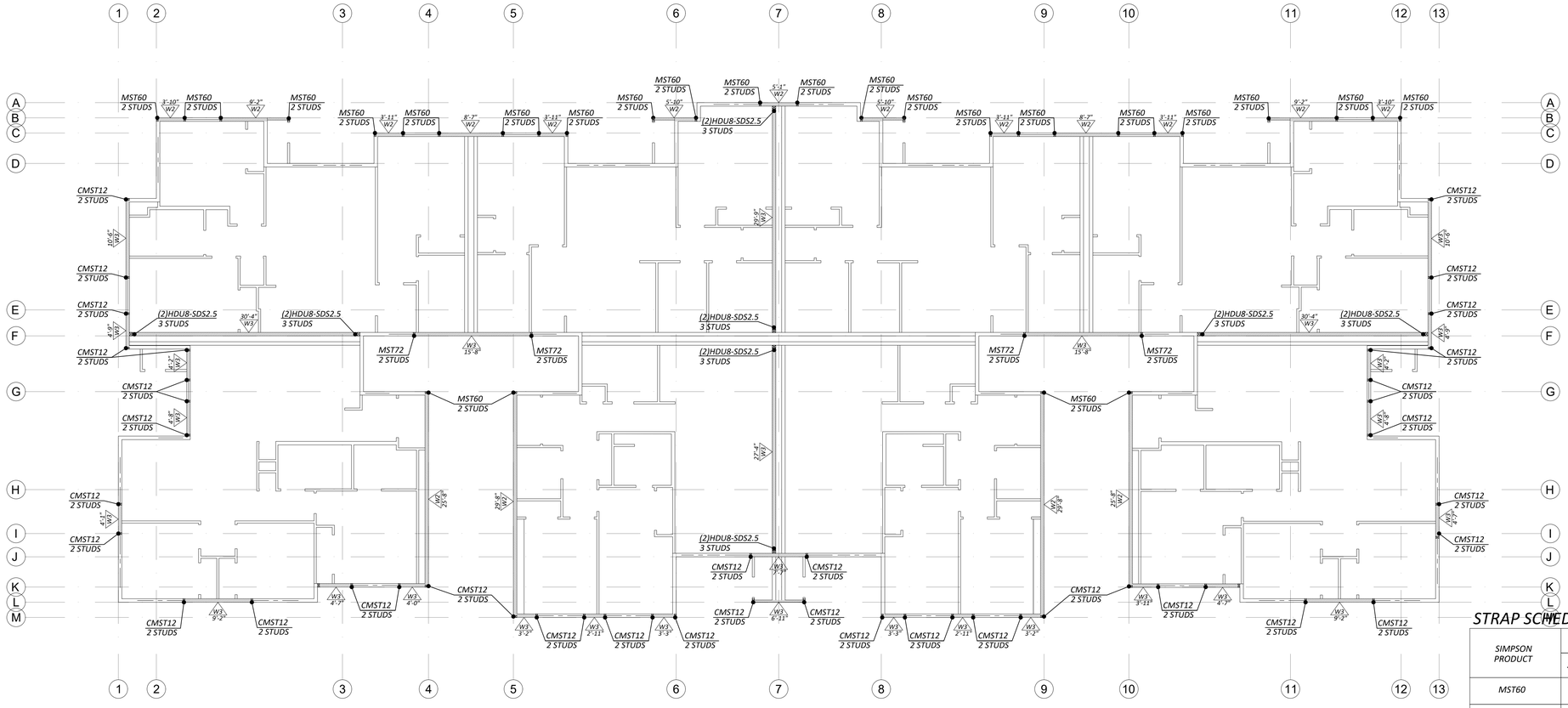

STRAP SCHEDULE

SIMPSON PRODUCT	FASTENERS		END LENGTH
	SCREWS OR BOLTS	NAILS	
MST60	--	(46) 16d INTO 2 STUDS	--
MST72	--	(62) 16d INTO 2 STUDS	--
CMST12	--	(84) 10d INTO 2 STUDS	38"

THRU FLOOR HOLD DOWN SCHEDULE

SIMPSON PRODUCT	FASTENERS		ANCHOR BOLTS
	SCREWS OR BOLTS	NAILS	
(2) HDU8-SDS2.5 (a)	(20) $\frac{1}{4}$" X 2 $\frac{1}{2}$" SDS INTO POST PER PLAN	--	$\frac{7}{8}$" THREADED ROD

(a) THESE HOLD DOWNS ARE THRU FLOOR HOLD DOWN. TOTAL OF 2 HOLD DOWNS ARE REQUIRED (SEE DETAIL 2/S4.2).

SPECIAL INSPECTIONS ARE REQUIRED FOR SHEAR WALLS: W2 W3

LEVEL 2 SHEAR WALL PLAN

1/8" = 1'-0"

NOTES:

1. ALL EXTERIOR WALL SHALL BE SHEAR WALL TYPE W1 UNLESS NOTED OTHERWISE.

SHEAR WALL AND ANCHOR TABLE

WALL TYPE	APA RATED SHEATHING (b), (c)	MINIMUM NOMINAL THICKNESS (IN)	MINIMUM NAIL PENTRATION IN FRAMING (IN) (i)	STUD & BLOCKING SIZE @ ADJOINING EDGES (k)	REQUIRED RIM JOIST THICKNESS	EDGE NAIL SIZE AND SPACING, COMMON OR GALV. BOX (d)	RIM JOIST OR BLOCK CONNECTION TO TOP PLATE (e), (f)	2x BOTTOM PLATE ATTACHMENT TO WOOD BELOW (g), (i)	ANCHOR BOLT SILL PLATE ATTACHMENT TO CONCRETE BELOW (h)	CAPACITY (PLF) SEISMIC/WIND
W1	OSB	7/16 (j)	1 3/8	2x	2x OR 1 $\frac{1}{4}$"LSL	8d@6" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @ 20" O.C. OR A35 @ 16" O.C.	(1) 16d @ 8" O.C.	$\frac{5}{8}$" @ 48" O.C.	242/339
W2	OSB	7/16 (j)	1 3/8	2x	2x OR 1 $\frac{1}{4}$"LSL	8d@4" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @14" O.C. OR A35 @ 11" O.C	(1) 16d @ 6" O.C.	$\frac{5}{8}$" @ 36" O.C.	353/495
W3	OSB	7/16 (j)	1 3/8	2x	2x OR 1 $\frac{1}{4}$"LSL	8d@3"O.C. EDGE 8d@12" O.C. FIELD	LTP4 @11" O.C. OR A35 @ 8" O.C	(1) 16d @ 4" O.C.	$\frac{5}{8}$" @ 24" O.C.	456/637

- FRAMING AT ADJACENT PANELS SHALL BE 3" NOMINAL OR GREATER AND NAILS SHALL BE STAGGERED.
- WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDE ARE NOT LOCATED ON THE SAME STUDS.
  BLOCKING IS REQUIRED AT ALL PANEL EDGES
- PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY EXTERIOR OF THE BUILDING, CORRIDORS, WINDOW, OR DOORWAYS OR AS DESIGNATED ON THE PLANS. SEE PLANS FOR HOLD DOWN POSTS. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD DOWN POSTS.
- BASED ON 0.131X 1 $\frac{1}{4}$" LONG NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131x 2 $\frac{1}{2}$" NAILS WHERE INSTALLED OVER SHEATHING. USE A35 OR RBC CLIPS IN LIEU OF LTP'S FOR ROOF BLOCKING TO TOP PLATE.
  LTP4'S ARE NOT REQUIRED WHERE THE LOWER WALL SHEATHING IS OVERLAPPED ONTO THE RIM JOIST A MINIMUM OF 1 $\frac{1}{2}$" AND NAILED TO THE RIM JOIST PER THE SHEAR WALL PERIMETER NAIL SPACING. LTP4'S MAY BE SUBSTITUTED W/ A35'S.
- CONTINUOUS SHEATHING IS REQUIRE OVER THE BOTTOM PLATE TO THE BOTTOM OF THE RIM JOIST OR SILL PLATE WITH EDGE NAILING AT EACH. WHERE TWO ROWS OF NAILING ARE REQUIRED AT RAISED FLOORS, PROVIDE BLOCKING PER PLAN, AND ATTACH WITH LTP4 PER SCHEDULE.
- ANCHOR BOLTS SHALL BE PROVIDED WITH STEEL PLATE WASHERS 0.229"x3"x3". EMBED ANCHOR BOLTS MINIMUM 7" INTO THE CONCRETE. PLATE WASHERS SHALL EXTEND TO WITHIN $\frac{1}{2}$" OF THE SILL PLATE EDGE ON THE SHEATHED WALL FACE.
  PRESSURE TREATED MATERIALS CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTROPLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS.
  ALL SHEAR WALL STUDS MUST BE SPACED NO MORE THAN 16" O.C.
  3X MEMBERS MAY BE SUBSTITUTED WITH 2 STUDS NAILED TOGETHER PER TYPICAL BUILT-UP COLUMN DETAIL (SEE DETAILS).

PIERUCCIONI E&C, LLC
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3128 N. BENNETT ST.
TACOMA, WA 98407

EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

REVISIONS

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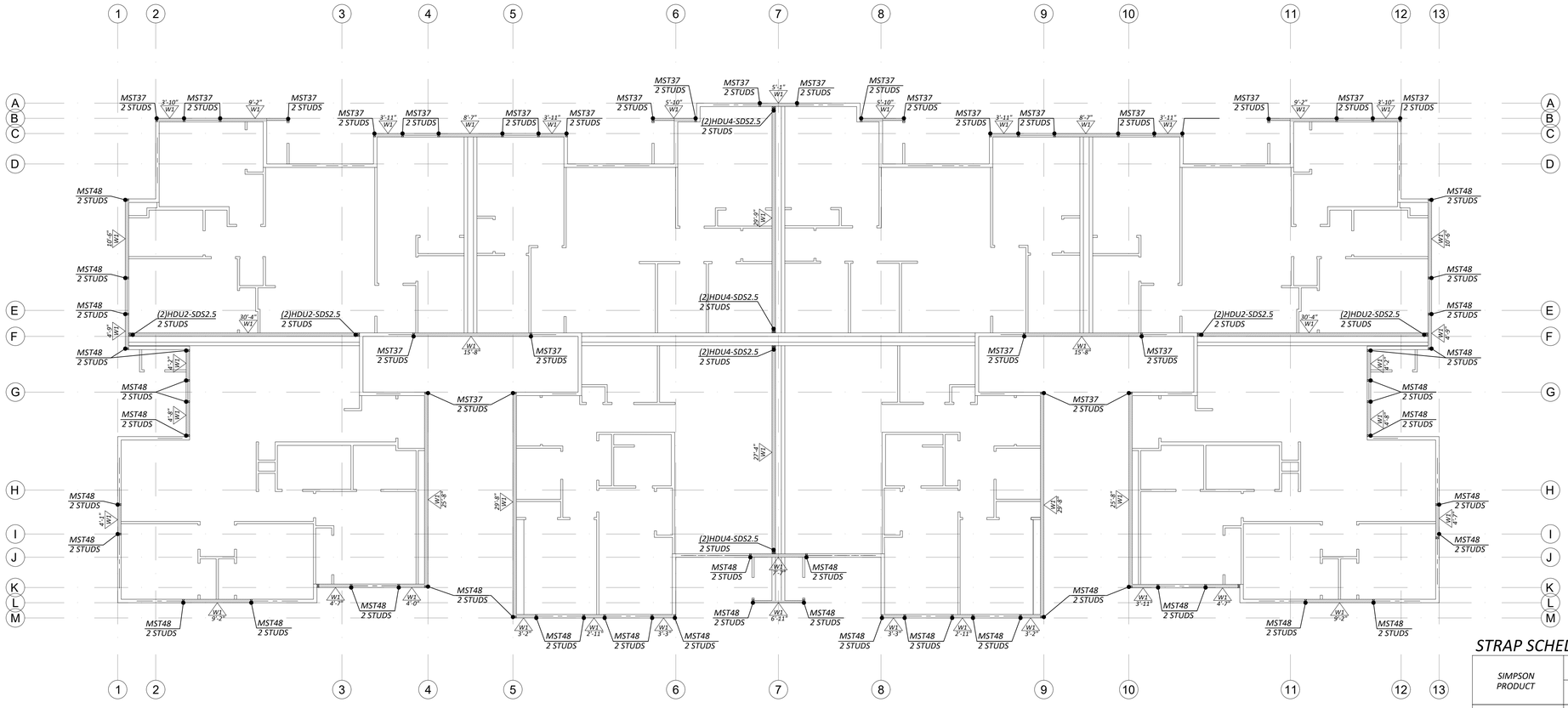
DRAWN BY: CP
CHECKED BY: CP
DATE: 2024.01.12
TITLE: SHEAR WALL PLAN
PROJECT # : ----
SHEET:

S3.7



LEVEL 3 SHEAR WALL PLAN

1/8" = 1'-0"

NOTES:

1. ALL EXTERIOR WALL SHALL BE SHEAR WALL TYPE W1 UNLESS NOTED OTHERWISE.

STRAP SCHEDULE

SIMPSON PRODUCT	FASTENERS		END LENGTH
	SCREWS OR BOLTS	NAILS	
MST37	--	(22) 16d INTO 2 STUDS	--
MST48	--	(34) 16d INTO 2 STUDS	--

THRU FLOOR HOLD DOWN SCHEDULE

SIMPSON PRODUCT	FASTENERS		ANCHOR BOLTS
	SCREWS OR BOLTS	NAILS	
(2) HDU2-SDS2.5 (a)	(6) $\frac{1}{4}$" X 2 $\frac{1}{2}$" SDS INTO POST PER PLAN	--	$\frac{5}{8}$" THREADED ROD
(2) HDU4-SDS2.5 (a)	(10) $\frac{1}{4}$" X 2 $\frac{1}{2}$" SDS INTO POST PER PLAN	--	$\frac{5}{8}$" THREADED ROD

(a) THESE HOLD DOWNS ARE THRU FLOOR HOLD DOWN. TOTAL OF 2 HOLD DOWNS ARE REQUIRED (SEE DETAIL 2/S4.2).

SHEAR WALL AND ANCHOR TABLE

WALL TYPE	APA RATED SHEATHING (b), (c)	MINIMUM NOMINAL THICKNESS (IN)	MINIMUM NAIL PENTRATION IN FRAMING (IN) (i)	STUD & BLOCKING SIZE @ ADJOINING EDGES (k)	REQUIRED RIM JOIST THICKNESS	EDGE NAIL SIZE AND SPACING, COMMON OR GALV. BOX (d)	RIM JOIST OR BLOCK CONNECTION TO TOP PLATE (e), (f)	2x BOTTOM PLATE ATTACHMENT TO WOOD BELOW (g), (i)	ANCHOR BOLT SILL PLATE ATTACHMENT TO CONCRETE BELOW (h)	CAPACITY (PLF) SEISMIC/WIND
W1	OSB	7/16 (j)	1 3/8	2x	2x OR 1 $\frac{1}{4}$"LSL	8d@6" O.C. EDGE 8d@12" O.C. FIELD	LTP4 @ 20" O.C. OR A35 @ 16" O.C.	(1) 16d @ 8" O.C.	$\frac{5}{8}$" @ 48" O.C.	242/339

FRAMING AT ADJACENT PANELS SHALL BE 3" NOMINAL OR GREATER AND NAILS SHALL BE STAGGERED.
WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDE ARE NOT LOCATED ON THE SAME STUDS.
BLOCKING IS REQUIRED AT ALL PANEL EDGES
PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY EXTERIOR OF THE BUILDING, CORRIDORS, WINDOW, OR DOORWAYS OR AS DESIGNATED ON THE PLANS. SEE PLANS FOR HOLD DOWN POSTS. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD DOWN POSTS.
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EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

REVISIONS

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DRAWN BY: CP
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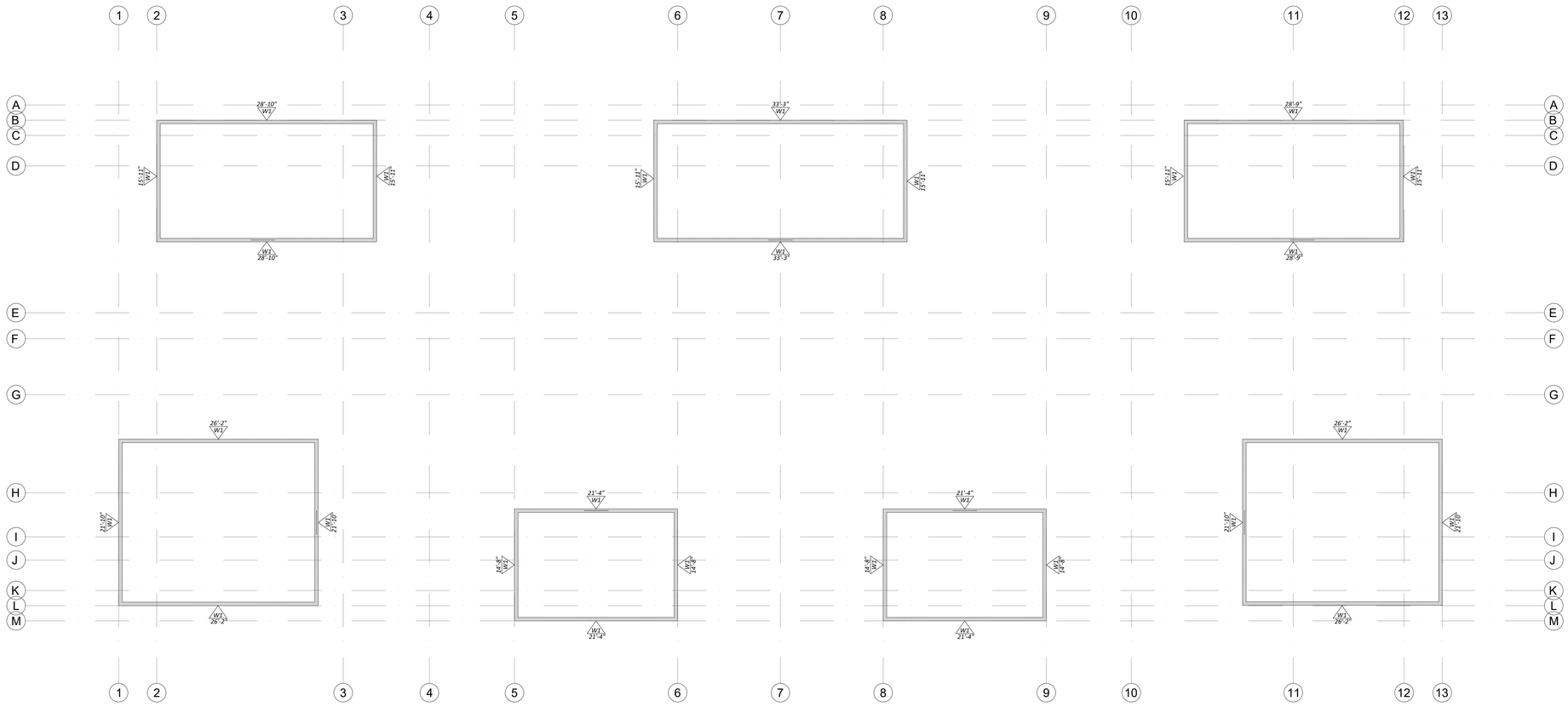
DATE: 2024.01.12
TITLE: SHEAR WALL PLAN
PROJECT # : ----
SHEET:

S3.8



UPPER ROOF SHEAR WALL PLAN

1/8" = 1'-0"

NOTES:

1. *ALL EXTERIOR WALL SHALL BE SHEAR WALL TYPE W1 UNLESS NOTED OTHERWISE.*

SHEAR WALL AND ANCHOR TABLE

WALL TYPE	*APA RATED SHEATHING (b), (c)*	*MINIMUM NOMINAL THICKNESS (IN)*	*MINIMUM NAIL PENTRATION IN FRAMING (IN) (i)*	*STUD & BLOCKING SIZE @ ADJOINING EDGES (k)*	*REQUIRED RIM JOIST THICKNESS*	*EDGE NAIL SIZE AND SPACING, COMMON OR GALV. BOX (d)*	*RIM JOIST OR BLOCK CONNECTION TO TOP PLATE (e), (f)*	*2x BOTTOM PLATE ATTACHMENT TO WOOD BELOW (g), (i)*	*ANCHOR BOLT SILL PLATE ATTACHMENT TO CONCRETE BELOW (h)*	*CAPACITY (PLF) SEISMIC/WIND*
W1	*OSB*	*7/16 (j)*	*1 3/8*	*2x*	*2x OR 1 $\frac{3}{4}$"LSL*	*8d@6" O.C. EDGE 8d@12" O.C. FIELD*	*LTP4 @ 20" O.C. OR A35 @ 16" O.C.*	*(1) 16d @ 8" O.C.*	*$\frac{5}{8}$" @ 48" O.C.*	*242/339*

(a) FRAMING AT ADJACENT PANELS SHALL BE 3" NOMINAL OR GREATER AND NAILS SHALL BE STAGGERED.

(b) WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDE ARE NOT LOCATED ON THE SAME STUDS.

(c) BLOCKING IS REQUIRED AT ALL PANEL EDGES

(d) PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY EXTERIOR OF THE BUILDING, CORRIDORS, WINDOW, OR DOORWAYS OR AS DESIGNATED ON THE PLANS. SEE PLANS FOR HOLD DOWN POSTS. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD DOWN POSTS.

(e) BASED ON 0.131X 1 $\frac{1}{2}$" LONG NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131x 2 $\frac{1}{2}$" NAILS WHERE INSTALLED OVER SHEATHING. USE A35 OR RBC CLIPS IN LIEU OF LTP'S FOR ROOF BLOCKING TO TOP PLATE.

(f) LTP4'S ARE NOT REQUIRED WHERE THE LOWER WALL SHEATHING IS OVERLAPPED ONTO THE RIM JOIST A MINIMUM OF 1 $\frac{1}{2}$" AND NAILED TO THE RIM JOIST PER THE SHEAR WALL PERIMETER NAIL SPACING. LTP4'S MAY BE SUBSTITUTED W/ A35'S.

(g) CONTINUOUS SHEATHING IS REQUIRE OVER THE BOTTOM PLATE TO THE BOTTOM OF THE RIM JOIST OR SILL PLATE WITH EDGE NAILING AT EACH. WHERE TWO ROWS OF NAILING ARE REQUIRED AT RAISED FLOORS, PROVIDE BLOCKING PER PLAN, AND ATTACH WITH LTP4 PER SCHEDULE.

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(i) PRESSURE TREATED MATERIALS CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTROPLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS.

(j) ALL SHEAR WALL STUDS MUST BE SPACED NO MORE THAN 16" O.C.

(k) 3X MEMBERS MAY BE SUBSTITUTED WITH 2 STUDS NAILED TOGETHER PER TYPICAL BUILT-UP COLUMN DETAIL (SEE DETAILS).

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TACOMA, WA 98407

EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

REVISIONS

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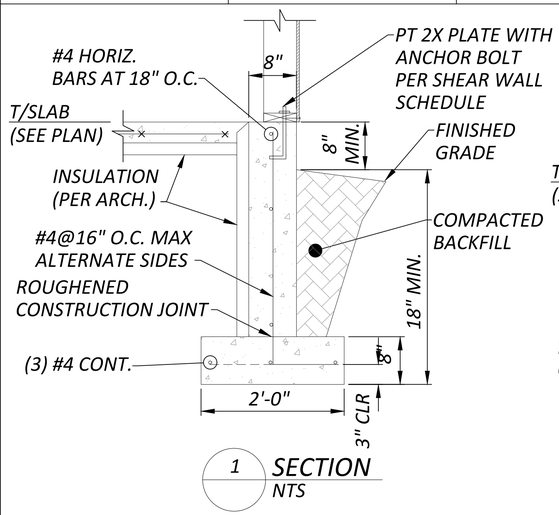
REVISIONS

DRAWN BY: CP
CHECKED BY: CP
DATE: 2024.01.12
TITLE: SHEAR WALL PLAN
PROJECT # : ----
SHEET: S3.9



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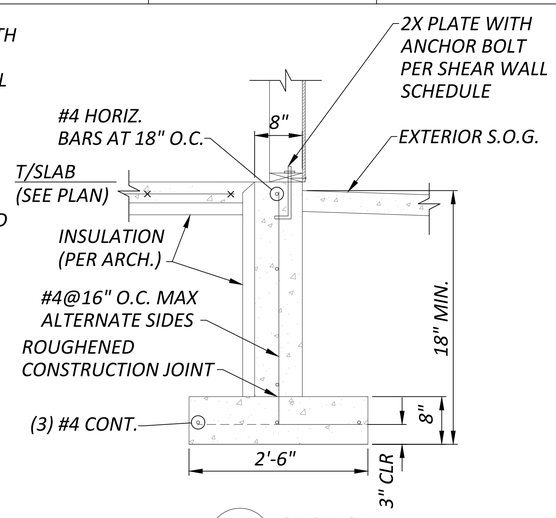

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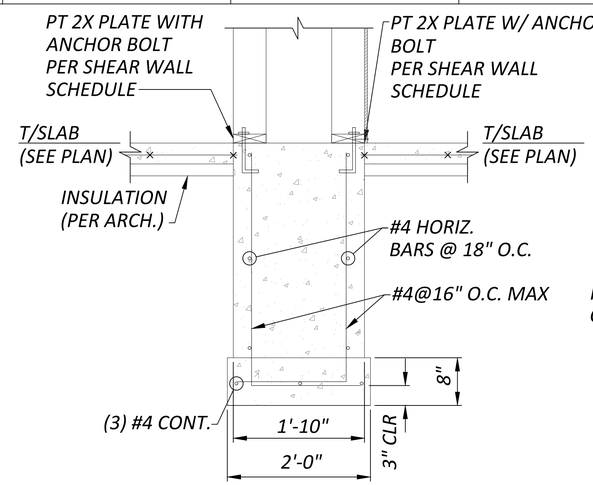

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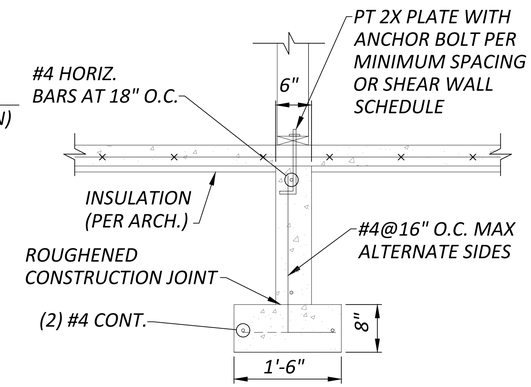

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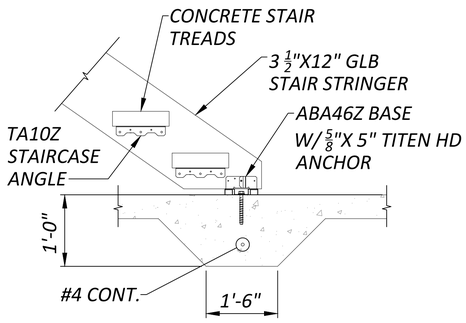

5 STAIR LANDING
ON SLAB DETAIL
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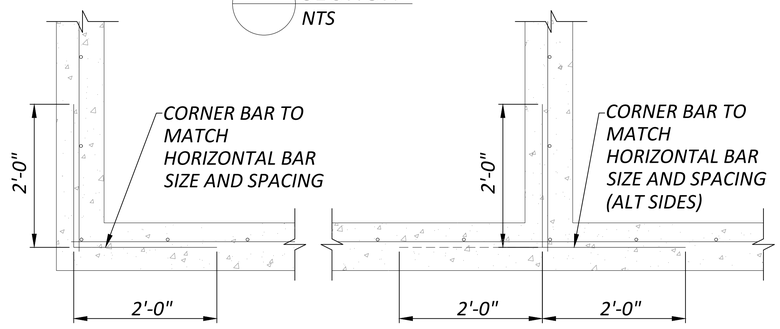

6 TYPICAL FOUNDATION
CORNER & INTERSECTION DETAIL
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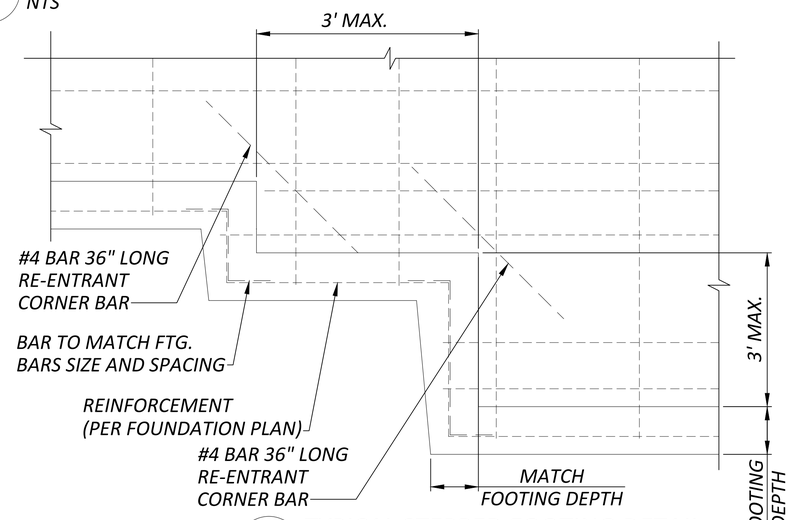

7 TYPICAL STEPPED FOOTING DETAIL
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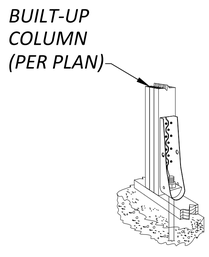

HDU2,4,5,8,11,14 -SDS2.5

8 TYPICAL FOUNDATION
HOLDDOWN DETAIL
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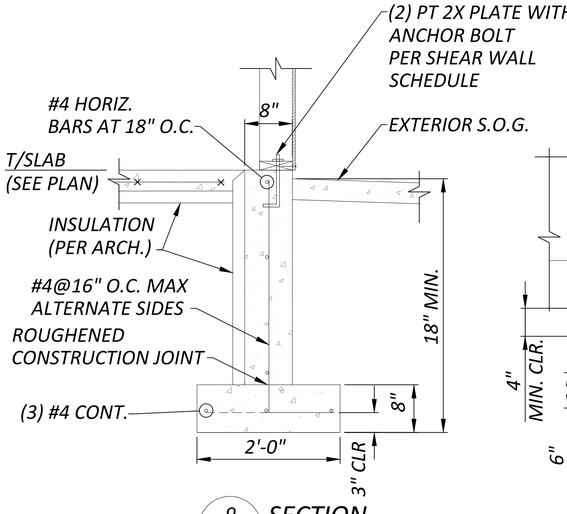

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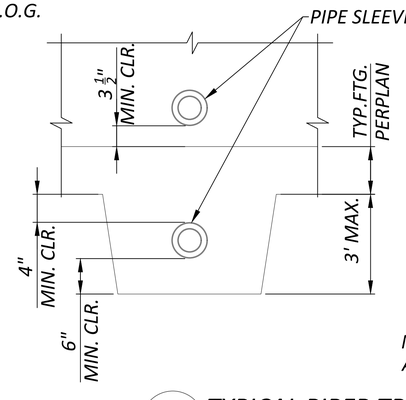

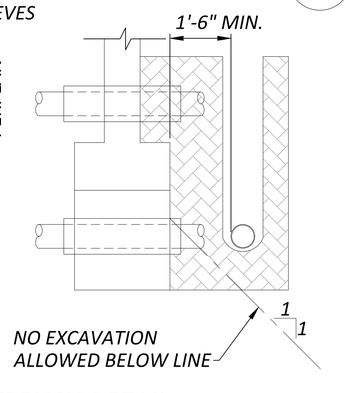

10 TYPICAL PIPER TRENCH DETAIL
NTS

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3128 N. BENNETT ST.
TACOMA, WA 98407

EAST TOWN CROSSING
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REVISIONS

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REVISIONS

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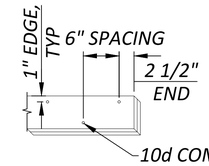
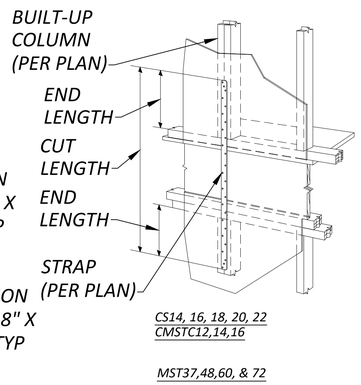
CHECKED BY:	CP
DATE:	2024.01.12
TITLE:	FOUNDATION DETAILS
PROJECT # :	----
SHEET:	S4.1





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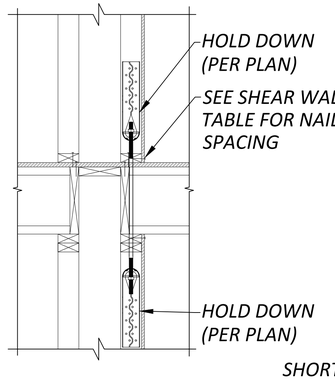
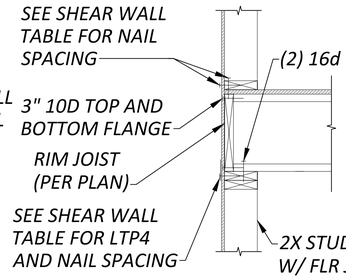


2 TYPICAL STRAP/THRU FLOOR HOLDDOWN DETAIL
NTS



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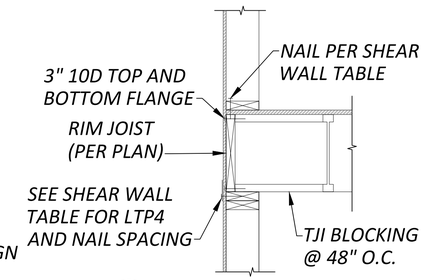

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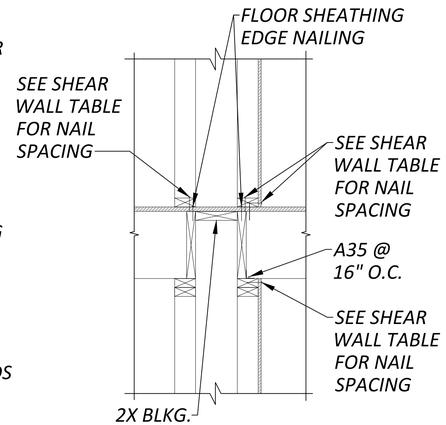

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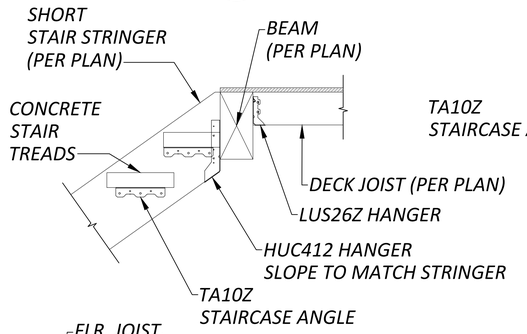

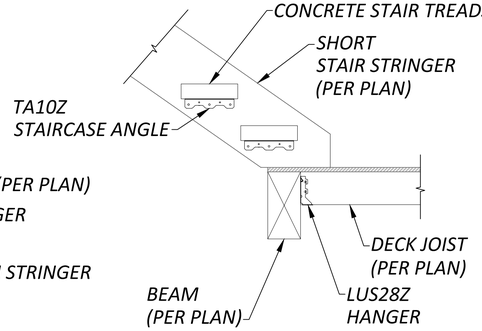

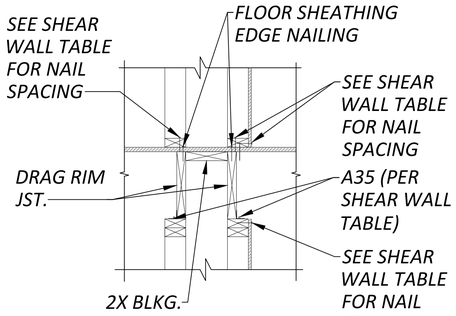

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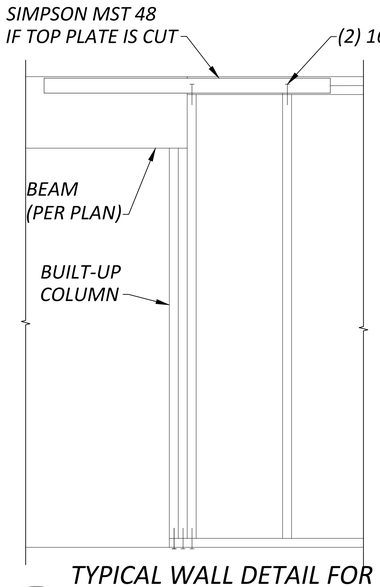

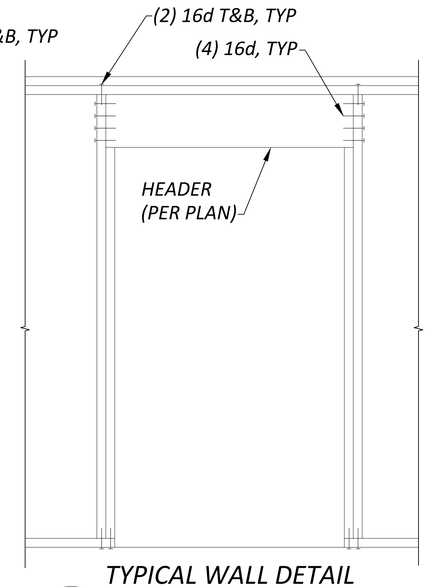

8 TYPICAL WALL DETAIL FOR OPENINGS 5' AND GREATER
NTS

9 TYPICAL WALL DETAIL FOR DOOR OPENINGS
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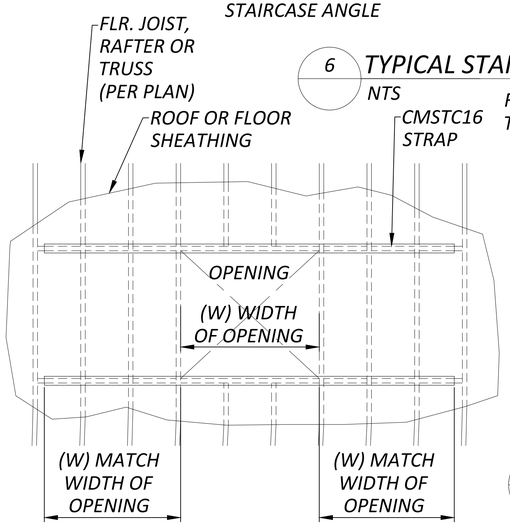

10 TYPICAL FLOOR AND ROOF SHEATHING OPENING DETAIL
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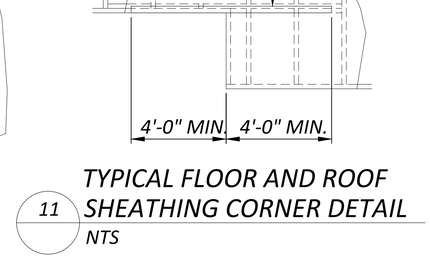

11 TYPICAL FLOOR AND ROOF SHEATHING CORNER DETAIL
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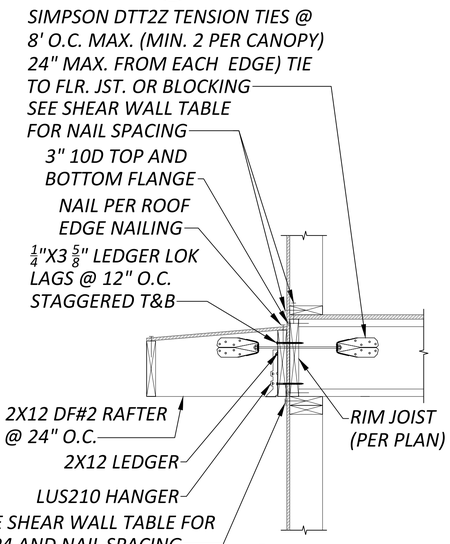

15 SECTION
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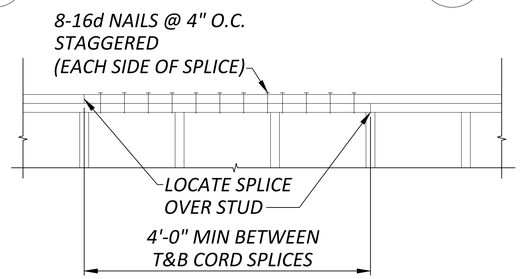

12 TYPICAL TOP PLATE SPLICE DETAIL
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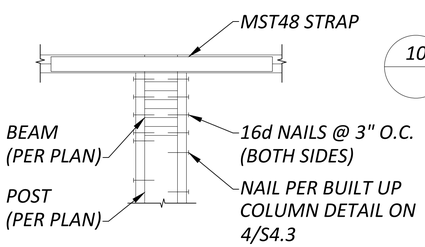

13 TYPICAL DROPPED BEAM @ PLATE BREAK
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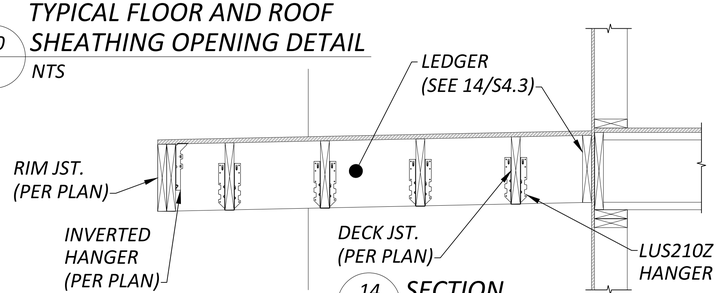


14 SECTION
NTS

PIERUCCIONI E&C, LLC
CHON PIERUCCIONI, PE
3128 N. BENNETT ST.
TACOMA, WA 98407

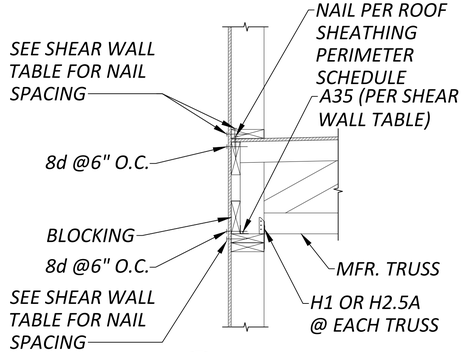
EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

REVISIONS

01	----

REVISIONS

DRAWN BY:	CP
CHECKED BY:	CP
DATE:	2024.01.12
TITLE:	FRAMING DETAILS
PROJECT # :	----
SHEET:	S4.2



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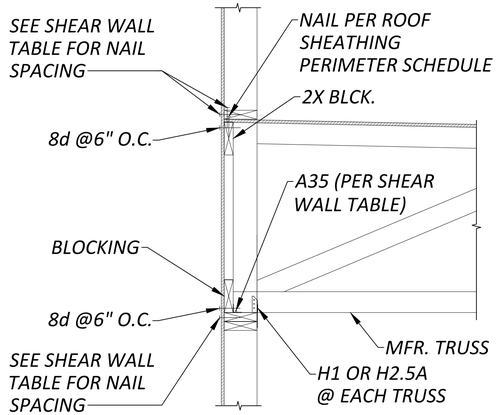

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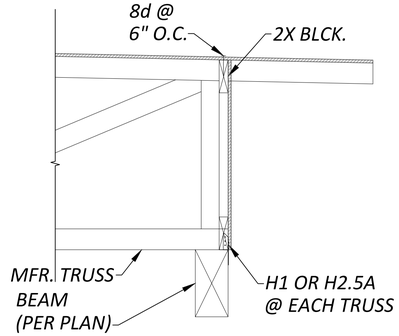

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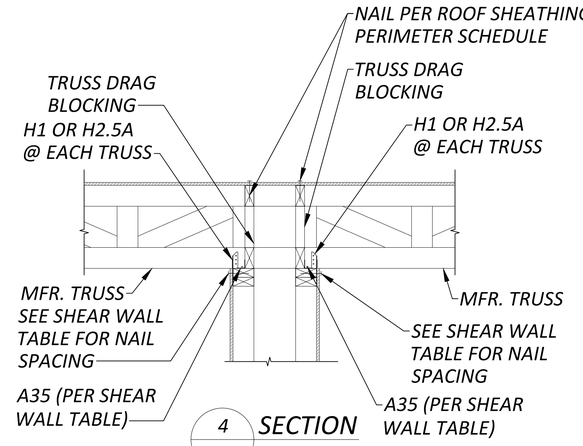

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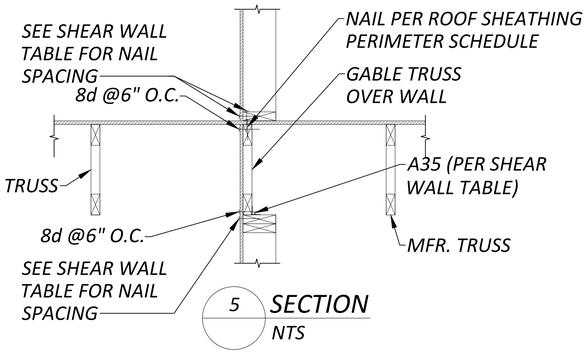

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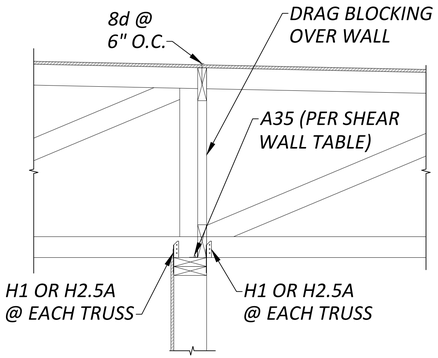
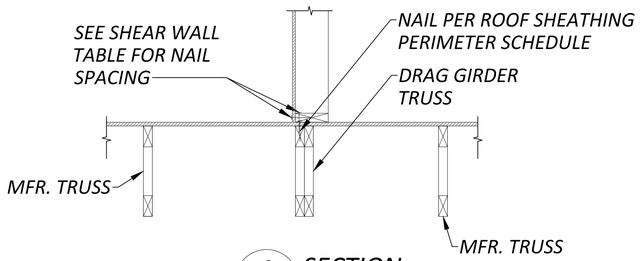


6 SECTION
NTS

7 LEDGER DETAIL
NTS



8 SECTION
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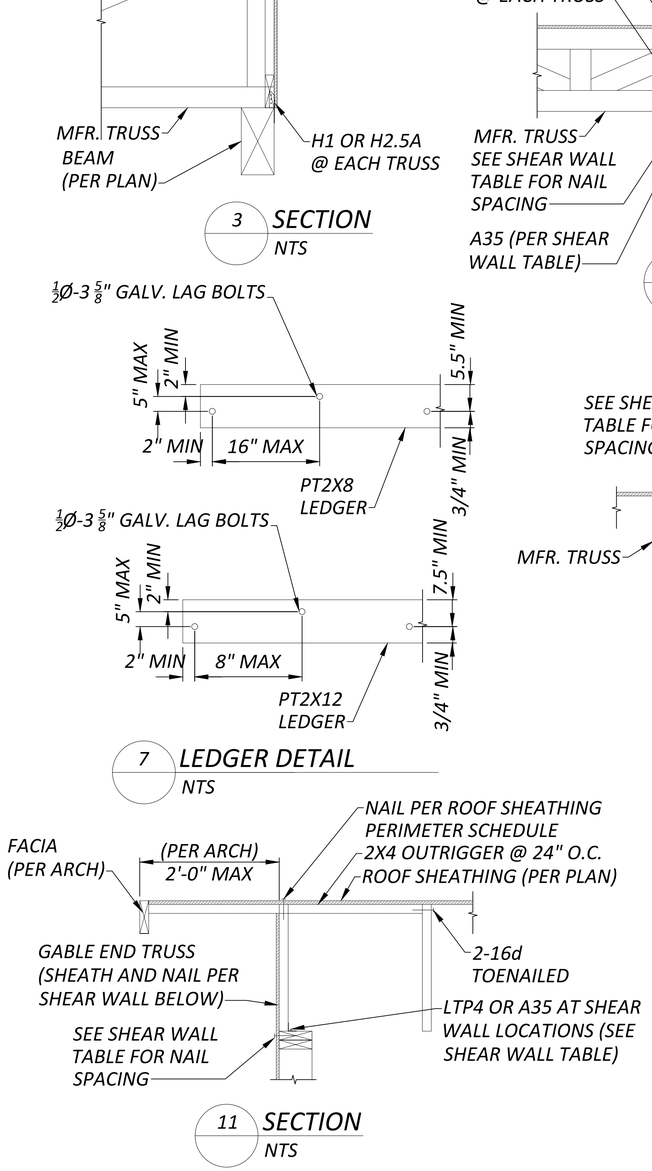
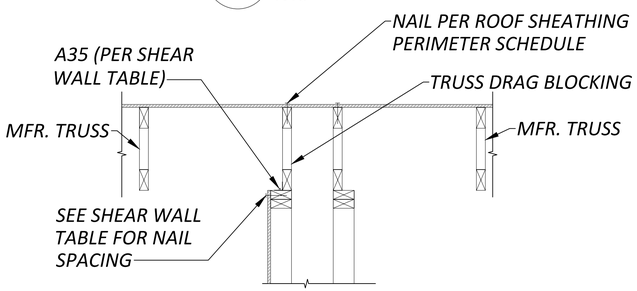
9 SECTION
NTS

10 SECTION
NTS



11 SECTION
NTS

12 SECTION
1" = 1'-0"



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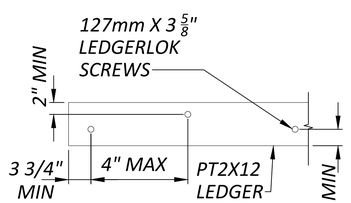
1" = 1'-0"



14 LEDGER DETAIL
1" = 1'-0"

PIERUCCIONI E&C, LLC
CHON PIERUCCIONI, PE
9128 N. BENNETT ST
TACOMA, WA 98407

EAST TOWN CROSSING
BUILDING "B"
PIONEER & SHAW PUYALLUP WA

REVISIONS

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REVISIONS

DRAWN BY:	CP
CHECKED BY:	CP
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PROJECT # :	----
SHEET:	S4.3

GENERAL NOTES

GENERAL NOTES – MECHANICAL

1. REFERENCE TO RELATED WORK: "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL, LANDSCAPE, OR KITCHEN), OR ITEM BASED ON A SPECIFIC MANUFACTURER'S DIMENSIONS (VERIFY).
2. ELECTRICAL CHARACTERISTICS: REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS (VOLTAGES, ETC. OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED.
3. CODES: COMPLETE INSTALLATION OF THE MECHANICAL SYSTEM SHALL BE PER THE APPLICABLE BUILDING, MECHANICAL, ENERGY, PLUMBING, FIRE, AND HEALTH CODES AND REGULATIONS AS ADOPTED BY THE LOCAL AHJ.
4. PREPARE AND SUBMIT FOR REVIEW A SHOP DRAWING BASED ON FINAL STRUCTURAL SHOP DRAWINGS FOR LOCATING AND ROUTING ALL DUCTWORK, DAMPERS, EQUIPMENT, PIPING, ETC.
   A. COORDINATE FLOOR AND BEAM PENETRATIONS WITH STRUCTURAL.
   B. COORDINATE FINAL LOCATION AND ROUTING WITH CEILING, LIGHTS, WALLS, FIRE SPRINKLER PIPING, AND OTHER TRADES WORK.
   C. INCLUDE ADDITIONAL OFFSETS, ELBOWS, ROUTING, EQUIVALENT DUCT SIZING EXCHANGE, RELOCATING, ETC. AS REQUIRED FOR A COMPLETE OPERATING MECHANICAL SYSTEM.
   D. PROVIDE SHOP DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.
5. MECHANICAL CONTRACTOR SHALL LOCATE AND COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT WITHIN THE STRUCTURE.
6. ACCESS DOORS: COORDINATE WITH ARCHITECT AND LOCATE ALL ACCESS DOORS ON SHOP DRAWINGS PRIOR TO BEGINNING OF CONSTRUCTION. ACCESS DOORS IN FIRE RATED STRUCTURE SHALL BE FIRE RATED. VERIFY ACCESS DOOR LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO BIDDING.
7. RATED PENETRATION: DUCT PENETRATIONS THROUGH RATED ENCLOSURES SHALL BE FIRE/SMOKE DAMPERED PER THE LATEST EDITION OF THE UNDERWRITERS LABORATORIES(UL) FIRE RESISTANCE WITH HOURLY RATINGS FOR THROUGH-PENETRATION FIRE STOPS SYSTEM VOLUME #2, OR SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S UL LISTINGS (3M OR EQUIVALENT). DETERMINE REQUIREMENTS WITH GENERAL CONTRACTOR PRIOR TO BID.
8. EXHAUST OUTLETS: SOURCE-SPECIFIC FANS SHALL BE VENTED TO OUTDOORS WITH A MINIMUM 3' CLEARANCE BETWEEN VENT OUTLETS AND BUILDING OPENINGS, AND 10' MINIMUM BETWEEN VENT OUTLETS AND MECHANICAL AIR INTAKES.
9. ROOF PENETRATIONS: SEE ARCHITECTURAL DRAWINGS FOR ROOF CAP, ROOF CURB, ROOF DRAIN, AND VTR DETAILS.
10. EXPOSED PIPING: PROVIDE CHROME PLATING FOR EXPOSED PIPING IN FINISHED ROOMS.
11. PENETRATIONS: PROVIDE ESCUTCHEON PLATES FOR EXPOSED PIPING PENETRATIONS AND SHEET METAL FLASHING FOR EXPOSED DUCTWORK PENETRATIONS.
12. SHAFT AND PLENUM CONNECTIONS: SEAL CONNECTIONS TO AIR SHAFTS AIRTIGHT. PROVIDE AIRTIGHT SEAL AROUND PENETRATIONS IN AIR PLENUMS.
13. LIGHT FIXTURE CLEARANCE: COORDINATE LOCATIONS OF MECHANICAL WORK TO PROVIDE CLEARANCES OVER LIGHTING FIXTURES FOR REMOVAL AND REPLACEMENT.
14. MOTORS: COMPLY WITH ENERGY CODE ENFORCED BY AHJ FOR MINIMUM EFFICIENCIES UNDER FULL LOAD.
15. ACCESS CLEARANCES FOR MAINTENANCE AND REPLACEMENT: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE LOCATIONS OF MECHANICAL WORK AND WORK OF OTHER TRADES TO PROVIDE ACCESS CLEARANCES FOR SERVICE AND MAINTENANCE.

COORDINATION REQUIREMENTS

1. PIPING: COORDINATE WITH STRUCTURAL FOR EXACT LOCATION OF ALL STRUCTURAL FRAMING AND FOOTINGS AND FINALIZE THE EXACT ROUTING OF ALL PIPES WITH STRUCTURAL AND AT THE SITE PRIOR AND DURING THE CONSTRUCTION.
2. DUCTWORK: LOCATE AND COORDINATE THE EXACT LOCATION OF DUCTWORK WITH STRUCTURAL PLANS AND WITH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY STRUCTURE OR EQUIPMENT. COORDINATE WITH FRAMING CONTRACTOR TO ASSURE JOIST SPACES LINE UP WHEN DUCTWORK MUST PASS THROUGH DIFFERENT JOIST SPACES.
3. ADJUSTMENTS: ALL EQUIPMENT, MOTORS, FANS GAS BURNERS, IGNITION DEVICES, DRIVES, ETC. SHALL BE ADJUSTED AND BALANCED TO OPERATE AT SPECIFIED RATINGS AS REQUIRED FOR THIS PROJECT SITE AND ACCOUNTING FOR ELEVATION ABOVE SEA LEVEL.
4. APPROVALS: MECHANICAL AND PLUMBING EQUIPMENT SHALL BE APPROVED FOR INSTALLATION IN THE PROJECT LOCATION AND SHALL HAVE ALL CERTIFICATIONS AND RATINGS TO MEET ALL ENERGY, POLLUTION, ENVIRONMENTAL, SEISMIC, ETC. CODES AND REGULATIONS. THE CONTRACTOR SHALL COORDINATE WITH HIS MANUFACTURE SUPPLIERS AND SHALL INCLUDE ALL COSTS REQUIRED TO MEET THESE REQUIREMENTS IN HIS BID.
5. FIRE PROTECTION: CONTRACTOR SHALL PROVIDE A FULLY DESIGNED FIRE PROTECTION SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA AND LOCAL CODES. PROVIDE DESIGN, PERMITS, MATERIALS, INSTALLATION, TESTING AND ALL OTHER FOR A FULLY OPERATIONAL SYSTEM. LOCATION OF ALL PIPING TO BE COORDINATED WITH OTHER TRADES.

PIPING NOTES

1. DISASSEMBLY PROVISIONS: PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
2. REDUCERS: PROVIDE AS REQUIRED FROM LINE PIPE SIZE TO EQUIPMENT, TRAP, COIL, AND CONTROL VALVE CONNECTION SIZES.
3. OFFSETS: PROVIDE FOR BRANCH LINES TO EQUIPMENT.
4. DIELECTRIC UNIONS: PROVIDE AT CONNECTIONS OF DISSIMILAR PIPE.
5. REFRIGERANT PIPING: PROVIDE SIZING & INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. CONDENSATE DRAIN: PROVIDE A P-TRAP FOR EACH HVAC UNIT CONDENSATE PAN WITH PLUG TEES FOR CLEANING. CONDENSATE DRAINS SHALL BE DISCHARGED TO AN INDIRECT WASTE OR OUTSIDE.

INSULATION/LINING NOTES

1. ENERGY CODE: AS A MINIMUM, COMPLY WITH THICKNESSES AND TYPES LISTED IN ENERGY CODE ENFORCED BY AHJ.
2. EXTENT OF INTERNAL DUCT LINING:
   A. GRILLE AND DIFFUSER BOXES AND BOOTS.
   B. TRANSFER DUCTS.
   C. THE FIRST 10 FEET OF SUPPLY AND RETURN DUCTWORK FROM THE AIR HANDLER.
3. EXTENT OF EXTERNAL DUCT INSULATION:
   A. SUPPLY AND RETURN AIR IN UNCONDITIONED SPACES, MECHANICAL ROOMS, ELECTRICAL ROOMS, AND EQUIPMENT ROOMS NOT SPECIFIED TO BE INTERNALLY LINED.
   B. SUPPLY AIR ABOVE CEILINGS OR EXPOSED NOT SPECIFIED TO BE INTERNALLY LINED.
   C. OUTDOOR AIR INTAKE.
4. MISCELLANEOUS DUCT FITTINGS (CONICAL TAKEOFFS, ETC.): WRAP WITH INSULATION FOR CONDENSATION CONTROL.

PLAN NOTES

1. DUCTWORK SHALL BE METALLIC DUCTWORK
2. TEST AND BALANCE WORK SHALL BE PERFORMED BY AN INDEPENDENT TEST AND BALANCE AGENCY. PROVIDE (3) COPIES OF TEST AND BALANCE REPORT TO OWNER.
3. COORDINATE DUCTWORK WITH MISCELLANEOUS OBSTRUCTIONS IN CEILING SPACE.
4. RESTROOM EXHAUST SHALL BE A MINIMUM OF 10' FROM ANY MECHANICAL OUTSIDE AIR INTAKES.
5. ROUTE DUCTWORK UNDERNEATH JOISTS UON.
6. TRANSITION DUCT UNDER BEAMS AND DUCTS. FIELD VERIFY AVAILABLE CEILING CAVITY DIMENSIONS.
7. COORDINATE MOUNTING HEIGHT OF DIFFUSERS WITH ARCHITECTURAL PLANS.

SHEET METAL NOTES

1. REFERENCE: SMACNA HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE, CURRENT EDITION.
2. CLEARANCE: COORDINATE DUCTWORK WITH MISCELLANEOUS OBSTRUCTIONS IN CEILING SPACE.
3. ROUND ELBOWS AND OFFSETS: FULL RADIUS (R/D = 1.5), 5-PIECE SEGMENTED OR STAMPED. REFER TO SMACNA HVAC FIG 2-7, 3-3. DO NOT USE ANGLED OFFSET (TYPE 1). MITERED OFFSET (TYPE 2) MAY BE USED UP TO 30 DEGREE OFFSET ANGLE.
4. ROUND TEES AND LATERALS: CONICAL TEE PER SMACNA HVAC FIG 3-5; DO NOT USE STRAIGHT TEE; DO NOT USE CONICAL SADDLE TAP FOR EXPOSED DUCTWORK IN FINISHED SPACES. 90-DEGREE TEE WITH OVAL TO ROUND TAP, LATERAL, AND 45-DEGREE RECTANGULAR LEAD-IN PER SMACNA HVAC FIG 3-4.
5. RECTANGULAR ELBOWS AND OFFSETS: FULL RADIUS WHERE SPACE PERMITS, R/W = 1.5; OTHERWISE USE SQUARE CORNER ELBOW WITH TURNING VANES.
6. RECTANGULAR DIVIDED FLOW FITTINGS: USE GENERALLY, EXCEPT BRANCHES TO TERMINALS; SMACNA HVAC FIG 2-5, TYPES 1, 2, 4A, AND 4B. DO NOT USE TYPE 3.
7. TURNING VANES: H.E.P. MANUFACTURER OR APPROVED HIGH EFFICIENCY PROFILE AIRFOIL TYPE FOR RECTANGULAR SQUARE THROAT ELBOWS. ACOUSTICAL TYPE FOR RETURN AIR MITERED ELBOWS.
8. TAKEOFFS TO OPENINGS: CONICAL TYPE WITH VOLUME DAMPER FOR ROUND DUCT BRANCHES PER SMACNA HVAC FIG 2-6, MINIMUM INLET DIAMETER 2 INCHES LARGER THAN DUCT SIZE. 45 DEGREE ENTRY FITTING FOR RECTANGULAR DUCT BRANCHES PER SMACNA HVAC FIG 2-6.
9. FLEXIBLE CONNECTIONS: PROVIDE AT EACH DUCT CONNECTION TO FANS, PACKAGED HVAC EQUIPMENT, EXTERNALLY ISOLATED AIR HANDLING UNITS, FAN COIL UNITS, AND SIMILAR EQUIPMENT. EXCEPTION: EQUIPMENT IN CORRIDOR CEILING SPACES WHERE FIRE RATING IS REQUIRED.
10. ALL DUCT WORK SHALL BE CLASSIFIED FOR LOW PRESSURE SYSTEMS PER IMC SECTION 603.
11. ALL DUCTS AND JOINTS SHALL BE SEALED PER IMC SECTION 603.

HVAC NOTES

1. ATTACHMENTS: AIR DISTRIBUTION OUTLETS AND LOUVERS SHALL HAVE ALL REQUIRED ACCESSORIES AND ATTACHMENTS FOR A COMPLETE CONNECTION TO THE SPECIFIC TYPE OF STRUCTURE THAT THEY ARE BEING ATTACHED TO. THIS INCLUDES, BUT IS NOT LIMITED TO, EXTERIOR BRICKS, GWB WALLS, GWB CEILING, ETC.
2. DUCTWORK: DUCTWORK SHALL BE SMOOTH SHEET METAL (CLASS-1). DUCTWORK THROUGH FIRE RATED STRUCTURE AND FLOOR SHALL BE MIN. 26 GA. STEEL. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE 5'-0", UNLESS OTHERWISE NOTED ON DRAWINGS. DUCTWORK SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
3. SEISMIC: PROVIDE SEISMIC RESTRAINTS FOR MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK PER SMACNA AND LOCAL REGULATIONS.
4. FILTER CLEARANCE: PROVIDE ADEQUATE CLEARANCE FOR CHANGING AIR FILTERS.
5. DUCTWORK AND PIPING OUTSIDE OF MECHANICAL ROOMS SHALL BE CONCEALED, COORDINATE WITH THE GENERAL CONTRACTOR TO FUR-OUT AS REQUIRED.
6. FIRE RATINGS: RATED FLOOR/CEILING JOINT SPACES HAVING DUCTWORK INSIDE THEM SHALL BE FIRE/SMOKE PROTECTED TO MAINTAIN THE 1-HOUR FLOOR/CEILING RATING PER LOCAL JURISDICTIONS. EXHAUST DUCTWORK PENETRATING THE 1-HOUR ROOF/CEILING OR FLOOR/CEILING ASSEMBLY SHALL HAVE ACCESSIBLE CEILING FIRE DAMPERS. ALTERNATIVELY, THE EXHAUST DUCTWORK SHALL BE ROUTED INSIDE A RATED SHAFT TO PROTECT THE CEILING/ROOF RATING PER THE LOCAL JURISDICTIONS.
7. FIRESTOP: PIPE, DUCT AND CONDUIT PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE FIRE AND SMOKE STOPPED PER CODE.
8. DUCTWORK: DUCTWORK SHALL BE SMOOTH SHEET METAL (CLASS-1). DUCTWORK THROUGH FIRE RATED STRUCTURE AND FLOOR SHALL BE MIN. 26 GA. STEEL. MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE 5'-0" UNLESS OTHERWISE NOTED ON DRAWINGS. DUCTWORK SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
9. VOLUME DAMPERS: PROVIDE AN ACCESSIBLE MANUAL VOLUME DAMPER FOR EACH SUPPLY, RETURN, OSA AND EXHAUST OPENING, LOCATED AS FAR UPSTREAM AS POSSIBLE FROM THE OPENING. PROVIDE A MANUAL VOLUME DAMPER FOR BRANCH MAINS SERVING MORE THAN ONE OPENING. VOLUME DAMPERS IN NON-ACCESSIBLE CEILING SHALL HAVE A CONTROL ARM EXTENDED TO AN ACCESSIBLE LOCATION. PROVIDE "YOUNG" REGULATOR OR EQUAL. EXACT LOCATION OF CONTROL DEVICES VISIBLE IN FINISHED SPACES SHALL BE COORDINATED WITH THE ARCHITECT.
10. CORRIDOR THERMOSTAT: PROVIDE TAMPERPROOF THERMOSTATS IN CORRIDORS. DO NOT PROVIDE PLASTIC GUARDS TO MAKE THE THERMOSTATS TAMPERPROOF. PROVIDE BLANK SECURABLE THERMOSTAT COVERS.

APPLICABLE CODE

BUILDING CODE:

2018 WASHINGTON STATE ENERGY CODE-RESIDENTIAL BY WASHINGTON ADMINSTRATIVE CODE CHAP 51-50 (WSEC)

2018 INTERNATIONAL RESIDENTIAL CODE WITH ADMINISTRATIVE CODE CHAP 51-51 (WSRC)

2018 INTERNATIONAL MECHANICAL CODE WITH ADMINISTRATIVE CODE CHAP 51-52 (WSMC)

DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

PRE-CON MEETING NOTES

CONTRACTORS SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE ENGINEER FOR THE PURPOSE OF REVIEWING THE WORK PRIOR TO ORDERING ANY EQUIPMENT OR PERFORMING ANY WORK. THE MEETING SHALL BE LOCATED AT THE PROJECT SITE ON A DATE AND TIME TO BE MUTUALLY AGREED. THE MEETING WILL BE A WORKING SESSION. THE MEETING WILL BE FACILITATED BY THE ENGINEER AND THE AGENDA WILL INCLUDE A DETAILED REVIEW OF THE PLANS AND SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES FOR COORDINATION ISSUES, REVIEW OF PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS AND METHODS,AND ON-SITE INVESTIGATION OF FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS THAT COULD AFFECT THE WORK. PERSONS ATTENDING THE MEETING SHALL BE KNOWLEDGEABLE OF THE PROJECT AND SHALL BE THE SPECIFIC PERSONS INTENDED TO CONTINUE WITH THE PROJECT THROUGH TO COMPLETION. IF REQUIRED, REVISED PLANS WILL BE ISSUED THROUGH OFFICIAL CHANNELS. CHANGES IN THE BID PRICE WILL BE DISCUSSED, BUT NO CHANGE ORDERS WILL BE ISSUED UNLESS PROCESSED THOUGH OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD THAT THE ENGINEER HAS NO AUTHORITY TO ISSUE CHANGE ORDERS.

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

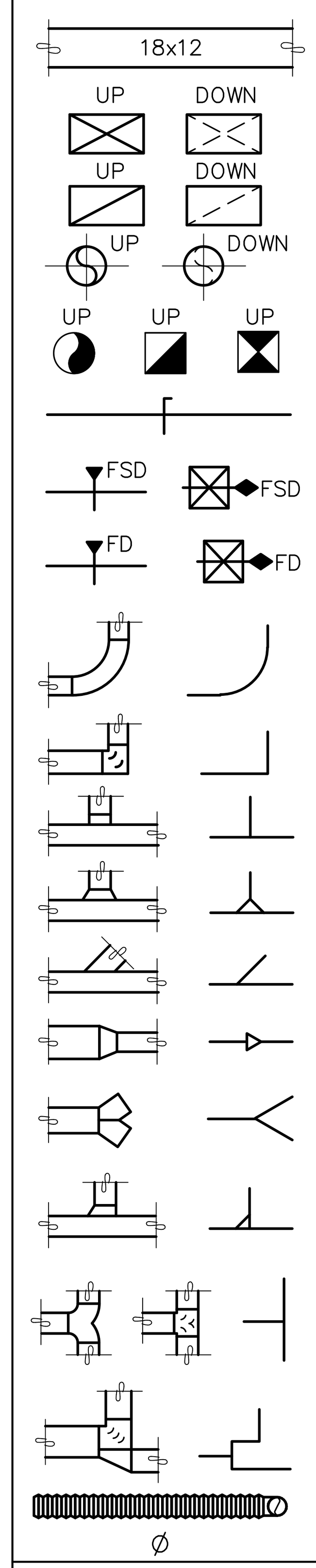
MECHANICAL SHEET METAL	4 HOURS
PLUMBING/PIPING	4 HOURS
ELECTRICAL	4 HOURS
SPRINKLER	2 HOURS
GENERAL CONTRACTOR	ALL SESSIONS

ANNOTATIONS

ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTUH	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CLG	CEILING, COOLING
CO	CLEANOUT
COMB	COMBUSTION
CONT	CONTINUE, CONTROL
CONTR	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
D	DIAMETER
DB	DRY BULB, DECIBEL
DEG	DEGREE
DIM	DIMENSION
DISCH	DISCHARGE
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE, ENGINE GENERATOR
ELEC	ELECTRIC
EQUIV	EQUIVALENT
ESP	EXTERNAL STATIC PRESSURE
EXH	EXHAUST
EXT	EXTERIOR, EXTERNAL
F	FAHRENHEIT
FD	FIRE DAMPER
FCU	FAN COIL UNIT
FLR	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD	FIRE/SMOKE DAMPER
G	GAS
GRD	GRILLES, REGISTERS, AND DIFFUSERS
GWB	GYPSUM WALLBOARD
HORIZ	HORIZONTAL
HP	HORSEPOWER, HEAT PUMP
HRU	HEAT RECOVERY UNIT
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HVU	HEATING AND VENTILATION UNIT
HWR	HIGH WALL RETURN, HOT WATER RETURN
HWS	HIGH WALL SUPPLY, HOT WATER SUPPLY
HX	HEAT EXCHANGER
ID	INDIRECT DRAIN, INSIDE DIAMETER
IN	INCH
KW	KILOWATT
L	LONG, LENGTH
LB	POUND
LWR	LOW WALL RETURN
LWS	LOW WALL SUPPLY
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
OSA	OUTDOOR AIR
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIMENSION OR DIAMETER
OPNG	OPENING
P	PUMP
PD	PRESSURE DROP
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
RA	RETURN AIR
REF	REFERENCE
RF	RELIEF FAN
RG	RETURN GRILLE
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCH	SCHEDULE
SF	SUPPLY FAN, SQUARE FOOT
SENS	SENSIBLE
SG	SUPPLY GRILLE
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SO	SCREENED OPENING
SP	STATIC PRESSURE
SS	STAINLESS STEEL, SANITARY SEWER
SQ	SQUARE
TG	TRANSFER GRILLE
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VENT
VENT	VENTILATION, VENTILATOR
VTR	VENT THRU ROOF
W	WASTE, WATT, WIDE
WB	WET BULB (TEMPERATURE)

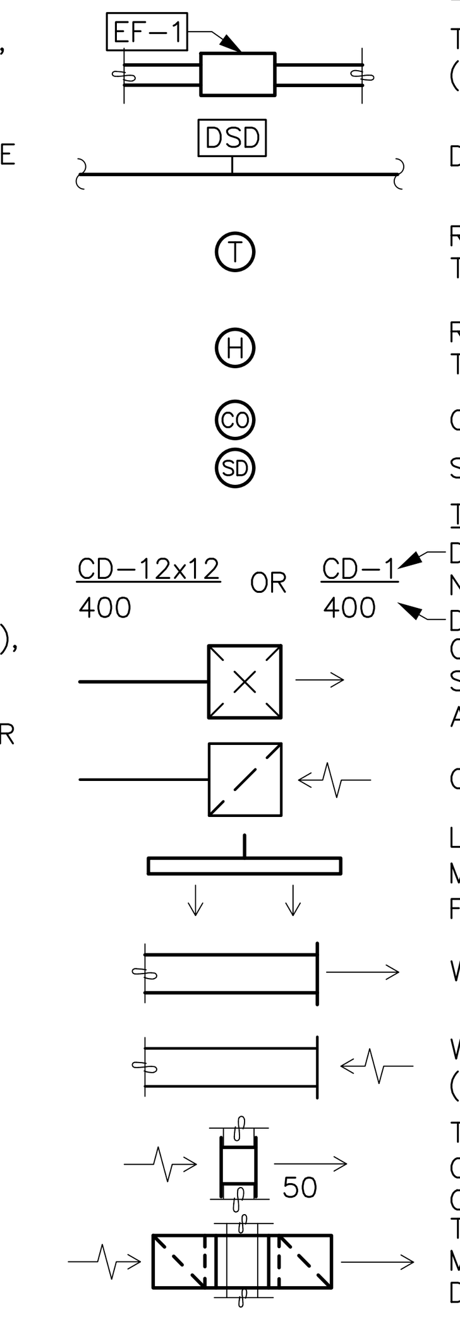
SYMBOLS

DUCTWORK



- DUCT (1ST FIGURE = SIDE SHOWN, 2ND FIGURE = SIDE NOT SHOWN)
- DUCT SECTION, POSITIVE PRESSURE
- DUCT SECTION, NEGATIVE PRESSURE
- ROUND DUCT SECTION
- DUCT PENETRATION THRU FLOOR OR ROOF
- VOLUME DAMPER
- FIRE/SMOKE DAMPER (--◄ = HORIZ DUCT, --◆ = VERT DUCT), 2-HR RATED, UON
- FIRE DAMPER (--◄ = HORIZ DUCT, --◆ = VERT DUCT), 2-HR RATED, UON
- 90° ELBOW, R/D OR R/W=1.5
- SQUARE CORNER ELBOW WITH TURNING VANES
- 90° TAKE-OFF OR TEE
- 90° CONICAL TAKE-OFF
- 45° LATERAL TAKE-OFF
- TRANSITION OR REDUCER (FOT = FLAT ON TOP, FOB = FLAT ON BOTTOM)
- WYE FITTING
- 90° RECTANGULAR TAKE-OFF WITH 45° TAPER
- 90° DIVERGING RECTANGULAR TEE, EITHER RADIUS OR TURNING VANES
- PARALLEL FLOW BRANCH CONNECTION, EITHER RADIUS OR TURNING VANES
- FLEXIBLE DUCT
- ROUND DUCT INDICATOR

EQUIPMENT



- TYPICAL EQUIPMENT DESIGNATION (EXHAUST FAN SHOWN)
- DUCT SMOKE DETECTOR
- ROOM THERMOSTAT OR TEMPERATURE TRANSMITTER
- ROOM HUMIDISTAT OR HUMIDITY TRANSMITTER
- CARBON MONOXIDE SENSOR
- SMOKE DETECTOR

TERMINALS

- DIFFUSER/GRILLE TYPE, AND NUMBER OR SIZE
- DESIGN CFM (WHERE APPLICABLE)
- CEILING DIFFUSER (FLOW ARROWS SHOWN FOR NON SYMMETRICAL AIRFLOW)
- CEILING RETURN/EXHAUST GRILLE
- LINEAR DIFFUSER, CEILING OR WALL MOUNTED (FLOW ARROWS SHOWN FOR NON SYMMETRICAL AIRFLOW)
- WALL SUPPLY GRILLE (SG)
- WALL RETURN/EXHAUST GRILLE (RG, EG)
- TRANSFER GRILLE (TG), DUCT CONNECTED, WALL MOUNTED W/ OPTIONAL CFM SHOWN
- TRANSFER GRILLE, CEILING MOUNTED WITH FULL-SIZED LINED DUCT CONNECTION

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SHEET TITLE: LEGEND, GENERAL NOTES, & DRAWING INDEX

SHEET NO. M0.0

ENERGY CODE NOTES

WASHINGTON STATE COMMISSIONING REQUIREMENTS

C408.1.1CONSTRUCTION DOCUMENTS SHALL CLEARLY INDICATE PROVISIONS FOR COMMISSIONING PROCESS. THE CONSTRUCTION DOCUMENTS SHALL MINIMALLY INCLUDE THE FOLLOWING:

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING THE COMMISSIONING PROCESS. AT A MINIMUM, THE COMMISSIONING PROCESS IS REQUIRED TO INCLUDE:
   - 1.1. DEVELOPMENT AND EXECUTION OF THE COMMISSIONING PLAN, INCLUDING ALL SUBSECTIONS OF SECTION C408.1.2;
   - 1.2. THE CERTIFIED COMMISSIONING PROFESSIONAL'S REVIEW OF THE BUILDING DOCUMENTATION AND CLOSE OUT SUBMITTALS IN ACCORDANCE WITH SECTION C103.6; AND
   - 1.3. THE COMMISSIONING REPORT IN ACCORDANCE WITH SECTION C408.1.3.
2. ROLES, RESPONSIBILITIES AND REQUIRED QUALIFICATIONS OF THE CERTIFIED COMMISSIONING PROFESSIONAL.
3. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED.

C408.1.2 A COMMISSIONING PLAN SHALL BE DEVELOPED BY THE PROJECT'S CERTIFIED COMMISSIONING PROFESSIONAL AND SHALL OUTLINE THE ORGANIZATION, SCHEDULE, ALLOCATION OF RESOURCES, AND DOCUMENTATION REQUIREMENTS OF THE COMMISSIONING PROCESS. THE PLAN SHALL ALSO INCLUDE THE FOLLOWING:

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES, SYSTEMS TESTING AND BALANCING, FUNCTIONAL PERFORMANCE TESTING, AND VERIFICATION OF THE BUILDING DOCUMENTATION REQUIREMENTS IN SECTION C103.6.
2. ROLES AND RESPONSIBILITIES OF THE COMMISSIONING TEAM, INCLUDING THE NAME AND STATEMENT OF QUALIFICATIONS OF THE CERTIFIED COMMISSIONING PROFESSIONAL.
3. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.

C408.1.2.1 WHERE THE CERTIFIED COMMISSIONING PROFESSIONAL'S CONTRACT OR EMPLOYMENT IS OTHER THAN DIRECTLY WITH THE BUILDING OWNER, AN IN-HOUSE COMMISSIONING DISCLOSURE AND CONFLICT MANAGEMENT PLAN SHALL BE A PART OF THE COMMISSIONING PROCESS. A COPY SHALL BE INCLUDED IN THE COMMISSIONING PLAN. THIS PLAN SHALL DISCLOSE THE CERTIFIED COMMISSIONING PROFESSIONAL'S CONTRACTUAL RELATIONSHIP WITH OTHER TEAM MEMBERS AND PROVIDE A CONFLICT MANAGEMENT PLAN DEMONSTRATING THAT THE CERTIFIED COMMISSIONING PROFESSIONAL IS FREE TO IDENTIFY ANY ISSUES DISCOVERED AND REPORT DIRECTLY TO THE OWNER.

C408.1.2.2 FUNCTIONAL PERFORMANCE TESTING SHALL BE CONDUCTED FOR MECHANICAL SYSTEMS IN SECTIONS C403; SERVICE WATER HEATING SYSTEMS IN SECTION C404; CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS IN SECTION C405; EQUIPMENT, APPLIANCES AND SYSTEMS INSTALLED TO COMPLY WITH SECTION C406 OR C407; ENERGY METERING IN SECTION C409; AND REFRIGERATION SYSTEMS IN SECTION C410. WRITTEN PROCEDURES WHICH CLEARLY DESCRIBE THE INDIVIDUAL SYSTEMATIC TEST PROCEDURES, THE EXPECTED SYSTEM RESPONSE OR ACCEPTANCE CRITERIA FOR EACH PROCEDURE, THE ACTUAL RESPONSE OR FINDINGS, AND ANY PERTINENT DISCUSSION SHALL BE FOLLOWED. THIS TESTING SHALL INCLUDE CONTROL SYSTEMS WHICH WILL BE TESTED TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT, AND SYSTEMS ARE CALIBRATED AND ADJUSTED TO OPERATE IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS. TESTING SHALL AFFIRM THE CONDITIONS REQUIRED WITHIN SECTIONS C408.2 THROUGH C408.7 UNDER SYSTEM TESTING.

C408.1.2.3 FOR PROJECTS WITH SEVEN OR FEWER SIMILAR SYSTEMS, EACH SYSTEM SHALL BE TESTED. FOR PROJECTS WITH MORE THAN SEVEN SYSTEMS, TESTING SHALL BE DONE FOR EACH UNIQUE COMBINATION OF CONTROLS TYPE. WHERE MULTIPLES OF EACH UNIQUE COMBINATION OF CONTROL TYPES EXIST, NO FEWER THAN 20 PERCENT OF EACH COMBINATION SHALL BE TESTED UNLESS THE CODE OFFICIAL OR DESIGN PROFESSIONAL REQUIRES A HIGHER PERCENTAGE TO BE TESTED. WHERE 30 PERCENT OR MORE OF THE TESTED SYSTEM FAIL, ALL REMAINING IDENTICAL COMBINATIONS SHALL BE TESTED.

C408.1.2.4 DEFICIENCIES FOUND DURING TESTING SHALL BE RESOLVED INCLUDING CORRECTIONS AND RETESTING.

C408.1.3 A FINAL COMMISSIONING REPORT SHALL BE COMPLETED AND CERTIFIED BY THE CERTIFIED COMMISSIONING PROFESSIONAL AND DELIVERED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL, SERVICE WATER HEATING, CONTROLLED RECEPTACLE AND LIGHTING CONTROL SYSTEMS, ENERGY METERING, AND REFRIGERATION FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW. THE REPORT SHALL RECORD THE ACTIVITIES AND RESULTS OF THE COMMISSIONING PROCESS AND BE DEVELOPED FROM THE FINAL COMMISSIONING PLAN WITH ALL OF ITS ATTACHED APPENDICES. THE REPORT SHALL INCLUDE:

1. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
2. DISPOSITION OF DEFICIENCIES FOUND DURING TESTING, INCLUDING DETAILS OF CORRECTIVE MEASURES USED OR PROPOSED.
3. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE, PROVIDED HEREIN FOR REPEATABILITY.
4. COMMISSIONING PLAN.
5. TESTING, ADJUSTING AND BALANCING REPORT. EXCEPTION: DEFERRED TESTS WHICH CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION DUE TO CLIMATIC CONDITIONS.

C408.1.4 PRIOR TO THE FINAL MECHANICAL, PLUMBING AND ELECTRICAL INSPECTIONS OR OBTAINING A CERTIFICATE OF OCCUPANCY, THE CERTIFIED COMMISSIONING PROFESSIONAL SHALL PROVIDE EVIDENCE OF BUILDING COMMISSIONING IN ACCORDANCE WITH THE PROVISIONS OF THIS SECTION.

C408.1.4.1 BUILDINGS, OR PORTIONS THEREOF, SHALL NOT BE CONSIDERED ACCEPTABLE FOR A FINAL INSPECTION PURSUANT TO SECTION C104.2.6 UNTIL THE CODE OFFICIAL HAS RECEIVED A LETTER OF TRANSMITTAL FROM THE BUILDING OWNER OR OWNER'S REPRESENTATIVE ACKNOWLEDGING THAT THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT HAS RECEIVED THE COMMISSIONING REPORT. COMPLETION OF COMMISSIONING COMPLIANCE CHECKLIST (FIGURE C408.1.4.1) IS DEEMED TO SATISFY THIS REQUIREMENT. PHASED ACCEPTANCE OF COMMISSIONING COMPLIANCE CHECKLIST FOR PORTIONS OF THE WORK SPECIFIC TO THE TRADE THAT IS BEING INSPECTED IS PERMISSIBLE WHERE ACCEPTED BY THE CODE OFFICIAL AND WHERE THE CERTIFIED COMMISSIONING PROFESSIONAL REMAINS RESPONSIBLE FOR COMPLETION OF THE COMMISSIONING PROCESS. IF THERE ARE UNRESOLVED DEFICIENCIES WHEN THE FINAL INSPECTION IS SCHEDULED, THE COMMISSIONING REPORT SHALL BE SUBMITTED AND SHALL DESCRIBE THE UNRESOLVED DEFICIENCIES.

C408.1.4.2 THE CODE OFFICIAL SHALL BE PERMITTED TO REQUIRE THAT A COPY OF THE COMMISSIONING REPORT BE MADE AVAILABLE FOR REVIEW BY THE CODE OFFICIAL.

C408.2 MECHANICAL EQUIPMENT AND CONTROLS SUBJECT TO SECTION C403 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE COMMISSIONING PROCESS SHALL MINIMALLY INCLUDE ALL ENERGY CODE REQUIREMENTS FOR WHICH THE CODE STATES THAT EQUIPMENT OR CONTROLS SHALL"BE CAPABLE OF" OR CONFIGURED TO" PERFORM SPECIFIC FUNCTIONS. EXCEPTION: MECHANICAL SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS WHERE THE INSTALLED TOTAL MECHANICAL EQUIPMENT CAPACITY IS LESS THAN 240,000 BTU/H COOLING CAPACITY AND LESS THAN 300,000 BTU/H HEATING CAPACITY.

C408.2.2 HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. AIR AND WATER FLOW RATES SHALL BE MEASURED AND ADJUSTED TO DELIVER FINAL FLOW RATES WITHIN THE TOLERANCES PROVIDED IN THE PROJECT SPECIFICATIONS. TEST AND BALANCE ACTIVITIES SHALL INCLUDE AIR SYSTEM AND HYDRONIC SYSTEM BALANCING.

C408.2.2.1 EACH SUPPLY AIR OUTLET AND ZONE TERMINAL DEVICE SHALL BE EQUIPPED WITH MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 OF THE INTERNATIONAL MECHANICAL CODE. DISCHARGE DAMPERS USED FOR AIR SYSTEM BALANCING ARE PROHIBITED ON CONSTANT VOLUME FANS AND VARIABLE VOLUME FANS WITH MOTORS 10 HP (18.6 KW) AND LARGER. AIR SYSTEMS SHALL BE BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES THEN, FOR FANS WITH SYSTEM POWER OF GREATER THAN 1 HP (0.74 KW), FAN SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. EXCEPTION: FANS WITH FAN MOTORS OF 1 HP (0.74 KW) OR LESS.

C408.2.2.2 INDIVIDUAL HYDRONIC HEATING AND COOLING COILS SHALL BE EQUIPPED WITH MEANS FOR BALANCING AND MEASURING FLOW. HYDRONIC SYSTEMS SHALL BE PROPORTIONATELY BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES, THEN THE PUMP IMPELLER SHALL BE TRIMMED OR PUMP SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. EACH HYDRONIC SYSTEM SHALL HAVE EITHER THE CAPABILITY TO MEASURE PRESSURE ACROSS THE PUMP, OR TEST PORTS AT EACH SIDE OF EACH PUMP. EXCEPTION: THE FOLLOWING EQUIPMENT IS NOT REQUIRED TO BE EQUIPPED WITH MEANS FOR BALANCING OR MEASURING FLOW:

1. PUMPS WITH PUMP MOTORS OF 5 HP (3.7 KW) OR LESS.
2. WHERE THROTTLING RESULTS IN NO GREATER THAN FIVE PERCENT OF THE NAMEPLATE HORSEPOWER DRAW ABOVE THAT REQUIRED IF THE IMPELLER WERE TRIMMED.

C408.2.3 FUNCTIONAL PERFORMANCE TESTING SHALL DEMONSTRATE THE COMPONENTS, SYSTEMS, AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS ARE INSTALLED AND OPERATE IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS. TESTING SHALL INCLUDE THE SEQUENCE OF OPERATION, AND BE CONDUCTED UNDER FULL-LOAD, OART-LOAD AND THE FOLLOWING CONDITIONS:

1. ALL MODES AS DESCRIBED IN THE SEQUENCE OF OPERATION;
2. REDUNDANT OR AUTOMATIC BACK-UP MODE;
3. PERFORMANCE OF ALARMS; AND
4. MODE OF OPERATION UPON LOSS OF POWER AND RESTORATION OF POWER.

C408.3 SERVICE WATER HEATING EQUIPMENT AND CONTROLS SUBJECT TO SECTION C404 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE COMMISSIONING PROCESS SHALL MINIMALLY INCLUDE EQUIPMENT AND COMPONENTS INSTALLED TO MEET ALL ENERGY CODE REQUIREMENTS FOR DEVICES TO "START," "AUTOMATICALLY TURN OFF," "AUTOMATICALLY ADJUST," "LIMIT OPERATION," AND "LIMIT THE TEMPERATURE" AND "BE CONFIGURED TO."

C408.4 CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS SUBJECT TO SECTION C405 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE CONFIGURATION AND FUNCTION OF CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS REQUIRED BY THIS CODE SHALL BE TESTED AND SHALL COMPLY WITH SECTION C408.4.1 EXCEPTION: LIGHTING CONTROL SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS IN BUILDINGS WHERE:

1. THE TOTAL INSTALLED LIGHTING LOAD IS LESS THAN 20 KW, AND
2. THE LIGHTING LOAD CONTROLLED BY OCCUPANCY SENSORS OR AUTOMATIC DAYLIGHTING CONTROLS IS LESS THAN 10 KW.

C408.5 EQUIPMENT, COMPONENTS, CONTROLS OR CONFIGURATION SETTINGS FOR SYSTEMS WHICH ARE INCLUDED IN THE PROJECT TO COMPLY WITH SECTION C406 OR C407 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1.

C408.6 ENERGY METERING SYSTEMS REQUIRED BY SECTION C409 SHALL COMPLY WITH SECTION C408.6 AND BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE COMMISSIONING PROCESS SHALL INCLUDE ALL ENERGY METERING EQUIPMENT AND CONTROLS REQUIRED BY SECTION C409.

C408.7 ALL INSTALLED REFRIGERATION SYSTEMS SUBJECT TO SECTION C410 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. EXCEPTIONS:

1. SELF-CONTAINED REFRIGERATION SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS.
2. TOTAL INSTALLED CAPACITY FOR REFRIGERATION IS EQUAL TO OR LESS THAN 240,000 BTUH.

WASHINGTON STATE CLOSE OUT DOCUMENTATION

C103.6 THE CONSTRUCTION DOCUMENTS SHALL SPECIFY THAT THE DOCUMENTS DESCRIBED IN THIS SECTION BE PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN A MAXIMUM 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATION OF OCCUPANCY. (C103.6.1 RECORD DOCUMENTS, C103.6.2 BUILDING OPERATIONS AND MAINTENANCE INFORMATION, C103.6.2.1 MANUALS, C103.6.3 COMPLIANCE DOCUMENTATION, C103.6.4 SYSTEMS OPERATION TRAINING)

WASHINGTON STATE ENERGY CODE

C403.4.1 THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE.

C403.4.1.1 UNITARY AIR COOLED HEAT PUMPS SHALL INCLUDE MICROPROCESSOR CONTROLS THAT MINIMIZE SUPPLEMENTAL HEAT USAGE DURING START-UP, SET-UP, AND DEFROST CONDITIONS. THESE CONTROLS SHALL ANTICIPATE NEED FOR HEAT AND USE COMPRESSION HEATING AS THE FIRST STAGE OF HEAT. CONTROLS SHALL INDICATE WHEN SUPPLEMENTAL HEATING IS BEING USED THROUGH VISUAL MEANS (E.G., LED INDICATORS). HEAT PUMPS EQUIPPED WITH SUPPLEMENTAL HEATERS SHALL BE INSTALLED WITH CONTROLS THAT PREVENT SUPPLEMENTAL HEATER OPERATION ABOVE 40°F.

C403.4.1.2 WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

C403.7.8.1 OUTDOOR AIR SUPPLY, EXHAUST OPENINGS AND RELIEF OUTLETS AND STAIRWAY AND ELEVATOR HOISTWAY SHAFT VENTS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. SEE SECTIONS C403.10.1 AND C403.10.2 FOR DUCTWORK INSULATION REQUIREMENTS UPSTREAM AND DOWNSTREAM OF THE SHUTOFF DAMPER. EXCEPTION:

1. GRAVITY (NONMOTORIZED) DAMPERS SHALL BE PERMITTED IN LIEU OF MOTORIZED DAMPERS AS FOLLOWS:
   - 1.1. RELIEF DAMPERS SERVING SYSTEMS LESS THAN 5,000 CFM TOTAL SUPPLY SHALL BE PERMITTED IN BUILDINGS LESS THAN THREE STORIES IN HEIGHT.
   - 1.2. GRAVITY (NONMOTORIZED) DAMPERS WHERE THE DESIGN OUTDOOR AIR INTAKE OR EXHAUST CAPACITY DOES NOT EXCEED 400 CFM.
   - 1.3. SYSTEMS SERVING AREAS WHICH REQUIRE CONTINUOUS OPERATION FOR 24/7 OCCUPANCY SCHEDULES.

2. SHUTOFF DAMPERS ARE NOT REQUIRED IN:
   - 2.1. COMBUSTION AIR INTAKES.
   - 2.2. SYSTEMS SERVING AREAS WHICH REQUIRE CONTINUOUS OPERATION IN ANIMAL HOSPITALS, KENNELS AND POUNDS, LABORATORIES, GROUP H, I AND R OCCUPANCIES.
   - 2.3. SUBDUCT EXHAUST SYSTEMS OR OTHER SYSTEMS THAT ARE REQUIRED TO OPERATE CONTINUOUSLY BY THE INTERNATIONAL MECHANICAL CODE.
   - 2.4. TYPE I GREASE EXHAUST SYSTEMS OR OTHER SYSTEMS WHERE DAMPERS ARE PROHIBITED BY THE INTERNATIONAL MECHANICAL CODE TO BE IN THE AIRSTREAM.
   - 2.5. UNCONDITIONED STAIRWELLS OR UNCONDITIONED ELEVATOR HOISTWAY SHAFTS THAT ARE ONLY CONNECTED TO UNCONDITIONED SPACES.

C403.7.8.2 RETURN AIR OPENINGS USED FOR AIRSIDE ECONOMIZER OPERATION SHALL BE EQUIPPED WITH CLASS I MOTORIZED DAMPERS.

C403.7.8.3 CLASS I DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM/SF WHEN TESTED IN ACCORDANCE WITH AMCA 500D AND SHALL BE LABELED BY AN APPROVED AGENCY FOR SUCH PURPOSE. GRAVITY (NONMOTORIZED) DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 20 CFM/SF WHERE NOT LESS THAN 24 INCHES IN EITHER DIMENSION AND 40 CFM/SF WHERE LESS THAN 24 INCHES IN EITHER DIMENSION. THE RATE OF AIR LEAKAGE SHALL BE DETERMINED AT 1.0 INCH W.G. WHEN TESTED IN ACCORDANCE WITH AMCA500D FOR SUCH PURPOSE. THE DAMPERS SHALL BE LABELED BY AN APPROVED AGENCY. GRAVITY DAMPERS FOR VENTILATION AIR INTAKES SHALL BE PROTECTED FROM DIRECT EXPOSURE TO WIND. EXCEPTIONS:

1. GRAVITY (NONMOTORIZED) DAMPERS ARE NOT REQUIRED TO BE TESTED TO VERIFY THE AIR LEAKAGE RATING WHEN INSTALLED IN EXHAUST SYSTEMS WHERE THE EXHAUST CAPACITY DOES NOT EXCEED 400 CFM AND THE GRAVITY DAMPER IS PROVIDED WITH A GASKETED SEAL.
2. MOTORIZED DAMPERS ON RETURN AIR OPENINGS IN UNITARY PACKAGED EQUIPMENT THAT HAVE THE MINIMUM LEAKAGE RATE AVAILABLE FROM THE MANUFACTURER.

C403.7.8.4 OUTDOOR AIR INTAKE, RELIEF AND EXHAUST SHUTOFF DAMPERS SHALL BE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO CLOSE WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE OR DURING UNOCCUPIED PERIOD WARM-UP AND SETBACK OPERATION, UNLESS THE SYSTEMS SERVED REQUIRE OUTDOOR OR EXHAUST AIR IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE OR THE DAMPERS ARE OPENED TO PROVIDE INTENTIONAL ECONOMIZER COOLING. STAIRWAY AND ELEVATOR HOISTWAY SHAFT VENT DAMPERS SHALL BE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO OPEN UPON THE ACTIVATION OF ANY FIRE ALARM INITIATING DEVICE OF THE BUILDING'S FIRE ALARM SYSTEM OF THE INTERRUPTION OF POWER TO THE DAMPER.

C403.10.1.1 DUCTS, SHAFTS AND PLENUMS CONVEYING OUTSIDE AIR FROM THE EXTERIOR OF THE BUILDING TO THE MECHANICAL SYSTEM SHALL MEET ALL AIR LEAKAGE AND BUILDING ENVELOPE INSULATION REQUIREMENTS OF SECTION C402, PLUS BUILDING ENVELOPE VAPOR CONTROL REQUIREMENTS FROM THE INTERNATIONAL BUILDING CODE, EXTENDING CONTINUOUSLY FROM THE BUILDING EXTERIOR TO THE AUTOMATIC SHUTOFF DAMPER OR HEATING OR COOLING EQUIPMENT. FOR THE PURPOSES OF BUILDING ENVELOPE INSULATION REQUIREMENTS, DUCT SURFACES SHALL BE INSULATED WITH THE MINIMUM INSULATION VALUES IN TABLE C403.10.1.1. DUCT SURFACES INCLUDED AS PART OF THE BUILDING ENVELOPE SHALL NOT BE USED IN THE CALCULATION OF MAXIMUM GLAZING AREA AS DESCRIBED IN SECTION C402.4.1. EXCEPTIONS:

1. OUTDOOR AIR DUCTS SERVING INDIVIDUAL SUPPLY AIR UNITS WITH LESS THAN 2,800 CFM OF TOTAL SUPPLY AIR CAPACITY, PROVIDED THESE ARE INSULATED TO THE MINIMUM INSULATION VALUES IN TABLE C403.10.1.1.
2. UNHEATED EQUIPMENT ROOMS WITH COMBUSTION AIR LOUVERS, PROVIDED THEY ARE ISOLATED FROM CONDITIONED SPACE AT SIDES, TOP AND BOTTOM OF THE ROOM WITH R-11 NOMINAL INSULATION.

C403.10.1.2 ALL OTHER SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES, AND WHERE LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-8 INSULATION IN CLIMATE ZONE 4 AND R-12 INSULATION IN CLIMATE ZONE 5. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM INSULATION VALUE AS REQUIRED FOR EXTERIOR WALLS BY SECTION C402.1.3. EXCEPTIONS:

1. WHERE LOCATED WITHIN EQUIPMENT.
2. SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F AND INSULATED IN ACCORDANCE WITH TABLE C403.10.1.2.

WHERE LOCATED WITHIN CONDITIONED SPACE, SUPPLY DUCTS WHICH CONVEY SUPPLY AIR AT TEMPERATURES LESS THAN 55°F OR GREATER THAN 105°F SHALL BE INSULATED WITH A MINIMUM INSULATION R-VALUE IN ACCORDANCE WITH TABLE C403.10.1.2. EXCEPTION: DUCTWORK EXPOSED TO VIEW WITHIN A ZONE THAT SERVES THAT ZONE IS NOT REQUIRED TO BE INSULATED.

WHERE LOCATED WITHIN CONDITIONED SPACE, RETURN OR EXHAUST AIR DUCTS THAT CONVEY RETURN OR EXHAUST AIR DOWNSTREAM OF AN ENERGY RECOVERY MEDIA SHALL BE INSULATED WITH A MINIMUM R-VALUE IN ACCORDANCE WITH TABLE C403.10.1.2.

ALL DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION 603.9 OF THE INTERNATIONAL MECHANICAL CODE.

C403.10.2 DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.

C403.10.3 ALL PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.10.3. EXCEPTIONS:

1. FACTORY-INSTALLED PIPING WITHIN HVAC EQUIPMENT TESTED AND RATED IN ACCORDANCE WITH A TEST PROCEDURE REFERENCED BY THIS CODE.
2. FACTORY-INSTALLED PIPING WITHIN ROOM FAN-COILS AND UNIT VENTILATORS TESTED AND RATED ACCORDING TO AHRI 440 (EXCEPT THAT THE SAMPLING AND VARIATION PROVISIONS OF SECTION 6.5 SHALL NOT APPLY) AND 840, RESPECTIVELY.
3. PIPING THAT CONVEYS FLUIDS THAT HAVE A DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60°F AND 105°F.
4. PIPING THAT CONVEYS FLUIDS THAT HAVE NOT BEEN HEATED OR COOLED THROUGH THE USE OF FOSSIL FUELS OR ELECTRIC POWER.
5. STRAINERS, CONTROL VALVES, AND BALANCING VALVES ASSOCIATED WITH PIPING 1 INCH OR LESS IN DIAMETER.
6. DIRECT BURIED PIPING THAT CONVEYS FLUIDS AT OR BELOW 60°F.

C403.5 AIR ECONOMIZERS SHALL BE PROVIDED ON ALL NEW COOLING SYSTEMS INCLUDING THOSE SERVING COMPUTER SERVER ROOMS, ELECTRONIC EQUIPMENT, RADIO EQUIPMENT, AND TELEPHONE SWITCHGEAR. ECONOMIZERS SHALL COMPLY WITH SECTIONS C403.5.1 THROUGH C403.5.5. NOTE: ECONOMIZERS ARE NOT REQUIRED FOR SYSTEMS THAT MEET THE REQUIREMENTS OF SECTION C403.5, EXCEPTIONS 1 THROUGH 11.

C403.5.1 ECONOMIZER SYSTEMS SHALL BE INTEGRATED WITH THE MECHANICAL COOLING SYSTEM AND BE CONFIGURED TO PROVIDE PARTIAL COOLING EVEN WHERE ADDITIONAL MECHANICAL COOLING IS REQUIRED TO PROVIDE THE REMAINDER OF THE COOLING LOAD. CONTROLS SHALL NOT BE CAPABLE OF CREATING A FALSE LOAD IN THE MECHANICAL COOLING SYSTEM BY LIMITING OR DISABLING THE ECONOMIZER OR ANY OTHER MEANS, SUCH AS HOT GAS BYPASS, EXCEPT AT THE LOWEST STAGE OF MECHANICAL COOLING. UNITS THAT INCLUDE AN AIR ECONOMIZER SHALL COMPLY WITH THE FOLLOWING:

1. UNIT CONTROLS SHALL HAVE THE MECHANICAL COOLING CAPACITY CONTROL INTERLOCKED WITH THE AIR ECONOMIZER CONTROLS SUCH THAT THE OUTDOOR AIR DAMPER IS AT THE 100 PERCENT OPEN POSITION WHEN MECHANICAL COOLING IS ON AND THE OUTDOOR AIR DAMPER DOES NOT BEGIN TO CLOSE TO PREVENT COIL FREEZING DUE TO MINIMUM COMPRESSOR RUN TIME UNTIL THE LEAVING AIR TEMPERATURE IS LESS THAN 45°F.
2. DIRECT EXPANSION (DX) UNITS WITH COOLING CAPACITY 65,000 BTUH OR GREATER OF RATED CAPACITY SHALL COMPLY WITH THE FOLLOWING:
3. 2.1 DX UNITS THAT CONTROL THE CAPACITY OF THE MECHANICAL COOLING DIRECTLY BASED ON OCCUPIED SPACE TEMPERATURE SHALL HAVE NOT FEWER THAN TWO STAGES OF MECHANICAL COOLING CAPACITY.
4. 2.2 OTHER DX UNITS, INCLUDING THOSE THAT CONTROL SPACE TEMPERATURE BY MODULATING THE AIRFLOW TO THE SPACE, SHALL BE IN ACCORDANCE WITH TABLE C403.5.1.

C403.5.2 HVAC SYSTEM DESIGN AND ECONOMIZER CONTROLS SHALL BE SUCH THAT ECONOMIZER OPERATION DOES NOT INCREASE BUILDING HEATING ENERGY USE DURING NORMAL OPERATION. EXCEPTION: ECONOMIZERS ON VAV SYSTEMS THAT CAUSE ZONE LEVEL HEATING TO INCREASE DUE TO A REDUCTION IN SUPPLY AIR TEMPERATURE. C403.5.3.1 AIR ECONOMIZER SYSTEMS SHALL BE CONFIGURED TO MODULATE OUTDOOR AIR AND RETURN AIR DAMPERS TO PROVIDE UP TO 100 PERCENT OF THE DESIGN SUPPLY AIR QUANTITY AS OUTDOOR AIR FOR COOLING.

C403.5.3.2 ECONOMIZER CONTROLS AND DAMPERS SHALL BE CONFIGURED TO SEQUENCE THE DAMPERS WITH MECHANICAL COOLING EQUIPMENT AND SHALL NOT BE CONTROLLED BY ONLY MIXED AIR TEMPERATURE. AIR ECONOMIZERS ON SYSTEMS WITH COOLING CAPACITY GREATER THAT 65,000 BTUH SHALL BE CONFIGURED TO PROVIDE PARTIAL COOLING EVEN WHEN ADDITIONAL MECHANICAL COOLING IS REQUIRED TO MEET THE REMAINDER OF THE COOLING LOAD. EXCEPTION: THE USE OF MIXED AIR TEMPERATURE LIMIT CONTROL SHALL BE PERMITTED FOR SYSTEMS THAT ARE BOTH CONTROLLED FROM SPACE TEMPERATURE (SUCH AS SINGLE ZONE SYSTEMS) AND HAVING COOLING CAPACITY LESS THAN 65,000 BTUH.

C403.5.3.3 AIR ECONOMIZERS SHALL BE CONFIGURED TO AUTOMATICALLY REDUCE OUTDOOR AIR INTAKE TO THE DESIGN MINIMUM OUTDOOR AIR QUANTITY WHEN OUTDOOR AIR INTAKE WILL NO LONGER REDUCE COOLING ENERGY USAGE. HIGH-LIMIT SHUTOFF CONTROL TYPES SHALL BE CHOSEN FROM TABLE C403.5.3.3. HIGH-LIMIT SHUTOFF CONTROL SETTINGS FOR THESE CONTROL TYPES SHALL BE THOSE SPECIFIED TO TABLE C403.5.3.3.

C403.5.3.4 SYSTEMS SHALL BE CAPABLE OF RELIEVING EXCESS OUTDOOR AIR DURING AIR ECONOMIZER OPERATION TO PREVENT OVER-PRESSURIZING THE BUILDING. THE RELIEF AIR OUTLET SHALL BE LOCATED TO AVOID RECIRCULATION INTO THE BUILDING.

C403.5.3.5 RETURN, EXHAUST/RELIEF AND OUTDOOR AIR DAMPERS USED IN ECONOMIZERS SHALL COMPLY WITH SECTION C403.7.8.

C409.1 ALL NEW BUILDINGS AND ADDITIONS SHALL HAVE THE CAPABILITY OF METERING SOURCE ENERGY FOR ON-SITE RENEWABLE ENERGY PRODUCTION IN ACCORDANCE WITH SECTION C409.2.4 AND THE END-USE ENERGY USAGE FOR ELECTRIC VEHICLE CHARGING IN ACCORDANCE WITH SECTION C409.3.4. NEW BUILDINGS AND ADDITIONS WITH A GROSS CONDITIONED FLOOR AREA OVER 50,000 SQUARE FEET SHALL COMPLY SECTION C409. BUILDINGS SHALL BE EQUIPPED TO MEASURE, MONITOR, RECORD AND DISPLAY ENERGY CONSUMPTION DATA FOR EACH ENERGY SOURCE AND END USE CATEGORY PER THE PROVISIONS OF THIS SECTION, TO ENABLE EFFECTIVE ENERGY MANAGEMENT. EXCEPTIONS:

1. TENANT SPACES SMALLER THAN 50,000 SQUARE FEET WITHIN BUILDINGS IF TENANT SPACE HAS ITS OWN UTILITY SERVICE AND UTILITY METERS.
2. BUILDINGS IN WHICH THERE IS NO GROSS CONDITIONED FLOOR AREA OVER 25,000 SQUARE FEET, INCLUDING BUILDING COMMON AREA, THAT IS SERVED BY ITS OWN UTILITY SERVICES AND METERS.

RESIDENTIAL ENERGY CODE

1. WHOLE-HOUSE FAN EFFICACY PER TABLE R403.6.1.
2. EQUIPMENT AND APPLIANCE SIZING PER R403.7, HEATING AND COOLING EQUIPMENT AND APPLIANCES SHALL BE SIZED IN ACCORDANCE WITH ACCA MANUAL S OR OTHER APPROVED SIZING METHODOLOGIES BASED ON BUILDING LOADS CALCULATED IN ACCORDANCE WITH ACCA MANUAL J OR OTHER APPROVED HEATING AND COOLING CALCULATION METHODOLOGIES
3. ELECTRIC RESISTANCE ZONE PER R403.7.1, ELECTRIC ZONAL HEATING AS PRIMARY HEAT SOURCE SHALL INSTALL DUCTLESS MINI-SPLIT HEAT PUMP IN THE LARGEST ZONE IN THE DWELLING UNLESS TOTAL INSTALLED HEATING CAPACITY OF 2 KW PER DWELLING OR LESS.
4. PROVIDED ONE THERMOSTAT FOR EACH HEATING AND COOLING SYSTEM PER R403.1
5. PER R403.3.6, SUPPLY AND RETURN DUCTS IN CEILING INSULATION SHALL HAVE MIN R-8 INSULATION ALL AROUND. THE SUM OF THE CEILING INSULATION OF THE TOP AND BELOW OF THE DUCT SHALL BE MIN R-19, EXCLUDING THE R-VALUE OF THE DUCT INSULATION.
6. MECHANICAL SYSTEM PIPING CARRYING FLUIDS ABOVE 105F OR BELOW 55F SHALL BE INSULATED WITH MIN R-6 PER R403.4. INSULATION SHALL BE PROTECTED FROM DAMAGE AND SHALL PROVIDE SHIELDING FROM SOLAR RADIATION. ADHESIVE TAPE SHALL NOT BE PERMITTED.

DUCT INSULATION SCHEDULE

	SERVICE (1)(3)(4)(5)	MATERIAL (6)	R-VALUE (MIN. INSTALLED)
WSEC	SUPPLY & RETURN AIR DUCTS IN UNCONDITIONED SPACE	MINERAL-WOOL BLANKET	6.0
	SUPPLY & RETURN AIR DUCTS LOCATED OUTSIDE THE BUILDING	MINERAL-WOOL BLANKET	8.0
	SUPPLY WITH SA TEMP <55°F OR >105°F WITHIN CONDITIONED SPACE	MINERAL-WOOL BLANKET	3.3
	SUPPLY DUCTS EXPOSED WITHIN CONDITIONED SPACE	MINERAL-WOOL BLANKET	0.0
	OUTSIDE AIR FROM EXTERIOR OF BUILDING TO AUTOMATIC SHUT-OFF DAMPER OR HEATING OR COOLING EQUIPMENT AND GREATER THAN 2,800 CFM	MINERAL-WOOL BLANKET	NOTE 2
	OUTSIDE AIR FROM EXTERIOR OF BUILDING TO AUTOMATIC SHUT-OFF DAMPER OR HEATING OR COOLING EQUIPMENT AND LESS THAN 2,800 CFM	MINERAL-WOOL BLANKET	7.0
	OUTSIDE AIR DUCT IN UNHEATED EQUIPMENT ROOMS WITH COMBUSTION AIR LOUVERS, ISOLATED FROM CONDITIONED SPACE AT SIDES, TOP AND BOTTOM WITH R-11 INSULATION	MINERAL-WOOL BLANKET	0.0
WSMC	OUTSIDE AIR DUCT IN CONDITION SPACE	MINERAL-WOOL BLANKET	4.0
	FOR HEAT OR ENERGY RECOVERY VENTILATION SYSTEM, DUCT UPSTREAM OF HEAT EXCHANGER	MINERAL-WOOL BLANKET	4.0
	EXHAUST DUCTS IN UNCONDITIONED SPACE	MINERAL-WOOL BLANKET	4.0

NOTES
(1) DUCT INSULATION SHALL COMPLY WITH WSMC AND WSEC
(2) DUCT SHALL MEET THE REQUIREMENTS OF METAL FRAMED WALLS PER WSEC TABLE C402.1.4
(3) VAPOR RETARDER IS INSTALLED ON SUPPLY DUCT THAT DOES COOLING AND OUTSIDE AIR DUCT PER WSMC 604.11
(4) EXTERAL DUCT INSULATION IS IDENTIFIABLE PER WSMC 604.7
(5) ALL DUCTWORK IS CONSTRUCTED AND SEALED PER WSMC
(6) INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND MAXIMUM SMOKE DEVELOPED INDEX OF 50 PER WSMC 604.3

TABLE C403.10.3: MINIMUM PIPE INSULATION THICKNESS

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		ELECTRICAL				
	CONDUCTIVITY BTU*IN/(H*FT^2*°F)	MEAN RATING 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	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5

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SHEET TITLE:
PROJECT NOTES

SHEET NO.
M0.1

ENERGY CODE NOTES

WSEC SECTION R406: ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS

EACH DWELLING UNIT IN A RESIDENTIAL BUILDING SHALL COMPLY WITH SUFFICIENT CREDIT OPTIONS FROM SECTION R406. CREDIT FROM BOTH SCTIONS R406.2 AND R406.3 ARE REQUIRED:

- ☐ #1. SMALL DWELLING UNIT: 3.0 CREDITS
  DWELLING UNITS LESS THAN 1500 SQUARE FEET IN CONDITIONED FLOOR AREA WITH LESS THAN 300 SQUARE FEET OF FENESTRATION AREA. ADDITIONS TO EXISTING BUILDING THAT ARE GREATER THAN 500 SQUARE FEET OF HEATED FLOOR AREA BUT LESS THAN 1500 SQUARE FEET.
- ☐ #2. MEDIUM DWELLING UNIT: 6.0 CREDITS
  ALL DWELLING UNITS THAT ARE NOT INCLUDED IN #1, #3 OR #4.
- ☐ #3. LARGE DWELLING UNIT: 7.0 CREDITS
  DWELLING UNITS EXCEEDING 5000 SQUARE FEET OF CONDITIONED FLOOR AREA.
- ☒ #4. DWELLING UNITS SERVING R-2 OCCUPANCIES: 4.5 CREDITS
- ☐ #5. ADDITIONS LESS THAN 500 SQUARE FEET: 1.5 CREDITS

TABLE R406.2 FUEL NORMALIZATION CREDITS

SYSTEM TYPE	DESCRIPTION	CREDITS	CREDIT TAKEN
1	COMBUSTION HEATING EQUIPMENT MEETING MINIMUM FEDERAL EFFICIENCY STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(4) OR C403.3.2(5)	0.0	–
2	FOR AN INITIAL HEATING SYSTEM USING A HEAT PUMP THAT MEETS FEDERAL STANDARDS FOR EQUIPMENT LISTED IN TABLE C403.3.2(2)C OR C403.3.2(2) OR AIR TO WATER HEAT PUMP UNITS THAT ARE CONFIGURED TO PROVIDE BOTH HEATING AND COOLING AND ARE RATED IN ACCORDANCE WITH AHRI 550 / 590	1.0	1.0
3	FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE ONLY (EITHER FORCED AIR OR ZONAL)	–1.0	–
4	FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE WITH A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM IN ACCORDANCE WITH SECTION R403.7.1 INCLUDING THE EXCEPTION	N/A	–
5	ALL OTHER HEATING SYSTEMS	–1.0	–
	TOTAL CREDITS		1.0

TABLE R406.3 ENERGY CREDITS

OPTION	DESCRIPTION	CREDITS	CREDIT TAKEN
1	EFFICIENT BUILDING ENVELOPE OPTIONS		
	OPTION 1.1	0.5	–
	OPTION 1.2	1.0	–
	OPTION 1.3	N/A	–
	OPTION 1.4	1.0	–
	OPTION 1.5	1.5	–
	OPTION 1.6	2.0	–
	OPTION 1.7	0.5	–
2	AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS		
	OPTION 2.1	1.0	–
	OPTION 2.2	1.5	–
	OPTION 2.3	2.0	–
	OPTION 2.4	2.5	–
3	HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS		
	OPTION 3.1	1.0	–
	OPTION 3.2	N/A	–
	OPTION 3.3	1.0	–
	OPTION 3.4	2.0	–
	OPTION 3.5	N/A	–
	OPTION 3.6	3.0	3.0
4	HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS		
	OPTION 4.1	0.5	–
	OPTION 4.2	N/A	–
5	EFFICIENT WATER HEATING OPTIONS		
	OPTION 5.1	0.5	–
	OPTION 5.2	0.5	–
	OPTION 5.3	1.0	–
	OPTION 5.4	2.0	–
	OPTION 5.5	2.5	2.5
	OPTION 5.6	3.0	–
6	RENEWABLE ELECTRIC ENERGY OPTION		
	OPTION 6.1	1.0	-
7	APPLIANCE PACKAGE OPTION		
	OPTION 7.1	1.5	–
	TOTAL CREDITS FROM TABLE R406.3		5.5
	TOTAL CREDITS FROM TABLE R406.2		1.0
	TOTAL CREDITS		6.5

WHOLE HOUSE VENTILATION NOTES

EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH A WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM THAT COMPLIES WITH SECTIONS 403.4.1 THROUGH 403.4.6. EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH LOCAL EXHAUST COMPLYING WITH SECTION 403.4.7. ALL OCCUPIED SPACES, INCLUDING PUBLIC CORRIDORS, OTHER THAN GROUP R DWELLING UNITS AND/OR SLEEPING UNITS, THAT SUPPORT THESE GROUP R OCCUPANCIES, SHALL MEET THE VENTILATION REQUIREMENTS OF SECTION 402 OR THE MECHANICAL VENTILATION REQUIREMENTS OF SECTIONS 403.1 THROUGH 403.3.

THE WHOLE HOUSE VENTILATION SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY FANS, ONE OR MORE EXHAUST FANS, OR AN ERV/HRV WITH INTEGRAL FANS; AND THE ASSOCIATED DUCTS AND CONTROLS. LOCAL EXHAUST FANS SHALL BE PERMITTED TO SERVE AS PART OF THE WHOLE-HOUSE VENTILATION SYSTEM WHEN PROVIDED WITH THE PROPER CONTROLS IN ACCORDANCE WITH SECTION 403.4.5. THE SYSTEMS SHALL BE DESIGNED AND INSTALLED TO SUPPLY AND EXHAUST THE MINIMUM OUTDOOR AIRFLOW RATES PER SECTION 403.4.2 AS CORRECTED BY THE BALANCED AND/OR DISTRIBUTED WHOLE-HOUSE VENTILATION SYSTEM COEFFICIENTS IN ACCORDANCE WITH SECTION 403.4.3 WHERE APPLICABLE.

THE DWELLING UNIT WHOLE-HOUSE MECHANICAL VENTILATION MINIMUM OUTDOOR AIRFLOW RATE SHALL BE DETERMINED IN ACCORDANCE WITH EQUATION 4-10 OR TABLE 403.4.2.

RESIDENTIAL DWELLING AND SLEEPING UNITS IN GROUP R-2 OCCUPANCIES SYSTEM SHALL INCLUDE SUPPLY AND EXHAUST FANS AND BE A BALANCED WHOLE-HOUSE VENTILATION SYSTEM IN ACCORDANCE WITH SECTION 403.4.6.3. THE SYSTEM SHALL INCLUDE A HEAT OR ENERGY RECOVERY VENTILATOR WITH A SENSIBLE HEAT RECOVERY EFFECTIVENESS AS PRESCRIBED IN SECTION C403.3.6 OF THE WASHINGTON STATE ENERGY CODE. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED IN ACCORDANCE WITH SECTION 403.4. THE WHOLE-HOUSE SUPPLY FAN SHALL PROVIDE DUCTED OUTDOOR VENTILATION AIR TO EACH HABITABLE SPACE WITHIN THE RESIDENTIAL UNIT.

CONTROLS FOR THE WHOLE-HOUSE VENTILATION SYSTEM SHALL COMPLY WITH THE FOLLOWING:
1. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL BE CONTROLLED WITH MANUAL SWITCHES, TIMERS OR OTHER MEANS THAT PROVIDE FOR AUTOMATIC OPERATION OF THE VENTILATION SYSTEM THAT HAVE READY ACCESS FOR THE OCCUPANT.
2. THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE OFF OF THE SYSTEM BY THE OCCUPANT DURING PERIODS OF POOR OUTDOOR AIR QUALITY. CONTROLS SHALL INCLUDE PERMANENT TEXT OR A SYMBOL INDICATING THEIR FUNCTION. RECOMMENDED CONTROL PERMANENT LABELING TO INCLUDE TEXT SIMILAR TO THE FOLLOWING; "LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." MANUAL CONTROLS SHALL HAVE READY ACCESS FOR THE OCCUPANT.
3. WHOLE-HOUSE VENTILATION SYSTEMS SHALL BE CONFIGURED TO OPERATE CONTINUOUSLY EXCEPT WHERE INTERMITTENT OFF CONTROLS ARE PROVIDED IN ACCORDANCE WITH SECTION 403.4.6.5 AND ALLOWED BY SECTION 403.4.4.2.

WHOLE HOUSE VENTILATION SUPPLY AND EXHAUST FANS SPECIFIED IN THIS SECTION SHALL HAVE A MINIMUM EFFICACY AS PRESCRIBED IN THE WASHINGTON STATE ENERGY CODE. THE FANS SHALL BE RATED FOR SOUND AT A MAXIMUM OF 1.0 SONE AT DESIGN AIRFLOW AND STATIC PRESSURE CONDITIONS. DESIGN AND INSTALLATION OF THE SYSTEM OR EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS

A BALANCED WHOLE HOUSE VENTILATION SYSTEM SHALL INCLUDE BOTH SUPPLY AND EXHAUST FANS. THE SUPPLY AND EXHAUST FANS SHALL HAVE AIRFLOW THAT IS WITHIN 10 PERCENT OF EACH OTHER. THE TESTED AND BALANCED TOTAL MECHANICAL EXHAUST AIRFLOW RATE IS WITHIN 10 PERCENT OR 5 CFM, WHICHEVER IS GREATER, OF THE TOTAL MECHANICAL SUPPLY AIRFLOW RATE. THE FLOW RATE TEST RESULTS SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION 403.4.6.6. THE EXHAUST FAN SHALL MEET THE REQUIREMENTS OF SECTION 403.4.6.2. THE SUPPLY FAN SHALL MEET THE REQUIREMENTS OF SECTION 403.4.6.3. FOR R-2 DWELLING AND SLEEPING UNITS, THE SYSTEM IS REQUIRED TO HAVE BALANCED WHOLE-HOUSE VENTILATION BUT IS NOT REQUIRED TO HAVE DISTRIBUTED WHOLE-HOUSE VENTILATION WHERE THE NOT DISTRIBUTED SYSTEM COEFFICIENT FROM TABLE 403.4.3 IS UTILIZED TO CORRECT THE WHOLE-HOUSE MECHANICAL VENTILATION RATE. THE SYSTEM SHALL BE DESIGNED AND BALANCED TO MEET THE PRESSURE EQUALIZATION REQUIREMENTS OF SECTION 501.4. INTERMITTENT DRYER EXHAUST, INTERMITTENT RANGE HOOD EXHAUST, AND INTERMITTENT TOILET ROOM EXHAUST AIRFLOW RATES ABOVE THE RESIDENTIAL DWELLING OR SLEEPING UNIT MINIMUM VENTILATION RATE ARE EXEMPT FROM THE BALANCED AIRFLOW CALCULATION.

<u>FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATIONS</u>

PER 2018 IMC 401.4.3, ITEM 3, EXCEPTION, SEPARATION IS NOT REQUIRED BETWEEN INTAKE AIR OPENINGS AND LIVING SPACE RELIEF AIR EXHAUST AIR OPENINGS OF AN INDIVIDUAL DWELLING UNIT OR SLEEPING UNIT, NOT TO INCLUDE COMMON AREAS OUTSIDE OF THE DWELLING OR SLEEPING UNIT, WHERE A FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATION FITTING, LISTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, IS USED TO SEPARATE THE AIR STREAMS. A MINIMUM OF 5 FEET HORIZONTAL SEPARATION BETWEEN OTHER ENVIRONMENTAL AIR EXHAUST OUTLETS AND OTHER DWELLING OR SLEEPING UNIT FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATION FITTINGS SHALL BE MAINTAINED.

CALCULATIONS

RESIDENTIAL VENTILATION CALCULATIONS

UNIT TYPE	UNIT SQUARE FOOTAGE PER ARCHITECTURAL PLANS	NUMBER OF BEDROOMS	2015 IMC CRITERIA (1)			TOTAL CFM PROVIDED BY WHOLE HOUSE VENTILATION SYSTEM
			FLOOR AREA, SQFT	NUMBER OF BEDROOMS	REQUIRED CFM (2)	
11-3/21-3	634	1	501-1,000	0-1	30	50
11-7/21-9/31-9	659	1	501-1,000	0-1	30	50
11-8/21-4/31-4	679	2	501-1,000	2	35	50
21-2/31-2	958	2	501-1,000	2	35	50
12-1	1,021	2	1,001-1,500	2	40	50
12-3	1,000	2	501-1,000	2	35	50
12-5	957	2	501-1,000	2	35	50
22-1/32-1	1,022	2	1,001-1,500	2	40	50
22-2/32-2	958	2	501-1,000	2	35	50
22-5/32-5	958	2	501-1,000	2	35	50
22-6/32-6	1,000	2	501-1,000	2	35	50
31-3	645	1	501-1,000	0-1	30	50

NOTE: (1) VENTILATION CRITERIA IS PER THE 2018 IRC, TABLE 1505.4.3(1).
(2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S).

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SHEET TITLE: TABLES & CALCULATIONS

SHEET NO. M0.2

SCHEDULES

ENERGY RECOVERY VENTILATOR

EQUIP NO.	SERVICE	MOUNTING/ DISCHARGE	FAN		ELECTRICAL			SENSIBLE HEAT RECOVERY EFFICIENCY	BASIS OF DESIGN (1)(2)(3)
			AIRFLOW, CFM	ESP, IN WG	VOLTAGE	AMPS	MOCP		
ERV-1	RESIDENTIAL UNIT	HORIZONTAL	PER PLANS	0.4	120V/1P	1.1	15	0.69	ALDES E130-HF-N (4)
ERV-2	RESIDENTIAL UNIT	HORIZONTAL	PER PLANS	0.4	120V/1P	1.1	15	0.69	ALDES E130-HF-N-M (4)

NOTES:
(1) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
(2) UNIT SHALL RUN CONTINUOUSLY.
(3) UNIT SHALL HAVE A MINIMUM MERV 8 FILTER.
(4) PROVIDE MANUFACTURER'S OPTIONAL WALL MOUNT SPEED CONTROLLER, PART NUMBER 611229. SPEED CONTROLLER SHALL BE MOUNTED NEXT TO THE LIGHT SWITCH FOR THE BATHROOM.

FAN SCHEDULE

EQUIP NO.	SERVICE	TYPE	AIRFLOW, CFM	ESP, IN WG	ELECTRICAL		OPERATION	WEIGHT, LBS	BASIS OF DESIGN (1)
					VOLTAGE	HP			
BEF-1	BATHROOM	CEILING MOUNTED	50	0.25	115V/1P	FHP	(2)	10	PANASONIC FV-0511VQ1 (3)
TF-1	TRANSFER FAN	IN WALL	50	0.1	120V/1P	(4.4)	(5)	8.82	PANASONIC FV-0510VS1 (4)
TF-2	TRANSFER FAN	CEILING MOUNTED	50	0.1	120V/1P	(4.4)	(5)	8.82	PANASONIC FV-0510VS1 (4)

NOTES:
(1) PROVIDE BACKDRAFT DAMPERS ON EXHAUST FANS.
(2) FAN SHALL BE ACTIVATED VIA WALL SWITCH.
(3) PROVIDE MANUFACTURER'S OPTIONAL CEILING RADIATION DAMPER.
(4) PROVIDE TRANBFER REGISTER BOX. BOD PANASONIC FV-JD
(5) FAN TO BE CONTROLLED BY WALL MOUNTED THERMOSTAT.

DIFFUSER SCHEDULE

CALLOUT	DESCRIPTION	AIRFLOW RANGE, CFM	FACE SIZE, IN	BASIS OF DESIGN
HRG-1	HARD LID RETURN GRILLE	0-700	12X12	TITUS 350ZRL
SSG-1	SIDEWALL SUPPLY GRILLE	0-150	10X4	SHOEMAKER 950
HSM-1	HARD LID SUPPLY GRILLE	0-150	10X4	SHOEMAKER 950

ELECTRIC HEATERS

EQUIP NO.	SERVICE	MOUNTING/ DISCHARGE	HEATING	ELECTRICAL	BASIS OF DESIGN (3)
			KW	VOLTAGE	
EWH-0.5	PER PLANS	WALL	0.5	208V/1P	(1)(2)
EWH-0.75	PER PLANS	WALL	0.75	208V/1P	(1)(2)
EWH-1.0	PER PLANS	WALL	1.0	208V/1P	(1)(2)
EWH-1.5	PER PLANS	WALL	1.5	208V/1P	(1)(2)
EWH-2.0	PER PLANS	WALL	2.0	208V/1P	(1)(2)

NOTES: (1) BROAN, KING, CADET OR EQUIVALENT.
(2) PROVIDE INTEGRAL THERMOSTAT.
(3) ALL ELECTRIC HEATERS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.

SPLIT SYSTEM HEAT PUMP SCHEDULE - INDOOR UNIT

EQUIP NO.	SERVICE	MOUNTING/ DISCHARGE	FAN		ELECTRICAL			BASIS OF DESIGN (1)(2)(4)	CONNECTED OUTDOOR UNIT
			AIRFLOW, CFM	ESP, IN WG	VOLTAGE	MCA	MOCP		
FCU-X	RES. UNIT	HIGH WALL	716	N/A	(3)	(3)	(3)	DAIKIN FTXB18BXVJU	HP-1

NOTES:
(1) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
(2) PROVIDE MANUFACTURER'S OPTIONAL CONDENSATE PUMP WITH RESERVOIR AND SENSOR.
(3) INDOOR UNIT POWERED FROM OUTDOOR UNIT.
(4) "X" DENOTES THE UNIT BEING SERVED.

SPLIT SYSTEM HEAT PUMP SCHEDULE - OUTDOOR UNIT

EQUIP NO.	SERVICE	CAPACITY, TONS	TOTAL COOLING CAPACITY, BTUH	SEER	TOTAL HEATING CAPACITY, BTUH	HSPF	ELECTRICAL			DIMENSIONS, INCHES			WEIGHT, LBS	BASIS OF DESIGN (1)(2)(3)(4)(5)(6)	CONNECTED FAN COIL UNIT
							VOLTAGE	MCA	MOCP	H	W	D			
HP-1	RES. UNIT	1.5	18,000	18.8	17,900	10.0	208V/1P	16.55	20	27-13/32	36-5/8	13-13/16	97	DAIKIN RXB18BXVJU	FCU-1

NOTES:
(1) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
(2) ARI LISTED WITH ALL STANDARD FEATURES, INSTALLATION ACCESSORIES AND COMPRESSOR SHORT CYCLING PROTECTION. FILTER DRIVER, REFRIGERANT LINE FILTER, LIQUID SOLENOID VALVE, AND SAFETY PRESSURE SWITCHES. INSTALL REFRIGERANT TUBING AND LENGTH IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
(3) PROVIDE ALL REQUIRED ACCESSORIES FOR LOW-AMBIENT.
(4) ROUTING OF REFRIGERANT LINES FROM INDOOR TO OUTDOOR UNITS NOT SHOWN ON PLANS. CONTRACTOR TO FIELD COORDINATE ROUTING.
(5) REFRIGERANT SHALL BE R-410A.
(6) "X" DENOTES THE UNIT BEING SERVED.

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: MECHANICAL SCHEDULES

SHEET NO. M0.3

WSEC FORMS

System/Equip ID	Area(s) Served	Location In Project Documents - Plan/Detail #	
HP-1	APARTMENT UNITSM0.3	M0.3	
	System/Equip ID for a single or multiple items?: Multiple items w/ identical heating & cooling capacity		
	Heating Section/Auxiliary Heating Type: Electric resistance (or None)		Economizer Compliance Method: Applying air-side economizer exception
	Air-side economizer exception applied: Exp 5(2) - Group R cooling unts ≥ 20,000 < 54,000 Btu/h (Note equip location limitations)		WSEC Equip Efficiency Reference Table - Cooling: Table C403.3.2(2) - Unitary and Applied Heat Pumps
	Proposed Low OSA Temp Efficiency:		LTH Units: COP
	WSEC Equip Efficiency Reference Table - Heating: Table C403.3.2(2) - Unitary and Applied Heat Pumps		

MECHANICAL COMPLIANCE SUMMARY

2018 WSEC Compliance Forms for Commercial Buildings including Group R2, R3 & R4 over 3 stories and all R1

Project & Applicant Information	Project Title	East Town Crossing Building B - 2018 WSEC	For Building Department Use: Date: Feb 26, 2024
	Project Address	Pioneer & Shaw Puyallup, WA 98372	
	Applicant Name	Arik Espineli	
	Applicant Phone	206-364-3343	
	Applicant Email	aespineli@robisonengineering.com	

For questions about this report, contact WSEC Commercial Technical Support at 360-539-5300 or via email at com.techsupport@waenergycodes.com

General Occupancy	All Group R - R2, R3 & R4 over 3 stories and all R1		General Building Use Type	Multifamily/Residential		Building Cond. Floor Area	27,753
General Project Types	New Building	New Building or Addition Mechanical Scope	Single Zone Systems & Equipment	Alteration Mechanical Scope		Project Cond. Floor Area	27,753
						Floors Above Grade	3
						Compliance Method	Compliance Method 1 - General
Mechanical Project Description							

Mechanical Compliance Scope and Method	Project Type	Mechanical Scope	Economizer Exception(s) Applied?	DOAS Ventilation Provided?	Higher Equipment Efficiency Option Applied?	Equipment Efficiency Compliance Verification
	New Building	Single Zone Systems & Equipment	Yes	Yes	Yes	COMPLIES
Additional Efficiency Credits Included (AEC)	Higher equipment efficiency and fan FEG					
Does building include occupancy classifications requiring DOAS?	No		Does project include DOAS equipment?			Yes
Based on project scope do TSPR requirements apply?	No		Do all systems comply with Appendix D standard reference design or qualify for an exception to TSPR?			No

Scope & Space Conditioning	NEW BUILDING - SINGLE ZONE SYSTEMS & EQUIPMENT	Compliance Verification	COMPLIES

Single Zone Air Systems Category - Heat pump, unitary, thru-wall, SDHV

Air Systems Summary Information

System/Equip ID	Quantity of Items	Supply Airflow Control	Ventilation Standard	Ventilation CFM (Total if Multiple Items)	Ventilation Air Source	Paired with DOAS	Ventilation energy recovery	Energy Recovery Efficiency (%)
HP-1	36	Constant volume	IMC Ventilation		Other System		Provided but not required	69

Air Systems & Equipment - Cooling

System/ Equip ID	Cooling System/Equip Type	Specific Type	Cooling Capacity per item (Btu/h)	AEC Efficiency Multiplier	Econo Exception Multiplier (FL & PL)	Combined Efficiency Multiplier (AEC & Econo)	Proposed Cooling Efficiency	CE Units	Proposed Part Load Efficiency	PL Units	Efficiency Compliance Verification
HP-1	Heat pump, air cooled	Split system	18,000	1.15	1.15	1.3225	18.8	SEER		IEER	COMPLIES

Air Systems & Equipment - Heating

System /Equip ID	Heating System/Equip Type	Specific Type	Heat Pump Heating Capacity (Btu/h)	Cooling Capacity (Btu/h)	AEC Efficiency Multiplier	Proposed Heat Pump Heating Efficiency	HPH Units	Proposed Low OSA Temp Efficiency	LTH Units	Efficiency Compliance Verification
HP-1	Heat pump, air cooled, heating	Split system	17,900	18,000	1.15	10.0	HSPF		COP	COMPLIES

Air Systems & Equipment Details

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 tel.

JACOB J. OBRIEN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
1/22/24

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

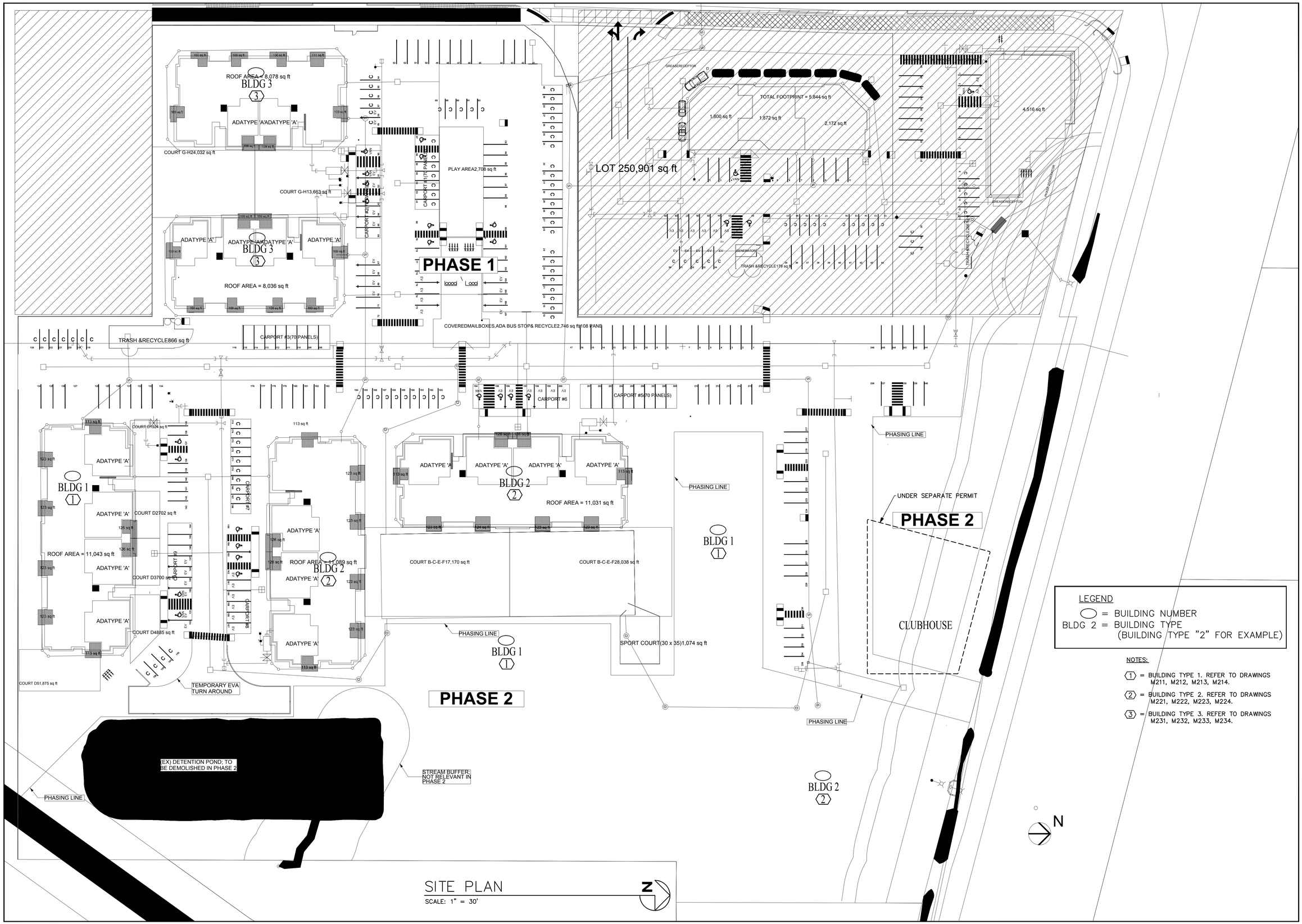
PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: WSEC FORMS

SHEET NO. M0.4



SITE PLAN

SCALE: 1" = 30'

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
(206) 364-3343 FX

JACOB J. OBRIEN
STATE OF WASHINGTON
21911
REGISTERED
PROFESSIONAL ENGINEER
1/12/24

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
OP	ABE	PR	JMR

PROJECT: EAST TOWN CROSSING BUILDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810010
CONTACT: ARIK ESPINELI

ROBISON ENGINEERING, INC

DATE:
1/22/2024

SHEET TITLE:
SITE PLAN

SHEET NO.
M1.0

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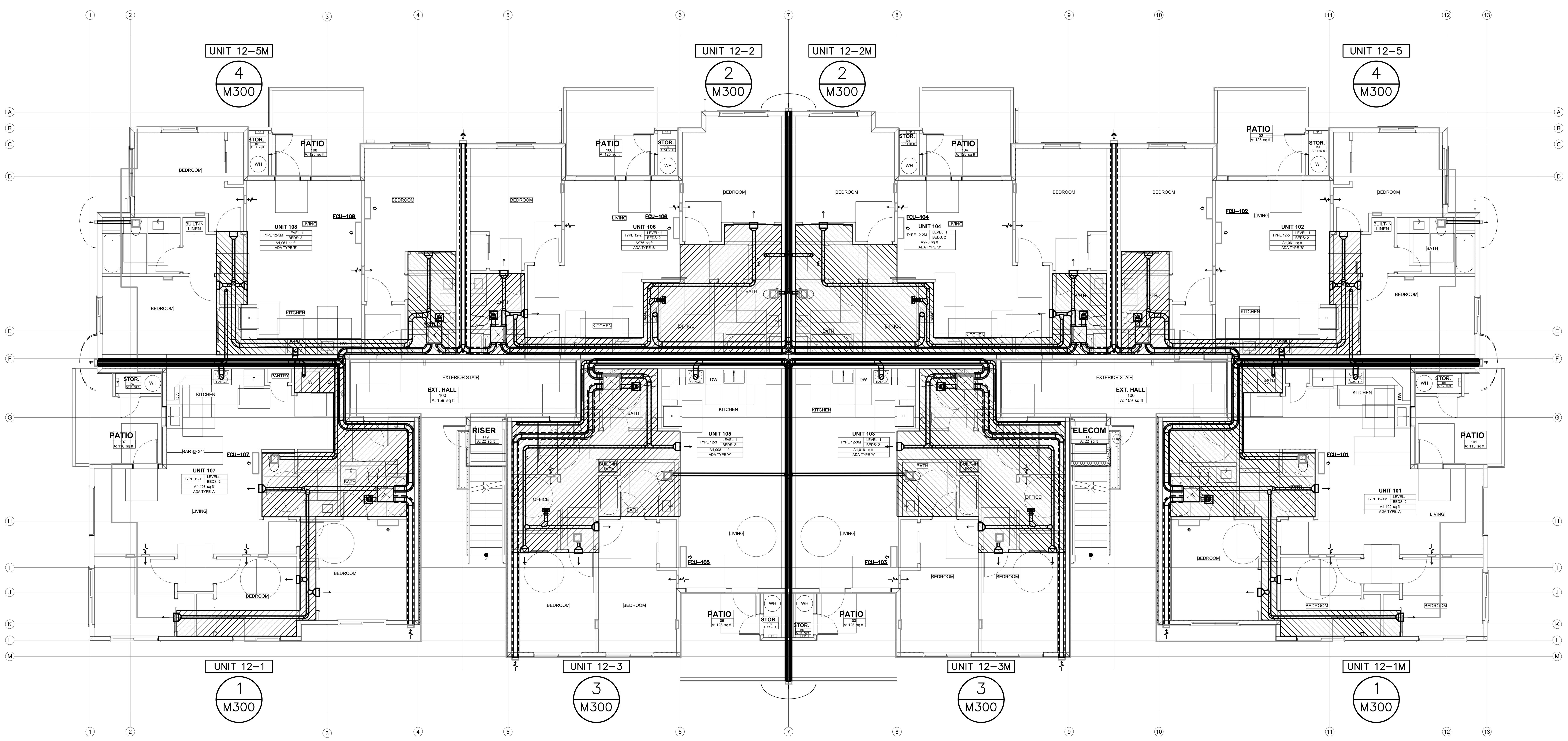

RESIDENTIAL UNIT NOTES:

UNIT A / 1 / M300 = UNIT TYPE A (FOR EXAMPLE) REFER TO DWG M300, DETAIL 1.

FOR DUCT SIZES WITHIN THE RESIDENTIAL UNITS, REFER TO THE ENLARGED UNIT PLANS ON DWGS M300–M303.

BUILDING TYPE 1

LEVEL 1 FLOOR PLAN

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

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 tel

JACOB J. O'BRIEN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
1/22/24

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BUILDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO. 810010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: HVAC PLAN - LEVEL 1

SHEET NO. M2.0

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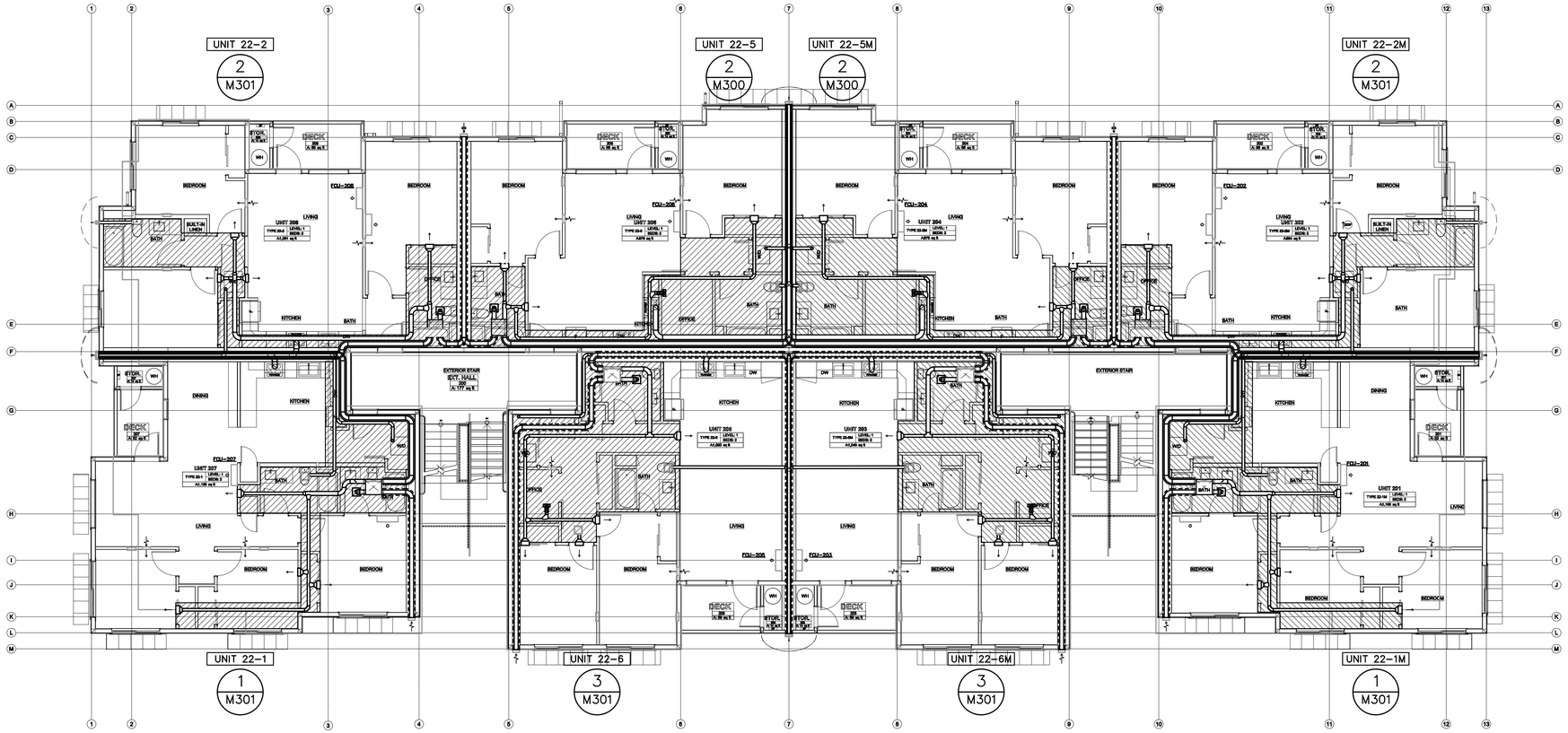

RESIDENTIAL UNIT NOTES:

UNIT A / 1 / M300 = UNIT TYPE A (FOR EXAMPLE) REFER TO DWG M300, DETAIL 1.

FOR DUCT SIZES WITHIN THE RESIDENTIAL UNITS, REFER TO THE ENLARGED UNIT PLANS ON DWGS M300-M303.

BUILDING TYPE 1

LEVEL 2 FLOOR PLAN

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

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.5343 TEL

JACOB J. OBRIEN — STATE OF WASHINGTON — 23011 — REGISTERED PROFESSIONAL ENGINEER — 1/22/24

DRAWN: OP | DESIGNED: ABE | CHECKED: PR | APPROVED: JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 8100.10
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: HVAC PLANS - LEVEL 2

SHEET NO. **M2.1**

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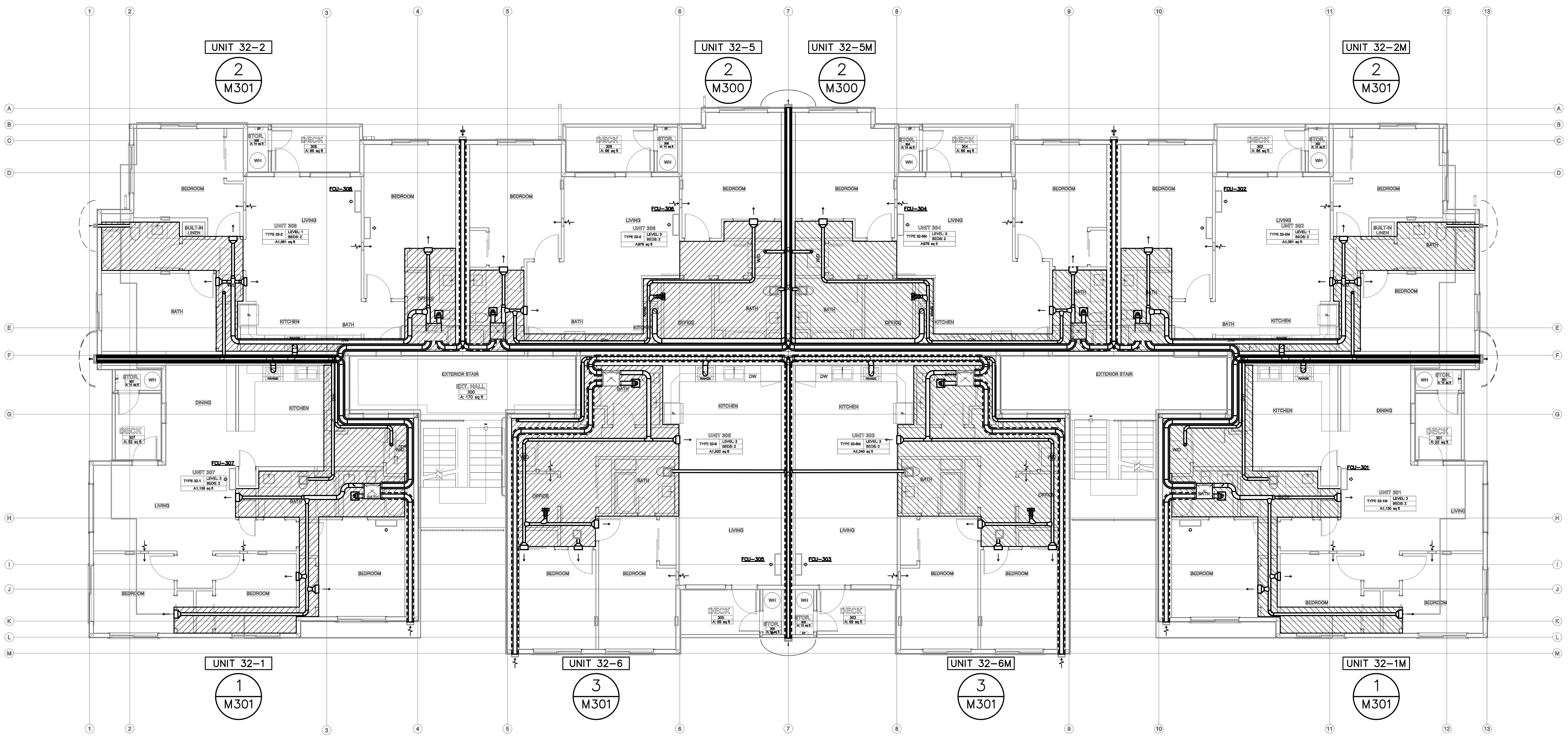


RESIDENTIAL UNIT NOTES:

UNIT A / 1 / M300 = UNIT TYPE A (FOR EXAMPLE) REFER TO DWG M300, DETAIL 1.

FOR DUCT SIZES WITHIN THE RESIDENTIAL UNITS, REFER TO THE ENLARGED UNIT PLANS ON DWGS M300–M303.

BUILDING TYPE 1

LEVEL 3 FLOOR PLAN

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

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343

JACOB J. OBRIEN
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
1/22/24

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

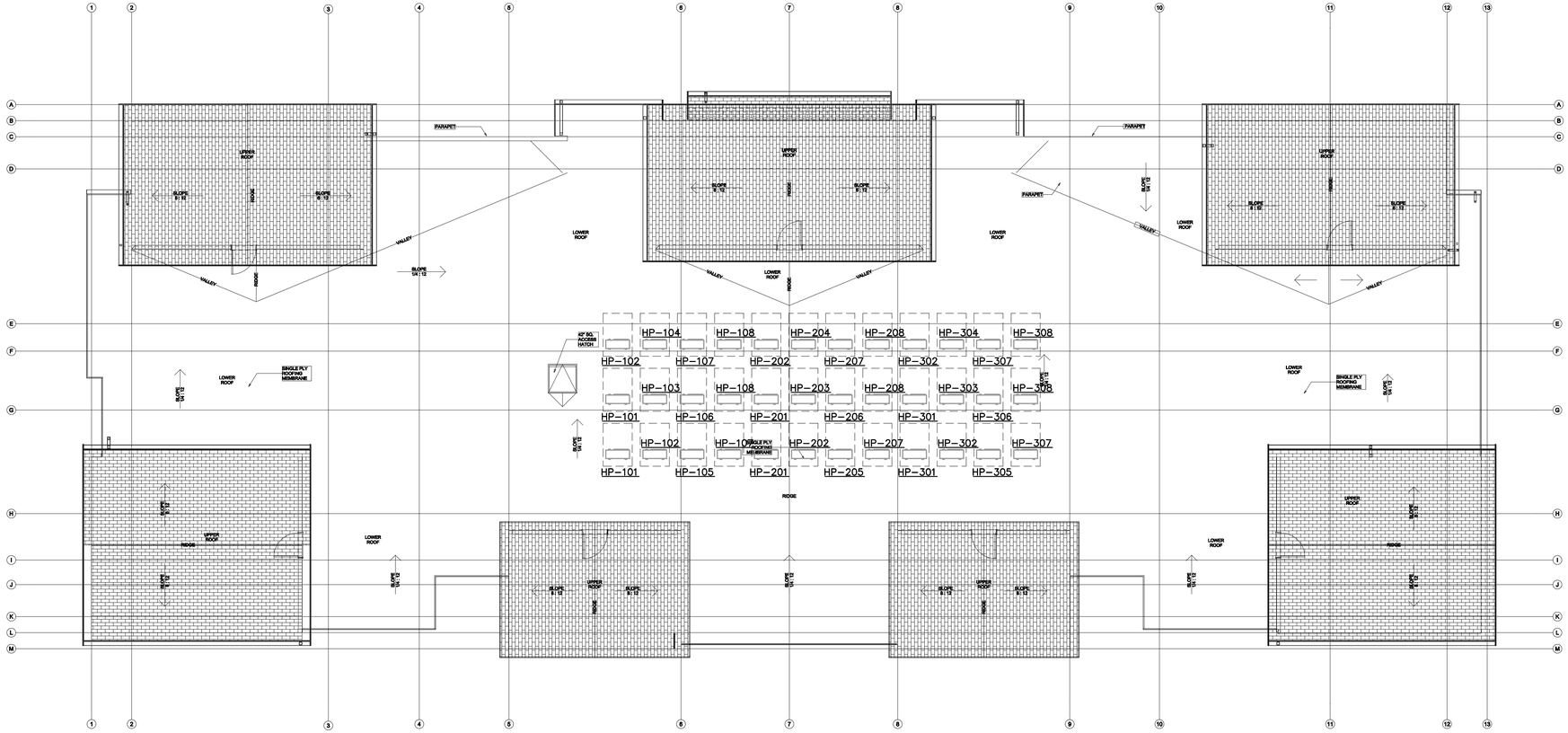
PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: HVAC PLANS - LEVEL 3

SHEET NO. M2.2



BUILDING TYPE 1

ROOF

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

NO.	DATE	REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
(206) 364-3343 FAX

JACOB J. OBRIEN
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
1/12/24

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BUILDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO. 810010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: HVAC PLANS - ROOF

SHEET NO. **M2.3**

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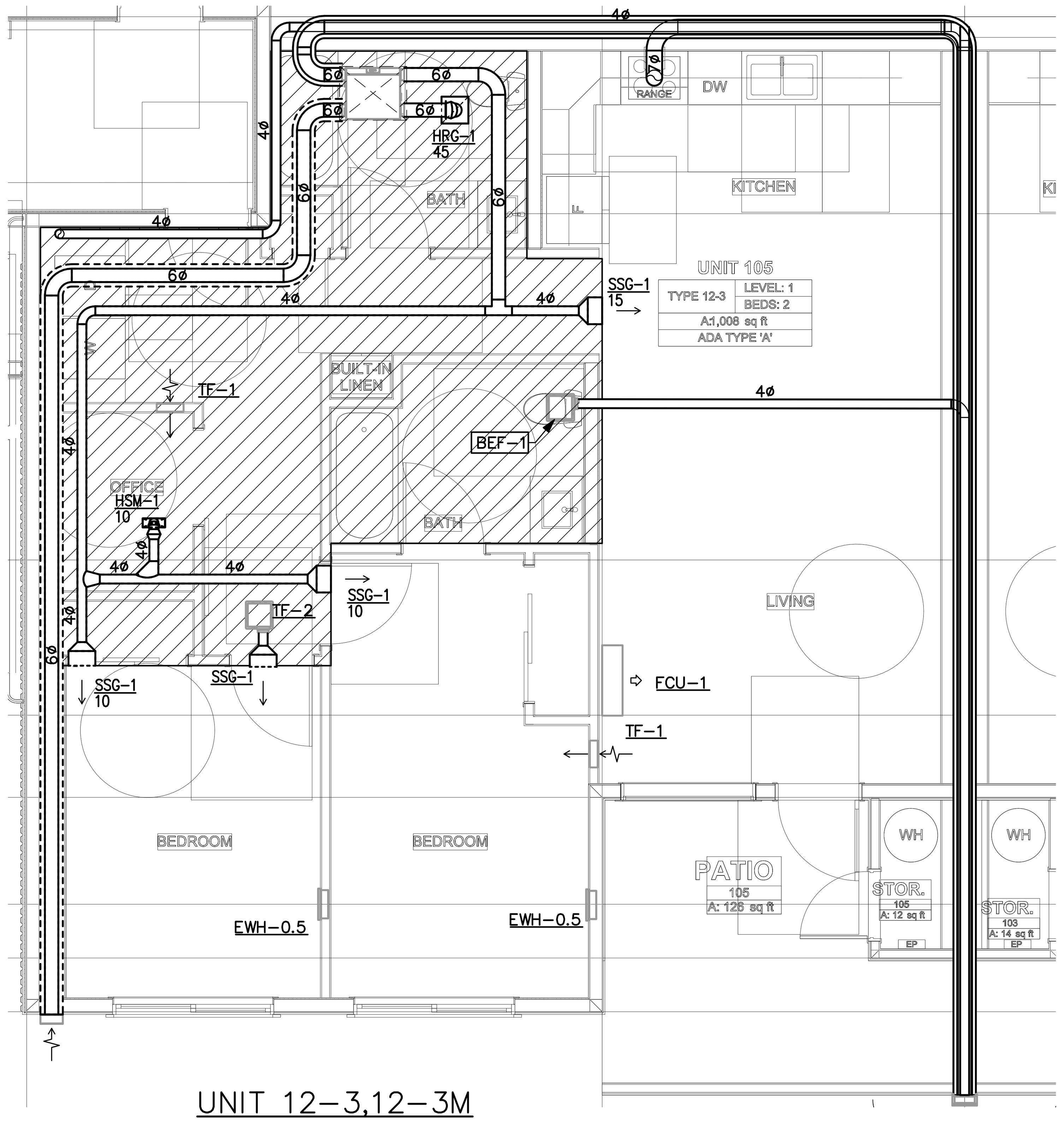
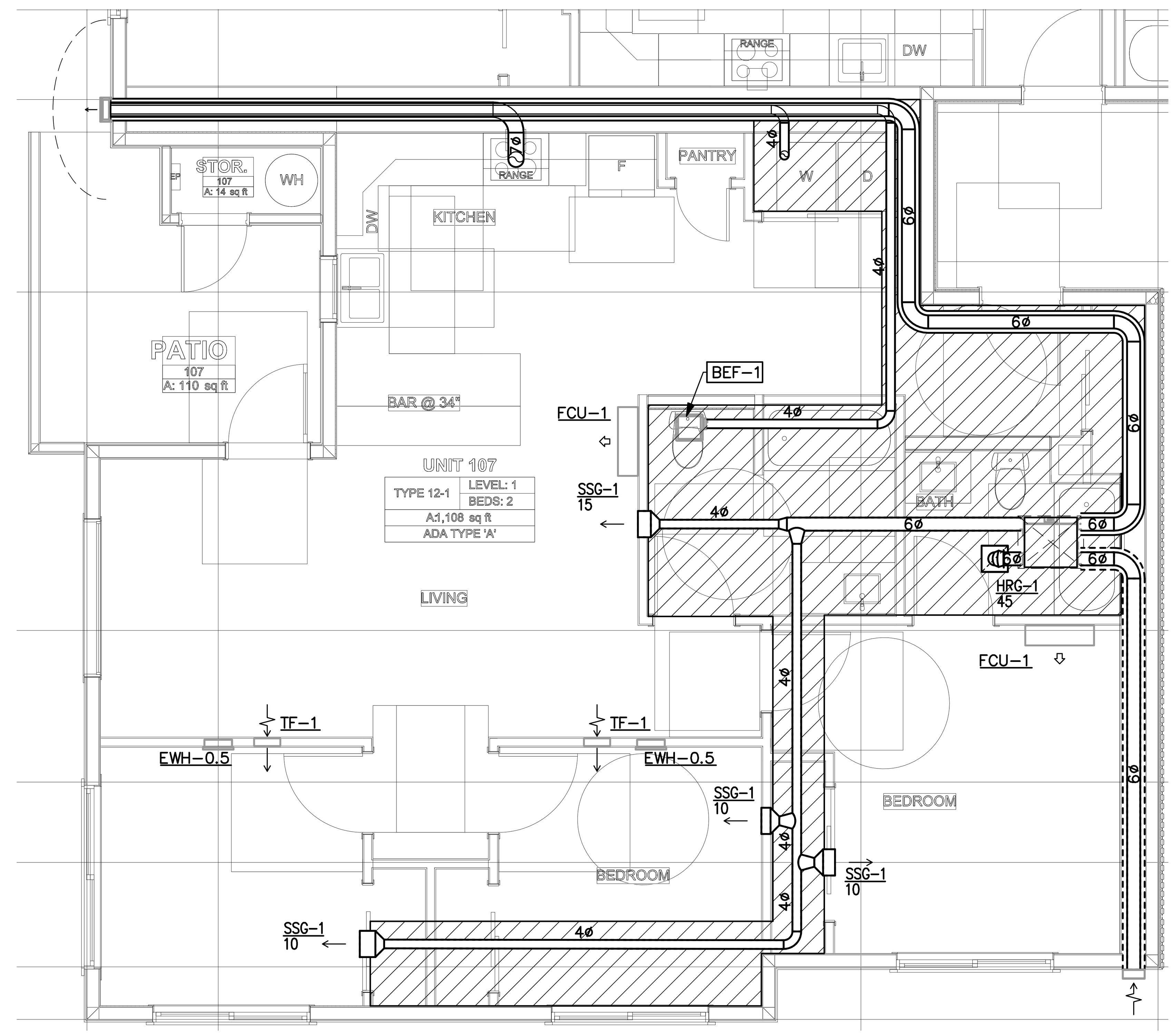
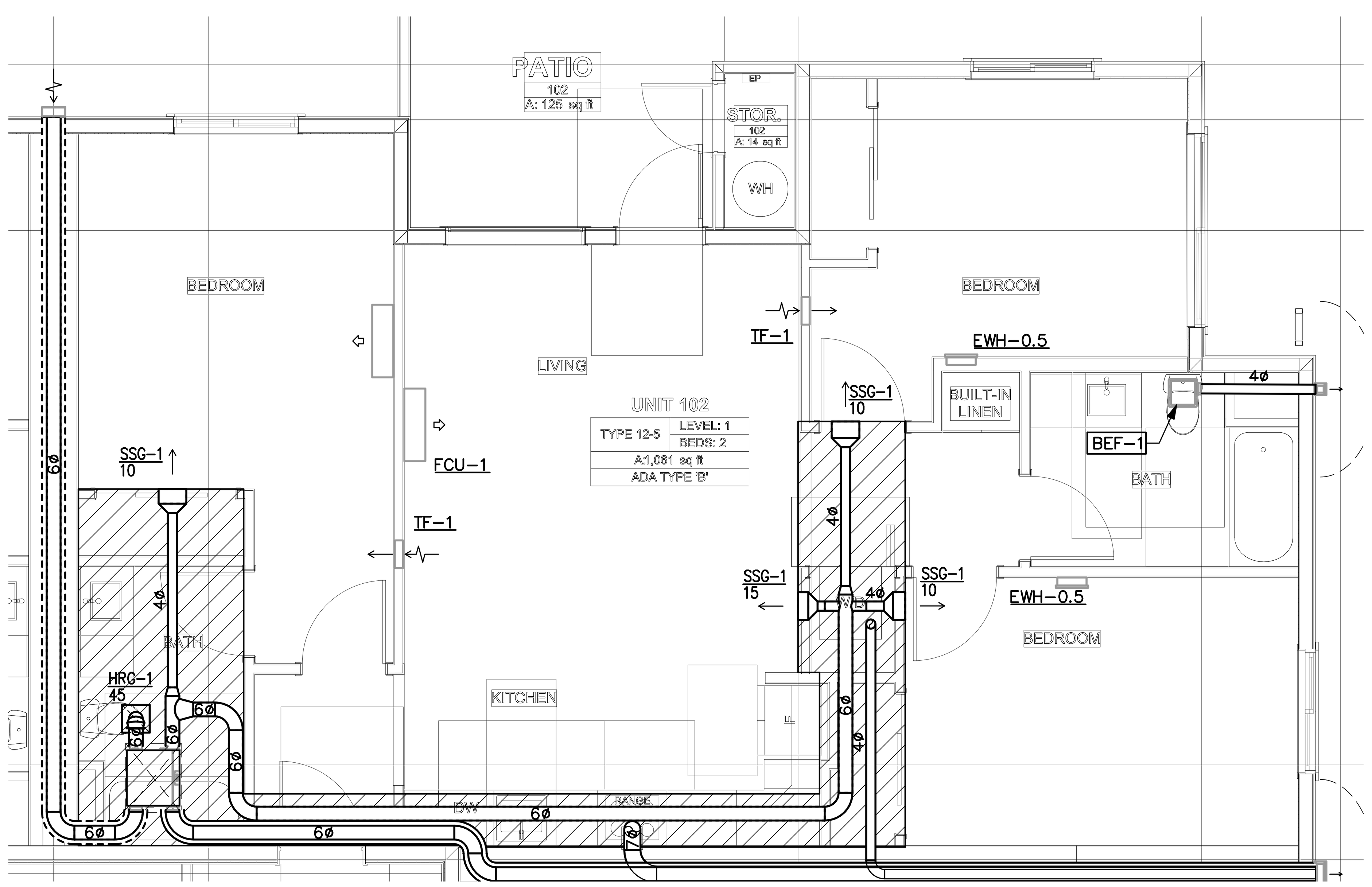


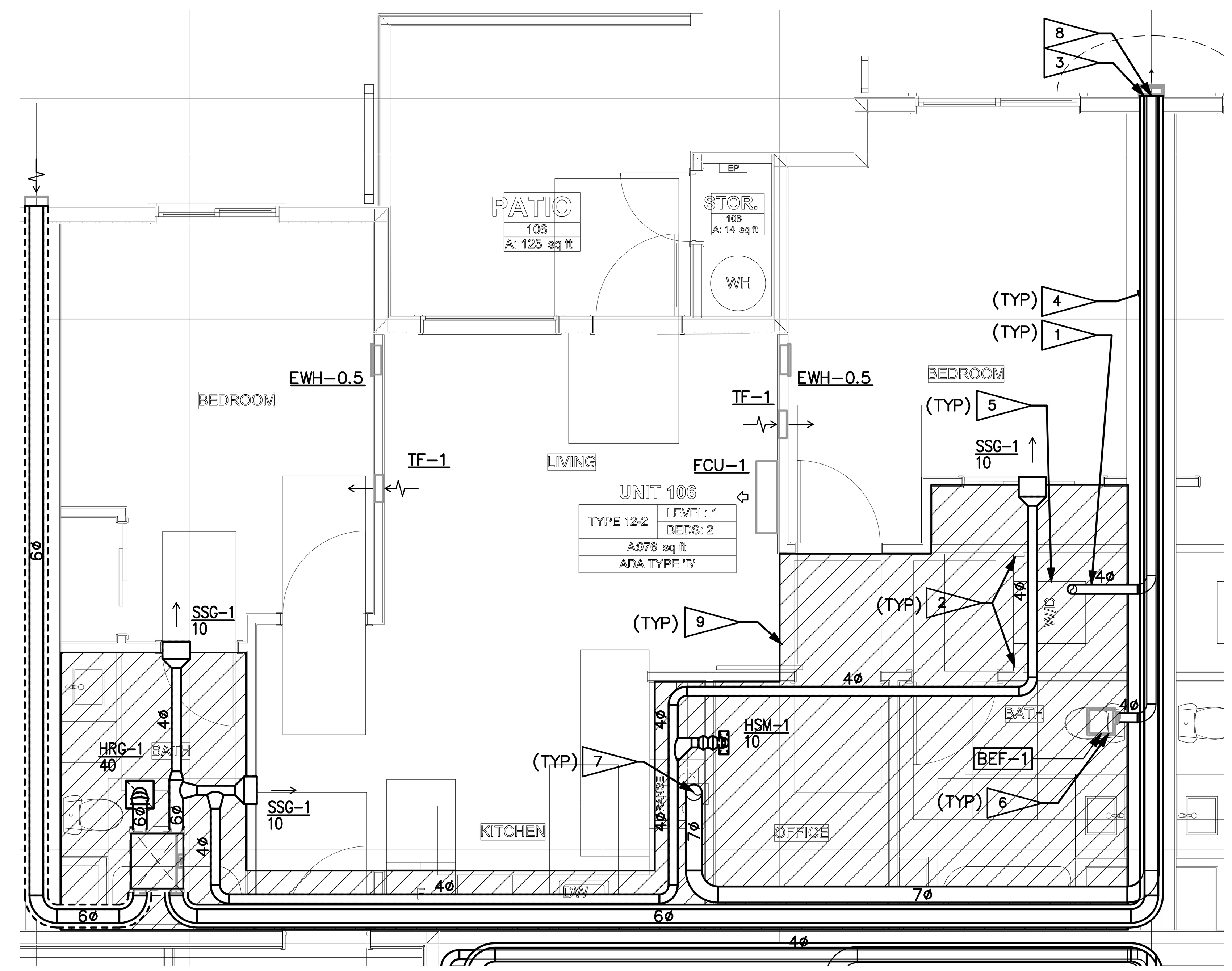
UNIT 12–3,12–3M
ENLARGED PLAN
SCALE: 1/4" = 1'-0"
3 / M3.0



UNIT 12–1,12–1M
ENLARGED PLAN
SCALE: 1/4" = 1'-0"
1 / M3.0



UNIT 12–5,12–5M
ENLARGED PLAN
SCALE: 1/4" = 1'-0"
4 / M3.0



UNIT 12–2, 12–2M, 22–5, 22–5M, 32–5, 32–5M
ENLARGED PLAN
SCALE: 1/4" = 1'-0"
2 / M3.0

RESIDENTIAL UNIT NOTES:

1. PENETRATIONS OF THE RATED WALL ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH IBC SECTION 717. REFER TO ARCHITECTURAL PLANS FOR PENETRATION DETAILS.
2. PER OWNER, THE FOLLOWING RANGE HOODS ARE BEING INSTALLED: STANDARD UNITS (MICRO/HOOD COMBO): FRIGIDAIRE LFMV1846VF ADA UNITS (HOOD ONLY): GE JVX3240DJWW PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, DUCT CONNECTION TO HOODS ARE 6ø. MINIMUM SIZE ROUND DUCT FOR HOOD VENTING SHALL BE 7".
3. EXHAUST FAN EF–1 SHALL SERVE AS THE WHOLE HOUSE VENTILATION FAN. REFER TO M003 FOR REQUIREMENTS.
4. DRYER VENTING: PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE MAXIMUM LENGTH OF THE DRYER VENTS IS AS FOLLOWS (REFER TO DWG M400, DETAIL 1):

STANDARD DRYER:
GE GUV27ESSM

NUMBER OF 90° ELBOWS OR TURNS	MAXIMUM LENGTH (FT)
0	200
1	185
2	175
3	165
4	155
5	145

ADA DRYER:
GE GFV55ESSN

NUMBER OF 90° ELBOWS OR TURNS	MAXIMUM LENGTH (FT)
0	200
1	185
2	175
3	165
4	155

FLAG NOTES:

1. 4ø POC TO DRYER. PROVIDE METAL DRYER BOX WHERE DUCT IS ROUTED IN 2X6 FRAMED WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WSMC 504.8.4.1 FOR THE MAXIMUM ALLOWED LENGTH OF THE DRYER VENT. PROVIDE PERMANENT PLACARD OF TYPE PLAC34 SHOWING NET EQUIVALENT LENGTH. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
2. LOUVERED DOOR. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
3. DRYER EXHAUST VENT SHALL BE PROTECTED WITH FIRE WRAP FROM DRYER TO EXTERIOR WALL TERMINATION POINT. REFER TO DWG M401, DETAIL 1 FOR FIRE WRAP DETAILS. FIRE WRAP SHALL BE UNIFRAX FYREWRAP DPS.
4. DUCT ROUTED IN LINED JOIST BAY
5. CLOSETS CONTAINING DRYERS SHALL BE PROVIDED WITH LOUVERED DOOR OR 100 SQ. IN FREE–AREA OPENING ABOVE DOOR. OPENING PROVIDES PATH FOR EXHAUST AIR DURING WASHER OPERATION PER WSMC TABLE 403.3.1.1 NOTE (I) AND MAKEUP AIR DURING DRYER OPERATION PER 504.6.
6. 4" DRYER EXHAUST TERMINATION WALL CAP. PROVIDE BACKDRAFT DAMPER AT TERMINATION. DO NOT INSTALL SCREENS ON DRYER EXHAUST TERMINATIONS. CLEARANCES PER GENERAL NOTE 1.
7. POC TO DOMESTIC KITCHEN RANGE HOOD. SEE PLANS FOR SIZE. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
8. DOMESTIC KITCHEN RANGE HOOD EXHAUST TERMINATION WALL CAP WITH SCREEN. PROVIDE BACKDRAFT DAMPER AT TERMINATION. CLEARANCES PER GENERAL NOTE 1.
9. LOWERED SOFFIT FOR MECHANICAL EQUIPMENT.

REVISIONS

NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

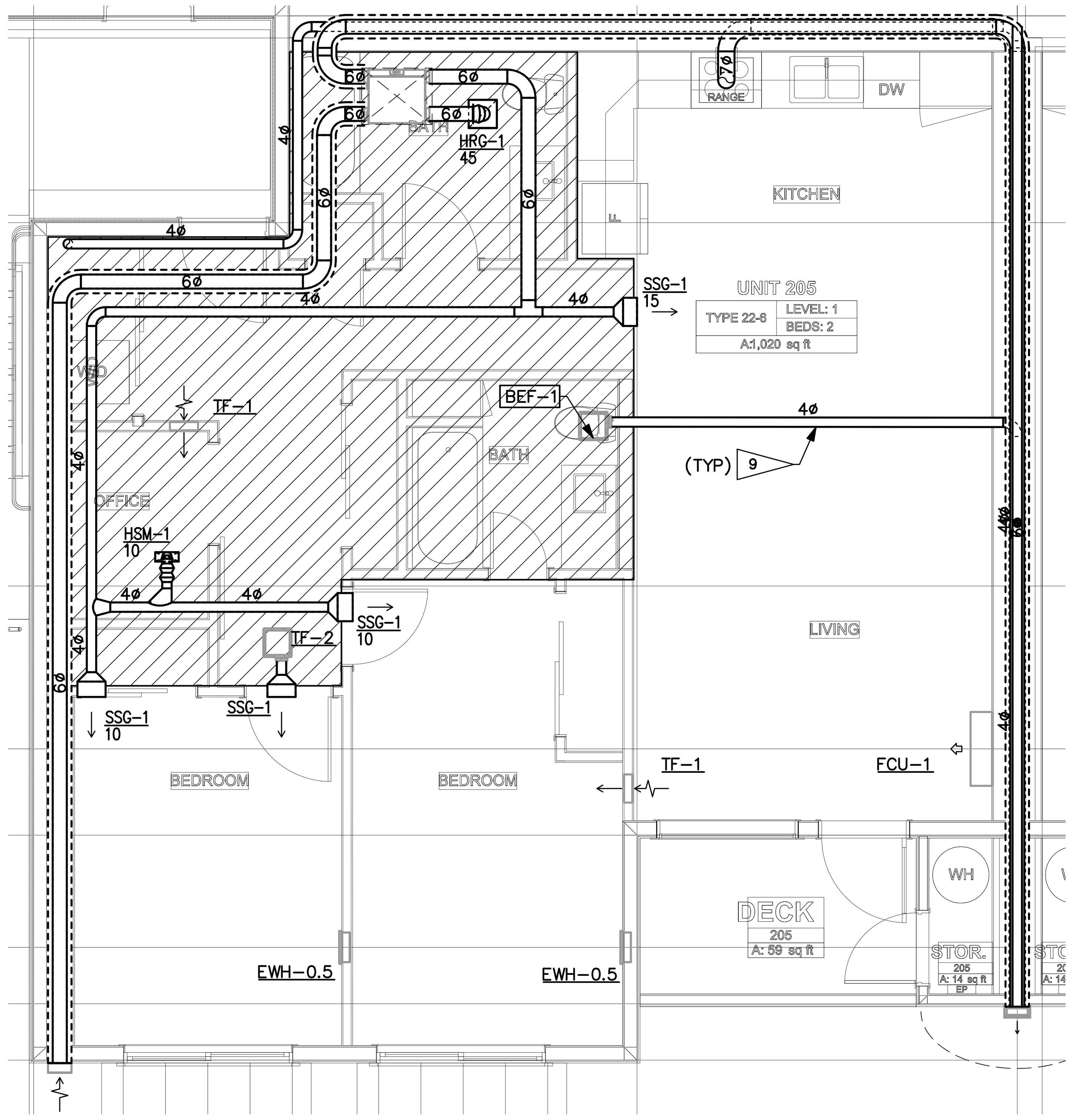
ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELLI

DATE: 1/22/2024

SHEET TITLE: HVAC ENLARGED PLANS

SHEET NO. M3.0

MNELSON F:\810-010 EAST TOWN CROSSING\DWG\M3.0 ENLARGED PLANS.DWG 01-03-2021 07:54

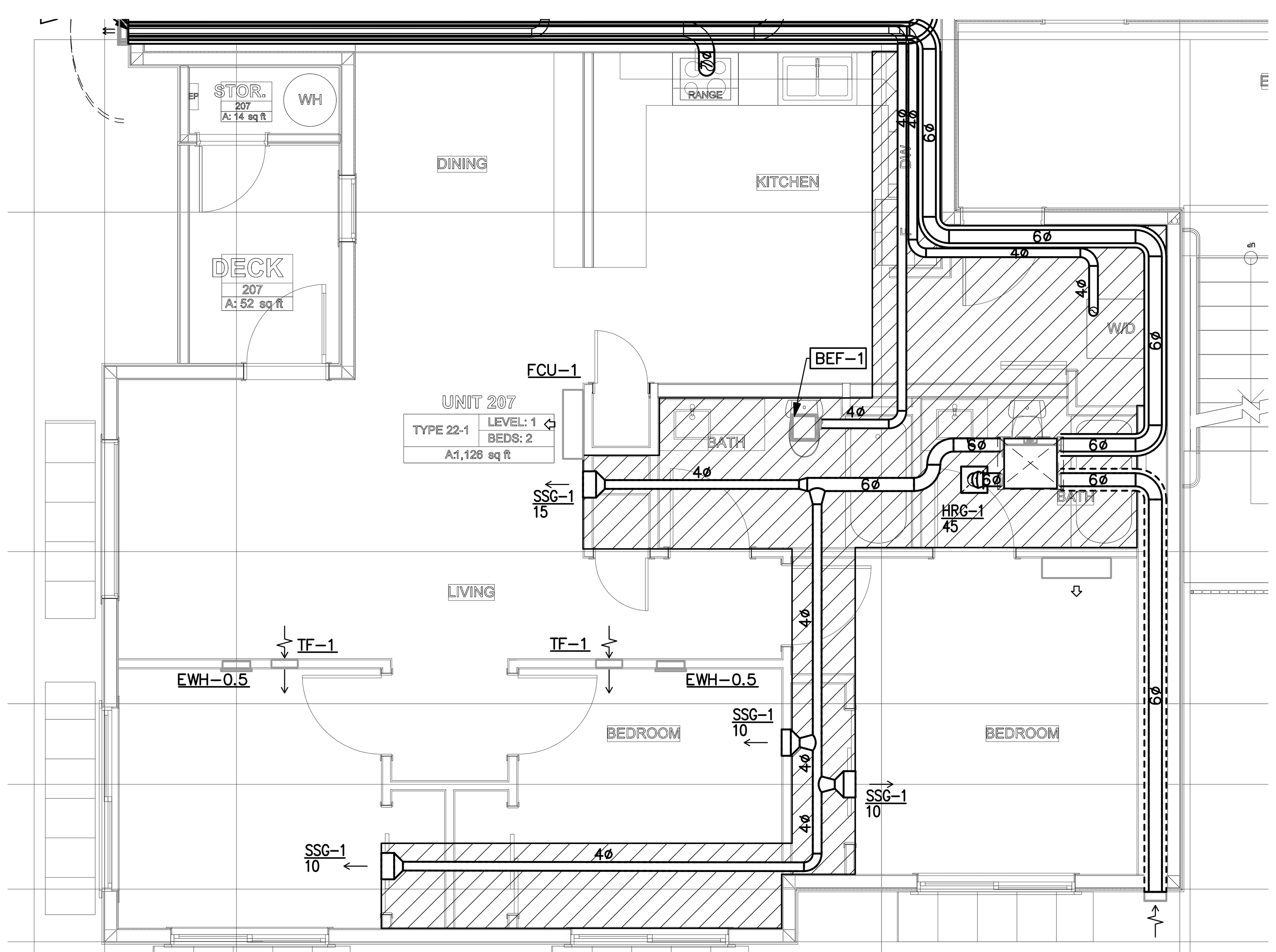


UNIT 22–6,22–6M,32–6,32–6M

ENLARGED PLAN

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

3
M3.1

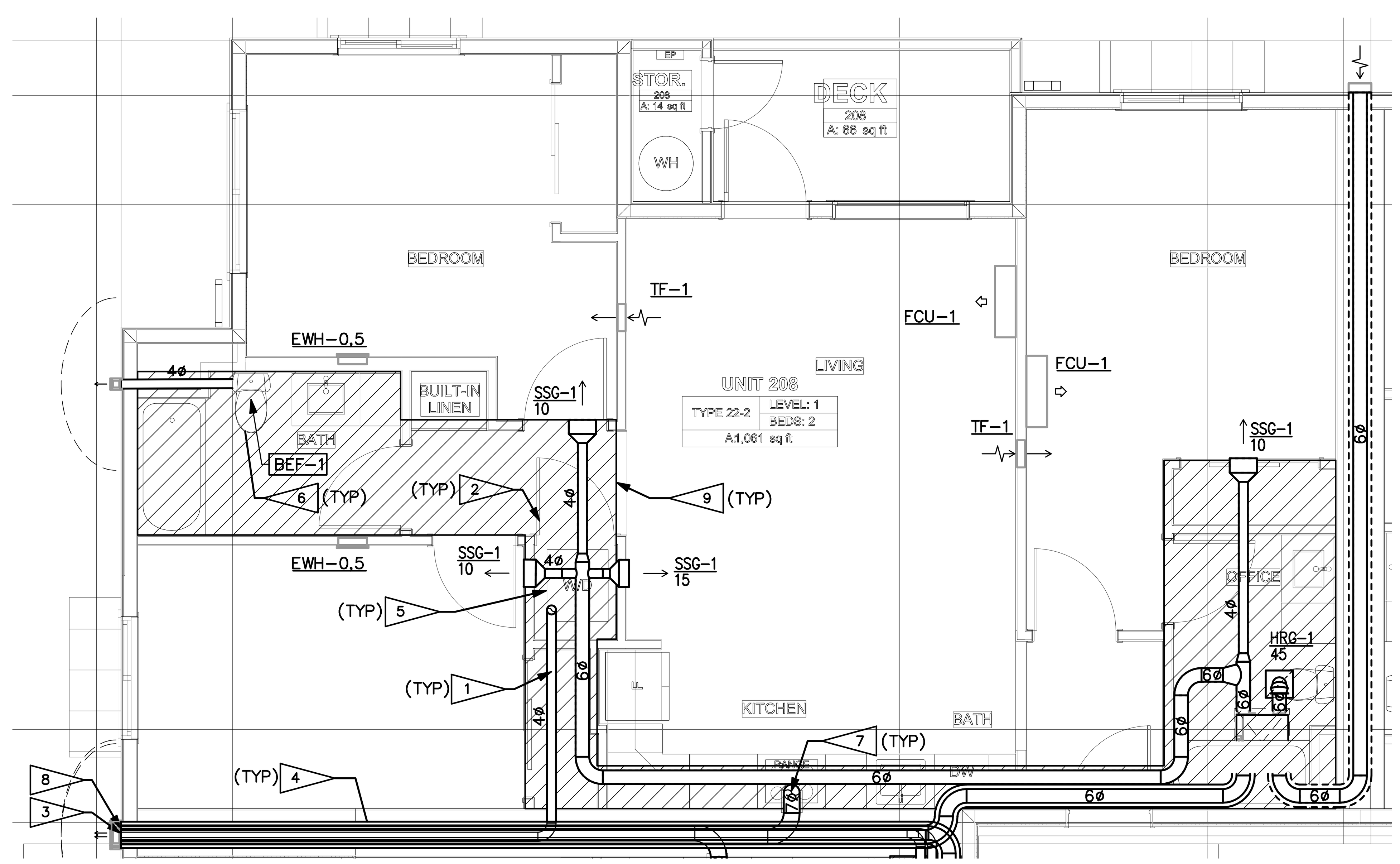


UNIT 22–1,22–1M,32–1,32–1M

ENLARGED PLAN

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

1
M3.1



UNIT 22–2,22–2M,32–2,32–2M

ENLARGED PLAN

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

2
M3.1

RESIDENTIAL UNIT NOTES:

1. PENETRATIONS OF THE RATED WALL ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH IBC SECTION 717. REFER TO ARCHITECTURAL PLANS FOR PENETRATION DETAILS.
2. PER OWNER, THE FOLLOWING RANGE HOODS ARE BEING INSTALLED: STANDARD UNITS (MICRO/HOOD COMBO): FRIGIDAIRE LFMV1846VF ADA UNITS (HOOD ONLY): GE JVX3240DJWW PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, DUCT CONNECTION TO HOODS ARE 6ø. MINIMUM SIZE ROUND DUCT FOR HOOD VENTING SHALL BE 7".
3. EXHAUST FAN EF–1 SHALL SERVE AS THE WHOLE HOUSE VENTILATION FAN. REFER TO M003 FOR REQUIREMENTS.
4. DRYER VENTING: PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, THE MAXIMUM LENGTH OF THE DRYER VENTS IS AS FOLLOWS (REFER TO DWG M400, DETAIL 1):

STANDARD DRYER: GE GUV27ESSM

NUMBER OF 90° ELBOWS OR TURNS	MAXIMUM LENGTH (FT)
0	200
1	185
2	175
3	165
4	155
5	145

ADA DRYER: GE GFV55ESSN

NUMBER OF 90° ELBOWS OR TURNS	MAXIMUM LENGTH (FT)
0	200
1	185
2	175
3	165
4	155

FLAG NOTES:

1. 4ø POC TO DRYER. PROVIDE METAL DRYER BOX WHERE DUCT IS ROUTED IN 2X6 FRAMED WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WSMC 504.8.4.1 FOR THE MAXIMUM ALLOWED LENGTH OF THE DRYER VENT. PROVIDE PERMANENT PLACARD OF TYPE PLAC34 SHOWING NET EQUIVALENT LENGTH. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
2. LOUVERED DOOR. REFER TO ARCHITECTURAL PLANS FOR DETAILS.
3. DRYER EXHAUST VENT SHALL BE PROTECTED WITH FIRE WRAP FROM DRYER TO EXTERIOR WALL TERMINATION POINT. REFER TO DWG M401, DETAIL 1 FOR FIRE WRAP DETAILS. FIRE WRAP SHALL BE UNIFRAX FYREWRAP DPS.
4. DUCT ROUTED IN LINED JOIST BAY
5. CLOSETS CONTAINING DRYERS SHALL BE PROVIDED WITH LOUVERED DOOR OR 100 SQ. IN FREE–AREA OPENING ABOVE DOOR. OPENING PROVIDES PATH FOR EXHAUST AIR DURING WASHER OPERATION PER WSMC TABLE 403.3.1.1 NOTE (I) AND MAKEUP AIR DURING DRYER OPERATION PER 504.6.
6. 4" DRYER EXHAUST TERMINATION WALL CAP. PROVIDE BACKDRAFT DAMPER AT TERMINATION. DO NOT INSTALL SCREENS ON DRYER EXHAUST TERMINATIONS. CLEARANCES PER GENERAL NOTE 1.
7. POC TO DOMESTIC KITCHEN RANGE HOOD. SEE PLANS FOR SIZE. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
8. DOMESTIC KITCHEN RANGE HOOD EXHAUST TERMINATION WALL CAP WITH SCREEN. PROVIDE BACKDRAFT DAMPER AT TERMINATION. CLEARANCES PER GENERAL NOTE 1.
9. LOWERED SOFFIT FOR MECHANICAL EQUIPMENT.

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL

JACOB J. OBRIEN
STATE OF WASHINGTON
23001780
REGISTERED
PROFESSIONAL ENGINEER
1/22/24

DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELI

DATE:
1/22/2024

SHEET TITLE:
HVAC ENLARGED PLANS

SHEET NO.
M3.1

ADA DRYER

GFV55ESSN

GE® Long Vent 7.8 cu. ft. Capacity Front Load Electric Dryer

DIMENSIONS AND INSTALLATION INFORMATION (IN INCHES)

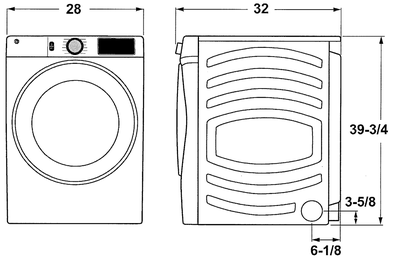
ELECTRIC DRYER RATING	
120V/240V	5600W, 25A, 60Hz
120V/208V	4300W, 23A, 60Hz

EXHAUST OPTIONS: 4-way via rear, right, left and bottom.

CIRCUIT REQUIREMENTS: An individual, properly grounded branch circuit, protected by a 30-amp circuit breaker or a time-delay fuse, is required.

NOTE: Dryer wall outlet must be located within 36" of service cord entry and accessible when dryer is mounted in position.

INSTALLATION INFORMATION: For complete information, see installation instructions packed with your dryer.



GE APPLIANCES

For answers to your Monogram, GE Café™ Series, GE Profile™ Series or GE Appliances product questions, visit our website at geappliances.com or call GE Answer Center® Service, 800.626.2000.

Listed by Underwriters Laboratories

Specification Revised 11/19

GFV55ESSN

GE® Long Vent 7.8 cu. ft. Capacity Front Load Electric Dryer

DRYER EXHAUSTING INFORMATION –METAL DUCT ONLY

For complete information, see installation instructions packed with your dryer.

DUCTING MATERIALS: For best performance, this dryer should be vented with 4" diameter all rigid metal exhaust duct. If rigid metal duct cannot be used, then UL-listed flexible metal (semi-rigid) ducting can be used (Kit WX08X10077). In special installations, it may be necessary to connect the dryer to the house vent using a flexible metal (foil-type) duct. A UL-listed flexible metal (foil-type) duct may be used ONLY in installations where rigid metal or flexible metal (semi-rigid) ducting cannot be used AND where a 4" diameter can be maintained throughout the entire length of the transition duct. Please see installation instruction packed with your dryer for complete instructions when using flexible metal (foil type) ducting.

EXHAUST LENGTH CALCULATION:

1. Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
2. The maximum length of 4" rigid (aluminum or galvanized) duct which can be tolerated is shown in the table.

   A turn of 45° or less may be ignored. Two 45° turns within the duct length should be treated as a 90° elbow.

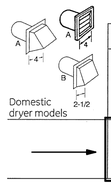
   A turn over 45° should be treated as a 90° elbow.

Dryers must be exhausted to the outside.

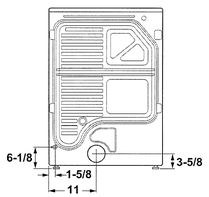
CAUTION: For personal safety do not terminate exhaust into a chimney, under any enclosed house floor (crawl space), or into an attic, since the accumulated lint could create a fire hazard or moisture could cause damage. Never terminate the exhaust into a common duct or plenum with a kitchen exhaust, since the combination of lint and grease could create a fire hazard.

Exhaust ducts should be terminated in a dampered wall cap to prevent back drafts, bird nesting, etc. The wall cap must also be located at least 12" above the ground or any other obstruction with the opening pointed down.

FOR MORE INFORMATION ON VENTING KITS AND ACCESSORIES, PLEASE CALL 1-800-GE-CARES.



Number of 90° turns	Best performance: Maximum length of 4" dia. rigid metal duct — Exhaust hood type: A 4" opening	B 2-1/2" opening
0	200 ft.	175 ft.
1	185 ft.	165 ft.
2	175 ft.	155 ft.
3	165 ft.	145 ft.
4	155 ft.	135 ft.



GE APPLIANCES

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Listed by Underwriters Laboratories

Specification Revised 11/19

STANDARD DRYER

GUV27ESSM

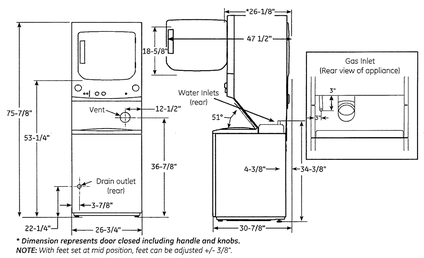
GE® Unitized Spacemaker® 3.8 DOE Cu. Ft. Stainless Steel Washer and 5.9 Cu. Ft. Long Vent Electric Dryer

DIMENSIONS AND INSTALLATION INFORMATION (IN INCHES)

ELECTRICAL REQUIREMENTS: This appliance should be connected to an individual, properly-grounded branch circuit with 120/240V or 120/208V single-phase 60 Hz electrical service and should be protected by 30-amp time-delay fuses or circuit breakers KW Rating per voltage (240/208). This appliance is manufactured with neutral connected to the frame. Power cord should be purchased separately.

Dryers must be exhausted to the outside.

INSTALLATION INFORMATION: For complete information, see installation instructions packed with the product.



** Dimension represents door closed including handle and knobs.*
***NOTE:** With feet set at mid position, feet can be adjusted +/- 3/8".*

GE APPLIANCES

For answers to your Monogram, GE Café™ Series, GE Profile™ Series or GE Appliances product questions, visit our website at geappliances.com or call GE Answer Center® Service, 800.626.2000.

Listed by Underwriters Laboratories

Specification Revised 11/17

GUV27ESSM

GE® Unitized Spacemaker® 3.8 DOE Cu. Ft. Stainless Steel Washer and 5.9 Cu. Ft. Long Vent Electric Dryer

DIMENSIONS AND INSTALLATION INFORMATION (IN INCHES)

For complete information, see installation instructions packed with your dryer.

DUCTING MATERIALS:
For best performance, this dryer should be vented with 4" diameter all rigid metal exhaust duct. If rigid metal duct cannot be used, then UL-listed flexible metal (semi-rigid) ducting can be used (Kit WX08X10077). In special installations, it may be necessary to connect the dryer to the house vent using a flexible metal (foil-type) duct. A UL-listed flexible metal (foil-type) duct may be used ONLY in installations where rigid metal or flexible metal (semi-rigid) ducting cannot be used AND where a 4" diameter can be maintained throughout the entire length of the transition duct. Please see installation instruction packed with your dryer for complete instructions when using flexible metal (foil type) ducting.

EXHAUST LENGTH CALCULATION:
1. Determine the number of 90° turns needed for your installation. If you exhaust to the side or bottom of dryer, add one turn.
2. The maximum length of 4" rigid (aluminum or galvanized) duct which can be tolerated is shown in the table.

For every extra 90° elbow, reduce the allowable vent system length by 10 ft. Two 45° elbows will be treated like one 90° elbow. For the side exhaust installations, add one 90° elbow to the chart. The total vent system length includes all the straight portions and elbows of the system (transition duct included).

Dryers must be exhausted to the outside.

CAUTION: For personal safety do not terminate exhaust into a chimney, under any enclosed house floor (crawl space), or into an attic, since the accumulated lint could create a fire hazard or moisture could cause damage. Never terminate the exhaust into a common duct or plenum with a kitchen exhaust, since the combination of lint and grease could create a fire hazard.

Exhaust ducts should be terminated in a dampered wall cap to prevent back drafts, bird nesting, etc. The wall cap must also be located at least 12" above the ground or any other obstruction with the opening pointed down.

GUV27 DRYER EXHAUST LENGTH

RECOMMENDED MAXIMUM LENGTH — Exhaust Hood Types		
	Recommended (4" DIA., 4")	Use only for short run installations (4" DIA., 2-1/2")
No. of 90° Elbows	Rigid Metal	Rigid Metal
0	200 Feet	175 Feet
1	185 Feet	165 Feet
2	175 Feet	155 Feet
3	165 Feet	145 Feet
4	155 Feet	135 Feet
5	145 Feet	125 Feet

GE APPLIANCES

For answers to your Monogram, GE Café™ Series, GE Profile™ Series or GE Appliances product questions, visit our website at geappliances.com or call GE Answer Center® Service, 800.626.2000.

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Specification Revised 11/17

SAMPLE LABEL

NOTE:

DRYER MAKE AND MODEL SHOWN ARE THE BASIS OF DESIGN FOR DETERMINING MAXIMUM DRYER VENT LENGTHS. IF A DIFFERENT MAKE/MODEL IS USED, NOTIFY THE ENGINEER AND ARCHITECT IMMEDIATELY TO VERIFY VENT LENGTHS AND TO DETERMINE IF DRYER BOOSTER FANS WILL BE NECESSARY.

PER IMC 504.8.5, CONTRACTOR SHALL PROVIDE A LABEL OR PLACARD WITHIN 6 FEET OF THE EXHAUST DUCT CONNECTION THAT LISTS THE EQUIVALENT LENGTH OF THE DRYER EXHAUST DUCT. SEE SAMPLE LABEL FOR DETAILS.

BASIS OF DESIGN FOR DRYER VENTING

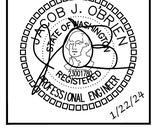
DETAIL

SCALE: NONE

1 / M400

NO.	DATE	DESCRIPTION
		REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 FX.



DRAWN: OP
DESIGNED: ABE
CHECKED: PR
APPROVED: JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

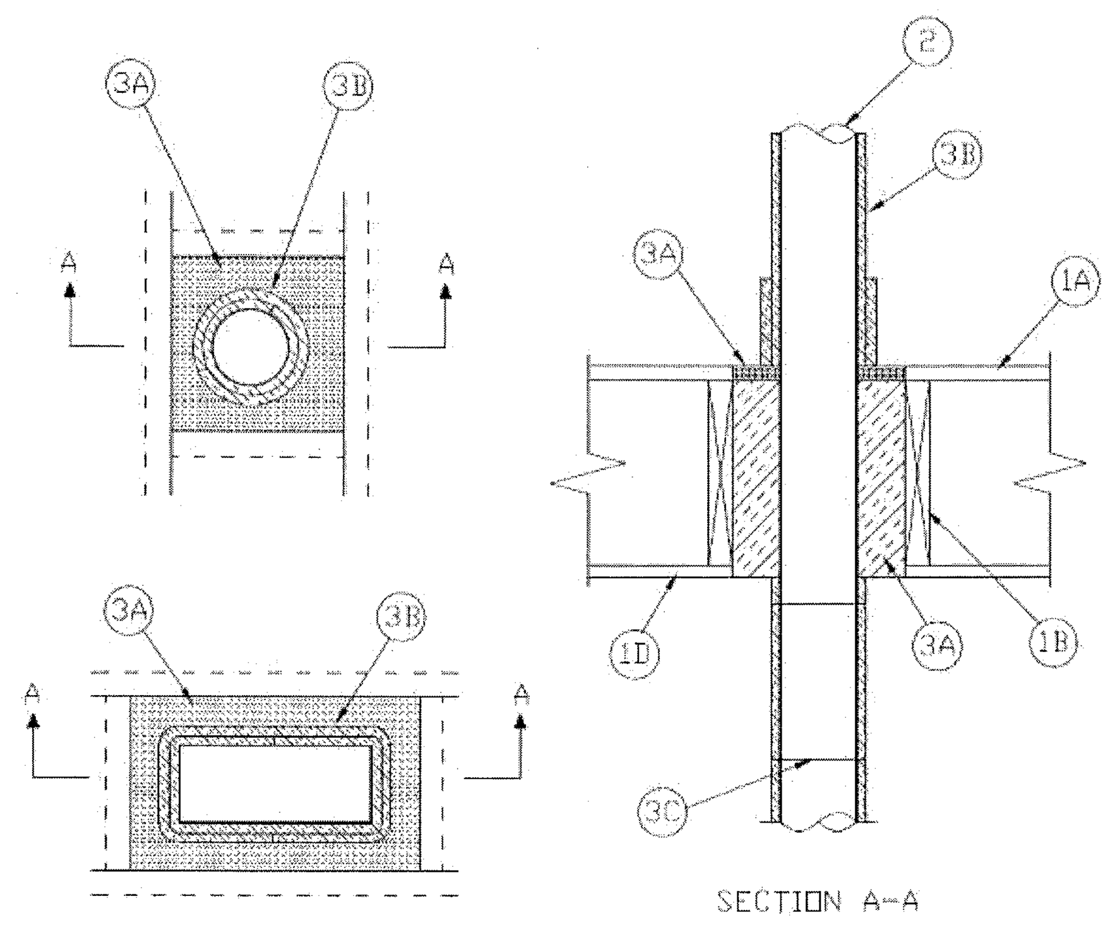
ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 8100.10
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: DETAILS & DIAGRAMS

SHEET NO. **M4.0**

M:\ELSN-010 EAST TOWN CROSSING\DWG\M000 COVER SHEET.DWG 01-02-2021 13:59



1. **Floor-Ceiling Assembly —** The 1 hr fire-rated solid or trussed lumber joist floor-ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor-Ceiling Designs in the UL Fire Resistance Directory. The general construction details of the floor-ceiling assembly are summarized below:

   A. **Flooring System —** Lumber or plywood subfloor with finish floor of lumber, plywood or **Floor Topping Mixture*** as specified in the individual Floor-Ceiling Design. Max area of floor opening is 150 in.2 (0.098 m^2) with a max 1.5 in. (38 mm) annular space between wrapped duct and framing members.

   B. **Wood Joists —** Nom 10 in. (254 mm) deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or **Structural Wood Members*** with bridging as required and with ends firestopped. Additional framing members installed to form a square enclosure around the perimeter of the opening in the floor and ceiling.

   C. **Furring Channels —** (Where required - not shown) - Resilient galv steel furring installed perpendicular to wood joists between gypsum board and wood joists as specified in the individual Floor-Ceiling Design. Furring channels spaced max 24 in. (610 mm) OC. If furring channels are used within the assembly, additional furring channels to be installed around the periphery of the opening.

   D. **Gypsum Board* —** Nom 4 ft (1.2 m) wide by 5/8 in. (15.9 mm) thick as specified in the individual Floor-Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor-Ceiling Design. Max area of ceiling opening is 150 in.2 (0.098 m^2) with a max 1.5 in. (38 mm) annular space between duct and framing members.

2. **Steel Air Duct —** Max 7 in. (178 mm) diam by min 0.0157 in. (No. 30 gauge or 0.40 mm) thick galv steel air duct to be centered within the firestop system. Max one steel air duct to be installed within opening. Steel duct to be rigidly supported on top side of floor-ceiling assembly.

2A. **Steel Air Duct —** Max 10 x 4 in. (254 x 102 mm) rectangular by min 0.022 in (no. 26 gauge or 0.56 mm) thick galv steel air duct to be centered within the firestop system. Max one steel air duct to be installed within opening. Steel duct to be rigidly supported on top side of floor-ceiling assembly.

3. **Fire-resistive System —** The fire resistive system shall consist of the following:

   A. **Firestop System —** When the ventilation duct passes through a fire rated floor assembly, the through openings shall be firestopped in accordance with System No. F-C-7057.

   B. **Batts and Blankets* —** 1/2 in. (13 mm) thick, 8 pcf (128 kg/m^3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m^3) with foil-scrim facers. The steel duct shall be wrapped with one layer of duct wrap installed with 1 in. (25 mm) transverse and longitudinal overlaps or tightly butted compression joints in accordance with the manufacturer's installation instructions A min 12 in. high collar consisting of an additional layer of 1/2 in. (13 mm) thick, 8 pcf (128 kg/m^3) or nom 1-1/2 in. (38 mm) thick, 6 pcf (96 kg/m^3) duct wrap, installed over the duct wrap flush with the top surface of the floor and extending upward. All seams and edges shall be sealed with min 3 in. (76 mm) wide pressure sensitive aluminum foil tape.

   UNIFRAX I L L C — FyreWrap® DPS or FyreWrap® Elite 1.5

   C. **Steel Tie Wire —** Min No. 18 Gauge (0.040 in. or 1 mm) galvanized steel wire formed into a loop on one end, with the other end passed through the loop, pulled hand tight and bent over. Tie wires spaced a max 12 in. (305 mm) OC.

*Bearing the UL Classification Mark

Last Updated on 2013-10-29

Questions? Print this page Terms of Use Page Top

Assembly No. V-32
HNLJ.V-32
Ventilation Duct Assemblies

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Ventilation Duct Assemblies

See General Information for Ventilation Duct Assemblies

Assembly No. V-32

October 29, 2013

Duct A	
Fire Resistance Rating	1 Hr

System No. F-C-7057
XHEZ.F-C-7057
Through-penetration Firestop Systems

Page Bottom

Design/System/Construction/Assembly Usage Disclaimer

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- Only products which bear UL's Mark are considered Certified.

XHEZ - Through-penetration Firestop Systems

XHEZ7 - Through-penetration Firestop Systems Certified for Canada

See General Information for Through-penetration Firestop Systems

See General Information for Through-penetration Firestop Systems Certified for Canada

System No. F-C-7057

March 27, 2017

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 Hr	F Rating — 1 Hr
T Rating — 1 Hr	FT Rating — 1 Hr
	FH Rating — 1 Hr
	FTH Rating — 1 Hr

UNIFRAX

Product Information Sheet

FyreWrap® DPS Insulation Dryer Protection System

Introduction

Unifrax's FyreWrap® DPS Insulation is a high-temperature insulation blanket specifically designed, UL tested and certified to provide a single layer, one-hour rated flexible enclosure around dryer and residential kitchen exhaust ductwork.

Dryer Exhaust Applications

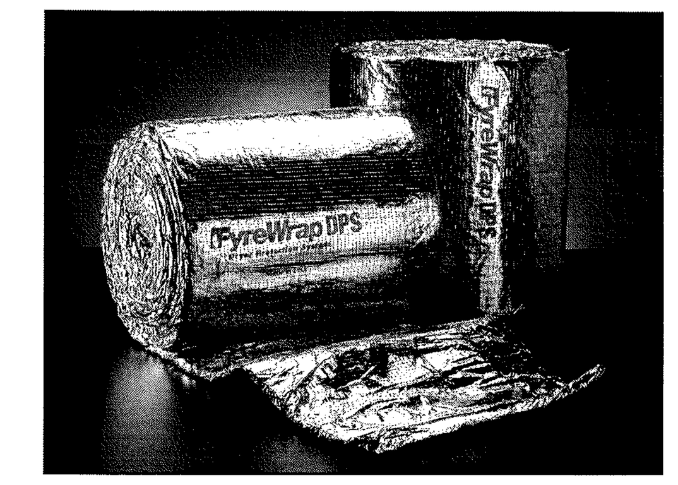
FyreWrap DPS is an innovative product that provides a safe and cost-effective means to achieve a one-hour fire resistance rated zero clearance enclosure for routing dryer ductwork, from start to finish, through rated wood truss/joist construction as prescribed by the International Building and Mechanical Codes.

FyreWrap DPS Insulation offers the following product features:

- Lightweight, flexible product form
- Scrim encapsulated
- Easy to cut, fabricate, wrap around ducts, pipes or cables
- Thin, single-layer design
- High-temperature, low biopersistance fiber

Product Components

Core Material: FyreWrap DPS Insulation incorporates Insulfrax® Thermal Insulation as its core material. Insulfrax is a high-temperature insulation made from a calcia, magnesia, silica chemistry designed to enhance biosolubility. It provides excellent insulation in a noncombustible blanket product form.



FyreWrap® DPS Insulation – Dryer Protection System

Encapsulating Material: The core insulation blanket is completely encapsulated in an aluminum foil, fiberglass reinforced scrim covering. This scrim provides additional handling strength as well as protection from moisture absorption and tearing.

Typical Product Parameters

Thickness	½"
Density	8pcf
Covering	Scrim Encapsulated
Product Availability	16"w x 25LF
	24"w x 25LF
	26"w x 25LF
	48"w x 25LF

Typical System Properties

ISO 6944	UL Assembly No. V-32, ULC Assembly No. FRD-29	
UL 1479 (ASTM E814), CAN/ULC S115	UL Assembly Nos. F-C-7057, F-C-7058	
Intertek Laboratories (OPL) Listed	Applied Fire Protection, File 16341-3	
ASTM E136 Noncombustibility Test	Passes	
ASTM E84, UL 723, ULC S102.2	UL File No. R14514	
	Unfaced Blanket	Encapsulated
Flame Spread Rating:	Zero	<25
Smoke Developed Rating:	Zero	<50

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Refer to the product Safety Data Sheet (SDS) No. M0456 for recommended work practices and other product safety information.

FyreWrap

Installation

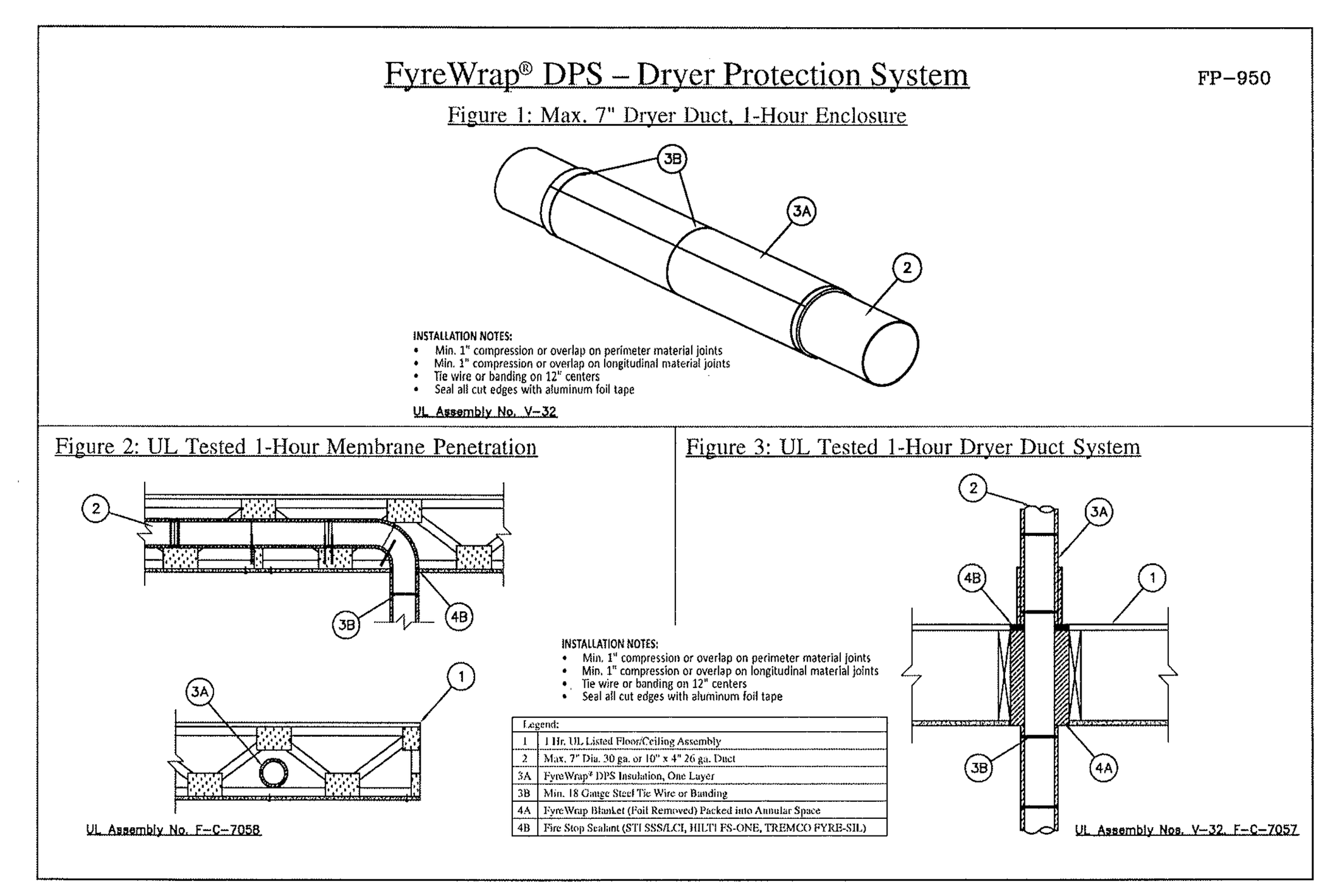
FyreWrap DPS Insulation consists of a single-layer system applied directly on to the surface of the duct or combustible item.

Dryer Applications

Install the insulation around the duct to provide a 1" longitudinal compression joint or overlap. Adjacent pieces of insulation should be installed with a 1" perimeter compression joint or material overlap. The 16" width DPS product facilitates linear installation around 4" diameter dryer ductwork without material cutting or scrap. The same technique can be used with wrapping 26" wide FyreWrap DPS on 7" diameter dryer ductwork. To temporarily secure the insulation, optional use of foil tape is permitted. Seal all cut edges with aluminum foil tape to ensure there is no exposed fiber. 18 gauge steel tie wire should be utilized for permanent attachment. Locate the wire ½" from the blanket edge and on maximum 12" centers. Twist tension the wire to firmly hold the wrap system in place, but not so tight as to cut or damage the blanket. Installation details are provided below for additional illustration.

Unifrax has a wide range of FyreWrap fire protection materials available to provide passive fire protection solutions in a variety of applications in the commercial building, industrial facility and transportation industries.

For additional information about product performance or for assistance identifying the recommended product for your fire protection application, please contact Unifrax at 716-768-6500 and ask for Fire Protection Application Engineering.



FyreWrap

Form C-1535
Effective 6/16

The following are registered trademarks of Unifrax: FyreWrap, Insulfrax.

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Product Information Sheets are periodically updated by Unifrax. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

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Suite 120
Tonawanda, NY 14150
Telephone: 716-768-6500
Canada: 1-800-635-4464
Internet: www.unifrax.com
Email: info@unifrax.com

DUCT FIRE WRAP

DETAIL

SCALE: NONE

1
M401

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC

DRAWN:	OP
DESIGNED:	ABE
CHECKED:	PR
APPROVED:	JMR

PROJECT: EAST TOWN CROSSING BULDING B
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343
REI PROJECT NO.: 810-010
CONTACT: ARIK ESPINELI

DATE: 1/22/2024

SHEET TITLE: DETAILS & DIAGRAMS

SHEET NO. M4.1

GENERAL NOTES

1. REFERENCE TO RELATED WORK: "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL, LANDSCAPE, OR KITCHEN), OR ITEM BASED ON A SPECIFIC MANUFACTURER'S DIMENSIONS (VERIFY).
2. ELECTRICAL CHARACTERISTICS: REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS (VOLTAGES, ETC. OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED.
3. CODES: COMPLETE INSTALLATION OF THE PLUMBING SYSTEM SHALL BE PER THE APPLICABLE BUILDING, MECHANICAL, ENERGY, PLUMBING, FIRE, AND HEALTH CODES AND REGULATIONS AS ADOPTED BY THE LOCAL AHJ.
4. PREPARE AND SUBMIT FOR REVIEW A SHOP DRAWING BASED ON FINAL STRUCTURAL SHOP DRAWINGS FOR LOCATING AND ROUTING ALL EQUIPMENT, PIPING, ETC.
   A. COORDINATE FLOOR AND BEAM PENETRATIONS WITH STRUCTURAL.
   B. COORDINATE FINAL LOCATION AND ROUTING WITH CEILING, LIGHTS, WALLS, FIRE SPRINKLER PIPING, AND OTHER TRADES WORK.
   C. INCLUDE ADDITIONAL OFFSETS, ELBOWS, ROUTING, EQUIVALENT DUCT SIZING EXCHANGE, RELOCATING, ETC. AS REQUIRED FOR A COMPLETE OPERATING MECHANICAL SYSTEM.
   D. PROVIDE SHOP DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.
5. PLUMBING CONTRACTOR SHALL LOCATE AND COORDINATE EXACT LOCATION OF ALL PLUMBING EQUIPMENT WITHIN THE STRUCTURE.
6. ACCESS DOORS: COORDINATE WITH ARCHITECT AND LOCATE ALL ACCESS DOORS ON SHOP DRAWINGS PRIOR TO BEGINNING OF CONSTRUCTION. ACCESS DOORS IN FIRE RATED STRUCTURE SHALL BE FIRE RATED. VERIFY ACCESS DOOR LOCATIONS WITH GENERAL CONTRACTOR PRIOR TO BIDDING.
7. ROOF PENETRATIONS: SEE ARCHITECTURAL DRAWINGS FOR ROOF CAP, ROOF CURB, ROOF DRAIN, OVERFLOW DRAINS AND VTR DETAILS.
8. EXPOSED PIPING: PROVIDE CHROME PLATING FOR EXPOSED PIPING IN FINISHED ROOMS.
9. PENETRATIONS: PROVIDE ESCUTCHEON PLATES FOR EXPOSED PIPING PENETRATIONS AND SHEET METAL FLASHING FOR EXPOSED DUCTWORK PENETRATIONS.
10. SHAFT AND PLENUM CONNECTIONS: SEAL CONNECTIONS TO AIR SHAFTS AIRTIGHT. PROVIDE AIRTIGHT SEAL AROUND PENETRATIONS IN AIR PLENUMS.
11. LIGHT FIXTURE CLEARANCE: COORDINATE LOCATIONS OF MECHANICAL WORK TO PROVIDE CLEARANCES OVER LIGHTING FIXTURES FOR REMOVAL AND REPLACEMENT.
12. CABLE TRAYS: PIPING INSTALLED ADJACENT TO ELECTRICAL CABLE TRAYS SHALL ALLOW MINIMUM ACCESS OF 6" ABOVE AND TO THE SIDE OF CABLE TRAYS.
13. MOTORS: COMPLY WITH ENERGY CODE ENFORCED BY AHJ FOR MINIMUM EFFICIENCIES UNDER FULL LOAD.
14. ACCESS CLEARANCES FOR MAINTENANCE AND REPLACEMENT: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET. COORDINATE LOCATIONS OF MECHANICAL WORK AND WORK OF OTHER TRADES TO PROVIDE ACCESS CLEARANCES FOR SERVICE AND MAINTENANCE.

COORDINATION REQUIREMENTS

1. IRRIGATION SYSTEM: COORDINATE IRRIGATION WATER DEMAND, MINIMUM WATER PRESSURE REQUIREMENTS & CONTROL CABINET LOCATIONS WITH IRRIGATION CONTRACTOR.
2. GAS: CONTRACTOR/GAS COMPANY SHALL FINALIZE GAS METER AND GAS SERVICE LOCATIONS. INSTALL SEISMIC GAS SHUT OFF VALVE PER GAS COMPANY REGULATIONS.
3. UTILITIES: COORDINATE WITH SITE UTILITY CONTRACTOR AND CIVIL DRAWINGS FOR UTILITY CONNECTIONS AND EXTENSIONS.
4. ROOF DRAINAGE: COORDINATE WITH GENERAL CONTRACTOR FOR ROOF DRAIN AND OVERFLOWS, SCUPPER DRAINS, AND CONDENSATE DRAINS.
5. PLUMBING FIXTURES & EQUIPMENT: COORDINATE EXACT LOCATION OF ALL PLUMBING FIXTURES & EQUIPMENT WITH ARCHITECTURAL AND OTHER TRADES DOCUMENTS.
6. PIPING: COORDINATE EXACT LOCATION OF ALL STRUCTURAL FRAMING & FOOTINGS AND FINALIZE THE EXACT ROUTING OF ALL PIPES WITH STRUCTURAL ENGINEER AT THE SITE PRIOR TO AND DURING THE CONSTRUCTION. COORDINATE UNDER GRADE PIPING & FOUNDATION DRAINAGE PIPING WITH CIVIL ENGINEER.
7. ADJUSTMENTS: ALL EQUIPMENT, MOTORS, FANS GAS BURNERS, IGNITION DEVICES, DRIVES, ETC. SHALL BE ADJUSTED AND BALANCED TO OPERATE AT SPECIFIED RATINGS AS REQUIRED FOR THIS PROJECT SITE AND ACCOUNTING FOR ELEVATION ABOVE SEA LEVEL.
8. APPROVALS: MECHANICAL AND PLUMBING EQUIPMENT SHALL BE APPROVED FOR INSTALLATION IN THE PROJECT LOCATION AND SHALL HAVE ALL CERTIFICATIONS AND RATINGS TO MEET ALL ENERGY, POLLUTION, ENVIRONMENTAL, SEISMIC, APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL COORDINATE WITH MANUFACTURE SUPPLIERS AND SHALL INCLUDE ALL COSTS REQUIRED TO MEET THE BID DOCUMENTS.
9. FIRE PROTECTION: CONTRACTOR SHALL PROVIDE A FULLY DESIGNED FIRE PROTECTION SPRINKLER SYSTEM IN COMPLIANCE WITH NFPA AND LOCAL CODES. PROVIDE DESIGN, PERMITS, MATERIALS, INSTALLATION, TESTING AND ALL OTHER FOR A FULLY OPERATIONAL SYSTEM. LOCATION OF ALL PIPING TO BE COORDINATED WITH OTHER TRADES.
10. PRIOR TO PIPING INSTALLATION: PLUMBING CONTRACTOR TO COORDINATE PIPING LAYOUT WITH ALL OTHER TRADES.
11. ACCESS: COORDINATE ALL ACCESS LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT TO ENSURE ALL REQUIRED ACCESS HATCHES, ACCESS PANELS & ACCESS COVERS ARE PROVIDED.
12. PROVIDE WATER TIGHT SEALS FOR ANY PIPING PENETRATING THE EXTERIOR FOUNDATION WALLS OR SLABS.
13. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.
14. PROVIDE FIRE PROOFING FOR ALL PIPING PENETRATING FIRE BARRIER WALLS OR FLOOR SLABS.

SYMBOLS

GENERAL

- ARCHITECTURAL BACKGROUND (THIN LINE)
- NEW PIPING (HEAVY LINE)
- EXISTING PIPING (THIN LINE)
- EXISTING WORK TO BE REMOVED
- MATCHLINE OR PROPERTY LINE
- CONNECTION TO EXISTING

SECTION IDENTIFICATION

- INDICATES DIRECTION OF CUTTING PLANE
- LETTER INDICATES SECTION (NO. INDICATES DETAIL)
- SHEET NUMBER WHERE SECTION IS DRAWN
- SHEET NUMBER WHERE SECTION IS TAKEN

(A, P-3, P-3)

DETAIL IDENTIFICATION

- DETAIL NUMBER (#)
- DRAWING/SHEET NUMBER (#)

EQUIPMENT

- TYPICAL EQUIPMENT DESIGNATION (HWCP-1)

PIPING

Symbol	Description
W	WASTE BELOW GRADE
W	WASTE ABOVE GRADE
PW	PUMPED WASTE
IW	INDIRECT WASTE
SS	SANITARY SEWER BELOW GRADE
SS	SANITARY SEWER ABOVE GRADE
PSS	PUMPED SANITARY SEWER
V	VENT
SD	STORM DRAIN
OD	OVERFLOW STORM DRAIN
PSD	PUMPED STORM DRAIN
CD	CONDENSATE DRAIN
PCD	PUMPED CONDENSATE DRAIN
-	COLD WATER (CW)
- -	HOT WATER (HW), POTABLE, 120°F
- - 140	HOT WATER, POTABLE, TEMPERATURE OTHER THAN 120°F
- - -	HOT WATER CIRCULATING (HWC), POTABLE, 120°F
- - - 140	HOT WATER CIRCULATING, POTABLE, TEMPERATURE OTHER THAN 120°F
FOF	FUEL OIL FILL
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
RV	RELIEF VENT
G	LOW PRESSURE NATURAL GAS
MPG	MEDIUM PRESSURE NATURAL GAS
IRR	IRRIGATION (NON POTABLE)
F	FIRE MAIN

PIPE SYMBOLS

- TOP PIPE CONNECTION
- BOTTOM PIPE CONNECTION
- PIPE TURNING UP
- PIPE TURNING DOWN/DROP
- PIPE CAP
- PIPE PLUG
- UNION
- FLANGE
- WYE STRAINER
- WYE STRAINER WITH CAPPED HOSE END BLOWDOWN VALVE
- BALL VALVE

(Valves and Devices)

- BALL VALVE
- GLOBE VALVE
- CHECK VALVE
- BALANCING OR PLUG VALVE
- BUTTERFLY VALVE
- FLEXIBLE CONNECTION IN PIPING
- PRESSURE REDUCING VALVE (PRV)
- AUTOMATIC CONTROL VALVE, 2-WAY
- AUTOMATIC CONTROL VALVE, 3-WAY
- RELIEF VALVE (ID)
- BALANCING/METERING VALVE (BV)
- REDUCER
- DIRECTION OF FLOW
- PIPE ANCHOR (A)
- PIPE ALIGNMENT GUIDE
- PIPE SUPPORT (PS)
- VALVE STATION OR ASSEMBLY
- INDIRECT DRAIN, PIPE TO DRAIN (ID)
- POINT OF CONNECTION
- ROOF DRAIN, OVERFLOW DRAIN (RD, OD)
- FLOOR DRAIN
- HOSE BIBB
- BREAK IN PIPING OR DUCTWORK
- GAS METER (GM)
- INLINE WATER METER (M)
- PUMP
- PRESSURE GAUGE
- THERMOMETER
- PRESSURE/TEMPERATURE TEST PORT (P/T)
- REDUCED PRESSURE BACKFLOW PREVENTER (RPBP)
- DOUBLE CHECK VALVE ASSEMBLY (DCVA)
- CATCH BASIN – SAND/OIL INTERCEPTOR
- TRENCH DRAIN
- EMERGENCY GAS SHUT-OFF VALVE
- SEISMIC GAS SHUT-OFF VALVE
- WASHER BOX
- GREASE INTERCEPTOR

NOTE TO CONTRACTOR

DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BOH	BACK OF HOUSE
BP	BOOSTER PUMP
BT	BATHTUB
BTUH	BRITISH THERMAL UNIT PER HOUR
BV	BALANCING VALVE
C	COMMON
CAP	CAPACITY
CB	CATCH BASIN
CD	CONDENSATE DRAIN
CFF	CAPPED FOR FUTURE
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CLG	CEILING, COOLING
CLW	CLOTHES WASHER
CO	CLEANOUTS
COMB	COMBUSTION
CONT	CONTINUE, CONTROL
CONTR	CONTRACTOR
COTG	CLEANOUTS TO GRADE
CP	CIRCULATING PUMP
CV	CHECK VALVE
CW	COLD WATER
D	DIAMETER
DB	DRY BULB, DECIBEL
DF	DRINKING FOUNTAIN
DFU	DRAIN FIXTURE UNITS
DI	DUCTILE IRON
DIM	DIMENSION
DN	DOWN
DS	DOWN SPOUT
DWG	DRAWING
(E)	EXISTING
EFF	EFFICIENCY
ELEC	ELECTRIC
EQUIV	EQUIVALENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXT	EXTERIOR, EXTERNAL
F	FAHRENHEIT
FCO	FLOOR CLEANOUTS
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISHED FLOOR
FLR	FLOOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FT	FEET
FU	FIXTURE UNITS
G	GAS (LOW PRESSURE)
GAL	GALLONS
GD	GARAGE DRAIN
GM	GAS METER
GPG	GRAINS PER GALLON
GPM	GALLONS PER MINUTE
GV	GATE VALVE
GWB	GYPSUM WALLBOARD
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HEAD
HDR	HUB DRAIN
HEDV	HOSE END DRAIN VALVE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPCW	HIGH PRESSURE COLD WATER
HW	HOT WATER
HWC	HOT WATER RE-CIRCULATION
HWCP	HOT WATER CIRCULATION PUMP
HWR	HOT WATER RETURN
HWST	HOT WATER STORAGE TANK
HX	HEAT EXCHANGER
ICW	INDUSTRIAL COLD WATER
ID	INDIRECT DRAIN, INSIDE DIAMETER
IE	INVERT ELEVATION
IHW	INDUSTRIAL HOT WATER
IN	INCH
KS	KITCHEN SINK
KW	KILOWATT
L	LONG, LENGTH
LAV	LAVATORY
LB	POUND
M	WATER METER
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MCA	MIN. CIRCUIT AMPACITY
MOCP	MAX. OVER CURRENT PROTECTION
MPG	MEDIUM PRESSURE GAS
MTD	MOUNTED
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OD	OUTSIDE DIMENSION/DIAMETER OVERFLOW DRAIN/DECK DRAIN
OPD	OVER PRESSURE DEVICE
OPNG	OPENING
P	PUMP
PD	PRESSURE DROP, PLANTER DRAIN
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE PRESSURE RELIEF VALVE
PS	PUMPED STORM DRAINAGE
PSIG	POUNDS PER SQUARE INCH GAUGE
PSD	PUMPED STORM DRAINAGE
PSS	PUMPED SANITARY SEWER
PSW	PUMPED SANITARY WASTE
PW	PUMPED WASTE
RD	ROOF DRAIN
REF	REFERENCE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
S	SINK
SCH	SCHEDULE
SCW	SOFTENED COLD WATER
SD	STORM DRAIN
SEP	SEWAGE EJECTOR PUMP
SF	SQUARE FOOT
SGSV	SEISMIC GAS SHUT-OFF VALVE
SH	SHOWER
SO	STORM OVERFLOW
SP	STATIC PRESSURE/SUMP PUMP
SR	SUDS RELIEF
SS	STAINLESS STEEL/SANITARY SEWER
SSS	SIDE SANITARY SEWER
STD	STANDARD
SQ	SQUARE
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VTR	VENT THRU ROOF
W	WASTE, WATT, WIDE
WC	WATER CLOSET
WCO	WALL CLEANOUTS
WHD	WALL HYDRANT
WM	WASHING MACHINE
WSFU	WATER SUPPLY FIXTURE UNITS

DRAWING INDEX

DWG	DESCRIPTION	INCLUDED IN SET: PERMIT SET 02/20/24				
P0.00	LEGEND, GENERAL NOTES, AND DRAWING INDEX	X				
P0.01	PLUMBING NOTES, TABLES AND CODES	X				
P0.02	PLUMBING FIXTURE UNIT COUNTS AND FIXTURE/DRAIN SCHEDULES	X				
P0.03	PLUMBING EQUIPMENT SCHEDULES, PIPE SIZING TABLES AND PRESSURE CALCULATIONS	X				
P2.B0	BUILDING B – UNDERSLAB AND LEVEL 1 PLUMBING PLANS	X				
P2.B1	BUILDING B – LEVEL 1 AND LEVEL 2 PLUMBING PLANS	X				
P2.B2	BUILDING B – ROOF PLUMBING PLAN	X				
P3.00	ENLARGED UNIT PLANS	X				
P4.00	DETAILS	X				
P4.01	DETAILS	X				
P4.02	DETAILS	X				
P6.B0	BUILDING B – WASTE DIAGRAMS	X				
P6.B1	BUILDING B – WASTE DIAGRAMS	X				

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343
CONTACT XXX

REED JACKSON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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PHONE:(206)364-3343

PERMIT PLANS
01/22/2024

SHEET TITLE:
LEGEND, GENERAL NOTES, & DRAWING INDEX

SHEET NO.
P0.00

PLUMBING TABLES

PIPE INSULATION SCHEDULE

SERVICE	OPTION 1		OPTION 2		VAPOR RETARDER REQUIRED	NOTES
	MATERIAL	THICKNESS	MATERIAL	THICKNESS		
DOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, STORM DRAIN (IN CONDITIONED SPACE)	MINERAL–FIBER WITH JACKET	ALL SIZES: ½"	PVC/NBR	ALL SIZES: ⅜"	YES	12,13
DOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, WASTE (OUTSIDE THE CONDITIONED SPACE)	MINERAL–FIBER WITH JACKET	(R–3) ½" PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R–3) ½" PIPE: ½" ALL OTHER SIZES: ¾"	YES	7,8,10
ROOF DRAIN BODIES	MINERAL–FIBER OR CELLULAR GLASS WITH JACKET	1"	PVC/NBR	1"	YES	12
DOMESTIC HOT WATER AND RECIRCULATED HOT WATER (RESIDENTIAL)	MINERAL–FIBER WITH JACKET	(R–3) ½" PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R–3) ½" PIPE: ½" ALL OTHER SIZES: ¾"	NO	2,10
DOMESTIC HOT WATER AND RECIRCULATED HOT WATER (NONRESIDENTIAL)	MINERAL–FIBER WITH JACKET	½"–1¼" PIPE: 1" 1½"–4" PIPE: 1.5"	PVC/NBR	½"–1¼" PIPE: 1" 1½"–4" PIPE: 1.5"	NO	3,9
EXPOSED SANITARY DRAINS AND DOMESTIC WATER SUPPLIES AND STOPS FOR ADA FIXTURES.	TRUEBRO LAV–GUARD	N/A	N/A	N/A	NO	11

NOTES:

1. PIPING INSULATION EXPOSED TO THE WEATHER SHALL BE PROTECTED FROM DAMAGE. CONTRACTOR SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.
2. PER 2015 WSEC SECTION R403.5.3 (RESIDENTIAL) INSULATION FOR HOT WATER PIPE SHALL HAVE A MINIMUM R–VALUE OF R–3.
3. PIPING FROM WATER HEATER TO THE TERMINATION OF HEATED WATER SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE C403.2.9.
4. ON BOTH THE INLET AND OUTLET PIPING OF A STORAGE HOT WATER HEATER, THE FIRST 8 FEET OF PIPING OR PIPING FROM WATER HEATER TO HEAT TRAP SHALL BE INSULATED.
5. HEAT TRACED PIPING SHALL BE INSULATED IN THE SAME MANNER AS NON HEAT TRACED PIPING OR PER THE HEAT TRACE MANUFACTURER'S INSTRUCTIONS.
6. TUBULAR PIPING INSULATION SHALL NOT BE REQUIRED FOR THE FOLLOWING:
   - 6.1. THE TUBING FROM THE CONNECTION AT THE TERMINATION OF THE FIXTURE SUPPLY PIPING TO A PLUMBING FIXTURE OR PLUMBING APPLIANCE.
   - 6.2. VALVES, PUMPS, STRAINERS, AND THREADED UNIONS IN PIPING THAT IS 1 INCH OR LESS IN NOMINAL DIAMETER.
   - 6.3. PIPING FROM USER–CONTROLLED SHOWER AND BATH MIXING VALVES TO THE WATER OUTLETS.
   - 6.4. COLD WATER PIPING OF A DEMAND RECIRCULATION WATER SYSTEM.
   - 6.5. TUBING FROM A HOT DRINKING–WATER HEATING UNIT TO THE WATER OUTLET.
   - 6.6. PIPING AT LOCATIONS WHERE A VERTICAL SUPPORT OF THE PIPING IS INSTALLED.
   - 6.7. PIPING SURROUNDED BY BUILDING INSULATION WITH A THERMAL RESISTANCE (R–VALUE) OF NOT LESS THAN R–3.
   - 6.8. HOT WATER PIPING THAT IS PART OF THE FINAL PIPE RUN TO THE PLUMBING FIXTURE AND IS NOT PART OF THE HEATED–WATER CIRCULATION SYSTEM CIRCULATION PATH IS NOT REQUIRED TO MEET THE MINIMUM INSULATION REQUIREMENTS OF C404.6.
7. PER 2015 UPC SECTION 312.6 NO WATER, SOIL, OR WASTE PIPE SHALL BE INSTALLED OR PERMITTED OUTSIDE OF A BUILDING, IN ATTICS OR CRAWL SPACES, OR IN AN EXTERIOR WALL UNLESS, WHERE NECESSARY, ADEQUATE PROVISION IS MADE TO PROTECT SUCH PIPE FROM FREEZING. ALL HOT AND COLD WATER PIPES OUTSIDE THE CONDITIONED SPACE SHALL BE PROVIDED WITH INSULATION WITH A MINIMUM R–VALUE OF R–3.
8. HEAT TRACING SHALL BE PROVIDED FOR COLD WATER AND IRRIGATION WATER IN UNCONDITIONED SPACES. CONTACT ENGINEERING IF NECESSARY. PER 2015 WSEC SECTION C403.12.3 FREEZE PROTECTION SYSTEMS, SUCH AS HEAT TRACING OF OUTDOOR PIPING, SHALL INCLUDE AUTOMATIC CONTROLS CONFIGURED TO SHUT OFF THE SYSTEMS WHEN OUTDOOR AIR TEMPERATURES ARE ABOVE 40°F.
9. PER 2015 WSEC TABLE C403.2.9 INSULATION FOR HOT WATER AND HOT WATER RECIRCULATION SHALL HAVE A THERMAL CONDUCTIVITY OF 0.21–0.28 (BTU.IN/H.FT²·°F) AT OPERATING TEMPERATURE.
10. INSULATION R–VALUE SHALL MEET THE MINIMUM REQUIREMENT. THICKNESS IS BASED ON GRAINGER SAMPLE DATA FOR K–FLEX(PVC/NBR) AND OWENS CORNING(FIBER GLASS).
11. ALL ADA P–TRAPS, HOT WATER SUPPLY TUBING, AND SHUT–OFF COCKS SHALL BE PROTECTED WITH APPROVED COVERS TO PREVENT SCALDING.
12. REQUIRED BY ENGINEERING BASED ON BEST PRACTICE.
13. INSULATION IS NOT REQUIRED ON PLASTIC COLD WATER PIPING.

Please revise this sheet and associates notes and sheets to conform to the 2018 Washington State Codes. [CONSTRUCTION PLAN SET - Bldg B, sheet P0.01]

WASHINGTON STATE-COMMERCIAL ENERGY CODE EFFICIENT HEATED WATER SUPPLY PIPING

NOMINAL PIPE SIZE (IN)	METHOD #1 – PIPE LENGTH (RECOMMENDED)		METHOD #2 – PIPE VOLUME			NOTES
	MAXIMUM ALLOWABLE PIPING LENGTH (FT)		PIPE VOLUME (FLUID OZ / FEET)	MAXIMUM ALLOWABLE PIPING LENGTH (FT)		
	PUBLIC LAVATORY FAUCET	OTHER FIXTURES		PUBLIC LAVATORY FAUCET	OTHER FIXTURES	
3/8	3	50	0.75	**2.67**	**85**	1–8
1/2	2	43	1.5	**1.33**	**43**	
5/8	1	32	2	**1.00**	**32**	
3/4	0.5	21	3	**0.67**	**21**	
7/8	0.5	16	4	**0.50**	**16**	
1	0.5	13	5	**0.40**	**13**	
1–1/4	0.5	8	8	**0.25**	**8**	
1–1/2	0.5	6	11	**0.18**	**6**	
2 OR LARGER	0.5	4	18	**0.11**	**4**	

NOTES:

1. CONTRACTOR MAY USE METHOD 1 OR 2 TO DETERMINE MAXIMUM ALLOWABLE PIPING LENGTH FROM SOURCE OF HEATED WATER.
2. PER 2015 WSEC SECTION C404.3 WATER HEATER, CIRCULATING WATER SYSTEM & HEAT TRACE TEMPERATURE MAINTENANCE SHALL BE CONSIDERED SOURCE OF HEATED WATER.
3. THIS TABLE IS BASED ON MINIMUM CODE REQUIREMENTS. CONTRACTOR SHALL FOLLOW OWNERSHIP/DEVELOPER REQUIREMENT AND/OR BRAND STANDARD REGARDING MAXIMUM WAITING TIME FOR HOT WATER DELIVERY [OR ALLOWABLE NON–CIRCULATING HOT WATER PIPING LENGTH] AS LONG AS IT IS STRICTER THAN CODE MINIMUM. CONTACT ENGINEERING AS NECESSARY.
4. PIPE LENGTH METHOD ONLY: WHERE THE PIPING CONTAINS MORE THAN ONE SIZE OF PIPE, THE LARGEST SIZE OF PIPE SHALL BE USED FOR DETERMINING THE MAXIMUM ALLOWABLE LENGTH OF PIPING.
5. PIPE LENGTH METHOD ONLY: PER WSEC TABLE C404.3.1
6. PIPE VOLUME METHOD ONLY: PER WSEC SECTION C404.3.2 THE VOLUME FROM HEATED WATER TO THE TERMINATION OF FIXTURE SUPPLY PIPE SHALL NOT EXCEED 2 FLUID OUNCES FOR PUBLIC LAVATORIES AND 0.5 GALLON (64 FLUID OUNCES) FOR OTHER FIXTURES.
7. PIPE VOLUME METHOD ONLY: PER C404.3.2.1 WATER VOLUME SHALL BE THE SUM OF INTERNAL VOLUMES OF PIPE, VALVES, METERS AND MANIFOLD BETWEEN THE NEAREST SOURCE OF HEATED WATER AND TERMINATION OF THE FIXTURE SUPPLY PIPE. PROVIDED CALCULATION DOES NOT INCLUDE VALVES, METERS, MANIFOLDS.
8. REFER TO MANUFACTURER RECOMMENDATIONS AND PLUMBING FIXTURE SCHEDULE IN COMPLIANCE WITH **2015 UPC** SECTION A106 AND TABLES 610.3 & A103.1 FOR MINIMUM BRANCH PIPE SIZES.

PIPING SUPPORTS (SUPPLY)

ALL SUSPENDED WATER SUPPLY PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2015 UPC TABLE 313.3:

	MAX. HORIZONTAL SPACING	MAX. VERTICAL SPACING
COPPER PIPE ≤1½"	6 FT.	10 FT.
COPPER PIPE >2"	10 FT.	10 FT.
COPPER TUBING ≤1½"	6 FT.	10 FT.
COPPER TUBING >2"	10 FT.	10 FT.
CPVC ≤ 1"	3 FT.	10 FT.
CPVC > 1¼"	4 FT.	10 FT.

PIPING SUPPORTS (WASTE)

ALL SUSPENDED SANITARY AND VENT PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2015 UPC TABLE 313.3:

	MAX. HORIZ. SPACING	MAX. VERT. SPACING
ABS	4 FT.	10 FT.
PVC (TYPE DWV)	4 FT.	10 FT.
CAST–IRON (<10 FT PIPE SECTIONS)	5 FT.	15 FT.
CAST–IRON (10 FT PIPE SECTIONS)	10 FT.	15 FT.

PRE-CONSTRUCTION MEETING NOTES

CONTRACTORS SHALL ATTEND A PRE–CONSTRUCTION MEETING WITH THE ENGINEER FOR THE PURPOSE OF REVIEWING THE WORK PRIOR TO ORDERING ANY EQUIPMENT OR PERFORMING ANY WORK. THE MEETING SHALL BE LOCATED AT THE PROJECT SITE ON A DATE AND TIME TO BE MUTUALLY AGREED. THE MEETING WILL BE A WORKING SESSION. THE MEETING WILL BE FACILITATED BY THE ENGINEER AND THE AGENDA WILL INCLUDE A DETAILED REVIEW OF THE PLANS AND SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES FOR COORDINATION ISSUES, REVIEW OF PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS AND METHODS,AND ON–SITE INVESTIGATION OF FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS THAT COULD AFFECT THE WORK. PERSONS ATTENDING THE MEETING SHALL BE KNOWLEDGEABLE OF THE PROJECT AND SHALL BE THE SPECIFIC PERSONS INTENDED TO CONTINUE WITH THE PROJECT THROUGH TO COMPLETION. IF REQUIRED, REVISED PLANS WILL BE ISSUED THROUGH OFFICIAL CHANNELS. CHANGES IN THE BID PRICE WILL BE DISCUSSED, BUT NO CHANGE ORDERS WILL BE ISSUED UNLESS PROCESSED THOUGH OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD THAT THE ENGINEER HAS NO AUTHORITY TO ISSUE CHANGE ORDERS.

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL	4 HOURS
PLUMBING/PIPING	4 HOURS
ELECTRICAL	4 HOURS
SPRINKLER	2 HOURS
GENERAL CONTRACTOR	ALL SESSIONS

PLUMBING NOTES

1. CONNECTIONS: PROVIDE PLUMBING FIXTURE CONNECTIONS TO BUILDING WASTE, VENT, COLD WATER, AND HOT WATER SYSTEM IN ACCORDANCE WITH DRAWINGS, MANUFACTURER'S RECOMMENDATIONS, AND LOCAL CODES. CONNECT TO EACH FIXTURE, EQUIPMENT, ETC. WITH ALL ACCESSORIES, VALVES, VACUUM BREAKERS, REGULATORS, UNIONS, ETC. AS REQUIRED AND AS RECOMMENDED BY THE MANUFACTURERS. REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE ON PLANS.
2. HOT AND COLD: WATER PIPING CONNECTION TO EACH FIXTURE SHALL BE COLD WATER ON THE RIGHT HAND SIDE AND HOT WATER ON THE LEFT HAND SIDE.
3. HOT WATER: NON–CIRCULATING HOT WATER PIPE SHALL NOT EXCEED 10' UNLESS OTHERWISE SHOWN ON DRAWINGS.
4. VENT STACKS: COORDINATE VENT STACK WITH HVAC EQUIPMENT TO MAINTAIN MINIMUM 10' CLEARANCE FROM OUTSIDE AIR INTAKES.
5. CLEANOUTS: PROVIDE CLEANOUTS PER CURRENT UPC AND AS REQUIRED BY LOCAL JURISDICTIONS. CLEANOUTS SHALL BE LOCATED IN WALLS/FLOORS WHERE THEY ARE NOT HIGHLY VISIBLE. FLOOR CLEANOUTS IN CARPETED AREAS TO BE FITTED WITH CARPET INSERTS. LOCATIONS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. NOTE: NOT ALL CLEANOUTS ARE SHOWN ON THE PLUMBING DRAWINGS.
6. SUDS RELIEF: PROVIDE SUDS RELIEF IN ACCORDANCE WITH 2015 UPC SECTION 711.0, STATE AND LOCAL CODES.
7. SHUT–OFFS: PROVIDE 1/4 TURN BALL VALVE ANGLE STOP SHUT–OFF VALVES AND BRAIDED STAINLESS STEEL FLEX CONNECTORS AT HOT AND COLD WATER SUPPLY TO EACH FIXTURE. EXCEPTION: PROVIDE SCREWDRIVER STOPS AT BATH/SHOWERS.
8. TUB SPOUTS SHALL BE THREADED (NO PUSH–ON FITTINGS).
9. TRAP ARMS: PROVIDE TRAP ARMS SUCH THAT THE MAXIMUM LENGTH WILL NOT EXCEED CODE REQUIREMENTS.
10. ADA INSULATION: AT PLUMBING PIPING EXPOSED UNDER LAVATORIES, INSULATE THE EXPOSED PIPING AND TRAPS WITH PRODUCT SPECIFICALLY DESIGNED FOR THIS APPLICATION MEETING ADA REQUIREMENTS. PROVIDE HANDI–LAV GUARD OR EQUIVALENT. OFFSET P–TRAPS TO CLEAR WHEELCHAIR ACCESS.
11. GAS EQUIPMENT: GAS EQUIPMENT SHALL BE INSTALLED PER EQUIPMENT LISTINGS, APPLICABLE IFGC, UPC, LOCAL CODES & NFPA STANDARDS.
12. GAS CONNECTIONS: INSTALL FLEXIBLE QUICK DISCONNECT ASSEMBLIES FOR ALL GAS FIRED KITCHEN EQUIPMENT PER APPLICABLE IFGC, UPC, LOCAL CODES & NFPA STANDARDS. PROVIDE LOCKABLE GAS SHUT–OFF VALVES FOR FIREPLACES & BBQS IN UNATTENDED PUBLIC LOCATIONS IN THE BUILDING.
13. WATER HAMMER ARRESTORS: PROVIDE AT THE END OF HOT AND COLD WATER LINES SERVING TWO OR MORE FIXTURES; SIZE IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE (PDI) REQUIREMENTS. WATER HAMMER ARRESTORS ARE REQUIRED FOR QUICK CLOSING VALVES, SUCH AS LAUNDRY WASHERS, FLUSH VALVES (PUBLIC TOILETS), ETC.
14. TRAP PRIMERS AS SPECIFIED: PROVIDE TRAP PRIMERS AND PIPING FOR FLOOR DRAINS, FLOOR SINKS, AREA DRAINS & HUB DRAINS. ARRANGE PIPING TO ACHIEVE EQUAL FLOW TO EACH DRAIN AND FLOOR SINK FOR TRAP PRIMERS SERVING MULTIPLE DRAINS AND FLOOR SINKS. COORDINATE EXACT LOCATIONS WITH ARCHITECT & ELECTRICAL ENGINEER.
15. P–TRAPS: ALL EXPOSED P–TRAPS SHALL BE CHROME–PLATED BRASS. P–TRAPS SERVING HANDICAPPED COUNTER TOP LAVATORIES SHALL BE INSULATED.
16. THROUGHOUT THE PROJECT PROVIDE BALL VALVES. GATE VALVES SHALL NOT BE USED. NO EXCEPTIONS.
17. HOT WATER RECIRCULATING BALANCING VALVES SHOULD BE BELL & GOSSETT CIRCUIT SETTER (WATTS OR EQUAL) WITH INTEGRAL READOUT PORTS, ADJUSTMENT KNOB, DRAIN CONNECTION, AND POSITIVE SHUTOFF.
18. DISASSEMBLY PROVISIONS: PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
19. REDUCERS: PROVIDE AS REQUIRED FROM LINE PIPE SIZE TO EQUIPMENT, TRAP, COIL, AND CONTROL VALVE CONNECTION SIZES.
20. VALVE TAGS: PROVIDE VALVE TAGS PER SPECIFICATIONS TO IDENTIFY VALVE AND THE AREA IT SERVES.
21. OFFSETS: PROVIDE FOR BRANCH LINES TO EQUIPMENT.
22. ALL TEMPERATURE MIXING VALVES SHALL COMPLY WITH ASSE–1070 SAFETY STANDARDS.
23. PROVIDE PIPE MARKER WITH DIRECTION OF FLOW. LABEL "NON–POTABLE WATER DO NOT DRINK" CLEARLY ON NON–POTABLE WATER PIPING.
24. PROVIDE EXPANSION LOOPS/EXPANSION JOINTS IN PIPING PER 2015 UPC TABLE 313.3 AND MANUFACTURER INSTALLATION INSTRUCTIONS.
25. PROVIDE APPROVED PIPE HANGERS & PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND 2015 UPC TABLES 313.3 & 313.6. SUBMIT FOR APPROVAL.
26. DIELECTRIC UNIONS: PROVIDE AT CONNECTIONS OF DISSIMILAR PIPE.
27. REFRIGERANT PIPING: PROVIDE SIZING & INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
28. CONDENSATE DRAIN: PROVIDE A P–TRAP FOR EACH HVAC UNIT CONDENSATE PAN WITH PLUG TEES FOR CLEANING. CONDENSATE DRAINS SHALL BE DISCHARGED TO AN INDIRECT WASTE OR OUTSIDE.
29. PROVIDE VIBRATION, SEISMIC ISOLATIONS & CONTROLS IN ACCORDANCE WITH SPEC SECTION 230548.
30. PIPING & EQUIPMENT SUPPORTS/HANGERS & SEISMIC RESTRAINTS TO BE DESIGNED BY DESIGN BUILT CONTRACTOR.
31. IF NEEDED, PROVIDE VACUUM BREAKERS AT ALL HOSE BIBBS.
32. FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS IN ACCORDANCE WITH 2015 UPC 1007.0.
33. INSULATION MATERIAL SHALL MEET CITY OF PUYALLUP QUALITY STANDARDS.
34. ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE 2015 WASHINGTON STATE ENERGY CODE.
35. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH 2015 UPC 701.0 AND 903.0.
36. ALL SANITARY SYSTEM MATERIAL SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
37. ALL STORAGE WATER HEATING EQUIPMENT SHALL BE PROVIDED WITH AN APPROVED, LISTED EXPANSION TANK OR OTHER DEVICE DESIGNED FOR INTERMITTENT OPERATION FOR THERMAL EXPANSION CONTROL PER 2015 UPC 608.3.
38. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENTS DUE TO SEISMIC MOTION PER 2015 UPC 507.2.
39. MATERIAL EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH 2015 IMC 602.2.1.
40. HVAC EQUIPMENT AND WATER HEATERS SHALL COMPLY WITH 2015 IMC CHAPTER 3.
41. BOILERS SHALL COMPLY WITH ALL THE REQUIREMENTS OF 2015 IMC CHAPTER 10.
42. PROVIDE EXPANSION TANKS FOR BOILERS PER 2015 IMC SECTION 1009.0.
43. SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER 2015 UPC 408.0.
44. PLUMBING FIXTURES AND FITTINGS SHALL COMPLY WITH CITY OF PUYALLUP WATER CONSERVATION STANDARDS.
45. CONTRACTOR SHALL PROVIDE FIRESTOPPING AT PENETRATIONS AS NECESSARY TO RETAIN THE FIRE RATING OF ALL ASSEMBLIES. ALL WORK SHALL BE IN COMPLIANCE WITH CODE REQUIREMENTS FOR THE BUILDING CONSTRUCTION TYPE.
46. ALL GARAGE DRAINS, TRASH ROOMS DRAINS & GARAGE TRENCH DRAINS SHALL BE TAKEN TO SAND/OIL INTERCEPTOR(S) BEFORE CONNECTING TO THE SANITARY SEWER SYSTEM.
47. PLUMBING CONTRACTOR SHALL PROVIDE REDUCED PRESSURE BACKFLOW PREVENTERS OR OTHER APPROVED BACKFLOW PREVENTION DEVICE WHERE REQUIRED BY HEALTH AUTHORITIES, FOOD SERVICE DRAWINGS, APPLIANCE MANUFACTURER INSTRUCTIONS AND BY CODE.

    PROVIDE REQUIRED & PROPER BACK FLOW PREVENTERS AS SPECIFIED FOR THE APPLIANCES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

    a. ICE MACHINES AND ICE MAKERS
    b. CARBONATED BEVERAGE DISPENSING SYSTEMS
    c. COFFEE BREWERS
    d. ESPRESSO MACHINES
    e. WATER FILTERS
    f. STEAM OR HOT WATER BOILERS
    g. IRRIGATION SYSTEM
    h. FIRE PROTECTION SYSTEM
    i. CHEMICAL TREATMENT SYSTEM
    j. SOAP/CHEMICAL DISPENSER SYSTEM
    k. COMMERCIAL WASHER

APPLICABLE CODES

THE FOLLOWING PROJECT DESIGN IS BASED ON THE FOLLOWING CODES:

–2015 INTERNATIONAL BUILDING CODE (IBC) & WASHINGTON STATE AMENDMENTS
–2015 INTERNATIONAL MECHANICAL CODE (IMC) & WASHINGTON STATE AMENDMENTS
–2015 UNIFORM PLUMBING CODE (UPC) & WASHINGTON STATE AMENDMENTS
–2018 WASHINGTON STATE ENERGY CONSERVATION CODE (WSEC)
–2015 INTERNATIONAL FUEL GAS CODE (IFGC) & WASHINGTON STATE AMENDMENTS

CONTRACTOR SUBSTITUTIONS & REVISIONS

PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE SUBSTITUTION PROPOSAL. CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL
CONTACT: XXX

REED JACKSON, STATE OF WASHINGTON, 57105, REGISTERED PROFESSIONAL ENGINEER, 01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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PERMIT PLANS
01/22/2024

SHEET TITLE: PLUMBING NOTES, TABLES AND CODES

SHEET NO. P0.01

PLUMBING FIXTURE UNIT COUNTS AND FIXTURE / DRAIN SCHEDULES

FIXTURE SCHEDULE

PLAN MARK	FIXTURE TYPE	SERVICE SIZE - INCHES				LOCATION	FINISH	MANUFACTURER	BASIS OF DESIGN MODEL	FLOW RATE, GPM	NOTES
		CW	HW	W	V						
BT-1	BATH-TUB	1/2	1/2	2	1-1/2	TYPICAL APARTMENT	WHITE	AQUATIC	6030SM	1.75 GPM	1-5,7
	IN-WALL VALVE						N/A	CFG	45312		
	TRIM KIT						CHROME	CFG	40311CGR		
LV-1	LAVATORY	1/2	1/2	1-1/2	1-1/2	TYPICAL APARTMENT	WHITE	CASCADIAN	L1560	1.2 GPM	1-5
	FAUCET						CHROME	PFISTER	LG1420600C		
KS-1	KITCHEN SINK	1/2	1/2	2	1-1/2	TYPICAL APARTMENT	STAINLESS	MOEN	G20193	1.8 GPM	1-5
	FAUCET						CHROME	PEERLESS	P188152LF		
WC-1	WATER CLOSET	1/2	---	3	2	TYPICAL APARTMENT	WHITE	WESTERN POTTERY	B832 ,-T8ULF -HP	1.28 GPF	1-6
	SEAT						WHITE	COMFORT SEATS	C014WD		
WB-1	WASHER BOX	3/4	3/4	2	1-1/2	TYPICAL APARTMENT	WHITE	SIOUX CHIEF	696-2313	N/A	1-5
HB-1	WALL HYDRANT	3/4	---	---	---	PER DWGS.	N/A	WOODFORD	B65	N/A	1-3,5,8

NOTES:

1. REFER TO ARCH PLANS FOR MOUNTING HEIGHT.
2. CONTRACTOR SHALL CONFIRM MAKE, MODEL, AND FINISH OF ALL FIXTURES WITH OWNER, ARCHITECT, AND INTERIOR DESIGNER PRIOR TO ORDERING.
3. PROVIDE RED/HOT AND BLUE/COLD WATER INDICATORS TO ALL FIXTURES.
4. ALL FIXTURE P-TRAPS SHALL BE CHROME-PLATED BRASS.
5. PROVIDE DAHL 1/4-TURN BALL VALVE ANGLE STOPS WITH BRAIDED STAINLESS STEEL FLEX CONNECTORS AT HOT AND COLD WATER SUPPLY TO EACH FIXTURE EXCEPT SHOWERS AND BATHS. PROVIDE SCREWDRIVER STOPS AT SHOWERS AND BATHS.
6. FLUSH TRIGGER SHALL BE ON WIDE SIDE OF ROOM.
7. SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER UPC SECTION 408.3.
8. PROVIDE LOCKABLE BOX.

DRAINS & CLEANOUTS SCHEDULE

PLAN MARK	FIXTURE TYPE	SERVICE SIZE - INCHES		LOCATION	FINISH	MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
		W	V					
FD-1	FLOOR DRAIN	4	2	PER DWGS.	CAST IRON	JR SMITH	2010	1
FS-1	FLOOR SINK	4	2	PER DWGS.	N/A	JR SMITH	3140	1
HD-1	HUB DRAIN	2	1-1/2	PER DWGS.	STAINLESS	JR SMITH	9654	1
FCO	FLOOR CLEANOUT	PER PLANS	N/A	PER DWGS.	CAST IRON	WADE	6000	1
WCO	WALL CLEANOUT	PER PLANS	N/A	PER DWGS.	CAST IRON	WADE	8560	1

NOTES:

1. CONTRACTOR SHALL CONFIRM MAKE, MODEL, AND FINISH OF ALL FIXTURES WITH OWNER, ARCHITECT, AND INTERIOR DESIGNER PRIOR TO ORDERING.

FIXTURE UNIT CALCULATIONS - BUILDING B,C,D

CALCULATIONS BASED ON 2015 UPC TABLES A103.1 AND 702.1.

APARTMENTS

FIXTURE	FIXTURE UNITS				FLOOR				TOTAL QTY OF FIXTURES	TOTAL FIXTURE UNITS			
	TOTAL	CW	HW	W/V	1	2	3	R		SERVICE	CW ONLY	HW ONLY	W/V ONLY
LAVATORY (PRIVATE)	1	0.75	0.75	1	16	16	16		48	48	36	36	48
WATER CLOSET (PRIVATE, TANK)	2.5	2.5	0	3	16	16	16		48	120	120	0	144
BATH-TUB (PRIVATE)	4	3	3	2	16	16	16		48	192	144	144	96
KITCHEN SINK (PRIVATE)	1.5	1.125	1.125	2	8	8	8		24	36	27	27	48
DISHWASHER	1.5	0	1.5	0	8	8	8		24	36	0	36	0
CLOTHES WASHER	4	3	3	3	8	8	8		24	96	72	72	72
										528	399	315	408

PUBLIC SPACES / MISC.

FIXTURE	FIXTURE UNITS				FLOOR				TOTAL QTY OF FIXTURES	TOTAL FIXTURE UNITS			
	TOTAL	CW	HW	W/V	1	2	3	R		SERVICE	CW ONLY	HW ONLY	W/V ONLY
FLOOR DRAIN (2")	0	0	0	2	2				2	0	0	0	4
HOSE BIB	2.5/1	2.5/1	0	0	2				2	3.5	3.5	0	0
										3.5	3.5	0	4

	TOTAL	CW	HW	W/V
TOTAL FIXTURE UNITS:	531.5	402.5	315	412
DOEMSTIC WATER PEAK FLOW:	103 GPM			

REQUIRED SERVICE SIZES IN BUILDING:

DOMESTIC WATER		**SEWER SIZE**
SERVICE SIZE:	3"	6"
		1/4" PER FT

PLUMBING FIXTURE FLOW RATES PER 2015 UPC CH. 4

FIXTURE TYPE	FLOW RATE	NOTES
SHOWERHEADS	2.5 GPM @ 80 PSI	
LAVATORY FAUCETS, RESIDENTIAL	2.2 GPM @ 60 PSI	1
LAVATORY FAUCETS, NON-RESIDENTIAL	0.5 GPM @ 60 PSI	2
KITCHEN FAUCETS	2.2 GPM @ 60 PSI	3
GRAVITY TANK-TYPE WATER CLOSETS	1.6 GALLONS/FLUSH	4
FLUSHOMETER TANK WATER CLOSETS	1.6 GALLONS/FLUSH	4
FLUSHOMETER VALVE WATER CLOSETS	1.6 GALLONS/FLUSH	4
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.6 GALLONS/FLUSH	4
URINALS	1.0 GALLONS/FLUSH	

NOTES:

1. LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.
2. WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS RATED AT 0.35 GPM OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.
3. KITCHEN FAUCETS MAY TEMPORARILY INCREASE FLOW ABOVE THE MAXIMUM RATE, BUT NOT ABOVE 2.2 GPM @ 60 PSI AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM @ 60 PSI.
4. INCLUDES SINGLE AND DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.6 GALLONS OR LESS. SINGLE FLUSH TOILETS – THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.6 GALLONS. THE EFFECTIVE FLUSH VOLUME IS THE AVERAGE FLUSH VOLUME WHEN TESTED IN ACCORDANCE WITH ASME A112.19.2 DUAL FLUSH TOILETS – THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.6 GALLONS. THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A112.19.2 AND ASME A112.19.14.

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01/22/2024

SHEET TITLE:
PLUMBING FIXTURE UNIT COUNTS AND FIXTURE/DRAIN SCHEDULE

SHEET NO.
P0.02

WATER SUPPLY PIPE SIZING CALCULATIONS

TYPE L COPPER SERVICE PIPING

Robison Engineering, Inc.
19401 40th AVE W. Suite 302
Lynnwood, WA 98087

Project Name: EAST TOWN CROSSING
Project Number: 810-010
Edited By: JD
Edit Date: 1/22/2024

SIZING IS PER 2015 UPC APPENDIX A

WATER SUPPLY PIPE SIZING CALCULATION FORM

UTILITY SUPPLY WATER PRESSURE: 55 PSI STATIC PRESSURE
ASSUMING BUILDING PRESSURE

BOOSTER PUMP: 70 PSI
OUTLET PRESSURE

WATER SOFTENER LOSS: 0 PSI
TYPICALLY 5-20 PSI, IF NO SOFTENER ENTER "0".

STATIC LIFT: 30 FEET = 13.0 PSI

THERMOSTATIC MIXING VALVE LOSS: 0 PSI

REQUIRED MINIMUM PRESSURE AT FURTHEST PLUMBING FIXTURE: 25 PSI

PRESSURE AVAILABLE TO OFFSET FRICTION LOSSES: 32.0 PSI

PIPING SYSTEM LENGTH FROM SERVICE TO FURTHEST FIXTURE: 200 FEET
FITTING ALLOWANCE: 66.6667 FEET

MAXIMUM FRICTION LOSS FACTOR: 12.0 PSI/100 FT

SELECTED FRICTION LOSS FACTOR: 12.0 PSI/100 FT
MAX CW VELOCITY 8 FPS. MAX HW VELOCITY 5 FPS.

SUPPLY PIPE SIZING SCHEDULE							Copper Type:		Type L
	FLUSH TANK CW			HOT WATER			FLUSH VALVE CW		
PIPE SIZE	FLOW, GPM	VEL. FPS	FIXTURE UNITS	FLOW, GPM	VEL. FPS	FIXTURE UNITS	FLOW, GPM	VEL. FPS	FIXTURE UNITS
2-1/2"	116.0	8.0	440.0	72.0	5.0	215.0	116.0	8.0	340.0
3"	160.0	8.0	750.0	100.0	5.0	350.0	160.0	8.0	680.0
4"	280.0	8.0	1600.0	175.0	5.0	800.0	280.0	8.0	1600.0
6"	650.0	8.0	5250.0	400.0	5.0	2750.0	650.0	8.0	5250.0

PEX PIPING

Robison Engineering, Inc.
19401 40th Ave. W, Suite 302
Lynnwood, WA 98036

Project Name: East Town Crossing
Project Number: 810-010
Edited By: JD
Edit Date: 1/22/24

SIZING IS PER 2015 UPC APPENDIX A

WATER SUPPLY PIPE SIZING CALCULATION FORM

AVAILABLE PRESSURE BEFORE BOOSTER PUMP: 55 PSI

AVAILABLE PRESSURE AFTER BOOSTER PUMP: 70 PSI

STATIC LIFT TO HIGHEST FIXTURE: 30 FEET = 13.0 PSI

REQUIRED MINIMUM PRESSURE AT FURTHEST PLUMBING FIXTURE: 25 PSI

PRESSURE AVAILABLE TO OFFSET FRICTION LOSSES: 32.0 PSI

PIPING SYSTEM LENGTH FROM SERVICE TO FURTHEST FIXTURE: 200 FEET
FITTING ALLOWANCE: 66 FEET

MAXIMUM FRICTION LOSS FACTOR: 12.0 PSI/100 FT

SELECTED FRICTION LOSS FACTOR: 12.0 PSI/100 FT
MAX HW & CW VELOCITY 8 FPS

SUPPLY PIPE SIZING SCHEDULE				
PIPE SIZE	FLOW, GPM	VELOCITY FPS	FIXTURE UNITS	PIPE MATERIAL
1/2"	3.5	8.00	3.0	PEX
3/4"	7.9	8.00	9.0	PEX
1"	14.6	8.00	20.0	PEX
1-1/4"	27.8	8.00	33.0	PEX
1-1/2"	30.3	8.00	54.0	PEX
2"	52.0	8.00	134.0	PEX
2-1/2"	79.2	8.00	270.0	PEX
3"	112.6	8.00	440.0	PEX

Please revise this sheet and associates notes and sheets to conform to the 2018 Washington State Codes. [CONSTRUCTION PLAN SET - Bldg B, sheet P0.03]

PLUMBING EQUIPMENT SCHEDULES

PIPE MATERIALS

PIPE TYPE	MATERIAL	JOINT	NOTES
UNDERGROUND WATER SERVICE ENTRANCE PIPING	PVC	SOLVENT CEMENT	
WATER DISTRIBUTION PIPING – MAINS ADN RISERS	SCHEDULE 80 CPVC	SOLVENT CEMENT	
WATER DISTRIBUTION PIPING – UNIT FIXTURE RUN–OUTS	PEX	EXPANSION FITTINGS	3
WASTE & VENT PIPING	SCHEDULE 40 SOLID CORE PVC OR ABS	SOLVENT CEMENT	4
STORM PIPING	SCHEDULE 40 SOLID CORE PVC OR ABS	SOLVENT CEMENT	
CONDENSATE DRAIN PIPING	CPVC OR PEX	SOLVENT CEMENT OR EXPANSION FITTINGS	

NOTES:
1. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
2. NOT USED
3. PROVIDE THERMAL EXPANSION LOOPS FOR ALL CPVC PIPING PER MANUFACTURER REQUIREMENTS.
4. NOT TO BE USED WHERE EXPOSED IN RETURN AIR PLENUM (METAL PIPING REQUIRED IN RETURN AIR PLENUMS.) USE CAST IRON FOR PIPING IN PLENUM.

WATER HEATER SCHEDULE - ELECTRIC

EQUIP. TAG	LOCATION	SERVICE	HEAT RECOVERY	STORAGE CAPACITY, GAL	INLET/OUTLET CONNECTION	HEATER, KW	OPERATING WEIGHT (LBS)	ELECTRICAL	BOD ENERGY FACTOR	BASIS OF DESIGN	NOTES
WH–1	APARTMENT	DOMESTIC HOT WATER (EA. UNIT)	21 GPH @ 90°F TR	30	¾"	4.5	360	240V/1P	0.94	AMERICAN STANDARD EN30T–6	1,2,3,4

NOTES:
1. WATER HEATER RECOVERY AND POWER REQUIREMENT ARE BASED ON NON–SIMULTANEOUS OPERATION.
2. FOR WATER HEATER PIPING, SEE PIPING DIAGRAM DETAIL 1 ON P7.00.
3. PROVIDE DRAIN PAN FOR WATER HEATER.

Sheet P7.00 was not included in the plan set. [CONSTRUCTION PLAN SET - Bldg B, sheet P0.03]

EXPANSION TANK

EQUIP. TAG	LOCATION	SERVICE	CAPACITY GAL.	TANK SIZE, IN		OPERATING WEIGHT, LBS	BASIS OF DESIGN	NOTES
				DIAMETER	HEIGHT			
ET–1	APARTMENT	DOMESTIC HOT WATER (EA. UNIT)	2	8	13	25	AMTROL ST–5	1,2

NOTES:
1. INSTALL ACCORDING TO MANUFACTURER'S REQUIREMENTS
2. EXPANSION TANK PRE–CHARGE PRESSURE SHALL BE SET TO INLET WATER STATIC PRESSURE AT INSTALLATION.

REDUCED PRESSURE BACKFLOW ASSEMBLY

EQUIP. TAG	SERVICE	INLET/OUTLET SIZE	DESIGN FLOW, GPM	PRESSURE DROP, PSI	MAX WATER PRESSURE, PSI	BASIS OF DESIGN	NOTES
RPBA–1	DOMESTIC WATER	3"	105	15	175	ZURN 375OSY	1,2

NOTES:
1. COMPLIES WITH AWWA C551–92 STANDARDS.
2. PROVIDE DRAIN TO NEAREST INDIRECT WASTE RECEPTOR.

PACKAGED BOOSTER PUMP SCHEDULE

EQUIP NO.	SERVICE	TYPE	TOTAL FLOW, GPM	PRESSURE RISE (INLET/OUTLET) PSIG	MOTOR HP (EACH)	ELECTRICAL	FLA (AMPS)	WEIGHT, LBS	BASIS OF DESIGN
BP–1	DOMESTIC WATER	DUPLEX	103	30 (40/70)	2	208V/3P	13.3	730	FLOWTHERM FMV2–3LH (1)(2)(3)

NOTES: (1) SINGLE POINT POWER CONNECTION.
(2) PROVIDE ALL REQUIRED VALVES, PIPING, CONTROLS, ETC. FOR A COMPLETE SYSTEM.
(3) PROVIDE VFD'S FOR EACH PUMP.

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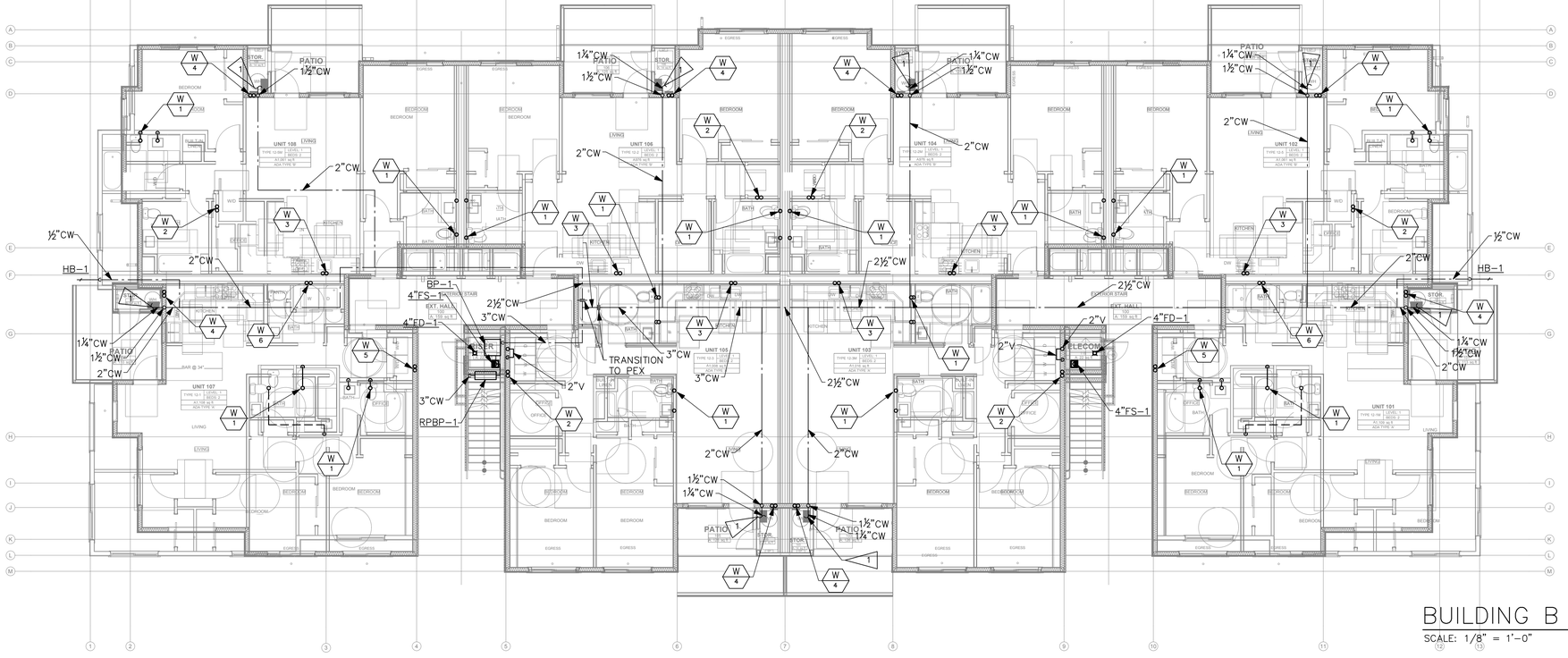
PERMIT PLANS
01/22/2024

SHEET TITLE: PLUMBING EQUIPMENT SCHEDULES, PIPE SIZING TABLES AND PRESSURE CALCULATIONS

SHEET NO. P0.03



BUILDING B LEVEL 1 – PLUMBING PLAN

SCALE: 1/8" = 1'–0"

0' 4' 8' 16'

NOTES:

1. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2018 UPC CHAPTER 7. WASTE PIPING SHALL BE SLOPED AT ¼" PER FOOT:

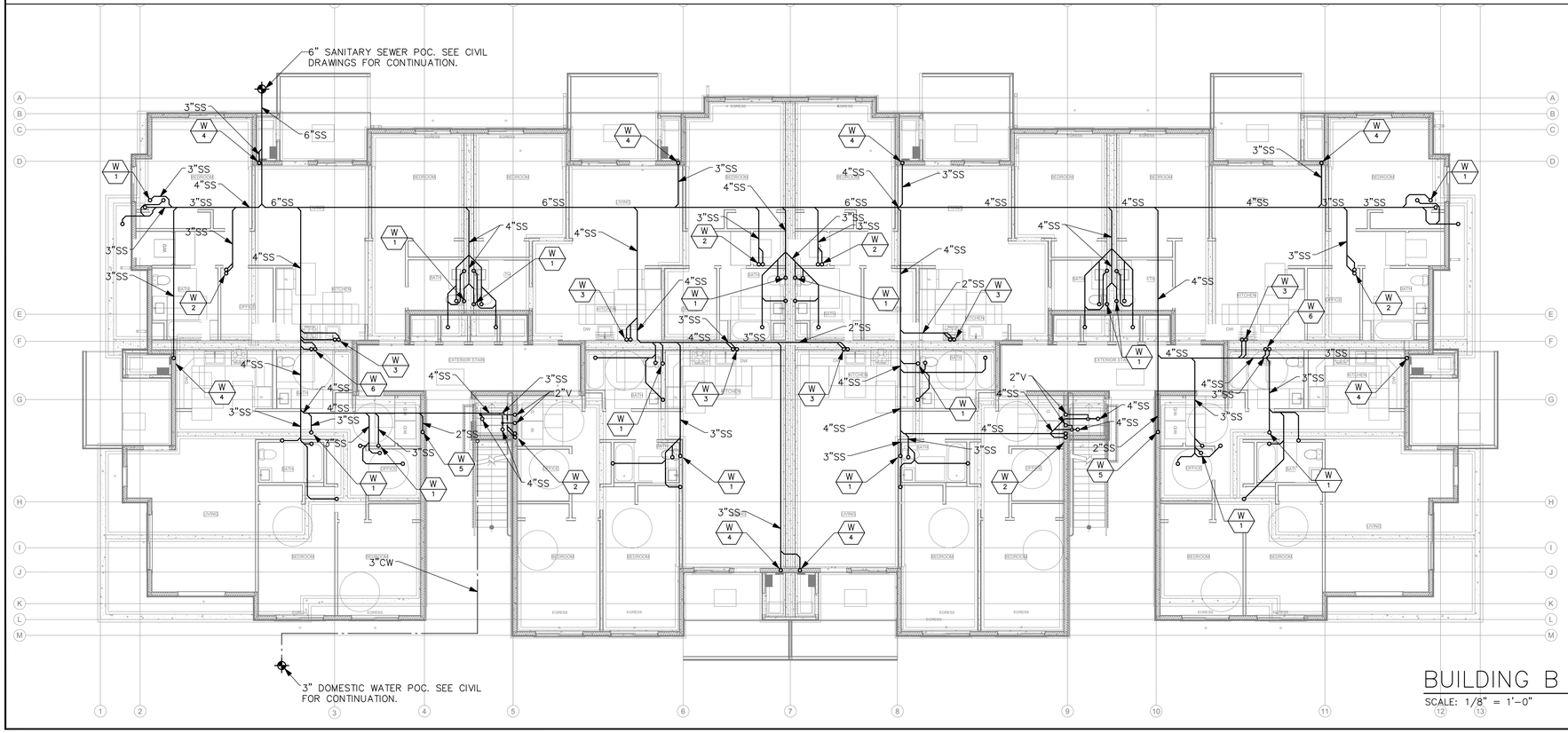
PIPE SIZE	VERT.	HORIZ.	VENT
1½"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

2. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. SEE DETAIL 2, P9.00.
3. NOT ALL FIXTURE PIPING SHOWN HERE. SEE RISER DIAGRAMS AND ENLARGED PLANS FOR ADDITIONAL FIXTURE PIPING AND SUDS RELIEF REQUIREMENTS.

(W/#) = WASTE/VENT RISER IDENTIFICATION ON SHEETS P6.B0 & P6.B1 (I.E RISER "#")

FLAG NOTES: (#)

1. REFER TO TYPICAL ENLARGED PLAN S2 ON SHEET P3.00 FOR SUPPLY PIPING ROUTING WITHIN UNIT.



BUILDING B UNDERSLAB – PLUMBING PLAN

SCALE: 1/8" = 1'–0"

0' 4' 8' 16'

NOTES:

1. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2018 UPC CHAPTER 7. WASTE PIPING SHALL BE SLOPED AT ¼" PER FOOT:

PIPE SIZE	VERT.	HORIZ.	VENT
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8"	3,600 DFU	2,640 DFU	3,600 DFU

2. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. SEE DETAIL 2, P9.00.
3. NOT ALL FIXTURE PIPING SHOWN HERE. SEE RISER DIAGRAMS AND ENLARGED PLANS FOR ADDITIONAL FIXTURE PIPING AND SUDS RELIEF REQUIREMENTS.

(W/#) = WASTE/VENT RISER IDENTIFICATION ON SHEETS P6.B0 & P6.B1 (I.E RISER "#")

NO.	DESCRIPTION	DATE
	REVISIONS	

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL
CONTACT: XXX

REED JACKSON
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
JD	JD	RJ	RJ

PROJECT:
EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364.3343

PERMIT PLANS

01/22/2024

SHEET TITLE:
BUILDING B – UNDERSLAB AND LEVEL 1 PLUMBING PLANS

SHEET NO.
P2.B0

NOTES:

1. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2018 UPC CHAPTER 7. WASTE PIPING SHALL BE SLOPED AT ¼" PER FOOT:

PIPE SIZE	VERT.	HORIZ.	VENT
1½"	2 DFU	1 DFU	8 DFU
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4"	256 DFU	216 DFU	256 DFU
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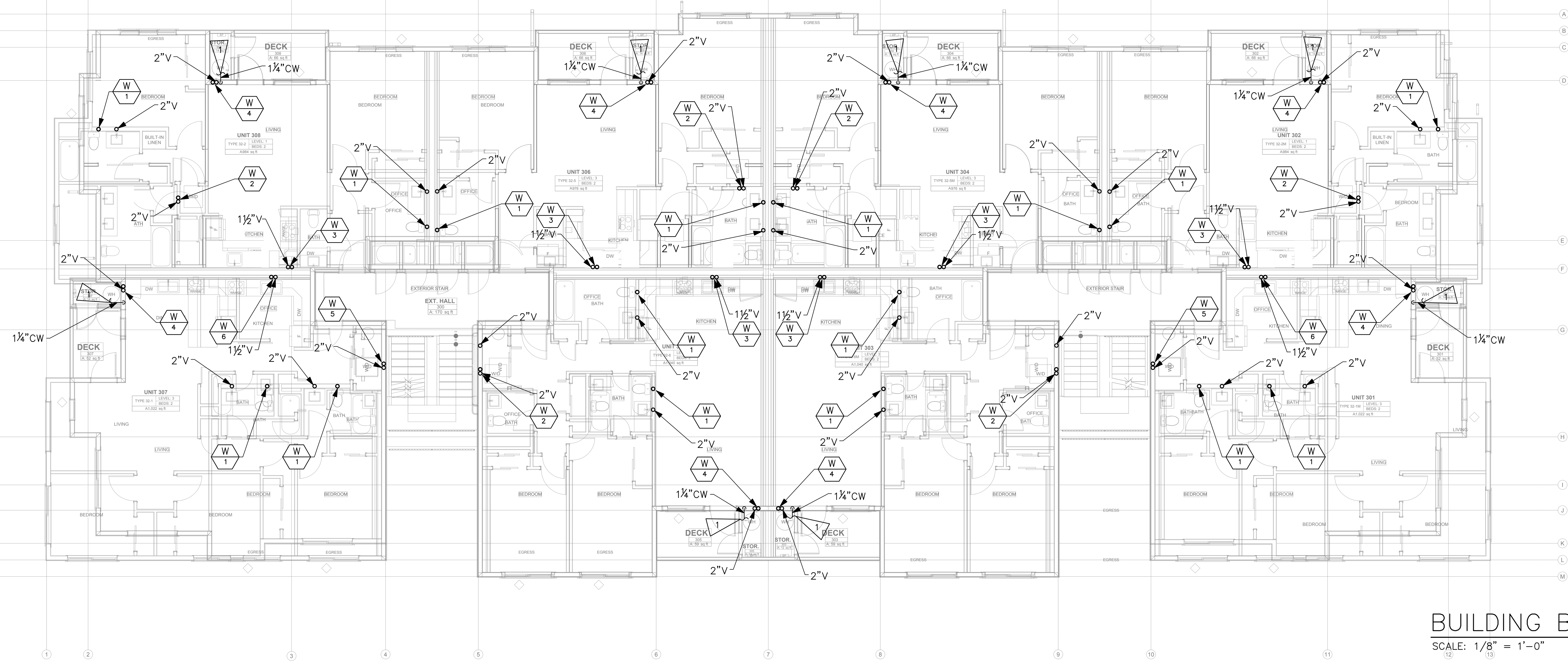
8"	3,600 DFU	2,640 DFU	3,600 DFU

2. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. SEE DETAIL 2, P9.00.
3. NOT ALL FIXTURE PIPING SHOWN HERE. SEE RISER DIAGRAMS AND ENLARGED PLANS FOR ADDITIONAL FIXTURE PIPING AND SUDS RELIEF REQUIREMENTS.

W # = WASTE/VENT RISER IDENTIFICATION ON SHEETS P6.B0 & P6.B1 (I.E RISER "#")

FLAG NOTES: #

1. REFER TO TYPICAL ENLARGED PLAN S1 ON SHEET P3.00 FOR SUPPLY PIPING ROUTING WITHIN UNIT.



BUILDING B LEVEL 3 – PLUMBING PLAN

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

0' 4' 8' 16'

NOTES:

1. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2018 UPC CHAPTER 7. WASTE PIPING SHALL BE SLOPED AT ¼" PER FOOT:

PIPE SIZE	VERT.	HORIZ.	VENT
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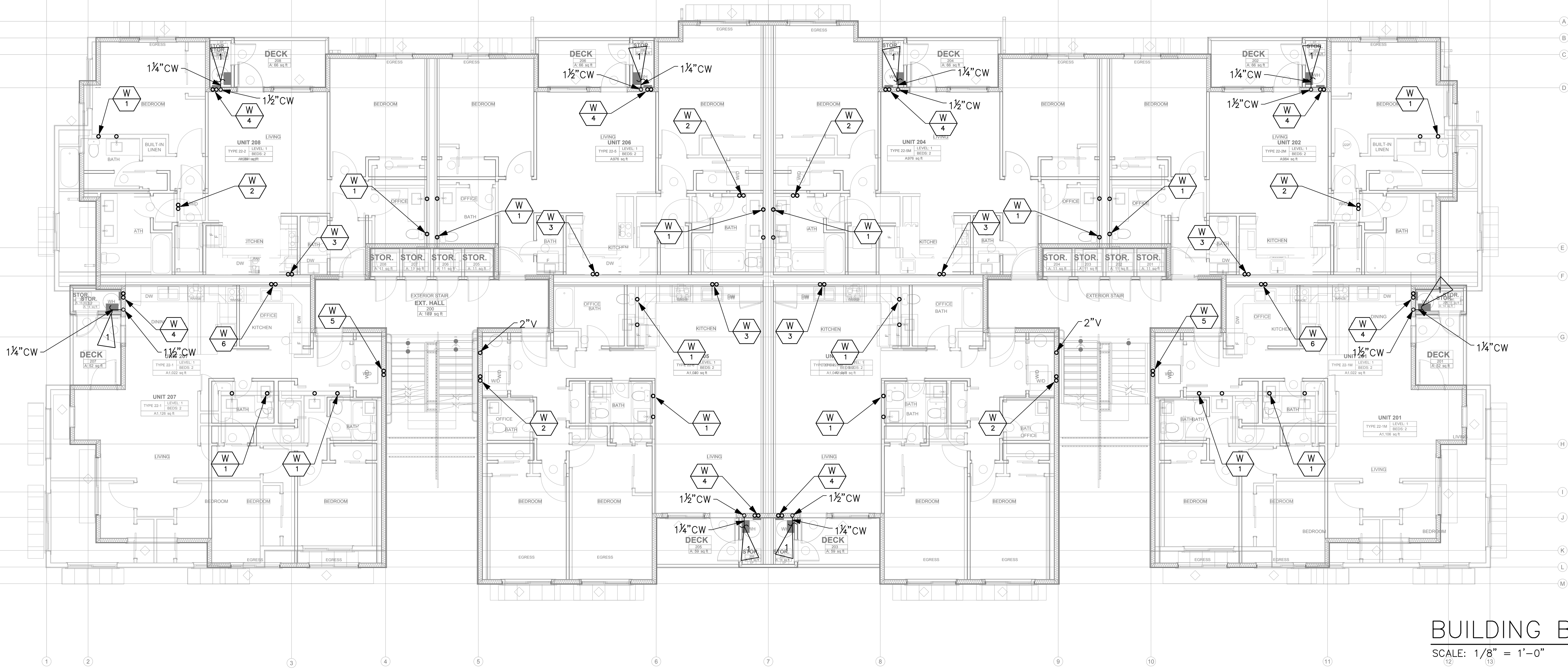
8"	3,600 DFU	2,640 DFU	3,600 DFU

2. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. SEE DETAIL 2, P9.00.
3. NOT ALL FIXTURE PIPING SHOWN HERE. SEE RISER DIAGRAMS AND ENLARGED PLANS FOR ADDITIONAL FIXTURE PIPING AND SUDS RELIEF REQUIREMENTS.

W # = WASTE/VENT RISER IDENTIFICATION ON SHEETS P6.B0 & P6.B1 (I.E RISER "#")

FLAG NOTES: #

1. REFER TO TYPICAL ENLARGED PLAN S1 ON SHEET P3.00 FOR SUPPLY PIPING ROUTING WITHIN UNIT.



BUILDING B LEVEL 2 – PLUMBING PLAN

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

0' 4' 8' 16'

NO.	DATE	DESCRIPTION

REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL
CONTACT: XXX

REED JACKSON – STATE OF WASHINGTON – REGISTERED PROFESSIONAL ENGINEER – 01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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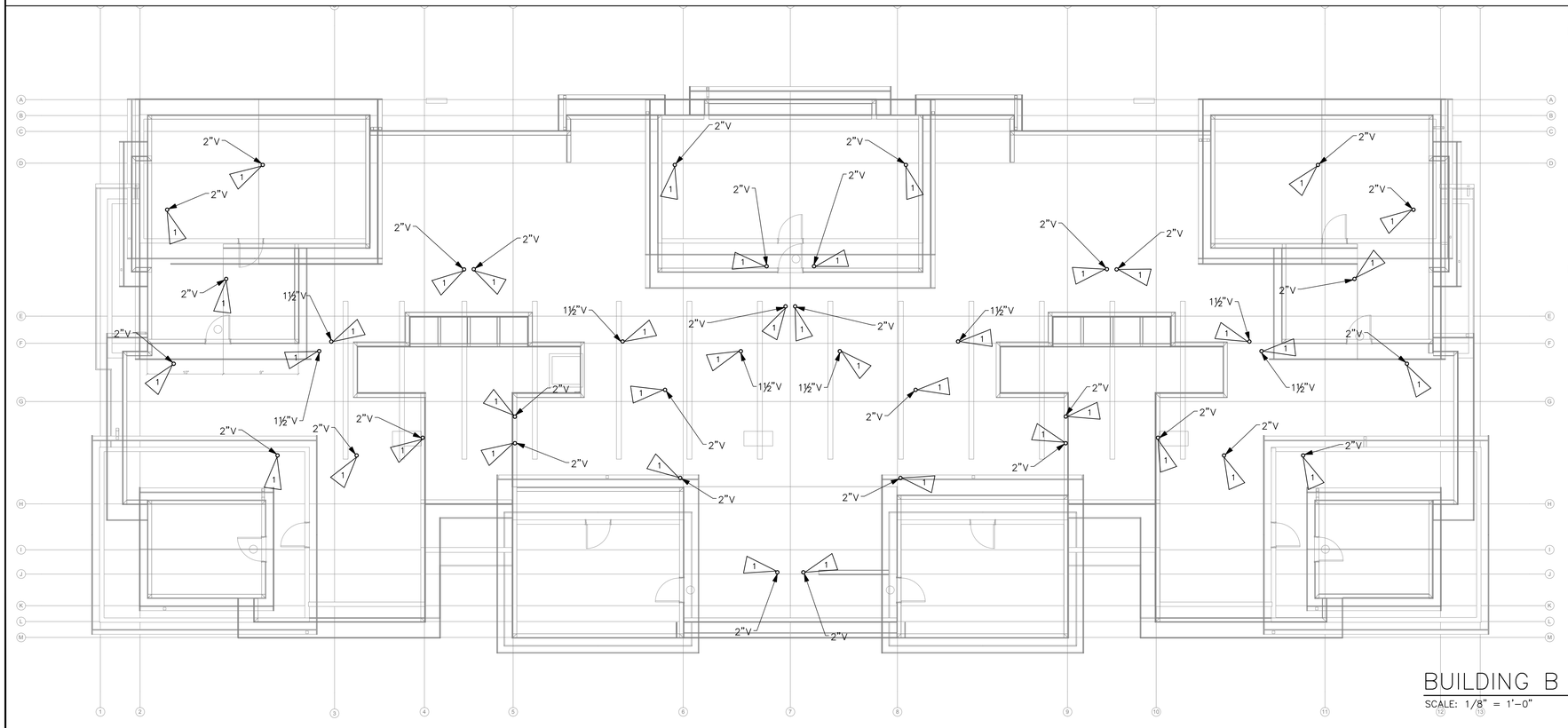
PERMIT PLANS

01/22/2024

SHEET TITLE:
BUILDING B – LEVEL 1 AND LEVEL 2 PLUMBING PLANS

SHEET NO.
P2.B1



NOTES:

1. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2018 UPC CHAPTER 7. WASTE PIPING SHALL BE SLOPED AT ¼" PER FOOT:

PIPE SIZE	VERT.	HORIZ.	VENT
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3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

2. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS. SEE DETAIL 2, P9.00.
3. STORM DRAINAGE: ROOF IS SLOPED AND DRAINAGE IS VIA GUTTERS AND DOWNSPOUTS. REFER TO ARCHITECTURAL PLANS FOR DOWNSPOUTS LOCATIONS.

FLAG NOTES:

1. VENT TO ROOF. VENT TO BE 10' MINIMUM FROM ANY FRESH AIR INTAKE.

BUILDING B ROOF – PLUMBING PLAN

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

0' 4' 8' 16'

N

REVISIONS			
NO.	DATE	DESCRIPTION	

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
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REED JACKSON
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
JD	JD	RJ	RJ

PROJECT:
EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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PHONE:(206)364.3343

PERMIT PLANS

01/22/2024

SHEET TITLE:
BUILDING B – ROOF PLUMBING PLAN

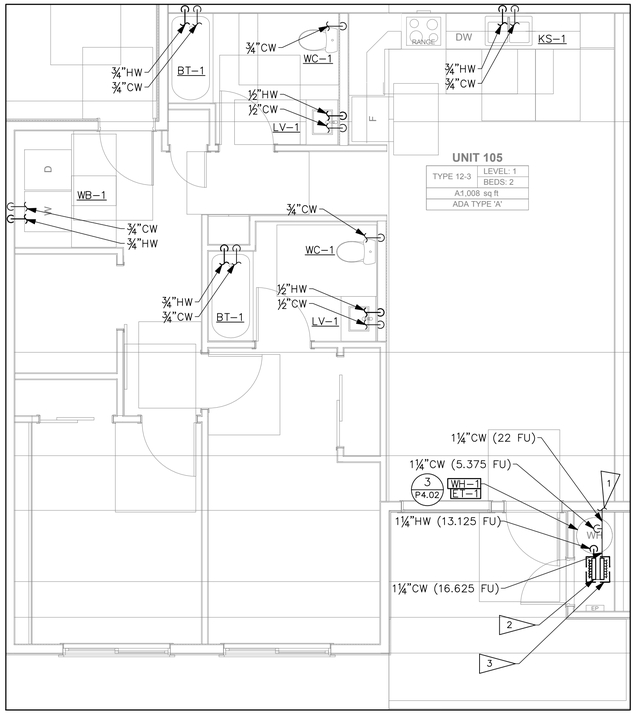
SHEET NO.
P2.B2

FLAG NOTES:

1. COLD WATER PIPE. REFER TO FLOOR PLANS FOR CONTINUATION.
2. HOT & COLD WATER PIPING MANIFOLD. VIEGA MANABLOC MODEL V5030.5 OR EQUAL. MANIFOLD SHALL BE NSF/ANSI 61 @ 372 CERTIFIED.
3. ACCESS PANEL.

ABBREVIATION LEGEND / FIXTURE UNIT VALUES:

LV = LAVATORY	(1 WSFU)
BT = BATHTUB/SHOWER COMBO	(4 WSFU)
KS = KITCHEN SINK WITH DISHWASHER	(1.5 WSFU)
WB = WASHER BOX	(4 WSFU)
WC = WATER CLOSET	(2.5 WSFU)

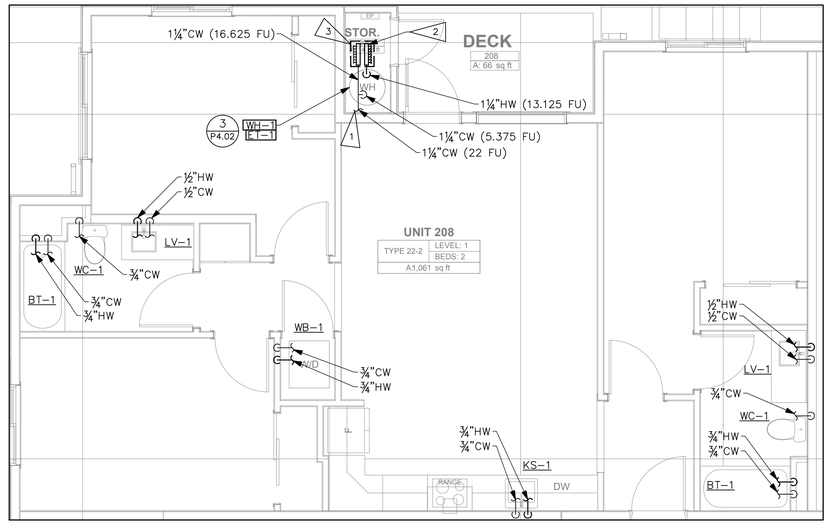


TYPICAL ENLARGED

ADA 2 BATHROOM UNIT

SCALE: 1/4" = 1'–0"

S2
P5.B0



TYPICAL ENLARGED

2 BATHROOM UNIT

SCALE: 1/4" = 1'–0"

S1
P5.B0

NO.	DATE	REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
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REED JACKSON
STATE OF WASHINGTON
21627
REGISTERED
PROFESSIONAL ENGINEER
01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT:
EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

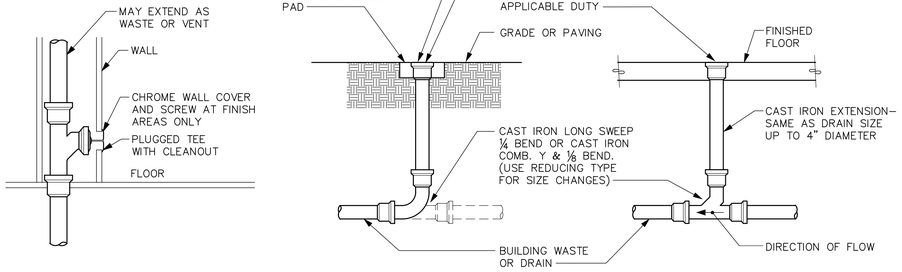
ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT PLANS

01/22/2024

SHEET TITLE:
ENLARGED UNIT PLANS

SHEET NO.
P3.00



INTERIOR WALL CLEANOUT (WCO)

EXTERIOR CLEANOUT TO GRADE (COTG)
(LIGHT TRAFFIC AREA)

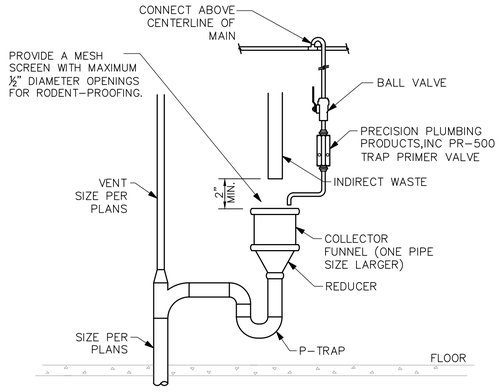
INTERIOR FLOOR CLEANOUT (FCO)

CLEANOUTS

DETAIL

SCALE: NONE

6
P4.00

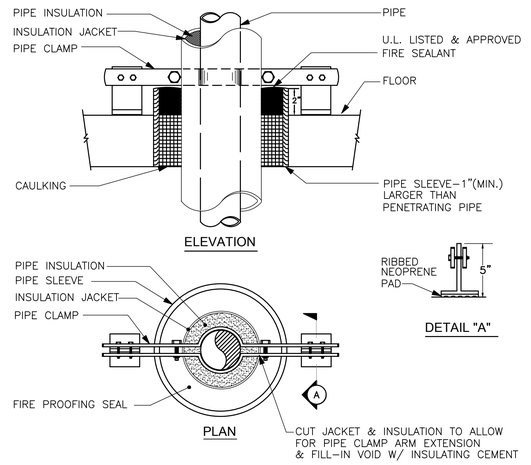


HUB DRAIN

DETAIL

SCALE: NONE

5
P4.00

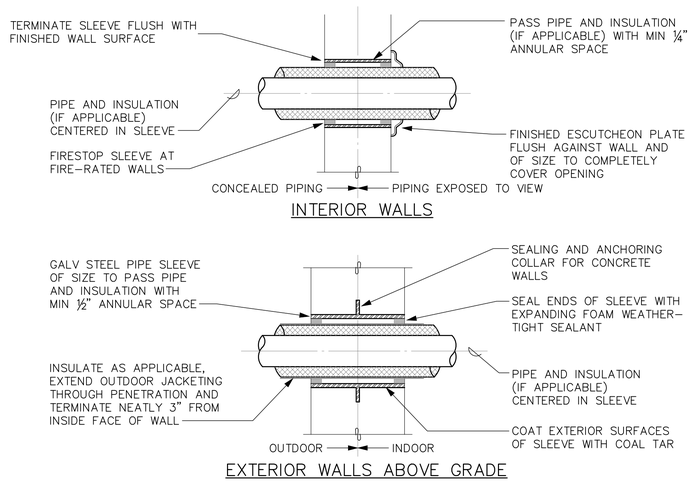


RISER PIPE SUPPORT

DETAIL

SCALE: NONE

4
P4.00

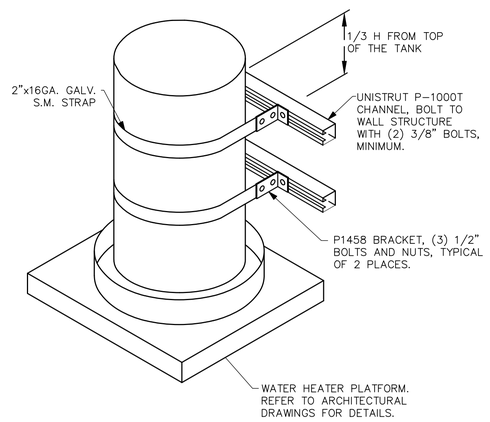


PIPE SLEEVES THROUGH WALLS

DETAIL

SCALE: NONE

3
P4.00

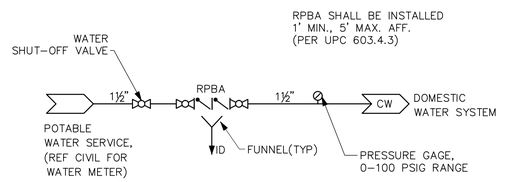


WATER HEATER SEISMIC STRAPPING

DETAIL

SCALE: NONE

2
P4.00



WATER SERVICE

PIPING DIAGRAM

SCALE: NONE

1
P4.00

NO.	DATE	REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

REED JACKSON
STATE OF WASHINGTON
21005
REGISTERED
PROFESSIONAL ENGINEER
01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
JD	JD	RJ	RJ

PROJECT:
EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

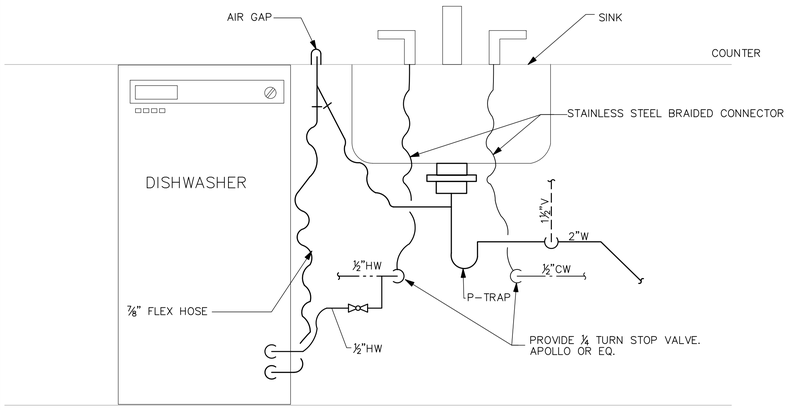
ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364.3343

PERMIT PLANS

01/22/2024

SHEET TITLE:
DETAILS

SHEET NO.
P4.00

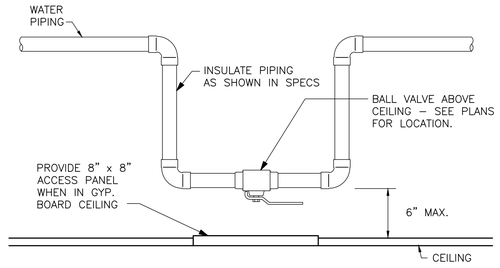


RESIDENTIAL DISHWASHER CONNECTION

DETAIL

SCALE: NONE

6 P4.01



TYPICAL VALVE PLACEMENT

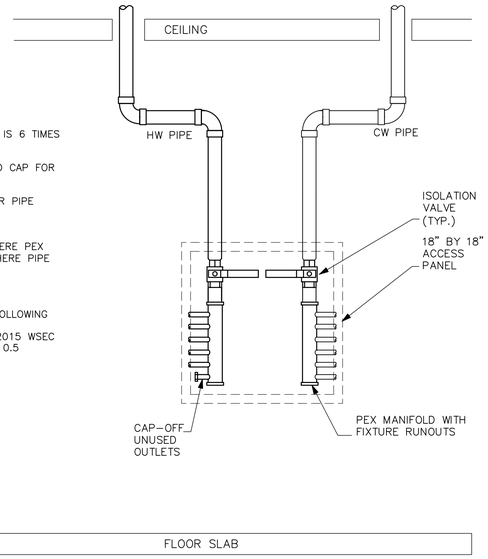
DETAIL

SCALE: NONE

5 P4.01

NOTES:

1. MINIMUM BEND RADIUS FOR PEX PIPING IS 6 TIMES THE TUBING DIAMETER.
2. FOR UNUSED PORTS, INSTALL VALVE AND CAP FOR FUTURE USE.
3. REFER TO PLUMBING RISER DIAGRAM FOR PIPE SIZING FROM RISERS.
4. PROVIDE GROMMETS OR SLEEVES PER MANUFACTURER'S RECOMMENDATIONS WHERE PEX PASSES THROUGH METAL STUDS AND WHERE PIPE ABRASION COULD OCCUR.
5. PROVIDE SHUT OFF VALVE TO MAINS.
6. PEX RUNOUT PIPING SHALL MEET THE FOLLOWING REQUIREMENTS:
   - 6.1. MAX WATER VOLUME ALLOWED PER 2015 WSEC 403.2 FOR HOT WATER RUNOUTS IS 0.5 GALLONS.

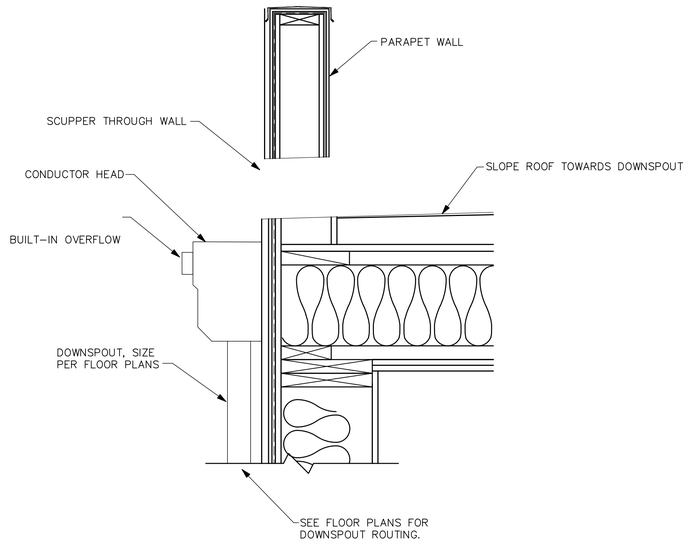


PEX MANIFOLD

DETAIL

SCALE: NONE

4 P4.01

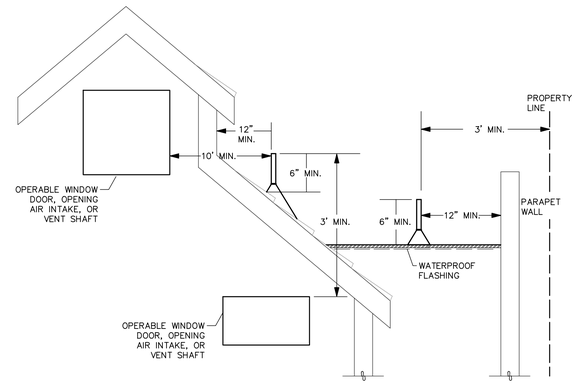


VENT TERMINATION

DETAIL

SCALE: NONE

3 P4.01

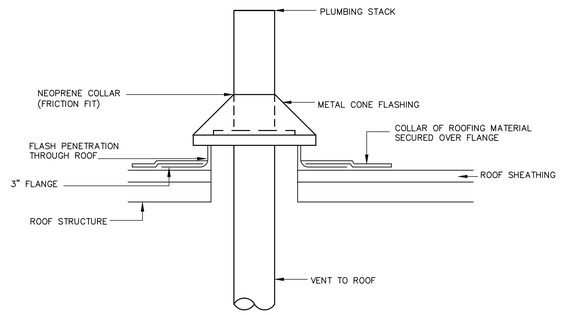


VENT TERMINATION

DETAIL

SCALE: NONE

2 P4.01



VENT THROUGH ROOF

DETAIL

SCALE: NONE

1 P4.01

NO.	DATE	DESCRIPTION
		REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

REED JACKSON
STATE OF WASHINGTON
24005
REGISTERED
PROFESSIONAL ENGINEER
01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT:
EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

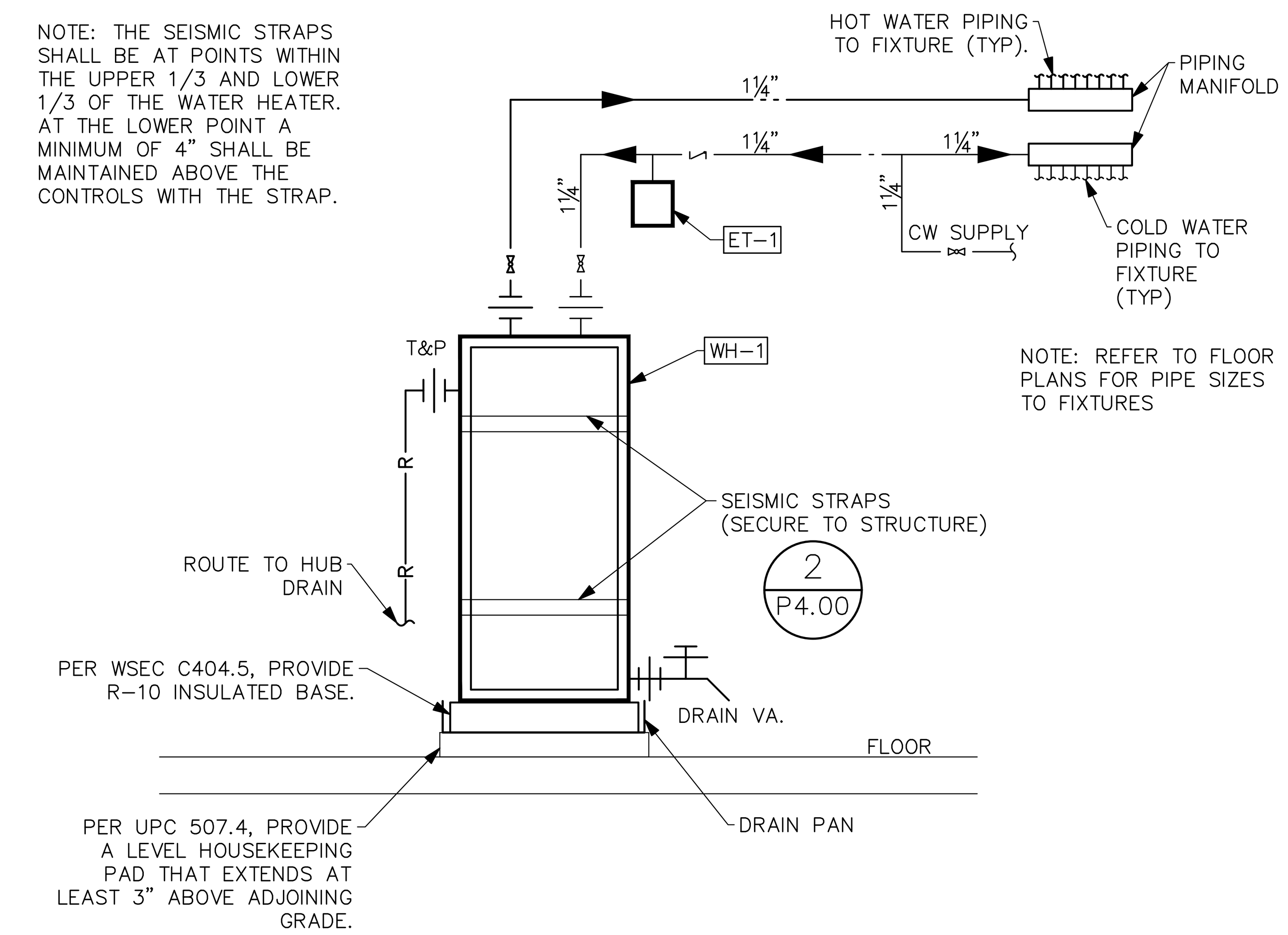
PERMIT PLANS

01/22/2024

SHEET TITLE:
DETAILS

SHEET NO.
P4.01

NOTE: THE SEISMIC STRAPS SHALL BE AT POINTS WITHIN THE UPPER 1/3 AND LOWER 1/3 OF THE WATER HEATER. AT THE LOWER POINT A MINIMUM OF 4" SHALL BE MAINTAINED ABOVE THE CONTROLS WITH THE STRAP.



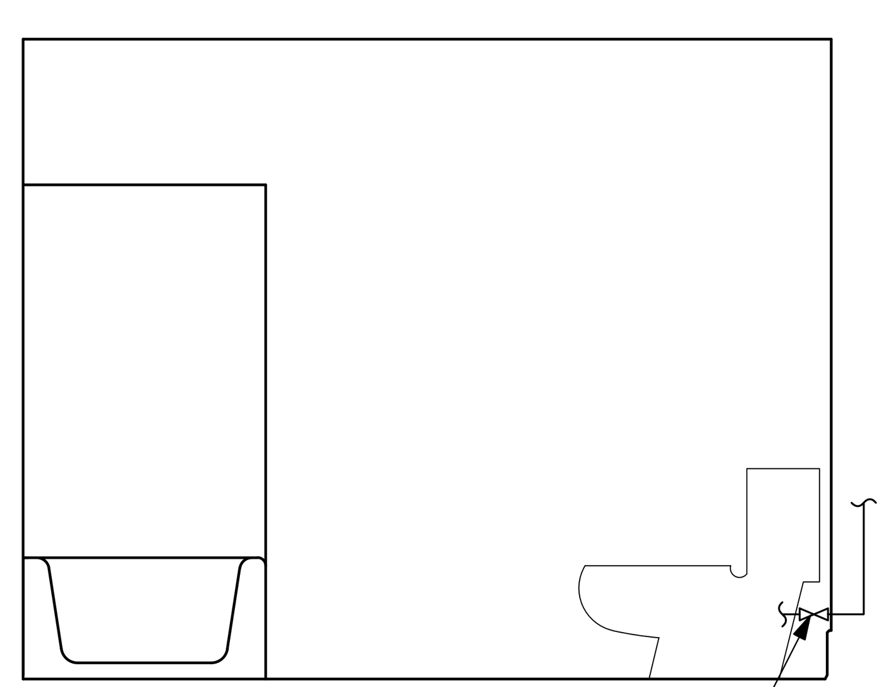
NOTE: REFER TO FLOOR PLANS FOR PIPE SIZES TO FIXTURES

WATER HEATER

DETAIL

SCALE: NONE

4
P4.02



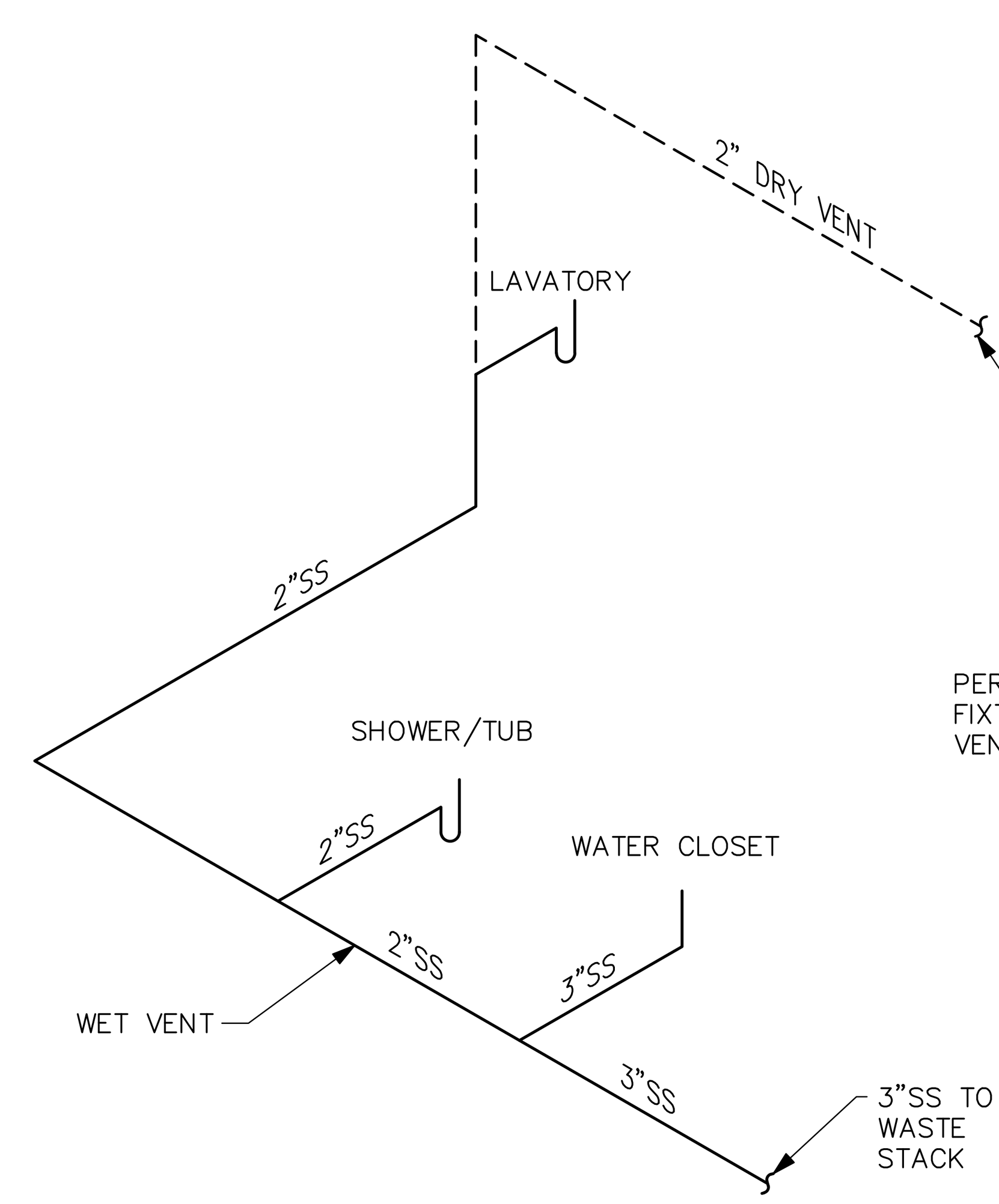
INSTALL CW ROUGH-IN APPROXIMATELY 8" AFF (CONFIRM ELEVATION WITH ARCH PLANS).

WATER CLOSET CW SUPPLY

DETAIL

SCALE: NONE

3
P4.02



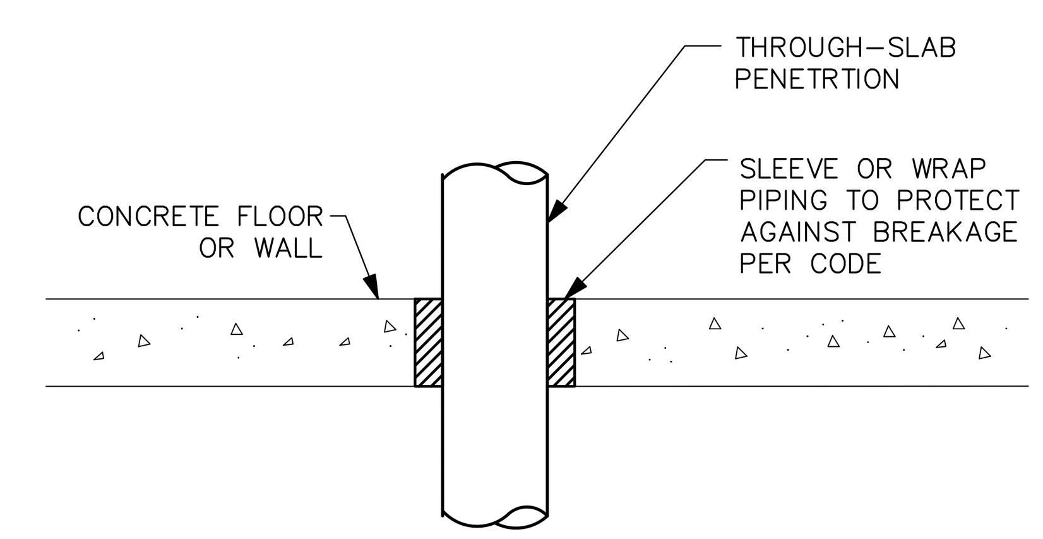
PER UPC SECTION 908, BATHROOM GROUP FIXTURES SHALL BE PERMITTED TO BE VENTED BY A HORIZONTAL WET VENT.

PRIVATE BATHROOM WET VENTING

DETAIL

SCALE: NONE

2
P4.02



PIPE SLAB PENETRATION

DETAIL

SCALE: NONE

1
P4.02

NO.	DATE	DESCRIPTION
		REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL
CONTACT XXX

REED JACKSON
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER
01/22/2024

DRAWN: JD
DESIGNED: JD
CHECKED: RJ
APPROVED: RJ

PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT PLANS

01/22/2024

SHEET TITLE:
DETAILS

SHEET NO.
P4.02

SYMBOLS

GENERAL

LIGHT LINE INDICATES NON–ELECTRICAL OR BACKGROUND (THIS IS NOT CONTRACTUAL DEFINITION OF WORK)

HEAVY LINE INDICATES NEW WORK (THIS IS NOT CONTRACTUAL DEFINITION OF WORK)

DETAIL IDENTIFICATION

SYMBOL	NAME
1	FLAG NOTE
	REVISION NOTE
	REVISION DEFINITION, AREA ENCIRCLED CONTAINS DRAWING CHANGES MADE SUBSEQUENT TO PREVIOUS ISSUE

SWITCHES

S_a	SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT
S_{OS}	OCCUPANCY SENSOR SWITCH
	SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT "D" INDICATES WALLBOX DIMMER
OS	CEILING MOUNTED OCCUPANCY SENSOR
S_T	SWITCH, TIMER.
S_3	SWITCH, THREE WAY.

RECEPTACLES

	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE: WALL MOUNTED, +18" AFF
a	CONTROLLED AND NON CONTROLLED DUPLEX RECEPTACLE (SPLIT WIRED RECEPTACLE)
	DUPLEX RECEPTACLE – ABOVE COUNTER
GFCI	DUPLEX GFCI ABOVE COUNTER
GFCI	DUPLEX GFCI
+42"	DUPLEX RECEPTACLE, WITH HEIGHT ABOVE FINISHED FLOOR INDICATED
	CEILING MOUNTED DUPLEX RECEPTACLE
	DOUBLE DUPLEX RECEPTACLE: WALL MOUNTED, +18" AFF
	FLOOR BOX ONE DUPLEX RECEPTACLE
D	FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA
D V	FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA + ONE VOICE
	SPECIAL PURPOSE RECEPTACLE, AS NOTED

MISCELLANEOUS

J	JUNCTION BOX: 4SQ MOUNTED
J	JUNCTION BOX: 4SQ WALL MOUNTED
J	JUNCTION BOX: 4SQ TRACK
L	CONNECTION FOR LIGHTED MIRROR COORDINATE LOCATION AND ELEVATION WITH ARCHITECT PRIOR TO ROUGH–IN
T	THERMOSTAT

SIGNAL/COMMUNICATION

	DATA OUTLET: WALL MOUNTED @ +18" AFF U.O.N.
	TELEPHONE/DATA OUTLET: WALL MOUNTED @ +18" AFF U.O.N.
TV	TELEVISION OUTLET: WALL MOUNTED @ +18" AFF U.O.N.

POWER

	PANELBOARD
WP	NON–FUSED DISCONNECT SWITCH (WP = NEMA 3R WHERE APPROPRIATE)
	FUSED DISCONNECT SWITCH
MAU–1,5HP,480,3	MOTOR CONNECTION (EQUIPMENT NAME, HORSEPOWER, VOLTAGE, AND PHASE INDICATED)
EF–1,12KVA,208,1	EQUIPMENT CONNECTION (EQUIPMENT NAME, LOAD, VOLTAGE, AND PHASE INDICATED)
T	TRANSFORMER, DRY TYPE, SHOWN TO SCALE
M	KW METER AND BASE

PART OF THE DESIGN/BUILD FIRE ALARM SYSTEM

FACP	FIRE ALARM SYSTEM CONTROL PANEL
P	FIRE ALARM SYSTEM PULL STATION
	FIRE ALARM SYSTEM STROBE/SPEAKER
SD	FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR AND SPEAKER.
	FIRE ALARM COMBINATION PHOTOELECTRIC SMOKE DETECTOR, CARBON MONOXIDE DETECTOR, AND SPEAKER, GUESTROOM.
CO	CARBON MONOXIDE DETECTOR.
	ELECTRO–MAGNETIC DOOR HOLDER
DSD	DUCT SMOKE DETECTOR

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT, ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
AMP	AMPERE
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
C	COIL or CONDUIT
CKT	CIRCUIT
CO	CONDUIT/RACEWAY ONLY
CT	CURRENT TRANSFORMER
Cu	COPPER
CW	COOL WHITE
D	DIMMER
DED	DEDICATED
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EXIST	EXISTING
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FLUOR	FLUORESCENT
GC	GENERAL CONRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERES
KW	KILOWATT
LTG	LIGHTING
LV	LOW VOLTAGE
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE (NFPA–70)
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NTS	NOT TO SCALE
PNL	PANEL
POC	POINT OF CONNECTION
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CLORIDE
PWR	POWER
QTY	QUANTITY
RECEPT	RECEPTACLE
REF	REFERENCE
RI	ROUGH–IN
RM	ROOM
RO	RACEWAY ONLY
SHT	SHEET
SPEC	SPECIFICATIONS
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLTS
W	WATTS
WW	WARM WHITE
WP	WEATHERPROOF
W/	WITH
W/O	WITHOUT
XFMR	TRANSFORMER
XFR	TRANSFER
Z	IMPEDANCE OR ZONE

GENERAL NOTES

GENERAL

1. PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE GOVERNING ELECTRICAL CODE, LOCAL CODES, ORDINANCES AND REQUIREMENTS OF UTILITY COMPANIES FURNISHING SERVICES TO INSTALLATION.
2. PROVIDE ALL WORK AND ITEMS NECESSARY FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY CONDUIT, BOX, CONDUCTOR OR SIMILAR ITEMS FOR A COMPLETE INSTALLATION.
3. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND DETERMINE CONDITIONS WHICH MAY AFFECT BID. ANY ITEMS NOT FULLY UNDERSTOOD SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
4. "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, OR MECHANICAL).
5. REFERENCE ARCHITECTURAL DRAWING FOR EXACT LOCATION OF DEVICES. QUESTIONS CONCERNING THE LOCATION OF DEVICES AND EQUIPMENT SHALL BE DIRECTED TO THE ARCHITECT. FAILURE TO COORDINATE REQUIREMENTS SHALL IN NO WAY RESULT IN ADDITIONAL COMPENSATION BEING PROVIDED TO THE CONTRACTOR.
6. WHEREVER THE WORD "PROVIDE" IS USED, IT MEANS, "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
7. COORDINATE LOCATION OF ELECTRICAL WITH OTHER TRADES.
8. REFER TO EQUIPMENT DRAWINGS FOR MECHANICAL CHARACTERISTICS (SIZE, LOCATION, ETC.) OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED. COORDINATE INSTALLATION AND LOCATION OF ALL EQUIPMENT WITH MECHANICAL CONTRACTOR. VERIFY ALL FUSE RATINGS, WIRE SIZES AND DISCONNECT SIZES PRIOR TO INSTALLATION.

MATERIALS AND METHODS

1. PROVIDE RACEWAY AND WIRING ROUTED CONCEALED WITHIN BUILDING STRUCTURE WHERE POSSIBLE. WHERE RACEWAY CANNOT BE CONCEALED, IT SHALL BE INSTALLED PER PROJECT MANAGER'S DIRECTION. ALL CONDUIT SHALL BE INSTALLED IN NEAT SYMMETRICAL LINES HORIZONTAL OR PERPENDICULAR TO BUILDING COLUMNS AND ROOF LINES. CONDUITS SHALL BE GROUPED ON COMMON SUPPORTS WHEREVER POSSIBLE.
2. EXPOSED CONDUIT ROUTING: CONDUITS MAY BE ROUTED EXPOSED IN MECHANICAL AND ELECTRICAL ROOMS ONLY. EXPOSED CONDUITS SHALL BE SECURED A MINIMUM OF 6" ABOVE FLOOR.
3. OUTDOOR EXPOSED CONDUIT ROUTING: CONDUITS ROUTED ON ROOF OR EXPOSED TO WEATHER SHALL BE GRC, PVC OR LIQUID–TIGHT FLEX. PROVIDE WATER–TIGHT CONNECTIONS AND FITTINGS.
4. CLEARANCES: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET.
5. CONNECTIONS: PROVIDE GRS, METALLIC FLEX, OR LIQUIDTITE FLEX CONDUITS FOR CONNECTIONS TO MOTORS OR MOTORIZED EQUIPMENT.
6. WIRING: PROVIDE MINIMUM #12 AWG WIRE SIZE. IF CONDUIT IS TO BE USED MINIMUM IS TO BE 1/2". FLEXIBLE CONDUIT AND FLEXIBLE CABLE IS PERMISSIBLE THROUGHOUT THE BUILDING.
7. WIRING: PROVIDE MINIMUM #10 AWG COPPER CONDUCTOR SIZE IN 120V BRANCH CIRCUIT RUNS OVER 75' IN LENGTH.

SITE ELECTRICAL

1. TRENCHING: COORDINATE ALL TRENCHING WORK WITH OTHER UTILITY LOCATIONS AND DRAINAGE TRENCHES.
2. UNDERGROUND CONDUITS: PROVIDE PVC, SCHEDULE 40, 3/4" MINIMUM. PROVIDE GRC CONDUIT TRANSITION ELBOW WHEN TURNING UP TO ABOVE GRADE.
3. DIRECT–BURIED CONDUITS: CONDUIT FOR BRANCH CIRCUITS OUTSIDE BUILDINGS NOT BENEATH DRIVEWAYS OR PARKING AREAS SHALL BE DIRECTLY BURIED WITHOUT CONCRETE ENCASEMENT. THE DEPTH TO THE TOP OF BURIED CONDUITS SHALL BE 36". PROVIDE MARKER TAPE 12" BELOW GRADE.
4. BELOW SLAB: CONDUIT ROUTED BELOW ON–GRADE FLOOR SLABS SHALL BE INSTALLED PRIOR TO FLOOR SLAB POUR. ROUTE CONDUITS BELOW SLAB AS STRAIGHT AS POSSIBLE TO MINIMIZE BENDS.
5. ALL CONDUITS PENETRATING THE BUILDING ENVELOPE BELOW GRADE SHALL FOLLOW WATERPROOFING REQUIREMENTS IN THE ARCHITECTURAL DRAWINGS.

NEUTRALS

1. AT CONTRACTORS OPTION, NEUTRALS MAY BE SHARED ON COMBINED HOMERUNS UNLESS THE CIRCUIT HAS A GFCI BREAKER, AN ISOLATED GROUND, OR IS FROM A PANEL WITH TVSS PROTECTION. ANY NEUTRAL DOWNSTREAM FROM A DIMMER SHALL BE DEDICATED TO THE DIMMED LOAD.
2. NEUTRAL WIRES SHOWN FOR TWO AND THREE POLE MECHANICAL AND KITCHEN EQUIPMENT MAY BE OMITTED UPON VERIFICATION THAT THEY ARE NOT REQUIRED EITHER FOR OPERATION OR CONTROL CIRCUITS PER MANUFACTURER'S SPECIFICATIONS.

LIGHTING

1. PROVIDE LIGHT FIXTURES WITH PROPER FITTING FLANGES, MOUNTING SUPPORTS, AND ACCESSORY ITEMS, UL LISTED FOR CONDITIONS OF USE.

LOW VOLTAGE LIGHTING

1. PROVIDE LOW VOLTAGE TRANSFORMERS IN NEARBY ACCESSIBLE CEILING SPACE.
2. PROVIDE LOW VOLTAGE CONDUCTORS SIZED PER MANUFACTURER'S GUIDELINES TO MINIMIZE VOLTAGE DROP.

LIGHTING CONTROL

1. THE MAXIMUM LIGHTING POWER THAT MAY BE CONTROLLED FROM A SINGLE SWITCH OR AUTOMATIC CONTROL SHALL NOT EXCEED THAT WHICH IS PROVIDED BY A TWENTY AMPERE CIRCUIT LOADED TO NOT MORE THAN EIGHTY PERCENT. A MASTER CONTROL MAY BE INSTALLED PROVIDED THE INDIVIDUAL SWITCHES RETAIN THEIR CAPABILITY TO FUNCTION INDEPENDENTLY.
2. EMERGENCY FIXTURES: EMERGENCY BATTERY/CHARGER SHALL BE CONNECTED TO AN UNSWITCHED LEG OF THE DESIGNATED CIRCUIT.

GENERAL REQUIREMENTS

1. DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED.
2. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT.
3. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
4. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS.
5. PROVIDE CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

CONTRACTOR SUBSTITUTIONS & REVISIONS

1. PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK.
2. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION.
3. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE SUBSTITUTION PROPOSAL.
4. CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

PRE-CON MEETING NOTES

CONTRACTORS SHALL ATTEND A PRE–CONSTRUCTION MEETING WITH THE ENGINEER FOR THE PURPOSE OF REVIEWING THE WORK PRIOR TO ORDERING ANY EQUIPMENT OR PERFORMING ANY WORK. THE MEETING SHALL BE LOCATED AT THE PROJECT SITE ON A DATE AND TIME TO BE MUTUALLY AGREED. THE MEETING WILL BE A WORKING SESSION. THE MEETING WILL BE FACILITATED BY THE ENGINEER AND THE AGENDA WILL INCLUDE A DETAILED REVIEW OF THE PLANS AND SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES FOR COORDINATION ISSUES, REVIEW OF PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS AND METHODS,AND ON–SITE INVESTIGATION OF FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS THAT COULD AFFECT THE WORK. PERSONS ATTENDING THE MEETING SHALL BE KNOWLEDGEABLE OF THE PROJECT AND SHALL BE THE SPECIFIC PERSONS INTENDED TO CONTINUE WITH THE PROJECT THROUGH TO COMPLETION. IF REQUIRED, REVISED PLANS WILL BE ISSUED THROUGH OFFICIAL CHANNELS. CHANGES IN THE BID PRICE WILL BE DISCUSSED, BUT NO CHANGE ORDERS WILL BE ISSUED UNLESS PROCESSED THOUGH OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD THAT THE ENGINEER HAS NO AUTHORITY TO ISSUE CHANGE ORDERS.

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL	4 HOURS
PLUMBING/PIPING	4 HOURS
ELECTRICAL	4 HOURS
SPRINKLER	2 HOURS
GENERAL CONTRACTOR	ALL SESSIONS

DRAWING INDEX

DWG	DESCRIPTION	INCLUDED IN SET: PERMIT SET 01/22/24
E0.00	LEGEND, GENERAL NOTES, DRAWING INDEX	X
E0.02	SITE POWER PLAN	X
E0.03	SITE LIGHTING PLAN	X
E1.01	LIGHTING PLAN – LEVEL 1	X
E1.02	LIGHTING PLAN – LEVEL 2	X
E1.03	LIGHTING PLAN – LEVEL 3	X
E1.10	PHOTOMETRIC PLAN – LEVEL 2–3	X
E1.50	LIGHTING NOTES & LUMINAIRE SCHEDULE	X
E3.00	POWER PLAN – LEVEL 1	X
E3.01	POWER PLAN – LEVEL 2	X
E3.02	POWER PLAN – LEVEL 3	X
E5.00	UNIT PLAN NOTES	X
E5.01	UNIT PLANS	X
E6.00	ONE–LINE DIAGRAM & PANEL SCHEDULES	X
E6.01	PANEL SCHEDULES	X

Separate Electrical Permit is required with the Washington State Department of Labor & Industries.
https://lni.wa.gov/licensing-permits/electrical/electrical-permits-fees-and-inspections or call for Licensing Information: 1-800-647-0982

REVISIONS

NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL
CONTACT: XXX

ERIK STEINKE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN: LYSAK K. | DESIGNED: LYSAK K. | CHECKED: STEINKE M. | APPROVED: STEINKE M.

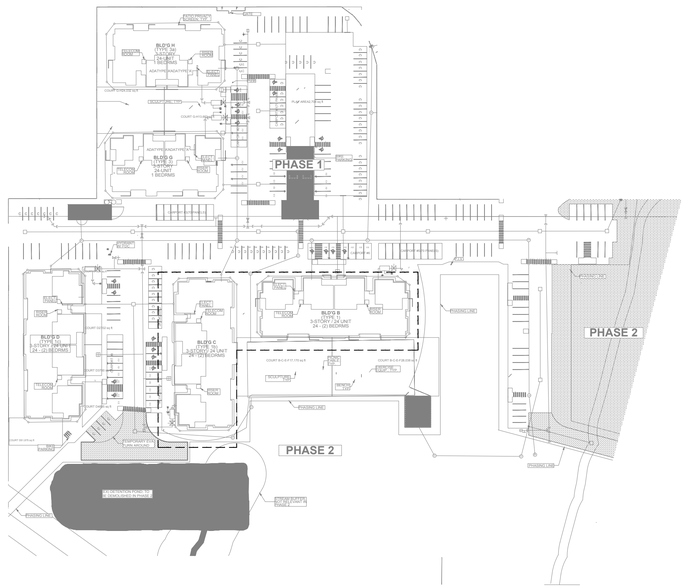
PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

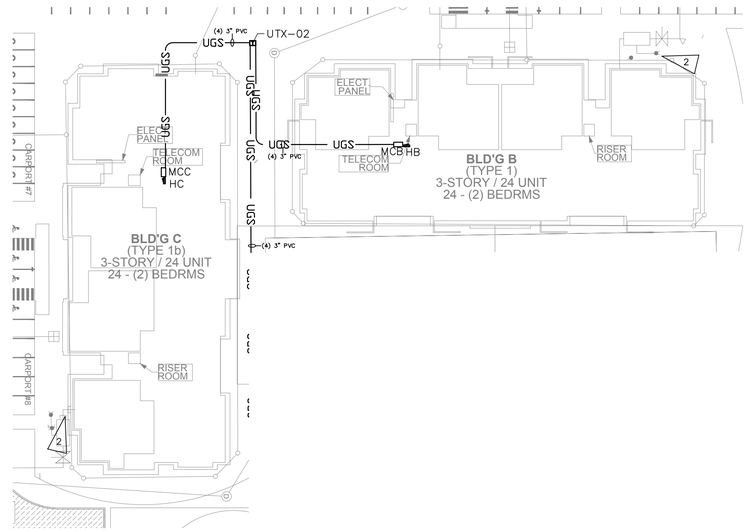
PERMIT SET
01/22/2024

SHEET TITLE:
LEGEND, GENERAL NOTES, DRAWING INDEX

SHEET NO.
E0.00

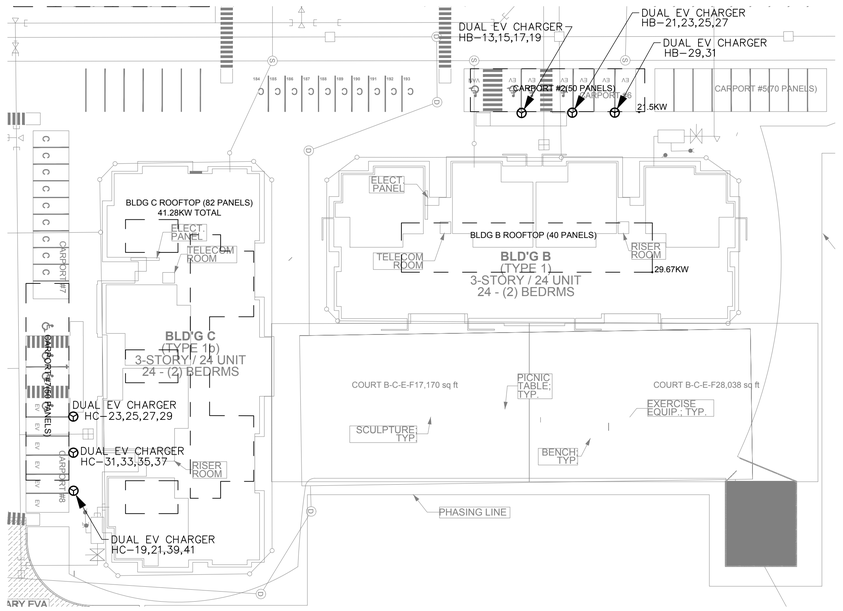


VICINITY MAP



BUILDING C & B SITE PLAN – POWER

SCALE: 1" = 30'



BUILDING C&B SITE PLAN – EV & SOLAR LAYOUT

SCALE: 1" = 30'

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL.

MARK STEINKE
STATE OF WASHINGTON
20183
REGISTERED
PROFESSIONAL ENGINEER
12/06/2023

DRAWN:
DESIGNED:
CHECKED:
APPROVED:

PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

DATE: 12-06-2023

SHEET TITLE: SITE PLAN

SHEET NO. E0.02

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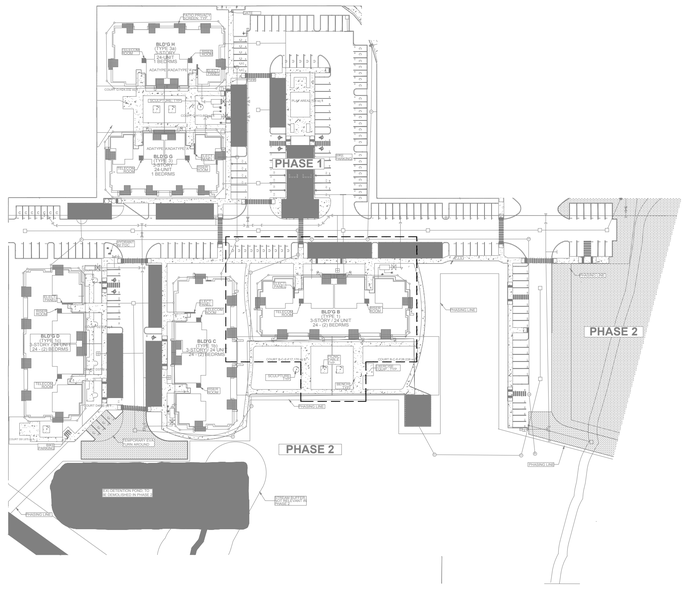
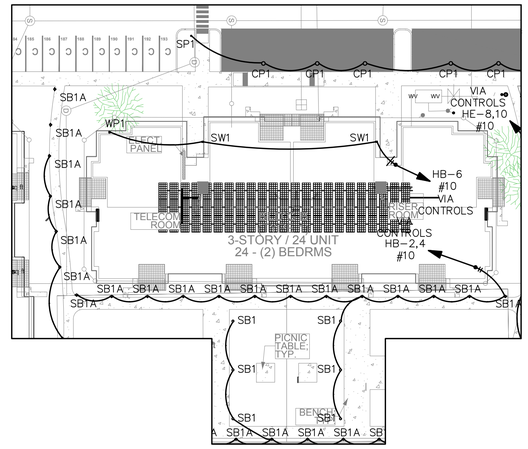


VICINITY MAP



BUILDING B SITE LIGHTING PLAN – POWER

SCALE: 1" = 30'

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL.

MARK STEINKE
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER
12/06/2023

DRAWN:
DESIGNED:
CHECKED:
APPROVED:

PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

DATE: 12-06-2023

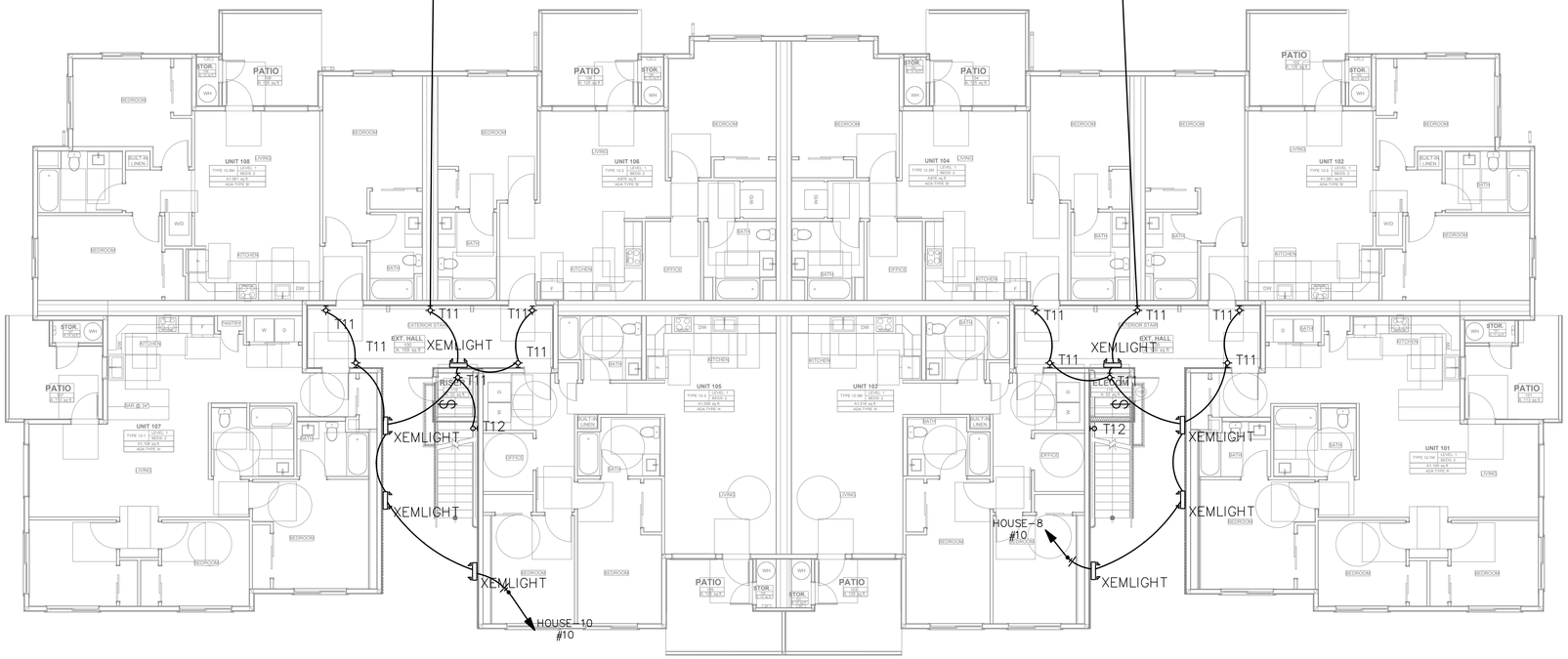
SHEET TITLE: LIGHTING PLAN

SHEET NO. E0.03

MLEAVENS F:\810-010 EAST TOWN CROSSING\DWG\ELECTRICAL\PRESENTATION SHEETS\A-E1.0.DWG 05-05-2021 00:45

GENERAL NOTES

1. MOUNTING HEIGHT (MH) LISTED IN LUMINAIRE SCHEDULE SHALL BE FROM ABOVE GRADE TO BOTTOM OF COMPLETE EXPOSED FIXTURE.
2. ALL EXTERIOR MOUNTED LIGHTING SHALL BE CONTROLLED BY PHOTOCONTROL OR ASTRONOMIC TIME-CLOCK SCHEDULING PER CALIFORNIA ENERGY CODE (CENC) REQUIREMENTS 160.5(c)2. PROVIDE MOTION SENSING CONTROLS FOR LUMINAIRES OVER 40 WATTS MOUNTED LESS THAN 24' ABOVE GRADE AND WALL MOUNTED LUMINAIRES MORE THAN 24' ABOVE GRADE.
3. ALL EXTERIOR MOUNTED LUMINAIRES SHALL FOLLOW MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS FOUND IN CALIFORNIA GREEN BUILDING STANDARDS CODE TABLE 5.106.8.
4. DURING EMERGENCY CONDITIONS EMERGENCY LIGHTING CIRCUITS SHALL BYPASS ALL LIGHTING CONTROLS IN ORDER TO ENERGIZE ALL CONNECTED LUMINAIRES AT FULL CAPACITY. PROVIDE UL924 RELAYS AS REQUIRED TO BYPASS AREA CONTROLS.
   4.1. EMERGENCY PATHWAY EGRESS LIGHTING: EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGED TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1 FOOTCANDLE. (CBC 1008.3.5)



PHOTOM ARROW

LIGHTING PLAN – LEVEL 1

SCALE: 1/8" = 1'-0" 0' 4' 8' 16'

N

NO.	DATE	REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

MARK STEINKE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
LYSAK K.	LYSAK K.	STEINKE M.	STEINKE M.

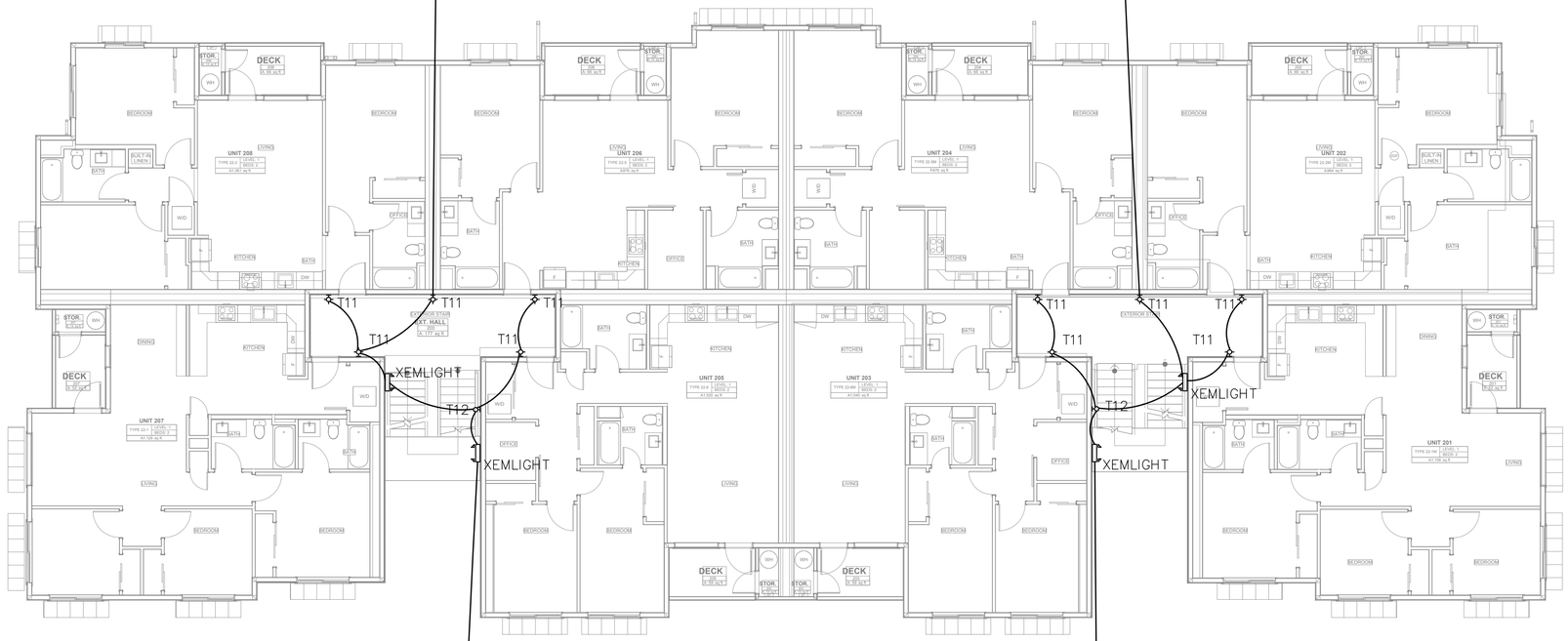
PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
LIGHTING PLAN – LEVEL 1

SHEET NO.
E1.01



GENERAL NOTES

1. MOUNTING HEIGHT (MH) LISTED IN LUMINAIRE SCHEDULE SHALL BE FROM ABOVE GRADE TO BOTTOM OF COMPLETE EXPOSED FIXTURE.
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4. DURING EMERGENCY CONDITIONS EMERGENCY LIGHTING CIRCUITS SHALL BYPASS ALL LIGHTING CONTROLS IN ORDER TO ENERGIZE ALL CONNECTED LUMINAIRES AT FULL CAPACITY. PROVIDE UL924 RELAYS AS REQUIRED TO BYPASS AREA CONTROLS.
   4.1. EMERGENCY PATHWAY EGRESS LIGHTING: EMERGENCY LIGHTING FACILITIES SHALL BE ARRANGED TO PROVIDE INITIAL ILLUMINATION THAT IS NOT LESS THAN AN AVERAGE OF 1 FOOTCANDLE. (CBC 1008.3.5)

LIGHTING PLAN – LEVEL 2

SCALE: 1/8" = 1'-0" 0' 4' 8' 16'

N

NO.	DESCRIPTION	DATE
	REVISIONS	

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

MARK STEINKE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
LYSAK K.	LYSAK K.	STEINKE M.	STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
LIGHTING PLAN – LEVEL 2

SHEET NO.
E1.02

GENERAL NOTES

1. MOUNTING HEIGHT (MH) LISTED IN LUMINAIRE SCHEDULE SHALL BE FROM ABOVE GRADE TO BOTTOM OF COMPLETE EXPOSED FIXTURE.
2. ALL EXTERIOR MOUNTED LIGHTING SHALL BE CONTROLLED BY PHOTOCONTROL OR ASTRONOMIC TIME-CLOCK SCHEDULING PER CALIFORNIA ENERGY CODE (CENC) REQUIREMENTS 160.5(c)2. PROVIDE MOTION SENSING CONTROLS FOR LUMINAIRES OVER 40 WATTS MOUNTED LESS THAN 24' ABOVE GRADE AND WALL MOUNTED LUMINAIRES MORE THAN 24' ABOVE GRADE.
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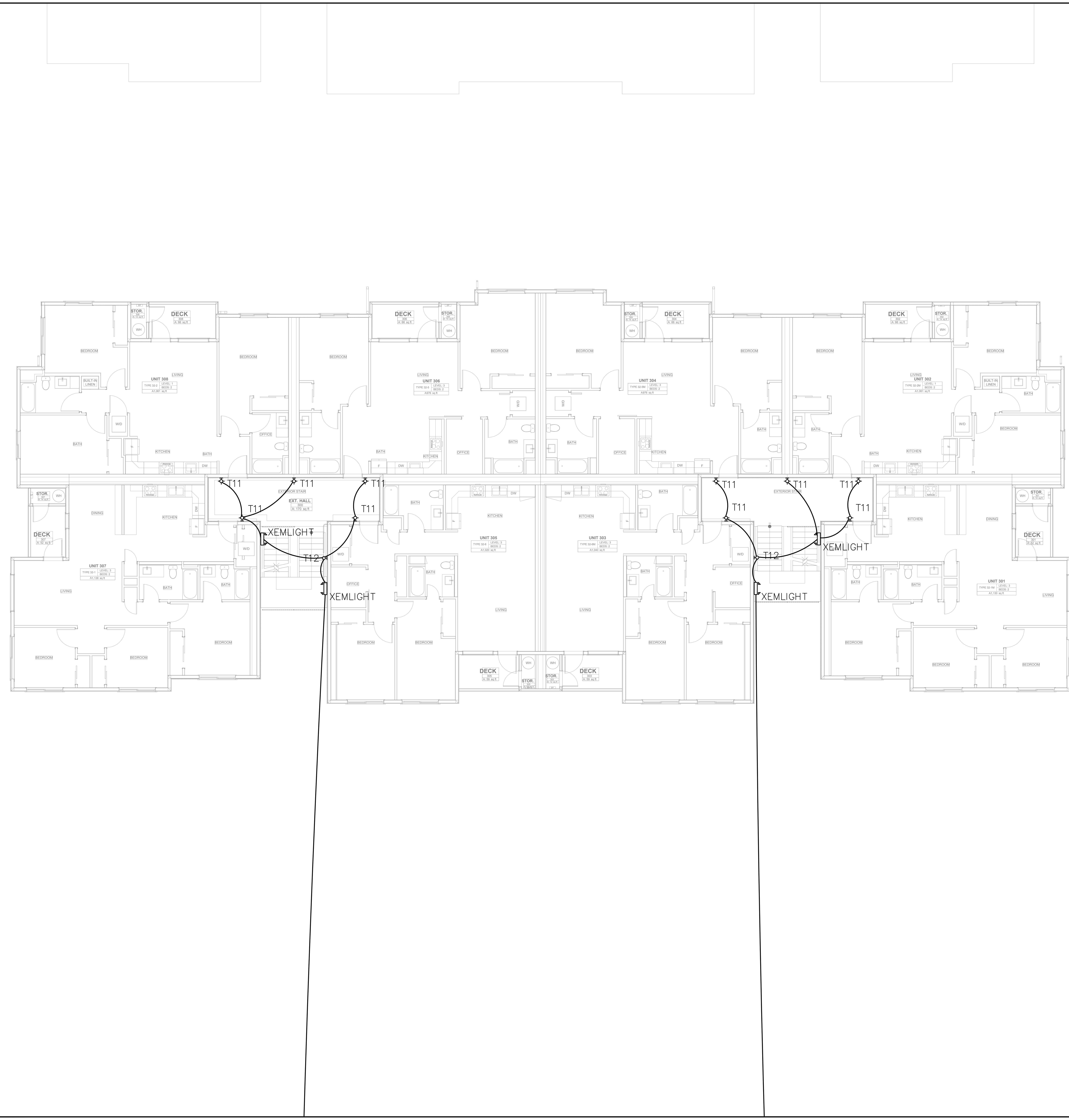


LIGHTING PLAN – LEVEL 3

SCALE: 1/8" = 1'-0" 0' 4' 8' 16'

N

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206-364-3343 TEL.
CONTACT XXX

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)3643343

PERMIT SET
01/22/2024

SHEET TITLE:
LIGHTING PLAN – LEVEL 3

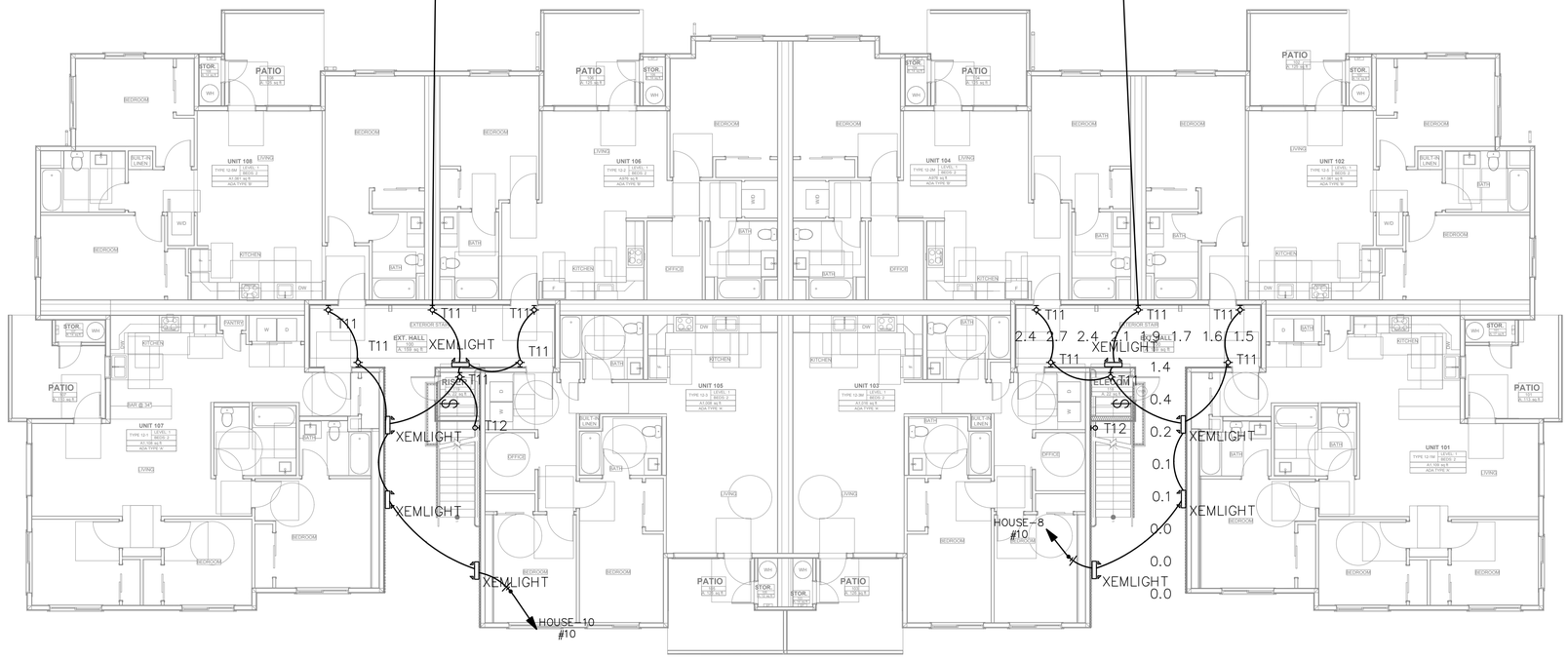
SHEET NO.
E1.03

PHOTOMETRIC NOTES

1. PHOTOMETRIC CALCULATIONS BASED ON AVAILABLE IES FILE FROM FIXTURE MANUFACTURER (OR EQUIVALENT). FIXTURE SUBSTITUTIONS MAY COMPROMISE FOOT CANDLE LEVELS.
2. PHOTOMETRIC CALCULATIONS MEASURED AT GRADE LEVEL FROM CEILING HEIGHT OR MOUNTING HEIGHT (MH) NOTED IN LUMINAIRE SCHEDULE.
3. SITE PHOTOMETRIC: BASED ON PROPOSED SITE LIGHTING FOR PROJECT ONLY.

Egress Photometric Schedule

AVERAGE FOOT–CANDLES	1.15
MAXIMUM FOOT–CANDLES	2.7
MINIMUM FOOT–CANDLES	0.0
MINIMUM TO MAXIMUM FC RATIO	0.01



PHOTOM ARROW

PHOTOMETRIC PLAN – LEVEL 1

SCALE: 1/8" = 1'–0" 0' 4' 8' 16'

N

REVISIONS		
NO.	DATE	DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

MARK STEINKE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN:	LYSAK K.
DESIGNED:	LYSAK K.
CHECKED:	STEINKE M.
APPROVED:	STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
PHOTOMETRIC PLAN – LEVEL 1

SHEET NO.
E1.10

EXTERIOR & SITE LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	CRI / CCT	LAMPING	WATTAGE
CP1		SURFACE	CARPORT LIGHT – TYPE 5 – B1 U0 G1	GARDCO: SVPG A01 830 5CD [MOUNTING] UNV	MULTIPLE	0–10V DIMMING	80 / 3000K	(1) 21W LED	21
SB1		3' BOLLARD	BOLLARD – TYPE 5 – B1 U0 G0	GARDCO: PUREFORM BOLLARD / PBL 36 14L 100 WW–G2 5 UNV	MULTIPLE	0–10V DIMMING	70 / 3000K	(1) 6W LED	6
SB1A		3' BOLLARD	BOLLARD – TYPE 3 – B0 U0 G0	GARDCO: PUREFORM BOLLARD / PBL 36 14L 100 WW–G2 3 UNV	MULTIPLE	0–10V DIMMING	70 / 3000K	(1) 6W LED	6
SF1		SURFACE	MONUMENT SIGN FLOOD LIGHT	TBD	120	TBD		(1) 15W LED	15
SP1		16' POLE	POST TOP LIGHT – TYPE 5 – B2 U3 G2	WE–EF: ZFT434LED / 115–1283	MULTIPLE	0–10V DIMMING	80 / 3000K	(1) 42W LED	42
SP2		16' POLE	POLE LIGHT – SPORT COURT – B1 U0 G2 – TYPE 3	SIGNIFY – GARDCO: P15 P A03 730 T3M AR1 UNV PCB [FINISH]	MULTIPLE	0–10V DIMMING	80 / 3000K	(1) 45W LED	45
SU1		TREE BAND	UPLIGHT – ACCENT	HK LIGHTING: ZXL16i 120V 5W 30K 010 / TMS120 TS – WATER TIGHT FITTING – CORD & PLUG BY ELECTRICAL	120	0–10V DIMMING		(1) 10W LED	10
SW1		SURFACE	EXTERIOR SCONCE – STAIRS – NB UP / TYPE II DOWN – MH 10'	PERFORMANCE IN LIGHTING: AMON / 070274	MULTIPLE	0–10V DIMMING	80 / 3000K	(1) 37W LED	37
SW2		SURFACE	SECURITY LIGHT – TRASH ENCLOSURES	STONCO: SL20 SCT G1 8 BK	MULTIPLE	INTEGRAL MOTION & PHOTOCELL	70 / 3000K	(1) 20W LED	20
WP1		SURFACE	WALL PACK – PARKING – TYPE III – B2 U0 G2 – MH 18'	GARDCO: PUREFORM COMFORT OPTICS / PWS 140L 1150 WW–G2 3 X UNV	MULTIPLE	AS NEEDED	70 / 3000K	(1) 52W LED	52
WP2		SURFACE	WALL PACK – POOL – TYPE IV – B3 U0 G3 – MH 14'	GARDCO: PUREFORM COMFORT OPTICS / PWS 140L 1675 WW–G2 4 UNV	MULTIPLE	AS NEEDED		(1) 76W LED	76

1. CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.
2. FIXTURE FINISHES TO BE COORDINATED WITH ARCHITECT/ID.

DWELLING UNIT LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	LAMP	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	WATTAGE	NOTES
T1		(1)	CEILING	SURFACE MOUNT LED LIGHT	OSTW: OW–LFMDR–14D2130–NK	120V 1P 2W	21	
T2		(1)	CEILING	SURFACE MOUNT LED	OSTW: OW–LDS01–6D1530N	120V 1P 2W	15	
T3		(1)	CEILING	FAN/LIGHT COMBO	KICHLER: 330017NI	120V 1P 2W	52	PROVIDE DIVA: DVFSQ–LF CONTROLLER IN UNITS DESIGNATED AS ACCESSIBLE PER ARCHITECTUAL
T4		(1)	PENDANT	LED CHANDELIER	OSTW: OW–LSFDR–12D1530–NK	120V 1P 2W	15	
T5		(1)	CEILING	LAUNDRY LIGHT/HOUSE FAN COMBO	BROAN: LP50100DC	120V 1P 2W	45	
T6		(1)	CEILING	BATH FAN/LIGHT COMBO	ORBT: OSP70L	120V 1P 2W	45	
T7		(1)	WALL	LED VANITY LIGHT	KICHLER: 5337NIS	120V 1P 2W	27	(3) BULBRITE 9W LED BULBS: ITEM #774006
T8		(1)	WALL	EXT. LED SCONCE		120V 1P 2W	20	
T9		(1)	CEILING	SURFACE MOUNT LED	OSTW: OW–LDSOB–6D1830W	120V 1P 2W	18	
T13		(1)	CEILING	1.4 LED TROFFER	TBD	120V 1P 2W	40	

1. CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.
2. FIXTURE FINISHES TO BE COORDINATED WITH ARCHITECT/ID.

GENERAL LIGHTING NOTES

1. LIGHTING CONTROLS SHALL BE INSTALLED WHICH MEET ALL REQUIREMENTS OF LOCAL ENERGY CODES.
2. EMERGENCY LIGHT FIXTURES: PROVIDE UNSWITCHED HOT FOR BATTERY CHARGER.
3. LOCATIONS OF OCCUPANCY SENSORS, PHOTO SENSORS, DIMMERS, AND SWITCHES ARE DIAGRAMMATIC. CONTRACTOR TO FIELD–IDENTIFY OPTIMAL LOCATIONS AND QUANTITIES.
4. ASSURE COMPATIBILITY OF DIMMERS WITH CONTROLLED LUMINAIRES PRIOR TO PURCHASING.
5. AUTOMATIC LIGHTING SHUT–OFF CONTROLS SHALL BE PROVIDED BY LOCAL OCCUPANCY SENSORS AND/OR ASTRONOMIC TIME CLOCK UNLESS OTHERWISE NOTED.
6. DAYLIGHT ZONES ARE REFERRED TO AS 'PRIMARY' AND 'SECONDARY' ON PLANS AND DENOTED BY DASHED LINES.
7. FOR CUSTOM FF&E FIXTURES, IT IS THE MANUFACTURER'S RESPONSIBILITY TO FURNISH PRODUCTS WHICH ARE COMPLIANT WITH ALL REQUIREMENTS OF LOCAL ENERGY CODES, AS WELL AS MATCH THE ELECTRICAL SPECIFICATIONS PROVIDED IN THE LUMINAIRE SCHEDULES. PROVIDE SUBMITTAL SHOP DRAWINGS WITHIN 30 DAYS OF RECEIVING FIXTURE ORDER. SUBMITTALS SHALL CLEARLY INDICATE LAMPING AND MAXIMUM WATTAGE RATING OF LAMP SOCKETS. NON–COMPLIANT FIXTURES REJECTED BY ELECTRICAL INSPECTOR SHALL BE RETURNED TO THE MANUFACTURER FOR REWORKING AND/OR RE–LABELING.
8. EMERGENCY EGRESS LIGHTING TO BE CONFIRMED AS INTENDED EGRESS DESIGN PRIOR TO PERMITTING

EXIT SIGN NOTES

DURING CONSTRUCTION, UPON COMPLETION OF A TYPICAL FLOOR FRAMING AND BEFORE WALL COVER, ELECTRICAL CONTRACTOR SHALL WALK THE EGRESS PATHS WITH THE LOCAL INSPECTOR (AHJ) TO CONFIRM THAT ALL THE EXIT SIGNS ARE LOCATED PER THE AHJ'S SATISFACTION AND IDENTIFY ANY ADDITIONAL EXIT SIGNS THAT THE AHJ WISHES TO BE INSTALLED. CONTRACTOR SHALL INCLUDE IN THEIR BASE BID UP TO 10% ADDITIONAL EXIT SIGNS (HIGH & LOW) AT NO ADDITIONAL COST. INCLUDE COST OF FIXTURES AND ASSOCIATED WIRING AND INSTALLATION.

LIGHTING CONTROL SYSTEM REQUIREMENTS

1. CONTRACTOR TO PROVIDE A FULLY OPERATIONAL LIGHTING CONTROL SYSTEM.
2. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH A LIGHTING CONTROLS VENDOR TO OBTAIN LIGHTING CONTROL SYSTEM PACKAGE COMPLETE WITH DEVICES, WIRING DIAGRAMS, ANNOTATED PLANS INDICATING WHICH DEVICE TO BE USED IN EACH LOCATION, CONNECTION REQUIREMENTS, SET UP INSTRUCTIONS, COMMISSIONING AND CHECK–OUT FOLLOWING COMPLETION. PROVIDE ALL LOW VOLTAGE WIRING AS REQUIRED FOR CONTROL DEVICE INTERCONNECTIONS.
3. INSTALLER QUALIFICATIONS: TECHNICIAN INSTALLING AND WIRING THE LIGHTING CONTROL SYSTEM SHALL HAVE INSTALLED THIS SAME SYSTEM AT LEAST ONCE PREVIOUSLY. TECHNICIAN SHALL HAVE RECEIVED TRAINING BY FACTORY REPRESENTATIVE ON THE SYSTEM BEING INSTALLED.
4. PROVIDE LIGHTING CONTROL SYSTEM TO PERFORM THE FUNCTIONS DESCRIBED BELOW AND WHERE INDICATED ON PLANS. NOT ALL FEATURES ARE REQUIRED.
   - 4.1. CONTROL EXTERIOR LIGHTING BASED ON ASTRONOMIC TIME–CLOCK SCHEDULING.
   - 4.2. INTERIOR PRIMARY AND SECONDARY DAYLIGHT HARVESTING CONTROL PER ENERGY CODE REQUIREMENTS.
   - 4.3. PROVIDE SEPARATE SWITCHING AND DIMMING CONTROL FOR LIGHTING ZONES AS INDICATED IN LIGHTING DIMMING SCHEDULE.
5. DURING EMERGENCY CONDITIONS EMERGENCY LIGHTING CIRCUITS SHALL BYPASS ALL LIGHTING CONTROLS IN ORDER TO ENERGIZE ALL CONNECTED LUMINAIRES AT FULL CAPACITY. PROVIDE UL924 RELAYS AS REQUIRED TO BYPASS AREA CONTROLS.

LIGHTING CONTROLS LEGEND

$ $°	TOGGLE SWITCH FOR MANUAL ON/OFF LIGHTING CONTROL. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH SWITCH.
D D°	DIMMER SWITCH FOR MANUAL MULTI–LEVEL LIGHTING CONTROL. SWITCH SHALL ALSO HAVE MANUAL ON/OFF FUNCTIONALITY. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH DIMMER.
OS $ OS D	SWITCHES LABELED 'OS' SHALL TURN OFF ALL CONNECTED LUMINAIRES WITHIN 30 MINUTES OF SPACE BEING VACANT.
(OS)	OCCUPANCY SENSOR SHALL AUTOMATICALLY TURN OFF ALL CONNECTED LUMINAIRES WITHIN 30 MINUTES OF SPACE BEING VACANT.
(PS)	PHOTOSENSOR FOR DAYLIGHT ZONE CONTROL SHALL AUTOMATICALLY ADJUST THE LIGHT OUTPUT OF ALL CONNECTED LUMINAIRES BASED ON THE DAYLIGHT LEVEL IN THE SPACE.

NO.	DATE	REVISIONS DESCRIPTION

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MARK STEINKE · STATE OF WASHINGTON · 23019315 · REGISTERED PROFESSIONAL ENGINEER · 01/22/2024

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DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

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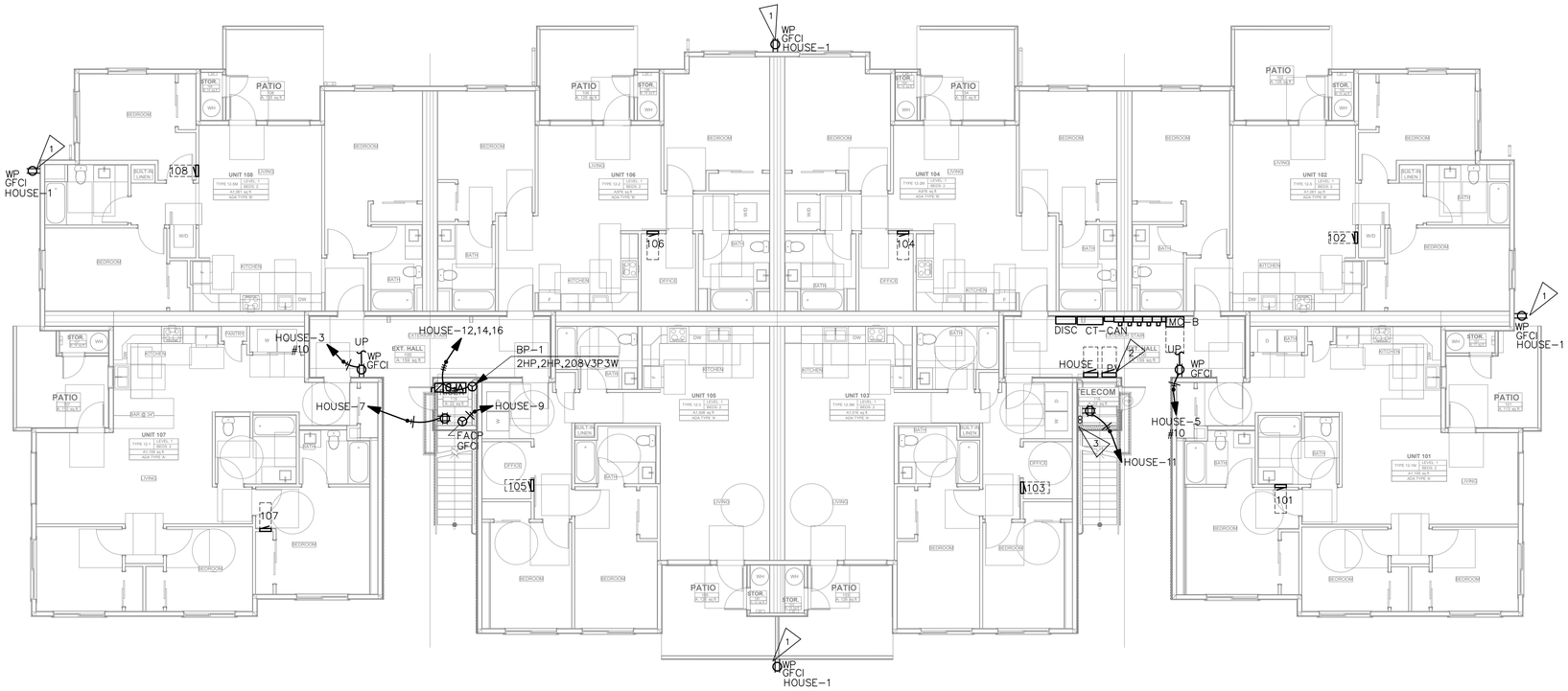
PERMIT SET
01/22/2024

SHEET TITLE:
LIGHTING NOTES & LUMINAIRE SCHEDULE

SHEET NO.
E1.50



SHEET NOTES:

1. PROVIDE CONDUITS WITH PULL WIRE FROM DEMARCATION OR MDF TO IDF CLOSETS FOR ALL SYSTEMS INCLUDING VOICE, DATA, TV AND SECURITY. QUANTITY AND SIZE AS DETERMINED BY LOW VOLTAGE CONSULTANT. PROVIDE SLEEVES WITH BUSHINGS AT BOTH ENDS PER LOW VOLTAGE CONSULTANT. FIRE STOP AS REQUIRED BY AHJ
2. PROVIDE CONDUIT, WIRING, CIRCUITS AND CONNECTIONS AS COORDINATED WITH SECURITY VENDOR FOR FULLY FUNCTIONING SECURITY AND ACCESS CONTROL SYSTEM. COORDINATE WITH SECURITY CONSTRUCTION DOCUMENTS TO IDENTIFY ALL CAMERA LOCATIONS, AT ALL DOORS CALLED OUT BY OWNER, AS WELL AS ROLL UP GARAGE DOORS FOR GARAGE ACCESS.
3. AMENITY SPACES, OFFICES AND PUBLIC AREAS: ROUGH-IN FOR EQUIPMENT, OUTLETS AND APPLIANCES IN AMENITY SPACES TO BE COORDINATED WITH ARCHITECT. REFER TO ARCHITECTS DRAWINGS AND ELEVATIONS.
4. WIRING METHOD FOR APARTMENT FEEDERS MUST BE SUITABLE FOR THE TYPE OF CONSTRUCTION. SEE NEC 334.10
5. CONTRACTOR TO COORDINATE DOOR CONTROLS AND CONNECTIONS WITH DOOR VENDOR. PROVIDE RACEWAY, CONDUCTORS, POWER SUPPLY AND TERMINATIONS FOR A FULLY FUNCTIONING SYSTEM. COORDINATE WITH SECURITY VENDOR FOR MONITORING AND CONTROL AS NEEDED.
6. ELECTRICAL CONTRACTOR (EC) TO PROVIDE J-BOX/PULL BOX SO NUMBER OF BENDS IN CONDUIT DOES NOT EXCEED CODE REQUIREMENT (360 MAX TOTAL). EC TO FIELD VERIFY LOCATION OF J-BOX/PULL BOX. COORDINATE WITH ARCHITECT WHERE ACCESS PANEL IS REQUIRED.
7. PROVIDE BLOCKOUTS AND SLEEVES AS REQUIRED FOR ALL FEEDERS AND RISERS SHOWN ON 1-LINE. COORDINATE WITH STRUCTURAL. PROVIDE SUPPORT FOR VERTICAL FEEDERS AS REQUIRED BY NEC 300.19. ANY SLEEVE LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. ELECTRICAL PLANS DO NOT SHOW BRANCH CIRCUIT OR SMALL FEEDER CONDUIT RUNS. LAYOUT PER EC. FINAL VERIFICATION OF NUMBER AND LOCATION OF ALL FLOOR PENETRATIONS BY EC.

FLAG NOTES: <#>

(NOT EVERY FLAG IS USED ON EVERY SHEET)

1. PROVIDE LOCKING COVER FOR EXTERIOR & CORRIDOR RECEPTACLES. TYP.
2. LEAVE 2' OF OPEN WALL SPACE ADJACENT TO HOUSE PANEL FOR FUTURE EV PANEL.
3. PROVIDE (1) 2" CONDUIT FROM TELEPHONE VAULT AND (1) 2" CONDUIT FROM THE CABLE TV VAULT. COORDINATE WITH TELECOM UTILITY FOR TELEPHONE & CABLE TV VAULT LOCATIONS.

UTIL
T TBD LOCATION

POWER PLAN – LEVEL 1

SCALE: 1/8" = 1'-0" 0' 4' 8' 16'

N

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	REVISIONS	

ROBISON ENGINEERING, INC
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CONTACT: XXX

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

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PERMIT SET
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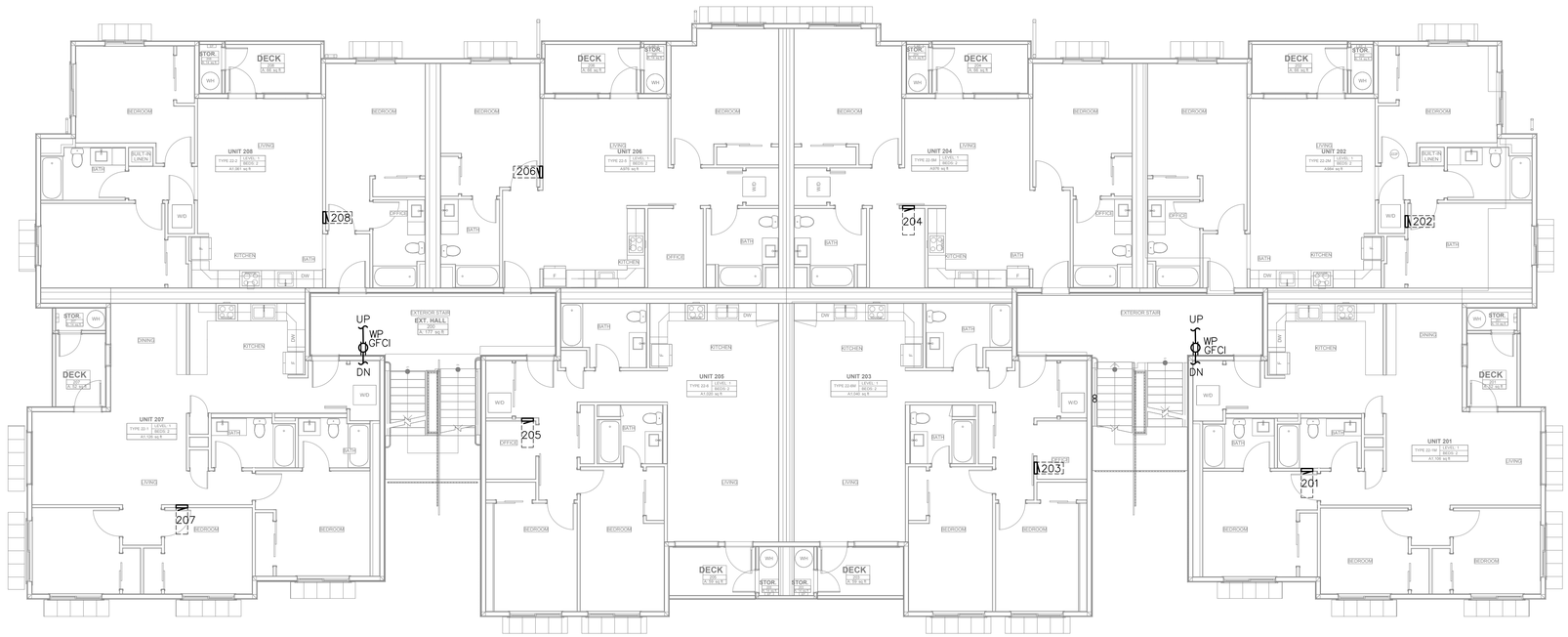
SHEET TITLE:
POWER PLAN – LEVEL 1

SHEET NO.
E3.00



SHEET NOTES:

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5. CONTRACTOR TO COORDINATE DOOR CONTROLS AND CONNECTIONS WITH DOOR VENDOR. PROVIDE RACEWAY, CONDUCTORS, POWER SUPPLY AND TERMINATIONS FOR A FULLY FUNCTIONING SYSTEM. COORDINATE WITH SECURITY VENDOR FOR MONITORING AND CONTROL AS NEEDED.
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2. LEAVE 2' OF OPEN WALL SPACE ADJACENT TO HOUSE PANEL FOR FUTURE EV PANEL.
3. PROVIDE (1) 2" CONDUIT FROM TELEPHONE VAULT AND (1) 2" CONDUIT FROM THE CABLE TV VAULT. COORDINATE WITH TELECOM UTILITY FOR TELEPHONE & CABLE TV VAULT LOCATIONS.

POWER PLAN – LEVEL 2

SCALE: 1/8" = 1'-0" 0' 4' 8' 16' N

NO.	DATE	REVISIONS

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LYNNWOOD, WA 98036
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CONTACT: XXX

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
POWER PLAN – LEVEL 2

SHEET NO.
E3.01

SHEET NOTES:

1. PROVIDE CONDUITS WITH PULL WIRE FROM DEMARCATION OR MDF TO IDF CLOSETS FOR ALL SYSTEMS INCLUDING VOICE, DATA, TV AND SECURITY. QUANTITY AND SIZE AS DETERMINED BY LOW VOLTAGE CONSULTANT. PROVIDE SLEEVES WITH BUSHINGS AT BOTH ENDS PER LOW VOLTAGE CONSULTANT. FIRE STOP AS REQUIRED BY AHJ
2. PROVIDE CONDUIT, WIRING, CIRCUITS AND CONNECTIONS AS COORDINATED WITH SECURITY VENDOR FOR FULLY FUNCTIONING SECURITY AND ACCESS CONTROL SYSTEM. COORDINATE WITH SECURITY CONSTRUCTION DOCUMENTS TO IDENTIFY ALL CAMERA LOCATIONS, AT ALL DOORS CALLED OUT BY OWNER, AS WELL AS ROLL UP GARAGE DOORS FOR GARAGE ACCESS.
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4. WIRING METHOD FOR APARTMENT FEEDERS MUST BE SUITABLE FOR THE TYPE OF CONSTRUCTION. SEE NEC 334.10
5. CONTRACTOR TO COORDINATE DOOR CONTROLS AND CONNECTIONS WITH DOOR VENDOR. PROVIDE RACEWAY, CONDUCTORS, POWER SUPPLY AND TERMINATIONS FOR A FULLY FUNCTIONING SYSTEM. COORDINATE WITH SECURITY VENDOR FOR MONITORING AND CONTROL AS NEEDED.
6. ELECTRICAL CONTRACTOR (EC) TO PROVIDE J-BOX/PULL BOX SO NUMBER OF BENDS IN CONDUIT DOES NOT EXCEED CODE REQUIREMENT (360 MAX TOTAL). EC TO FIELD VERIFY LOCATION OF J-BOX/PULL BOX. COORDINATE WITH ARCHITECT WHERE ACCESS PANEL IS REQUIRED.
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FLAG NOTES:

(NOT EVERY FLAG IS USED ON EVERY SHEET)

1. PROVIDE LOCKING COVER FOR EXTERIOR & CORRIDOR RECEPTACLES. TYP.
2. LEAVE 2' OF OPEN WALL SPACE ADJACENT TO HOUSE PANEL FOR FUTURE EV PANEL.
3. PROVIDE (1) 2" CONDUIT FROM TELEPHONE VAULT AND (1) 2" CONDUIT FROM THE CABLE TV VAULT. COORDINATE WITH TELECOM UTILITY FOR TELEPHONE & CABLE TV VAULT LOCATIONS.

POWER PLAN – LEVEL 3

SCALE: 1/8" = 1'-0" 0' 4' 8' 16' N

NO.	DESCRIPTION	DATE
	REVISIONS	

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CONTACT: XXX

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

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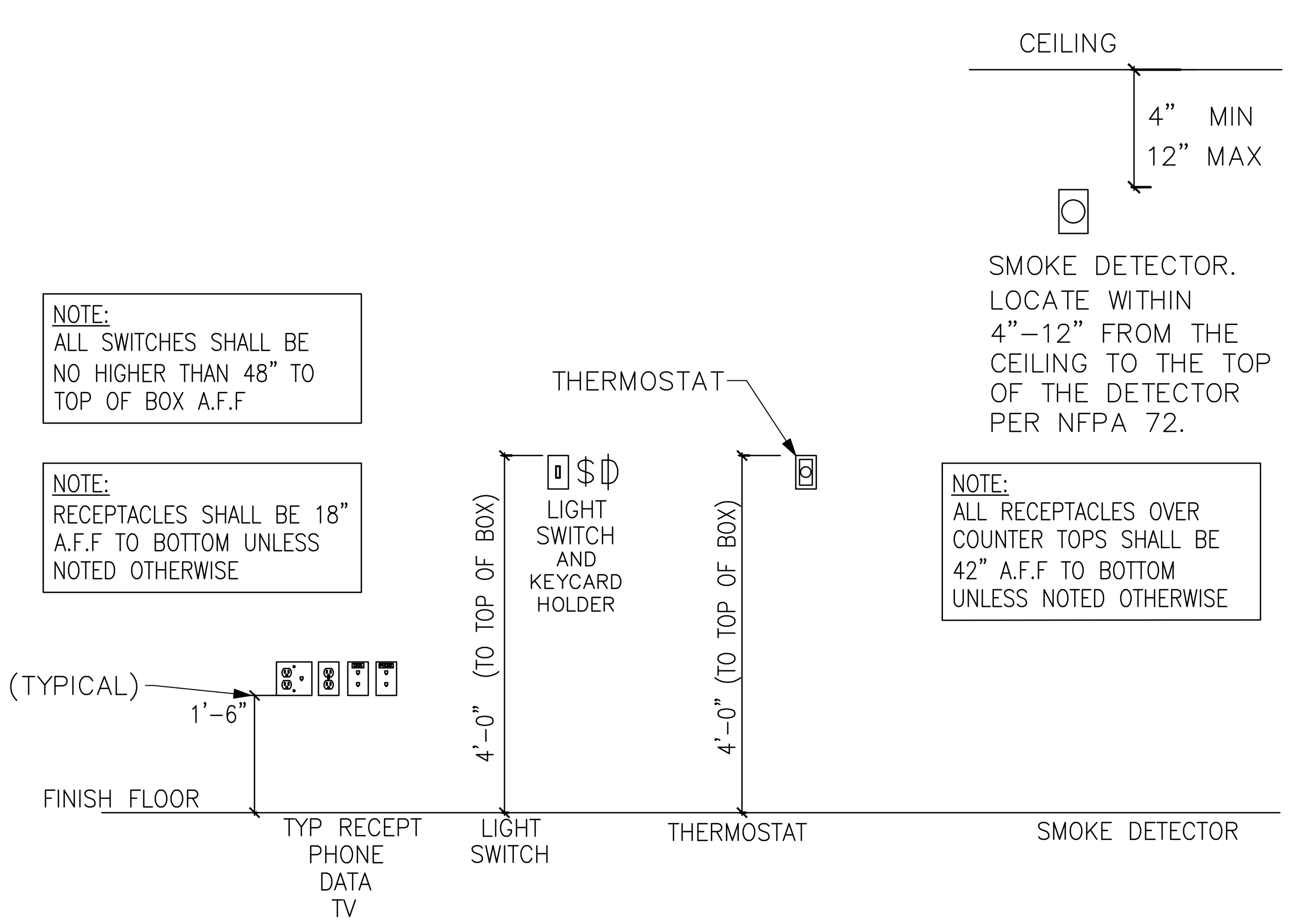
PERMIT SET
01/22/2024

SHEET TITLE:
POWER PLAN – LEVEL 3

SHEET NO.
E3.02

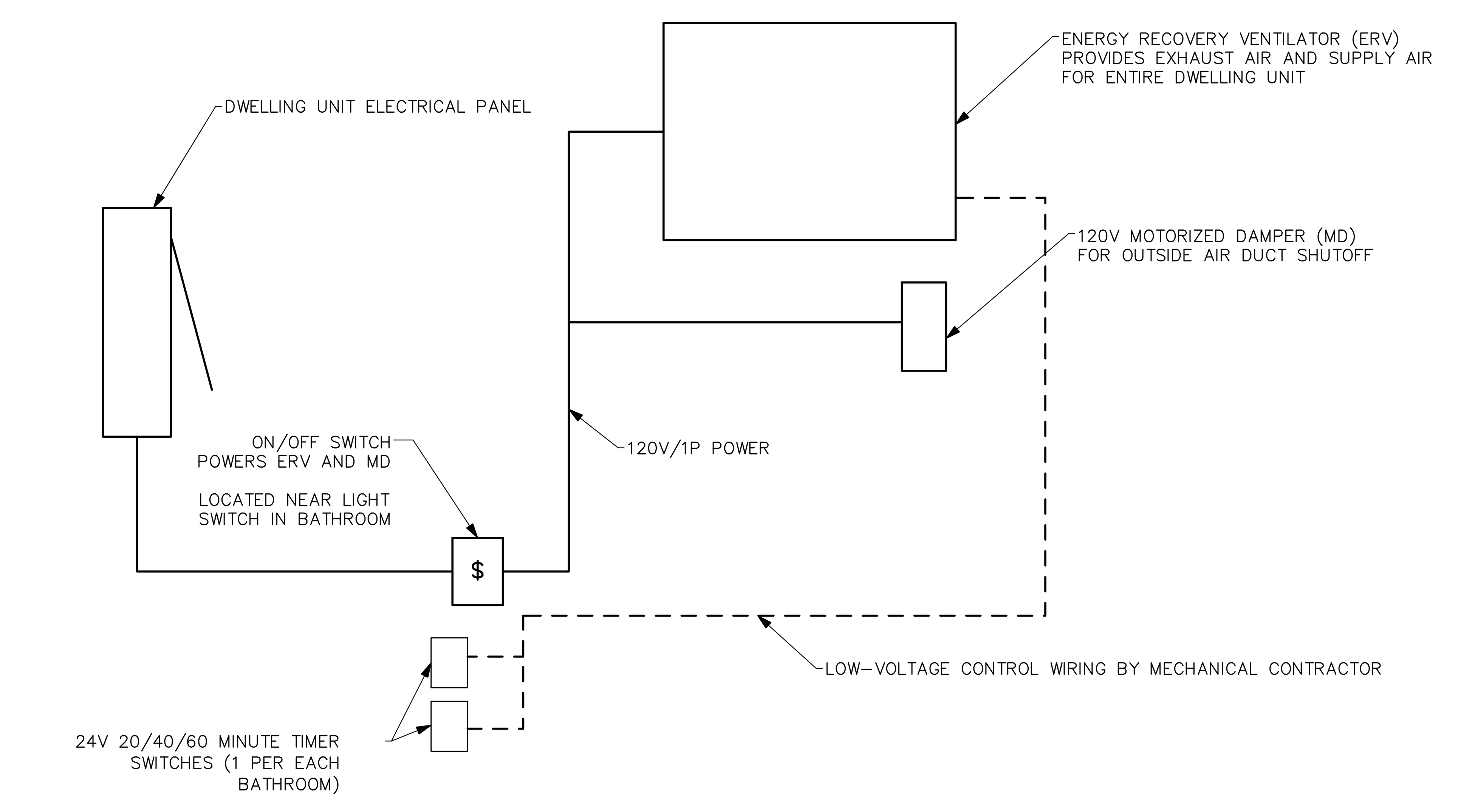


TYPICAL MOUNTING HEIGHTS FOR ELECTRICAL

APARTMENT ELECTRICAL DEVICE SCHEDULE

SYMBOL	DEVICE	NOTES
	RECEPTACLE, SIMPLEX	PROVIDE WHERE INDICATED.
	RECEPTACLE, SIMPLEX, FLOOR MOUNT	PROVIDE WHERE INDICATED.
	RECEPTACLE, DUPLEX, FLOOR MOUNT	PROVIDE WHERE INDICATED.
	RECEPTACLE, DUPLEX	PROVIDE WHERE INDICATED.
	RECEPTACLE, DUPLEX, SPLIT-WIRED	PROVIDE WHERE INDICATED. LOWER OUTLET CONTROLLED BY WALL SWITCH
	RECEPTACLE, QUAD + TELEVISION CABLE OUTLET	PROVIDE WHERE INDICATED.
	RECEPTACLE, QUAD	PROVIDE WHERE INDICATED.
	TELEPHONE WALL OUTLET	REFER TO LOW VOLTAGE PLANS
	COMM/DATA WALL OUTLET	REFER TO LOW VOLTAGE PLANS
TV	TELEVISION CABLE OUTLET	REFER TO LOW VOLTAGE PLANS
$	WALL SWITCH	PROVIDE WHERE INDICATED.
$VS	WALL SWITCH VACANCY SENSOR	PROVIDE WHERE INDICATED.
$3W	WALL SWITCH (3-WAY)	PROVIDE WHERE INDICATED.
	WALL SWITCH DIMMER	PROVIDE WHERE INDICATED.
	FAN CONTROL	PROVIDE WHERE INDICATED.
$AT	SWITCH ASTRONOMICAL TIME CLOCK CONTROL	PROVIDE WHERE INDICATED.
	LIGHT FIXTURE, WALL MOUNTED SCONCE	PROVIDE ROUGH IN WHERE INDICATED REFER TO LUMINAIRE SCHEDULE
	LIGHT FIXTURE, CEILING MOUNTED	PROVIDE ROUGH IN WHERE INDICATED REFER TO LUMINAIRE SCHEDULE
	PENDANT LIGHT FIXTURE, CEILING MOUNTED	PROVIDE ROUGH IN WHERE INDICATED REFER TO LUMINAIRE SCHEDULE
	LIGHT FIXTURE, WALL MOUNTED	PROVIDE ROUGH IN WHERE INDICATED REFER TO LUMINAIRE SCHEDULE
EF	FAN, CEILING MOUNTED.	FURNISHED & INSTALLED BY MECH, WIRED BY ELECTRICAL CONTRACTOR
T	THERMOSTAT	FURNISHED & INSTALLED BY MECH
	SMOKE DETECTOR & CARBON MONOXIDE DETECTOR	PART OF DESIGN/BUILD FIRE ALARM SYSTEM. SMOKE/CO DETECTORS TO BE WIRED TO FIRE ALARM SYSTEM.
DB	DOOR BELL BUTTON	PROVIDE WHERE INDICATED.
DBC	DOOR BELL CHIMES	PROVIDE WHERE INDICATED.
DBT	DOOR BELL TRANSFORMER	PROVIDE WHERE INDICATED.
MB	MULTIMEDIA BOX	PROVIDE WHERE INDICATED.
	FAN COIL UNIT	FURNISHED & INSTALLED BY MECH (ELECTRICAL PROVIDE POWER TO THE UNIT PER NEC)
PC	PHOTOCELL	EXTERIOR WEATHERPROOF PHOTOCELL CONTROL FOR DUSK TO DAWN OPERATION
	WALL SWITCH, LOW VOLTAGE BATHROOM FAN SPEED CONTROL	FURNISHED & INSTALLED BY ELEC

NOTE: NOT ALL ITEMS USED ON PROJECT.



DWELLING UNIT VENTILATION WIRING DIAGRAM

DETAIL

ELECTRIC HEATERS

EQUIP NO.	SERVICE	MOUNTING/ DISCHARGE	HEATING	ELECTRICAL	BASIS OF DESIGN
			KW	VOLTAGE	
EWH-1	BEDROOM	WALL	1	208V/1P	KING WHF
EWH-2	LIVING ROOM	WALL	2	208V/1P	KING WHF
EWH-0.5	BATHROOM	WALL	0.5	208V/1P	KING WHF

NOTES:
(1) BROAN, CADET OR EQUIVALENT.
(2) PROVIDE REMOTE THERMOSTAT.

APARTMENT NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES.
2. DEVICE BOXES ON OPPOSITE SIDES OF DEMISING WALLS SHALL BE IN SEPARATE STUD BAYS. PROVIDE BACKING EQUIVALENT TO LOWRY'S OUTLET BOX PADS. CONDUIT FROM ONE UNIT SHALL NOT PASS THROUGH STUDS OF A SHARED WALL(DOUBLE STUDS) FROM AN ADJACENT UNIT(BRIDGING).
3. PROVIDE ARC-FAULT PROTECTION, TAMPER PROOF AND GFCI RECEPTACLES AS REQUIRED BY CODE AND LOCAL AHJ. ARC-FAULT PROTECTION MUST BE PROVIDED FOR CIRCUITS IN THE AREAS LISTED IN NEC 210.12(A).
4. PROVIDE SUFFICIENT DUPLEX RECEPTACLES TO MEET NEC 210.52.
5. THERMOSTATS SHALL NOT INTERFERE WITH DOOR SWINGS.
6. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS FOR KITCHEN APPLIANCES. COORDINATE ALL J-BOX LOCATIONS WITH APPLIANCE INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
7. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CORD AND PLUG ASSEMBLY FOR EACH DISPOSER.
8. PROVIDE A DEDICATED 20 AMP CIRCUIT TO EACH UNIT BATHROOM RECEPTACLE. BATHROOM LIGHTS, FAN TO BE ON SAME CIRCUIT PER 210.11(C)(3) EXCEPTION.
9. HOME RUNS AND LOOPS CONNECTING LIGHT FIXTURES, WIRING DEVICES, AND HVAC EQUIPMENT ON PLANS INDICATE CIRCUITING SCHEME. SEE TYPICAL PANEL SCHEDULES FOR ACTUAL CIRCUIT NUMBERS FOR TYPICAL APARTMENT.
10. LIGHTS WITHIN 3' HORIZONTAL OF SHOWER OR TUB TO BE WET LOCATION RATED AND HAVE FULLY ENCLOSED TRIMS. PROVIDE GFCI PROTECTION IF THE LUMINAIRE INSTALLATION MANUAL STATES IT IS REQUIRED.
11. PROVIDE SMOKE DETECTORS AND CO ALARMS AS REQUIRED. DETECTORS AND ALARMS TO BE HARDWIRED AND PROVIDED WITH BATTERY BACKUP.
12. ELECTRICAL CONTRACTOR SHALL INSTALL RECEPTACLES AND TV, DATA/PHONE OUTLETS UNDER COMMON COVER PLATE WHERE POSSIBLE. PROVIDE AND INSTALL DIVIDERS AS REQUIRED FOR CABLE/POWER SEPARATION.
13. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LAYOUTS OF ALL DEVICES.
14. ALL WALL PENETRATIONS SHALL BE CAULKED WITH APPROVED MATERIAL TO MAINTAIN THE FIRE RATING OF ALL WALLS AND FLOORS.
15. ALL CONDUIT SHALL BE INSTALLED IN NEAT SYMMETRICAL LINES HORIZONTAL OR PERPENDICULAR TO BUILDING COLUMNS AND ROOF LINES. CONDUITS SHALL BE GROUPED ON COMMON SUPPORTS WHEREVER POSSIBLE.
16. REFERENCE MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT.
17. ELECTRICAL CONTRACTOR SHALL VERIFY ALL FUSE RATING WIRE SIZES AND DISCONNECT SIZES WITH EQUIPMENT SERVED ON THE JOB PRIOR TO INSTALLATION.
18. SEE ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR ADDITIONAL DETAILS AND CASEWORK DIMENSIONS.
19. DEVICE LOCATIONS IN 1ST DWELLING/RESIDENT UNIT SHALL BE REVIEWED AND APPROVED BY OWNER PRIOR TO ROUGH-IN OF REMAINING UNITS
20. CONFIRM FINAL LOCATION OF HEATERS AND THERMOSTATS IN FIELD PRIOR TO ROUGH-IN

ACCESSIBILITY NOTES:

1. ALL SWITCHES AND CONTROLS – 15" MIN; 48" MAX TO CONTROL.
2. GENERAL OUTLETS MIN 18" AFF.
3. ALL SWITCHES/CONTROLS ABOVE COUNTERTOPS 48" MAX.
4. ELECTRICAL SUB-PANELS IN UNITS MUST COMPLY WITH ABOVE REACH RANGES.
5. SWITCHES FOR EXHAUST HOODS AND GARBAGE DISPOSALS MUST COMPLY WITH ABOVE REACH RANGES. INSTALL SWITCHES ON FACE OF CABINETS IF REQUIRED TO COMPLY.

NO.	DATE	REVISIONS DESCRIPTION

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
206-364-3343

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

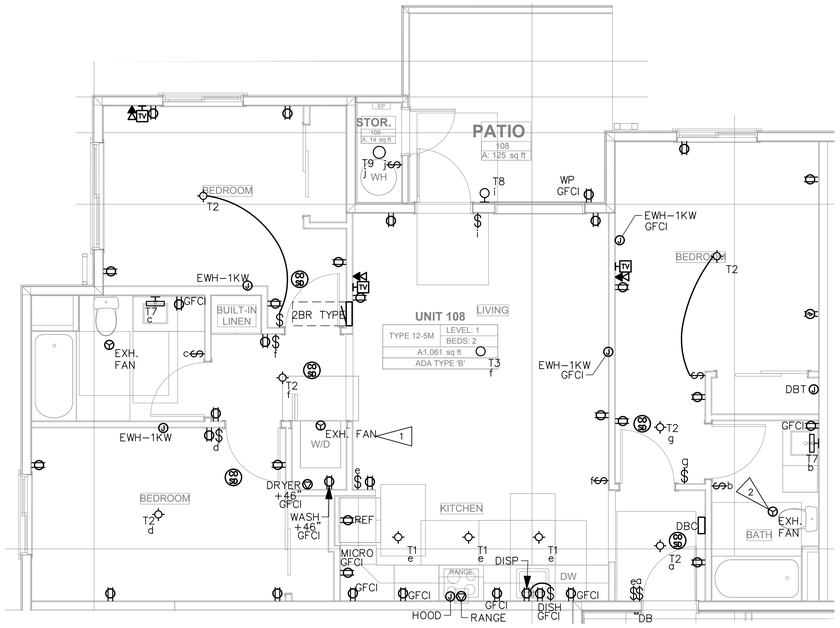
PROJECT: EAST TOWN CROSSING
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W, SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
UNIT PLANS
NOTES

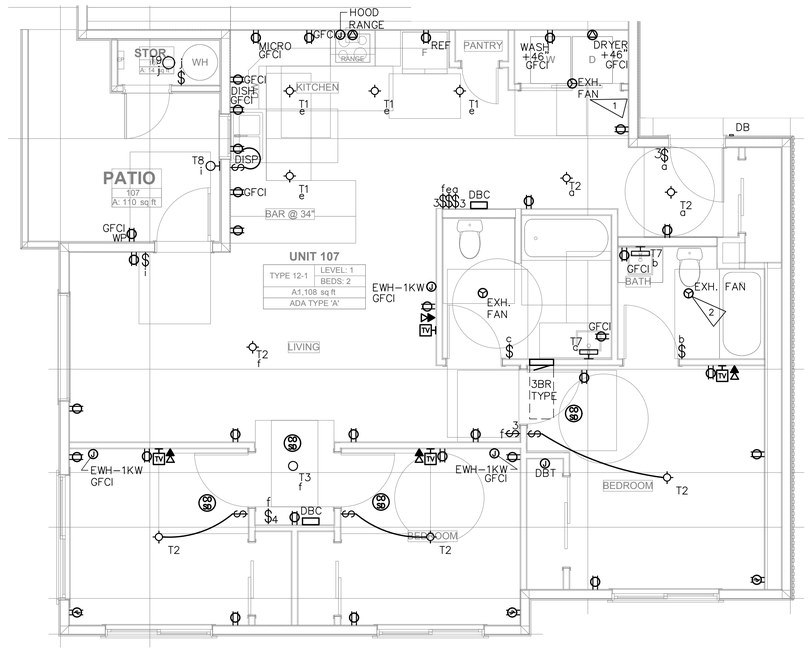
SHEET NO.
E5.00



UNIT TYPICALS

TYPE 12–5 2BR

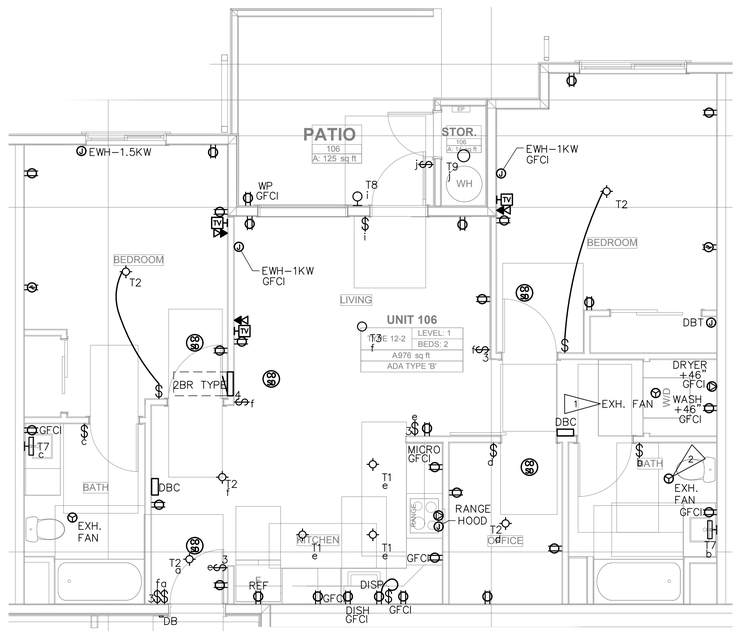
SCALE: 1/4" = 1'–0"



UNIT TYPICALS

TYPE 12–1 3BR

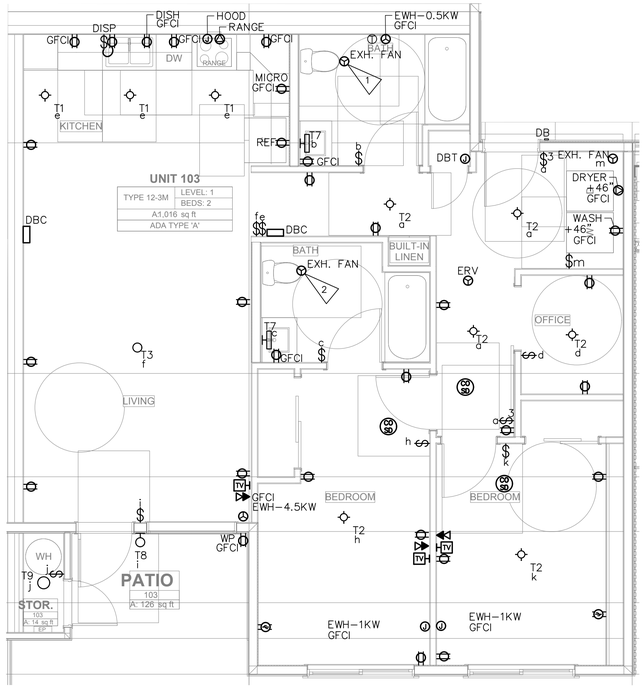
SCALE: 1/4" = 1'–0"



UNIT TYPICALS

TYPE 12–2 2BR

SCALE: 1/4" = 1'–0"



UNIT TYPICALS

TYPE 12–3 3BR

SCALE: 1/4" = 1'–0"

GENERAL NOTES:

1. PROVIDE AFCI BREAKERS PER NEC 210.12.
2. PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.
3. PROVIDE ADA COMPLIANT CONTROLS FOR RANGE HOODS & CEILING FANS IN UNITS DESIGNATED AS 'ACCESSIBLE' PER ARCHITECTURAL.

FLAG NOTES

1. LAUNDRY EXHAUST FAN CONTROLLED BY INTEGRAL HUMIDISTAT. PROVIDE UNSWITCHED HOT.
2. TWO–SPEED WHOLE HOUSE FAN CONTROLLED BY INTEGRAL OCCUPANCY SENSOR. HIGH SPEED OPERATION WHEN OCCUPIED, LOW SPEED OPERATION OTHERWISE. PROVIDE UNSWITCHED HOT.

NO.	DATE	REVISIONS

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206.364.3343 TEL
CONTACT: XXX

DRAWN: LYSAK K. | DESIGNED: LYSAK K. | CHECKED: STEINKE M. | APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
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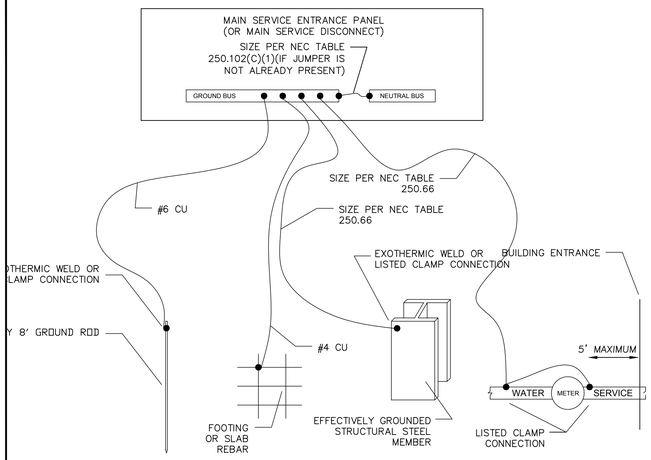
PERMIT SET
01/22/2024

SHEET TITLE:
UNIT PLANS

SHEET NO.
E5.01



GEC DIAGRAM

GENERAL FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
⟨1⟩	125	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G	101, 102, 103, 104, 105, 106, 107, 108, 201, 202, 203, 204, 205, 206, 207, 208, 301, 302, 303, 304, 305, 306, 307, 308
⟨10⟩	800	(3)3"C,3#400kcmil AL,#400kcmil AL N,#4/0 AL G	UTIL
⟨11⟩	400	(2)2-1/2"C,3#250kcmil AL,#250kcmil AL N,#1 AL G	HOUSE
⟨12⟩	1000	(4)3"C,3#350kcmil AL,#350kcmil AL N,#4/0 AL G	MC
⟨14⟩	300	3"C,3#350kcmil,#350kcmil N,#4G	PV

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/0 AND ABOVE

FEEDER SCHEDULE NOTES:
CONDUIT FILL:
* FOR CONDUIT SIZES 1-1/2" AND BELOW, FILL IS BASED ON EMT.
* FOR CONDUIT SIZES 2" AND ABOVE, FILL IS BASED ON SCHEDULE 40 PVC.

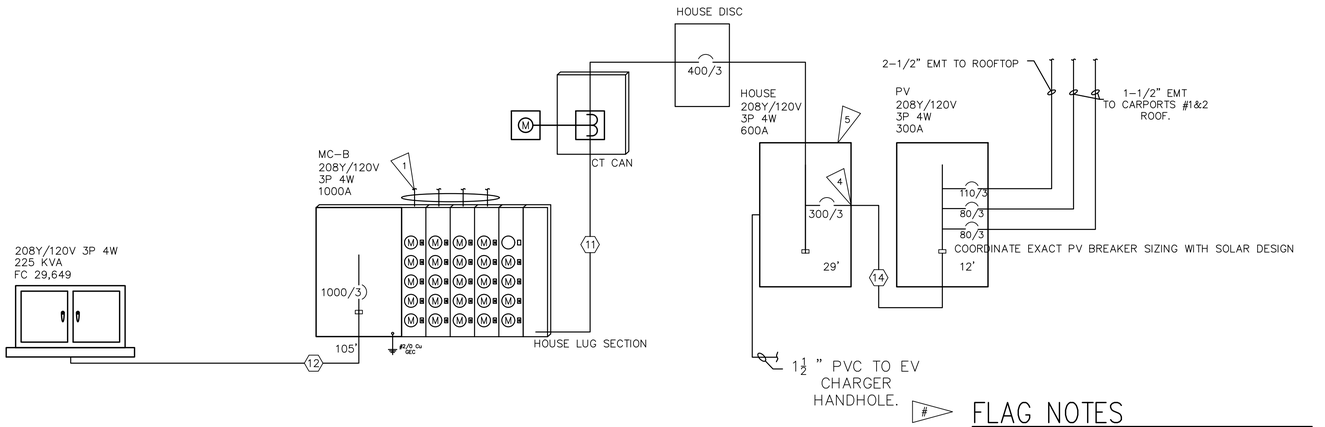
IN LOCATIONS APPROVED FOR THE PURPOSE, CONTRACTOR MAY USE MC CABLE.
IN LOCATIONS APPROVED FOR THE PURPOSE CONTRACTOR MAY USE OTHER CONDUIT TYPES, INCLUDING RMC, FMC AND LFMC. CONTRACTOR REQUIRED TO ENSURE CONDUIT FILL DOES NOT EXCEED 40%.

CONTRACTOR RESPONSIBLE TO ENSURE TERMINATION/LUG CAPACITY FOR ALL SCHEDULED FEEDERS.

XHHW/THHN/THWN SHALL BE USED FOR INSULATION OF THE CONDUCTOR.

PHASE 1 EV BREAKDOWN: 290 PARKING SPACES * 0.2 = 58 EV CHARGERS

Bldg	# EV chargers	208V 1PH load (KVA)	208/120V 3PH load (A)	50% load management infrastructure (KVA)	50% load management infrastructure (A)
B	6	49.92	138.57	24.96	69.29
C	6	49.92	138.57	24.96	69.29
D	6	49.92	138.57	24.96	69.29
G	20	166.4	461.9	83.2	230.95
H	4	33.28	92.38	16.64	46.19
TI.1	3	24.96	69.29	12.48	34.65
TI.2-4	13	108.16	300.24	54.08	150.12
Total	58	482.56	1339.5	241.28	669.75



ONE-LINE DIAGRAM

SCALE: NONE

FAULT CURRENT SCHEDULE

DEVICE	FAULT	AIC RATING	L-N VOLTS	UTILITY	FED FROM		FEEDER		TOTAL MOTOR
				FAULT	DEVICE	FAULT	SIZE	LENGTH	FAULT
UTIL	29,711	NA	120V	29,100					611
MC-B	21,901	42,000	120V	21,286	UTIL	29,100	(4)#350kcmil AL	105'	615
HOUSE	17,917	42,000	120V	17,483	MC-B	21,286	(2)#250kcmil AL	29'	434
PV	16,302	22,000	120V	15,944	HOUSE	17,483	#350kcmil	12'	358
101	10,709	22,000	120V	10,549	MC-B	21,286	#2/0 AL	42'	160
102	11,121	22,000	120V	10,949	MC-B	21,286	#2/0 AL	39'	172
103	9,799	22,000	120V	9,662	MC-B	21,286	#2/0 AL	48'	137
104	9,351	22,000	120V	9,225	MC-B	21,286	#2/0 AL	52'	126
105	5,597	22,000	120V	5,539	MC-B	21,286	#2/0 AL	106'	58
106	6,879	22,000	120V	6,802	MC-B	21,286	#2/0 AL	81'	77
107	4,386	22,000	120V	4,342	MC-B	21,286	#2/0 AL	143'	44
108	4,426	22,000	120V	4,381	MC-B	21,286	#2/0 AL	141'	45
201	9,257	22,000	120V	9,133	MC-B	21,286	#2/0 AL	53'	124
202	9,316	22,000	120V	9,191	MC-B	21,286	#2/0 AL	52'	125
203	8,690	22,000	120V	8,578	MC-B	21,286	#2/0 AL	58'	112
204	8,266	22,000	120V	8,164	MC-B	21,286	#2/0 AL	63'	102
205	5,413	22,000	120V	5,358	MC-B	21,286	#2/0 AL	111'	55
206	5,496	22,000	120V	5,439	MC-B	21,286	#2/0 AL	109'	57
207	3,976	22,000	120V	3,936	MC-B	21,286	#2/0 AL	160'	40
208	4,749	22,000	120V	4,701	MC-B	21,286	#2/0 AL	130'	48
301	8,258	22,000	120V	8,155	MC-B	21,286	#2/0 AL	63'	103
302	8,305	22,000	120V	8,202	MC-B	21,286	#2/0 AL	62'	103
303	7,798	22,000	120V	7,705	MC-B	21,286	#2/0 AL	68'	93
304	7,453	22,000	120V	7,366	MC-B	21,286	#2/0 AL	73'	87
305	4,826	22,000	120V	4,778	MC-B	21,286	#2/0 AL	127'	48
306	5,118	22,000	120V	5,066	MC-B	21,286	#2/0 AL	119'	52
307	3,773	22,000	120V	3,735	MC-B	21,286	#2/0 AL	170'	38
308	4,463	22,000	120V	4,418	MC-B	21,286	#2/0 AL	140'	45

REQUIRED ELECTRIC VEHICLE CHARGING INFRASTRUCTURE WAC 51-50-0429:

- WHERE PARKING IS PROVIDED, TEN PERCENT OF PARKING SPACES SHALL BE PROVIDED WITH ELECTRIC VEHICLE CHARGING INFRASTRUCTURE.
- ELECTRICAL ROOM(S) SERVING PARKING AREAS SHALL BE DESIGNED TO ACCOMMODATE THE ELECTRICAL EQUIPMENT AND DISTRIBUTION REQUIRED TO SERVE A MINIMUM OF 20 PERCENT OF THE TOTAL PARKING SPACES WITH 208/240 V 40-AMP ELECTRIC VEHICLE CHARGING INFRASTRUCTURE.
- MINIMUM ONE ACCESSIBLE PARKING SPACE SHALL BE SERVED BY ELECTRIC VEHICLE CHARGING INFRASTRUCTURE.

TOTAL NUMBER OF PARKING SPACES = 458; 458 x 0.2 = CAPACITY FOR 92 EV CHARGERS
92 CHARGERS x 208V/1PH x 40A = 765.44 KVA = 2,126.22 A 3 PHASE POWER @ 120/208V

UTILIZING LOAD MANAGEMENT INFRASTRUCTURE, EV LOAD CAN BE REDUCED BY 50%. 2,126.22A/2 = 382.72 KVA (1,063.11 A) @ 208V 3 PHASE.

PER WAC 427, ELECTRICAL INFRASTRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN ADDITIONAL 1,064 AMPS OF ELECTRICAL LOAD.

FLAG NOTES

1. UNIT FEEDERS: REFER TO METER CENTER PANEL SCHEDULE ON THIS SHEET FOR UNIT FEEDER SIZE & TYPE. TYP.
2. CONTRACTOR SHALL VERIFY AVAILABLE FAULT CURRENT WITH PSE SERVICE LETTER PRIOR TO ORDERING EQUIPMENT.
3. HOUSE PANEL METER AND MAIN BREAKER.
4. PROVISIONAL BREAKER SPACE AND CONDUIT FOR FUTURE PV SYSTEM. LOCATE BREAKER SPACE AT
5. BUSBAR SIZED PER NEC 705.12(B)(2).

NO.	DATE	DESCRIPTION
		REVISIONS

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CONTACT: XXX

RK STEINKE STATE OF WASHINGTON 22 REGISTERED PROFESSIONAL ENGINEER 01/22/2024

DRAWN:	DESIGNED:	CHECKED:	APPROVED:
LYSAK K.	LYSAK K.	STEINKE M.	STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
ONE-LINE DIAGRAM & PANELS SCHEDULES

SHEET NO.
E6.00

MC-B

ROOM
MOUNTING **FLUSH**
FED FROM **UTIL**
NOTE

VOLTS **208Y/120V 3P 4W**
BUS AMPS **1000**
NEUTRAL **100%**

AIC **42,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	FEEDER RACEWAY AND CONDUCTORS
1	125/2	PANEL 101	18.2	18.3		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
2	125/2	PANEL 102		18.2	18.3	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
3	125/2	PANEL 103	17.8		17.7	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
4	125/2	PANEL 104	17.7	17.8		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
5	125/2	PANEL 105		17.7	17.8	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
6	125/2	PANEL 106	17.8		17.7	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
7	125/2	PANEL 107	18.2	18.3		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
8	125/2	PANEL 108		18.2	18.3	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
9	125/2	PANEL 201	18.3		18.2	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
10	125/2	PANEL 202	17.7	17.8		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
11	125/2	PANEL 203		17.7	17.8	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
12	125/2	PANEL 204	17.8		17.7	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
13	125/2	PANEL 205	17.7	17.8		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
14	125/2	PANEL 206		17.7	17.8	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
15	125/2	PANEL 207	18.3		18.2	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
16	125/2	PANEL 208	18.2	18.3		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
17	125/2	PANEL 301		18.2	18.3	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
18	125/2	PANEL 302	18.3		18.2	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
19	125/2	PANEL 303	17.7	17.8		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
20	125/2	PANEL 304		17.7	17.8	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
21	125/2	PANEL 305	17.8		17.7	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
22	125/2	PANEL 306	17.7	17.8		1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
23	125/2	PANEL 307		18.2	18.3	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
24	125/2	PANEL 308	18.3		18.2	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G
25	400/3	PANEL HOUSE	42.2	41.9	41.9	(2)2-1/2"C,3#250kcmil AL,#250kcmil AL N,#1 AL G
26	-/2	SPACE		0	0	
		TOTAL CONNECTED KVA BY PHASE	329	329	329	

OPTIONAL MULTIFAMILY DWELLING CALCULATION (NEC 220.84)

DWELLING UNIT LOADS

	KVA			KVA
LIGHTING AND RECEPTACLES	77.9	25,950 SF (3 VA/SF)	CONNECTED LOAD	794
SMALL-APPLIANCE	72		DWELLING UNITS	24
LAUNDRY	36		DEMAND FACTOR	(35%)
APPLIANCES	290		CALCULATED LOAD	278
ELECTRIC COOKING	194			
MOTORS	28.8			
HEATING	95	(100%)		

HOUSE LOADS

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0.658	0.823	(125%)	RECEPTACLES	2.7	2.7	(50%>10)
LARGEST MOTOR	2.83	0.707	(25%)	EV LOAD	39.6	49.5	(125%)
MOTORS	5.65	5.65	(100%)	PV LOAD	77.4	0	(0%)
				TOTAL HOUSE LOAD		59.4	

TOTAL LOAD

	KVA		KVA
TOTAL DWELLING UNIT LOAD	278	TOTAL LOAD	337
TOTAL HOUSE LOAD	59.4	BALANCED 3-PHASE LOAD	937 A

HOUSE

Panel
ROOM
MOUNTING **FLUSH**
FED FROM **MC-B**
NOTE

VOLTS **208Y/120V 3P 4W**
BUS AMPS **600**
NEUTRAL **100%**

AIC **42,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	20/1	0.72	RECEPTACLE	a	2	20/2	0.1	COURTYARD LIGHTING
3	20/1	0.54	RECEPTACLE	b	4	|		
5	20/1	0.54	RECEPTACLE	c	6	20/1	0.1	SITE LIGHTING
7	20/1	0.36	RECEPTACLE	a	8	20/1	0.22	LIGHTING
9	20/1	0.18	FACP	b	10	20/1	0.238	LIGHTING
11	20/1	0.36	RECEPTACLE	c	12	20/3	5.65	BP-1
13	40/2	6.6	DUAL EV CHARGER	a	14	|		
15	|			b	16	|		
17	40/2	6.6	DUAL EV CHARGER	c	18	-/1	0	SPACE
19	|			a	20	-/1	0	SPACE
21	40/2	6.6	DUAL EV CHARGER	b	22	-/1	0	SPACE
23	|			c	24	-/1	0	SPACE
25	40/2	6.6	DUAL EV CHARGER	a	26	-/1	0	SPACE
27	|			b	28	-/1	0	SPACE
29	40/2	6.6	DUAL EV CHARGER	c	30	-/1	0	SPACE
31	|			a	32	-/1	0	SPACE
33	40/2	6.6	DUAL EV CHARGER	b	34	-/1	0	SPACE
35	|			c	36	-/1	0	SPACE
37	-/1	0	SPACE	a	38	300/3	77.4	PANEL PV
39	-/2	0	SPACE	b	40	|		
41	|			c	42	|		

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	0.658	0.823	(125%)	MOTORS	5.65	5.65	(100%)
LARGEST MOTOR	2.83	0.707	(25%)	RECEPTACLES	2.7	2.7	(50%>10)
				EV LOAD	39.6	49.5	(125%)
				PV LOAD	77.4	0	(0%)
				TOTAL LOAD		59.4	
				BALANCED 3-PHASE LOAD		165 A	
				PHASE A		101%	
				PHASE B		99.7%	
				PHASE C		99.7%	

PV

Panel
ROOM
MOUNTING **FLUSH**
FED FROM **HOUSE**
NOTE

VOLTS **208Y/120V 3P 4W**
BUS AMPS **300**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	150/3	40.2	BTPO ARRAY 82 PANELS	a	2	-/1	0	SPACE
3	|			b	4	-/1	0	SPACE
5	|			c	6	-/1	0	SPACE
7	30/3	5.88	SOUTH ARRAY 12 PANELS	a	8	-/1	0	SPACE
9	|			b	10	-/1	0	SPACE
11	|			c	12	-/1	0	SPACE
13	20/3	3.92	SOUTH ARRAY 8 PANELS	a	14	-/1	0	SPACE
15	|			b	16	-/1	0	SPACE
17	|			c	18	-/1	0	SPACE
19	30/3	5.88	EAST ARRAY 12 PANEL	a	20	-/1	0	SPACE
21	|			b	22	-/1	0	SPACE
23	|			c	24	-/1	0	SPACE
25	80/3	21.5	CARPORT 1 50 PANELS	a	26	-/1	0	SPACE
27	|			b	28	-/1	0	SPACE
29	|			c	30	-/1	0	SPACE
31	-/1	0	SPACE	a	32	-/1	0	SPACE
33	-/1	0	SPACE	b	34	-/1	0	SPACE
35	-/1	0	SPACE	c	36	-/1	0	SPACE
37	-/1	0	SPACE	a	38	-/1	0	SPACE
39	-/1	0	SPACE	b	40	-/1	0	SPACE
41	-/1	0	SPACE	c	42	-/1	0	SPACE

	CONN KVA	CALC KVA			CALC KVA	
PV LOAD	77.4	0	(0%)	TOTAL LOAD	0	
				BALANCED 3-PHASE LOAD	0 A	
				PHASE A	100%	
				PHASE B	100%	
				PHASE C	100%	

2 BED TNP

Panel
ROOM
MOUNTING **FLUSH**
FED FROM
NOTE

VOLTS **208/120V 2P 3W**
BUS AMPS **125**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	15/1	1	LVG RM R/L, SD/CO	a	2	20/1	1.5	SML APPLIANCE/REF
3	15/1	1	OFFICE R/L	b	4	20/1	1.5	SML APPLIANCE/DINING
5	15/1	1	BED RM R/L	a	6	20/1	0.8	DISHWASHER
7	15/1	1	BED RM R/L	b	8	20/1	1.2	DISPOSAL
9	20/1	1	BATHROOM REC/LTG	a	10	40/2	8.1	RANGE
11	20/1	1	BATHROOM REC/LTG	b	12	|		
13	20/2	1.5	WALL HEATER BED	a	14	20/1	1.8	MICRO/HOOD
15	|			b	16	30/2	5	DRYER
17	20/2	2	WALL HEATER LVG	a	18	|		
19	|			b	20	20/1	1.5	WASHER
21	30/2	4.5	ELEC WATER HEATER	a	22	-/1	0	SPACE
23	|			b	24	-/1	0	SPACE
25	-/1	0	SPACE	a	26	-/1	0	SPACE
27	-/1	0	SPACE	b	28	-/1	0	SPACE
29	-/1	0	SPACE	a	30	-/1	0	SPACE

OPTIONAL DWELLING UNIT CALCULATION (NEC 220.82)

	CONN KVA			CONN KVA	CALC KVA	
LIGHTING AND RECEPTACLES	3.12	1,040 SF (3 VA/SF)	GENERAL LOAD UP TO 10 KVA	10	10	(100%)
SMALL-APPLIANCE	3		OVER 10 KVA	19	7.61	(40%)
LAUNDRY	1.5		MAX HEATING OR COOLING		2.28	(220.82(C)(4))
APPLIANCES	12.1		TOTAL LOAD		19.9	
ELECTRIC COOKING	8.1		BALANCED LOAD		95.6 A	
MOTORS	1.2		PHASE A		99.7%	
TOTAL GENERAL LOAD	29		PHASE B		100%	

3 BED TNP

Panel
ROOM
MOUNTING **FLUSH**
FED FROM
NOTE

VOLTS **208/120V 2P 3W**
BUS AMPS **125**
NEUTRAL **100%**

AIC **22,000**
MAIN BKR **MLO**
LUGS **STANDARD**

CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION		CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRIPTION
1	15/1	1	LVG RM R/L, SD/CO	a	2	20/1	1.5	SML APPLIANCE/REF
3	15/1	1	BED RM R/L	b	4	20/1	1.5	SML APPLIANCE/DINING
5	15/1	1	BED RM R/L	a	6	20/1	0.8	DISHWASHER
7	15/1	1	BED RM R/L	b	8	20/1	1.2	DISPOSAL
9	20/1	1	BATHROOM REC/LTG	a	10	40/2	8.1	RANGE
11	20/1	1	BATHROOM REC/LTG	b	12	|		
13	20/2	1.5	WALL HEATER BED	a	14	20/1	1.8	MICRO/HOOD
15	|			b	16	30/2	5	DRYER
17	20/2	1.5	WALL HEATER BED/BATH	a	18	|		
19	|			b	20	20/1	1.5	WASHER
21	20/2	1.5	WALL HEATER LVG	a	22	-/1	0	SPACE
23	|			b	24	-/1	0	SPACE
25	30/2	4.5	ELEC WATER HEATER	a	26	-/1	0	SPACE
27	|			b	28	-/1	0	SPACE
29	-/1	0	SPACE	a	30	-/1	0	SPACE

OPTIONAL DWELLING UNIT CALCULATION (NEC 220.82)

	CONN KVA			CONN KVA	CALC KVA	
LIGHTING AND RECEPTACLES	3.39	1,130 SF (3 VA/SF)	GENERAL LOAD UP TO 10 KVA	10	10	(100%)
SMALL-APPLIANCE	3		OVER 10 KVA	19.3	7.72	(40%)
LAUNDRY	1.5		MAX HEATING OR COOLING		2.93	(220.82(C)(4))
APPLIANCES	12.1		TOTAL LOAD		20.6	
ELECTRIC COOKING	8.1		BALANCED LOAD		99.2 A	
MOTORS	1.2		PHASE A		99.8%	
TOTAL GENERAL LOAD	29.3		PHASE B		100%	

NO.	DATE	REVISIONS

ROBISON ENGINEERING, INC
19401 40TH AVE W., SUITE 302
LYNNWOOD, WA 98036
206.364.3343 TEL
CONTACT: XXX

MARK STEINKE — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 01/22/2024

DRAWN: LYSAK K.
DESIGNED: LYSAK K.
CHECKED: STEINKE M.
APPROVED: STEINKE M.

PROJECT: **EAST TOWN CROSSING**
MULTIFAMILY DEVELOPMENT
PIONEER WAY & SHAW RD. PUYALLUP, WA

ROBISON ENGINEERING, INC
19401 40TH AVE W. SUITE 302
LYNNWOOD, WA 98036
PHONE:(206)364-3343

PERMIT SET
01/22/2024

SHEET TITLE:
PANELS SCHEDULES

SHEET NO.
E6.01