Bradley Heights Apartments A 236-Unit Apartment Development Puyallup, Washington

PROJECT TEAM

Owner/Developer

Architect:

Bradley Heights SS LLC 614 Boylston Ave E Seattle, WA 98102 (206) 557-7236

Milbrandt Architects, Inc., P.S. 25 Central Way, Suite 210 Kirkland, WA 98033 (425) 454-7130

Solutions 4 Structure, Inc

Azure Green Consultants

11605 135th St Ct E

(253) 268-2923

409 East Pioneer

(253) 770-3144

Nature By Design

Puyallup, WA 98372

Puyallup, WA 98374

Structural Engineer

Civil Engineer

Landscape Architect

1320 Alameda Avenue, Suite B Fircrest, WA 98466

MEP Engineer

(253) 460-6067 Robison Engineering Inc. 19401 40th Avenue W, Suite 302

Lynnwood, WA 98036 (206) 364-3343

PROJECT INFORMATION

Site Address:

Project Description:

Site Area:

Tax Parcel Number:1

Occupancy Type:

Type of Construction

Applicable Codes:

202 27th Ave SE, Puyallup, WA 98374 Construction of 236 wood framed apartment units in eight

stacked flat buildings along with a leasing amenity building. 7.785 acres (+/- 339,107 SQ. FT.)

All Apartment Buildings are R2 occupancy

All Apartment Buildings are Type V-B construction with NFPA 13R automatic sprinklers

2018 International Building Code 2018 Uniform Plumbing Code 2018 Washington State Energy Code 2018 International Mechanical code 2018 International Fire Code 2022 National Electrical Code ICC/ANSI A117.1-2009 Standard Washington State Amendments as modified and adopted by the local jurisdiction.

RATED ASSEMBLIES

Rated assemblies shall be provided in accordance with IBC section 420

419036006

Assembly	Fire Rating	Detail
Common walls separating dwelling units:	1-hour	4/D1
Exterior walls:	non-rated	1/D1
Interior bearing walls:	non-rated	2/D1
Interior non-bearing walls:	non-rated	2/D1
Corridor-to-unit walls:	1-hour	3/D1
Floor/ceiling:	1-hour	13/D1
Roof/ceiling:	1-hour	17/D1
Penetrations (firestopping)	Per situation	17/D7
Membrane penetrations by ducts in ceiling	26 ga. steel ductir	ng 6/D7
Stair fire barrier wall:	1-hour @ 3-story 2-hour @ 4-story	3/D1 7/D1

Fire Alarm systems and smoke alarms shall be provided in accordance with IBC section 420.5 Refer to unit plan sheets for smoke detector locations and requirements.

GENERAL NOTES

1. Comply with 2018 IBC and all applicable codes and ordinances of the local jurisdiction and the State of Washington. 2. Do not scale drawings.

- 3. Verify all rough-in dimensions for equipment provided in this contract or by All rough-ins shall be approved and fireblocking shall be installed prior to
- framing inspection. 4. Verify size and location of and provide all openings through floors and walls,
- furring, anchors, inserts, rough bucks and backing for surface mounted items. 5. Provide furring as required to conceal mechanical and electrical work in all finished areas.
- 6. All swinging doors not located by dimensions on plans, interior elevations, or details shall be 3" from face of stud to edge of rough openings or centered
- between room partitions as shown. 7. Plans are drawn assuming the following rough openings: Swinging doors: Nominal size +2".
 - Bi-Fold doors: Nominal size +1-1/2". Bi-Pass doors: Nominal size +0".
 - Windows: Nominal size +0".
- Sliding glass doors: Nominal size +0". 8. Fill where required with earth free from organic material. Compact fill in
- 12" lavers maximum. 9. "Finish Floor" refers to the top of concrete slab or top of wood floor
- sheathing.
- 10. Exterior walls shall be 2x6 studs at 16" o.c. and interior walls shall be 2x4 studs at 16" o.c., unless noted otherwise.
- 11. Unless otherwise noted, plan dimensions are to face of studs and face of concrete walls. 12. Refer to interior elevations for cabinet and counter lengths, dimensions,
- countertop materials and detail reference. Verify all existing dimensions before installation. 13. Provide caulking between sole plates and subfloor and between rim joists at
- both top plate and subfloor. 14. Hydrants shall be in service prior to start of framing. 15. Through penetrations and membrane penetrations of rated wall or
- floor/ceiling assembly will require firestopping per 2018 IBC Section 714. See detail 7/D7 for diagram of specifics. 16. Shall be no asbestos used on this project.
- 17. All Tub-Shower valves installed shall conform to UPC 408.3 & ASSE 1016 or ASME A112.18.1 18. Milbrandt Architects is not responsible for construction means, methods,
- techniques or procedures, or for the safety precautions and programs in connection with the work, and is not responsible for the failure of any contractor or subcontractor to carry out the work in accordance with the various contract documents and or governing jurisdiction, regardless of what is shown on these drawings.

FEDERALLY DECLARED SAFE HARBOR

Declared Safe Harbor: HUD Fair Housing Accessibility Guidelines published on March 6, 1991 and the Supplemental Notice to Fair Housing Accessibility Guidelines: Questions and Answers about the Guidelines, published on June 28, 1994.

ACCESSIBILITY

Design is based on the 2018 IBC Chapter 11 which has been amended by the State of Washington, & 2009 ICC A117.1 Accessible & Useable Buildings & Facilities. None of the buildings are an elevator type building.

There are a total of 84 one-story dwelling units at ground level. All ground floor units are 1 or 2-bed unit designs. Provided total 84 accessible units: 12 Type A and 72 Type B units. Type A units meet the requirements for Type B units.

- The 12 Type A units are proportioned as follows (see Site Plan): • (7) 1-Bed units (1 BR) in each of Buildings A, C, D, E, F & G- for a total of 7.
- (5) 2-Bed units (2 BR) in Buildings A, D, E, F & G for a total of 5.

Parking: Section 1106.2 IBC requires 2% of each proposed parking stall type to be accessible. Of the 354 total open stalls, 12 are accessible, including 5 van stalls. Each accessible open stall is indicated by the wheelchair symbol on the site plan and further designated by the detail symbols 10/A3.

VENTILATION NOTES

- 1. Design Criteria: 2018 International Mechanical Code with Washington State
- Amendments. 2. System Type: Balanced whole house fan system with energy recovery
- ventilator
- 3. Use: Group R occupancy. 4. Specifics: See mechanical plans by others.

Bradley Heights SS LLC

ENERGY NOTES

D (
Reference:	2018 WSEC										
	Chapter 4 using climate	zone catagory 5 &	marine 4 for								
	all calculations.										
All residential units shall comply with the Requirements By Component Table 402.1.1.											
Including by	ut not limited to the follow	ving:	Associated Notes/Details								
-	Code Requirement	nts	Showing Compliance								
Wind	low U-Factor	.24 or better	See Insul. Notes on sheets U1,								
			U2, U3, U4, U5								
Ceili	ng R-Value	R-49	13 / D1								
Woo	d Frame Wall R-Value	R-21 int.	1, 3, 4, 7 & 8 / D1								
Floor	R-Value	R-30	N/A								
Slab	R-Value & Depth	R-10, 2ft	1, 3, 5 & 6/ D2								
"int."	(intermediate framing) de	enotes standard frar	ning 16" o.c. with headers								
insul	ated with a min. of R-10 (see 6/D6) .									
All units ne	ed to have a certificate po	sted within 3 feet o	f the electrical distribution panel listing								
the followin	g information: R-values,	U-values, duct air le	eakage test results, building envelope air								
leakage test	results, types and efficien	cies of heating, coo	bling and service water heating equipment								
per R401.3		U,									
All insulation	on shall comply with table	e R402.4.1.1 WSEC	2								
Hot water p	piping shall be insulated to	a minimum of R-3	3 per R403.5.2								
Water heate	rs in unheated spaces, or o	on concrete floors s	hall be placed on minimum								
of R-10 inc	ompressible insulated sur	face per R403.5.5	-								

Mechanical ventilation shall be provided per R403.6 A minimum of 90% of all permanently installed lamps in lighting fixtures shall be

	hergy Credits used (see 2018 WSEC table 406.3 hel Normalization Credit System Type 3	for all requirements): -1.0 CREDITS
Or	otion 1.1 Efficient Building Envelope	0.5 CREDITS
	otion 2.1 Air Leakage Control	1.0 CREDITS
	otion 5.5 Efficient Water Heating	2.5 CREDITS
Op	otion 7.1 Appliance Package	1.5 CREDITS
ΤĈ	DTAL PROVIDED	4.5 CREDITS
L	mmmm	un <u>m</u> un
	Revise to match 2018 Prescriptive Code Compliance report. Page A	Energy

Report selected 1.7, 3.4 credit; plans show 1.1 credit

FIRE SYSTEMS

Buildings shall have an NFPA 13R sprinkler system installed throughout per 2018 IBC Section 903.3.1.2 which shall include a notification appliance which is activated upon sprinkler flow. Any alarms, bells or lights required due to the design of the sprinkler system or integral with the sprinkler system shall be considered part of the sprinkler system. The sprinkler system design, therefore, needs to include any and all integrated alarms.

Plans and specifications for sprinklers shall be submitted to the city of Puyallup as a separate permit for review and approval before installation.

DESIGN LOADS See structural notes. Sheet S1.0

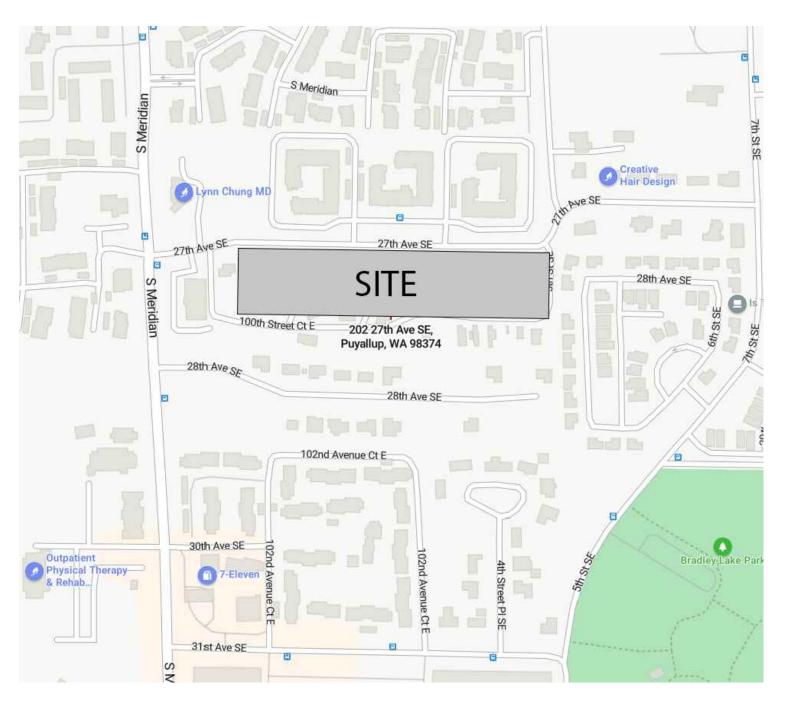
DEFERRED SUBMITTALS

Shop drawings and calculations are required for:

1. Firestopping details. Firestopping methods and materials shall be determined by the Contractor except where details or notes are indicated in these drawings. Firestopping locations are indicated in part by detail 17/07. Contractor shall submit UL assembly details and product cuts of all relevant situations to the Architect for conformance to the building design. Upon the Architect's approval, they shall be submitted to the Building Official for approval. Firestopping shall not be installed without City approval.

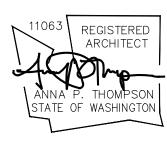
SEPARATE PERMITS

The following required permits will be submitted separately: 1. Automatic Fire Sprinkler System (See fire systems note, this sheet). 2. Fire Alarm System.









Ū Ŭ Sh 0 U

Bradley Heights Apartments

> Puyallup, Wa



Revisions No. Date Description

Initial Publish Date: Date Plotted: 2-20-24 Job No.: Drawn By: 23-06 TMK/HDM/APT



Sheet No.:

Bradley Heights Apartments

Bradley Heights Building Areas

		Unit																									Other Uni	heated				Total	Total		· · · · · · · · · · · · · · · · · · ·		
Bldg			Unit Area	Deck Area	a 1-Bed	Unit Are	ea Deck	Area 1-	Bed	Unit Area	Deck Are	a 1-Bed	Unit Area	Deck Are	a 1-Bed	Unit Area	Deck Area	1-Bed	Unit Area	Deck Area		Unit Area	Deck Area		Unit Area	Deck Area						Heated		Total Floor	Total Building	Total Allowable	le Unit
	loor Level	1-Bed End	(SF)	(SF)	End-Alt	: (SF)	(S	F) Ir	nt-1	(SF)	(SF)	Int-2	(SF)	(SF)	Int-Alt-1		(SF)	Int-Alt-2	(SF)	(SF)	2-Bed	(SF)	(SF)	2-Bed Alt	(SF)	(SF)	Misc. (a)	Stair 1	Area (SF)	Stair 2	Area (SF)	Area (SF)	Area (b)	Area (SF)	Area (SF)	Bldg. Area (d)) Bu
A	Bsmt	1	712	67					1	684	61	1	684	71										1	1019	60	118			2	422	3099	799	3898	· · · · · · · · · · · · · · · · · · ·		
	1st	2	1424	134					2	1368	122	2	1368	142							1	1019	66	1	1019	60		2	520	2	350	6198	1394	7592	22633		
	2nd	2	1424	134					2	1368	122	2	1368	142							1	1019	66	1	1019	60		2	350	2	478	6198	1352	7550	(Plus 3358 SF	See Sheet	
	3rd	1	712	67	1	625	7	8	1	684	61	1	684	71	1	634	74	1	634	86	1	1019	66	1	980	60		2	478	2	478	5972	1519	7491	Basement)	A4	
В	Bsmt																							2	2038	120	69			1	211	2038	400	2438			
	1st																				2	2038	132	2	2038	120		1	260	1	175	4076	687	4763	14233	21,000 SF	
	2nd																				2	2038	132	2	2038	120		1	175	1	239	4076	666	4742	(Plus 2438 SF	(Plus 7,000 SF	F
	3rd																				2	2038	132	2	1960	120		1	239	1	239	3998	730	4728	Basement)	Basement)	
С	1st								4	2736	244	4	2736	284							4	4076	264				20	6	1560			9548	2372	11920			
	2nd								4	2736	244	4	2736	284							4	4076	264					6	1050			9548	1842	11390		See Sheet	
	3rd								4	2736	244	4	2736	284							4	4076	264					6	1434			9548	2226	11774	35084	A4	
D	Bsmt								2	1368	122	2	1368	142										2	2038	120	167			3	633	4774	1184	5958	·		
	1st								4	2736	244	4	2736	284							2	2038	132	2	2038	120		3	780	3	525	9548	2085	11633	34743		
	2nd								4	2736	244	4	2736	284							2	2038	132	2	2038	120		3	525	3	717	9548	2022	11570	(Plus 1184 SF	See Sheet	
	3rd								2	1368	122	2	1368	142	2	1268	148	2	1268	172	2	2038	132	2	1960	120		3	717	3	717	9270	2270	11540	Basement)	A4	
E	Bsmt								1	684	61	1	684	71										2	2038	120	118			2	422	3406	792	4198	· · · · · · · · · · · · · · · · · · ·		
	1st								2	1368	122	2	1368	142							2	2038	132	2	2038	120		2	520	2	350	6812	1386	8198	24488		
	2nd								2	1368	122	2	1368	142							2	2038	132	2	2038	120		2	350	2	478	6812	1344	8156	(Plus 4198 SF	See Sheet	
	3rd								1	684	61	1	684	71	1	634	74	1	634	86	2	2038	132	2	1960	120		2	478	2	478	6634	1500	8134	Basement)	A4	
F	Bsmt								1	684	61	1	684	71										2	2038	120	118			2	422	3406	792	4198	,		
	1st								2	1368	122	2	1368	142							2	2038	132	2	2038	120		2	520	2	350	6812	1386	8198	24488		
	2nd								2	1368	122	2	1368	142							2	2038	132	2	2038	120		2	350	2	478	6812	1344	8156	(Plus 4198 SF	See Sheet	
	3rd								1	684	61	1	684	71	1	634	74	1	634	86	2	2038	132	2	1960	120		2	478	2	478	6634	1500	8134	Basement)	A4	
G	1st								4	2736	244	4	2736	284							4	4076	264				20	6	1560			9548	2372	11920	· · · · · · · · · · · · · · · · · · ·		
	2nd								4	2736	244	4	2736	284							4	4076	264					6	1050			9548	1842	11390	,	See Sheet	
	3rd								4	2736	244	4	2736	284							4	4076	264					6	1434			9548	2226	11774	35084	A4	
Н	1st								2	1368	122	2	1368	142							4	4076	264				20	4	1040			6812	1588	8400	·,		
	2nd								2	1368	122	2	1368	142							4	4076	264					4	700			6812	1228	8040	,	See Sheet	
	3rd								2	1368	122	2	1368	142							4	4076	264					4	956			6812	1484	8296	24736	A4	
I		6			1				60			60			5			5			63			36								•	Tot	al Gross SF	236179	1	

All buildings are Type V-B construction; all occupancies are R-2; all have NFPA 13R sprinkler systems throughout.

a. Misc. Areas include SF of sprinkler riser rooms and basement storage rooms. b. Unheated Areas include SF of Decks, Patios, storage & sprinkler rooms.

c. Base Area allowed is 7000SF per floor for Type V-B construction (Table 506.2). See area increase diagrams on sheet A4 for total area allowed.

BUILDING C = 3 STORIES ONLY NO BASEMENT

Unit Area Summary

Unit		Unit SF	Patio/ Deck SF
1-Bed-End	1BR/1BA	712	67
1-Bed-End-Alt	1BR/1BA	625	78
1-Bed-Int-1	1BR/1BA	684	61
1-Bed-Int-2	1BR/1BA	684	71
1-Bed-Int-Alt-1	1BR/1BA	634	74
1-Bed-Int-Alt-2	1BR/1BA	634	86
2-Bed	2BR/2BA	1019	66
2-Bed-Alt	2BR/2BA	1019	60
2-Bed-Alt (3rd Floor)	2BR/2BA	980	60

SINGLE EXITS Per IBC 1006.3.2 section 5, Individual single-story or multistory dwelling units shall be permitted to have a single exit or access to a single exit provided that the dwelling unit has a maximum occupant load of 20, is equipped throughout with an automatic sprinkler system in accordance with section 903.3.1.1 or 903.3.1.2, is provided with emergency escape and rescue openings in accordance with section 1030, and the common path of egress travel does not exceed 125'.

LIST O

A	Cover
A1	Buildi
A2	Site P
A3	Site S
A4	Area
B4	Buildi
U1 U2 U4 U5 U6 U8 U9 U11	1-Bed 1-Bed 2-Bed 1-Bed Interio Acces Stair
F4	Partia
F5	Partia
R3	Roof
E5	Exteri
E6	Exteri
E7	Buildi
S1.0	Struct
S1.1	Struct
S1.2	Sheer

Building C Puyallup, Washington

Bradley Heights SS LLC

F	DRAWINGS	

· Sheet ling Areas and Statistics

Plan Standards

Increase Diagram

ding Floor Plans

d-Int Unit - Basement & 1st Level Floor Plans ed-Int Unit - 2nd & 3rd Level Floor Plans ed Unit - Basement & 1st Level Floor Plans ed Unit - 2nd & 3rd Level Floor Plans rior Elevations - 1-Bed-Int rior Elevations - 2-Bed essibility Standards r 1 - Floor Plans al Foundation Plan al Foundation Plan

f Plan

rior Elevations rior Elevations & Building Sections ding Glazing Diagram

ctural Notes ctural Notes & Tables r Wall Notes S1.3 Sheer Wall Notes S2.6 Foundation & 2nd Floor Framing Plans S2.7 3rd Floor & Roof Framing Plans S3.0 Details

S4.0 Details S4.1 Details S5.0 Details S5.1 Details

S3.1 Details

D1 Details

D2 Details

D3	Details
D4	Details
D5	Details
D6	Details

D7 Details

M0.0 Legend, General Notes & Drawing Index

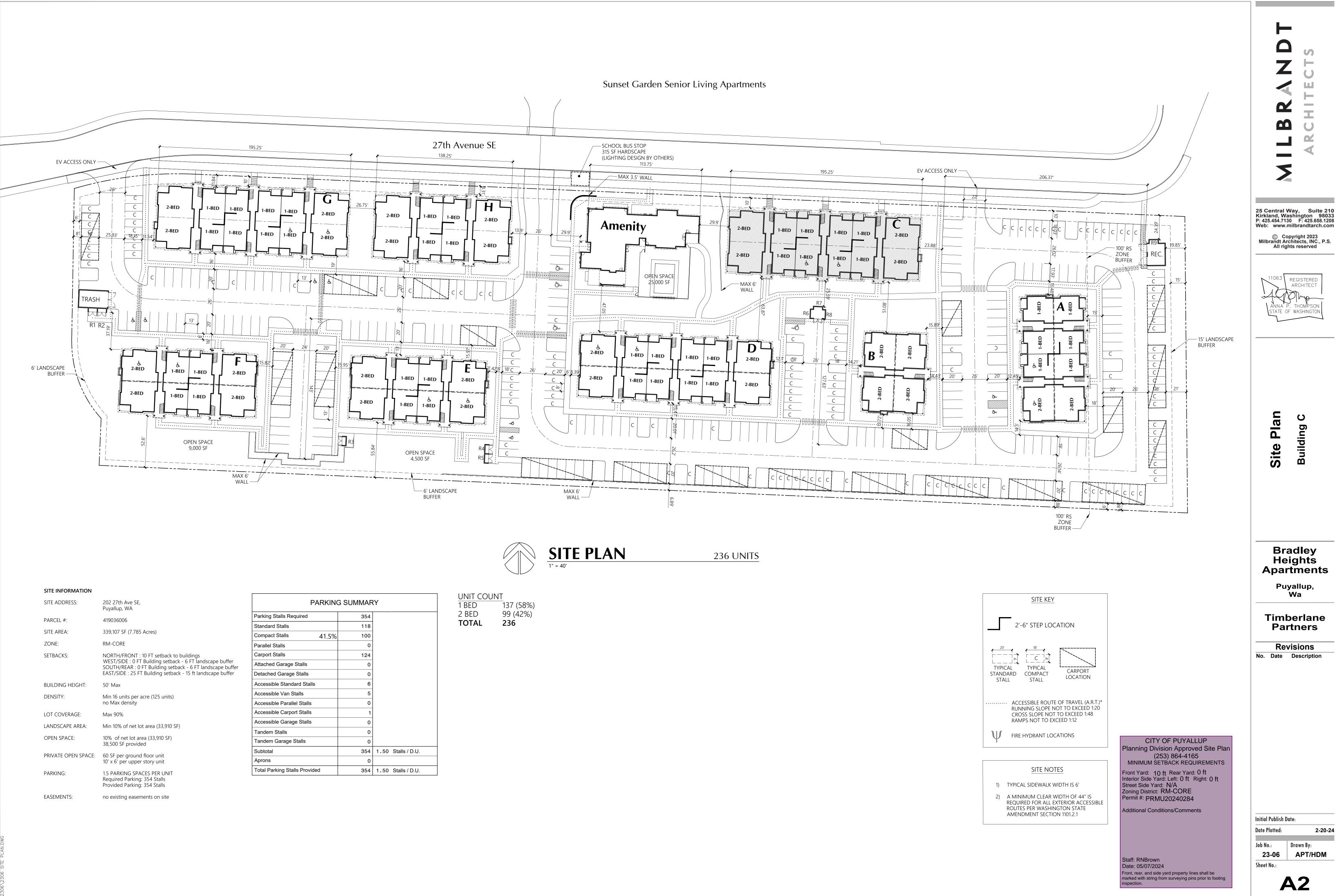
M0.1 Project Notes

- M0.2 Tables & Calculations
- M0.3 Mechanical Schedules & WSEC Forms M2.0 Building C - HVAC Plans
- M3.0 HVAC Enlarged Plan
- M3.1 HVAC Enlarged Plan
- E0.00 Electrical Cover Sheet
- E0.01 Electrical Cover Sheet
- E0.10 Power Site Plan
- E0.11 Lighting Site Plan
- E1.01 1st Floor Lighting Plan E1.02 2nd & 3rd Floor Lighting Plan
- E1.50 Lighting Notes
- E3.00 1st & 2nd Floor Power Plans
- E3.01 3rd Floor & Roof Power Plans
- E5.00 Unit Plan Notes
- E5.01 Unit Electrical Plans E5.02 Unit Electrical Plans
- E6.00 One-Line Diagram & Notes
- E6.01 Panel Schedule

P0C.00 Plumbing - Legend, General Notes & Drawing Index P0C.01 Plumbing Notes & Tables POC.02 Plumbing Calculations P0C.03 Plumbing Schedules P2C.00 Underslab Waste & Vent Plan P2C.01 1st Floor Waste & Vent Plan P2C.02 2nd Floor Waste & Vent Plan P2C.03 3rd Floor Waste & Vent Plan P2C.04 Roof Waste & Vent Plan P3C.01 1st Floor Plumbing Supply Plan P3C.02 2nd Floor Plumbing Supply Plan P3C.03 3rd Floor Plumbing Supply Plan

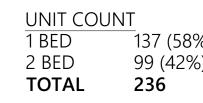
P7C.00 Details P7C.01 Details

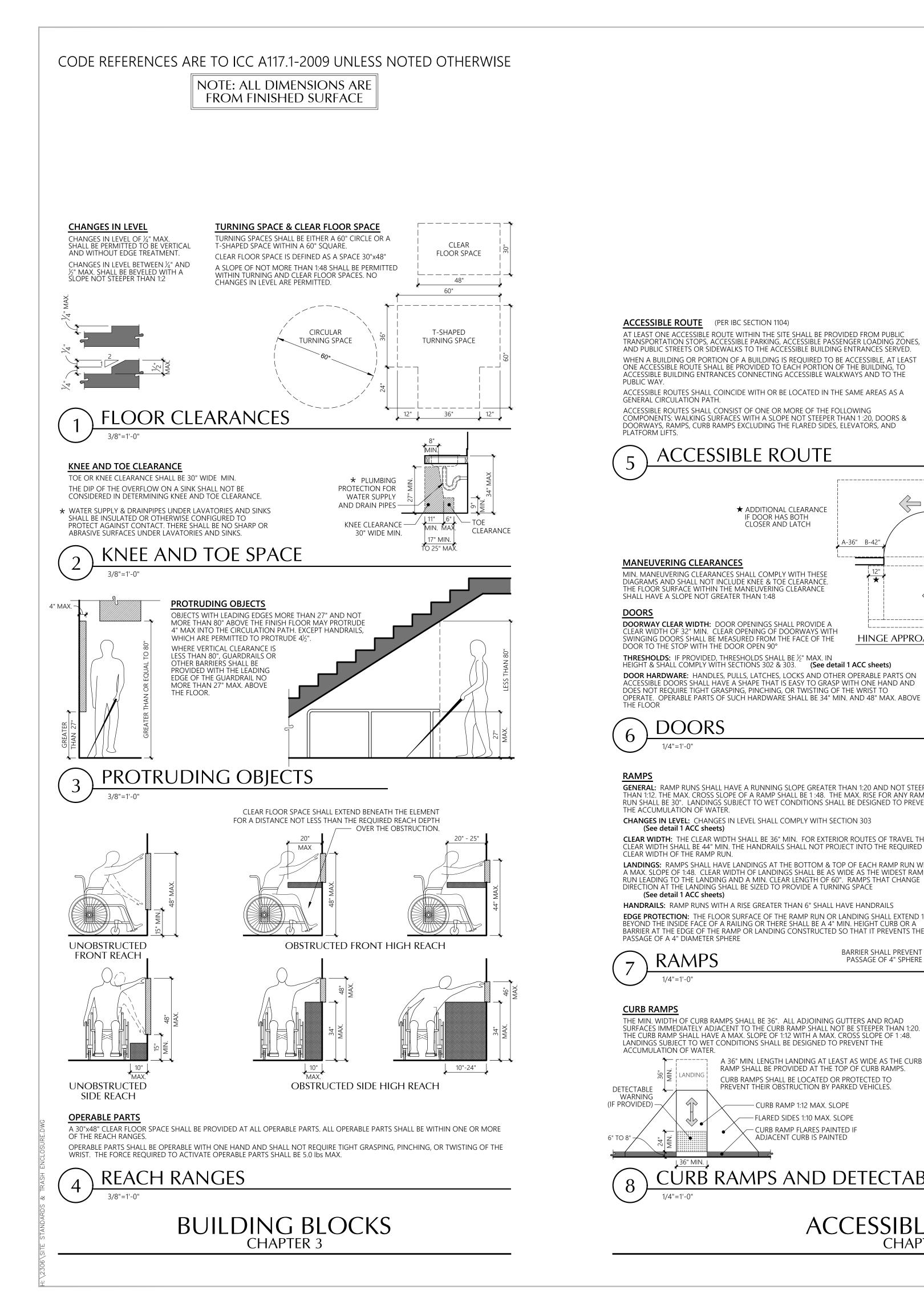
MILBRANDT ARCHITECTS
25 Central Way, Suite 210 Kirkland, Washington 98033 P: 425.454.7130 F: 425.658.1208 Web: www.milbrandtarch.com © Copyright 2023 Milbrandt Architects, INC., P.S. All rights reserved
ANNA P. THOMPSON STATE OF WASHINGTON
Cover Sheet Building Areas and Statistics
Bradley Heights Apartments ^{Puyallup,} Wa
Timberlane Partners
Revisions
Initial Publish Date: Date Plotted: 2-20-24 Job No.: Drawn By: 23-06 MK/HDM/APT Sheet No.:
A1



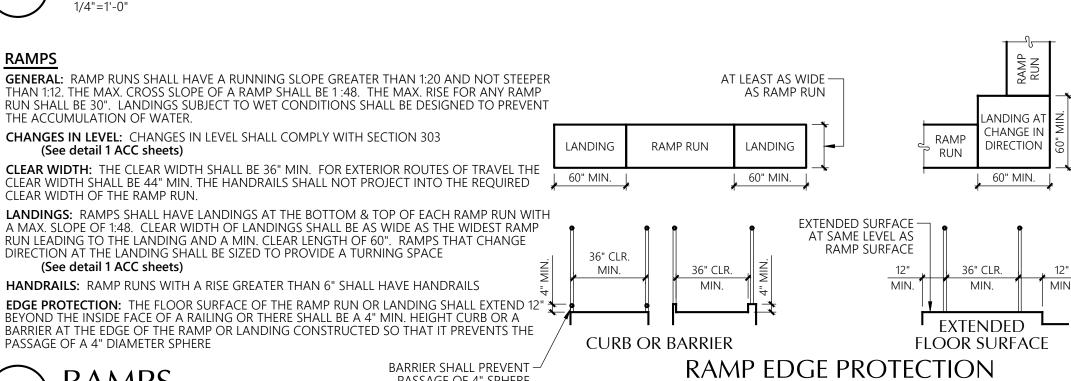
RKING	G SUMMAR	Υ .	
	354		
	118		
1.5%	100		
	0		
	124		
	0		
	0		
	6		
	5		
	0		
	1		
	0		
	0		
	0		
	354	1.50	Stalls / D.U.
	0		
	354	1.50	Stalls / D.U.
		354 118 1.5% 100 0 0 124 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 354 0	118 118 1.5% 100 0 0 124 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 354 1.50 0 0







EDGE PROTECTION: THE FLOOR SURFACE OF THE RAMP RUN OR LANDING SHALL EXTEND 12" BEYOND THE INSIDE FACE OF A RAILING OR THERE SHALL BE A 4" MIN. HEIGHT CURB OR A EXTENDED BARRIER AT THE EDGE OF THE RAMP OR LANDING CONSTRUCTED SO THAT IT PREVENTS THE PASSAGE OF A 4" DIAMETER SPHERE CURB OR BARRIER FLOOR SURFACE RAMP EDGE PROTECTION BARRIER SHALL PREVENT -RAMPS PASSAGE OF 4" SPHERE 1/4"=1'-0" CURB RAMPS DETECTABLE WARNINGS THE MIN. WIDTH OF CURB RAMPS SHALL BE 36". ALL ADJOINING GUTTERS AND ROAD DETECTABLE WARNINGS SHALL CONTE SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 1:20. LIGHT-ON-DARK OR DARK-ON-LIGHT. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJACENT SURFACES, EITHER THE CURB RAMP SHALL HAVE A MAX. SLOPE OF 1:12 WITH A MAX. CROSS SLOPE OF 1 :48. DETECTABLE WARNING SURFACES IN INTERIOR LOCATIONS SHALL DIFFER FROM LANDINGS SUBJECT TO WET CONDITIONS SHALL BE DESIGNED TO PREVENT THE ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT ACCUMULATION OF WATER. TRUNCATED DOMES SHALL BE ALIGNED IN A SQUARE PATTERN. A 36" MIN. LENGTH LANDING AT LEAST AS WIDE AS THE CURB RAMP SHALL BE PROVIDED AT THE TOP OF CURB RAMPS. CENTER-TO-CENTER TOP DIAMETER 50% MIN. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES TO 65% MAX. OF THE -SPACING 1.6" MIN. BASE DIAMETER ≻TO 2.4" MAX. CURB RAMP 1:12 MAX. SLOPE CHECK WITH LOCAL JURISDICTION — FLARED SIDES 1:10 MAX. SLOPE ON WHERE DETECTABLE WARNINGS ARE REQUIRED. — CURB RAMP FLARES PAINTED II URRENTLY IBC & ANSI A117.1 ONLY ADJACENT CURB IS PAINTED BASE DIAMETER **REOUIRE DETECTABLE WARNINGS** AT LIMITED & SPECIFIC LOCATIONS. HEIGH .9" MIN. TO 1.4" MAX. CURB RAMPS AND DETECTABLE WARNINGS ACCESSIBLE ROUTES **CHAPTER 4**



LATCH IS 5 SECONDS MIN.

SHALL HAVE AN OPENING FORCE AS FOLLOWS:

HEIGHT & SHALL COMPLY WITH SECTIONS 302 & 303. (See detail 1 ACC sheets) DOOR HARDWARE: HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERABLE PARTS ON SIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND

DOORS

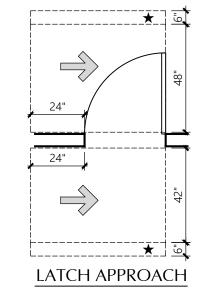
DOORWAY CLEAR WIDTH: DOOR OPENINGS SHALL PROVIDE A CLEAR WIDTH OF 32" MIN. CLEAR OPENING OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED FROM THE FACE OF THE DOOR TO THE STOP WITH THE DOOR OPEN 90° THRESHOLDS: IF PROVIDED, THRESHOLDS SHALL BE 1/3" MAX. IN

SHALL HAVE A SLOPE NOT GREATER THAN 1:48

MANEUVERING CLEARANCES MIN. MANEUVERING CLEARANCES SHALL COMPLY WITH THESE DIAGRAMS AND SHALL NOT INCLUDE KNEE & TOE CLEARANCE. THE FLOOR SURFACE WITHIN THE MANEUVERING CLEARANCE

★ ADDITIONAL CLEARANCE IF DOOR HAS BOTH CLOSER AND LATCH

HINGE APPROACH



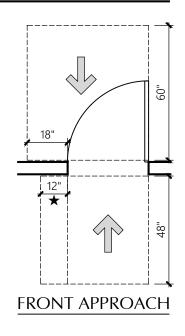
CLOSING SPEED: DOORS WITH CLOSERS SHALL BE ADJUSTED SO THAT FROM A 90° OPEN

DOORS WITH A SPRING HINGE SHALL BE ADJUSTED SO THAT FROM A 70° OPEN POSITION

DOOR OPENING FORCE: HINGED, SLIDING OR FOLDING DOORS OTHER THAN FIRE DOORS

THE TIME REQUIRED TO MOVE THE DOOR TO A CLOSED POSITION IS 1.5 SECONDS MIN.

POSITION, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12° FROM THE



INTERIOR DOORS: 5 lbs. MAX.

EXTERIOR DOORS: 10 lbs. MAX.

PLATFORM LIFTS. CESSIBLE ROUTE

ACCESSIBLE ROUTES SHALL COINCIDE WITH OR BE LOCATED IN THE SAME AREAS AS A GENERAL CIRCULATION PATH. ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A SLOPE NOT STEEPER THAN 1:20, DOORS & DOORWAYS, RAMPS, CURB RAMPS EXCLUDING THE FLARED SIDES, ELEVATORS, AND

ACCESSIBLE ROUTE (PER IBC SECTION 1104) AT LEAST ONE ACCESSIBLE ROUTE WITHIN THE SITE SHALL BE PROVIDED FROM PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, ACCESSIBLE PASSENGER LOADING ZONES, AND PUBLIC STREETS OR SIDEWALKS TO THE ACCESSIBLE BUILDING ENTRANCES SERVED. WHEN A BUILDING OR PORTION OF A BUILDING IS REQUIRED TO BE ACCESSIBLE, AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED TO EACH PORTION OF THE BUILDING, TO ACCESSIBLE BUILDING ENTRANCES CONNECTING ACCESSIBLE WALKWAYS AND TO THE

> SHALL BE 44" MIN. PASSING SPACE: AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN 60" SHALL PROVIDE PASSING SPACES AT MAXIMUM INTERVALS OF 200 FEET. PASSING SPACES SHALL BE EITHER A 60"x60" MIN. SPACE, OR AN INTERSECTION OF WALKING SURFACES WITH A -SHAPED TURNING SPACE (See detail 1 ACC sheets), PROVIDED THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND 48" MIN. BEYOND THE INTERSECTION.

(see detail 1 ACC sheets) CLEAR WIDTH: THE WIDTH OF AN ACCESSIBLE ROUTE SHALL BE 36" MIN. THE CLEAR WIDTH SHALL BE PERMITTED TO BE REDUCED TO 32" MIN. FOR A LENGTH OF 24" MAX. PROVIDED THE REDUCED WIDTH SEGMENTS ARE SEPARATED BY SEGMENTS THAT ARE 48" MIN. IN LENGTH AND 36" MIN. IN WIDTH. FOR EXTERIOR ROUTES OF TRAVEL, THE CLEAR WIDTH

WALKING SURFACES SLOPE: THE RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20. THE CROSS SLOPE OF A WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48. CHANGES IN LEVEL: CHANGES IN LEVEL SHALL COMPLY WITH SECTION 303

ACCESSIBLE PARKING SPACES

LOCATION: PER IBC SECTION 1106.6, ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE. WHERE PRACTICAL THE ACCESSIBLE ROUTE SHALL NOT CROSS LANES OF TRAFFIC. WHERE CROSSING TRAFFIC LANES IS NECESSARY, THE ROUTE SHALL BE DESIGNATED AND MARKED AS A CROSSWALK.

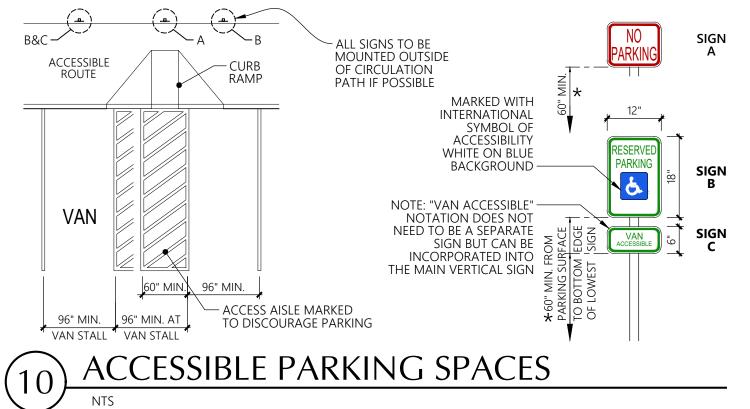
PARKING STALL SIZE: CAR AND VAN PARKING SPACES SHALL BE 96" MIN. WIDTH. ACCESS AISLES SERVING CAR PARKING SPACES SHALL BE 60" MIN. IN WIDTH. ACCESS AISLES SERVING VAN PARKING SPACES SHALL BE 96" MIN. IN WIDTH. ACCESS AISLE: CAR AND VAN PARKING SPACES SHALL HAVE AN ADJACENT ACCESS AISLE ON EITHER SIDE OF THE PARKING SPACE. THE ACCESS AISLES SHALL BE 60" MIN. IN WIDTH FOR CAR STALLS AND 96" MIN. IN WIDTH FOR VAN STALLS AND EXTEND THE FULL LENGTH OF AND AT THE SAME LEVEL AS THE PARKING SPACE THEY SERVE. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM

FLOOR SURFACES: PARKING STALLS & ADJACENT ACCESS AISLES SHALL HAVE A SURFACE SLOPE NOT GREATER THAN 1:48. VERTICAL CLEARANCE: ACCESSIBLE VAN PARKING STALLS, ACCESS AISLES SERVING THEM, & VEHICULAR ROUTES SERVING THE VAN SPACE SHALL HAVE A VERTICAL CLEARANCE OF 98" MIN.

IDENTIFICATION: ACCESSIBLE PARKING SPACES SHALL BE INDICATED BY A VERTICAL SIGN. SIGNS SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY THAT IS WHITE WITH A BLUE BACKGROUND. SIGNS IDENTIFYING VAN PARKING SPACES SHALL CONTAIN THE DESIGNATION "VAN ACCESSIBLE". A VERTICAL "NO PARKING" SIGN SHALL BE ERECTED AT THE HEAD OF EACH ACCESS AISLE LOCATED ADJACENT TO AN ACCESSIBLE PARKING SPACE. THESE SIGNS MAY INCLUDE ADDITIONAL LANGUAGE SUCH AS, BUT NOT LIMITED TO, AN INDICATION OF THE AMOUNT OF THE MONETARY PENALTY FOR PARKING IN THE SPACE WITHOUT A VALID PERMIT OR THE ACCESS AISLE. THESE SIGNS SHALL BE 60" MIN. ABOVE THE FLOOR OF THE PARKING SPACE MEASURED TO THE BOTTOM OF THE SIGN.

SIGN MOUNTING: SIGNS ARE TO BE MOUNTED COMPLETELY OUTSIDE OF CIRCULATION PATHS WHEREVER POSSIBLE WHERE MOUNTING IS NECESSARY WITHIN A PATH OF CIRCULATION, SIGNS SHALL MEET THE REQUIREMENTS OF IBC SECTION 1003.3 FOR PROTRUDING OBJECTS AND POST-MOUNTED OBJECTS.

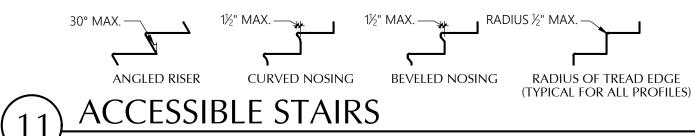
* SIGNS MOUNTED ON POSTS WITHIN A CIRCULATION PATH SHALL BE INSTALLED WITH A VERTICAL CLEARANCE OF 80" MIN. FROM THE LOWEST POINT OF THE SIGN(S) TO THE WALKING SURFACE. IF A POST MOUNTED SIGN IS SIZED SUCH THAT IT PROTRUDES 4" MAX. FROM THE MOUNTING POST, THEN THE MOUNTING HEIGHT SHALL BE MOUNTED AT 60" MIN. ABOVE THE PARKING SURFACE SO AS TO NOT BE OBSTRUCTED BY ANY PARKED VEHICLES.



ACCESSIBLE STAIR REQUIREMENTS

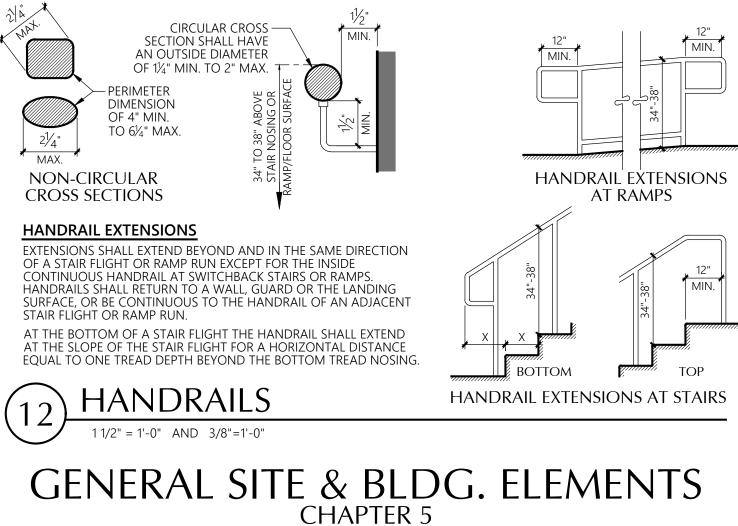
ALL STEPS ON A FLIGHT OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND UNIFORM TREAD DEPTHS. RISERS SHALL BE 4" HIGH MIN. AND 7" HIGH MAX. TREADS SHALL BE 11" DEEP MIN. OPEN RISERS ARE NOT PERMITTED & TREADS SHALL HAVE A SLOPE NOT MORE THAN 1:48.

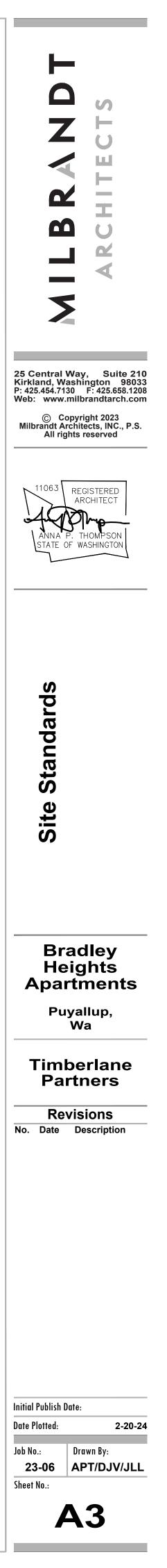
STAIR NOSINGS SHALL CONFORM TO THE DIAGRAMS SHOWN HERE AND THE LEADING 2" OF THE TREAD SHALL HAVE VISUAL CONTRAST OF DARK-ON-LIGHT OR LIGHT-ON-DARK FROM THE REMAINDER OF THE TREAD. STAIR TREADS & LANDINGS SUBJECT TO WET CONDITIONS SHALL BE DESIGNED TO PREVENT ACCUMULATION OF WATER. FLOOR IDENTIFICATION SIGNS SHALL BE LOCATED AT EACH FLOOR LANDING ADJACENT TO THE STAIRWELL DOOR LEADING INTO THE CORRIDOR. SIGNS SHALL BE IN RAISED CHARACTERS & BRAILLE. "EXIT" SIGNS SHALL BE LOCATED AT STAIRS LEADING TO THE EXTERIOR OF THE BUILDING. (See detail 21 ACC sheets)



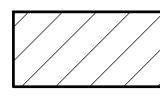
HANDRAILS

HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF STAIRS & RAMPS. THEY SHALL BE CONTINUOUS FOR THE FULL LENGTH OF EACH STAIR FLIGHT OR RAMP RUN. INSIDE HANDRAILS ON SWITCHBACKS SHALL BE CONTINUOUS BETWEEN FLIGHTS OR RUNS. HANDRAIL GRIPPING SURFACES & ANY SURFACES ADJACENT TO THEM SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS & SHALL HAVE ROUNDED EDGES. THEY SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOM SHALL NOT BE OBSTRUCTED FOR MORE THAN 20% OF IT'S LENGTH





LEGEND



Portion of perimeter with 30 feet of open space

FRONTAGE INCREASE TO BUILDING AREA

Per IBC Section 506.3 buildings that adjoin or have access to a public way or qualifying green space for more than 25% of their total perimeter are eligible for an area factor increase based on frontage.

To qualify for an area factor increase based on frontage, the public way or open space adjacent to the building perimeter shall have a minimum distance (W) of 20 feet, and only the first 30 feet shall be considered in the calculation. The measurement shall be to the nearest lot line, the entire width of a street, alley or public way, or the exterior face of an adjacent building on the same property.

For purposes of simplifying this calculation only those portions of perimeter fronting right of way or green space with a dimension of 30 feet or more are considered. Those portions of perimeter that front areas that may qualify (are more than 20 feet, but are less than 30 feet) are not included in the frontage calculation.

Frontage Area increase calculation: $I_{f} = [F/P-0.25]W/30$

- I_{f} = area of increase due to frontage
- F = Building perimeter that fronts on a public way or open space
- P = Full building perimeter
- W = Width of public way or open space (max of 30')

For Building C F = 526.98'

P = 529.98'

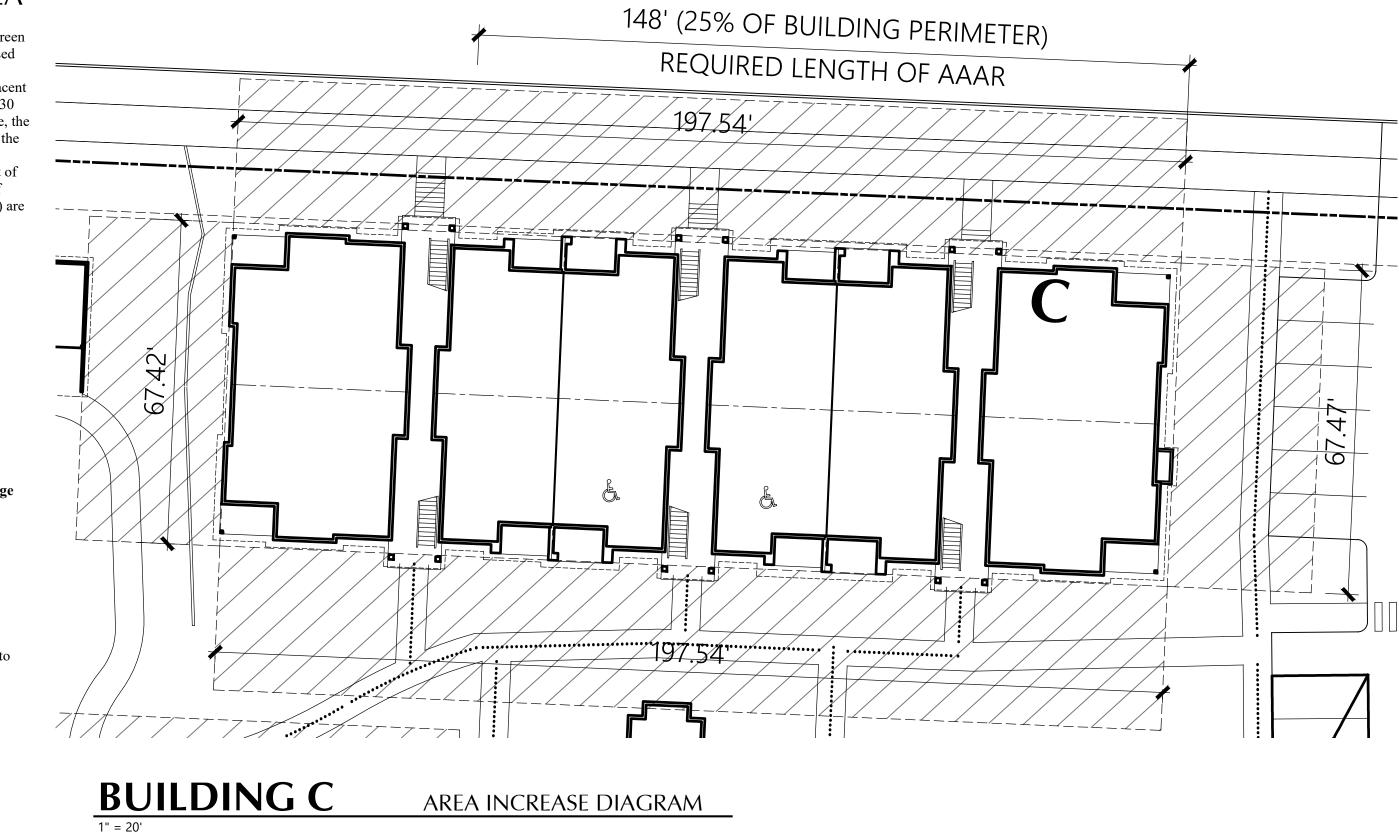
W = 30'

 $I_f = [526.98'/529.98'-0.25]30'/30' = 0.75$ factor of increase due to frontage

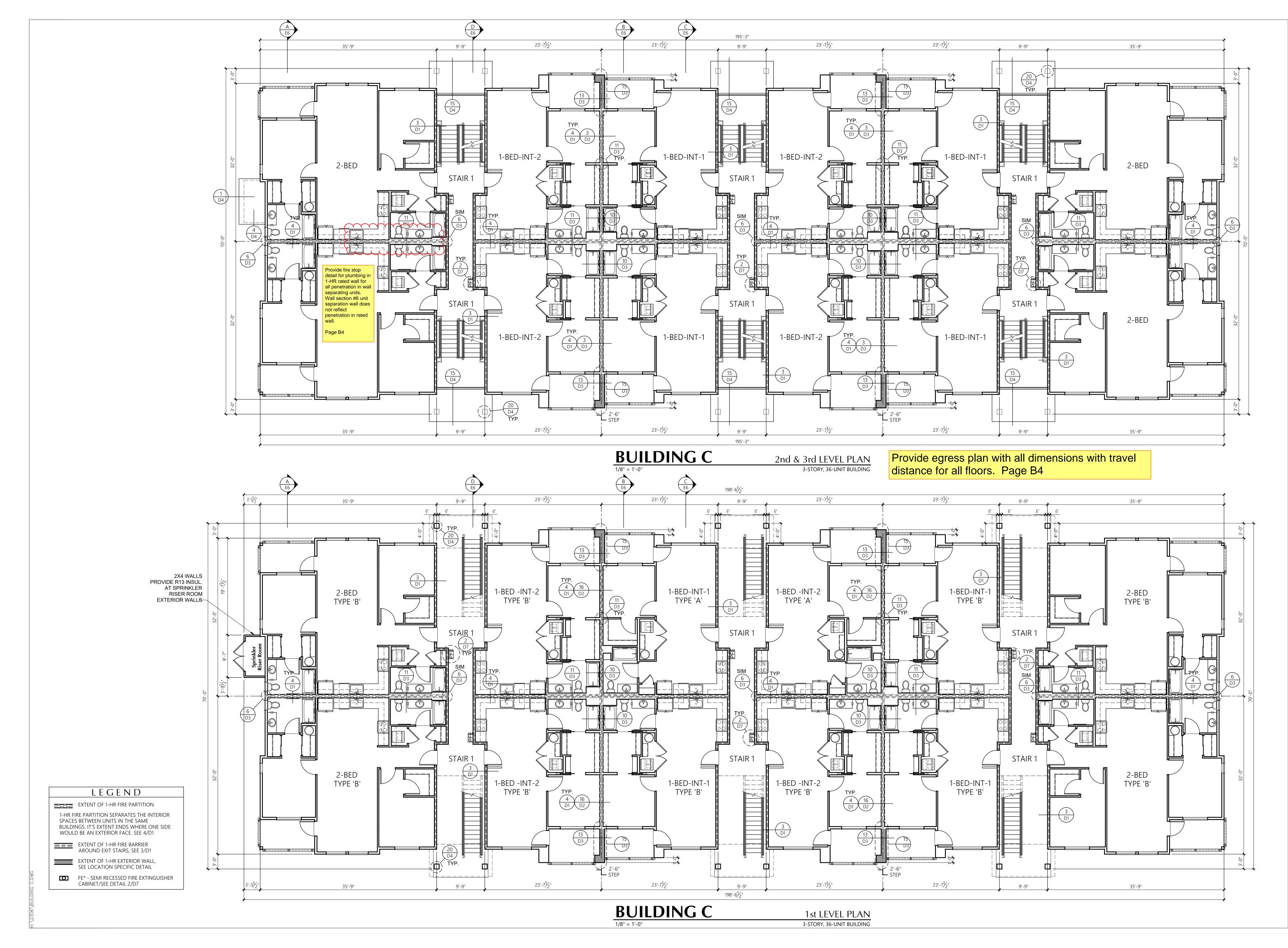
ALLOWABLE BUILDING AREA

Per IBC Table 506.2: Buildings of R-2 occupancy with VB construction type are allowed to have an area of 7,000 square feet per floor. With the area factor increase from above this allowable area per floor is increased as follows: 7,000 s.f. + (7,000 s.f. X 0.75) = 12,250 square feet per floor allowed

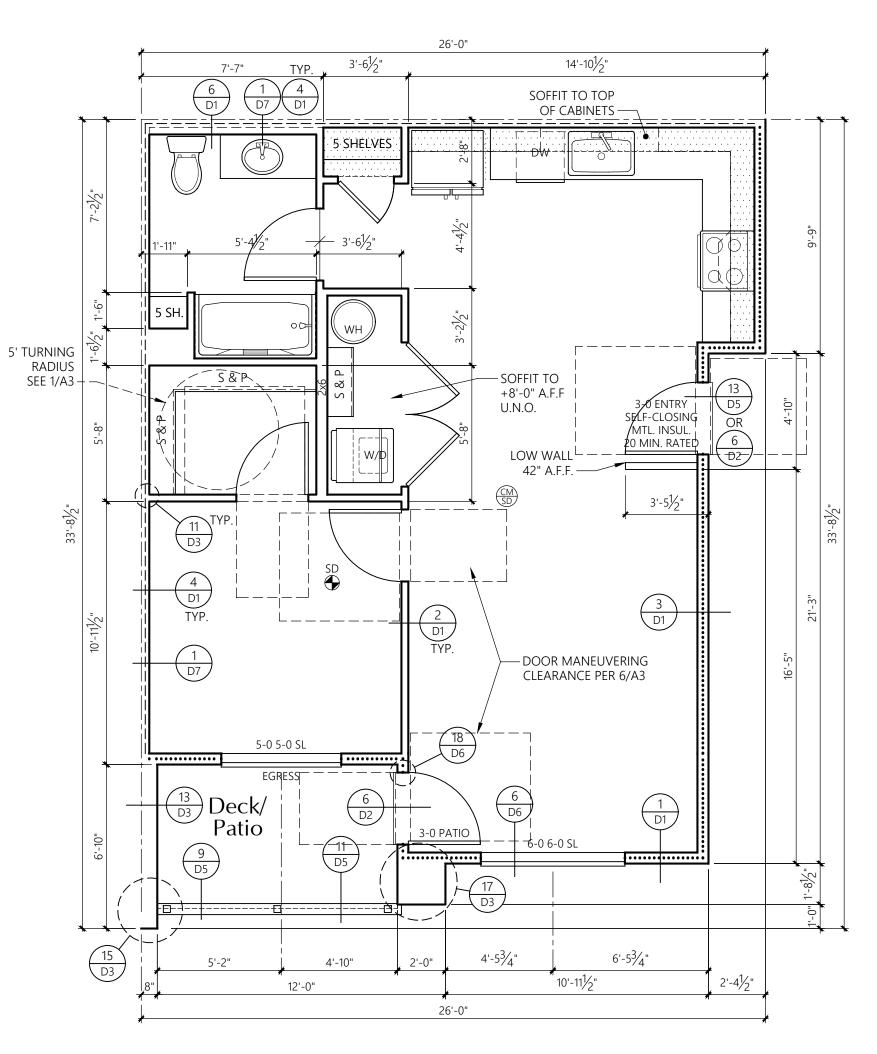
Proposed floor area for Building C Floor 1: 11,908 s.f. Floor 2: 11,378 s.f. Floor 3: 11,762 s.f.











1-BED-INT-1 UNIT 1/4" = 1'-0"

UNIT PLAN NOTES

PROVIDE WATER RESISTANT GYPSUM WALLBOARD BEHIND TUB AND SHOWER ENCLOSURE MATERIALS TO A HEIGHT OF 70" MINIMUM ABOVE THE DRAIN INLET.

NO PLUMBING SHALL BE LOCATED IN THE 1" AIR SPACE OF FIRE PARTITIONS OR FIRE WALLS.

ALL BEDROOM AND BATHROOM DOORS SHALL BE UNDERCUT A MINIMUM OF 1/2" ABOVE THE ADJACENT FLOOR COVERING.

THE FRONT DOOR SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. IT MAY BE PROVIDED WITH A NIGHT LATCH, DEAD BOLT OR SECURITY CHAIN, PROVIDED SUCH DEVICES ARE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR TOOL, AND MOUNTED NOT TO EXCEED 48" ABOVE THE FINISHED FLOOR.

GYPSUM WALLBOARD SCHEDULE EXCEPT WHERE NOTED OTHERWISE, 5/8" TYPE 'X' GYPSUM WALLBOARD SHALL BE USED THROUGHOUT; ON INTERIOR NON-RATED WALLS, EXTERIOR WALLS, CORRIDOR WALLS, AND 1-HOUR AND 2-HOUR FIRE-RATED WALLS.

STANDARD PLATE HEIGHT: 9'-1"

SEE ELEVATION SHEETS FOR FLOOR TO FLOOR HEIGHTS

WINDOW HDR IS 8'-0" UNLESS NOTED OTHERWISE

SEE SHEET U6 FOR INTERIOR ELEVATIONS AND ACCESSIBILITY REQUIREMENTS.

DOOR KEY:

TYPE: SW = SWING

BF = BIFOLD

BP = BYPASS

CONSTRUCTION: HCW = HOLLOW CORE WD. SCW = SOLID CORE WD. MTL = METAL HM = HOLLOW METAL

WINDOW KEY:

TYPE:
FIX = FIXED/PICTURE
SL = SLIDER
SH = SINGLE HUNG
SGD = SLIDING GLASS DOOR

								~
I	Ν	S l	JL	. A	Т	ΙΟ	N	
	DEPTH	H OF	24" (ID INSU FOOTING	-
EXTERI 2x6 WA				BERG	LASS	S BATT	'S OR BL	ANKETS
FLOOR	s ov	'ER U	INHE	ATED	SPA	CES -	R30	
ATTICS FULL HI EXTENE THE EA	EIGH DS O'	T OF	UNC	OMF	RES	SED IN	ISULATIO	NC
EXTERI ALL OT	0	00.			enti	RY U=	0.20	
WINDO TYPE (\ SLIDIN FIXED SINGLI DBL. S SGD	VINYI G E HU	L) NG	6110 6310 6210 812	MOI) ARG) ARG) ARG) ARG	DEL ION/ ION, ION, ION,	/LoE	0.24 or 0.24 or 0.24 or 0.24 or	ALUE BETTER BETTER BETTER BETTER BETTER
	shai Mor	LL HA RE TH	AVE A IAN 2	A FLA 25 AN	ME S ID A	SPREA	D INDEX (E-DEVE	OF NOT

 $3\frac{1}{2}$ " Acoustical insulation one side of partywall, U.N.O. LOCATION OF SOFFIT FOR VENT -----RUNS. SOFFIT HEIGHT +8'-0" A.F.F.

– – – – – R-13 BATT INSULATION

FRAMING:

.

U.N.O. ON PLANS; SEE DETAIL 1/D7

2x6'S AT EXTERIOR WALLS

2x4'S AT INTERIOR WALLS

UNLESS NOTED OTHERWISE.

R-21 BATT INSULATION U.N.O.

SMOKE DETECTOR

CARBON MONOXIDE/SMOKE DETECTOR

CONCEALED SPACES SHALL BE FIRESTOPPED IN BOTH DIRECTIONS AT 10'-0" ON CENTER AND AT FLOORS. TYPICAL.

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET. THE MINIMUM CLEAR OPENING HEIGHT DIMENSION SHALL BE 24". MINIMUM CLEAR OPENING WIDTH DIMENSION SHALL BE 20". EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.

WHERE THE OPENING OF THE SILL PORTION OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE AT A HEIGHT NOT LESS THAN 36 INCHES ABOVE THE FINISHED FLOOR SURFACE OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 36 INCHES OF THE FINISHED FLOOR.

ALL GLAZING SHALL CONFORM TO THE 2018 IBC, CHAPTER 24, SEC. 2406, SAFETY GLAZING. GLAZING IN ALL DOORS SHALL BE SAFETY TYPE AND ALL GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE SHALL BE SAFETY TYPE.

PROVIDE $\frac{5}{3}$ " TYPE 'X' (MIN.) GYPSUM SHEATHING ON WALLS BEHIND TUB/SHOWERS TO SATISFY FIRE REQUIREMENTS AT PARTYWALL CONDITION. PROVIDE $\frac{3}{4}$ " PLYWOOD UNDER TUB IN PLACE OF THE GYPCRETE, SEE DETAIL 14/D1

TYPE 'A' ACCESSIBLE BASEMENT & 1st LEVEL FLOOR PLAN

AREA SUMMARY									
Heated SF Patio/Deck S									
Total SF	684	61							

ACCESSIBILITY NOTES:

ALL GROUND FLOOR UNITS IN THIS PROJECT MUST MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE B' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC.

INCLUDED IN THE ABOVE GROUND FLOOR UNITS 5% OF ALL UNITS NEED TO MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE A' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC. SEE BUILDING PLANS FOR LOCATION OF 'TYPE A' UNITS

SEE SHEET U9 FOR SPECIFIC ADAPTABILITY STANDARD FOR BOTH 'TYPE A' AND 'TYPE B' ACCESSIBLE UNITS. SEE INTERIOR ELEVATION SHEETS FOR ADDITIONAL ACCESSIBILITY REQUIREMENTS.

LIGHTING CONTROLS, ELECTRICAL SWITCHES, ENVIRONMENTAL CONTROLS, OPERATING HARDWARE FOR DOORS AND WINDOWS, AND PLUMBING FIXTURE CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. EXCEPT FOR OPERABLE DOOR HARDWARE, SUCH ITEMS SHALL BE 15" MINIMUM AND 44" MAXIMUM ABOVE THE FLOOR (48" FOR WINDOWS).

OPERABLE ENTRY DOOR HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM ABOVE THE FLOOR.

OPENING FORCES FOR ENTRY DOOR SHALL BE: 15 POUNDS TO RELEASE THE LATCH 30 POUNDS TO SET DOOR IN MOTION 15 POUNDS TO OPEN DOOR TO FULL 90° FORCE MEASURED AT LATCH SIDE OF DOOR.

THE DOOR CLOSER ON THE ENTRY DOOR SHALL BE ADJUSTED TO CLOSE FROM AN OPEN POSITION OF 90° TO AN OPEN POSITION OF 12° IN NOT LESS THAN 5 SECONDS.

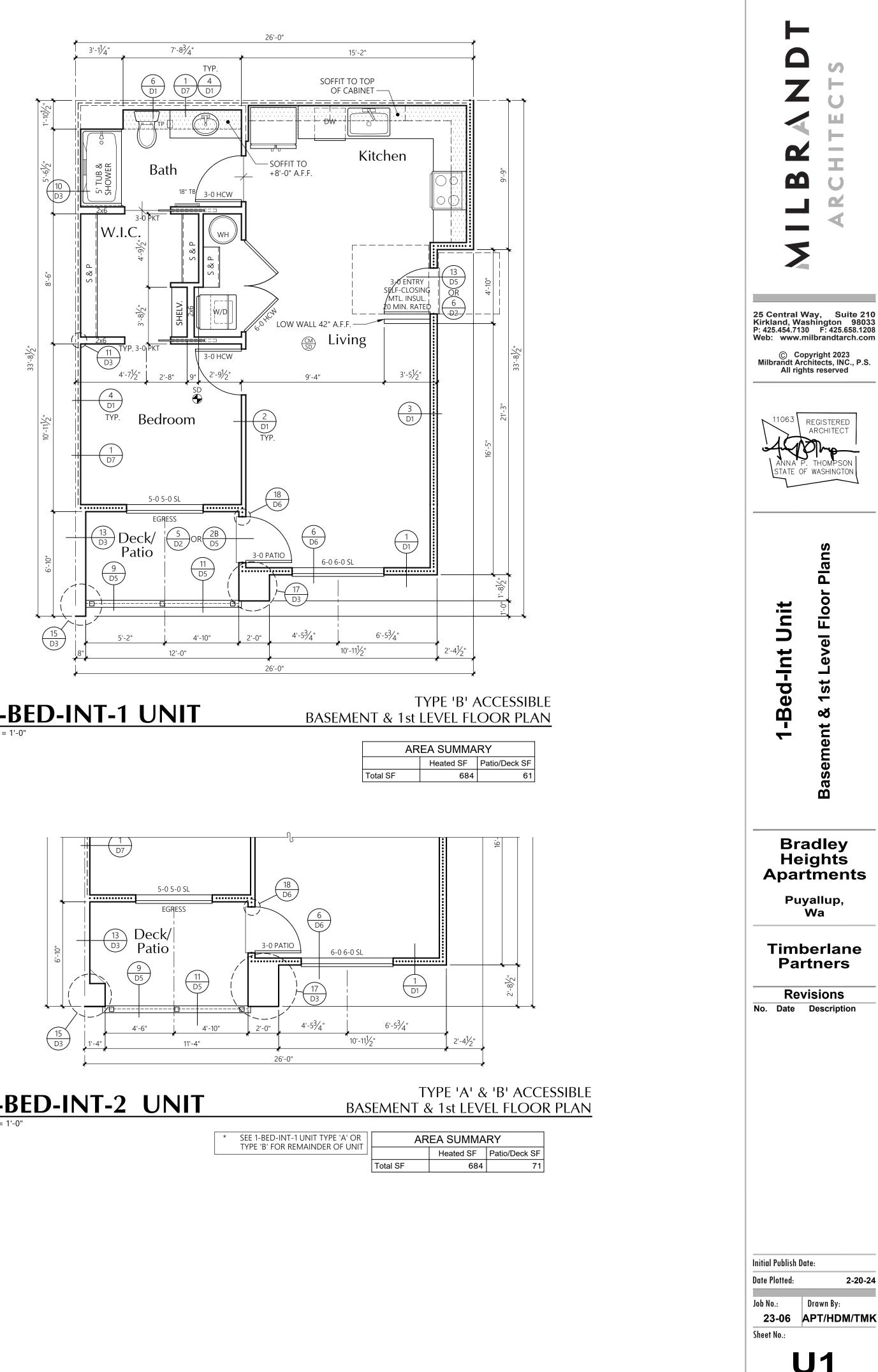
OPENING FORCE OF ALL SWINGING INTERIOR DOORS AND THE SLIDING GLASS DOOR SHALL NOT EXCEED 5 POUNDS APPLIED TO THE LATCH SIDE OF THE DOOR.

THE FORCE REQUIRED TO ACTIVATE ALL OTHER OPERABLE ITEMS LISTED ABOVE SHALL BE 5 POUNDS.

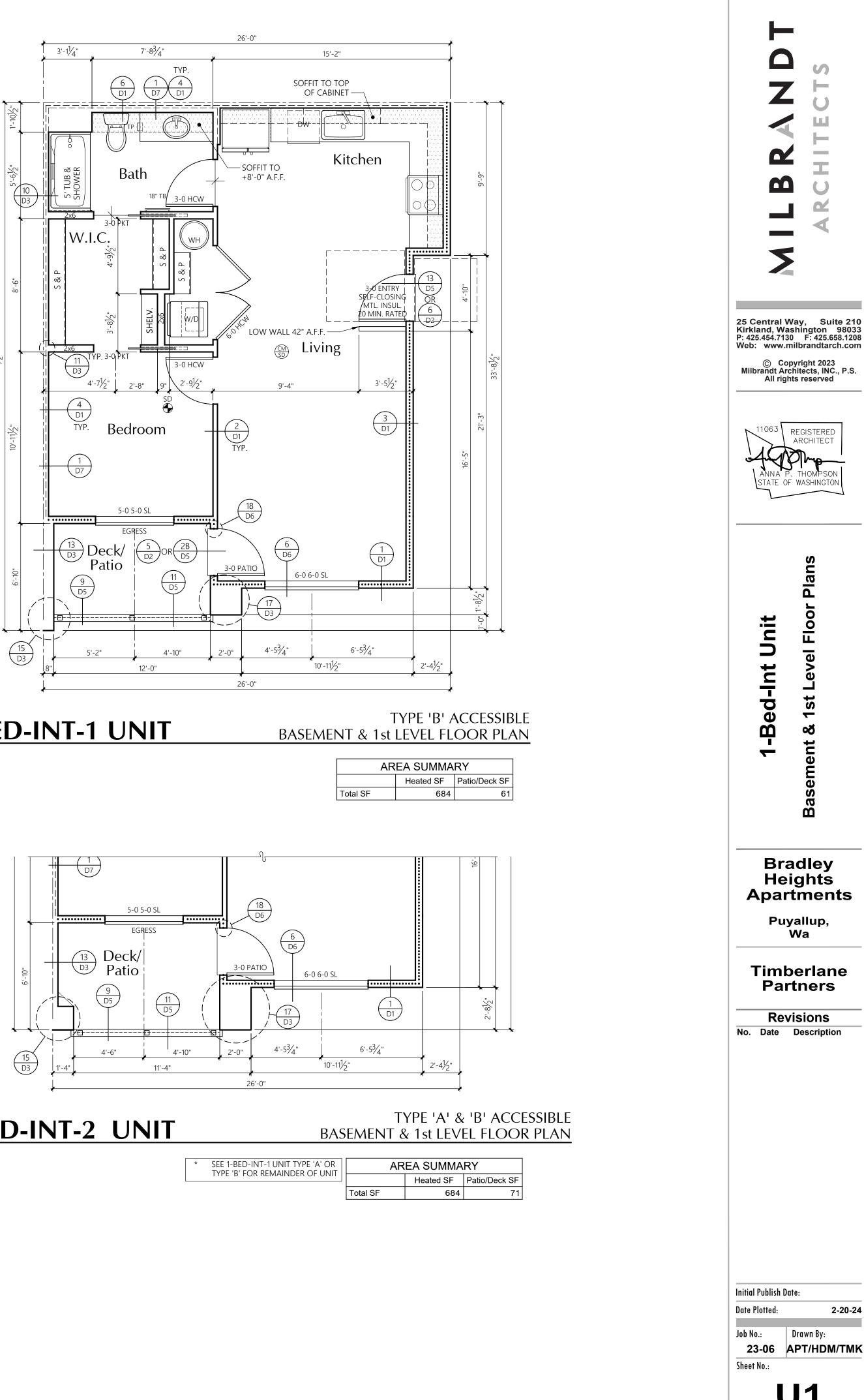
*BIFOLD DOOR HARDWARE AT LAUNDRY TO BE 'FULL ACCESS HARDWARE'.

30X48

_____ THE 30"x48" CLEAR FLOOR SPACE IS REQUIRED AT EACH FIXTURE OR LOCATION SHOWN ON THE FLOOR PLAN.



I-BED-INT-1 UNIT 1/4" = 1'-0"



1-BED-INT-2 UNIT

UNIT PLAN NOTES

RAMING:	2x6'S AT EXTERIOR WALLS 2x4'S AT INTERIOR WALLS UNLESS NOTED OTHERWISE.
• •••••	R-21 BATT INSULATION U.N.O.
	R-13 BATT INSULATION 3½" ACOUSTICAL INSULATION ONE SIDE OF PARTYWALL, U.N.O.
	LOCATION OF SOFFIT FOR VENT RUNS. SOFFIT HEIGHT +8'-0" A.F.F. U.N.O. ON PLANS; SEE DETAIL 1/D7
SD	SMOKE DETECTOR

(CM) CARBON MONOXIDE/SMOKE DETECTOR

CONCEALED SPACES SHALL BE FIRESTOPPED IN BOTH DIRECTIONS AT 10'-0" ON CENTER AND AT FLOORS. TYPICAL.

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET. THE MINIMUM CLEAR OPENING HEIGHT DIMENSION SHALL BE 24". MINIMUM CLEAR OPENING WIDTH DIMENSION SHALL BE 20". EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.

WHERE THE OPENING OF THE SILL PORTION OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE AT A HEIGHT NOT LESS THAN 36 INCHES ABOVE THE FINISHED FLOOR SURFACE OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 36 INCHES OF THE FINISHED FLOOR.

ALL GLAZING SHALL CONFORM TO THE 2018 IBC, CHAPTER 24, SEC. 2406, SAFETY GLAZING. GLAZING IN ALL DOORS SHALL BE SAFETY TYPE AND ALL GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE SHALL BE SAFETY TYPE.

PROVIDE $\%^{"}$ Type 'X' (MIN.) Gypsum sheathing on Walls behind tub/showers to satisfy fire requirements at PARTYWALL CONDITION. PROVIDE $\frac{3}{4}$ " PLYWOOD UNDER TUB IN PLACE OF THE GYPCRETE, SEE DETAIL 14/D1

INSULATION

FOUNDATION PERIMETER - R-10 RIGID INSULATION TO A DEPTH OF 24" OR TO TOP OF FOOTING AT HEATED PERIMETER

EXTERIOR WALLS: FIBERGLASS BATTS OR BLANKETS 2x6 WALLS - R21

FLOORS OVER UNHEATED SPACES - R30

ATTICS AND ROOF ASSEMBLIES - R-49 FULL HEIGHT OF UNCOMPRESSED INSULATION EXTENDS OVER THE WALL TOP PLATE AT

THE EAVES EXTERIOR DOORS: MAIN ENTRY U=0.20

ALL OTHERS U=0.40 WINDOWS: MILGARD VINYL

TYPE (VINYL) MODEL U-VALUE SLIDING 6110 ARGON/LoE 0.24 or BETTER 6310 ARGON/LoE 0.24 or BETTER FIXED SINGLE HUNG 6210 ARGON/LOE 0.24 or BETTER DBL. SLIDER 8125 ARGON/LoE 0.24 or BETTER

SGD 6610 ARGON/Loe 0.24 or BETTER NOTE: ALL CONCEALED OR EXPOSED INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED

INDEX OF NOT MORE THAN 450

STANDARD PLATE HEIGHT: 9'-1"

SEE ELEVATION SHEETS FOR FLOOR TO FLOOR HEIGHTS

WINDOW HDR IS 8'-0" UNLESS NOTED OTHERWISE

SEE SHEET U6 FOR INTERIOR ELEVATIONS AND ACCESSIBILITY REQUIREMENTS.

PROVIDE WATER RESISTANT GYPSUM WALLBOARD BEHIND TUB AND SHOWER ENCLOSURE MATERIALS TO A HEIGHT OF 70" MINIMUM ABOVE THE DRAIN INLET.

NO PLUMBING SHALL BE LOCATED IN THE 1" AIR SPACE OF FIRE PARTITIONS OR FIRE WALLS.

ALL BEDROOM AND BATHROOM DOORS SHALL BE UNDERCUT A MINIMUM OF 1/2" ABOVE THE ADJACENT FLOOR COVERING.

THE FRONT DOOR SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. IT MAY BE PROVIDED WITH A NIGHT LATCH, DEAD BOLT OR SECURITY CHAIN, PROVIDED SUCH DEVICES ARE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR TOOL, AND MOUNTED NOT TO EXCEED 48" ABOVE THE FINISHED FLOOR.

GYPSUM WALLBOARD SCHEDULE XCEPT WHERE NOTED OTHERWISE, 5/8" TYPE 'X' GYPSUM WALLBOARD SHALL BE USED THROUGHOUT; ON INTERIOR NON-RATED WALLS, EXTERIOR WALLS, CORRIDOR WALLS, AND 1-HOUR AND 2-HOUR FIRE-RATED WALLS.

DOOR KEY:

 $\overline{SW} = SWING$ BF = BIFOLDBP = BYPASS CONSTRUCTION: HCW = HOLLOW CORE WD. SCW = SOLID CORE WD. MTL = METAL HM = HOLLOW METAL

WINDOW KEY:

FIX = FIXED/PICTURE SL = SLIDER SH = SINGLE HUNG SGD = SLIDING GLASS DOOR

ACCESSIBILITY NOTES:

ALL GROUND FLOOR UNITS IN THIS PROJECT MUST MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE B' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC.

INCLUDED IN THE ABOVE GROUND FLOOR UNITS 5% OF ALL UNITS NEED TO MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE A' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC. SEE BUILDING PLANS FOR LOCATION OF 'TYPE A' UNITS

SEE SHEET U9 FOR SPECIFIC ADAPTABILITY STANDARD FOR BOTH 'TYPE A' AND 'TYPE B' ACCESSIBLE UNITS. SEE INTERIOR ELEVATION SHEETS FOR ADDITIONAL ACCESSIBILITY REQUIREMENTS.

LIGHTING CONTROLS, ELECTRICAL SWITCHES, ENVIRONMENTAL CONTROLS, OPERATING HARDWARE FOR DOORS AND WINDOWS AND PLUMBING FIXTURE CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. EXCEPT FOR OPERABLE DOOR HARDWARE, SUCH ITEMS SHALL BE 15" MINIMUM AND 44" MAXIMUM ABOVE THE FLOOR (48" FOR WINDOWS).

OPERABLE ENTRY DOOR HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM ABOVE THE FLOOR.

OPENING FORCES FOR ENTRY DOOR SHALL BE: 15 POUNDS TO RELEASE THE LATCH 30 POUNDS TO SET DOOR IN MOTION 15 POUNDS TO OPEN DOOR TO FULL 90° FORCE MEASURED AT LATCH SIDE OF DOOR.

THE DOOR CLOSER ON THE ENTRY DOOR SHALL BE ADJUSTED TO CLOSE FROM AN OPEN POSITION OF 90° TO AN OPEN POSITION OF 12° IN NOT LESS THAN 5 SECONDS.

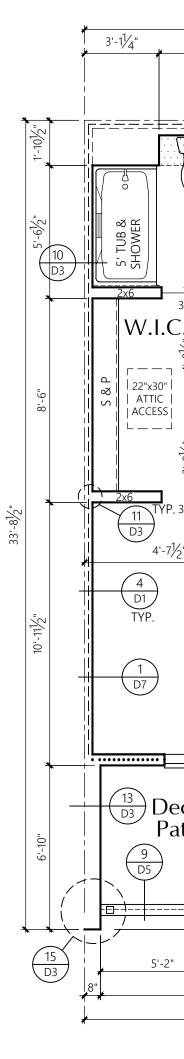
OPENING FORCE OF ALL SWINGING INTERIOR DOORS AND THE SLIDING GLASS DOOR SHALL NOT EXCEED 5 POUNDS APPLIED TO THE LATCH SIDE OF THE DOOR.

THE FORCE REQUIRED TO ACTIVATE ALL OTHER OPERABLE ITEMS LISTED ABOVE SHALL BE 5 POUNDS.

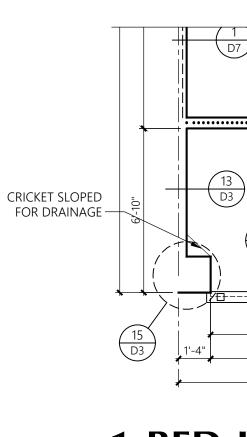
*BIFOLD DOOR HARDWARE AT LAUNDRY TO BE 'FULL ACCESS HARDWARE'.

THE 30"x48" CLEAR FLOOR SPACE IS REQUIRED AT EACH FIXTURE OR LOCATION SHOWN ON THE FLOOR PLAN.

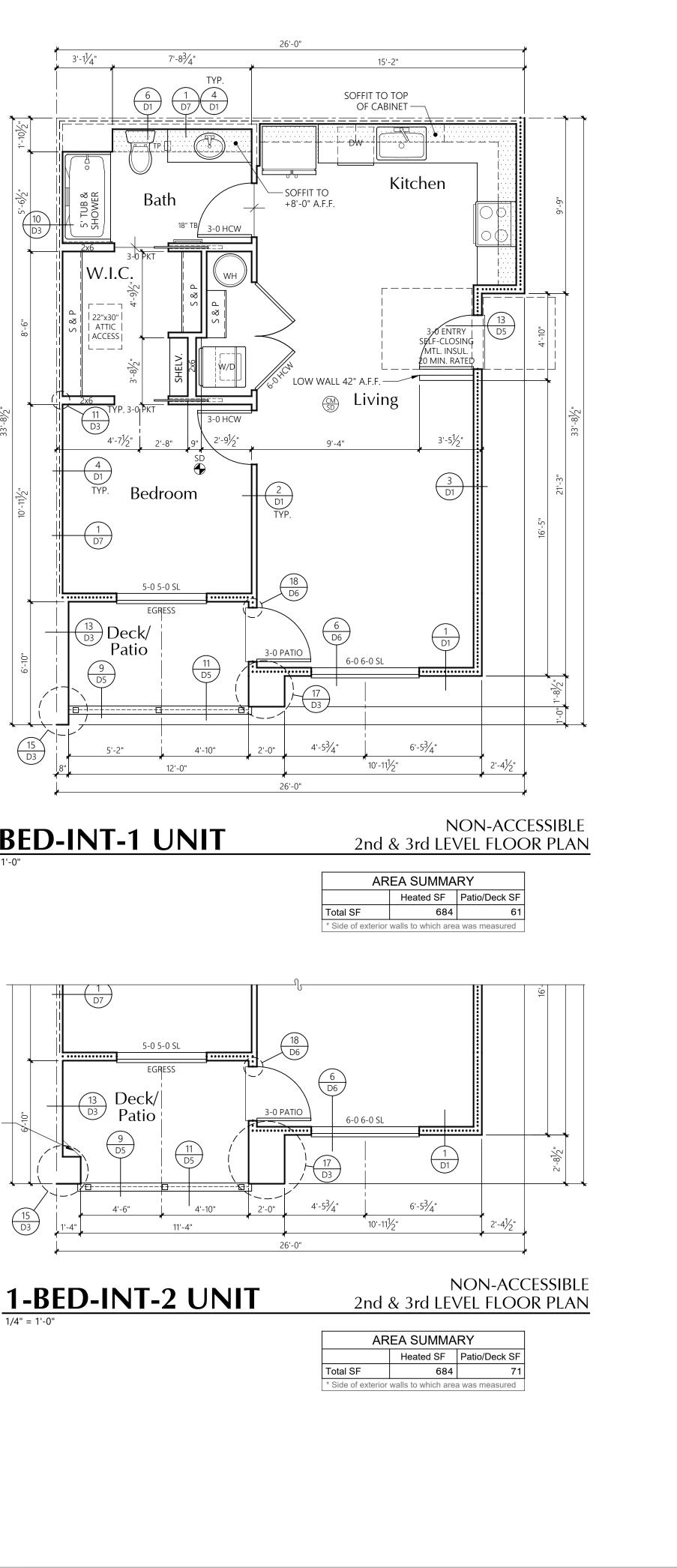




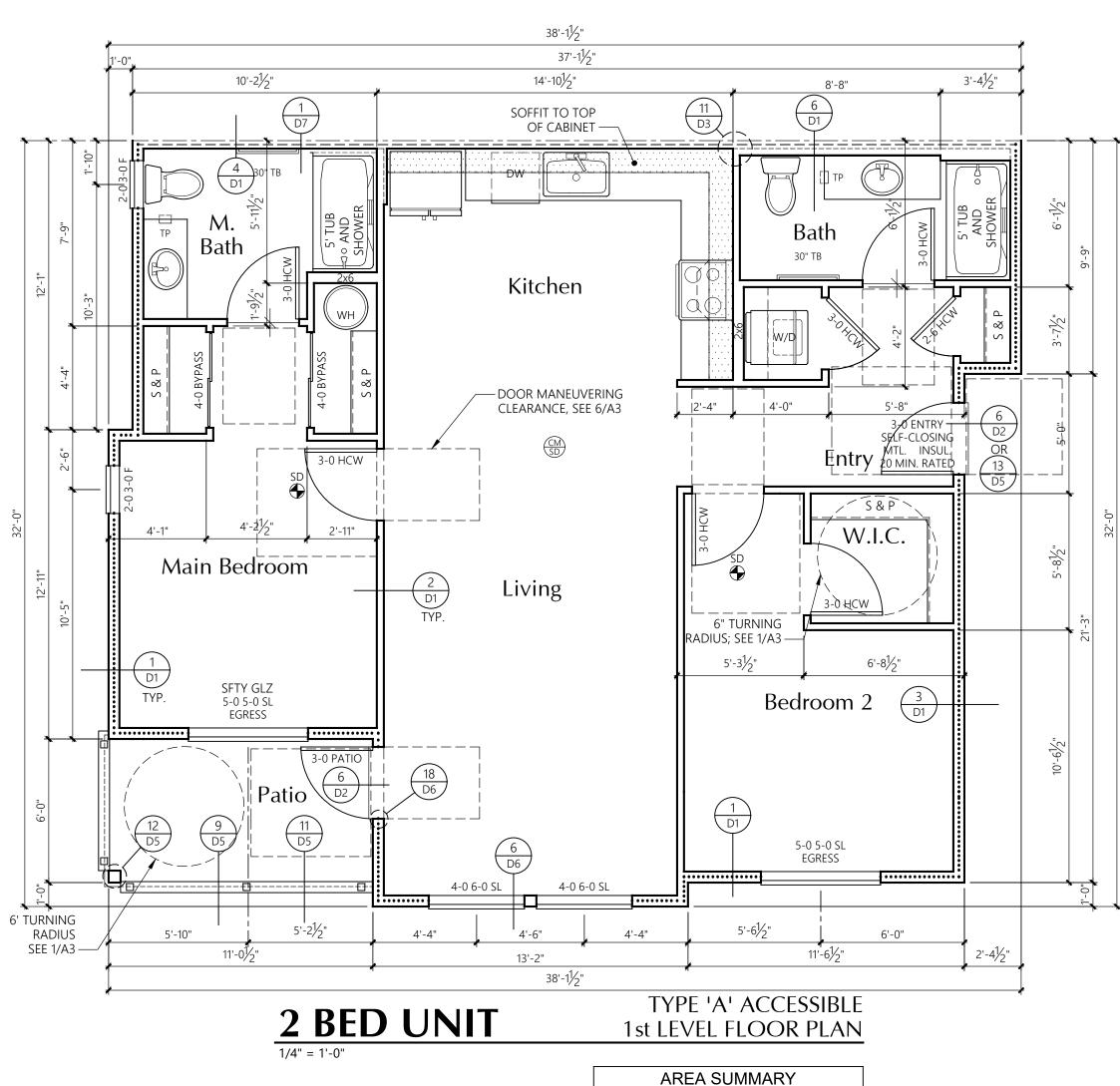




1/4" = 1'-0"







Heated SF 1019 Total SF

UNIT PLAN NOTES

2x6'S AT EXTERIOR WALLS 2x4'S AT INTERIOR WALLS UNLESS NOTED OTHERWISE.

R-21 BATT INSULATION U.N.O. – – – – – R-13 BATT INSULATION 3¹/₂" ACOUSTICAL INSULATION ONE SIDE OF PARTYWALL, U.N.O.

LOCATION OF SOFFIT FOR VENT r----RUNS. SOFFIT HEIGHT +8'-0" A.F.F. U.N.O. ON PLANS; SEE DETAIL 1/D7

SMOKE DETECTOR $\mathbf{+}$

FRAMING:

<u>CM</u> CARBON MONOXIDE/SMOKE DETECTOR

CONCEALED SPACES SHALL BE FIRESTOPPED IN BOTH DIRECTIONS AT 10'-0" ON CENTER AND AT FLOORS. TYPICAL.

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET. THE MINIMUM CLEAR OPENING HEIGHT DIMENSION SHALL BE 24". MINIMUM CLEAR OPENING WIDTH DIMENSION SHALL BE 20". EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.

WHERE THE OPENING OF THE SILL PORTION OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE AT A HEIGHT NOT LESS THAN 36 INCHES ABOVE THE FINISHED FLOOR SURFACE OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 36 INCHES OF THE FINISHED FLOOR.

ALL GLAZING SHALL CONFORM TO THE 2018 IBC, CHAPTER 24, SEC. 2406, SAFETY GLAZING. GLAZING IN ALL DOORS SHALL BE SAFETY TYPE AND ALL GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE SHALL BE SAFETY TYPE.

PROVIDE $\frac{5}{8}$ " TYPE 'X' (MIN.) GYPSUM SHEATHING ON WALLS BEHIND TUB/SHOWERS TO SATISFY FIRE REQUIREMENTS AT PARTYWALL CONDITION. PROVIDE ³/₄" PLYWOOD UNDER TUB IN PLACE OF THE GYPCRETE, SEE DETAIL 14/D1

PROVIDE WATER RESISTANT GYPSUM WALLBOARD BEHIND TUB AND SHOWER ENCLOSURE MATERIALS TO A HEIGHT OF 70" MINIMUM ABOVE THE DRAIN INLET.

NO PLUMBING SHALL BE LOCATED IN THE 1" AIR SPACE OF FIRE PARTITIONS OR FIRE WALLS.

ALL BEDROOM AND BATHROOM DOORS SHALL BE UNDERCUT A MINIMUM OF 1/2" ABOVE THE ADJACENT FLOOR COVERING.

THE FRONT DOOR SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. IT MAY BE PROVIDED WITH A NIGHT LATCH, DEAD BOLT OR SECURITY CHAIN, PROVIDED SUCH DEVICES ARE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR TOOL, AND MOUNTED NOT TO EXCEED 48" ABOVE THE FINISHED FLOOR.

GYPSUM WALLBOARD SCHEDULE EXCEPT WHERE NOTED OTHERWISE, 5/8" TYPE 'X' GYPSUM WALLBOARD SHALL BE USED THROUGHOUT; ON INTERIOR NON-RATED WALLS, EXTERIOR WALLS, CORRIDOR WALLS, AND 1-HOUR AND 2-HOUR FIRE-RATED NALLS.

STANDARD PLATE HEIGHT: 9'-1"

SEE ELEVATION SHEETS FOR FLOOR TO FLOOR HEIGHTS

WINDOW HDR IS 8'-0" UNLESS NOTED OTHERWISE

SEE SHEET U8 FOR INTERIOR ELEVATIONS AND ACCESSIBILITY REQUIREMENTS.

DOOR KEY:

 $\frac{\text{TYPE:}}{\text{SW} = \text{SWING}}$ BF = BIFOLD BP = BYPASS

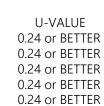
WINDOW KEY:

TYPE: FIX = FIXED/PICTURE SL = SLIDER SH = SINGLE HUNG SGD = SLIDING GLASS DOOR

INSULATION FOUNDATION PERIMETER - R-10 RIGID INSULATION TO A DEPTH OF 24" OR TO TOP OF FOOTING AT HEATED PERIMETER EXTERIOR WALLS: FIBERGLASS BATTS OR BLANKETS 2x6 WALLS - R21 FLOORS OVER UNHEATED SPACES - R30 ATTICS AND ROOF ASSEMBLIES - R-49 FULL HEIGHT OF UNCOMPRESSED INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES EXTERIOR DOORS: MAIN ENTRY U=0.20 ALL OTHERS U=0.40 WINDOWS: MILGARD VINYL TYPE (VINYL) MODEL 6110 ARGON/Loe 0.24 or BETTER SLIDING FIXED 6310 ARGON/Loe 0.24 or BETTER SINGLE HUNG 6210 ARGON/LoE 0.24 or BETTER DBL. SLIDER 8125 ARGON/LoE 0.24 or BETTER SGD 6610 ARGON/LoE 0.24 or BETTER NOTE: ALL CONCEALED OR EXPOSED INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450

ΓT I	
Patio/Deck SF	
66	

CONSTRUCTION: HCW = HOLLOW CORE WD. SCW = SOLID CORE WD. MTL = METAL HM = HOLLOW METAL



ACCESSIBILITY NOTES:

ALL GROUND FLOOR UNITS IN THIS PROJECT MUST MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE B' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC.

INCLUDED IN THE ABOVE GROUND FLOOR UNITS 5% OF ALL UNITS NEED TO MEET THE ACCESSIBILITY REQUIREMENTS OF 'TYPE A' ACCESSIBLE UNITS AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC. SEE BUILDING PLANS FOR LOCATION OF 'TYPE A' UNITS

SEE SHEET U9 FOR SPECIFIC ADAPTABILITY STANDARD FOR BOTH 'TYPE A' AND 'TYPE B' ACCESSIBLE UNITS. SEE INTERIOR ELEVATION SHEETS FOR ADDITIONAL ACCESSIBILITY REQUIREMENTS.

LIGHTING CONTROLS, ELECTRICAL SWITCHES, ENVIRONMENTAL CONTROLS, OPERATING HARDWARE FOR DOORS AND WINDOWS, AND PLUMBING FIXTURE CONTROLS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. EXCEPT FOR OPERABLE DOOR HARDWARE, SUCH ITEMS SHALL BE 15" MINIMUM AND 44" MAXIMUM ABOVE THE FLOOR (48" FOR WINDOWS).

OPERABLE ENTRY DOOR HARDWARE SHALL BE 34" MINIMUM AND 48" MAXIMUM ABOVE THE FLOOR.

OPENING FORCES FOR ENTRY DOOR SHALL BE: 15 POUNDS TO RELEASE THE LATCH 30 POUNDS TO SET DOOR IN MOTION 15 POUNDS TO OPEN DOOR TO FULL 90° FORCE MEASURED AT LATCH SIDE OF DOOR.

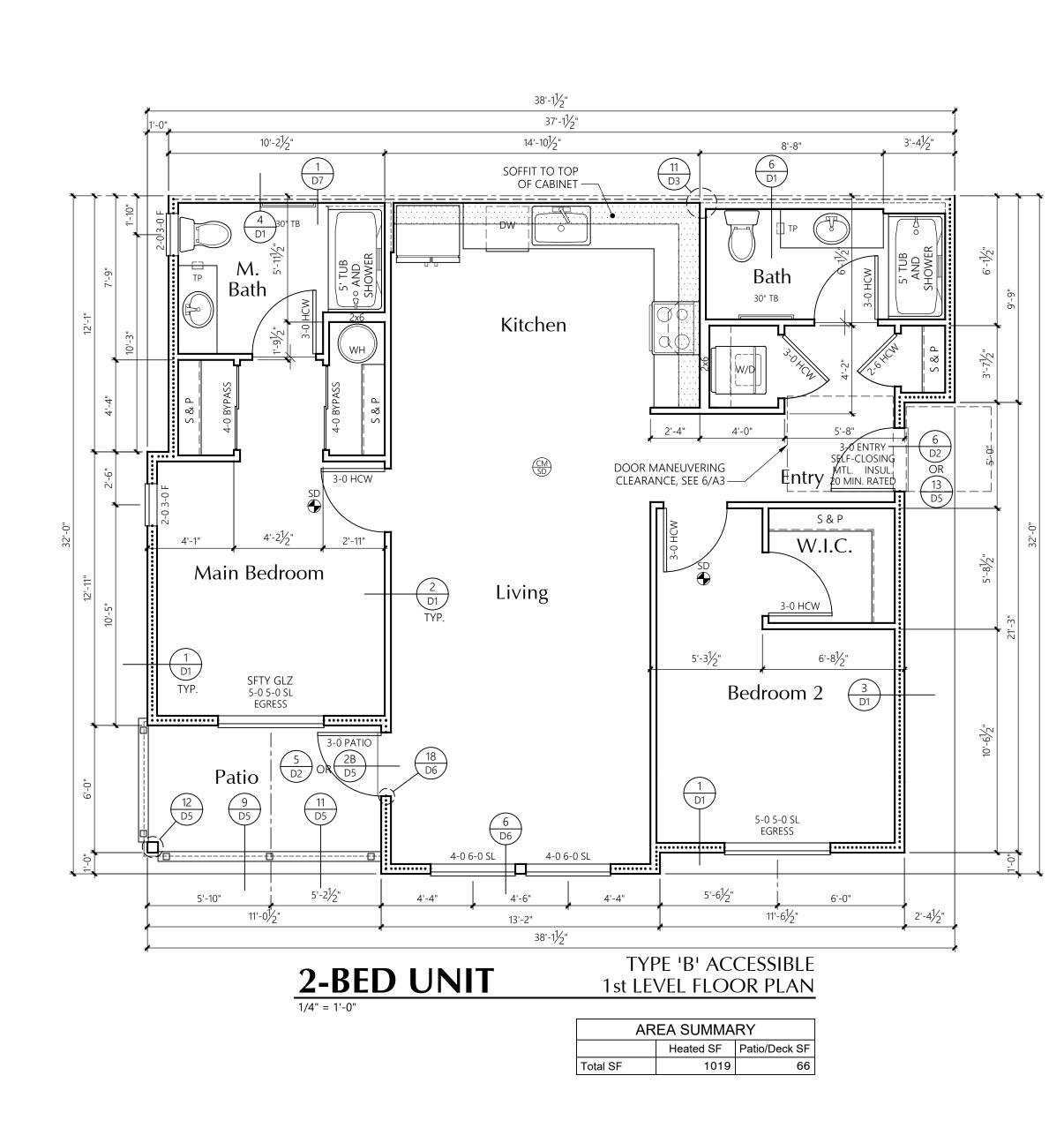
THE DOOR CLOSER ON THE ENTRY DOOR SHALL BE ADJUSTED TO CLOSE FROM AN OPEN POSITION OF 90° TO AN OPEN POSITION OF 12° IN NOT LESS THAN 5 SECONDS.

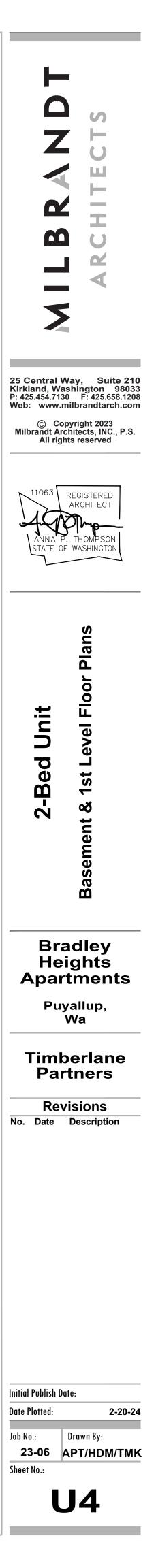
OPENING FORCE OF ALL SWINGING INTERIOR DOORS AND THE SLIDING GLASS DOOR SHALL NOT EXCEED 5 POUNDS APPLIED TO THE LATCH SIDE OF THE DOOR.

THE FORCE REQUIRED TO ACTIVATE ALL OTHER OPERABLE ITEMS LISTED ABOVE SHALL BE 5 POUNDS.

*BIFOLD DOOR HARDWARE AT LAUNDRY TO BE 'FULL ACCESS HARDWARE'.

THE 30"x48" CLEAR FLOOR SPACE IS REQUIRED AT EACH FIXTURE OR LOCATION SHOWN	30X48	
		1





UNIT PLAN NOTES

FRAMING:

2x6'S AT EXTERIOR WALLS 2x4'S AT INTERIOR WALLS UNLESS NOTED OTHERWISE. R-21 BATT INSULATION U.N.O.

– – – – – R-13 BATT INSULATION 3¹/₂" ACOUSTICAL INSULATION ONE SIDE OF PARTYWALL, U.N.O.

SMOKE DETECTOR

(CM) CARBON MONOXIDE/SMOKE DETECTOR

LOCATION OF SOFFIT FOR VENT

RUNS. SOFFIT HEIGHT +8'-0" A.F.F.

U.N.O. ON PLANS; SEE DETAIL 1/D7

CONCEALED SPACES SHALL BE FIRESTOPPED IN BOTH DIRECTIONS AT 10'-0" ON CENTER AND AT FLOORS. TYPICAL.

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET. THE MINIMUM CLEAR OPENING HEIGHT DIMENSION SHALL BE 24". MINIMUM CLEAR OPENING WIDTH DIMENSION SHALL BE 20". EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE THE BOTTOM OF CLEAR OPENING NOT GREATER THAN 44 INCHES MEASURED FROM THE FLOOR.

WHERE THE OPENING OF THE SILL PORTION OF AN OPERABLE WINDOW IS LOCATED MORE THAN 72 INCHES ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE AT A HEIGHT NOT LESS THAN 36 INCHES ABOVE THE FINISHED FLOOR SURFACE OF THE ROOM IN WHICH THE WINDOW IS LOCATED. OPERABLE SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 36 INCHES OF THE FINISHED FLOOR.

ALL GLAZING SHALL CONFORM TO THE 2018 IBC, CHAPTER 24, SEC. 2406, SAFETY GLAZING. GLAZING IN ALL DOORS SHALL BE SAFETY TYPE AND ALL GLAZING WITHIN A 24" ARC OF EITHER VERTICAL EDGE SHALL BE SAFETY TYPE.

PROVIDE ⁵/8" TYPE 'X' (MIN.) GYPSUM SHEATHING ON WALLS BEHIND TUB/SHOWERS TO SATISFY FIRE REQUIREMENTS AT PARTYWALL CONDITION. PROVIDE $\frac{3}{4}$ " PLYWOOD UNDER TUB IN PLACE OF THE GYPCRETE, SEE DETAIL 14/D1

PROVIDE WATER RESISTANT GYPSUM WALLBOARD BEHIND TUB AND SHOWER ENCLOSURE MATERIALS TO A HEIGHT OF 70" MINIMUM ABOVE THE DRAIN INLET.

NO PLUMBING SHALL BE LOCATED IN THE 1" AIR SPACE OF FIRE PARTITIONS OR FIRE WALLS.

ALL BEDROOM AND BATHROOM DOORS SHALL BE UNDERCUT A MINIMUM OF 1/2" ABOVE THE ADJACENT FLOOR COVERING.

THE FRONT DOOR SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. IT MAY BE PROVIDED WITH A NIGHT LATCH, DEAD BOLT OR SECURITY CHAIN, PROVIDED SUCH DEVICES ARE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR TOOL, AND MOUNTED NOT TO EXCEED 48" ABOVE THE FINISHED FLOOR.

GYPSUM WALLBOARD SCHEDULE EXCEPT WHERE NOTED OTHERWISE, 5/8" TYPE 'X' GYPSUM WALLBOARD SHALL BE USED THROUGHOUT; ON INTERIOR NON-RATED WALLS, EXTERIOR WALLS, CORRIDOR WALLS, AND 1-HOUR AND 2-HOUR FIRE-RATE WALLS.

STANDARD PLATE HEIGHT: 9'-1" SEE ELEVATION SHEETS FOR

FLOOR TO FLOOR HEIGHTS

WINDOW HDR IS 8'-0" UNLESS NOTED OTHERWISE

SEE SHEET U8 FOR INTERIOR ELEVATIONS AND ACCESSIBILITY REQUIREMENTS.

DOOR KEY:

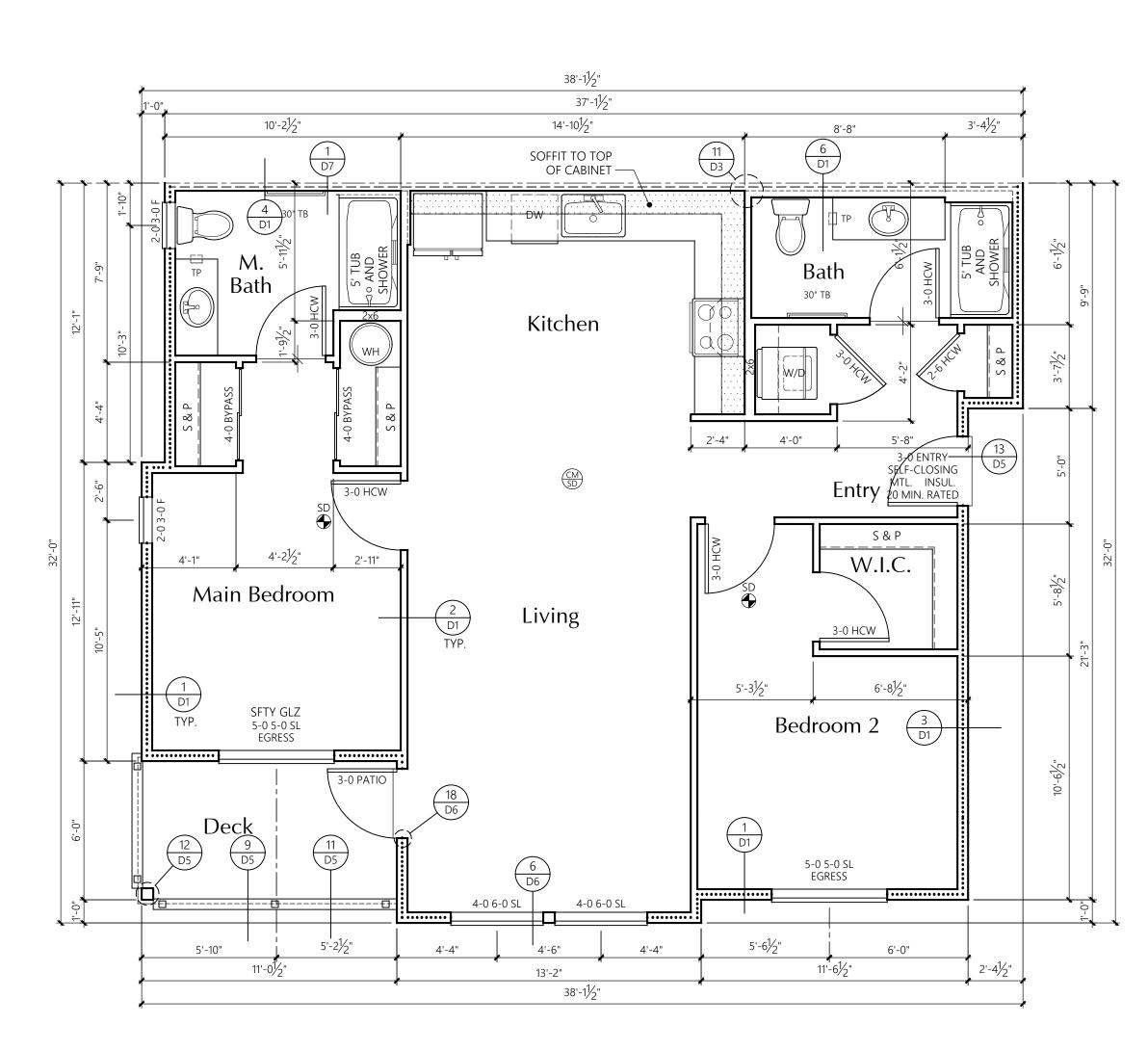
TYPE: SW = SWING BF = BIFOLDBP = BYPASS

WINDOW KEY:

TYPE: FIX = FIXED/PICTURE SL = SLIDER SH = SINGLE HUNG SGD = SLIDING GLASS DOOR

HEATED PERIMETER EXTERIOR WALLS: FIBERGLASS BATTS OR BLANKETS 2x6 WALLS - R21 THE EAVES ALL OTHERS U=0.40 WINDOWS: MILGARD VINYL FIXED

SGD



2-BED UNIT 1/4" = 1'-0"

CONSTRUCTION:
HCW = HOLLOW CORE WD.
SCW = SOLID CORE WD.
MTL = METAL
HM = HOLLOW METAL

INSULATION

FOUNDATION PERIMETER - R-10 RIGID INSULATION TO A DEPTH OF 24" OR TO TOP OF FOOTING AT

FLOORS OVER UNHEATED SPACES - R30

ATTICS AND ROOF ASSEMBLIES - R-49 FULL HEIGHT OF UNCOMPRESSED INSULATION EXTENDS OVER THE WALL TOP PLATE AT

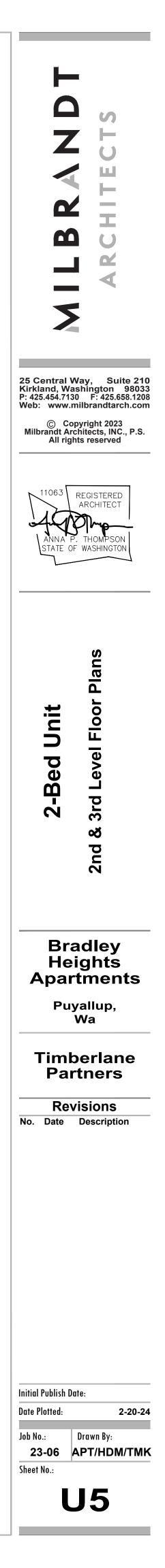
EXTERIOR DOORS: MAIN ENTRY U=0.20

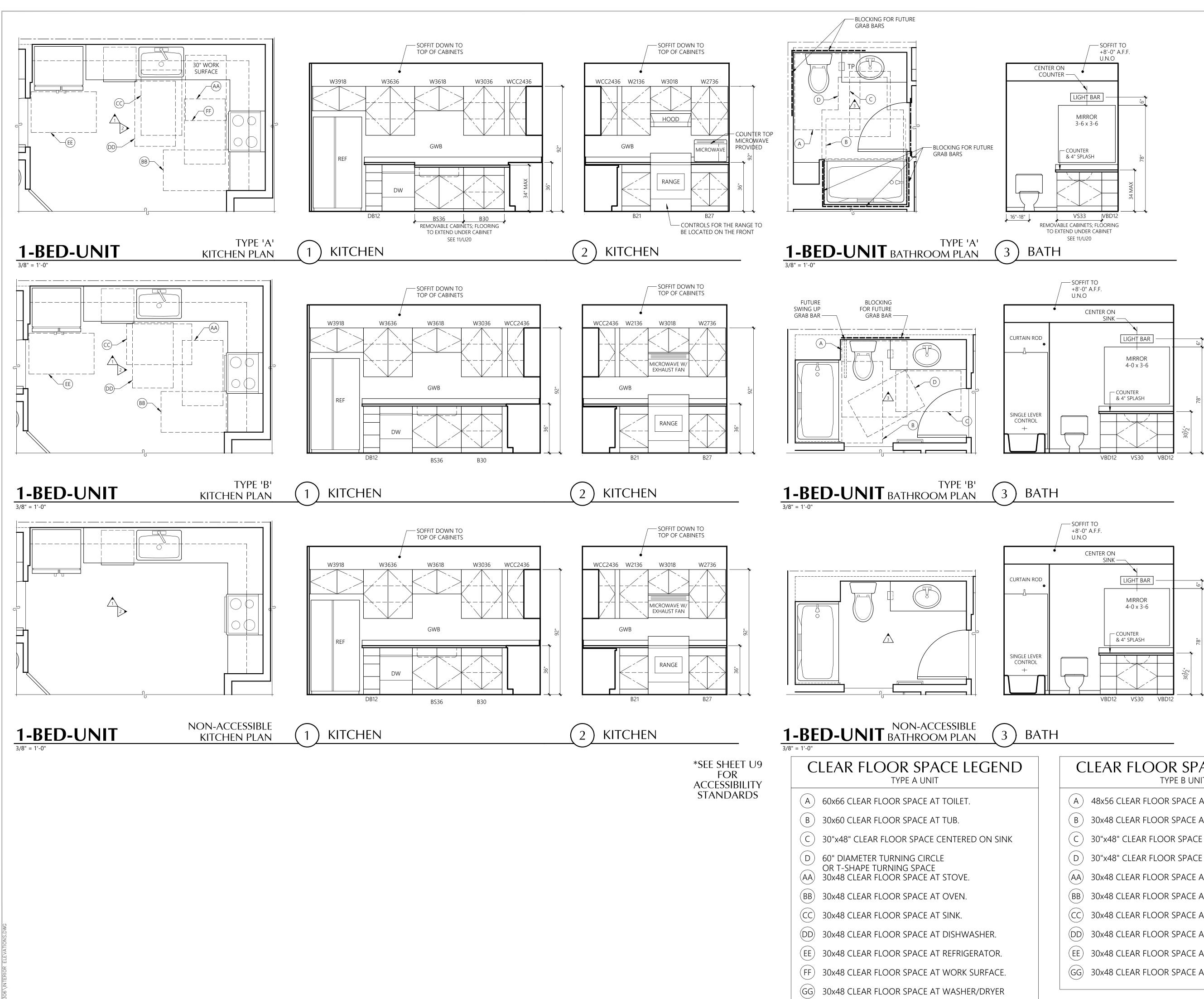
TYPE (VINYL) MODEL U-VALUE SLIDING 6110 ARGON/LoE 0.24 or BETTER 6310 ARGON/Loe 0.24 or BETTER SINGLE HUNG 6210 ARGON/LoE 0.24 or BETTER DBL. SLIDER 8125 ARGON/LOE 0.24 or BETTER 6610 ARGON/LoE 0.24 or BETTER

NOTE: ALL CONCEALED OR EXPOSED INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450

NON-ACCESSIBLE 2nd & 3rd LEVEL FLOOR PLAN

A	AREA SUMMARY								
Heated SF Patio/Deck SF									
Total SF	1019	66							





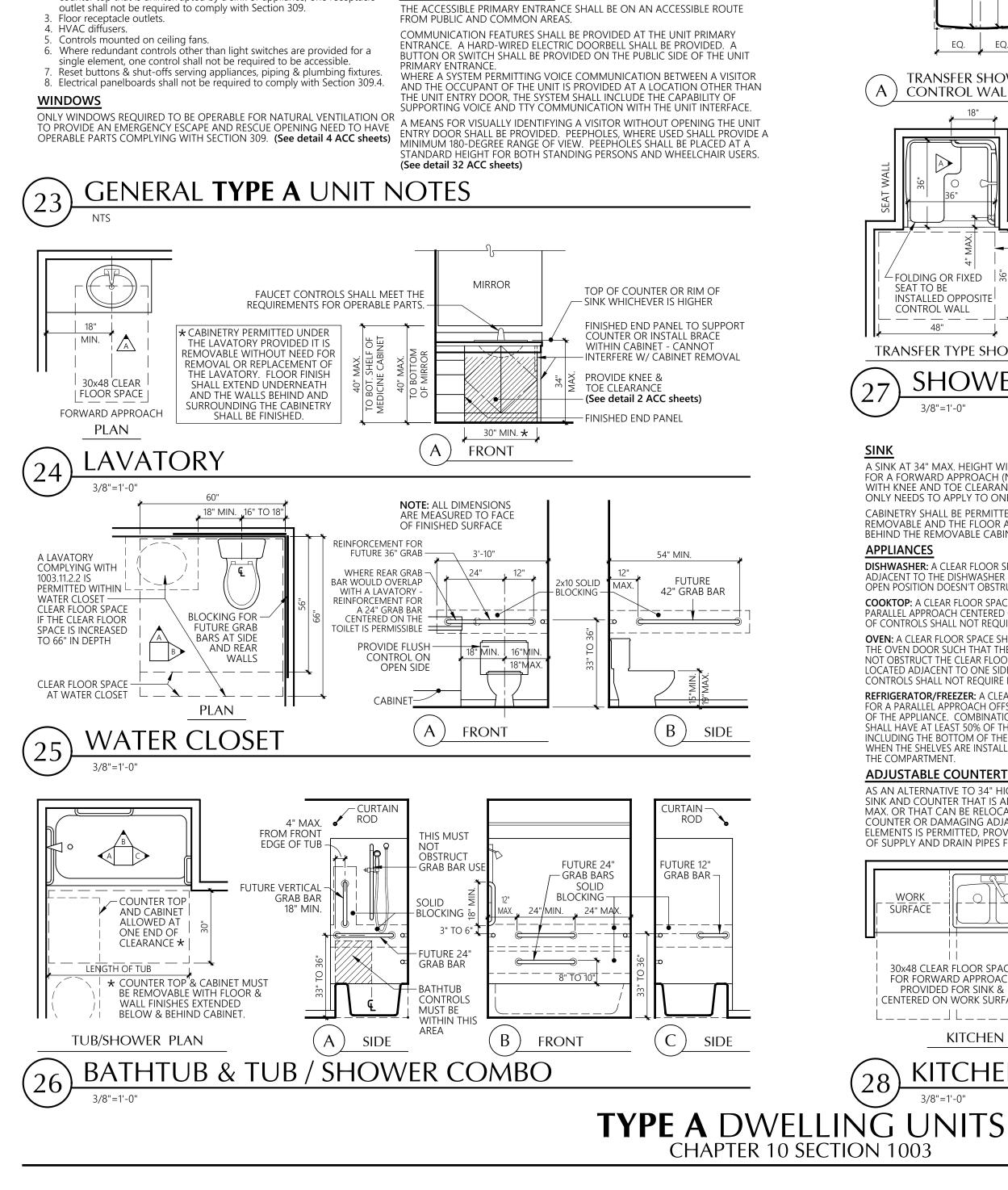
CI	LEAR FLOOR SPACE LEGEND
A	48x56 CLEAR FLOOR SPACE AT TOILET.
B	30x48 CLEAR FLOOR SPACE AT TUB.
C	30"x48" CLEAR FLOOR SPACE CENTERED ON SINK
D	30"x48" CLEAR FLOOR SPACE BEYOND ARC OF DOOR.
AA	30x48 CLEAR FLOOR SPACE AT STOVE.
BB	30x48 CLEAR FLOOR SPACE AT OVEN.
CC	30x48 CLEAR FLOOR SPACE AT SINK.
	30x48 CLEAR FLOOR SPACE AT DISHWASHER.
EE	30x48 CLEAR FLOOR SPACE AT REFRIGERATOR.
GG	30x48 CLEAR FLOOR SPACE AT WASHER/DRYER

	MILBRANDT	ARCHITECTS
P: 428 Web:	5.454.7130 www.m © Cop randt Arci	ay, Suite 210 hington 98033 F: 425.658.1208 ilbrandtarch.com yright 2023 hitects, INC., P.S. is reserved
		REGISTERED ARCHITECT THOMPSON WASHINGTON
	Interior Elevations	1-Bed-Int
	Hei part ^{Puy}	dley ghts tments ^{allup,}
	īmb	_{Va} erlane tners
No.		ISIONS Description
Initial Date P Job No	_	e: 2-20-24 Drawn By:



CE LEGEND	CLEAR FLOOR SPACE LEGEND
FOILET.	A 48x56 CLEAR FLOOR SPACE AT TOILET.
ГUВ.	B 30x48 CLEAR FLOOR SPACE AT TUB.
INTERED ON SINK	C 30"x48" CLEAR FLOOR SPACE CENTERED ON SINK
	D 30"x48" CLEAR FLOOR SPACE BEYOND ARC OF DOOR.
STOVE.	(AA) 30x48 CLEAR FLOOR SPACE AT STOVE.
OVEN.	(BB) 30x48 CLEAR FLOOR SPACE AT OVEN.
SINK.	CC 30x48 CLEAR FLOOR SPACE AT SINK.
DISHWASHER.	DD 30x48 CLEAR FLOOR SPACE AT DISHWASHER.
REFRIGERATOR.	EE 30x48 CLEAR FLOOR SPACE AT REFRIGERATOR.
NORK SURFACE.	GG 30x48 CLEAR FLOOR SPACE AT WASHER/DRYER
WASHER/DRYER	

MILBRANDT ARCHITECTS
25 Central Way, Suite 210 Kirkland, Washington 98033 P: 425.454.7130 F: 425.658.1208 Web: www.milbrandtarch.com © Copyright 2023 Milbrandt Architects, INC., P.S. All rights reserved
ANNA P. THOMPSON STATE OF WASHINGTON
Interior Elevations 2-Bed
Bradley Heights Apartments
Puyallup, Wa Timberlane Partners
Revisions No. Date Description
Initial Publish Date: Date Plotted: 2-20-24 Job No.: Drawn By: 23-06 APT/HDM/TMK Sheet No.: U8



EXCEPTIONS: . Receptacle outlets serving a dedicated use. 2. Where two or more receptacle outlets are provided in a kitchen above a counter top that is uninterrupted by a sink or appliance, one receptacle

RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, APPLIANCE

UNIT PRIMARY ENTRANCE

ALARM. THE SAME VISIBLE NOTIFICATION APPLIANCE CAN BE USED FOR BOTH SMOKE DETECTION AND FIRE ALARM ACTIVATION, BUT SHALL NOT BE USED FOR ANY OTHER PURPOSE WITHIN THE UNIT.

The interconnection of the building fire alarm system with the unit smoke alarms. Replacement of audible appliances with combination audible/visible appliances. The future extension of the existing wiring from the unit smoke alarm location to required locations for visible appliances. VISIBLE NOTIFICATION APPLIANCES, WHERE PROVIDED AS PART OF THE UNIT SMOKE DETECTION SYSTEM OR BUILDING FIRE ALARM SYSTEM, SHALL BE ACTIVATED UPON SMOKE DETECTION OR WITH ACTIVATION OF THE BUILDING FIRE

BE POWERED BY A COMMERCIAL LIGHT AND POWER SOUCE, BE PERMANENTLY STORY THAT CONTAINS DWELLING UNITS & SLEEPING UNITS SHALL BE PROVIDED WITH THE CAPABILITY TO SUPPORT VISIBLE ALARM NOTIFICATION APPLIANCES.

SUCH CAPABILITY SHALL ACCOMMODATE WIRED OR WIRELESS EQUIPMENT. THE

FUTURE CAPABILITY SHALL INCLUDE ONE OF THE FOLLOWING:

VISIBLE NOTIFICATION APPLIANCES

PERMANENTLY INSTALLED. IN GROUP R-2 OCCUPANCIES REOUIRED TO HAVE A FIRE ALARM SYSTEM, EACH

CONNECTED TO THE WIRING OF THE PREMISES ELECTRIC SYSTEM, AND BE

SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72 LISTED IN SECTION 105.2.2,

ALL TOILET & BATHING FACILITIES WITHIN A TYPE A UNIT SHALL PROVIDE REINFORCEMENT FOR THE FUTURE INSTALLATION OF GRAB BARS AT WATER

THE ACCESSIBLE LEVEL OF THE DWELLING UNIT.

LAUNDRY EQUIPMENT

ALARMS

AT LEAST ONE TOILET AND BATHING FACILITY SHALL CONTAIN: ONE LAVATORY, ONE WATER CLOSET AND EITHER A BATHTUB OR SHOWER WITHIN THE UNIT THAT MEETS THE REQUIREMENTS DETAILED FOR **TYPE A** FIXTURES (See details 23 thru 28 ACC sheets). THE ACCESSIBLE TOILET AND BATHING FIXTURES SHALL BE IN A SINGLE TOILET/BATHING AREA SUCH THAT TRAVEL BETWEEN FIXTURES DOES NOT REQUIRE TRAVEL THROUGH OTHER PARTS OF THE UNIT

CLOSETS, BATHTUBS AND SHOWER SEATS. REINFORCEMENT IS NOT REQUIRED

IN A ROOM CONTAINING ONLY A LAVATORY AND A WATER CLOSET, PROVIDED

THE ROOM DOES NOT CONTAIN THE ONLY LAVATORY OR WATER CLOSET ON

ACCESSIBLE AUDIBLE AND VISIBLE ALARMS AND NOTIFICATION APPLIANCES

WASHING MACHINES AND CLOTHES DRYERS SHALL COMPLY WITH SECTION 611. (See detail 20 ACC sheets) TOILET AND BATHING FACILITIES

AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ALL SPACES AND

ELEMENTS THAT ARE PART OF THE UNIT. ACCESSIBLE ROUTES SHALL

COINCIDE WITH OR BE LOCATED IN THE SAME AREA AS THE GENERAL

SPACE EXCEPT FOR BATHROOMS THAT ARE NOT REQUIRED TO MEET

ALL ROOMS SERVED BY AN ACCESSIBLE ROUTE SHALL PROVIDE A TURNING

ACCESSIBILITY STANDARDS, OR CLOSETS OR PANTRIES THAT ARE 48" MAX

(See detail 1 ACC sheets)

THE PRIMARY ENTRANCE DOOR AND ALL DOORS INTENDED FOR USER PASSAGE, SHALL COMPLY WITH SECTION 404. (See detail 6 ACC sheets)

BALCONY DOORS: THRESHOLDS AT EXTERIOR SLIDING DOORS SHALL BE

PERMITTED TO BE $\frac{3}{4}$ " MAX. IN HEIGHT PROVIDED THEY ARE BEVELED WITH

WHERE EXTERIOR SPACE DIMENSIONS OF BALCONIES ARE LESS THAN THE

BATHROOM DOORS: BATHROOMS NOT REQUIRED TO BE ACCESSIBLE

BATHROOM DOORS MAY SWING INTO THE BATHROOM AND INTO THE

REQUIRED CLEAR FLOOR SPACE AT ANY FIXTURE WHEN A CLEAR FLOOR

SPACE OF AT LEAST 30"x48" IS PROVIDED WITHIN THE ROOM BEYOND THE

LIGHTING CONTROLS, ELECTRICAL PANELBOARDS, ELECTRICAL SWITCHES &

CONTROLS, OPERATING HARDWARE FOR OPERABLE WINDOWS, PLUMBING

FIXTURE CONTROLS, AND USER CONTROLS FOR SECURITY OR INTERCOM

SYSTEMS SHALL COMPLY WITH SECTION 309. (See detail 4 ACC sheets)

ONLY NEED TO PROVIDE DOOR MANEUVERING CLEARANCE ON THE

ARE NOT REQUIRED ON THE EXTERIOR SIDE OF THE DOOR.

REQUIRED MANEUVERING CLEARANCE, DOOR MANEUVERING CLEARANCES

NOTE: BALCONIES AND CORRIDORS ARE NOT ROOMS AND AS SUCH DO

IN GROUP R-2 OCCUPANCIES CONTAINING MORE THAN 10 DWELLING UNITS OR SLEEPING UNITS AT LEAST 5% BUT NOT LESS THAN ONE OF THE UNITS HALL BE A TYPE A UNIT. ALL UNITS ON THE SITE SHALL BE CONSIDERED TO DETERMINE THE TOTAL NUMBER OF UNITS AND THE REQUIRED NUMBER OF TYPE A UNITS. EXISTING STRUCTURES ON A SITE SHALL NOT CONTRIBUTE TO THE TOTAL NUMBER OF UNITS ON A SITE. TYPE A UNITS SHALL BE DISPERSED AMONG THE VARIOUS CLASSES OF UNITS. THE NUMBER OF TYPE A UNITS IS PERMITTED TO BE REDUCED IN ACCORDANCE WITH CONDITIONS

NUMBER OF TYPE A UNITS

DEFINED IN SECTION 1107.7 OF THE IBC.

ACCESSIBLE ROUTE

IN DFPTH

A MAX SLOPE OF

OUTSIDE OF THE DOOR.

ARC OF THE DOOR SWING.

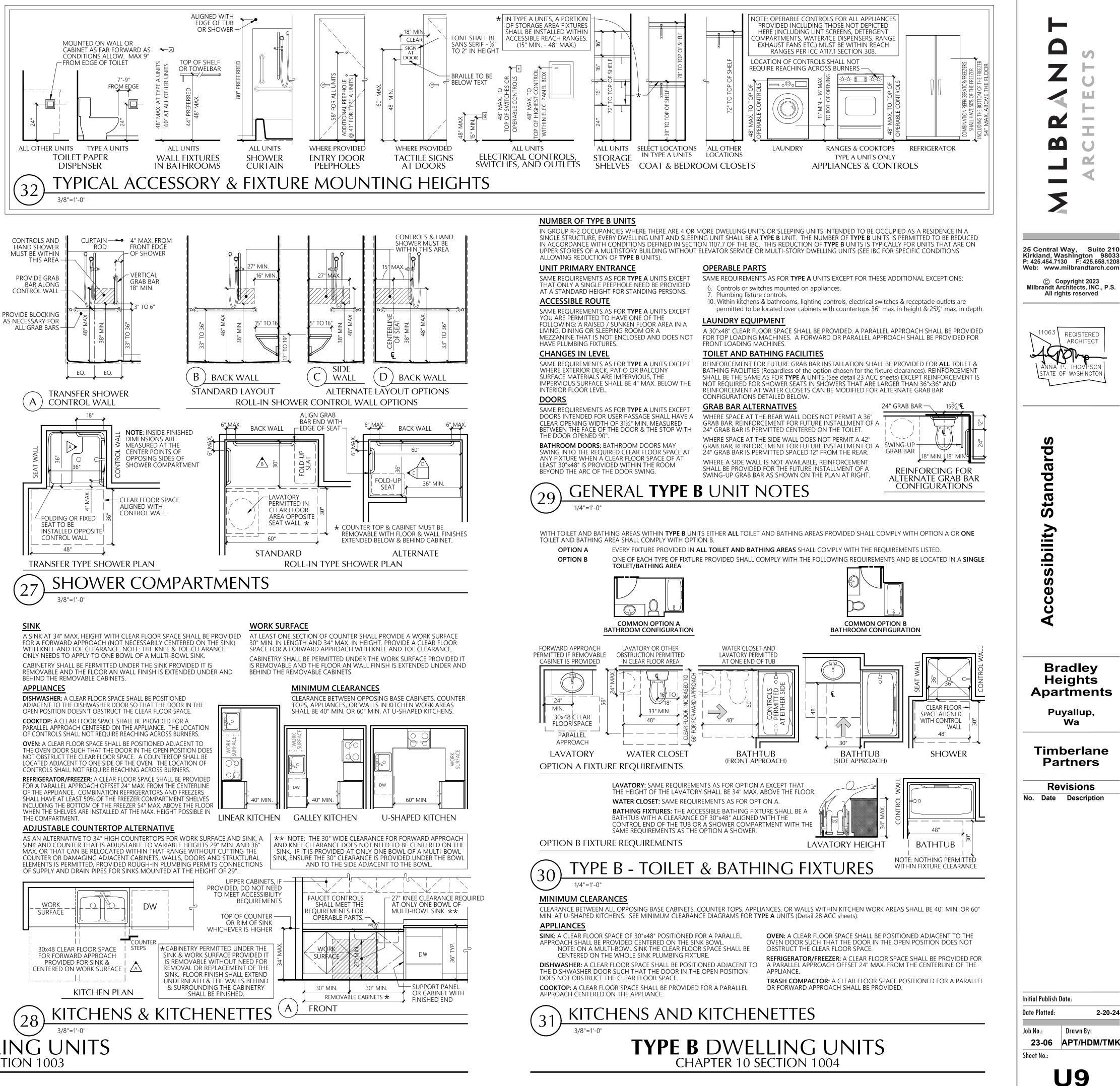
OPERABLE PARTS

CIRCULATION PATH. (See detail 5 ACC sheets)

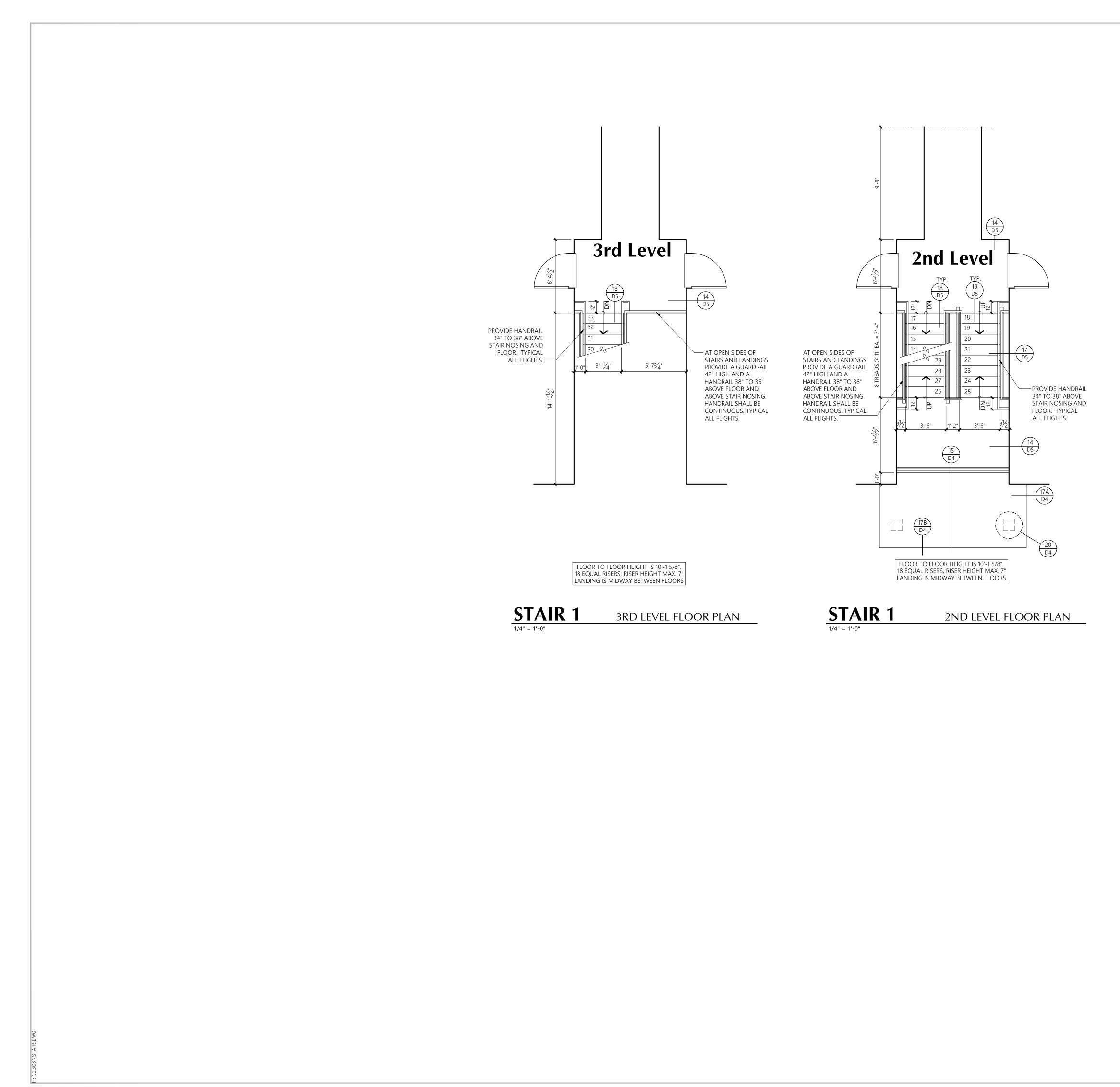
TURNING SPACE & CLEAR FLOOR SPACE

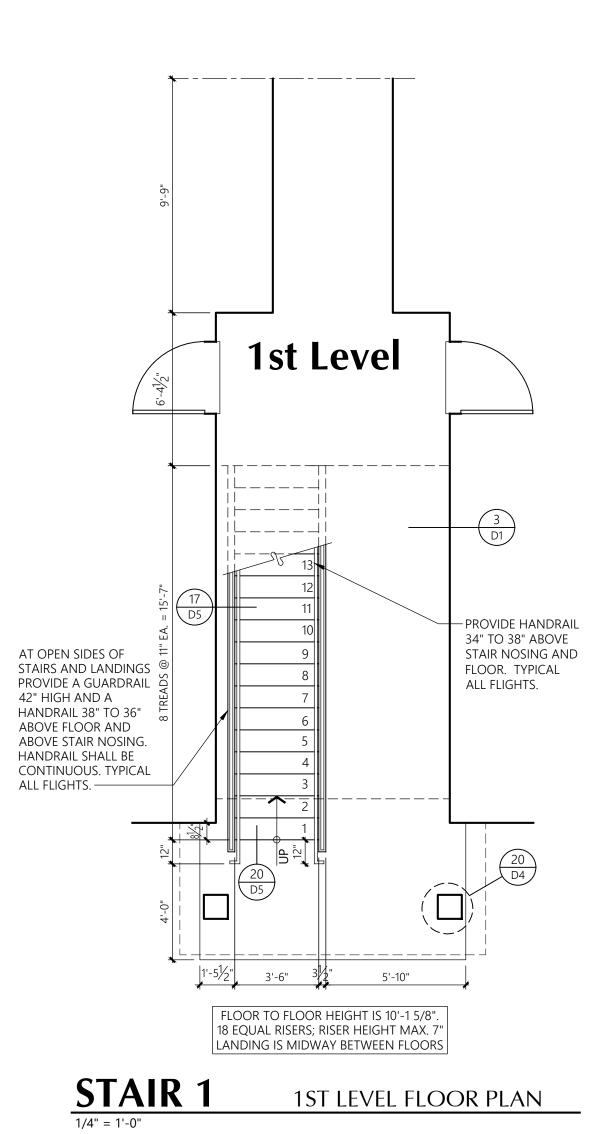
NOT NEED TO HAVE A TURNING SPACE

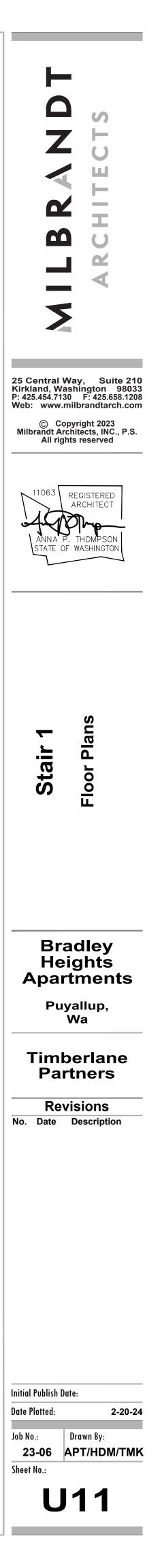
DOORS AND DOORWAYS

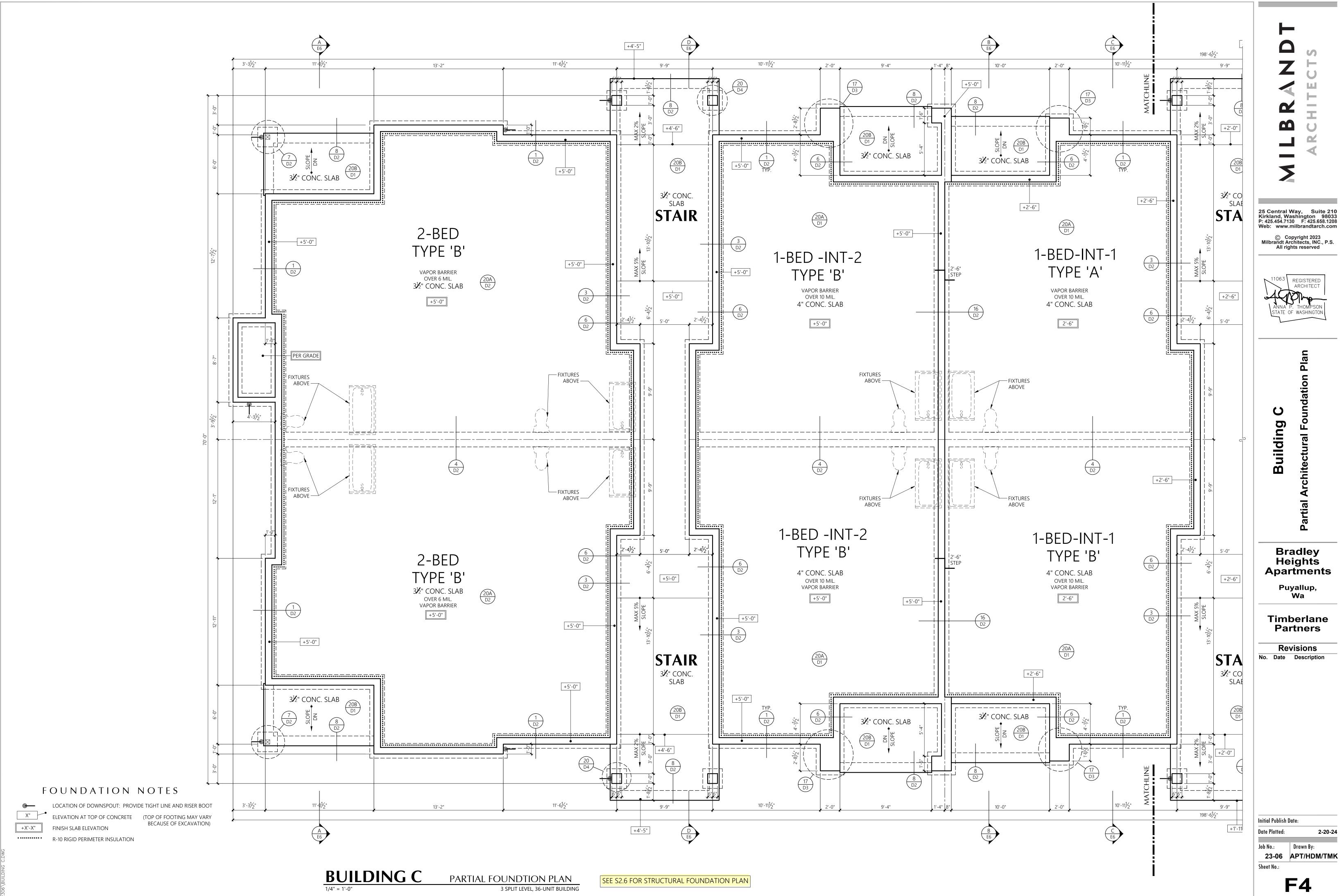


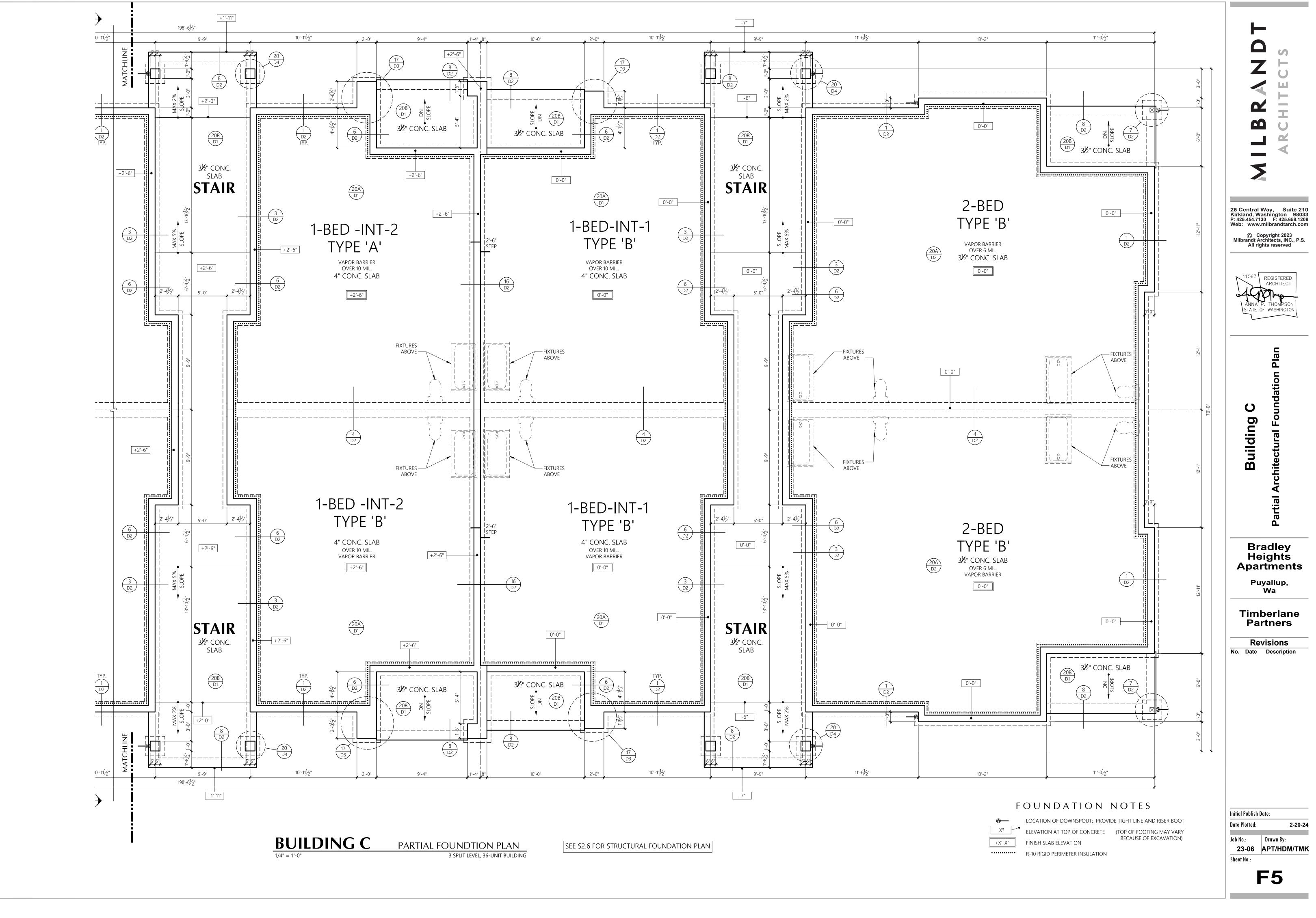
2-20-24 Drawn By: APT/HDM/TMK

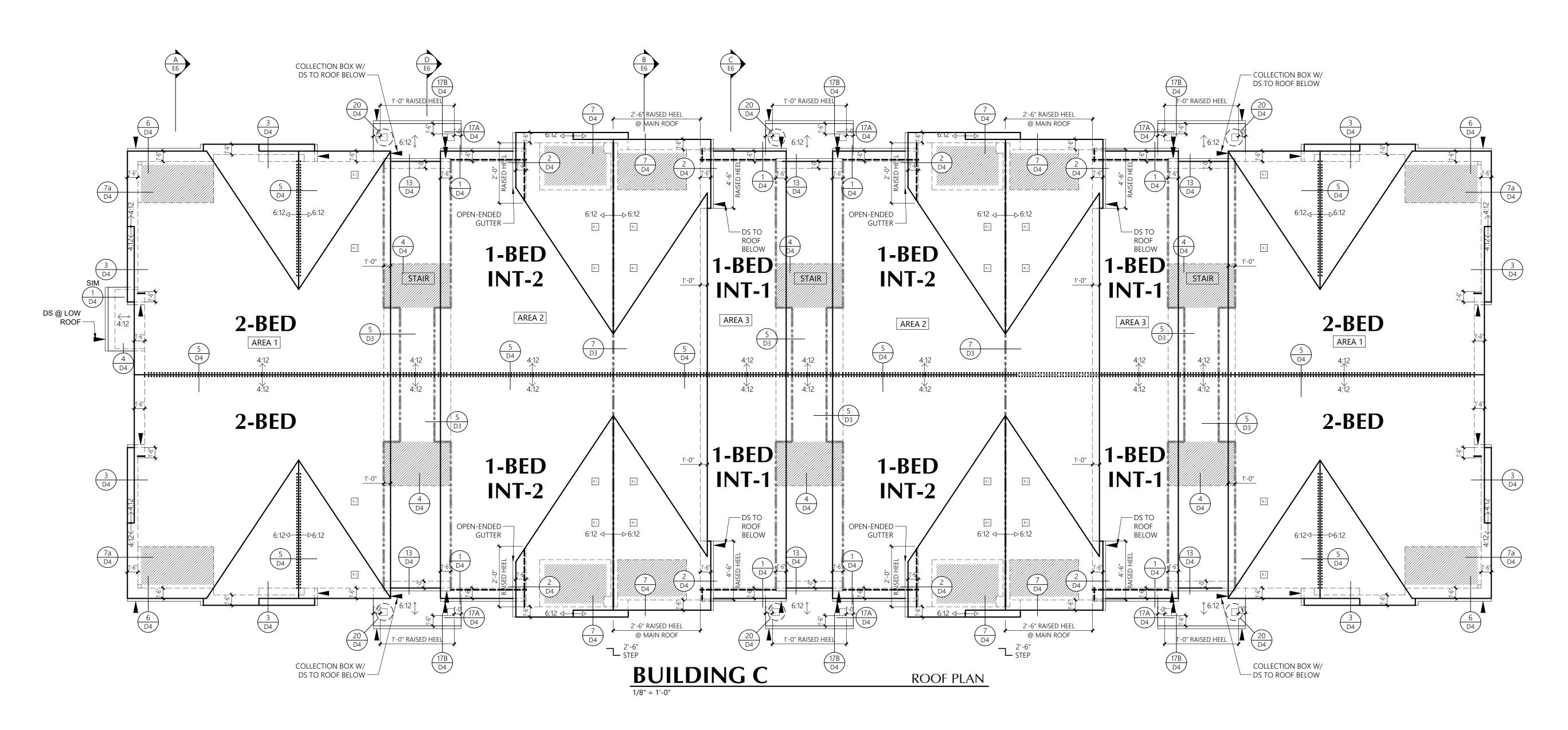










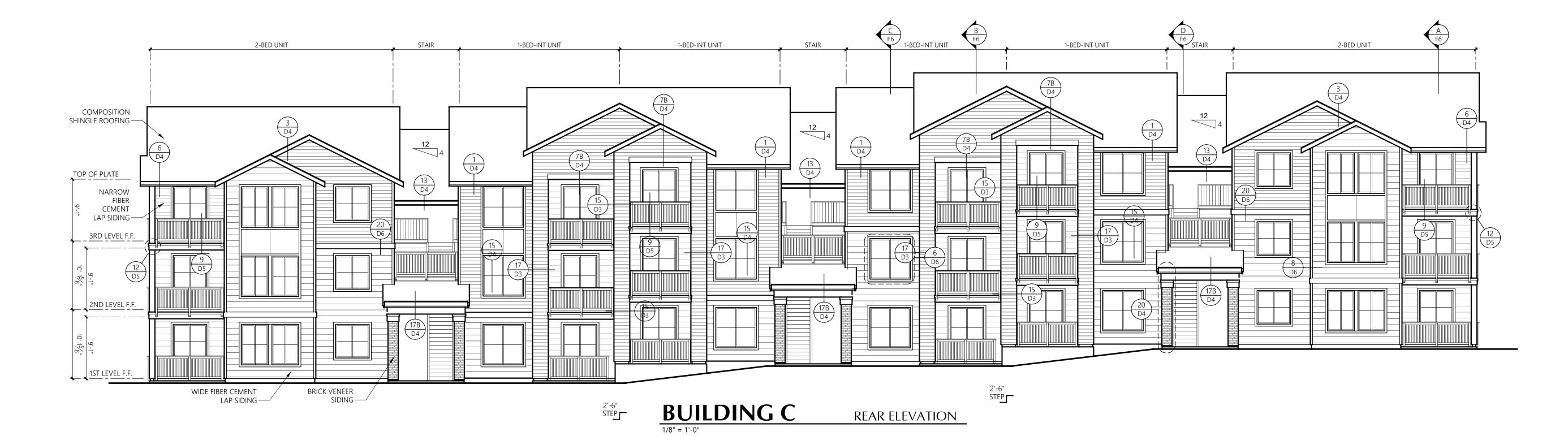


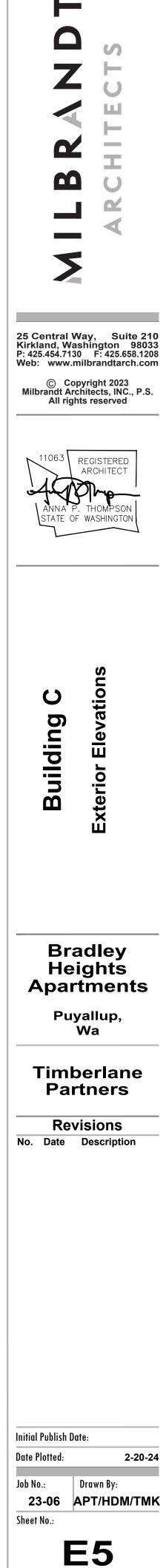
ROOF LEGEND
ROOF JACK 50 SQ.IN. NET FREE AREA
4:12 SLOPE INDICATOR U.N.O. 6:12 SLOPE INDICATOR U.N.O.
BUILDING OUTLINE EAVE VENTING 2.4 SQ.IN./LF. NET FREE AREA
 RIDGE VENTING 12 SQ.IN./LF. NET FREE AREA UNIT SEPARATION AND DRAFT STOPPING LOCATIONS AT ATTIC
 GUTTER (DOUBLE LINE) DOWNSPOUT LOCATION
VENTED FIBER CEMENT SOFFIT 5.9 SQ.IN./LF. NET FREE AREA

	ROOF VENTING CALCULATIONS														
Area Attic Area Venting Description (SF) Ratio		Venting Ratio		Low Eave Vent (LF)	Low Jacks (Qty)	High Jacks (Qty)	Vented Soffit (SF)	Ridge Vent (LF)	Venting Provided (SI)			* %	* % of req'd		
Description		Ка	lio	(SI)	2.4	50.0	50.0	5.9	12.0	Lower	%	Upper	%	Total	%*
AREA 1	2,265	1/	300	1,087	0	4	0	116	68	884	52%	816	48%	1,700	156%
AREA 2	1,580	1/	300	758	36	0	4	101	25	682	58%	500	42%	1,182	156%
AREA 3	1,556	1/	300	747	20	0	4	107	24	679	58%	488	42%	1,167	156%
STAIR	492	1/	150	472	0	0	0	124	5	732	92%	60	8%	792	168%

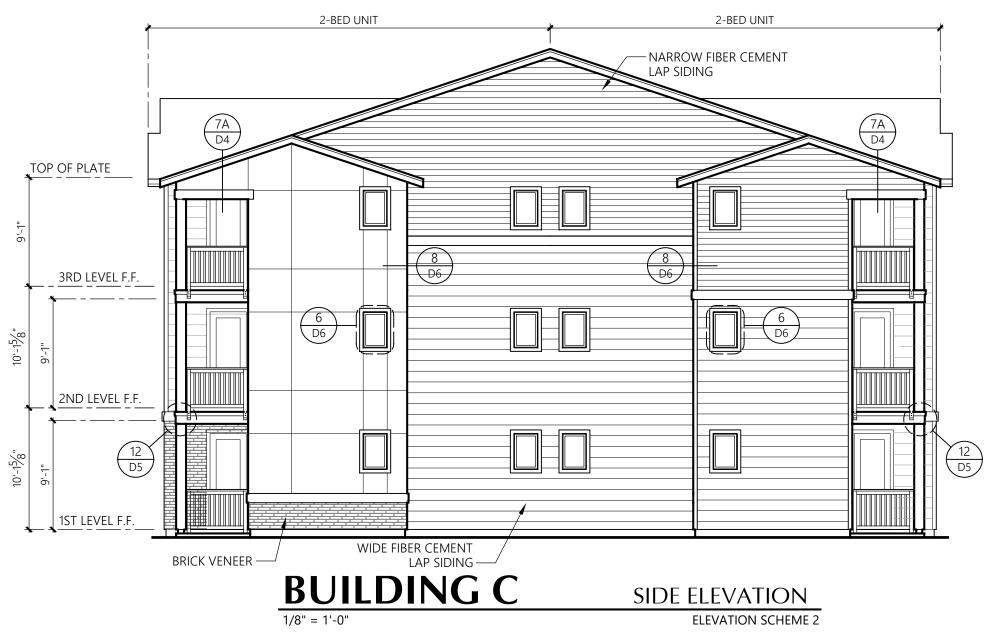


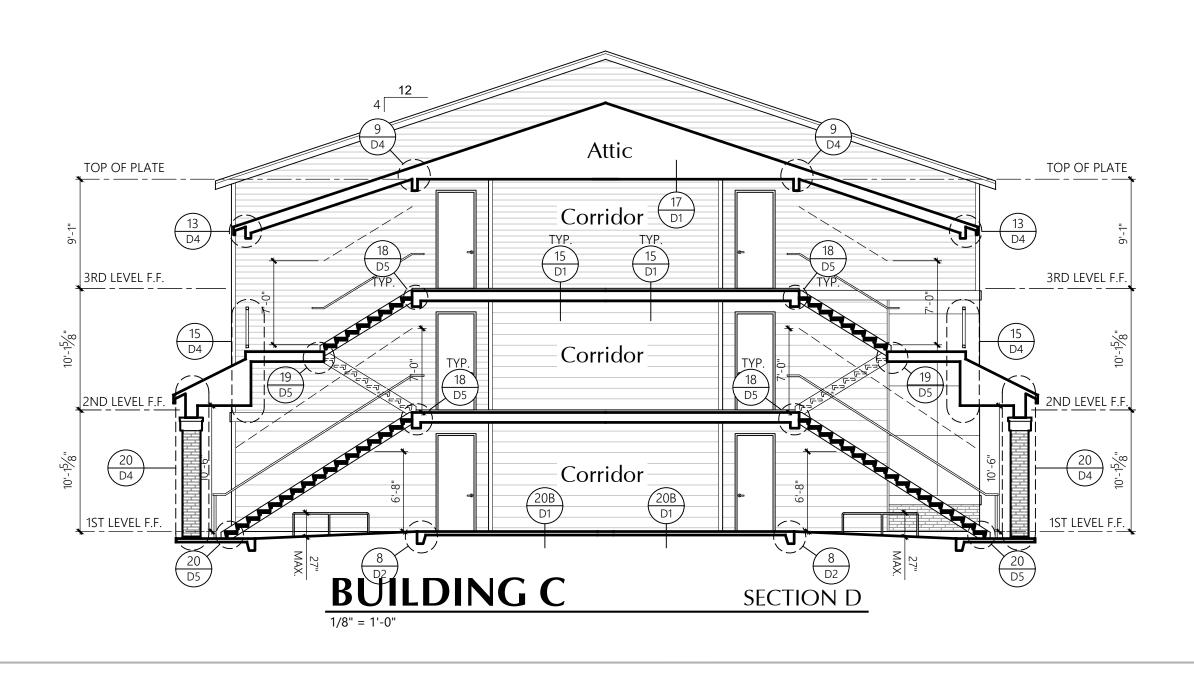


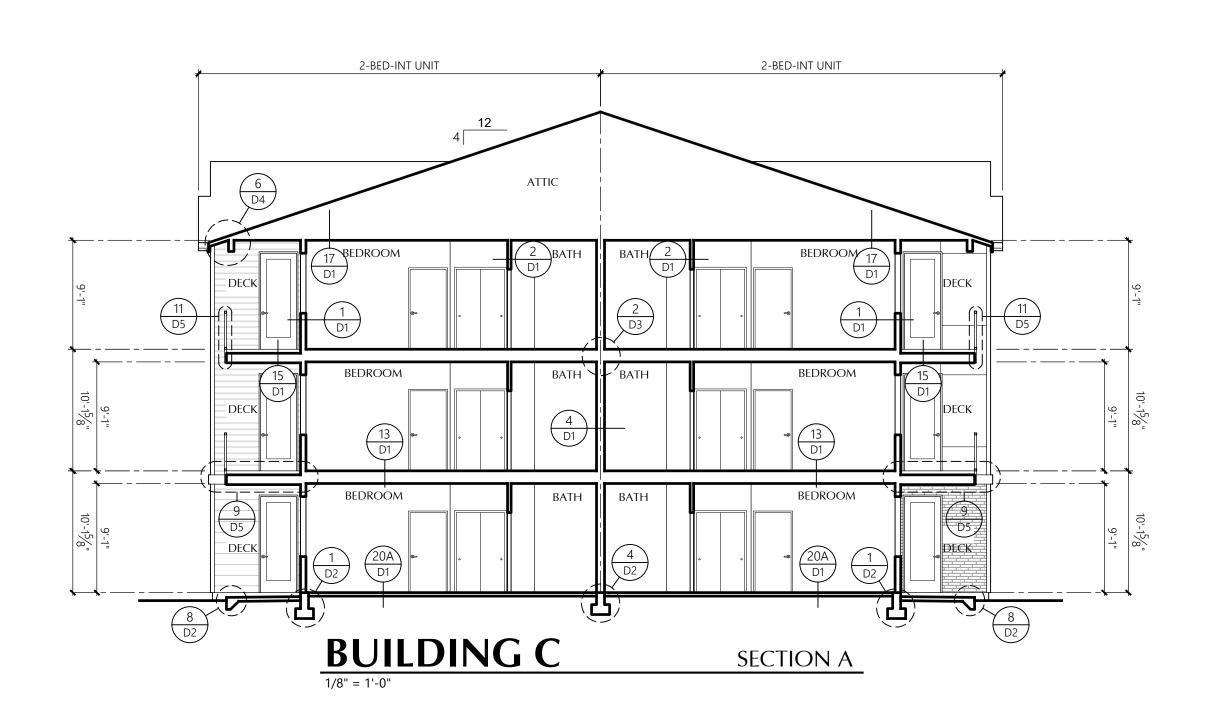


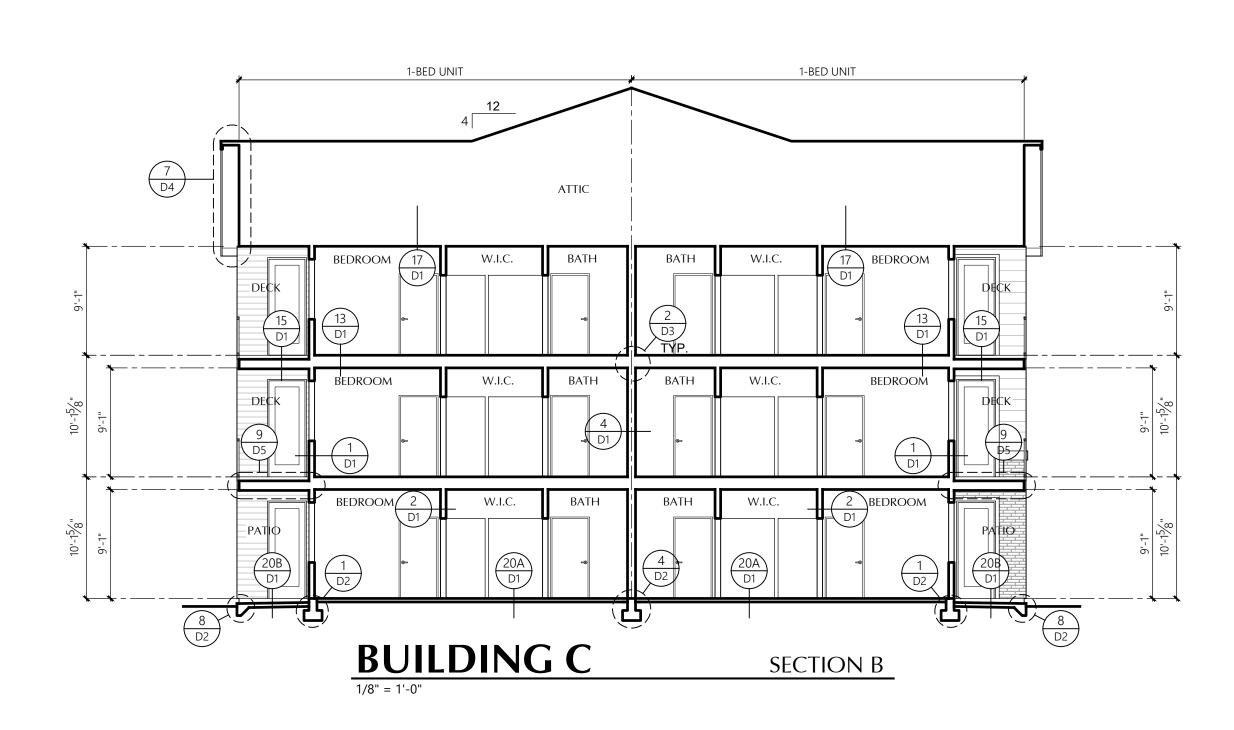


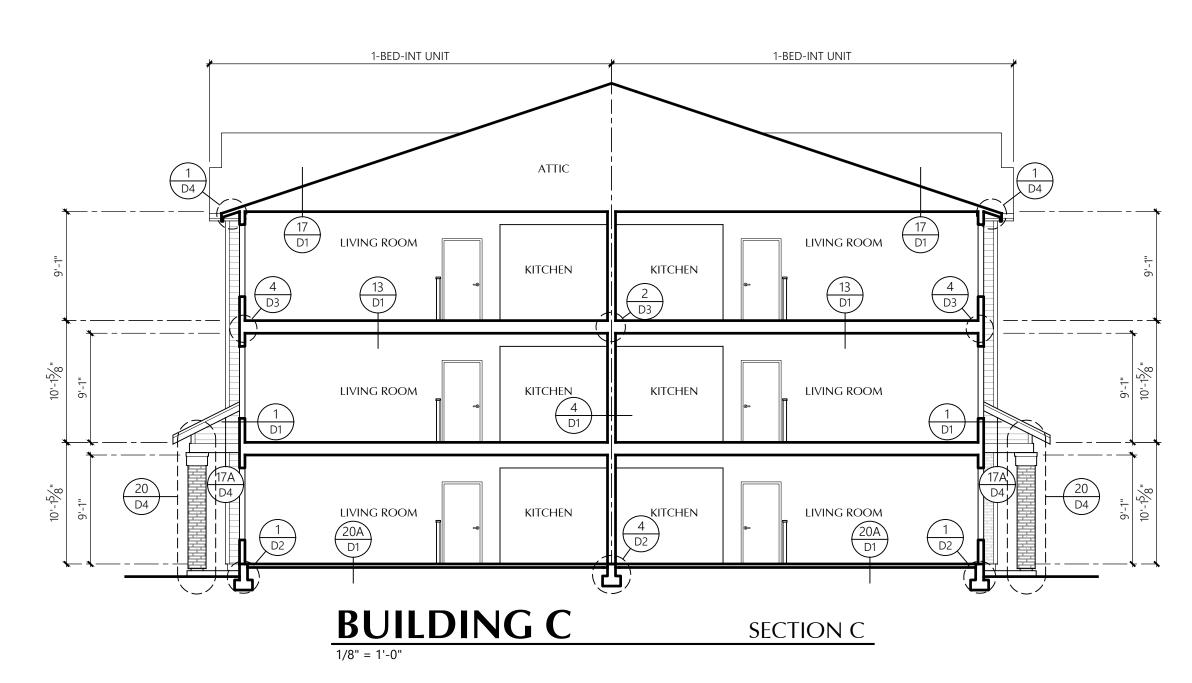




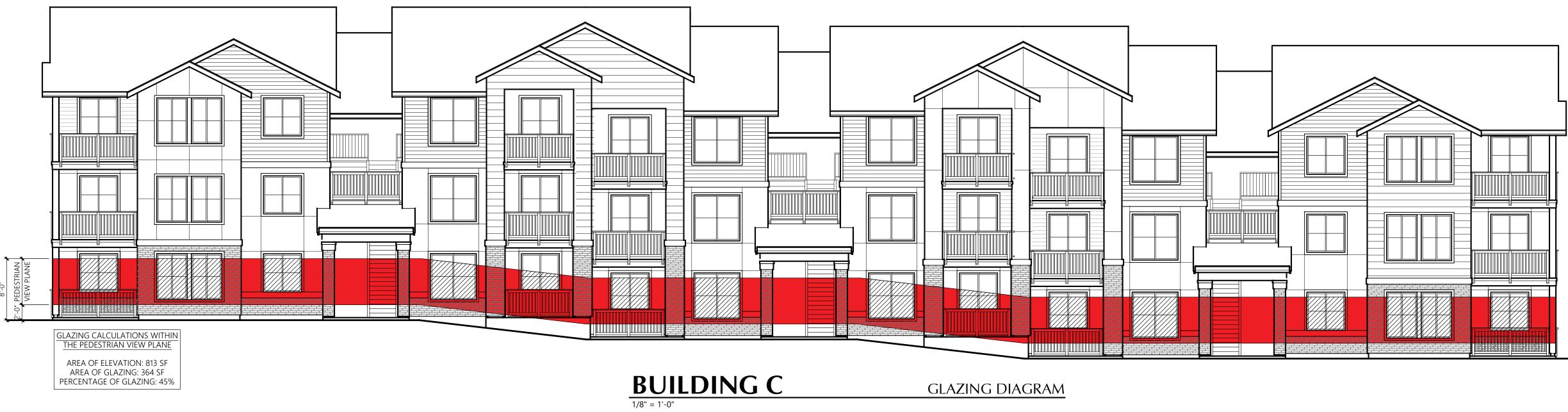








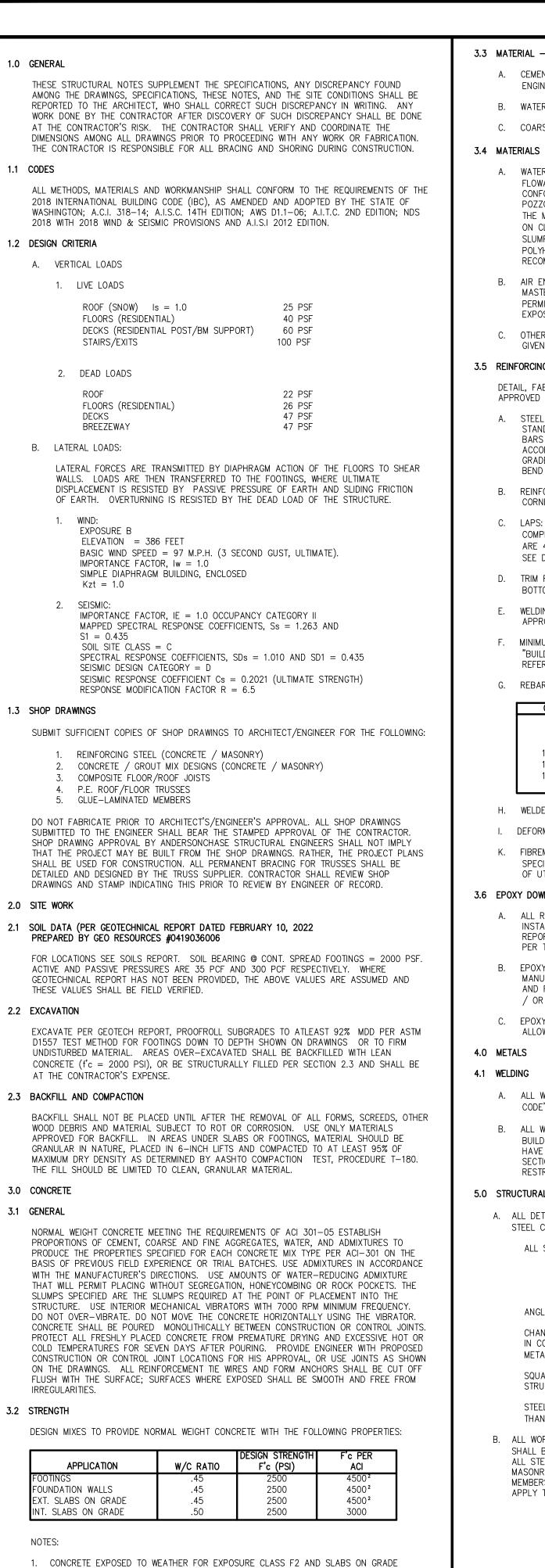








Structural Notes



SHALL HAVE A MIN F'C PER TABLE AND HAVE 5% AIR ENTRAINMENT.

f'c>2500 WHERE STRENGTH IS INCREASED FOR DURABILITY.

EXPOSURE CLASS.

2. DESIGN STRENGTH F'C (USED IN DESIGN). F'C PER ACI TABLE 19.3.2.1 FOR F2

3. PER IBC 1705.3 SPECIAL INSPECTION STRENGTH TESTS NOT REQUIRED FOR CONCRETE

3.3 MATERIAL - CEMENT, WATER & AGGREGATES PER ACI 301

- A. CEMENT MUST CONFORM TO ASTM C-150, TYPE I OR TYPE II. ENGINEER'S APPROVAL IS REQUIRED FOR USE OF TYPE III CEMENT.
- B. WATER TO BE CLEAN AND POTABLE.
- C. COARSE AND FINE AGGREGATES TO CONFORM TO ASTM-C33.

- A. WATER REDUCING ADMIXTURES: CONCRETE USING POZZOLITH ADMIXTUR FLOWABLE CONCRETE MAY BE USED WITH THE ENGINEER'S APPROVAL CONFORM TO ASTM-C494, POZZOLITH POLYHEED, POZZOLITH 100XR, POZZOLITH SHALL BE INCORPORATED INTO ALL CONCRETE IN EXACT THE MANUFACTURER'S INSTRUCTIONS. ADMIXTURES AND DOSAGES WIL ON CLIMATIC CONDITIONS AND THE CONTRACTOR'S JOBSITE REQUIREME SLUMP FOR SUCH CONCRETE SHALL NOT EXCEED 8" WITH A MINIMUM POLYHEED PER 100 OUNCES OF CEMENT. USE IN ACCORDANCE WITH RECOMMENDATIONS.
- B. AIR ENTRAINMENT: CONFORM TO ASTM-C260 AND ASTM-C494, MBVF MASTER BUILDER. NO AIR ENTRAINMENT IN COLUMNS WITHOUT PRIOR PERMISSION BY ENGINEER OF RECORD. ENTRAIN 5% +/- 1% AIR BY V EXPOSED CONCRETE.
- C. OTHER ADMIXTURE: NO OTHER ADMIXTURES PERMITTED UNLESS PRIOR GIVEN BY THE ENGINEER. NO ADMIXTURES CONTAINING CHLORIDES ARE

3.5 REINFORCING STEEL

DETAIL, FABRICATE AND PLACE PER ACI-315 AND ACI-318. SUPPORT REIN APPROVED CHAIRS, SPACERS, OR TIES.

- A. STEEL REINFORCEMENT SHALL BE NEW, DEFORMED BILLET STEEL, MEET STANDARD A-615, A-706 AT BOUNDARY ELEMENTS; GRADE 60 FOR BARS UNLESS NOTED OTHERWISE ON THE PLANS. SHOP DRAWINGS ACCORDINGLY AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR GRADE 60 REBARS SHALL NOT BE BENT IN FIELD AFTER CONCRETE BEND SHALL BE PER ACI.
- B. REINFORCEMENT IN ALL WALLS, SLABS, AND FOOTINGS SHALL BE CON CORNERS OR CORNER BARS PROVIDED, BOTH VERTICAL AND HORIZON
- C. LAPS: ALL TENSION SPLICES ARE ACCORDING TO ACI 318, CLASS B A COMPRESSION SPLICES ARE 30 DIAMETERS FOR I'C GREATER THAN 30 ARE 40 DIAMETERS FOR I'C WHICH IS LESS THAN 3000 PSI, UNLESS I SEE DETAIL 17/S3.0 FOR TYPICAL SPLICE AMOUNTS BASE ON BAR SIZ
- D. TRIM REINFORCING: AROUND ALL OPENINGS SHALL BE A MINIMUM 1-BOTTOM, EXTENDING 2'-6" BEYOND OPENING AT EACH CORNER. SEE
- WELDING: TACK WELDING OF REBAR IS NOT PERMITTED UNLESS CALLED APPROVED BY THE ENGINEER.
- MINIMUM REINFORCING: WHERE REINFORCEMENT IS NOT SHOWN ON THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318 REFERRED TO FOR PROPER REINFORCEMENT.

G. REBAR COVER: PROVIDE CONCRETE PROTECTION FOR REINFORCEMENT

COVER	CONDITION					
3"	CONCRETE DEPOSITED AGAINST EARTH					
2"	CONCRETE DEPOSITED AGAINST EARTH CONCRETE DEPOSITED AGAINST FORMS BUT					
	EXPOSED TO EARTH					
1-1/2"	MAIN REINFORCING IN BEAMS					
1-1/2"	TO TIES IN COLUMNS, AND TIED REBAR IN WALLS					
1-1/2"	FOR BARS IN SLABS ON GROUND					
3/4"	FOR BARS IN SLABS ON FORMS					

- H. WELDED WIRE FABRIC: ASTM-A185 AND ASTM-A82
- I. DEFORMED BAR ANCHORS: ASTM-A496
- K. FIBREMESH: PROVIDE FIBREMESH STRANDS WITHIN CONCRETE PER THE SPECIFICATION (1.5#/CU. YARD TYPICALLY) WHERE REQUIRED BY THE OF UTILIZING WELDED WIRE FABRIC WITHIN SLABS ON GRADE.

3.6 EPOXY DOWELED REINFORCEMENT

- A. ALL REINFORCEMENT WHICH IS TO BE DOWELED INTO EXISTING CONCRE INSTALLED USING THE SIMPSON SET-XP ADHESIVE ANCHORING SYSTEM REPORT ESR-2508 OR APPROVED EQUAL. ADHESIVE ANCHORS SHALL PER THE MANUFACTURERS SPECIFICATIONS OR APPROVED EQUAL.
- B. EPOXY SHALL BE MIXED, APPLIED, AND CURED IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. REINFORCEMENT AND CONCRETE SHALL AND FREE OF IRREGULARITY. EPOXY SHALL NOT BE MIXED OR CURE / OR CONCRETE TEMPERATURES BELOW MINIMUM PER MANUFACTURE
- C. EPOXY DOWELING OF REINFORCEMENT IN OVERHEAD APPLICATIONS SHA ALLOWED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF

- A. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL CODE" & D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL."
- B. ALL WELDING SHALL BE DONE BY AWS/WABO (WASHINGTON STATE AS BUILDING OFFICIALS) CERTIFIED WELDERS. FOR ALL MOMENT FRAMES HAVE ADDITIONAL CERTIFICATION SHOWING QUALIFIED IN ACCORDANCE SECTION 5, WELDER QUALIFICATION, THE SUPPLEMENTAL WELDER QUAL RESTRICTED ACCESS WELDING.

5.0 STRUCTURAL STEEL

Α.	,	CATION, AND ERECTION SHALL CONFORM TO THE A " STEEL SHALL CONFORM TO THE FOLLOWING, UN	
	ALL STEEL, UNO	ASTM A992.	

-301 ON THE		ALL STEEL, UNU	ASTM A992.
N ACCORDANCE ADMIXTURE POCKETS. THE INTO THE			ASTM A572, GRADE 50, A447, Fy = 50 KSI OR A588 Fy = 50 KSI O PRIOR APPROVAL OF ENGINEER OF REG
FREQUENCY. HE VIBRATOR.		ANGLES	ASTM A36, $Fy = 36$ ksi
ONTROL JOINTS. ESSIVE HOT OR VITH PROPOSED INTS AS SHOWN		CHANNELS, EMBEDMENTS IN CONCRETE AND MISC. METALS, UNO	ASTM A36, Fy = 36 ksi OR STEEL TYPES LISTED UNDER "ALL STEEL"
L BE CUT OFF D FREE FROM		SQUARE AND RECTANGULAR STRUCTURAL TUBES	ASTM A500, GRADE B, $Fy = 46$ ksi
		STEEL PIPE DIAMETER LESS THAN OR EQUAL TO 12" NOM	ASTM A53, TYPE E OR S, GRADE B, Fy = 35 ksi
COPERTIES:	В.		WITH THE AISC SPECIFICATION. SHOP
PER			THER MEMBERS EMBEDDED IN CONCRET

ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CON MASONRY SHALL BE LEFT UNPAINTED. DIMENSIONAL TOLERANCE FOR BU MEMBERS SHALL BE PER AWS D1.1. GENERAL NOTES FOR STEEL CONNE APPLY TO ALL STEEL CONNECTIONS, UNO.

	C. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONAL POINTS. MINIMUM CONNECTIONS SHALL BE A TWO-BOLT CONNECTION USING 7/8-INCH DIAMETER A325 BOLTS IN SINGLE SHEAR. OPTIONAL TO USE F1554 BOLTS WITH PRIOR APPROVAL OF ENGINEER OF RECORD. ALL HIGH-STRENGTH BOLTS SHALL BE	7.8 MANUFACTURED TIMBER BEAMS A. GLULAMINATED TIMBER BEAMS (GLULAM BEAMS)
	INSTALLED, TIGHTENED AND INPSECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. THE CRITERIA FOR SLIP-CRITICAL CONNECTIONS SHALL APPLY TO ALL CONNECTIONS UNLESS SPECIFICALLY NOTED AS SNUG TIGHT ON THE STRUCTURAL DRAWINGS. WHERE CONNECTIONS ARE NOTED SNUG TIGHT THE CONTRACTOR MAY INSTALL PER CRITERIA FOR SNUG TIGHT BOLTS. SLIP CRITICAL CONNECTIONS SHALL USE LOAD INDICATOR WASHERS OR TENSION CONTROL BOLTS. ALL ASTM A307 BOLTS SHALL	AL STRUCTURAL GLUE-LAMINATED TIMBER, MATERIALS, MANUFACTURE AND QUALITY CONTROL SHALL BE IN CONFORMANCE WITH VOLUNTARY PRODUCT STANDARD P.S.56 "STRUCTURAL GLUED LAMINATED TIMBER", AND ALL MEMBERS SHALL BE MARKED WITH A QUALITY MARK THEREOF. ALL PLY LAYOUTS SHALL BE PER P.S. 56. CAMBERS ARE AS SHOWN ON THE DRAWINGS. ALL MEMBERS SHALL BE EITHER COMBINATION 24F-V4 (SIMPLE SPAN) OR 24F-V8 (CANTILEVERED OR CONTINUOUS SPAN) AS APPLICABLE. AL
RES TO PRODUCE AND MUST OR POZZUTECH 20. ACCORDANCE WITH	BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL BOLT HOLES SHALL BE STANDARD SIZE, UNO.D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS THAT INCLUDE, BUT ADD NOT HAVE TO FOR THE HOLES. AND OTHER AIDS	MEMBERS SHÁLL BE ARCHITECTURAL APPEARANCE AND SHALL BE GLUED WITH WATERPROOF ADHESIVE PER P.S. 56. ARCHES SHALL BE COMBINATION 24F–V8 AND HAVE EXTERIOR GLUE, ARCHITECTURAL GRADE.
ILL VARY DEPENDING IENTS. MAXIMUM 1 OF 10 OUNCES OF 1 MANUFACTURER'S	 ARE NOT LIMITED TO: ERECTION ANGLES; LIFT HOLES, AND OTHER AIDS. E. METAL PROTECTION – ALL MISCELLANEOUS STEEL AND HARDWARE EXPOSED TO VIEW OR IN UNHEATED PORTION OF BUILDING SHALL BE GALVANIZED PER ASTM A-123 WITH 1.25 OZ OF ZINC SPELTER PER SQUARE FOOT OF SURFACE AREA. ALL OTHER STEEL 	7.9 SHRINKAGE WOOD MEMBERS WERE EVALUATED USING KILN DRIED (KD) OR SURFACE DRIED (SD) LUMBER (HEM-FIR WITH MOISTURE CONTENT = 19% OR LESS). THE FLOOR TO FLOOR COMPRESSION OF SUCH WOOD MEMBERS (PLATES AND JOISTS TOTALING 15.25") DUE TO A MOISTURE
R OR MICRO-AIR BY R WRITTEN VOLUME IN ALL	SURFACES TO BE SHOP PAINTED AFTER FABRICATION. F. ALL STEEL BEAM COPING SHALL CONFORM TO AISC STANDARD PRACTICE. G. GROUT FOR BEARING PLATES SHALL BE NON-SHRINK EMBECO BY MASTER BUILDERS, INC. OR APPROVED EQUAL.	CONTENT CHANGE OF 10% WILL BE APPROXIMATELY 3/8 INCHES PER FLOOR. ADDITIONAL FLOOR TO FLOOR COMPRESSION OF WOOD STUDS DUE TO FULL COMPRESSIVE LOAD WILL BE APPROXIMATELY 1/32 INCHES PER FLOOR. ADDITIONAL COMPRESSION OF WOOD FRAMING MA OCCUR DUE TO FRAMING TECHNIQUES AND LOCAL STRESS CONCENTRATIONS. ALL FULL BUILDING HEIGHT ELECTRICAL, MECHANICAL, AND PLUMBING SYSTEMS AS WELL AS EXTERIOR
APPROVAL IS RE PERMITTED.	ALL EXPOSED STRUCTURAL MATERIALS OR MATERIAL IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED (SEE SECTION 7.10). 6.0 LIGHT GAUGE STEEL	FINISHES SHOULD BE DESIGNED TO ACCOMMODATE THESE MOVEMENTS. USE OF WOOD STUDS PLATES & JOISTS WHICH WILL HAVE MOISTURE CONTENT CHANGES GREATER THAN 10% WILL EXPERIENCE GREATER MOVEMENT. FLOOR ASSEMBLIES UTILIZING DEPTHS GREATER THAN THOSE ASSUMED ABOVE MAY EXPERIENCE GREATER MOVEMENTS. LOCALIZED HEADERS MAY EXPERIENCE SIMILAR SHRINKAGE AS DESCRIBED ABOVE.
INFORCEMENT WITH	7.0 CARPENTRY	7.10 PRESERVATIVE TREATMENT
TING ASTM	7.1 ROUGH CARPENTRY	A. PRESERVATIVE TREATMENTS
#3 AND LARGER SHALL BE MARKED TO FABRICATION. PLACEMENT. ALL	ALL 2X FRAMING LUMBER SHALL BE STUD GRADE HEM-FIR FOR STUDS AND STANDARD OR BETTER FOR PLATES UNLESS OTHERWISE NOTED ON THE DRAWINGS OR BELOW. ALL 2" LUMBER SHALL BE KILN DRIED (KD) OR SURFACE DRIED (SD). EACH PIECE OF LUMBER SHALL BEAR THE STAMP OF THE WEST COAST LUMBER INSPECTION BUREAU (WCLIB) OR WESTERN WOOD PRODUCTS ASSOCIATION (WWPA) SHOWING GRADE MARK OR APPROVED	SEE ARCH FOR ALL PRESERVATIVE TREATED REQUIREMENTS AND FINISHES OF EXPOSED TIMBER MEMBERS AND AT EXTERIOR CONDITIONS. ALL EXPOSED FRAMING LUMBER, PLYWOOD AND DECK MATERIALS SHALL BE PRESSURE TREATED PER AWPA SPECIFICATION P-5 OR OTHER APPROVED TREATMENT. ALL CUTTING AND BORING AFTER PRESSURE TREATMENT SHALL BE CARED FOR IN
ITINUOUS AROUND ITAL. AND ALL 000 PSI AND	EQUAL. OTHER MATERIALS SHALL BE AS SHOWN BELOW: MEMBER SPECIES 2x & 3x STUDS STUD GRADE HEM FIR 2x JOISTS #2 HEM FIR	ACCORDANCE WITH AWPA SPECIFICATION M-4. ACZA PRESERVATIVE TREATMENT SHALL NOT BE PERMITTED EXCEPT WHERE HARDWARE (INCLUDING NAILS) IN CONTACT WITH THE TREATED PRODUCT IS COMPOSED ENTIRELY OF STAINLESS STEEL MATERIAL. STAINLESS STEEL HARDWARE SUBSTITUTED FOR HDG
NOTED OTHERWISE. IZE. #5 TOP AND	4x HEADERS#2 HEM FIR6x HEADERS#2 DOUGLAS FIR4x COLUMNS#2 HEM FIR	 B. GALVANIZATION OF HARDWARE (EXPOSED OR IN CONTACT WITH PRESERVATIVE TREATED
TYPICAL DETAILS.	6x COLUMNS #2 DOUGLAS FIR ALL EXPOSED STRUCTURAL MATERIALS OR MATERIAL IN CONTACT WITH CONCRETE SHALL	WOOD)
ED FOR AND	BE PRESSURE TREATED (SEE SECTION 7.10).	 PROTECTED ENVIRONMENT ALL HARDWARE (HANGERS, NAILS, BOLTS, LAG SCREWS, FLASHING ETC) SHALL
E DRAWINGS, THE 8) SHALL BE T AS FOLLOWS:	7.3 PRE-ENGINEERED ROOF TRUSSES ALL PREFABRICATED WOOD ROOF AND FLOOR TRUSSES SHALL BE DESIGNED BE OR UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE STRUCTURE IS LOCATED. THE TRUSS SHOP DRAWINGS SHALL BEAR THE STAMP OF THAT ENGINEER. ALL NECESSARY BRIDGING, BLOCKING, PRE-NOTCHED PLATES, HANGERS,	BE HOT-DIP GALVANIZED (HDG) TO A MINIMUM COATING LEVEL OF G185 (1.85 oz/ft2 OF ZINC) WHEN IN CONTACT WITH PRESERVATIVE TREATED WOOD CONTAINING PRODUCTS SUCH AS, BUT NOT LIMITED TO; CCA, ACQ, OR CBA. HDU PRODUCTS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS AS APPLICABLI ASTM A653, ASTM A123, AND ASTM A153. WHEN USING STAINLESS STEEL OR
	ETC. SHALL BE DETAILED OR SPECIFIED, AND FURNISHED BY THE MANUFACTURER. ALL PERMANENT BRACING FOR TRUSSES SHALL BE DETAILED AND DESIGNED BY THE TRUSS SUPPLIER. THE TRUSS MANUFACTURER SHALL VERIFY ALL SETBACKS, DIMENSIONS, AND BEARING POINTS PRIOR TO FABRICATION. MAXIMUM ALLOWABLE DEFLECTIONS SHALL BE AS FOLLOWS:	 HOT-DIP GALVANIZED CONNECTORS, THE CONNECTORS AND FASTENERS SHALL BE OF THE SAME MATERIAL. 2. EXPOSED ENVIRONMENT ALL HARDWARE (INCLUDING CONNECTORS) IN CONTACT WITH PRESSURE TREATED
	ROOF TOTAL LOAD SPAN/240 OR 1.5" ROOF LIVE LOAD SPAN/360 OR 1"	WOOD IN AN EXPOSED OR POTENTIAL TO BE EXPOSED ENVIRONMENT (HAVING POTENTIAL FOR WIND BLOWN RAIN TO REACH) SHALL BE STAINLESS STEEL. 8.0 MECHANICAL AND EPOXY FASTENERS
	TRUSSES SHALL BE DESIGNED FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS AND SHALL BE FURNISHED AND INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S PUBLISHED SPECIFICATIONS. ADDITIONAL CONCENTRATED LOADS FROM MECHANICAL UNITS,	A. MECHANICAL FASTENERS (PRE-DRILLED ANCHORS)
E MANUFACTURERS OWNER IN LIEU	AND MISCELLANEOUS EQUIPMENT, ETC. SHALL BE ACCOUNTED FOR/COORDINATED WITH THE SUB-CONTRACTORS, ARCHITECT AND TRUSS ENGINEER. ALTERATION OF THE TRUSS LAYOUT INDICATED ON THE PLANS MAY REQUIRE SUPPORTING STRUCTURAL AND FOUNDATION CHANGES, THEREFORE PRIOR APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER IS REQUIRED. TRUSSES SHALL NOT BE FIELD ALTERED PRIOR TO WRITTEN APPROVAL OF THE ENGINEER OF RECORD DESIGNING THE TRUSSES.	 TYPICAL MECHANICAL ANCHORS WHICH ARE INSTALLED IN CONCRETE SHALL BE AS MANUFACTURED BY THE SIMPSON, INC. AND SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURERS GUIDELINES AND PER ICC REPORT ESR-1771 FOR WEDGE ANCHORS OR PER ICC REPORT ESR-2713 FOR SCREW TYPE ANCHORS OR APPROVED EQUALS.
ETE SHALL BE M PER ICC L BE INSTALLED	TRUSS CONNECTIONS TO NON-LOAD BEARING WALLS SHALL BE PER THE TYPICAL DETAILS. SLIDE CLIPS SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER. 7.4 CARPENTRY HARDWARE	2. SPECIAL CARE SHALL BE TAKEN DURING THE DRILLING / INSTALLATION OF FASTENERS WITHIN POST-TENSIONED CONCRETE. ANCHORS SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO INTERFERE WITH / DAMAGE REINFORCEMENT.
THE	A. BOLTS SHALL BE ASTM A-307.	B. EPOXY CONNECTIONS (PRE-DRILLED ANCHORS)1. ADHESIVE ANCHORS SHALL BE OF THE SIZE AND LENGTH AS CALLED OUT ON THE
L BE CLEAN D IN AIR AND R'S SPECIFICATIONS. ALL NOT BE	 B. WASHERS SHALL BE STANDARD CUT WASHERS OR MALLEABLE IRON WASHERS. C. ALL NAILS SHALL BE COMMON WIRE NAILS OR EQUIVALENT PNEUMATICALLY DRIVEN NAILS (P-NAILS), AMERICAN OR CANADIAN MANUFACTURER ONLY AS INDICATED BELOW. 	 PLANS USING THE SIMPSON SET-XP ADHESIVE ANCHORING SYSTEM PER ICC REPORT ESR-2508 OR APPROVED EQUAL. ADHESIVE ANCHORS SHALL BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS. 2. ALL EPOXY ANCHORS OR FASTENERS REQUIRE SPECIAL INSPECTION.
F RECORD.	P-NAIL'S SHALL'BE INSTALLED PER THE MANUFACTURERS GUIDELINES. COMMON WIRE PNEUMATIC MINIMUM NAIL NAIL NAIL NAIL LENGTH APPLICATION 16d COMMON 0.162" P-NAIL 3-1/2" FRAMING	 ANCHORS SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO INTERFERE WITH / DAMAGE REINFORCEMENT. 9.0 SPECIAL INSPECTIONS:
L WELDING	12d COMMON 0.148" P-NAIL 3-1/4" FRAMING N/A 0.131" P-NAIL 3" FRAMING	SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1704 OF THE 2018 IBC AND ARE
SSOCIATION OF WELDERS SHALL WITH AWS D1.8,	10d COMMON0.148" P-NAIL2-1/2"SHEATHING8d COMMON0.131" P-NAIL2-1/2"SHEATHINGD.LAG SCREWS, SHEAR PLATES	REQUIRED DURING THE FOLLOWING: A. THE EXCAVATION OF FOOTINGS PRIOR TO CONCRETE PLACEMENT, B. THE TAKING OF CONCRETE TEST SPECIMENS. SEE PARAGRAPH 3.2, NOTE 4 FOR
LIFICATION FOR	E. ANCHORS AND CONNECTORS SHALL BE SIMPSON, USP, OR OTHER ICBO APPROVED.F. HARDWARE EXPOSED TO WEATHER OR TO VIEW SHALL BE GALVANIZED OR PROTECTED	EXCEPTION WITH I'C GREATER THAN 2500 PSI. C. THE PLACEMENT OF REINFORCING STEEL OF ALL STRUCTURAL FOOTINGS, COLUMNS,
AISC "MANUAL OF	WITH OTHER APPROVED MEANS OF CORROSION PROTECTION. FOR ADDITIONAL REQUIREMENTS REGARDING HARDWARE IN EXPOSED CONDITIONS SEE SECTION 7.10.	WALLS, SLABS AND APPENDAGES, D. THE CONSTRUCTION OF THE LATERAL WOOD SYSTEM TO VERIFY APPROPRIATE ELEMENTS
D:	 7.5 MINIMUM NAILING – PER IBC TABLE 2304.9.1. – SEE SHEET S1.1 7.6 ANCHOR BOLTS FOUNDATION PLATE OR SILL BOLTING SHALL BE PER IBC CHAPTER 23. PER IBC 2308.6 &	NAILING, HARDWARE & CONNECTIONS PRIOR TO FINAL APPROVAL. E. ALL EPOXY DOWELED APPLICATIONS. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE A
KSI ONLY W/ DF RECORD.	2304.3.1 ALL FOUNDATION PLATES OR SILLS SHALL BE BOLTED TO CONCRETE OR MASONRY WITH MINIMUM 1/2" NOMINAL DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7" AND SPACED NOT MORE THAN 6 FEET APART. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE WITH ONE BOLT LOCATED NOT MORE THAN 12 INCHES OR LESS THAN 4 INCHES FROM EACH END OF EACH PIECE. 3" x 3" x 0.229" WASHERS ARE REQUIRED AT ALL ANCHOR BOLTS PER	SCHEDULE OF REQUIRED INSPECTIONS AND SHALL SUBMIT THIS SCHEDULE TO THE ARCHITECT AND ENGINEER FOR APPROVAL. INSPECTION IS INSPECTION PERFORMED BY THE BUILDING OFFICIAL AT VARIOUS STAGES OF A PROJECT AS OUTLINED IN IBC SECTION 109 TO ENSURE COMPLIANCE TO THE BUILDING CODE.
	AF&PA SDPWS-2008 SECTION 4.3.6.4.3 THE PLATE WASHER ARE PERMITTED TO HAVE A DIAGONAL SLOT. FOR SHEAR WALL TYPES W3 AND GREATER THE PLATE WASHER MUST EXTEND TO WITHIN $1/2$ " OF THE EDGE OF THE BOTTOM PLATE ON SIDE(S) WITH SHEATHING.	SPECIAL INSPECTION SHALL BE DONE BY AN INDEPENDENT 3RD PARTY INSPECTOR BY OWNER WHERE IBC CHAPTER 17 (REF SECTION 1704) REQUIRES SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
ksi	7.7 PLYWOOD/OSB SHEATHING EACH SHEET SHALL BEAR THE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION. ALL GRADING AND INSTALLATION SHALL CONFORM TO MOST CURRENT VERSION OF PS2 FOR OSB. USE THICKNESS AND NAILING AS SHOWN ON THE DRAWINGS. SHEATHING SHALL HAVE	STRUCTURAL OBSERVATION SHALL BE PERFORMED BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AS DEFINED IN IBC SECTION 1702. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR INSPECTION AS REQUIRED BY IBC.
SHOP DRAWINGS NG FABRICATION. NCRETE OR BUILD-UP ECTIONS SHALL	EXPOSURE RATING AS APPROPRIATE PER THE CONTRACTOR'S CONSTRUCTION AND WEATHER CONDITIONS SPECIFIED BY CONTRACTOR. EXCEPT AS OTHERWISE SHOWN OR NOTED, PROVIDE 0.131" DIA P-NAILS OR 8d COMMON NAILS AT 6" ON CENTER @ SUPPORTED PANEL EDGES AND 0.131" DIA P-NAILS OR 8d COMMON NAILS AT 12" ON CENTER ON OTHER SUPPORTING MEMBERS FOR WALLS AND ROOFS. FOR FLOORS, USE THE SAME SPACING PATTERN AS STATED FOR WALLS OR ROOF EXCEPT USE 0.148" DIA P-NAILS OR 10d COMMON NAILS.	10.0 MISCELLANEOUS VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO PROCEEDING. PROVIDE ERECTION BRACING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFNESS ARE INSTALLED. REFER TO ARCHITECTURAL PLANS FOR WALL OPENING, ARCHITECTURAL TREATMENT AND DIMENSIONS NOT SHOWN. REFER TO MECHANICAL AND ELECTRICAL PLANS FOR SIZE AND LOCATION
	NOTE: EQUIVALENT RATED PLYWOOD MAY BE USED IN LIEU OF OSB CALLED OUT. ALL THICKNESS AND GRADING SHALL CONFORM TO PS1 OR PS2. SHEATHING SHALL HAVE EXPOSURE RATING AS APPROPRIATE PER THE CONTRACTOR'S CONSTRUCTION AND WEATHER CONDITIONS SPECIFIED BY CONTRACTOR.	OF ALL OPENINGS FOR DUCTS, PIPES, CONDUITS, ETC., NOT SHOWN.
	ROOF DIAPHRAGM: $1/2$ " MIN OSB (MIN PANEL INDEX = $24/16$), WITH 0.131" DIA P-NAILS OR 8d COMMON NAILS AT 6" O.C. AT SUPPORTED PANEL EDGES AND AT 12" O.C. AT FIELD TYPICAL UNLESS NOTED OTHERWISE ON PLAN. WHERE REQUIRED, USE PLY-CLIPS INSTALLED PER MANUFACTURER'S GUIDELINES AND APA GUIDELINES.	
	FLOOR DIAPHRAGM: $3/4$ " TONGUE AND GROOVE OSB (MIN PANEL INDEX = $32/16$). WITH	

0.148" DIA P-NAILS OR 10d COMMON NAILS AT 6" O.C. AT SUPPORTED PANEL EDGES AND AT 12" O.C. AT FIELD TYPICAL UNLESS NOTED OTHERWISE ON PLAN. SHEATHING SHALL BE

GLUE-NAILED TO FRAMING WITH APPROVED ADHESIVE PER THE ARCHITECT. FIELD NAILING SHALL BE 6" O.C. AT ALL INTERIOR SHEARWALL LOCATIONS INSTEAD OF TYPICAL 12" O.C.

SPACING

JRE AND QUALITY TANDARD P.S.56 . BE MARKED WITH 56. CAMBERS ARE MBINATION 24F-V4 AS APPLICABLE. ALL LUED WITH TION 24F-V8 AND

RIED (SD) LUMBER OOR COMPRESSION) A MOISTURE OOR. ADDITIONAL SIVE LOAD WILL BE WOOD FRAMING MAY ONS. ALL FULL WELL AS EXTERIOR SE OF WOOD STUDS, ER THAN 10% WILL GREATER THAN ZED HEADERS MAY

NCE OF THE SERVATIVE TREATED

HING ETC ...) SHALL L OF G185 (1.85 TED WOOD ACQ, OR CBA. HDG RDS AS APPLICABLE; NLESS STEEL OR ASTENERS SHALL

Sheet

S1.1

S1.2

S2.2

S2.3

S2.5

S2.7

S2.8

S2.9

S2.10

S2.14

S2.17

S2.18

S2.22

S2.23

S3.0

S3.1

S4.0

S4.1

S5.0

S5.1

S1.0 Structural Notes

S1.3 Holdown Details

Special Inspection Tables

Shearwall & Holdown Tables & Details

2nd & 3rd Floor Framing Plans - Bldg A

Roof Framing Plan & Notes - Bldg A

S2.4 2nd & 3rd Floor Framing Plans - Bldg B

Roof Framing Plan & Notes - Bldg B

S2.6 Foundation & 2nd Floor Framing Plans - Bldg C

3rd Floor & Roof Framing Plans - Bldg C

2nd & 3rd Floor Framing Plans - Bldg D

S2.11 Foundation & Basement Floor Framing Plans - Bldg E

Roof Framing Plan & Notes - Bldg D

S2.12 2nd & 3rd Floor Framing Plans - Bldg E

S2.13 Roof Framing Plan & Notes - Bldg E

S2.15 2nd & 3rd Floor Framing Plans - Bldg F

S2.16 Roof Framing Plan & Notes - Bldg F

S2.0 Foundation & Basement Floor Framing Plans - Bldg A

Foundation & Basement Floor Framing Plans - Bldg B

Foundation & Basement Floor Framing Plans - Bldg D

Foundation & Basement Floor Framing Plans - Bldg F

Foundation & 2nd Floor Framing Plans - Bldg G

3rd Floor & Roof Framing Plans - Bldg G

S2.19 Foundation & 2nd Floor Framing Plans - Bldg H

Roof Framing Plan - Recreation Building

Foundation Plan & Details - Trash Compactor Enclosure

TOTAL NUMBER OF SHEETS

* LATEST INDIVIDUAL SHEET REVISION ISSUED

S2.20 3rd Floor & Roof Framing Plans - Bldg H

S2.21 Foundation Plan - Recreation Building

Concrete Details

Concrete Details

Framing Details

Framing Details

Framing Details

Framing Details

ROPRIATE ELEMENTS,

OORDINATE A TO THE ARCHITECT

RIOUS STAGES OF A THE BUILDING CODE. SPECTOR BY OWNER. SE TO ENSURE

ERECTION BRACING ED. REFER TO AND DIMENSIONS AND LOCATION

AB.	ANCHOR BOLT
AGGR.	AGGREGATE
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
BD.	BOARD
BLDG.	BUILDING
BLK	BLOCK
BLK'G.	BLOCKING
BM.	BEAM
BOT.	BOTTOM
BTWN.	BETWEEN
C.J.	CONTROL JT.
CLR.	CLEAR
C.M.U.	CONCRETE
	MASONRY
COL.	60FAWN
CONC.	CONCRETE
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CSE	COMPONENTS
DE0	STRUCTURAL ENGR
DEG.	DEGREE
DET./DTL.	DETAIL
DIAG.	DIAGONAL
DIA. ø	DIAMETER
DN.	DOWN
DWG.	DRAWING
(E)	EXISTING
EA.	EACH
E.J. E.I.F.S.	EXPANSION JOINT EXTERIOR INSULATION
E.I.F.S.	AND FINISH SYSTEM
EL. ELEV.	ELEVATION
ELEV. EQ.	ELEVATION EQUAL
EQ. EQUIP.	EQUIPMENT
E.W. EXP.	EACH WAY EXPANSION
EXF. EXT.	EXTERIOR
LAI.	

obr	eviations
D.	FLOOR DRAIN
N.	FOUNDATION
T.	FINSH FLOOR
N.	FINISH
R.	FLOOR
ND.	FOUNDATION
D.B.	FACE OF BRICK
D.C.	FACE OF CONCRETE
S.	FULL SIZE
C.	FOOT OR FEET
G.	FOOTING
IRR.	FURRING
A. ALV. R. (P. BD. T. /AC	GAUGE GALVINIZED GRADE GYPSUM GYPSUM BOARD HEIGHT HEATING, VENT AND AIR CONDITIONING
).	INSIDE DIAMETER
ISUL.	INSULATION
IT.	INTERIOR
NT.	JOINT
ST.	JOIST
AX.	MAXIMUM
FR.	MANUFACTURER
IN.	MINIMUM
ISC.	MISCELLANEOUS
.0.	MASONRY OPENING
TL.	METAL
0.	NUMBER
T.S.	NOT TO SCALE
C.	ON CENTER
D.	OUTSIDE DIAMETER
H.	OVERHEAD
PG.	OPENING
PP.	OPPOSITE
CT.	PRE-CAST

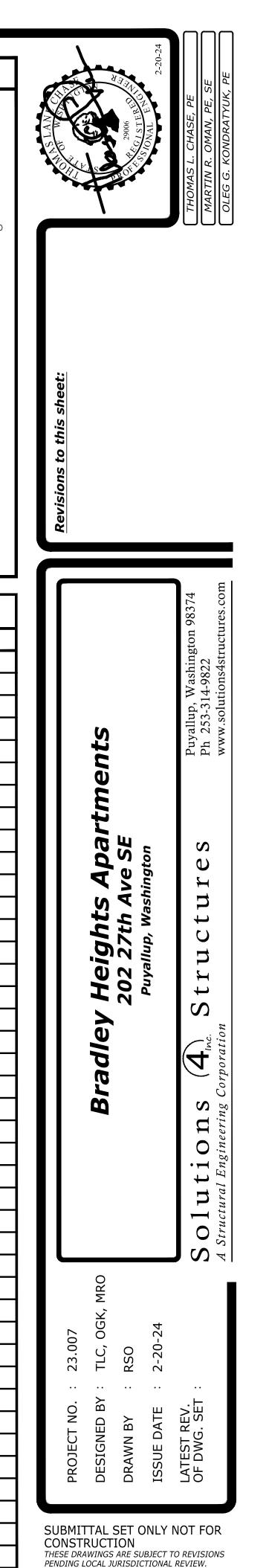
Sheet Index

Sheet Contents

At

P.L.	PROPERTY LINE
PLYWD.	PLYWOOD
R.D.	ROOF DRAIN
RE:	REFER TO
REINF.	REINFORCED
REQ'D.	REQUIRED
RM	ROOM
R.0.	ROUGH OPENING
SCHED.	SCHEDULE
SECT.	SECTION
SER	STRUCTURAL
	ENGINEER OR RECORD
S.F.	SQUARE FOOT
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
S.S.	STAINLESS STEEL
STAGG.	STAGGERED
STD.	STANDARD
STIFF	STIFFENER
STL.	STEEL
STRUC.	STRUCTURAL
TR	TREAD
Т & В Т & G	TOP AND BOTTOM TONGUE & GROOVE
TACG THK.	TUNGUE & GRUUVE
т. Т/	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED
U.N.U.	OTHERWISE
VER	VERIFY
VERT.	VERTICAL
W/	WITH
W/0	WITHOUT
¢	CENTERLINE
PL	PLATE

Revisions*



34

STRUCTURAL NOTES-TABLES

				TABL		-			
COMPONENTS & CLADDING (ASD)									
ROOF SURFACES'									
EFFECTIVE	POS	ITIVE PRESSURE	- (* -* /		TIVE PRESSURE	E (PSF)			
WIND AREA			Z	ONE ²		-			
	1	2	3	1	2	3			
10 SF	7.80	7.80	7.80	-12.39	-21.56	-31.89			
20 SF	7.04	7.04	7.04	-12.01	-19.65	-29.59			
50 SF	6.27	6.27	6.27	-11.62	-17.74	-27.30			
100 SF	5.51	5.51	5.51	-11.24	-15.83	-25.01			
500 SF	5.51	5.51	5.51	-11.24	-15.83	-25.01			
		٧	VALL SURFACES						
EFFECTIVE	POS	ITIVE PRESSURE			TIVE PRESSURE	E (PSF)			
WIND AREA			Z	ONE ²					
	4		5	4		5			
10 SF	12.18		12.18	-13.21		-16.31			
20 SF	11.56		11.56	11.56 –12.59		-15.07			
50 SF	10.94		10.94		10.94			-13.83	
100 SF	10.32		10.32	-11.36		-12.57			
500 SF	9.08		9.08	-10.12		-10.12			

2. ZONES ARE DEFINED BY FIGURE 30.6-1 ASCE/SE1 07-10 FOR ROOF AND WALL ELEMENTS

MATERIAL/ TYPE	TO THIS PROJECT					
INSPECTION	REFERENCE	STANDARD	CONT.	PERIODIC	REQUIRED	SCOPE OF SERVICE
Site Preparation	Table 1705.6 Item 5	-	-	Х	N/A	Inspection to determine that the site has been prepared in accordanc with the approved soils or geotechnical report.
Prepared Fill — During Fill Preparation	Table 1705.6 Item 4	_	X	-	YES	Inspection to determine that the materials being used and maximum thicknesses comply with the approved report as specified in Section 1
Evaluation of in-place Density	Table 1705.6 Item 3	-		X	YES	Tests to determine, at the approved frequency, that the in-place dry density of the compacted fill complies with the approved report.
Footings and Foundations	1805.1 - 1805.9 Table 1705.6 Item 1	-	_	Х	YES	Confirm soils suitable for the design allowable soil bearing pressure a present at bearing grade. Confirm the footing dimensions are as spec on the project plans.
Foundation Depth	Table 1705.6 Table 1705.6 Item 2	-	-	Х	YES	Confirm excavation are extended to proper depth and have reached proper materials.

CONCRETE CONSTRUCTION

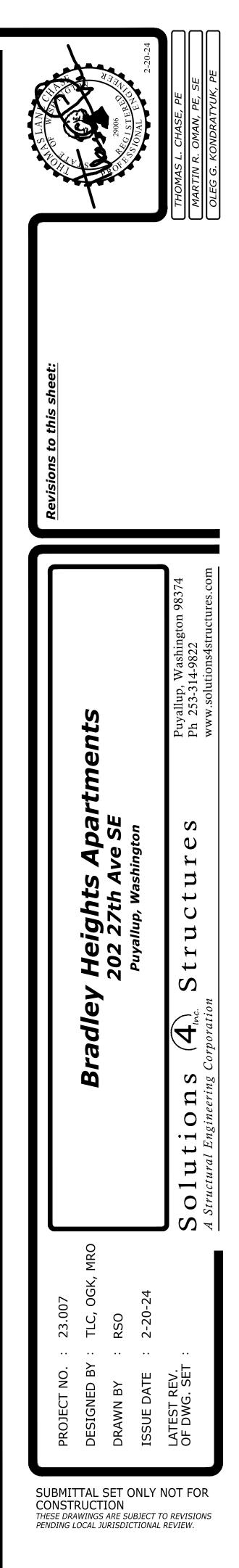
MATERIAL/ TYPE	IBC_CODE REFERENCE		FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
INSPECTION	REFERENCE	STANDARD	CONT.	PERIODIC	REQUIRED	1
Materials	1705.3.1, Table 1705.3 Item 1	Applicable ASTM material spec.; AISC 360, Section A3.3	_	Х	YES	Manufacturer's Certificates of Compliance or Tests per Chapter 3 of ACI 318, per ASTM A 706, and per 1705.3.1
Installation of Reinforcing Steel	1910.4 Table 1705.3 Item 1	ACI 318:3.5; 7.1 – 7.7	_	Х	YES	Inspection to confirm compliance with details shown on approved Construction Documents, Shop Drawings, ACI 318 and Code Section 1910.4
Welding of Reinforcing Steel	Table 1705.3 Item 2	AWS D1.4, ACI 318:3.5.2	_	-	N/A	Observation of reinforcing steel welding in accordance with Table 1705.2.2, Item 2, (see attached steel construction table).
Bolt Installation	1908.5, 1901.1 Table 1705.3 Item 3	ACI 318: 8.1.3, 21.2.8	Х	-	YES	Observation of anchor bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased.
Formwork	Table 1705.3 Item 12	ACI 318:6.1.1	_	Х	YES	Inspection for compliance with ACI 318, Section 6.1, 6.2, for shape, location and dimensions of concrete member being formed.
Concrete Strength	1910.10, Table 1705.3 Item 6	ASTM C 172, ASTM C 31, ACI 318:5.6, 5.8	_	Х	NO	Evaluation of Concrete strength in accordance with ACI 318, Section 5.6 and in accordance with the requirements of IBC 1905.6.
Concrete Mixes	1904.2, 1910.2, 1910.3 Table 1705.3 Item 5	ACI 318: 4, 5.2-5.4	_	Х	YES	Inspection for use of proper mix proportions and techniques, ACI 318, Chapter 4, Sections 5.2 — 5.4.
-	-		-	-	-	-
Concrete Sampling	1910.10 Table 1705.3 Item 6	ASTM C 172, ASTM C 31, ACI 318:5.6, 5.8	Х	-	МО	
Concrete Placement	1910.6, 1910.7, 1910.8, Table 1705.3 Item 7	ACI 318:5.9, 5.10	Х	-	YES	Inspection for proper application techniques; ACI 318, Sections 5.9 and 5.10
Curing Temperatures and Techniques	1910.9 Table 1705.3 Item 8	ACI 318: 5.11-5.13	_	Х	NO	Inspection for maintenance of curing temperatures and techniques; ACI 318, Sections 5.11, 5.12 and 5.13.
Prestressed Concrete: Application Prestressing Forces	Table 1705.3 Item 9a	ACI 318: 18.20, ACI 18.18.4	Х	-	NO	Field inspections of precast concrete members in accordance with ACI 318, Section 18.20.
Prestressed Concrete: Grouting of unbonded prestressing tendons in seismic-force-resisting system	Table 1705.3 Item 9b	ACI 318: 18.20, ACI 18.18.4	Х	-	NO	Field inspections of precast concrete members in accordance with ACI 318, Chapter 18.18.4.
Manufacture of Precast Concrete	1704.2.1	-	_	Х	NO	Certificate from Independent Agency and current agreement for periodic (minimum 6 month intervals) in-plant quality assurance inspections.
Erection of Precast Concrete	Table 1705.3 Item 10	ACI 318: 16	_	Х	NO	Field inspections of precast concrete members in accordance with ACI 318, Chapter 16.
Post Tensioning	Table 1705.3 Item 11	ACI 318: 6.2	_	х	NO	Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms for beams and structural slabs in accordance with ACI 318, Section, 6.2.
Post Installed Anchors	1909.1, Table 1705.3 Item 11	ACI 318: 3.8.6, 8.1.3, 21.1.8	-	Х	YES	Verification of anchors post installed in hardened concrete members.

2018 International Building Code — Statement of Special Inspection WOOD CONSTRUCTION

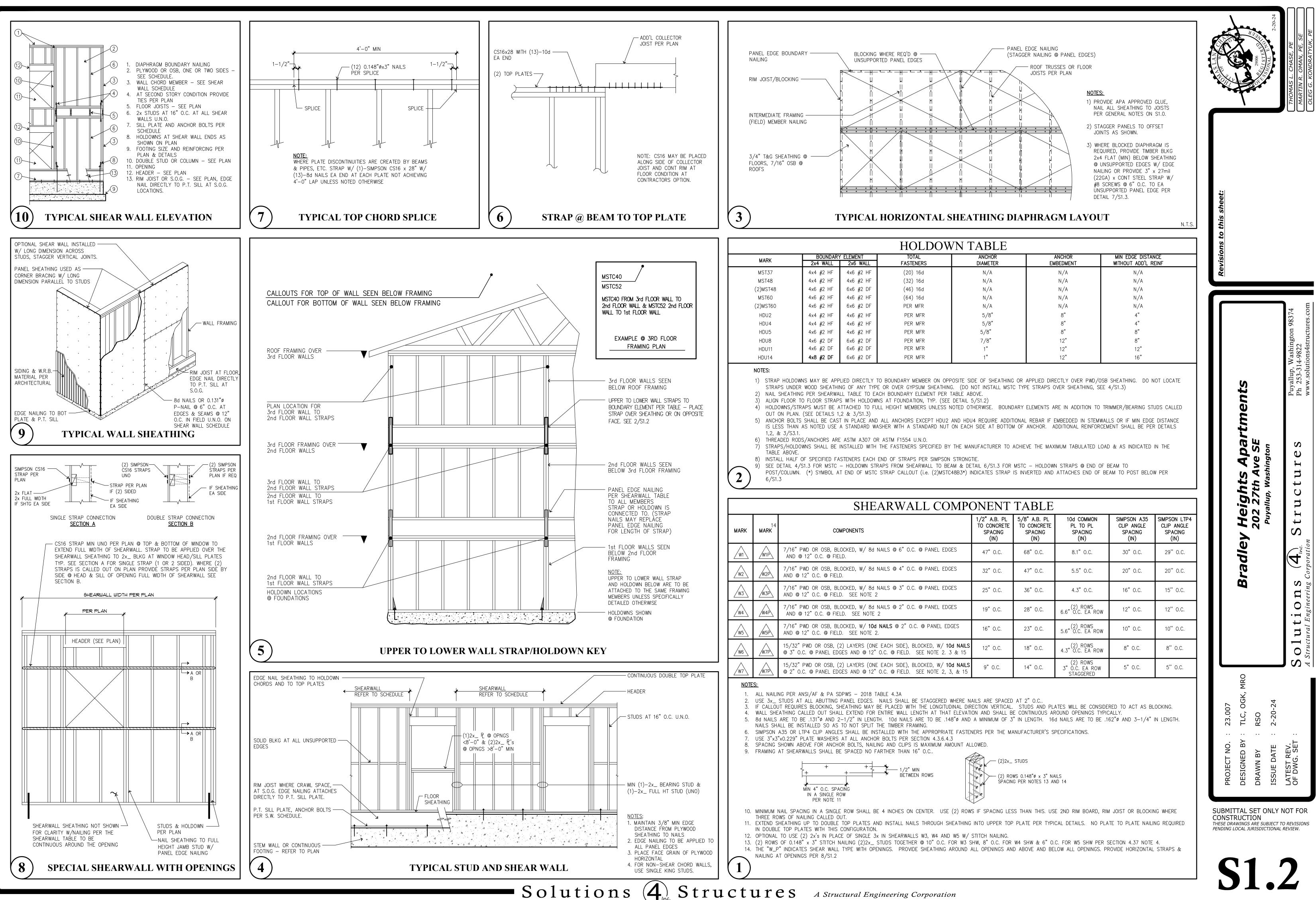
MATERIAL/ TYPE INSPECTION	IBC CODE	REFERENCE		FREQUENCY APPLICABLE TO THIS PROJECT		SCOPE OF SERVICE	
INSPECTION	REFERENCE STANDARD		CONT.	PERIODIC	REQUIRED		
Fabrication — Inspection of Fabricator's Quality Control Procedures	1704.2.5	_	-	Х	YES	Certificate from Independent Agency and current agreement for periodic (minimum 6 month intervals) in-plant quality assurance inspections.	
2018 International Building Code — Statement of Sp	pecial Inspection						

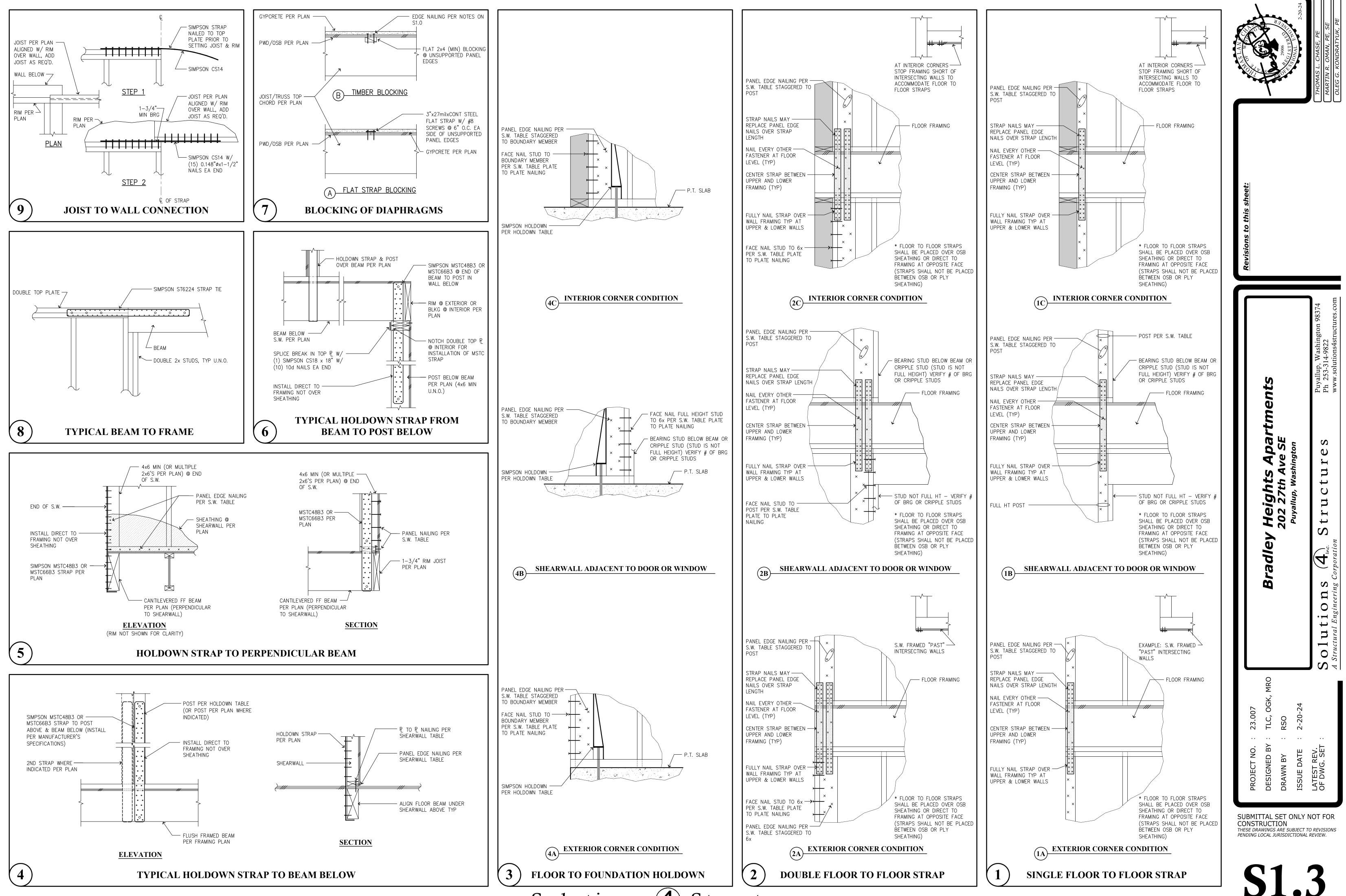
MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FR	EQUENCY APPLIC		SCOPE OF SERVICE
INSPECTION	REFERENCE	STANDARD	CONT.	PERIODIC	REQUIRED	
Structural Steel	1705.11.1	AISC 341	Х	-	N/A	Observation of structural welding in accordance with AISC Seismic. Not required for 5/16" single pass fillet welds or welding of metal deck.
Structural Wood: Inspection of field gluing operations of elements of the seismic force resisting system.	1705.11.2	_	Х	-	N/A	Inspection of field gluing operations of elements of the seismic force resisting system.
Structural Wood: Inspection of nailing, bolting, anchoring and other fastening components the seismic force resisting system, including drag struts, braces and hold-downs.	1705.11.2	_	_	х	YES	Inspection of nailing, bolting, anchoring and other fastening components within the seismic force resisting system, including drag struts, braces and hold-downs. Not required for nailing o.c. spacing greater that 4" o.c
Cold-formed Steel Framing	1705.11.3	_	-	X	NO	Inspection of welding operations of elements of the seismic force resisting system.
Cold-formed Steel Framing	1705.11.3	-	-	Х	NO	Inspection of screw attachments, bolting, anchoring and other fastening components within the seismic force resisting system, including struts, braces and hold-downs.
1018 International Building Code — Statement of Sp	ecial Inspection					
TRUCTURAL: OBSERVATIONS						
MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FR	FREQUENCY APPLICABLE TO THIS PROJECT		SCOPE OF SERVICE
INSECTION	REFERENCE	STANDARD	CONT.	PERIODIC	REQUIRED	
Strucutral Observations	1704.5	-	-	Х		Structural observations to be preformed to observe general conformance to the construction documents.

Special Inspection required per Chapter 17 of the 2018 IBC - SUBMIT REPORTS TO INSPECTORS WITH THE CITY OF PUYALLUP

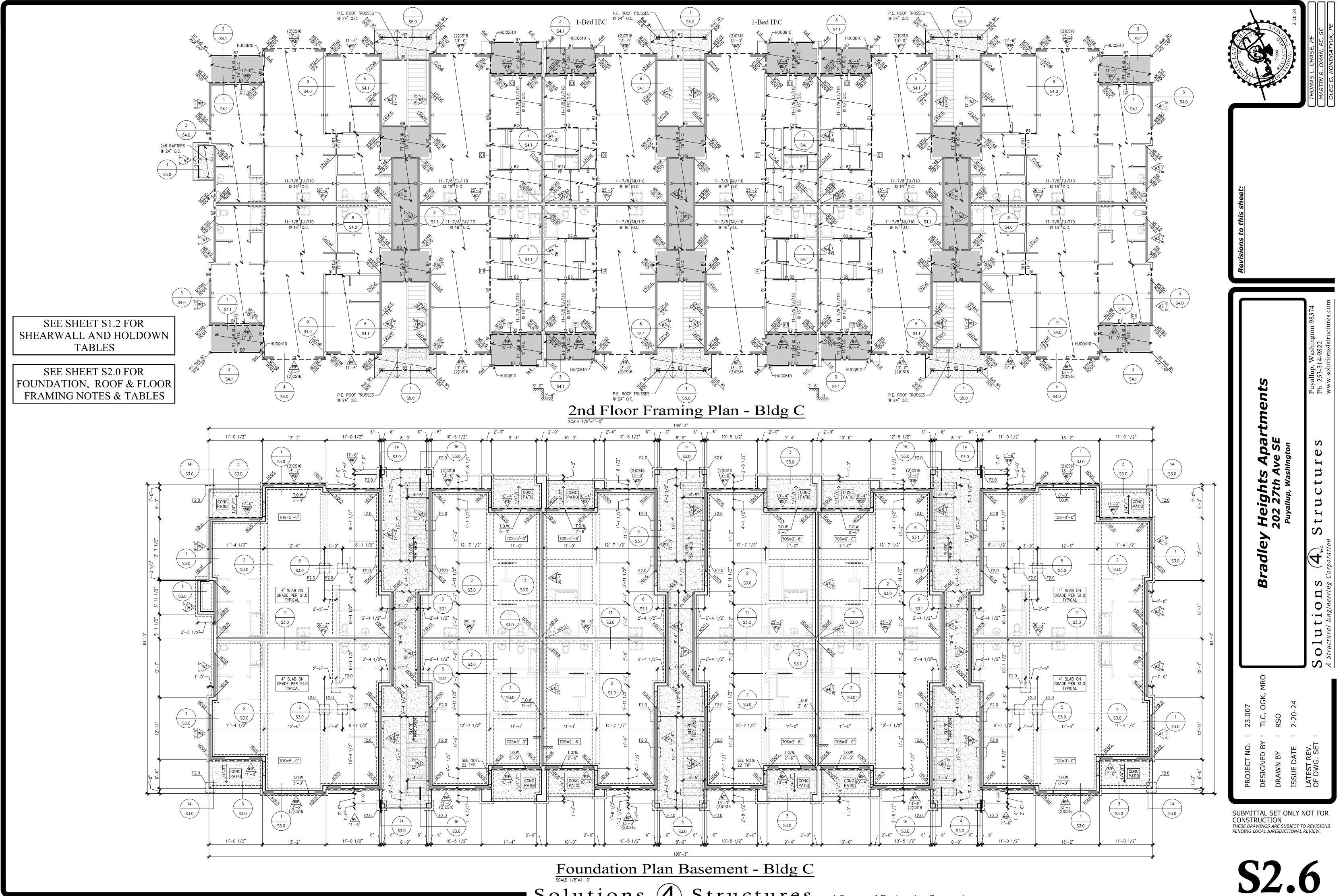


S1.1

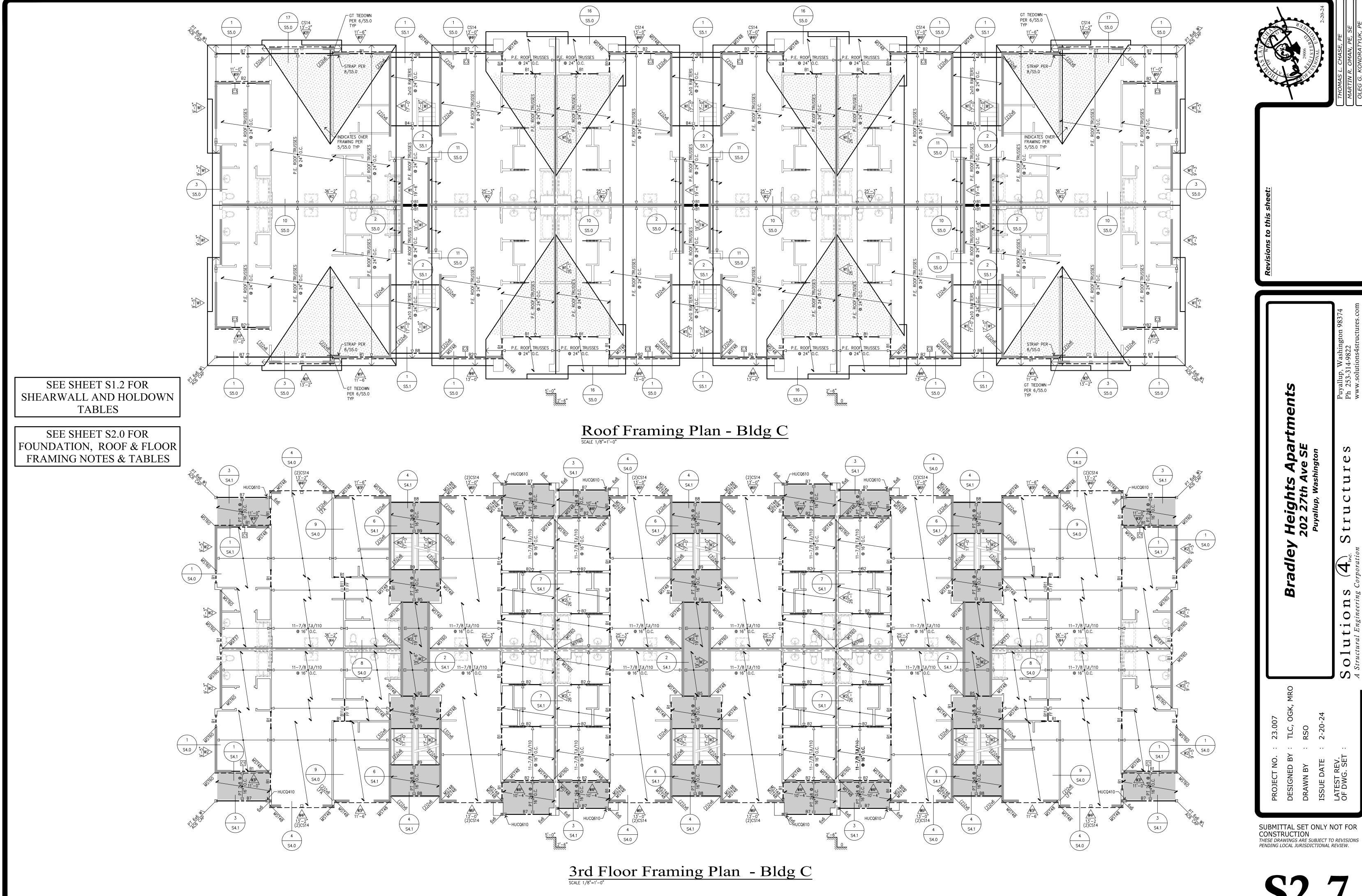




Solutions (4). Structures A Structural Engineering Corporation

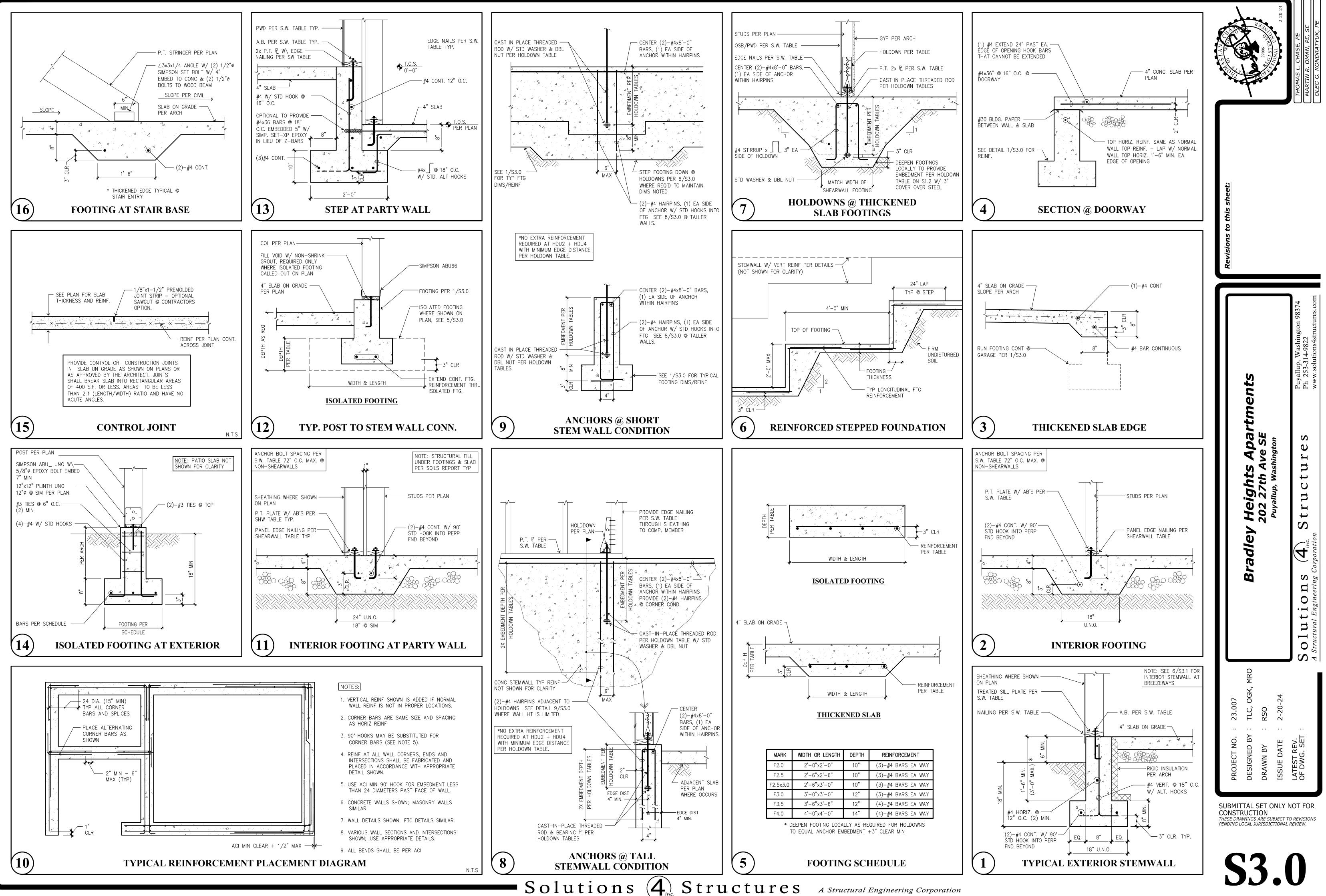


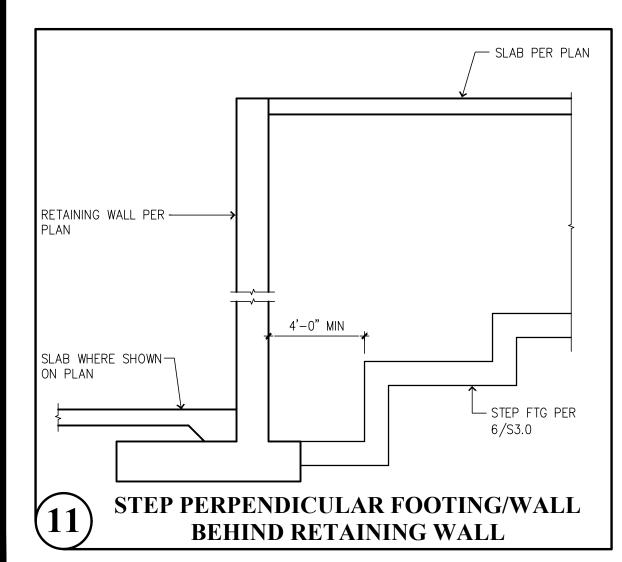
Solutions (4). Structures A Structural Engineering Corporation

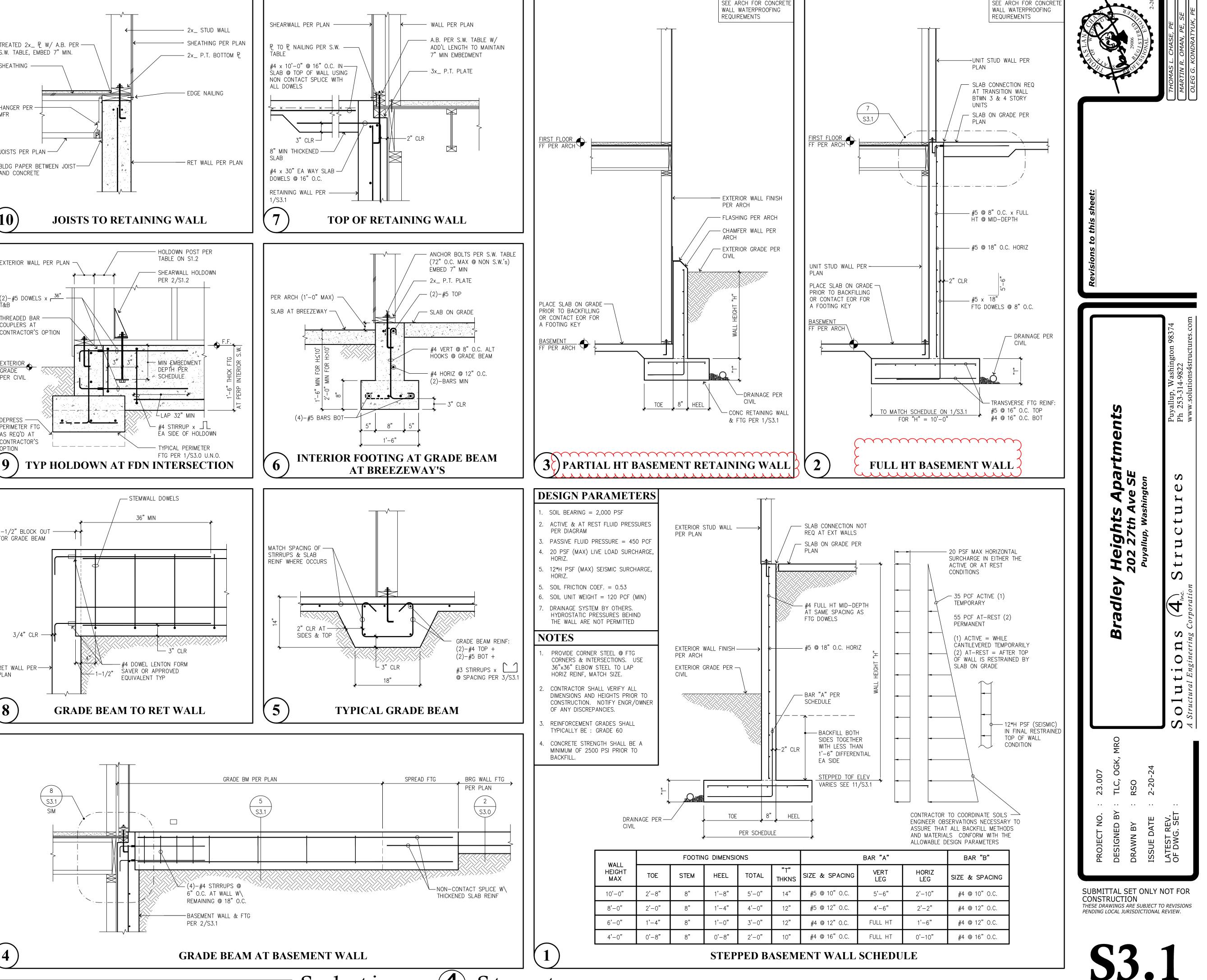


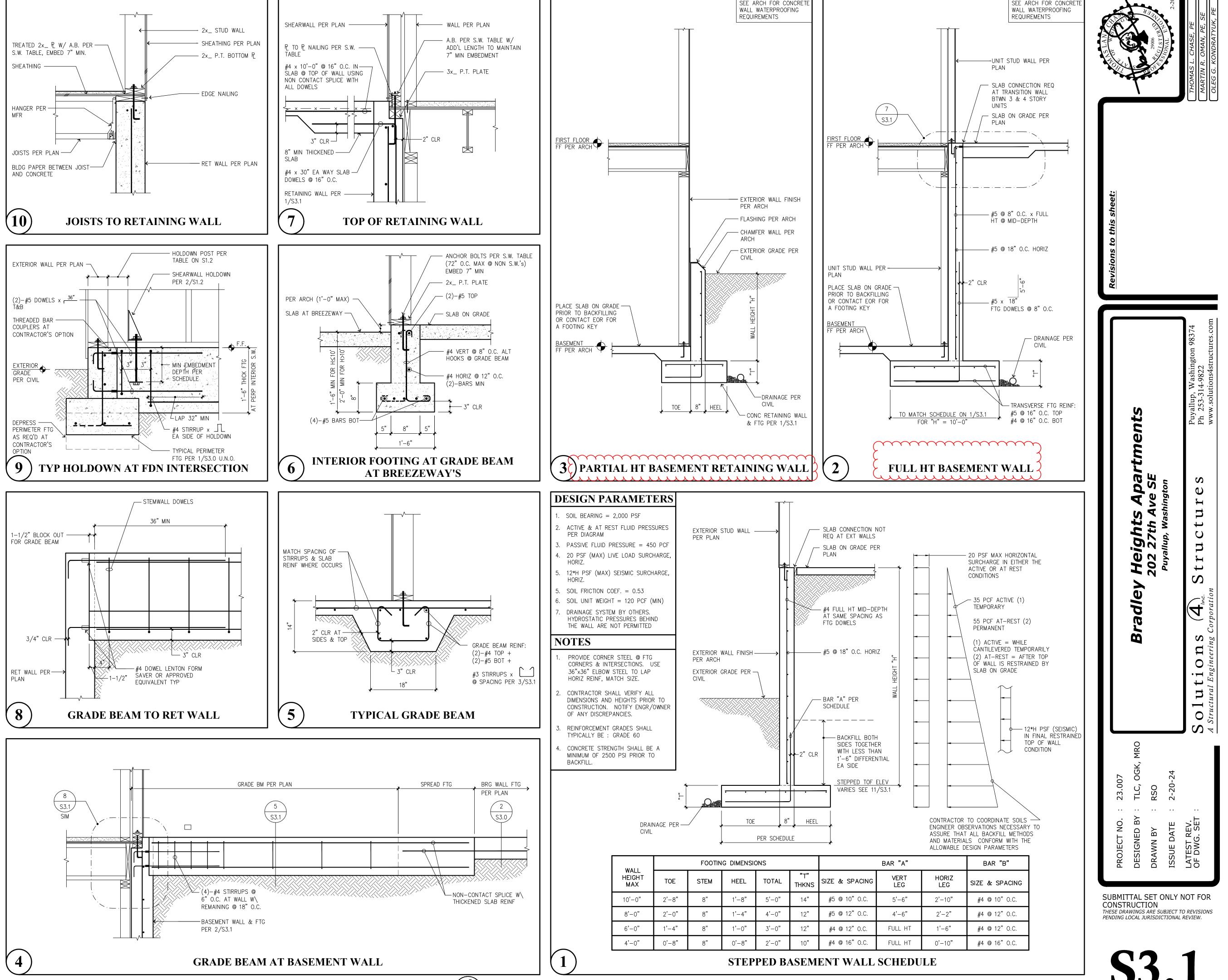
Solutions (4) Structures A Structural Engineering Corporation

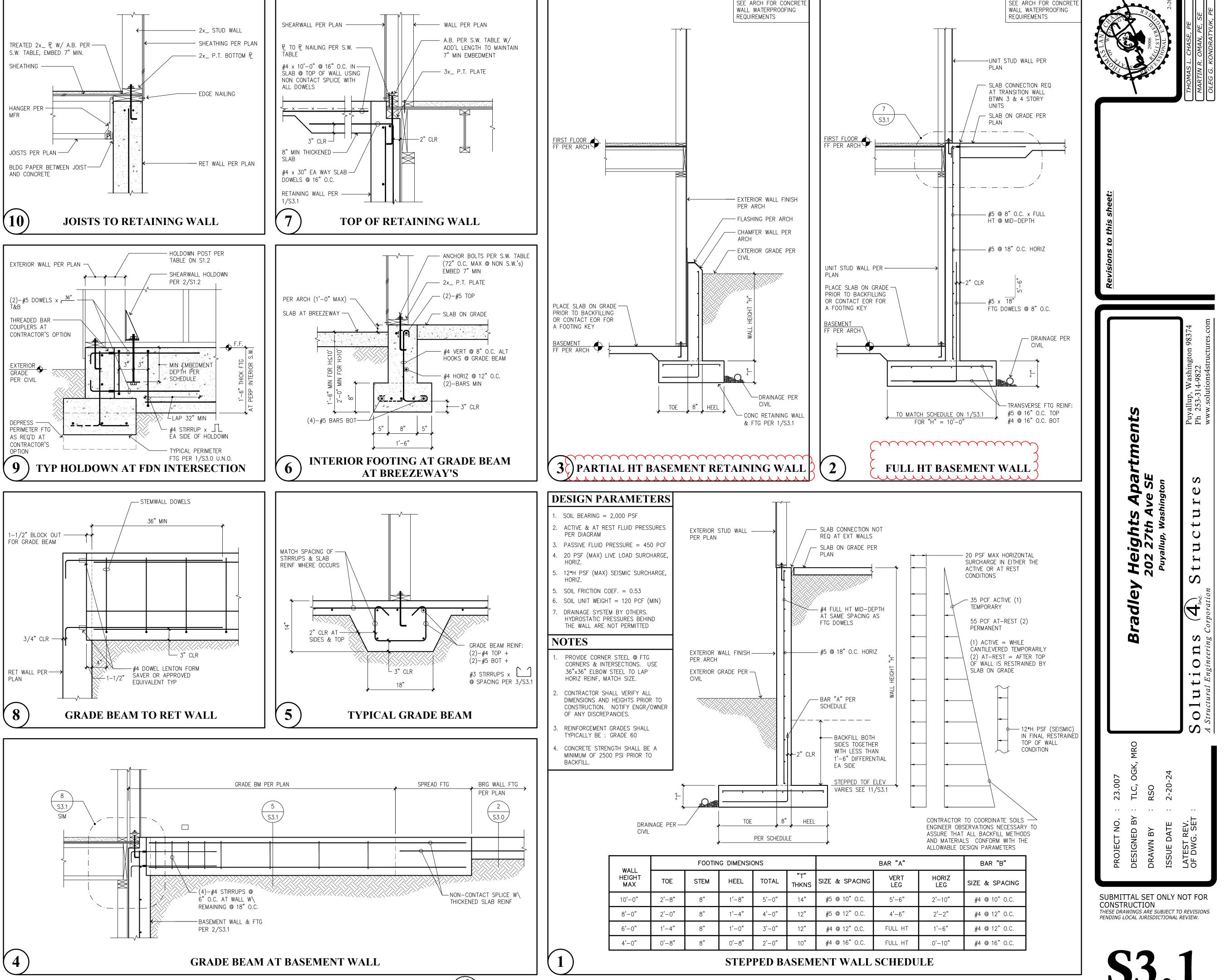
S2.7

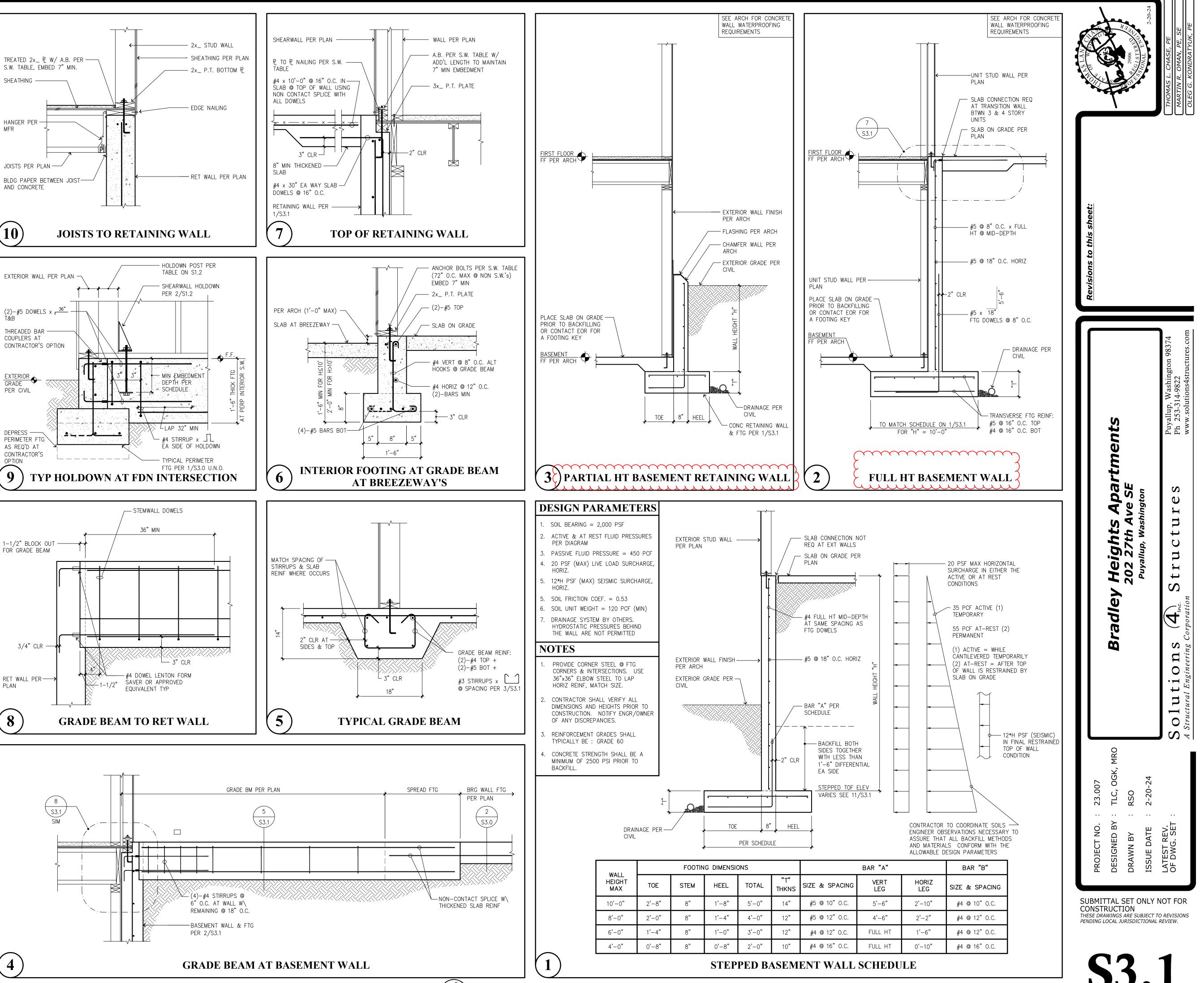




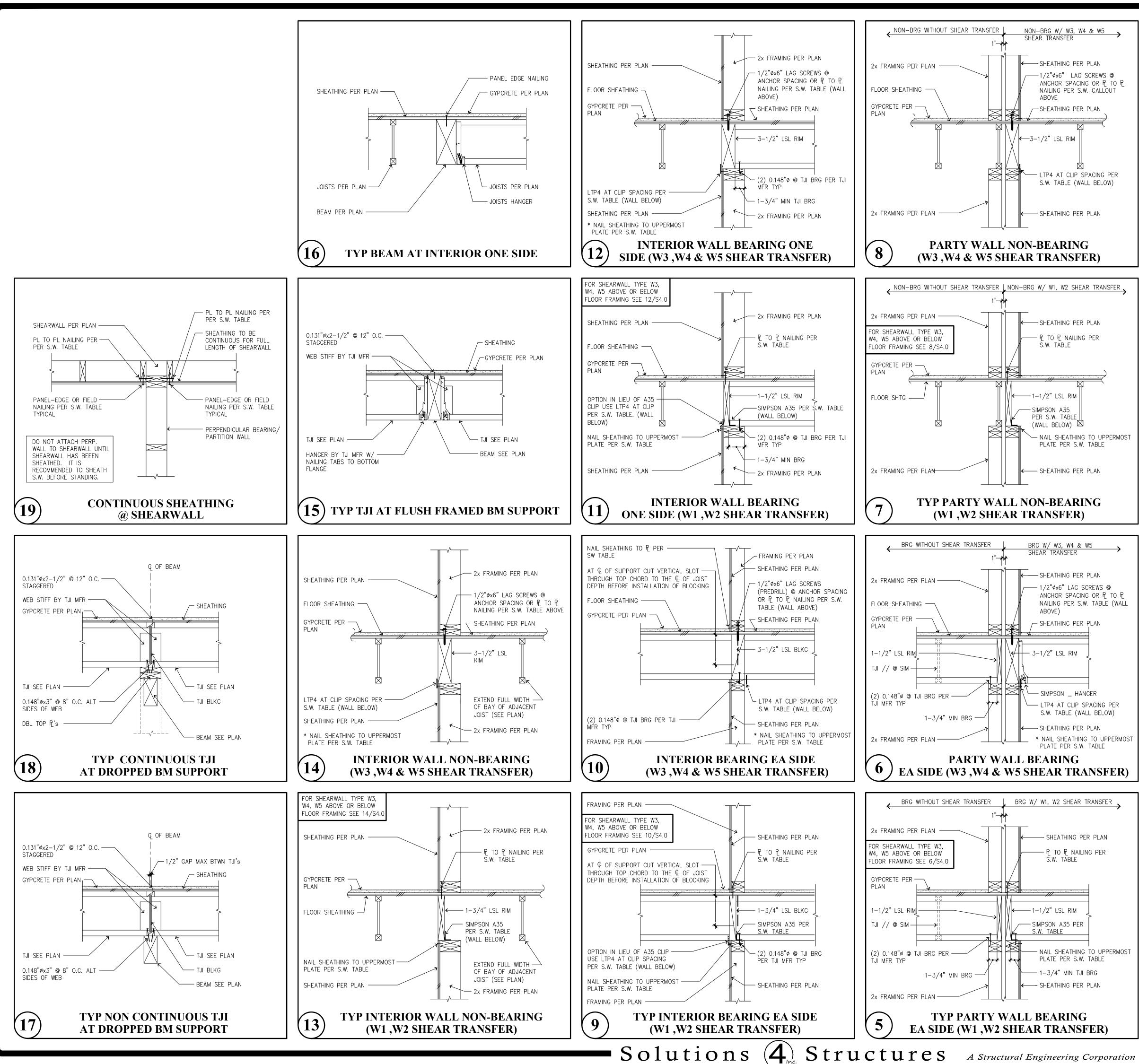




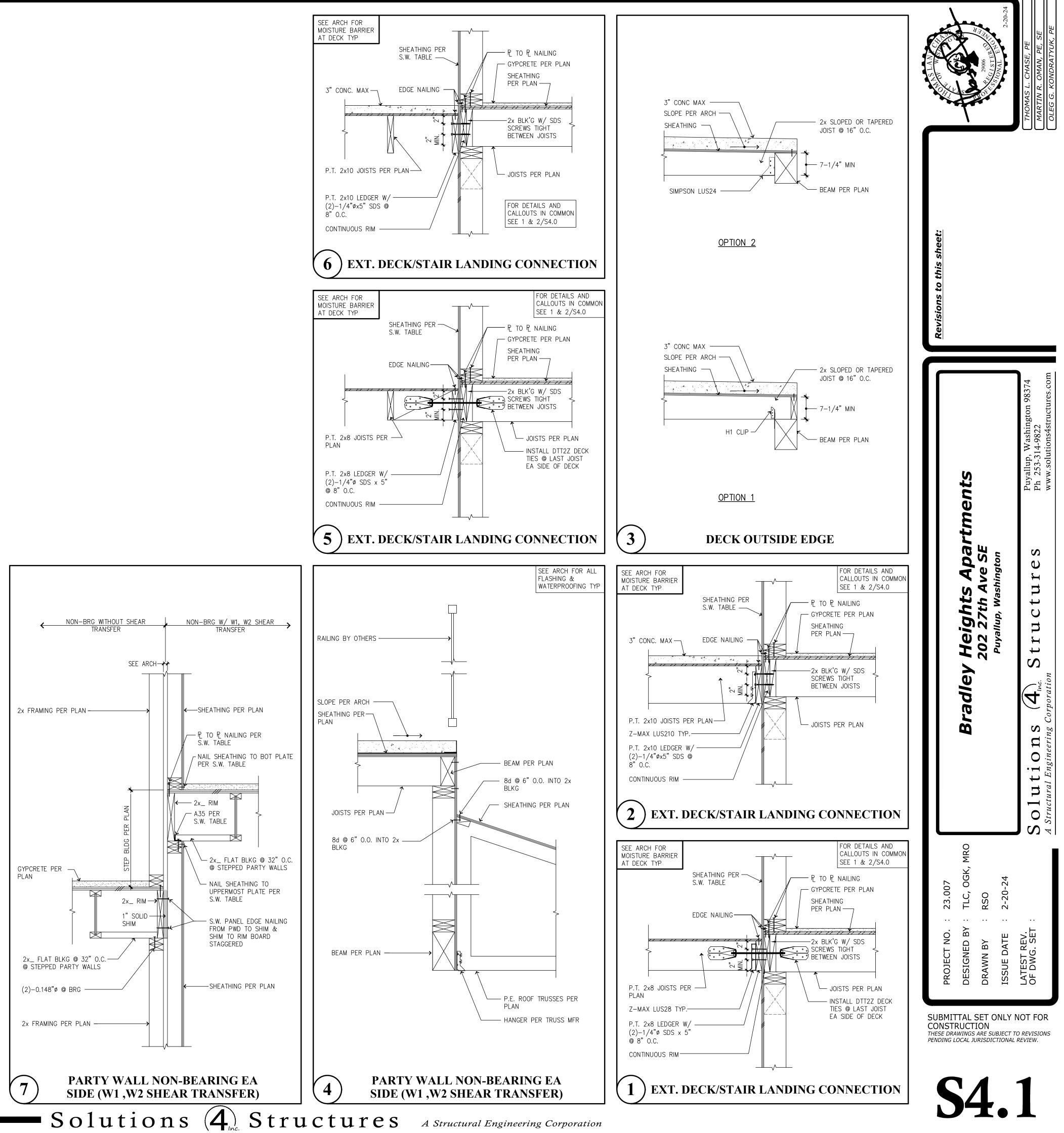


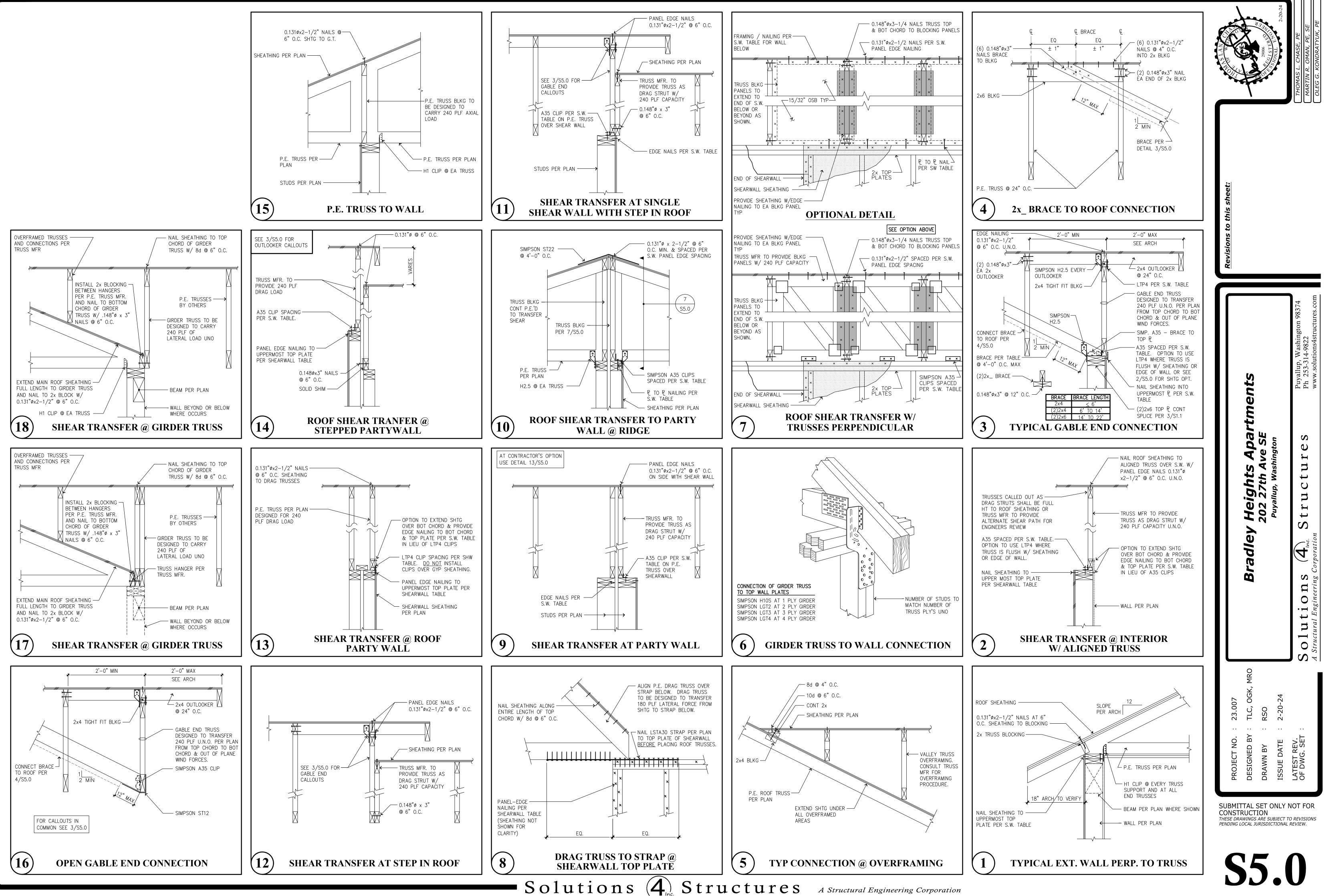


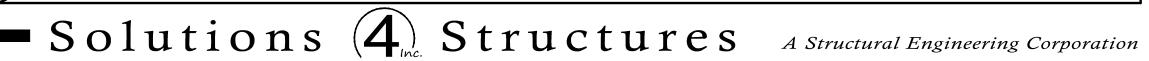
Solutions (4), Structures A Structural Engineering Corporation

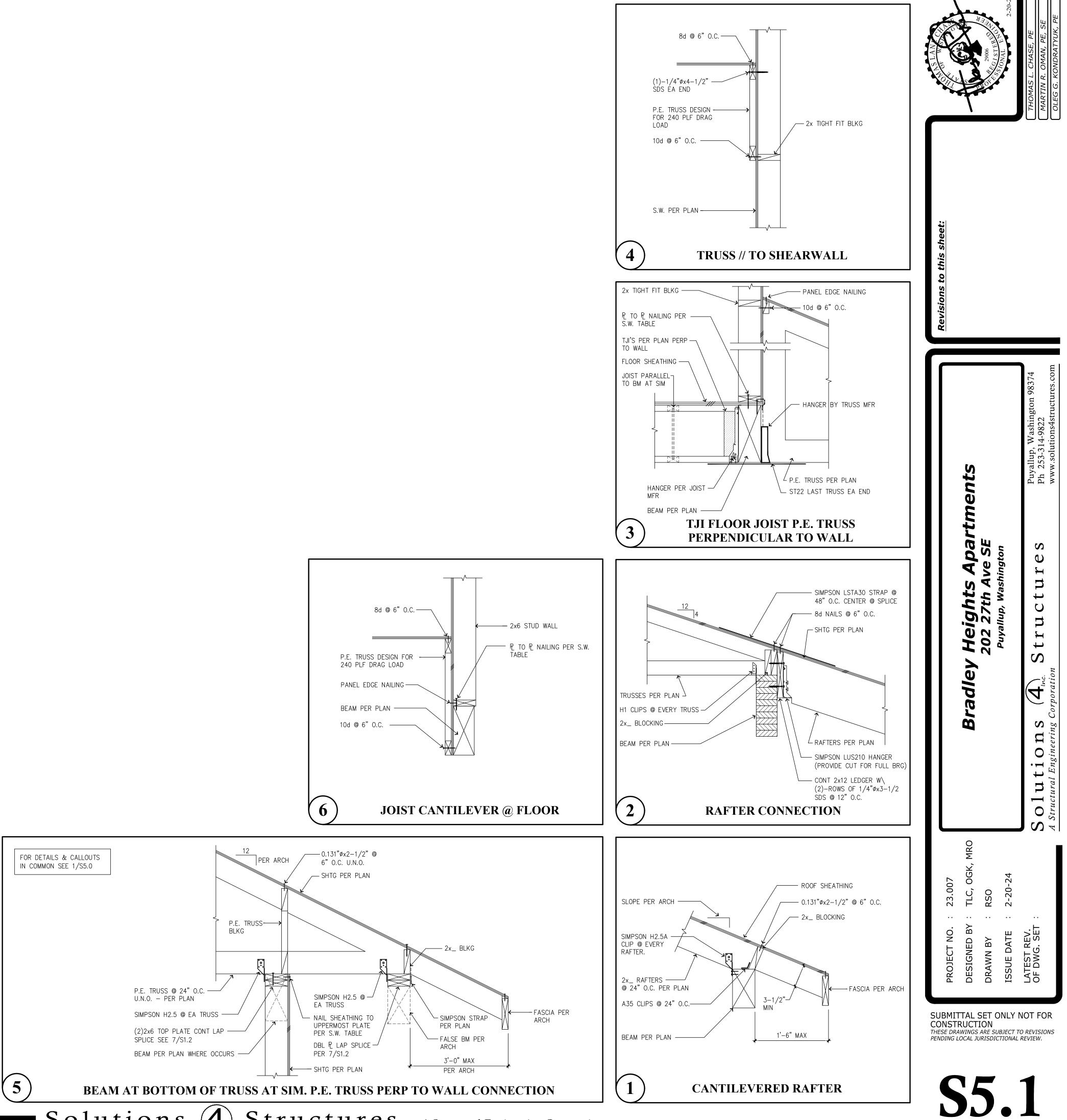


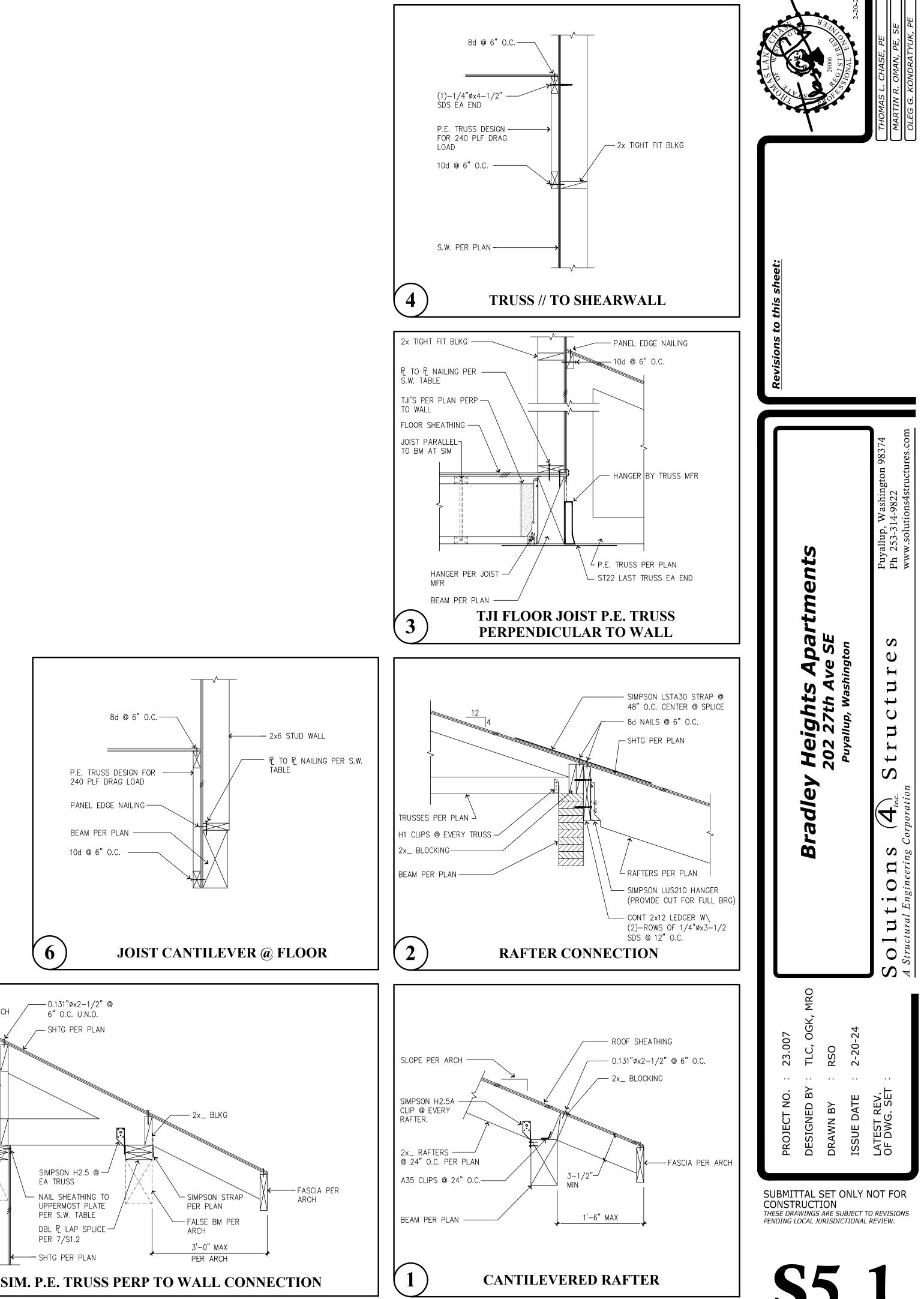
- SHEATHING TJI'S PER PLAN PARALLEL TO WALL -FLOOR SHEATHING -- LTP4 AT CLIP SPACING GYPCRETE PER -PER S.W. TABLE PLAN ¥###====== --- 1 - 1/2" LSL RIM TJI BLOCKING -@ 32"O.C. - LTP4 AT CLIP SPACING PER S.W. TABLE (WALL BELOW) PROVIDE SOLID BLKG @ -FLR TO FLR STRAPS - SHEATHING (2) 0.148"øx3" @ TJI BRG -2x FRAMING PER PLAN * NAIL SHEATHING TO UPPERMOST PLATE PER S.W. TABLE **TJI FLOOR JOIST PARALLEL TO** WALL (W3 ,W4 & W5 SHEAR TRANSFER) - SHEATHING TJI'S PER PLAN PERP TO WALL -FLOOR SHEATHING -----GYPCRETE PER ------- LTP4 AT CLIP SPACING PER S.W. TABLE PLAN — 1-1/2" LSL RIM LTP4 AT CLIP SPACING PER /allup, W 253-314-w solutio S.W. TABLE (WALL BELOW) PROVIDE SOLID BLKG @ -FLR TO FLR STRAPS - SHEATHING (2) 0.148"øx3" @ TJI BRG -Ph Ph 2x FRAMING PER PLAN -* NAIL SHEATHING TO UPPERMOST PLATE PER S.W. TABLE **TJI FLOOR JOIST PERPENDICULAR TO** 2 J WALL (W3 ,W4 & W5 SHEAR TRANSFER) pa S C FOR SHEARWALL TYPE W3, H W4, W5 ABOVE OR BELOW Heights 202 27th Av Puyallup, Washi - SHEATHING LOOR FRAMING SEE 4/S4.0 ロ —— 0.131"ø @ 4" O.C. TO TJI BLKG t C - P TO P NAILING PER FLOOR SHEATHING -S.W. TABLE コ OPTION IN LIEU OF P TO P GYPCRETE PER -NAILING USE LTP4 AT CLIP PLAN 4 SPACING PER S.W. TABLE S TJI BLOCKING · U @ 32"O.C. - SIMPSON A35 PER S.W. TABLE (WALL BELOW) (4 OPTION IN LIEU OF A35 CLIP USE LTP4 AT CLIP PER S.W. PROVIDE SOLID BLKG @ -S TABLE (WALL BELOW) FLR TO FLR STRAPS n - SHEATHING (2) 0.148"øx3" @ TJI BRG — 0 2x FRAMING PER PLAN -* NAIL SHEATHING TO t UPPERMOST PLATE PER S.W. TABLE **D TYP TJI FLOOR JOIST PARALLEL** 5 0 TO WALL (W1 ,W2 SHEAR TRANSFER) FOR SHEARWALL TYPE W3, W4, W5 ABOVE OR BELOW FLOOR FRAMING SEE 3/S4. SHEATHING GYPCRETE PER PLAN ------ P TO P NAILING PER 00 -20 ĽĊ, RSO S.W. TABLE TJI'S PER PLAN PERP TO WALL \sim -OPTION IN LIEU OF P TO F FLOOR SHEATHING -NAILING USE LTP4 AT CLIP SPACING PER S.W. TABLE TEST REV. DWG. SE DAT BΥ ← 1-1/2" LSL RIM DRAWN П - SIMPSON A35 PER S.W. TABLE 0 (WALL BELOW) PFI PFI - OPTION IN LIEU OF A35 CLIP USE LTP4 AT CLIP PER S.W. PROVIDE SOLID BLKG @ --TABLE (WALL BELOW) FLR TO FLR STRAPS SUBMITTAL SET ONLY NOT FOR CONSTRUCTION - SHEATHING (2) 0.148"øx3" @ TJI BRG -THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW 2x FRAMING PER PLAN -* NAIL SHEATHING TO UPPERMOST PLATE PER S.W. TABLE **TYP TJI FLOOR JOIST PERPENDICULAR** TO WALL (W1 ,W2 SHEAR TRANSFER)

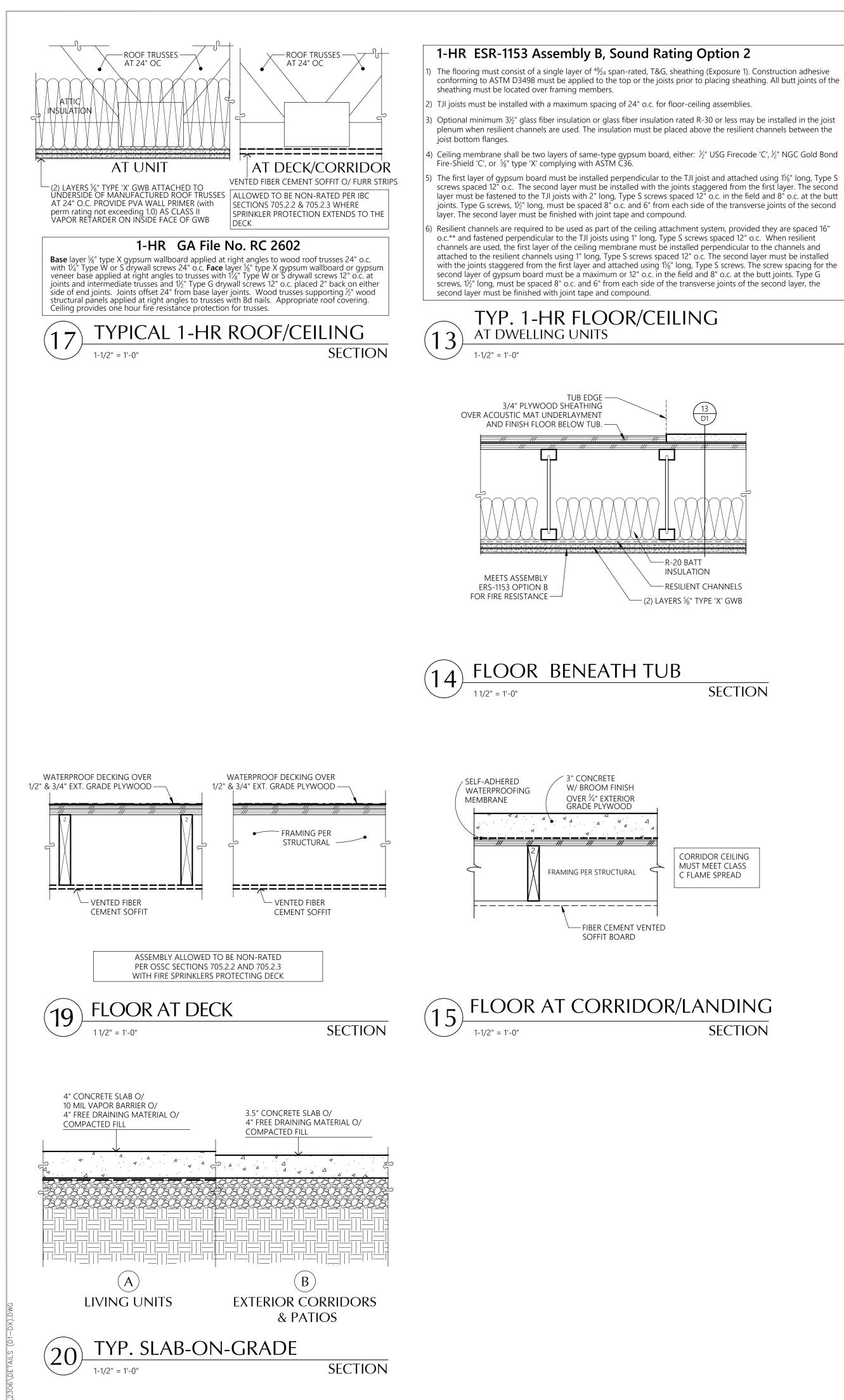


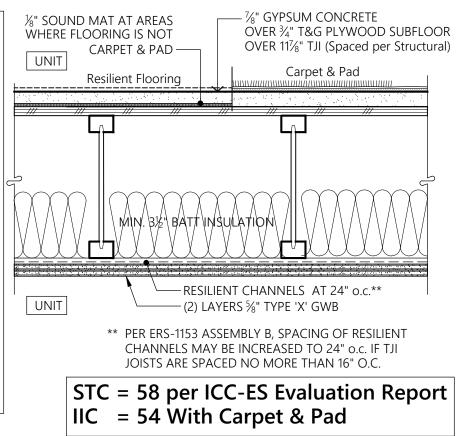








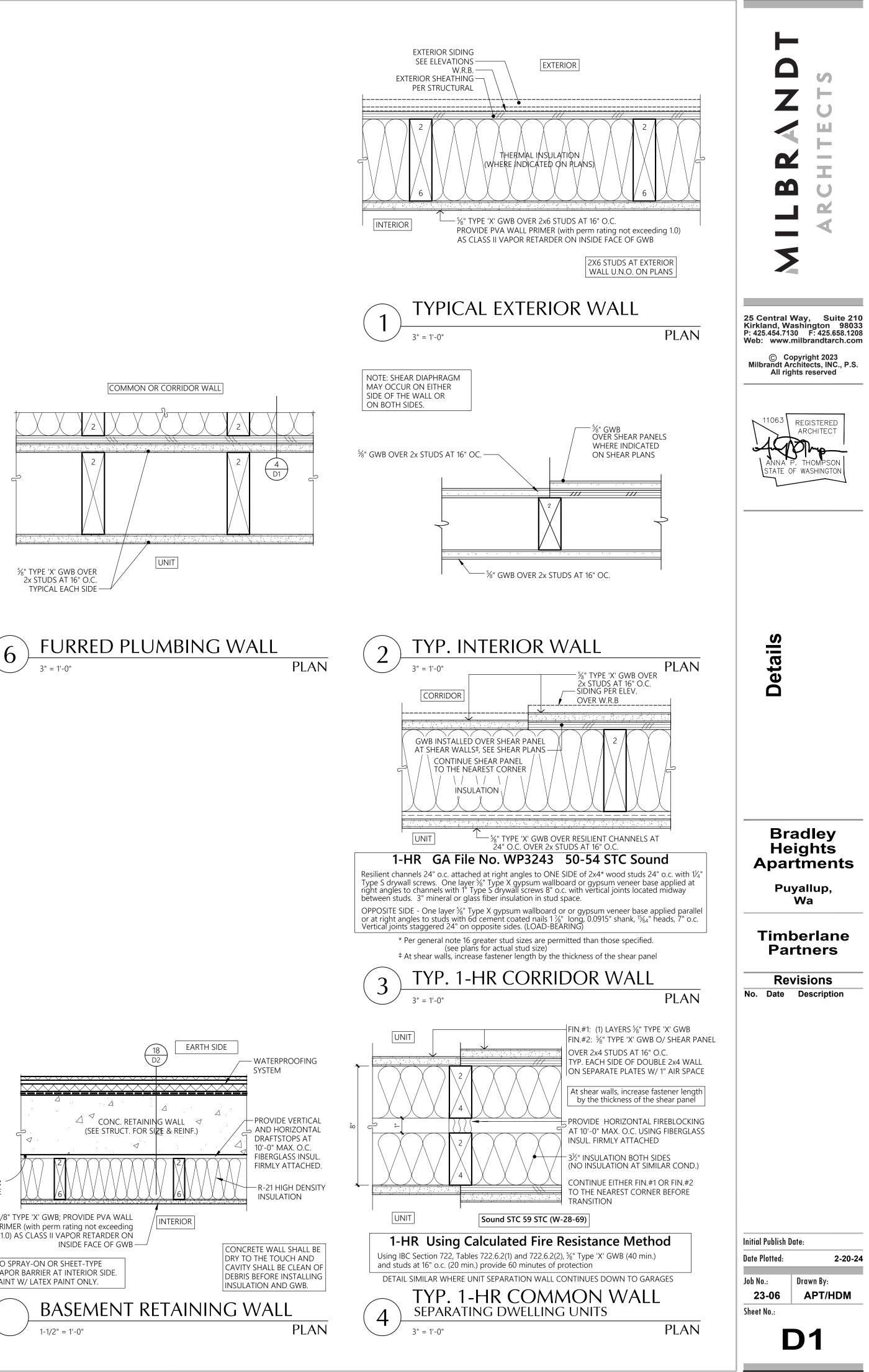




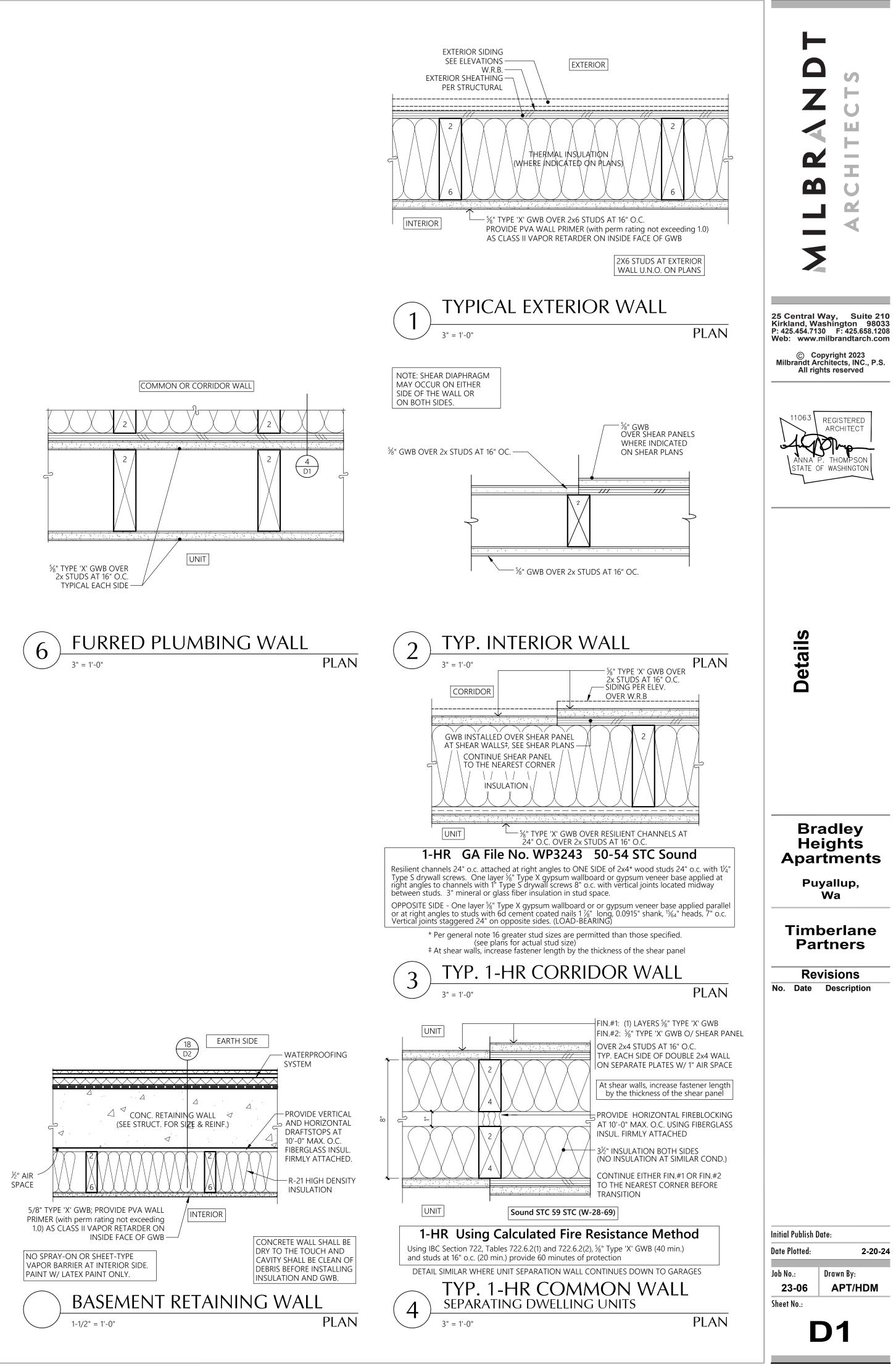
SECTION

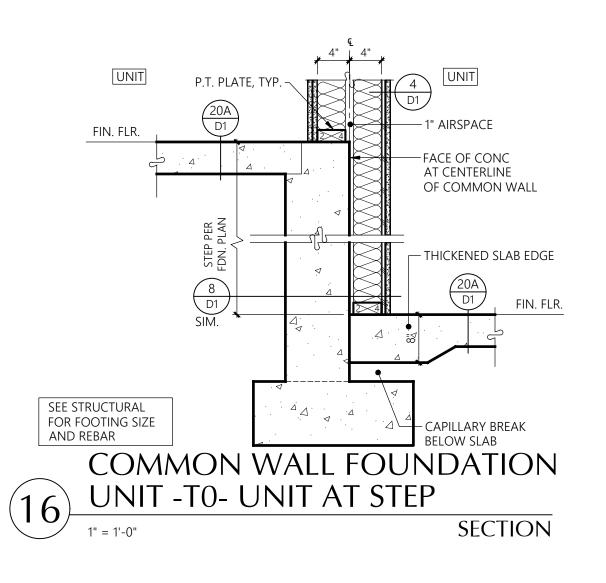
SECTION

SECTION

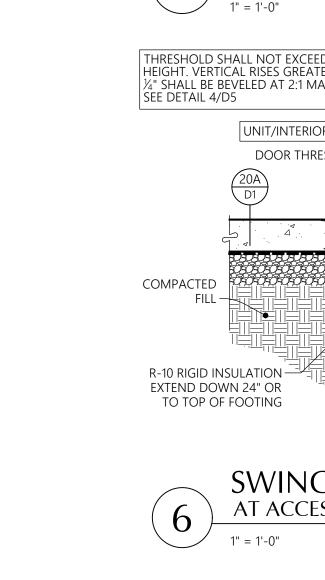


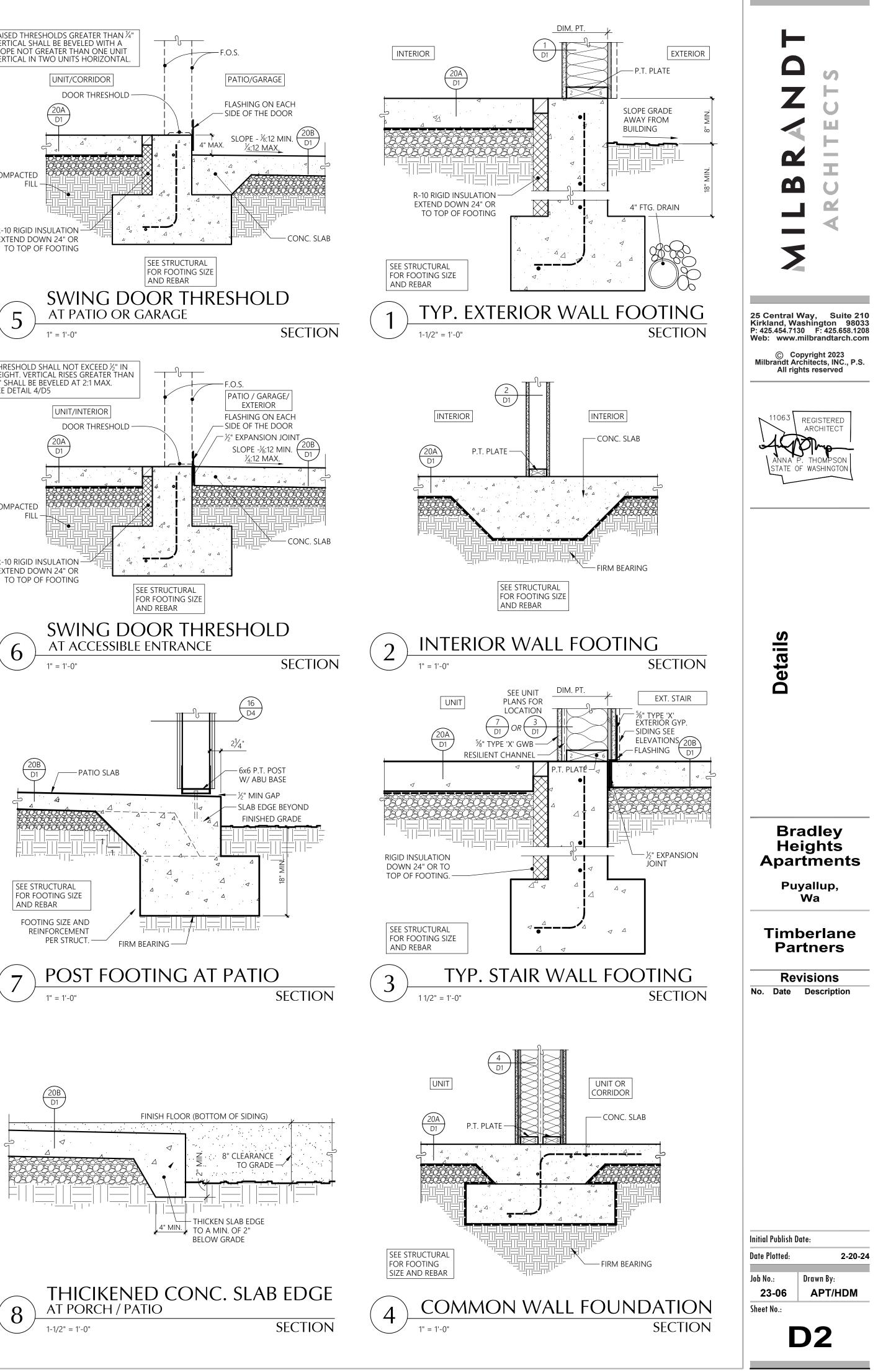


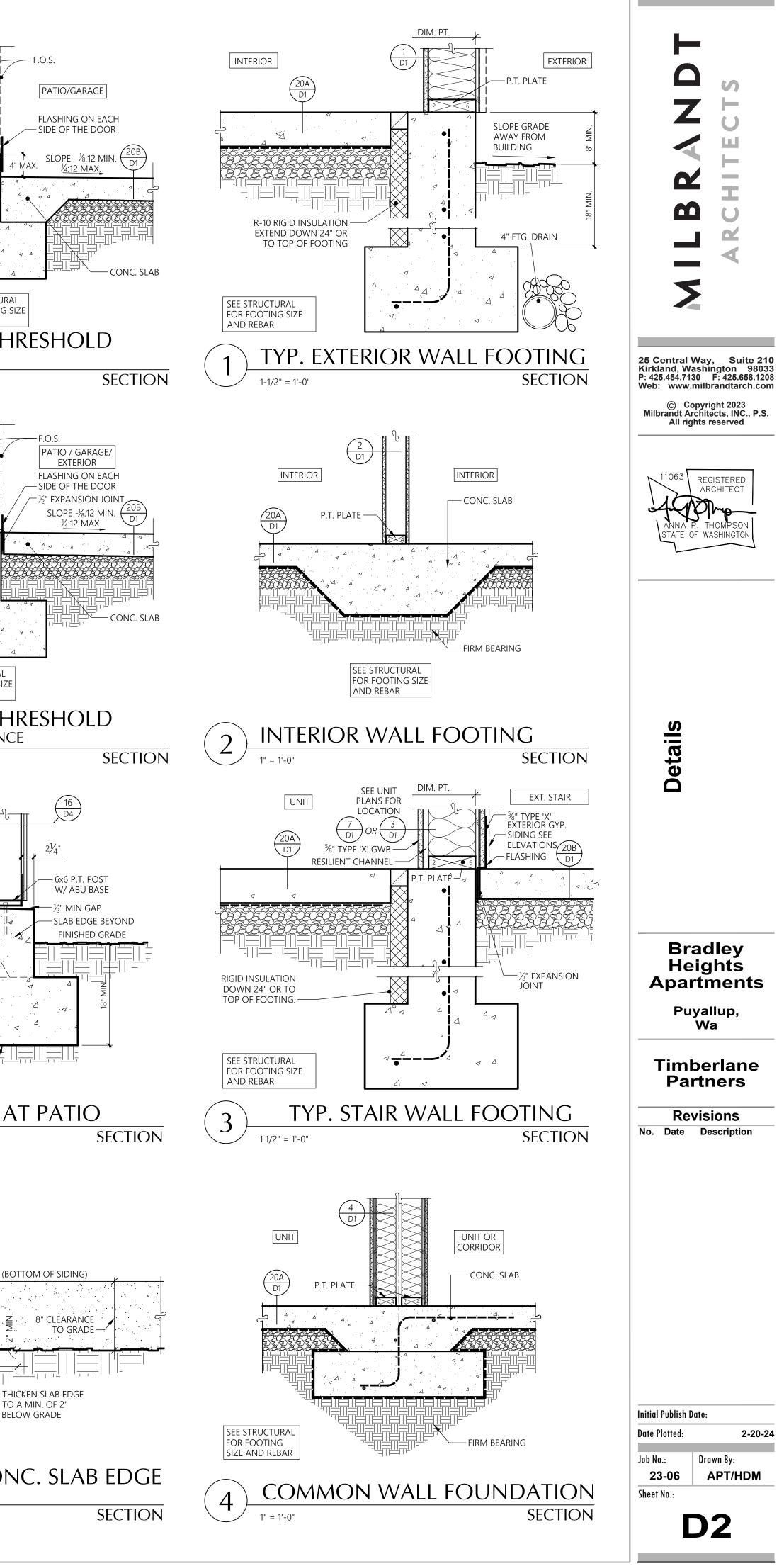


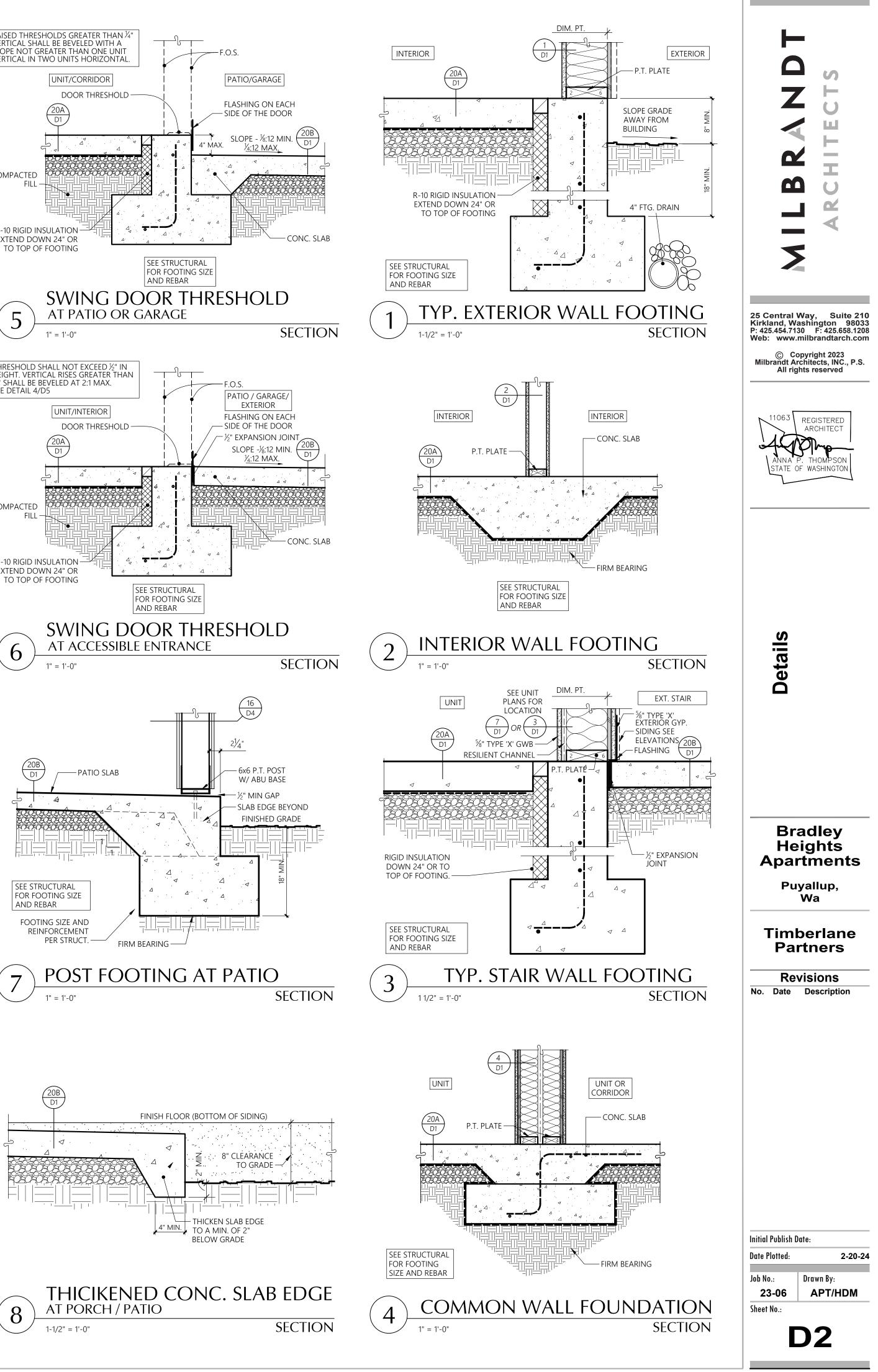


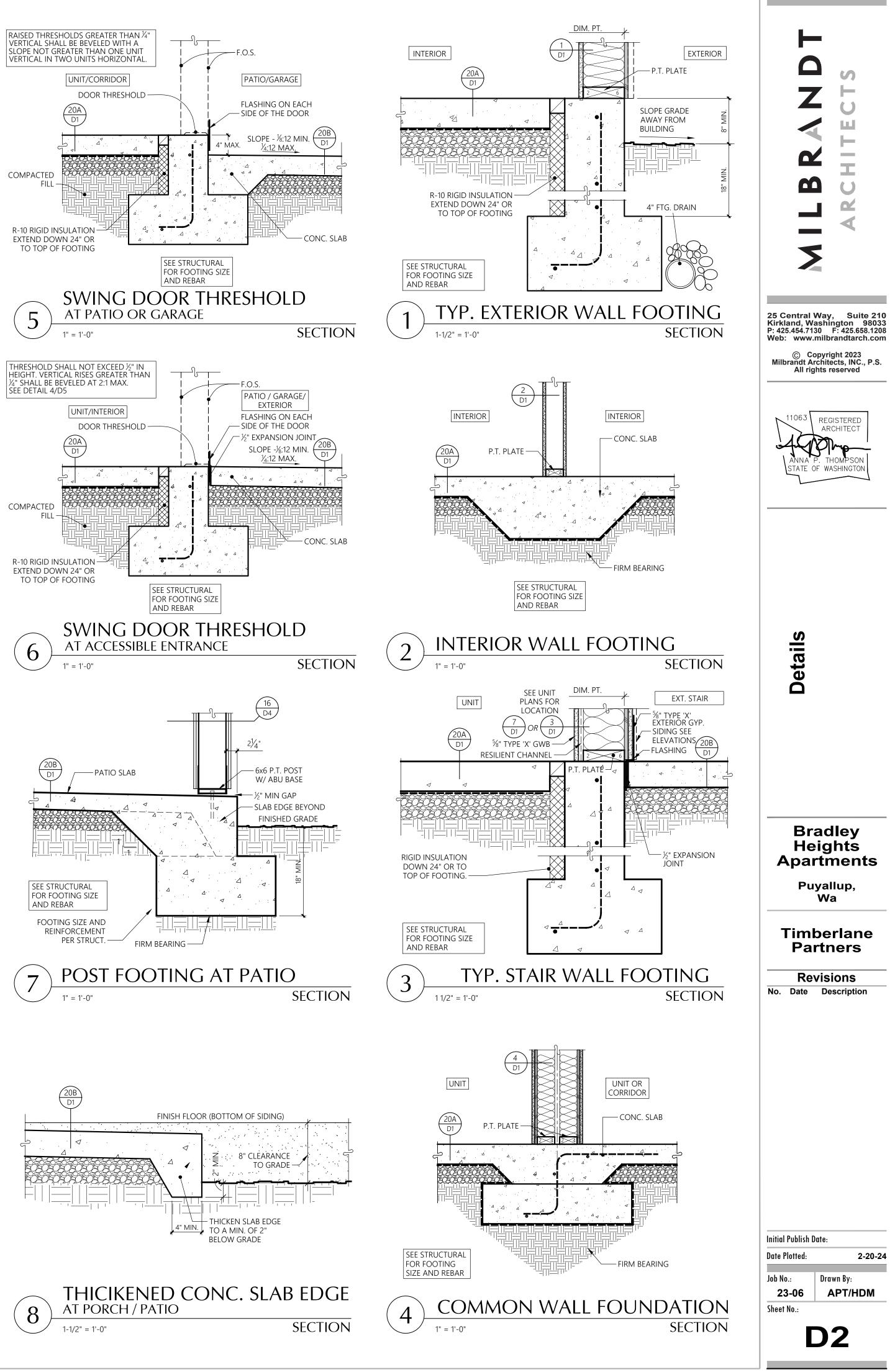


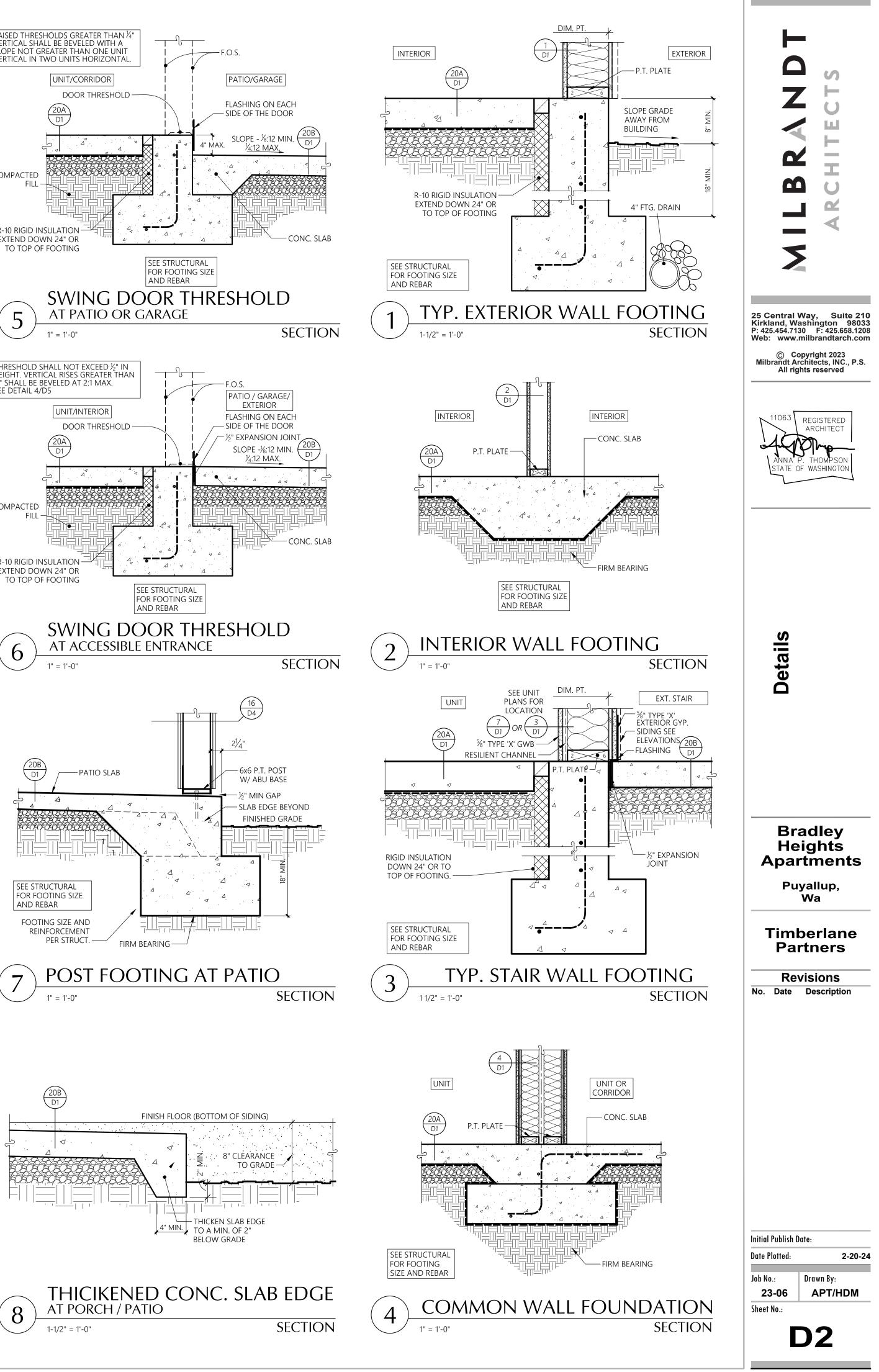


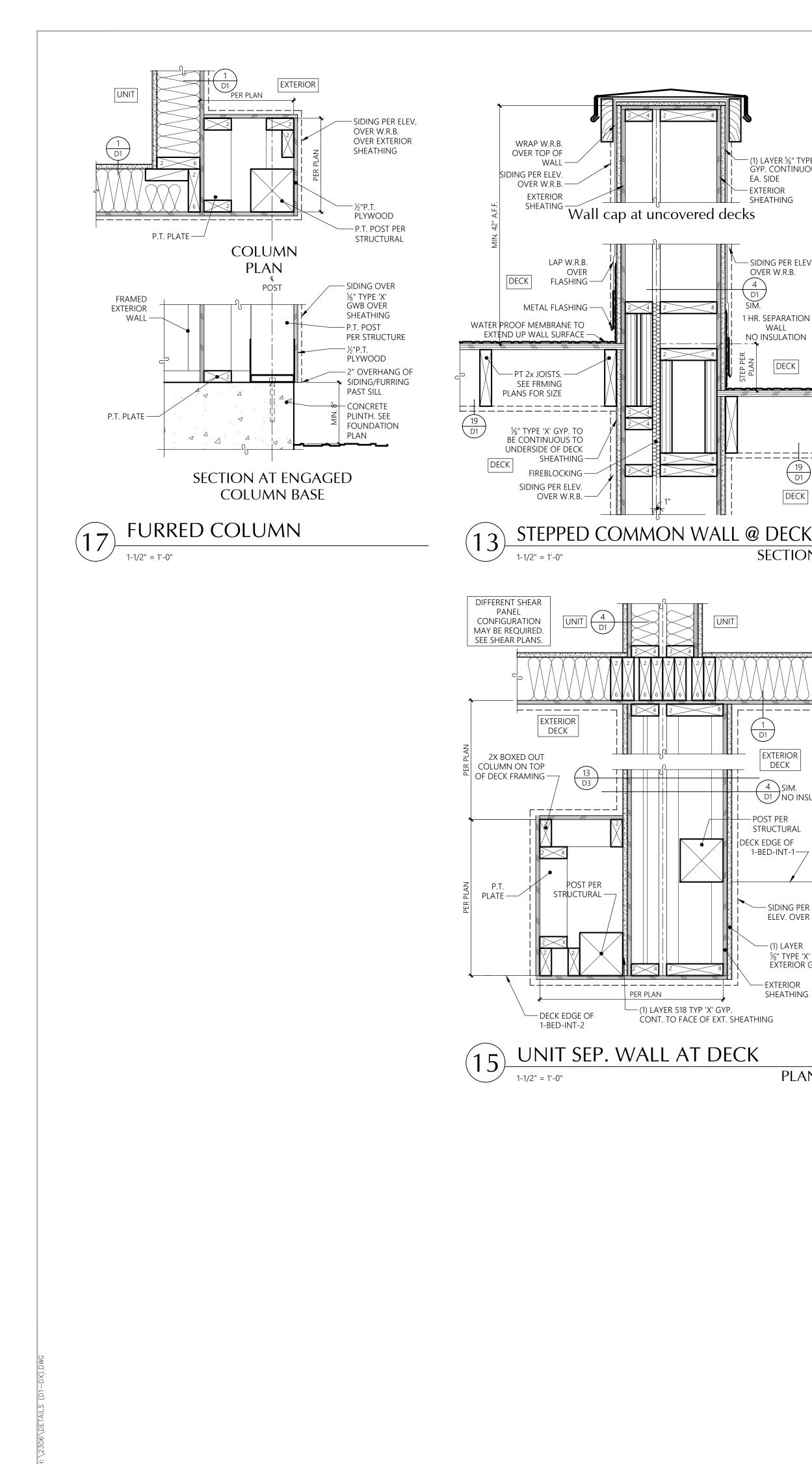


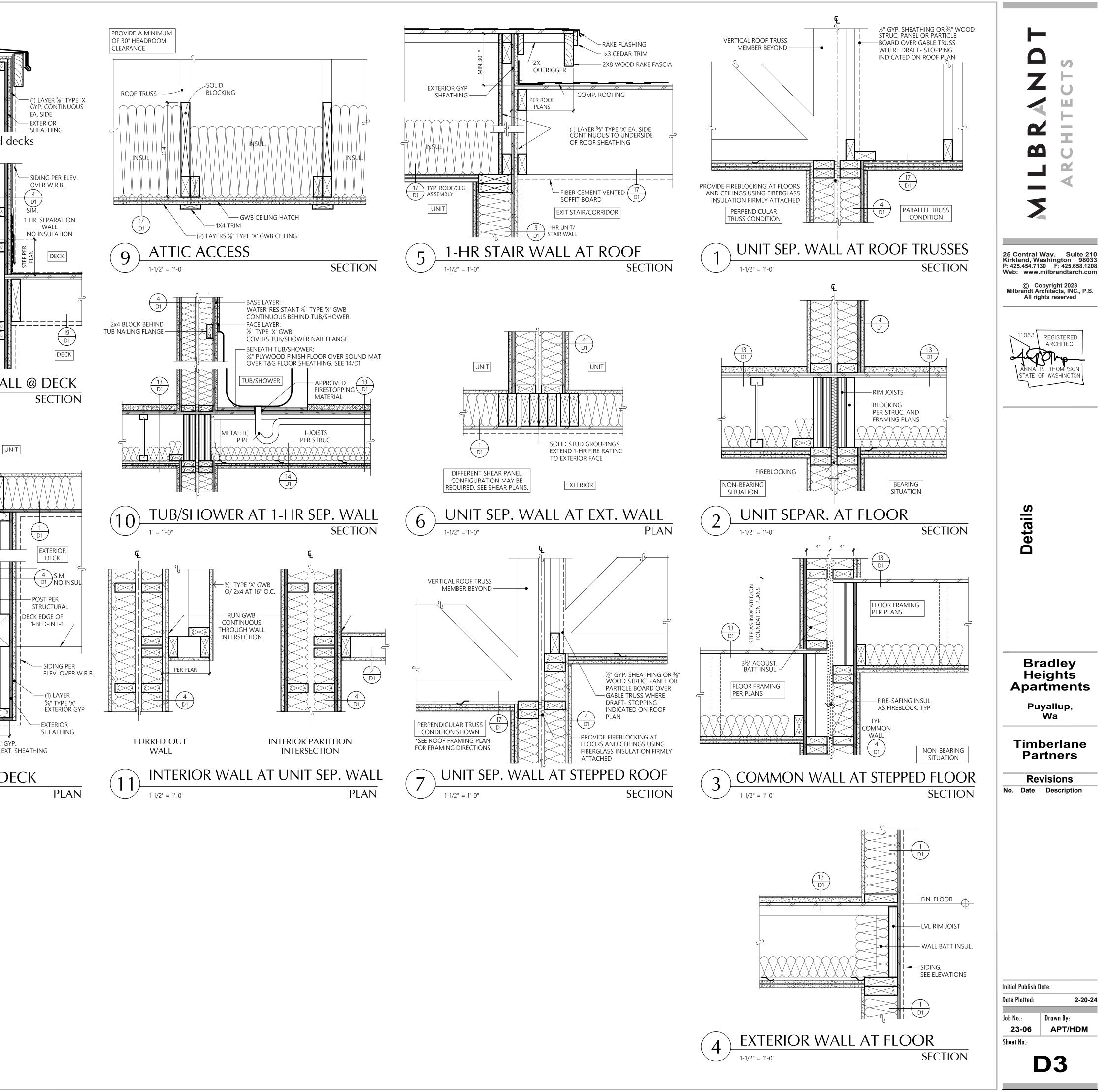


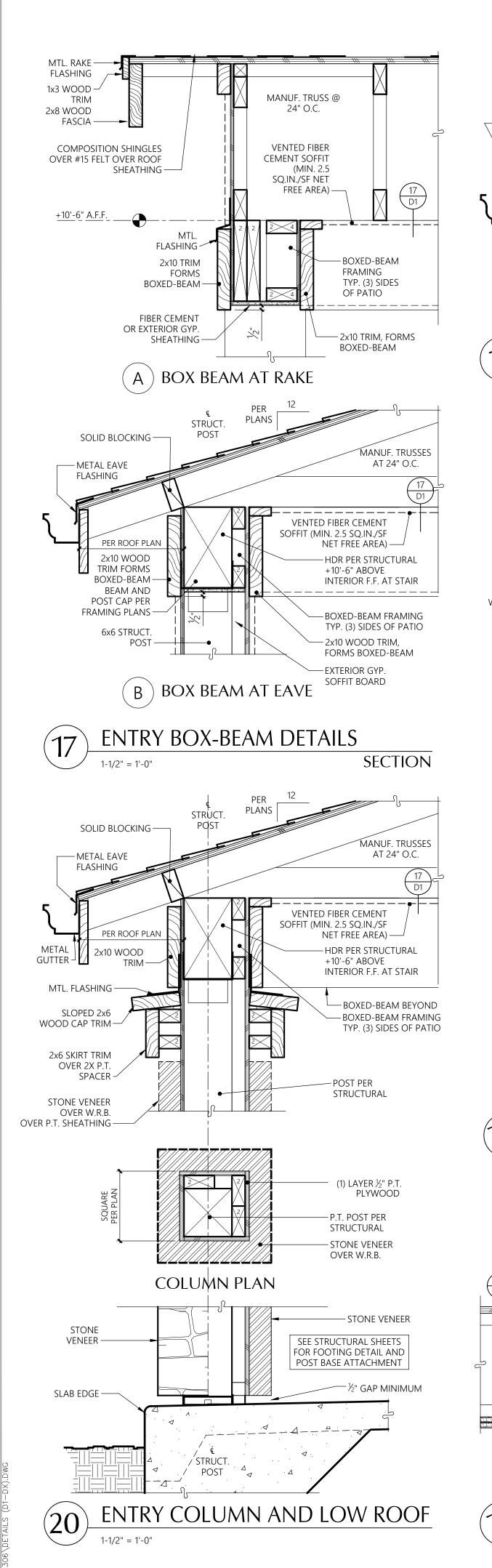


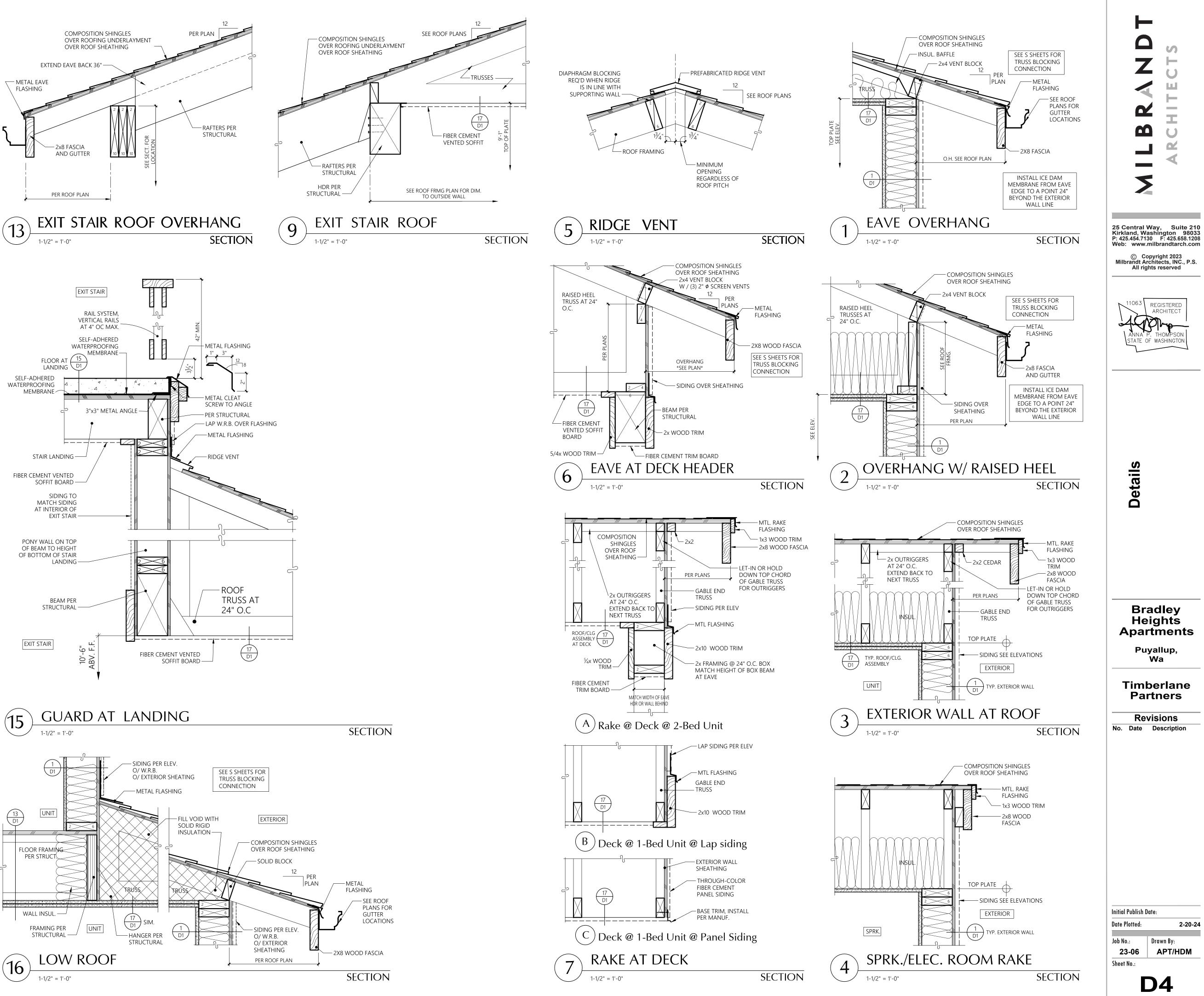


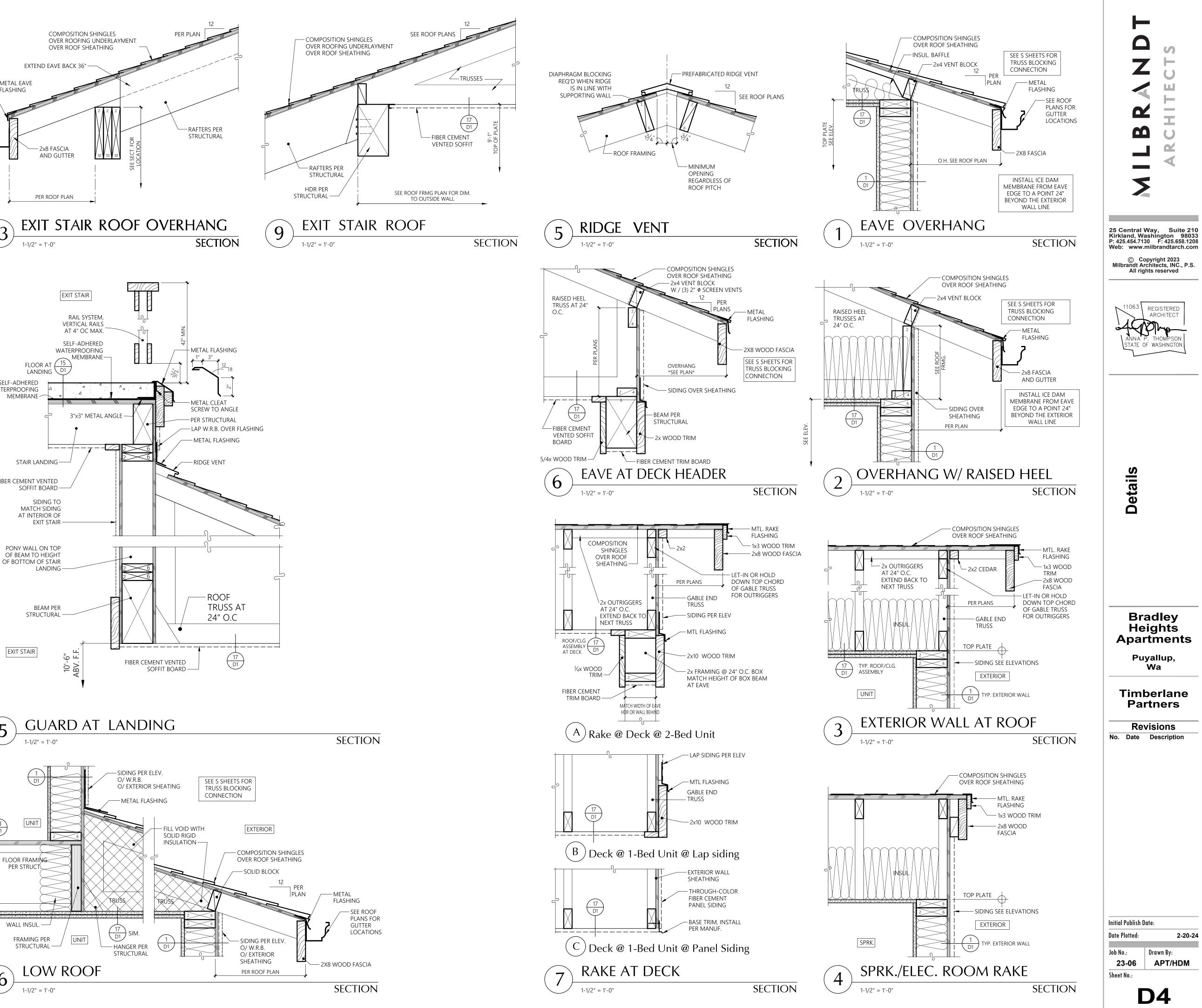


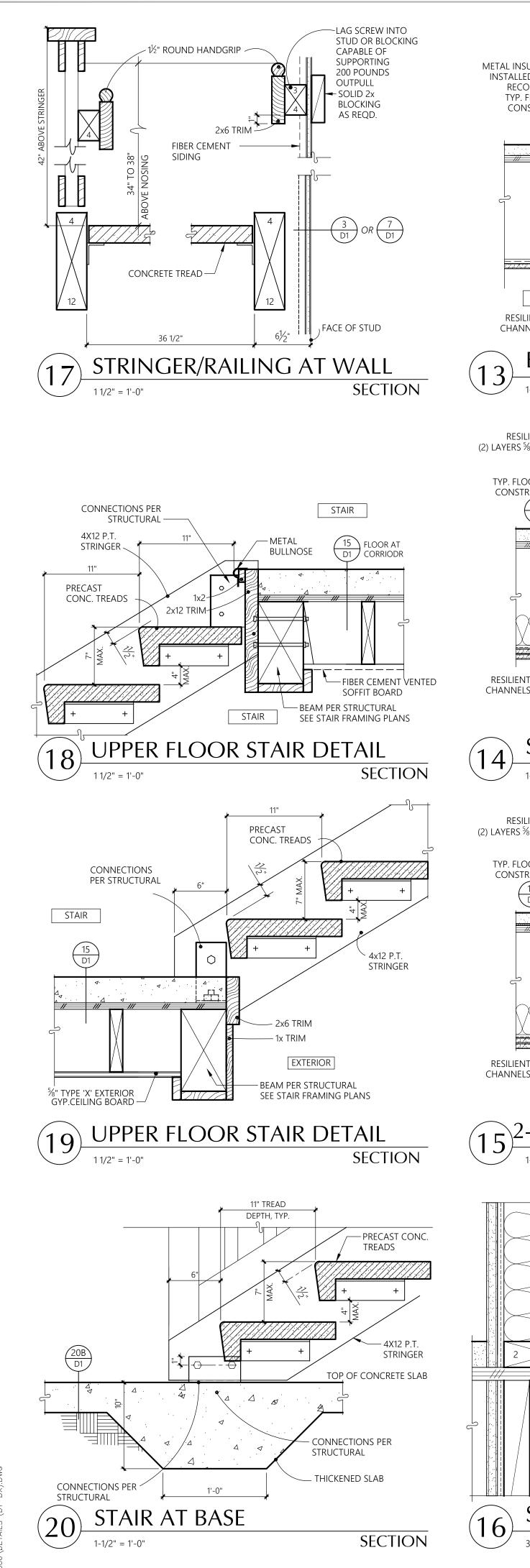


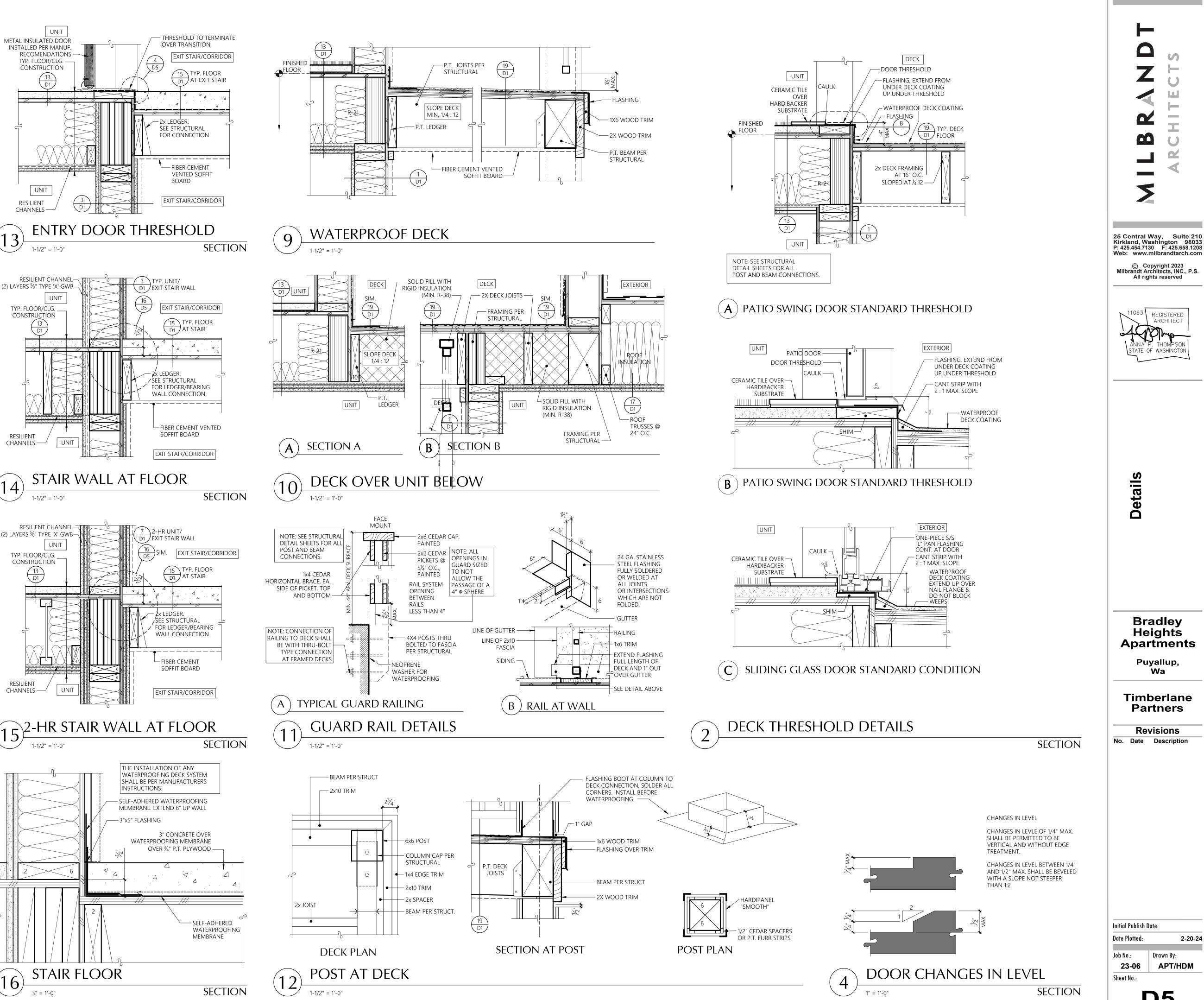


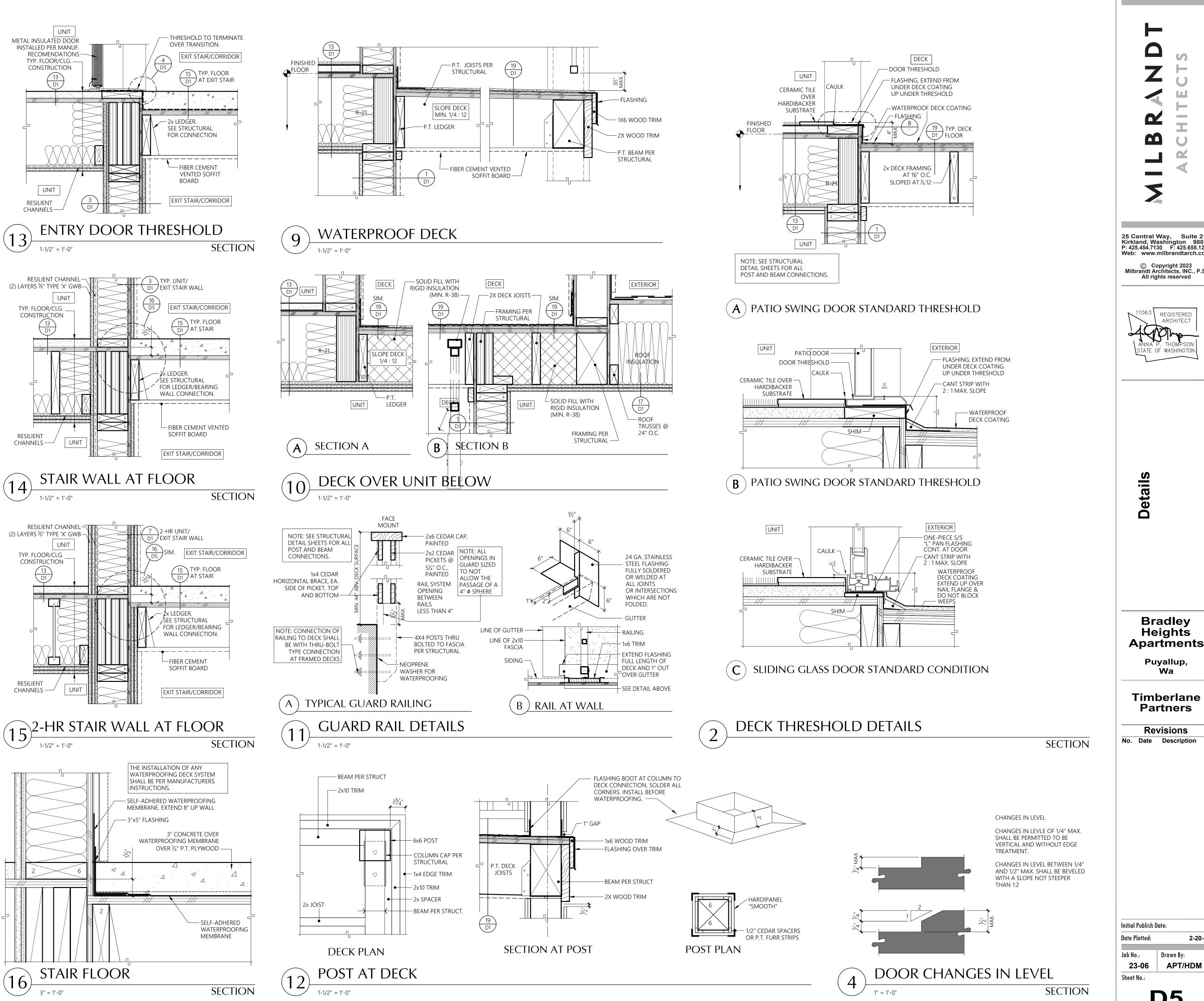




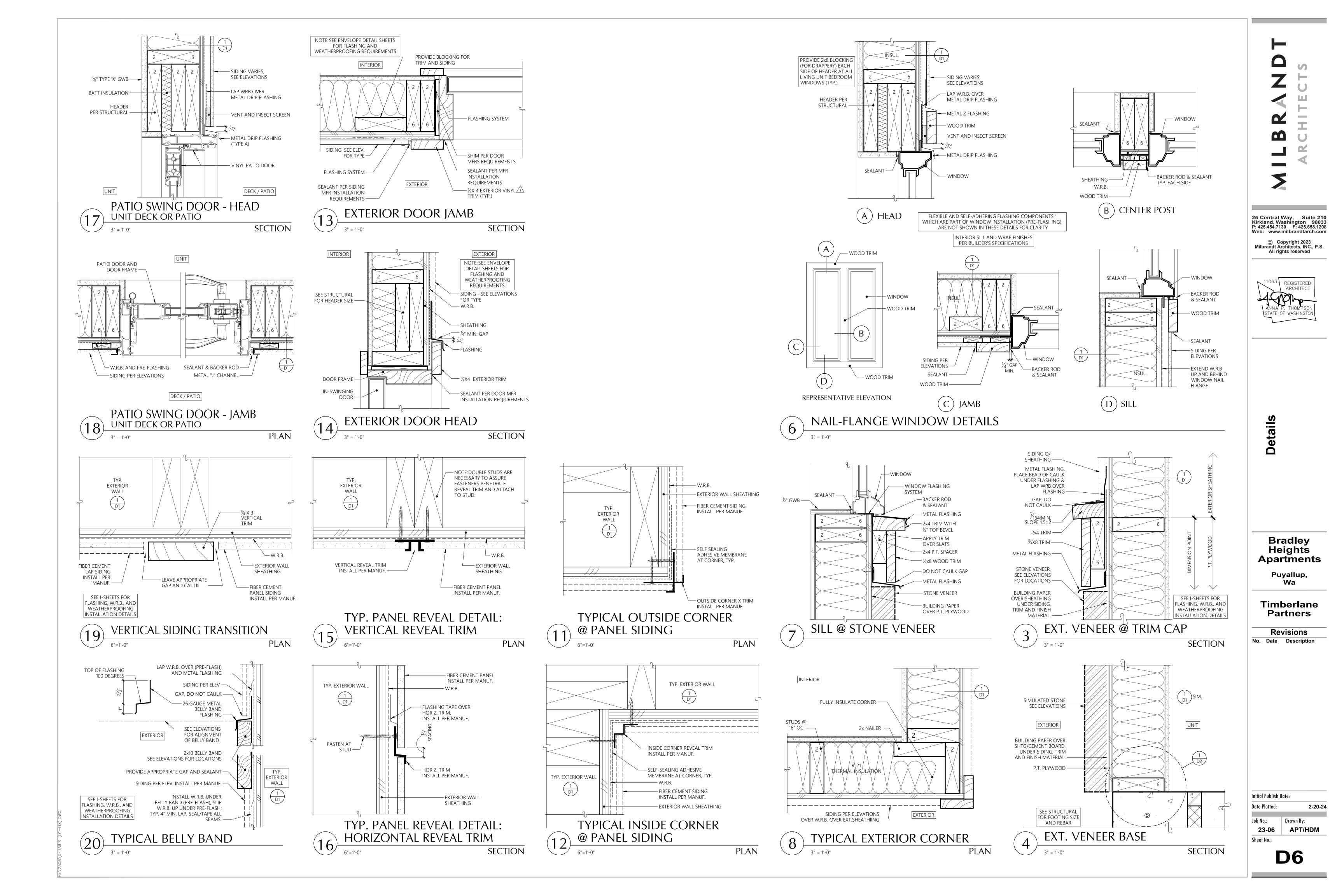


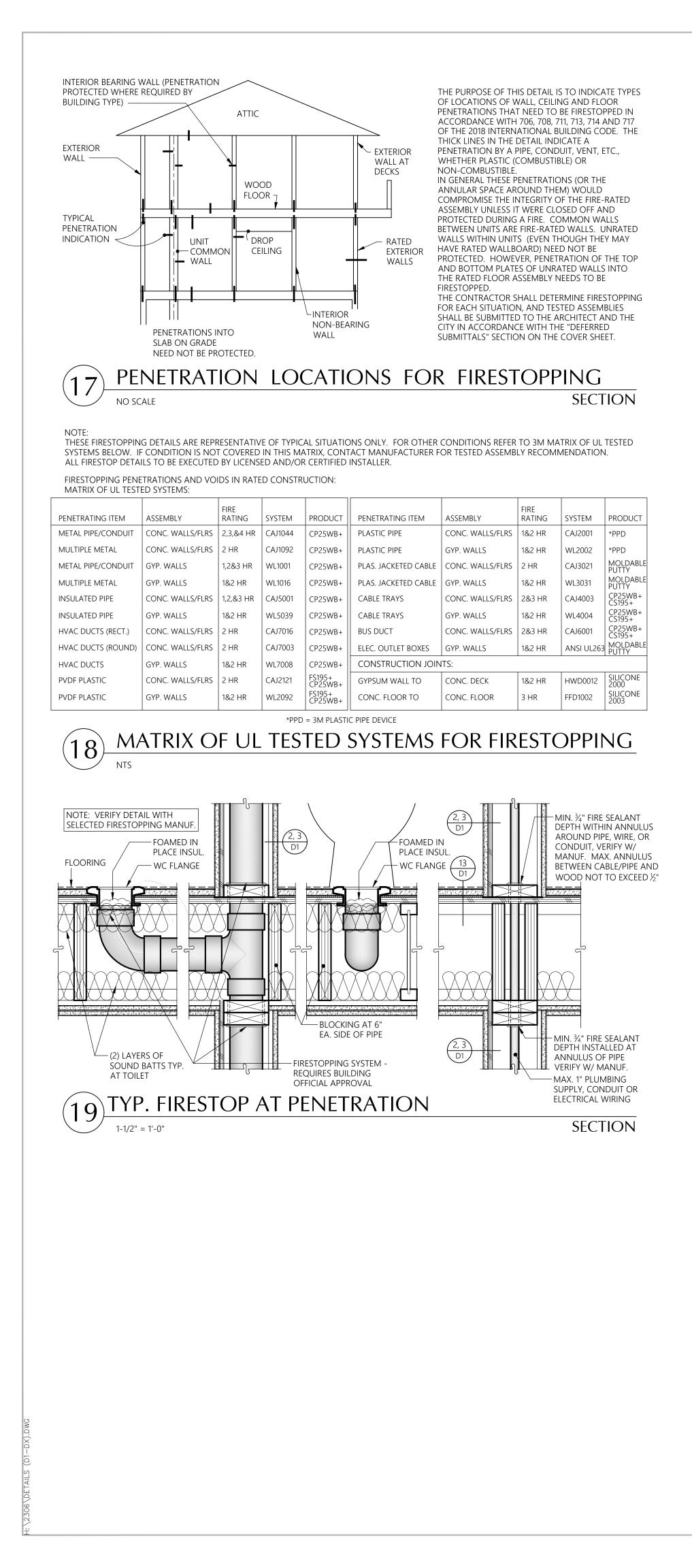


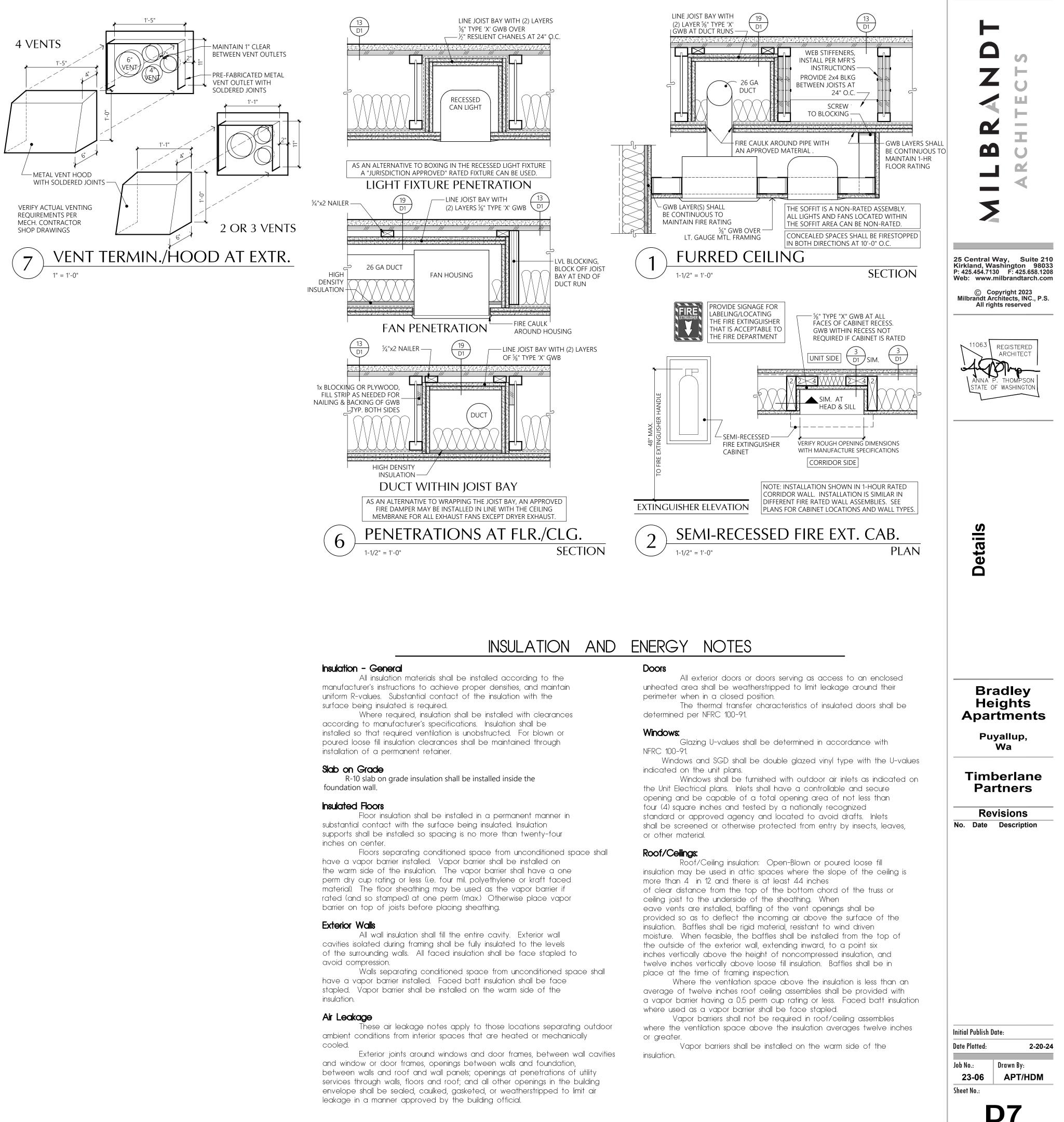




D5







GENERAL NOTES - MECHANICAL

- 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.
- 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.
- 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.
- MECHANICAL CONTRACTOR SHALL LOCATE AND COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT WITHIN THE STRUCTURE.
- 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.
- 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.
- 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.
- 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

- 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.
- 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.
- 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.
- 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.
- 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.

GENERAL NOTES

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.
- 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.
- CONDENSATE DRAIN: PROVIDE A P-TRAP FOR EACH HVAC 6. 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.
- EXTENT OF INTERNAL DUCT LINING: A. GRILLE AND DIFFUSER BOXES AND BOOTS.
- . TRANSFER DUCTS. C. THE FIRST 10 FEET OF SUPPLY AND RETURN DUCTWORK FROM THE AIR HANDLER.
- 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 I INFD.
- B. SUPPLY AIR ABOVE CEILINGS OR EXPOSED NOT SPECIFIED TO BE INTERNALLY LINED.
- C. OUTDOOR AIR INTAKE.
- MISCELLANEOUS DUCT FITTINGS (CONICAL TAKEOFFS, ETC.): WRAP WITH INSULATION FOR CONDENSATION CONTROL

<u>PLAN NOTES</u>

- 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

- REFERENCE: SMACNA HVAC DUCT CONSTRUCTION 1. STANDARDS, METAL AND FLEXIBLE, CURRENT EDITION.
- 2. CLEARANCE: COORDINATE DUCTWORK WITH MISCELLANEOUS OBSTRUCTIONS IN CEILING SPACE.
- 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.
- 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.
- RECTANGULAR DIVIDED FLOW FITTINGS: USE GENERALLY, 6. EXCEPT BRANCHES TO TERMINALS; SMACNA HVAC FIG 2-5, TYPES 1, 2, 4A, AND 4B. DO NOT USE TYPE 3.
- TURNING VANES: H.E.P. MANUFACTURER OR APPROVED 7. 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.
- FLEXIBLE CONNECTIONS: PROVIDE AT EACH DUCT 9. 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.

<u>HVAC NOTES</u>

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.

- 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.
- SEISMIC: PROVIDE SEISMIC RESTRAINTS FOR MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK PER SMACNA AND LOCAL REGULATIONS.
- FILTER CLEARANCE: PROVIDE ADEQUATE CLEARANCE FOR CHANGING AIR FILTERS
- DUCTWORK AND PIPING OUTSIDE OF MECHANICAL ROOMS SHALL BE CONCEALED, COORDINATE WITH THE GENERAL CONTRACTOR TO FUR-OUT AS REQUIRED.
- 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.
- 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.
- 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 THROUG 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: 4 HOURS

4 HOURS

4 HOURS

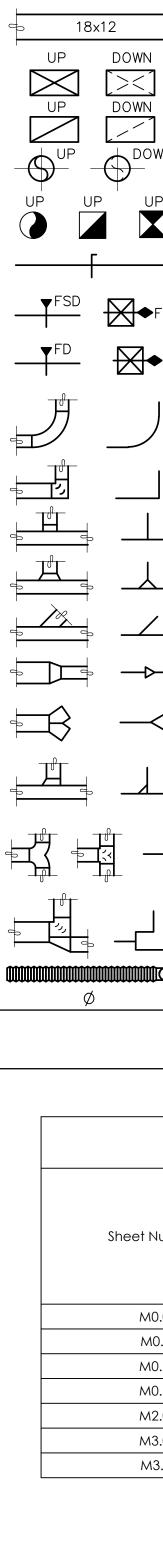
2 HOURS

ALL SESSIONS

MECHANICAL SHEET METAL
PLUMBING/PIPING
ELECTRICAL
SPRINKLER
GENERAL CONTRACTOR

A	NN	01	ΤΑΤ	10	NS

ACU	AIR CONDITIONING UNIT
AFF AHJ	ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION
AHU	
BDD	
BHP BTUH	
С	COMMON
CAP	
CC CD	
CFM	CUBIC FEET PER MINUTE
CLG	
CO COMB	CLEANOUT COMBUSTION
CONT	
CONTR	CONTRACTOR COEFFICIENT OF PERFORMANCE
COP CWS	
CWR	CHILLED WATER RETURN
D DB	
DEG	
DIM	
DISCH DN	DISCHARGE DOWN
EA	EXHAUST AIR
EAT	
EER EF	ENERGY EFFICIENCY RATIO EXHAUST FAN
EFF	EFFICIENCY
EG	,
ELEC	GENERATOR ELECTRIC
EQUIV	EQUIVALENT
ESP	EXTERNAL STATIC PRESSURE
	EXHAUST EXTERIOR, EXTERNAL
F	FAHRENHEIT
	FIRE DAMPER FAN COIL UNIT
FLR	
FPM	FEET PER MINUTE
FPS	
FSD G	GAS
GRD	GRILLES, REGISTERS, AND
CWP	DIFFUSERS GYPSUM WALLBOARD
HORIZ	HORIZONTAL HORSEPOWER, HEAT PUMP
HP	HORSEPOWER, HEAT PUMP
HRU HVAC	
IIVAC	CONDITIONING
HVU	
HWR	HIGH WALL RETURN, HOT WATER RETURN
HWS	
	SUPPLY
нх ID	HEAT EXCHANGER INDIRECT DRAIN, INSIDE DIAMETER
IN	INCH
KW	KILOWATT LONG, LENGTH
LB	
LWR	
LWS MBH	LOW WALL SUPPLY THOUSAND BTU PER HOUR
	MECHANICAL
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
OSA	OUTDOOR AIR
OBD OD	OPPOSED BLADE DAMPER OUTSIDE DIMENSION OR DIAMETER
OPNG	OPENING
P	PUMP
PD POC	PRESSURE DROP POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
RA REF	RETURN AIR REFERENCE
RF	RELIEF FAN
RG RPM	RETURN GRILLE REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCH	SCHEDULE
SF SENS	SUPPLY FAN, SQUARE FOOT SENSIBLE
SG	SUPPLY GRILLE
SMACNA	
	CONDITIONING CONTRACTORS
	ASSOCIATION
SO	SCREENED OPENING
SP SS	STATIC PRESSURE STAINLESS STEEL, SANITARY
	SEWER
SQ	SQUARE
TG TYP	TRANSFER GRILLE TYPICAL
UH	UNIT HEATER
UON V	UNLESS OTHERWISE NOTED VENT
V VENT	VENTILATION, VENTILATOR
VTR	VENT THRU ROOF
W WB	WASTE, WATT, WIDE WET BULB (TEMPERATURE)
۱	HEI DOLD (ILMIFLIKATURE)



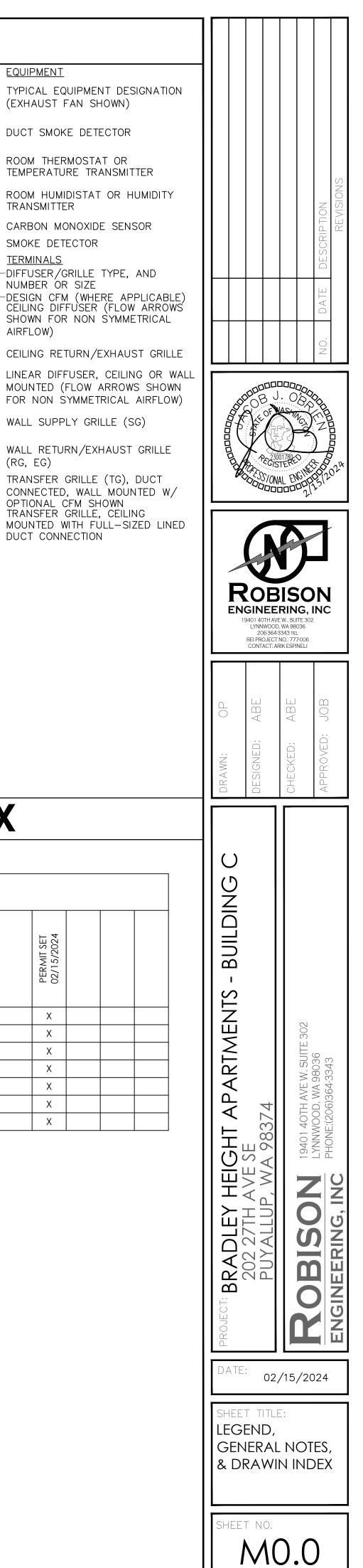
SYMBOLS

	DUCTWORK		EQUIPMENT
	DUCT (1ST FIGURE = SIDE SHOWN, 2ND FIGURE = SIDE NOT SHOWN)		TYPICAL EQUIPMENT DESIGNATION (EXHAUST FAN SHOWN)
	DUCT SECTION, POSITIVE PRESSURE		DUCT SMOKE DETECTOR
	DUCT SECTION, NEGATIVE PRESSURE		ROOM THERMOSTAT OR TEMPERATURE TRANSMITTER
WN	ROUND DUCT SECTION	(H)	ROOM HUMIDISTAT OR HUMIDITY TRANSMITTER
P	DUCT PENETRATION THRU FLOOR OR ROOF	© ®	CARBON MONOXIDE SENSOR SMOKE DETECTOR
	VOLUME DAMPER	<u>CD-12x12</u> OR <u>CD-1</u>	TERMINALS -DIFFUSER/GRILLE TYPE, AND
FSD	FIRE/SMOKE DAMPER $(4 =$ HORIZ DUCT, $ = $ VERT DUCT), 2-HR RATED, UON	400 VR 400 V	NUMBER OR SIZE -DESIGN CFM (WHERE APPLICABLE) CEILING DIFFUSER (FLOW ARROWS SHOWN FOR NON SYMMETRICAL
FD	FIRE DAMPER $(4 = HORIZ)$ DUCT, $ = VERT$ DUCT, 2-HR RATED, UON		AIRFLOW) CEILING RETURN/EXHAUST GRILLE
)	90° ELBOW, R/D OR R/W=1.5		LINEAR DIFFUSER, CEILING OR WALI MOUNTED (FLOW ARROWS SHOWN FOR NON SYMMETRICAL AIRFLOW)
	SQUARE CORNER ELBOW WITH TURNING VANES		WALL SUPPLY GRILLE (SG)
	90° TAKE-OFF OR TEE		WALL RETURN/EXHAUST GRILLE (RG, EG)
	90° CONICAL TAKE-OFF	$-\sqrt{2}$	TRANSFER GRILLE (TG), DUCT CONNECTED, WALL MOUNTED W/ OPTIONAL CFM SHOWN
/	45° LATERAL TAKE-OFF	$- \forall \rightarrow \boxed{ \begin{array}{c} & & \\ & $	TRANSFER GRILLE, CEILING MOUNTED WITH FULL-SIZED LINED DUCT CONNECTION
	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

DRAWING INDEX

	Sheet List Table						
Number	Sheet Title	PERMIT SET 02/15/2024					
10.0	LEGEND, GENERAL NOTES, & DRAWIN INDEX	Х					
10.1	PROJECT NOTES	Х					
10.2	TABLES & CALCULATIONS	Х					
10.3	MECAHNICAL SCHEDULES & WSEC FORMS	Х					
12.0	HVAC PLAN - FLOOR PLANS	Х					
13.0	HVAC ENLARGED PLANS	Х					
13.1	HVAC ENLARGED PLANS	Х					



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.

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

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 C403.10.1.2 ALL OTHER SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED C405 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES, AND WHERE CONFIGURATION AND FUNCTION OF CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-8 INSULATION IN CLIMATE ZONE 4 AND REQUIRED BY THIS CODE SHALL BE TESTED AND SHALL COMPLY WITH SECTION C408.4.1 R-12 INSULATION IN CLIMATE ZONE 5. WHERE LOCATED WITHIN A BUILDING ENVELOPE EXCEPTION: LIGHTING CONTROL SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS IN ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR BUILDINGS WHERE: UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM INSULATION VALUE AS REQUIRED FOR 1. THE TOTAL INSTALLED LIGHTING LOAD IS LESS THAN 20 KW, AND EXTERIOR WALLS BY SECTION C402.1.3. EXCEPTIONS:

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.

BTUH.

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:

- EXHAUST CAPACITY DOES NOT EXCEED 400 CFM.
- OCCUPANCY SCHEDULES.

2. SHUTOFF DAMPERS ARE NOT REQUIRED IN:

- 2.1. COMBUSTION AIR INTAKES.
- CONTINUOUSLY BY THE INTERNATIONAL MECHANICAL CODE.

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

ENERGY CODE NOTES

2. WHERE THROTTLING RESULTS IN NO GREATER THAN FIVE PERCENT OF THE NAMEPLATE HORSEPOWER DRAW ABOVE THAT REQUIRED IF THE IMPELLER WERE TRIMMED.

4. MODE OF OPERATION UPON LOSS OF POWER AND RESTORATION OF POWER.

2. TOTAL INSTALLED CAPACITY FOR REFRIGERATION IS EQUAL TO OR LESS THAN 240,000

WASHINGTON STATE CLOSE OUT DOCUMENTATION

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

1.3. SYSTEMS SERVING AREAS WHICH REQUIRE CONTINUOUS OPERATION FOR 24/7

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

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.

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 C409.1 ALL NEW BUILDINGS AND ADDITIONS SHALL HAVE THE CAPABILITY OF METERING SOURCE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO CLOSE WHEN THE SYSTEMS OR SPACES ENERGY FOR ON-SITE RENEWABLE ENERGY PRODUCTION IN ACCORDANCE WITH SECTION SERVED ARE NOT IN USE OR DURING UNOCCUPIED PERIOD WARM-UP AND SETBACK OPERATION. C409.2.4 AND THE END-USE ENERGY USAGE FOR ELECTRIC VEHICLE CHARGING IN ACCORDANCE UNLESS THE SYSTEMS SERVED REQUIRE OUTDOOR OR EXHAUST AIR IN ACCORDANCE WITH THE WITH SECTION C409.3.4. NEW BUILDINGS AND ADDITIONS WITH A GROSS CONDITIONED FLOOR INTERNATIONAL MECHANICAL CODE OR THE DAMPERS ARE OPENED TO PROVIDE INTENTIONAL AREA OVER 50,000 SQUARE FEET SHALL COMPLY SECTION C409. BUILDINGS SHALL BE ECONOMIZER COOLING. STAIRWAY AND ELEVATOR HOISTWAY SHAFT VENT DAMPERS SHALL BE EQUIPPED TO MEASURE, MONITOR, RECORD AND DISPLAY ENERGY CONSUMPTION DATA FOR INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO OPEN UPON THE ACTIVATION OF ANY EACH ENERGY SOURCE AND END USE CATEGORY PER THE PROVISIONS OF THIS SECTION, TO ENABLE EFFECTIVE ENERGY MANAGEMENT. EXCEPTIONS: FIRE ALARM INITIATING DEVICE OF THE BUILDING'S FIRE ALARM SYSTEM OF THE INTERRUPTION 1. TENANT SPACES SMALLER THAN 50,000 SQUARE FEET WITHIN BUILDINGS IF TENANT SPACE 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.
- 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.

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 S	SCHEDULE	
	SERVICE (1)(3)(4)(5)	MATERIAL (6)	R-VALUE (MIN. INSTALLED)
	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
WSEC		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
	OUTSIDE AIR DUCT IN CONDITION SPACE	MINERAL—WOOL BLANKET	4.0
WSMC	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

(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

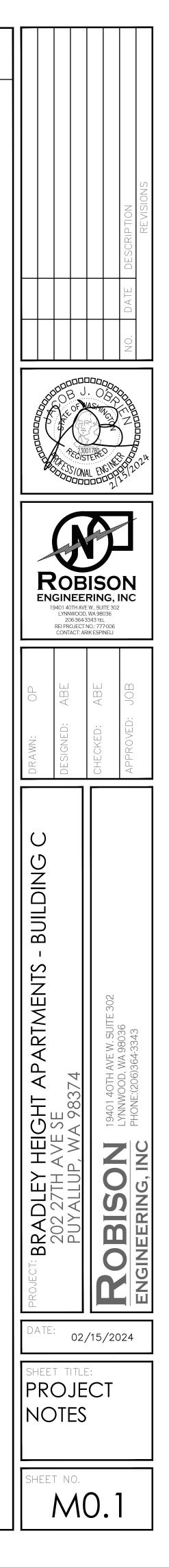
(4) EXTERAL DUCT INSULATION IS IDENTIFIABLE PER WSMC 604.7

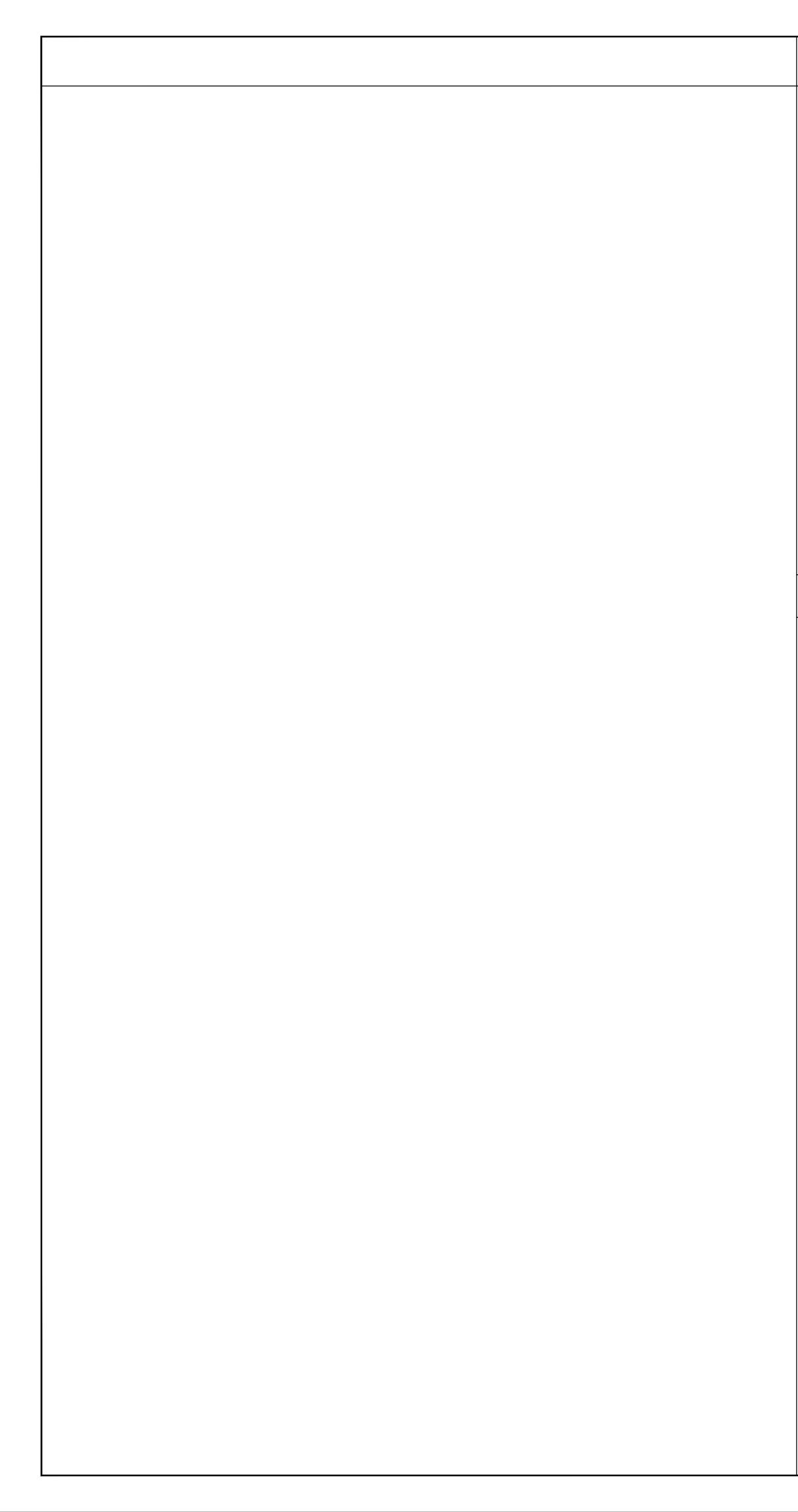
(5) ALL DUCTWORK IS CONSTRUCTED AND SEALED PER WSMC

NOTES

(6) INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND MAXIMUM SMOKE DEVELOPED INDEX OF 50 PER WSMC 604.3

TABL	TABLE C403.10.3: MINIMUM PIPE								
INSULATION THICKNESS									
FLUID OPERATING TEMPERATURE	INSULATION C	ONDUCTIVITY	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		





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:

- 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
- 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.

FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATIONS

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 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

UNIT TYPE UNIT SQUARE FOOTAGE NUMBER OF BEDROOMS FLOOR AREA, SQFT NUMBER OF BEDROOMS 1 BEDROOM 660 1 500 - 1,000 1 2 BEDROOM 1000 2 500 - 1,000 2 TE: (1) VENTILATION CRITERIA IS PER THE 2018 WA RESIDENTIAL CODE SECTION MI505.4.3 (2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S). (3) ADJUSTMENT COEFFICIENT IS PER 2018 WRC, TABLE MI505.4.3(2) FOR A NOT BALANCED, AND NOT DISTRIBUTE				DENTIAL VENTILA 2018 I	IMC CRITERIA (1)
2 BEDROOM10002500 - 1,0002TE:(1) VENTILATION CRITERIA IS PER THE 2018 WA RESIDENTIAL CODE SECTION M1505.4.3 (2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S).2	UNIT TYPE	UNIT SQUARE FOOTAGE	NUMBER OF BEDROOMS	FLOOR AREA, SQFT	
TE: (1) VENTILATION CRITERIA IS PER THE 2018 WA RESIDENTIAL CODE SECTION M1505.4.3 (2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S).	1 BEDROOM	660	1	500 - 1,000	1
(2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S).	2 BEDROOM	1000	2	500 - 1,000	2

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 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."

_	JLATIONS							
		VENTILATION QUALITY	MINIMUM WHOLE HOUSE	TOTAL CFM PROVIDED				
	REQUIRED CFM (2)	ADJUSTMENT COEFFICIENT (3)	VENTILATION RATE, CFM	BY WHOLE HOUSE FAN SYSTEM				
	30	1.5	45	55				
	35	1.5	53	55				

HOLE HOUSE VENTILATION SYSTEM.

			NO. DATE DESCRIPTION REVISIONS
19	GINEE	3343 tel NO.: 777-006	INC
DRAWN:	DESIGNED:	CHECKED:	APPROVED:
PROJECT: BRADLEY HEIGHT APARTMENTS - BUILDING C	zuz z/im ave se Puyallup, wa 98374	DDDDD1001 40TH AVE W. SUITE 302	ENGINEERING, INC PHONE:(206)364-3343
DATE:	02,	/15/20)24
TABL	es &		IS
SHEET	r no.		

WSEC FORMS

MECHANIC												
MECHANIC	LALCON	VIPLIA	NCE SUI	VIVIAR	(Y							
2018 WSEC Complia	ance Forms for	Commercial	Buildings inclu	iding Group	9 R2,	, R3 & R4 over 3 sto	ories and	all R1				
							artments Building C - 2018 WSEC			For		
Project & Applicant Information		Project Addres		ess				2 27th Ave allup, WA 9				
			Applicant Na	ame				Arik Espine				
			Applicant Ph	ione			2	206-364-334	43			
			Applicant Er				<u> </u>		ineering.con			
		For	questions abo	ut this repo	rt, co	ontact WSEC Comm	nercial Te	chnical Sur	oport at 360-	-539-530) or vi	a email at c
General Occupancy			All Group I	R - R2, R3 (& R4	4 over 3 stories and	all R1	General B	uilding Use	e Type		Multifar
General Project Type	es		New Bui	ilding	or A	y Building Addition Chanical Scope		Single Zo	one Systems	s & Equip	ment	Alteratio Mechani
Mechanical Project I	Description							Fu	Ill mechanic	al design	for ne	w 3 story r
			-		-							·
	echanical Com Scope and Me			Project Ty	уре	Mechanical	Scope		Economizer Exception(s) Applied?		DC	AS Ventil Provided
Scope and Method			New Building	~	Single Zone Sy			No			Yes	
Additional Efficiency				Building Equipment								
			i		g	Equipme						
Credits Included (AI	EC)				<u>g</u>	Equipme			i			
	EC)	assifications	requiring		g	No		Does	project incl	lude DO	AS equ	ipment?
Credits Included (AF Does building includ	EC) e occupancy cl					A			l systems co			-
Credits Included (AF Does building includ DOAS? Based on project scop	EC) e occupancy cl pe do TSPR re		apply?			No		Do al TSPR	l systems co R?	omply wi		-
Credits Included (AE Does building includ DOAS?	EC) e occupancy cl pe do TSPR re		apply?			No		Do al TSPR	l systems co R?	omply wi		-
Credits Included (AF Does building includ DOAS? Based on project scop	EC) e occupancy cl pe do TSPR re onditioning	equirements :	apply?	LDING -		No		Do al TSPR	l systems co R?	omply wi		-
Credits Included (AF Does building includ DOAS? Based on project scop Scope & Space Co Single Zone Air Syste	EC) e occupancy cl pe do TSPR re onditioning ems Category	quirements : - Unit heater	apply?	LDING -		No		Do al TSPR	l systems co R?	omply wi		-
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space C Single Zone Air System	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information	quirements - - Unit heater	apply? NEW BUI rs & duct heat	LDING - ers		No No	YSTEN	Do al TSPR	l systems co R?	omply wi	th Apj	oendix D s
Credits Included (AF Does building includ DOAS? Based on project scop Scope & Space Co	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information	quirements - - Unit heater	apply?	LDING - ers		No	YSTEN	Do al TSPR	l systems co R?	omply wi	th App	pendix D s
Credits Included (AF Does building includ DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summan	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Informatior ip ID EWH-1	quirements - - Unit heater	apply? NEW BUI rs & duct heat antity of Items 72	LDING - ers		No No NGLE ZONE S' Ventilatio IMC V	YSTEM on Standa	Do al TSPR	l systems co R?	omply wi	th App	-
Credits Included (AF Does building includ DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summan	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Informatior ip ID	quirements - - Unit heater	apply? NEW BUI rs & duct heat antity of Items	LDING - ers		No No NGLE ZONE S' Ventilatio IMC V	YSTEM	Do al TSPR	l systems co R?	omply wi	th App	pendix D s
Credits Included (AF Does building includ DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summan	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2	- Unit heater 1 Qu:	apply? NEW BUI rs & duct heat antity of Items 72	LDING - ers		No No NGLE ZONE S' Ventilatio IMC V	YSTEM on Standa	Do al TSPR	l systems co R?	omply wi	th App	pendix D s
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space Co Single Zone Air Syste Air Systems Summan System/Equip System /Equip ID	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin	- Unit heater - Unit heater g System/Equ	apply? NEW BUI rs & duct heat antity of Items 72 12	LDING - ers	SIN	No No NGLE ZONE S' Ventilatio IMC V IMC V cific Type	YSTEN on Standa	Do al TSPR	UIPMEN	(Tot	th App	tion CFM ultiple Ite
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space Co Single Zone Air Syste Air Systems Summan System/Equip Air Systems & Equip System /Equip ID EWH-1	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin	quirements : - Unit heater : Qu: g System/Equ Unit heater	apply? NEW BUI rs & duct heat antity of Items 72 12	LDING - ers	SIN	No No No No No NGLE ZONE S' Ventilatio IMC V IMC V cific Type ic resistance	YSTEN on Standa	ard 11 ating Capa	UIPMEN	(Tot	th App	tion CFM ultiple Ite
Credits Included (AE Does building include DOAS? Based on project scop Scope & Space Co Single Zone Air Syste Air Systems Summan System/Equip System /Equip ID	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin	- Unit heater - Unit heater g System/Equ	apply? NEW BUI rs & duct heat antity of Items 72 12	LDING - ers	SIN	No No NGLE ZONE S' Ventilatio IMC V IMC V cific Type	YSTEN on Standa	Do al TSPR	UIPMEN	(Tot	th App	tion CFM ultiple Ite
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summat System/Equip Air Systems & Equip System /Equip ID EWH-1 EWH-2	EC) e occupancy el pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin Heating	quirements : - Unit heater : Qu: g System/Equ Unit heater	apply? NEW BUI rs & duct heat antity of Items 72 12	LDING - ers	SIN	No No No No No NGLE ZONE S' Ventilatio IMC V IMC V cific Type ic resistance	YSTEN on Standa	ard 11 ating Capa	UIPMEN	(Tot	th App	tion CFM ultiple Ite
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summat System/Equip Air Systems & Equip System /Equip ID EWH-1 EWH-2	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin Heating	quirements : - Unit heater : Qu: g System/Equ Unit heater	apply? NEW BUI rs & duct heat antity of Items 72 12 ip Type	LDING - ers	SIN Spee	No No No No No NGLE ZONE S' Ventilatio IMC V IMC V cific Type ic resistance	YSTEN on Standa	ard 11 ating Capa	UIPMEN	(Tot	Ventilaal if M	tion CFM ultiple Ite
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summan System/Equi Air Systems & Equip System /Equip ID EWH-1 EWH-1 EWH-2 Air Systems & Equip	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin Heating	quirements : - Unit heater : Qu: g System/Equ Unit heater	apply? NEW BUI rs & duct heat antity of Items 72 12 ip Type Ar	LDING - ers s E E E	SIN Spec	No No No No NGLE ZONE S Ventilatio IMC V imc V cific Type ic resistance ic resistance	YSTEN on Standa	ard 11 ating Capa	UIPMEN	(Tot	Ventilaal if M	tion CFM fultiple Ite
Credits Included (AF Does building include DOAS? Based on project scop Scope & Space C Single Zone Air Syste Air Systems Summan System/Equi Air Systems & Equip System /Equip ID EWH-1 EWH-2 Air Systems & Equip	EC) e occupancy cl pe do TSPR re onditioning ems Category ry Information ip ID EWH-1 EWH-2 oment - Heatin Heating oment Details ip ID	quirements : - Unit heater Qu: g System/Equ Unit heater Unit heater	apply? NEW BUI rs & duct heat antity of Items 72 12 ip Type Ar APAR ip ID for a sing	LDING - ers s E E E E E E E E C E C E C E C C C C	SIN Spee llectri ed NITS ple it	No No No No NGLE ZONE S Ventilatio IMC V IMC V icific Type ic resistance ic resistance S ems?: Multiple item	YSTEN on Standa fentilation Her	ard 1 2	city	(Tot HC Units Btu/h Btu/h	Ventilaal if M	pendix D s

https://waenergycodes.com/print_project_summary_form.php?k=aWQ9MTkxMjYmZnZpPTE3JmN0aT00Ng==&print=1

MECHANICAL SCHEDULES

ELECTRIC HEATERS

EQUIP NO.	SERVICE	MOUNTING/ DISCHARGE	HEATING	ELECTRICAL	BASIS OF DESIGN (3)		
EQUIF NO.	SERVICE	MOUNTING/ DISCHARGE	KW	VOLTAGE	DASIS OF DESIGN (3)		
EWH-1	APARTMENT UNIT	WALL	1.0	208V/1P	(1)(2)		
EWH-2	APARTMENT UNIT	WALL	1.5	208V/1P	(1)(2)		
NOTES: (1) BROAN, KING, CADET OR EQUIVALENT.							
	(2) PROVIDE REMOTE THERMOSTAT. COOF	DINATE FINAL LOCATION WITH ELECTRICAL	DRAWINGS.				

(3) ALL ELECTRIC HEATERS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.

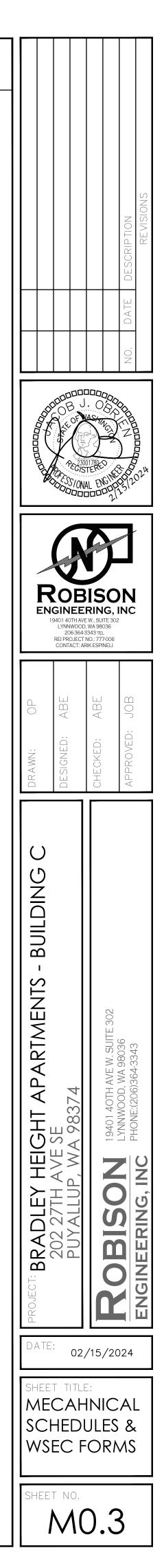
FAN SCHEDULE										
EQUIP NO.	SERVICE		TYPE	AIRFLOW,	ESP. IN WG	ELECTRICAL		OPERATION	WEIGHT, LBS	BASIS OF DESIGN
		CFM	CFM	CFM	VOLTAGE	HP	OFERATION	(1)(2)(3)		
BEF-1		RESTROOM	CEILING MOUNTED	55/80	0.5	115V/1P	FHP	CONTINUOUS	10	GREENHECK SP-AP0511W (4)
BEF-2		RESTROOM	CEILING MOUNTED	50	0.5	115V/1P	FHP	(2)	10	GREENHECK SP-AP0511W
iotes:	(1) (2) (3)	1.0 sones maximu	.FT DAMPERS ON EXHA M. DN: FANS < 125 LBS RU		s, fans > 125 lbs	S SPRING ISOLAT	ORS			

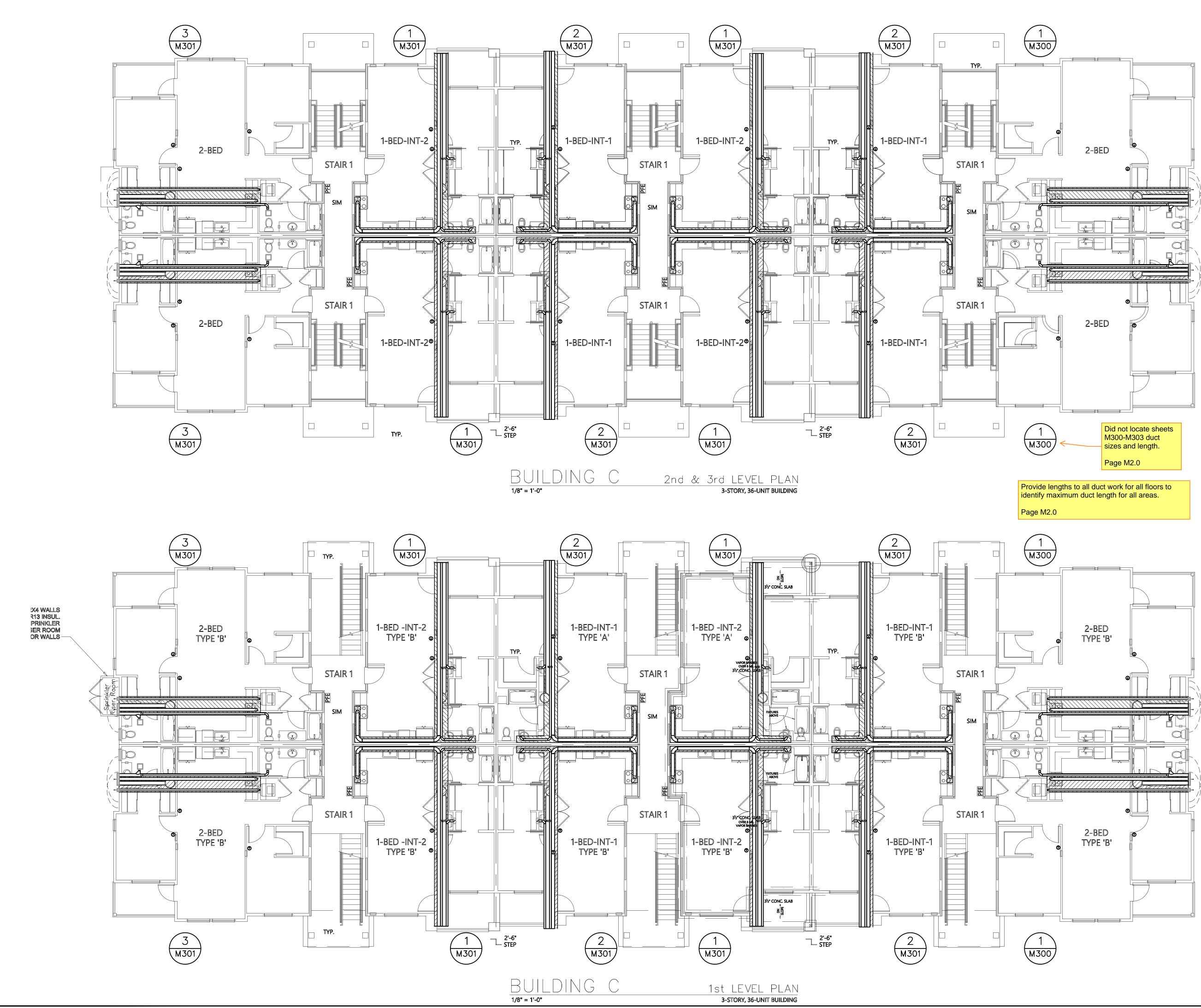
YmZnZpPT	E3JmN0aT00Ng≕	=&print=1				
	A	dministered	d by: ©2023 N	EEA, All rights reserved		
r Building De	epartment Use:		Date	Jun 16, 2023		
com.techsup	port@waenergycodes.	.com				
	tial Daviding Cand	Eleen Area	-	20.974		
amily/Resider	tial Building Cond.		a	<u>29,874</u> 29,874		
ion	Floors Above C			3		
ical Scope	Compliance M	ethod	Complia	nce Method 1 - General		
residential bu	ilding					
ilation d?	Higher Efficiency (Equipment Option App		Equipment Efficiency Compliance Verification		
		NA		COMPLIES		
	-					
	ŀ		·	Yes		
standard ref	erence design or qua	lify for an o	exception to	No		
	Cor	npliance	Verification	COMPLIES		
(I ems)	Ventilati Air Sou		Pair	red with DOAS		
	Other Sys	stem				
	Other Sys	tem				
osed Heating	z Efficiencv	HE	Efficie	ency Compliance		
	, <i>y</i>	Units		Verification COMPLIES		
				COMPLIES		
In Duciest D	aumonte Dian/D-4	31 #				
	ocuments - Plan/Deta 10.3	411 #				
14						
Ν	10.3					

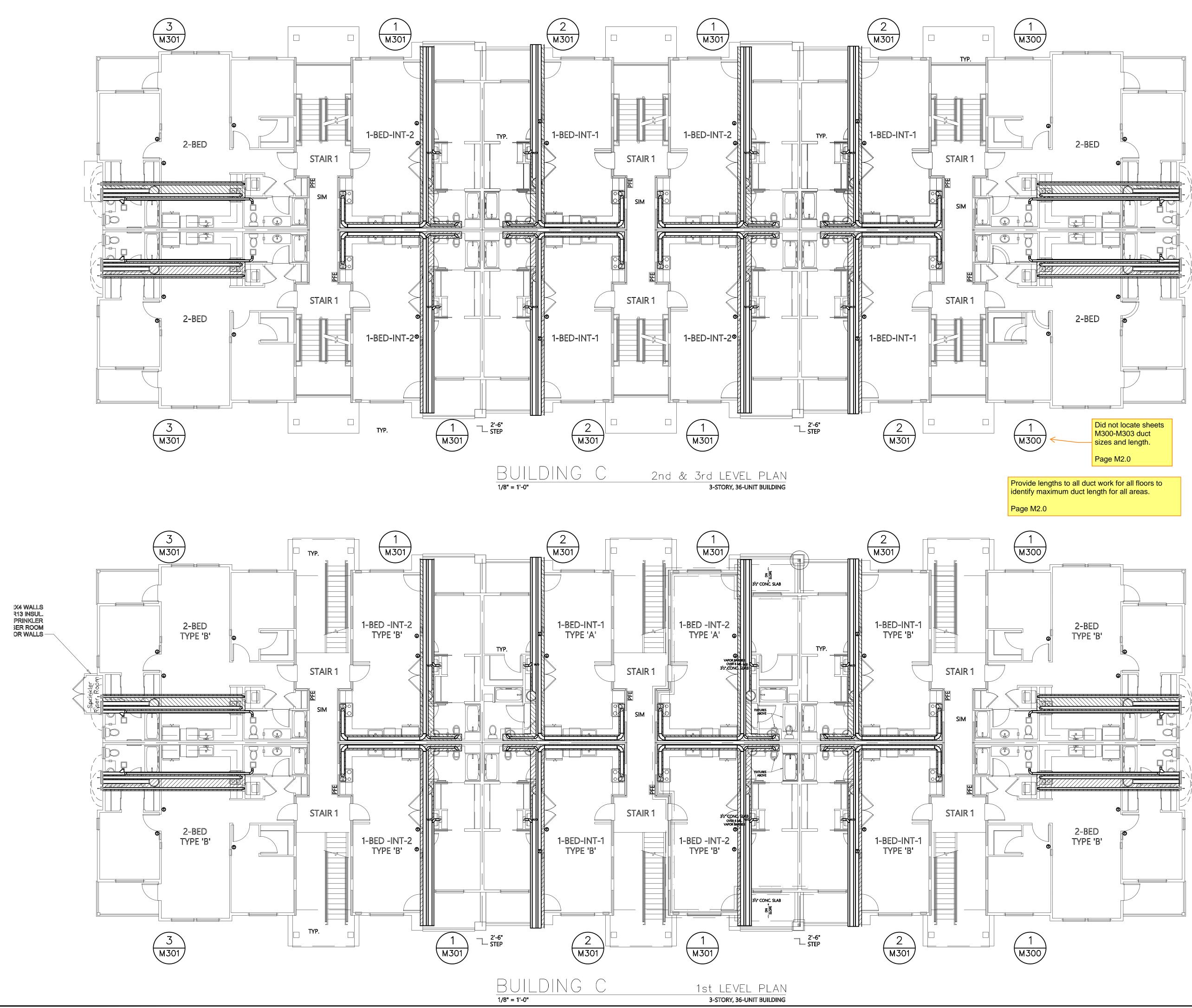
1/1

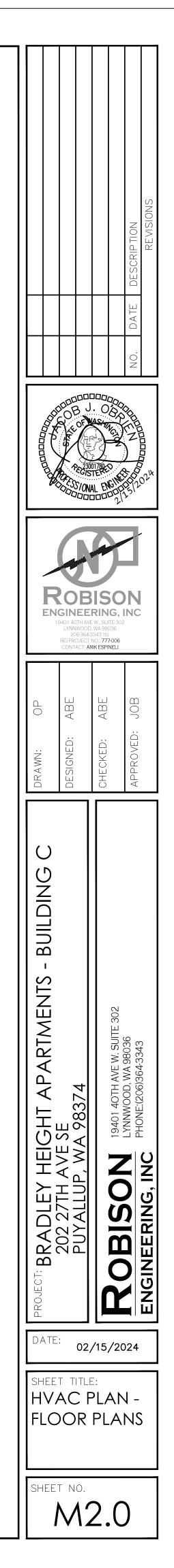
(4)

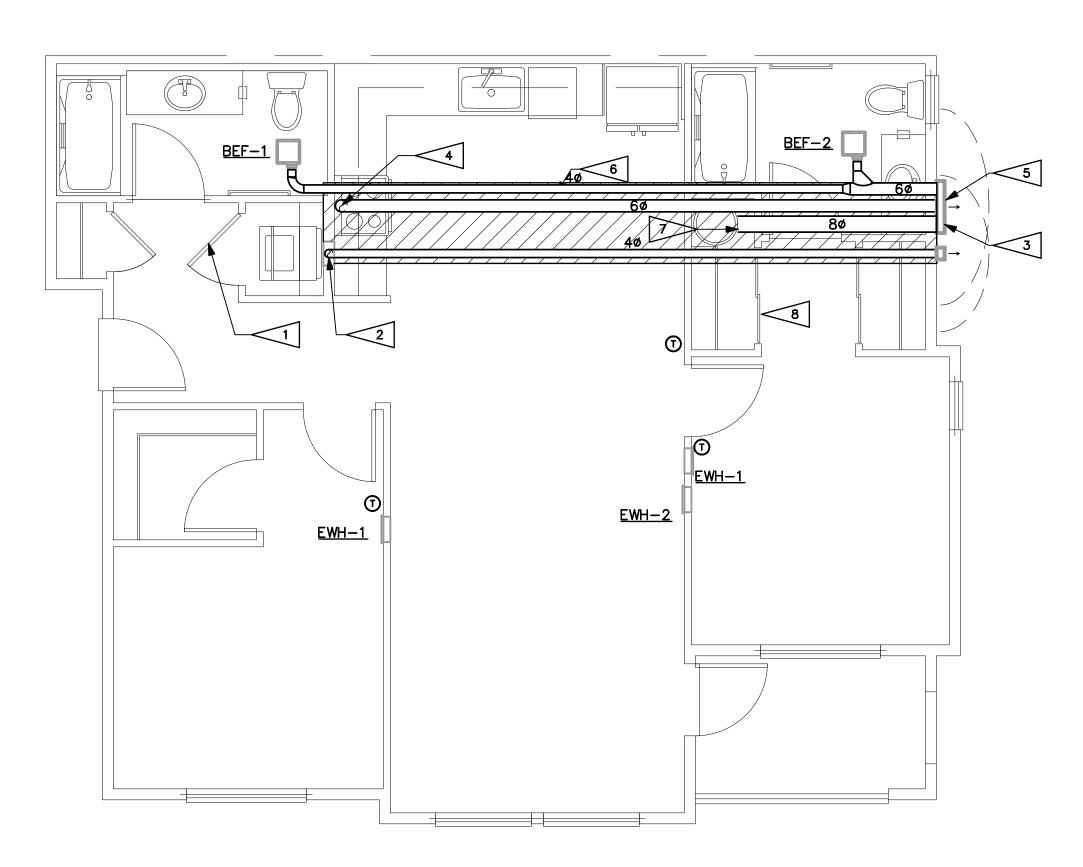
FAN SHALL BE 2-SPEED: 35 CFM CONTINUOUS LOW SETTING AND 80 CFM HIGH SPEED ACTIVATED BY INTEGRAL OCCUPANCY SENSOR ON GRILLE.



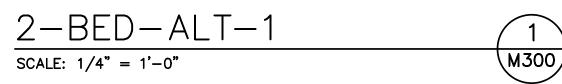






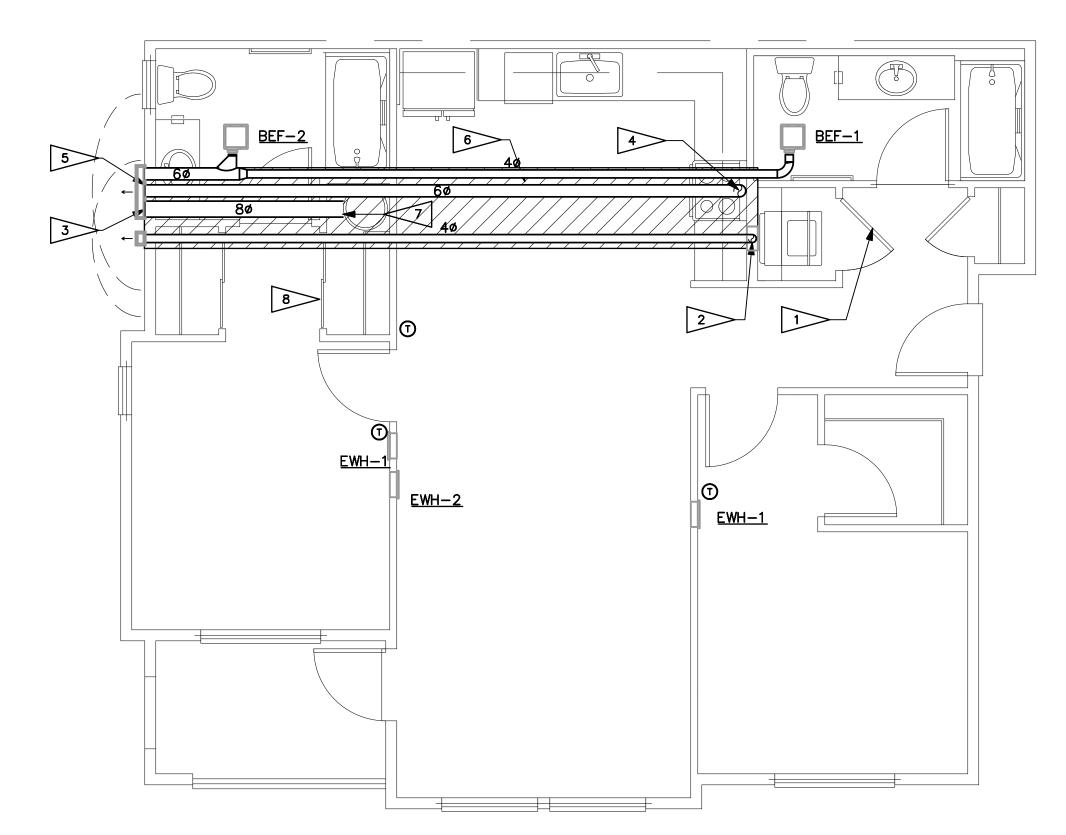


HVAC ENLARGED PLANS



GENERAL NOTES:

- 1. ENVIRONMENTAL EXHAUST TERMINATIONS: MAINTAIN 3 FOOT SEPARATION FROM PROPERTY LINES AND OPERABLE OPENINGS INTO BUILDING, 10 FEET FROM MECHANICAL AIR INTAKES.
- 2. MOUNT REMOTE THERMOSTATS 48" AFF. PER WSEC C403.4.9, AT LEAST ONE THERMOSTAT SHALL BE PROGRAMMABLE ON A 5-2 SCHEDULE.
- 3. UNDERCUT ALL BATHROOM DOORS BY MINIMUM 1/2" TO ALLOW TRANSFER OF MAKEUP AIR FOR BATHROOM EXHAUST.
- 4. ELECTRIC WALL HEATERS SHALL BE RECESSED IN WALL UNLESS FIRE RATED OR EXTERIOR WALL. FOR HEATERS MOUNTED ON SUCH WALL, PROVIDE SURFACE-MOUNT WALL CAN.
- 5. PROVIDE ACCESSIBLE MANUAL VOLUME DAMPERS AT BRANCHES OR OPPOSED-BLADE DAMPERS AT GRILLES FOR AIR BALANCING PER VOLUME DAMPERS NOTE ON SHEET MO.OO.



HVAC ENLARGED PLANS

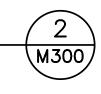
2-BED-ALT-2 SCALE: 1/4" = 1'-0"

Provide lengths to all duct work for all floors to identify and verify does not exceed Table 504.8.4.1 for allowable exhaust duct length.

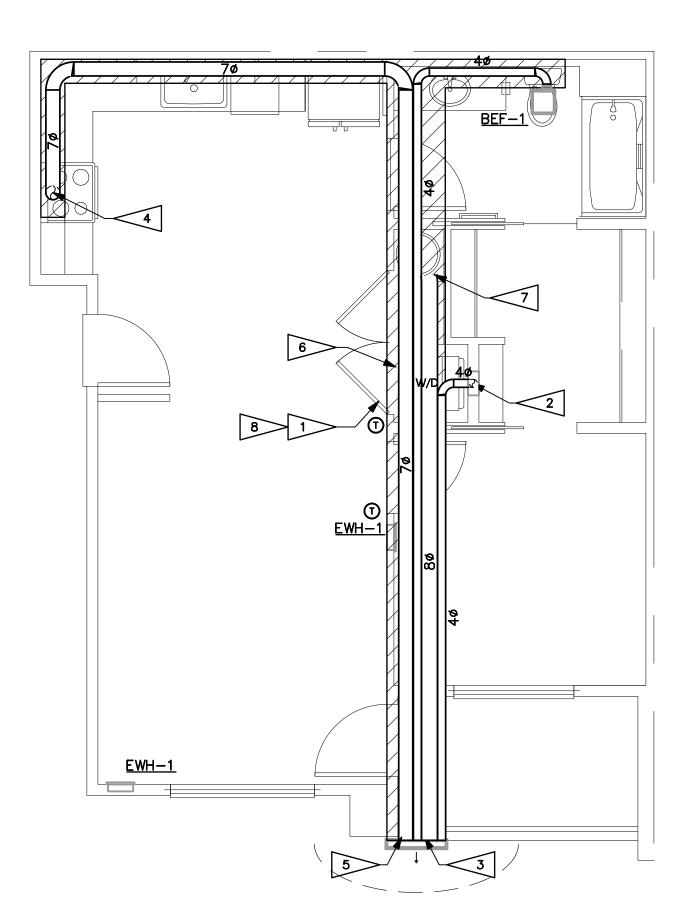
Page M3.0

FLAG NOTES:

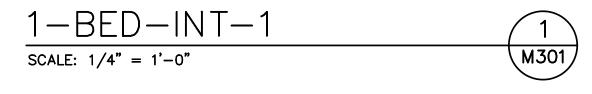
- 1. CLOSETS CONTAINING DRYERS SHALL BE PROVIDED WITH LOUVERED DOOR OR 100 SQ. IN FREE-AREA OPENING ABOVE DOOR. OPENING PROVIDES PATH FOR EXHAUST AIR DURING WASHER OPERATION PER WSMC TABLE 403.3.1.1 NOTE (i) AND MAKEUP AIR DURING DRYER OPERATION PER 504.6.
- 2. 40 POC TO DRYER. PROVIDE METAL DRYER BOX WHERE DUCT IS ROUTED IN 2x6 FRAMED WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WSMC 7. 80 POC FOR HEAT PUMP WATER HEATER EXHAUST. 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.
- 3. 4" DRYER EXHAUST TERMINATION WALL CAP. PROVIDE BACKDRAFT DAMPER AT TERMINATION. DO NOT INSTALL SCREENS ON DRYER EXHAUST TERMINATIONS. CLEARANCES PER GENERAL NOTE 1.
- 4. POC TO DOMESTIC KITCHEN RANGE HOOD. SEE PLANS FOR SIZE. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
- 5. DOMESTIC KITCHEN RANGE HOOD EXHAUST TERMINATION WALL CAP WITH SCREEN. PROVIDE BACKDRAFT DAMPER AT TERMINATION. CLEARANCES PER GENERAL NOTE 1.
- 6. LOWERED SOFFIT FOR MECHANICAL EQUIPMENT.
- 8. CLOSETS CONTAINING WATER HEATERS SHALL BE PROVIDED WITH MINIMUM 3/4" UNDERCUT.



					2 2 2		
OP	L	LI 40TH A VINNWOO 20636 IPROJEC DNTACT:	ER VE V 20, V 4-33	V., SUI /A 980 43 TEL 2.: 7777 (ESPII	G , I TE 302 036 7-006	JOB	
		DESIGNED		CHECKED:		APPROVED:	
		PUYALLUP, WA 98374			LODIAN 19401 40TH AVE W. SUITE 302	PHONE (206)364-3343	
SH H E	te: V4 NL LA		20	•	/20 ,EI		
SH	EET	NO.	3	3.)	

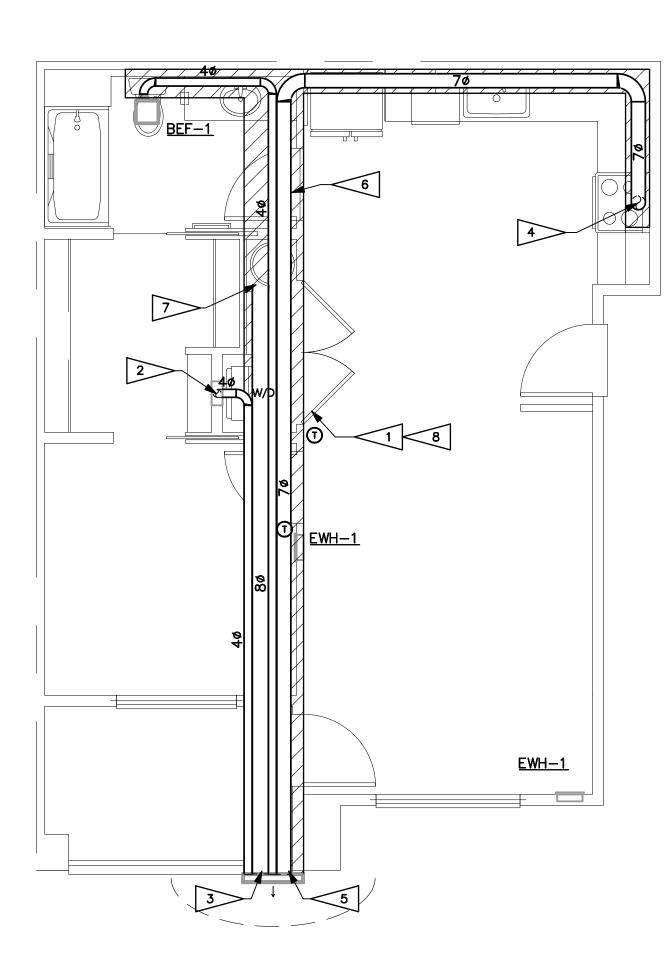


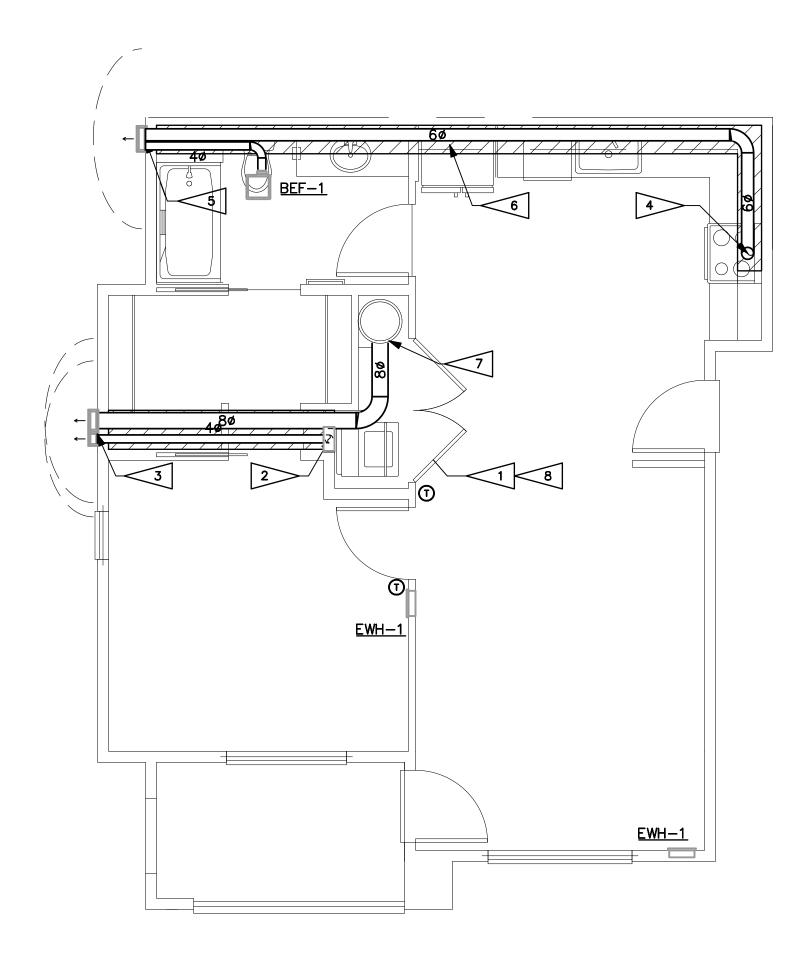
HVAC ENLARGED PLANS



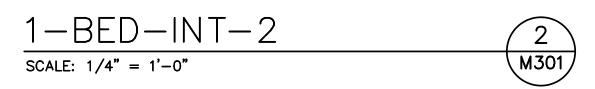
GENERAL NOTES:

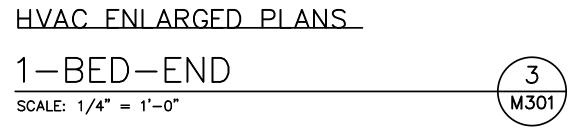
- 1. ENVIRONMENTAL EXHAUST TERMINATIONS: MAINTAIN 3 FOOT SEPARATION FROM PROPERTY LINES AND OPERABLE OPENINGS INTO BUILDING, 10 FEET FROM MECHANICAL AIR INTAKES.
- 2. MOUNT REMOTE THERMOSTATS 48" AFF. PER WSEC C403.4.9, AT LEAST ONE THERMOSTAT SHALL BE PROGRAMMABLE ON A 5-2 SCHEDULE.
- 3. UNDERCUT ALL BATHROOM DOORS BY MINIMUM 1/2" TO ALLOW TRANSFER OF MAKEUP AIR FOR BATHROOM EXHAUST.
- 4. ELECTRIC WALL HEATERS SHALL BE RECESSED IN WALL UNLESS FIRE RATED OR EXTERIOR WALL. FOR HEATERS MOUNTED ON SUCH WALL, PROVIDE SURFACE-MOUNT WALL CAN.
- 5. PROVIDE ACCESSIBLE MANUAL VOLUME DAMPERS AT BRANCHES OR OPPOSED-BLADE DAMPERS AT GRILLES FOR AIR BALANCING PER VOLUME DAMPERS NOTE ON SHEET MO.OO.





HVAC ENLARGED PLANS





- 1. 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.
- 2. 40 POC TO DRYER. PROVIDE METAL DRYER BOX WHERE DUCT IS ROUTED IN 2x6 FRAMED WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WSMC 7. 80 POC FOR HEAT PUMP WATER HEATER EXHAUST. 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.
- 3. 4" DRYER EXHAUST TERMINATION WALL CAP. PROVIDE BACKDRAFT DAMPER AT TERMINATION. DO NOT INSTALL SCREENS ON DRYER EXHAUST TERMINATIONS. CLEARANCES PER GENERAL NOTE 1.
- 4. POC TO DOMESTIC KITCHEN RANGE HOOD. SEE PLANS FOR SIZE. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
- 5. DOMESTIC KITCHEN RANGE HOOD EXHAUST TERMINATION WALL CAP WITH SCREEN. PROVIDE BACKDRAFT DAMPER AT TERMINATION. CLEARANCES PER GENERAL NOTE 1.
- 6. LOWERED SOFFIT FOR MECHANICAL EQUIPMENT.
- 8. CLOSETS CONTAINING WATER HEATERS SHALL BE PROVIDED WITH MINIMUM 3/4" UNDERCUT.

			NO. DATE DESCRIPTION REVISIONS
R		A STANDARD	
drawn: OP	DESIGNED: ABE	CHECKED: ABE	APPROVED: JOB
DATE: SHEET HV EN		GE	ENGIN 024

	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
	FLAG NOTE
\bigtriangleup	REVISION NOTE
\sim	REVISION DEFINITION, AREA ENCIRCLED CONTAINS DRAWING CHANGES MADE SUBSEQUENT TO PREVIOUS ISSUE
<u>SWITCHES</u> \$□	SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT
\$os D	OCCUPANCY SENSOR SWITCH SWITCH, SINGLE POLE; WITH SWITCHING SUBSCRIPT "D" INDICATES WALLBOX
OS ¢	CEILING MOUNTED OCCUPANCY SENSOR
\$⊤ \$₃	SWITCH, TIMER. SWITCH, THREE WAY.
<u>RECEPTACLES</u> Φ ↓	SINGLE RECEPTACLE
₩ Øa ⊖ € GFCI	DUPLEX RECEPTACLE: WALL MOUNTED, +18" AFF CONTROLLED AND NON CONTROLLED DUPLEX RECEPTACLE (SPLIT WIRED RECE DUPLEX RECEPTACLE – ABOVE COUNTER 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
	FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA
	FLOOR BOX ONE DUPLEX RECEPTACLE + ONE DATA + ONE VOICE SPECIAL PURPOSE RECEPTACLE, AS NOTED
MISCELLANEOUS	
Q	JUNCTION BOX: 4SQ MOUNTED JUNCTION BOX: 4SQ WALL MOUNTED JUNCTION BOX: 4SQ TRACK
C	CONNECTION FOR LIGHTED MIRROR COORDINATE LOCATION AND ELEVATION WITH ARCHITECT PRIOR TO ROUGH-IN
	THERMOSTAT
SIGNAL/COMMUNICATION ▼	DATA OUTLET: WALL MOUNTED @ +18" AFF U.O.N.
▼ ▼ 型	TELEPHONE/DATA OUTLET: WALL MOUNTED @ +18" AFF U.O.N. TELEVISION OUTLET: WALL MOUNTED @ +18" AFF U.O.N.
POWER	TELEVISION OUTLET. WALL MOUNTED & TTO AFF U.U.N.
	PANELBOARD
	NON-FUSED DISCONNECT SWITCH (WP = NEMA 3R WHERE APPROPRIATE) FUSED DISCONNECT SWITCH
Ó MAU-1,5HP,480,3	MOTOR CONNECTION (EQUIPMENT NAME, HORSEPOWER, VOLTAGE, AND PHASE
, ,	INDICATED) EQUIPMENT CONNECTION (EQUIPMENT NAME, LOAD, VOLTAGE, AND PHASE
	INDICATED)
Γ M	TRANSFORMER, DRY TYPE, SHOWN TO SCALE KW METER AND BASE
FACP	FIRE ALARM SYSTEM CONTROL PANEL
P	FIRE ALARM SYSTEM PULL STATION
	FIRE ALARM SYSTEM STROBE/SPEAKER
PART OF THE	FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR AND SPEAKER.
DESIGN/BUILD FIRE ALARM	FIRE ALARM COMBINATION PHOTOELECTRIC SMOKE DETECTOR, CARBON MONOXIDE DETECTOR, AND SPEAKER, GUESTROOM.
SYSTEM CO	CARBON MONOXIDE DETECTOR.
	ELECTRO-MAGNETIC DOOR HOLDER
DSD	DUCT SMOKE DETECTOR

	ABBREVIATIONS		GEN			
LBOX DIMMER	A AMPERE AC ALTERNATING CURRENT, ABOVE COUNTER AFF ABOVE FINISHED FLOOR ALC AMPS INTERRYPTING CAPACITY AL ALUMINUM AMP AMPERE AWG AMERICAN WIRE GAUGE BKR BREAKER BLDG BUIDING C COLL or CONDUIT CKT CURENT TRANSFORMER Cu COPPER CW COOL WHITE D DIMMER DED DEDICATED EC ELECTRICAL CONTRACTOR EF EXHAUST FAN ELEC ELECTRICAL METALLIC TUBING EOUP EQUIPMENT EXIST EXIST EXISTING FAA FIRE ALARM ANNUNCIATOR FAA FIRE ALARM CONTROL PANEL FLUOR FLUORESCENT G GRUNND FAULT CIRCUIT INTERRUPTER GNOND FAA GISOLATED GROUND KCML HOUSAND CIRCULT AMERES KW KLLOVALT AMPERES K	 GENERAL PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH TH ELECTRICAL CODE, LOCAL CODES, ORDINANCES AND REQUIRE COMPANIES FURNISHING SERVICES TO INSTALLATION. PROVIDE ALL WORK AND ITEMS NECESSARY FOR COMPLETE / ELECTRICAL SYSTEMS. THE ELECTRICAL DRAWINGS ARE DIAG NOT NECESSARILY SHOW EVERY CONDUIT, BOX, CONDUCTOR FOR A COMPLETE INSTALLATION. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND CONDITIONS WHICH MAY AFFECT BID. ANY ITEMS NOT FULLY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO USETIONS CONCERNING THE LOCATION OF DEVICES AND EQU DIRECTED TO THE ARCHITECT. FAILURE TO COORDINATE REQU NO WAY RESULT IN ADDITIONAL COMPENSATION BEING PROVI CONTRACTOR. WHEREVER THE WORD "PROVIDE" IS USED, IT MEANS, "FURNI: COMPLETE AND READY FOR USE." COORDINATE LOCATION OF ELECTRICAL WITH OTHER TRADES. REFER TO EQUIPMENT DRAWINGS FOR MECHANICAL CHARACTE LOCATION, ETC.) OF MECHANICAL EQUIPMENT, UNLESS OTHER COMPLETE AND READY FOR USE." COORDINATE LOCATION OF ELECTRICAL WITH OTHER TRADES. REFER TO EQUIPMENT DRAWINGS FOR MECHANICAL CHARACTE LOCATION, ETC.) OF MECHANICAL EQUIPMENT CONTRACTOR. VERIFY ALL FUSE RATINGS, WIRE SIZES AND D PRIOR TO INSTALLATION. MATERIALS AND METHODS PROVED RACEWAY AND WRING ROUTED CONCEALED WITHIN FI WHERE POSSIBLE. WHERE RACEWAY CANNOT BE CONCEALED, INSTALLED PER PROJECT MANAGER'S DIRECTION. ALL CONDUININS AND ELECTRICAL ROMONS ONLY. EXPOSED CONDUS SECURED A MINIMUM OF 6" ABOVE FLOOR. OUTDOOR EXPOSED CONDUIT ROUTING: CONDUITS MAY BE ROUTED EX MECHANICAL AND ELECTRICAL ROMONS ON FEQUIPMENT ACCESS CLEARANCES CAN BE MET. CONNECTIONS AND FILTINGS. CLEARANCES: VERFY PHYSICAL DIMENSIONS OF EQUIPMENT ACCESS CLEARANCES CAN BE MET. CONNECTIONS AND FILTINGS. CLEARANCES: VERFY PHYSICAL DIMENSIONS OF EQUIPMENT. ACCESS CLEARANCES CAN BE MET. CONNECTIONS AND FILTINGS. 				
	W/ WITH W/O WITHOUT XFMR TRANSFORMER XFR TRANSFER Z IMPEDANCE OR ZONE					
	GENERAL REQU	IREMENTS				
e) Phase Se	 DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GE EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXA REFER TO ARCHITECTURAL DRAWINGS FOR DIMEN REFER TO MANUFACTURER'S STANDARD INSTALL AND INSTALLATION REQUIREMENTS. PROVIDE CONNECTIONS, ACCESSORIES, OFFSETS, SYSTEM. 	CT MEASUREMENT. ISIONS. ATION DRAWINGS FOR EQUIPMENT CONNECTIONS	DWG E0.00 LEG E0.01 PRO			
	CONTRACTOR SUBSTIT	UTIONS & REVISIONS	E0.10 SITE E0.11 SITE			
	 PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR ORDERING MATERIAL OR DOING WORK. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTU MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFIC SPECIFICATION. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL SUBSTITUTION PROPOSAL. CONTRACTOR TO COORDINATE WITH ENGINEER AND DI COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OT RESULTING FROM SUBSTITUTIONS OR REVISIONS. 	RER'S NAME AND CATALOG DESIGNATIONS, THE CATION FOR THAT ITEM ARE CONSIDERED PART OF BE ADDRESSED IN THE COST ANALYSIS OF THE ETERMINE ASSOCIATED DESIGN AND PERMITTING	E1.01 LIGH E1.02 LIGH E1.50 LIGH E3.00 POV E3.01 POV E3.02 POV			
	PRE-CON MEETIN	IG NOTES	E5.00 UNI E5.01 UNI E5.02 UNI			
	CONTRACTORS SHALL ATTEND A PRE-CONSTRUCTION PURPOSE OF REVIEWING THE WORK PRIOR TO ORDERIN WORK. THE MEETING SHALL BE LOCATED AT THE PRO MUTUALLY AGREED. THE MEETING WILL BE A WORKING BY THE ENGINEER AND THE AGENDA WILL INCLUDE A SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES F PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS A FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS ATTENDING THE MEETING SHALL BE KNOWLEDGEABLE SPECIFIC PERSONS INTENDED TO CONTINUE WITH THE REQUIRED, REVISED PLANS WILL BE ISSUED THROUGH PRICE WILL BE DISCUSSED, BUT NO CHANGE ORDERS OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD THAT ISSUE CHANGE ORDERS. THE FOLLOWING TRADES SHALL BE REPRESENTED FOR MECHANICAL SHEET METAL 4 HOURS ELECTRICAL 4 HOURS SPRINKLER 2 HOURS GENERAL CONTRACTOR ALL SESSIONS	NG ANY EQUIPMENT OR PERFORMING ANY JECT SITE ON A DATE AND TIME TO BE & SESSION. THE MEETING WILL BE FACILITATED DETAILED REVIEW OF THE PLANS AND FOR COORDINATION ISSUES, REVIEW OF ND METHODS, AND ON-SITE INVESTIGATION OF THAT COULD AFFECT THE WORK. PERSONS OF THE PROJECT AND SHALL BE THE PROJECT THROUGH TO COMPLETION. IF OFFICIAL CHANNELS. CHANGES IN THE BID WILL BE ISSUED UNLESS PROCESSED THOUGH THE ENGINEER HAS NO AUTHORITY TO	E6.00 ONE E6.00 PAN			

NERAL NOTES

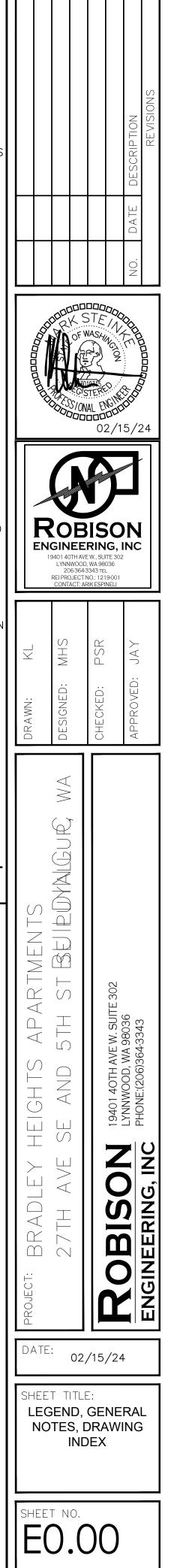
VERNING	7. WIRING: PROVIDE MINIMUM #10 AWG COPPER CONDUCTOR SIZE IN 120V BRANCH CIRCUIT RUNS OVER 75' IN LENGTH.								
S OF UTILITY	SITE ELECTRICAL								
FUNCTIONAL MATIC AND DO IMILAR ITEMS	1. TRENCHING: COORDINATE ALL TRENCHING WORK WITH OTHER UTILITY LOCATIONS AND DRAINAGE TRENCHES.								
RMINE	2. UNDERGROUND CONDUITS: PROVIDE PVC, SCHEDULE 40, 3/4" MINIMUM. PROVIDE GRC CONDUIT TRANSITION ELBOW WHEN TURNING UP TO ABOVE GRADE.				1 SIONS				
DERSTOOD SHALL DDING. CTURAL,	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.				ESCRIPTION REVISIO				
EVICES. NT SHALL BE ENTS SHALL IN	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.	+			ATED				
TO THE	5. ALL CONDUITS PENETRATING THE BUILDING ENVELOPE BELOW GRADE SHALL FOLLOW WATERPROOFING REQUIREMENTS IN THE ARCHITECTURAL DRAWINGS.	+							
ND INSTALL	NEUTRALS				NON				
ICS (SIZE,	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.								
INDICATED. TH MECHANICAL INECT SIZES	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	•		VAL ENGL	15 /24				
ING STRUCTURE HALL BE	1. PROVIDE LIGHT FIXTURES WITH PROPER FITTING FLANGES, MOUNTING SUPPORTS, AND ACCESSORY ITEMS, UL LISTED FOR CONDITIONS OF USE.				15/24				
ALL BE DICULAR TO	LOW VOLTAGE LIGHTING								
ED ON COMMON	1. PROVIDE LOW VOLTAGE TRANSFORMERS IN NEARBY ACCESSIBLE CEILING SPACE.		Z	ソ					
D IN SHALL BE	2. PROVIDE LOW VOLTAGE CONDUCTORS SIZED PER MANUFACTURER'S GUIDELINES TO MINIMIZE VOLTAGE DROP.	EN	GINEE		INC				
	LIGHTING CONTROL	1	LYNNWOO 206-364	/E W., SUITE 3 D, WA 98036 -3343 TEL 'NO.: 1219-00					
DOF OR EXPOSED DE WATER-TIGHT	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	<u> </u>		ARIK ESPINELI		1]			
ENSURE THAT	THEIR CAPABILITY TO FUNCTION INDEPENDENTLY.		Š	Ř	\succ				
X CONDUITS	2. EMERGENCY FIXTURES: EMERGENCY BATTERY/CHARGER SHALL BE CONNECTED TO AN UNSWITCHED LEG OF THE DESIGNATED CIRCUIT.	Ц Х	HM 	L S S	AU :				
TO BE USED E IS PERMISSIBLE		JRAWN:	DESIGNED:	CHECKED:	APPROVED.				

DRAWING INDEX

		IN	CLU	DE	DI	Ν	SE	Γ	
DESCRIPTION	DD SET 04/10/23	PERMIT REVIEW SET 10/06/23	PERMIT SET 02/15/24						
EGEND, GENERAL NOTES, DRAWING INDEX	Х	Х	Х						
ROJECT NOTES	Х	Х	Х						
ITE POWER PLAN – EAST ITE LIGHTING PLAN – EAST	X	X	X X						
IGHTING & PHOTOMETRIC PLAN-1ST FLOOR	Х	Х	Х						
IGHTING PLAN – 2ND & 3RD FLOOR	X	Х	Х						
IGHTING NOTES & LUMINAIRE SCHEDULES	X	Х	Х						
OWER PLAN – BASEMENT & 1ST FLOOR OWER PLAN – 2ND & 3RD FLOOR OWER PLAN – ROOF		X X X	X X X						
NIT PLANS NOTES NIT PLANS & SCHEDULES NIT PLANS & SCHEDULES	X X X	X X X	X X X						
NE-LINE DIAGRAM & NOTES ANELS SCHEDULES	X	X X	X X						

rate electrical permit is required with Washington Department of Labor & Industries.

://Ini.wa.gov/licensing-permits/electrical/electrical-perm es-and-inspections or Licensing information: Call 0-647-0982



APPLICABLE CODES

THE FOLLOWING PROJECT DESIGN IS BASED ON THE FOLLOWING CODES:

- -2020 NATIONAL ELECTRICAL CODE (NEC)
- -2018 WASHINGTON STATE ENERGY CODE (WSEC) -2018 INTERNATIONAL BUILDING CODE (IBC) & WASHINGTON STATE AMENDMENTS
- -2018 INTERNATIONAL FIRE CODE (IFC) & WASHINGTON STATE AMENDMENTS
- -2018 INTERNATIONAL MECHANICAL CODE (IMC) & WASHINGTON STATE AMENDMENTS
- -2018 UNIFORM PLUMBING CODE (UPC) & WASHINGTON STATE AMENDMENTS

VIBRATION AND ACOUSTICAL ISOLATION

THE FOLLOWING MEASURES SHALL BE TAKEN TO MINIMIZE VIBRATION AND NOISE TRANSMISSION FROM MECHANICAL AND ELECTRICAL EQUIPMENT TO THE INTERIOR SPACES:

TRANSFORMERS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION.

B) MOUNT TRANSFORMERS ON NEOPRENE GROMMET ISOLATORS.

SUBDUCT EXHAUST FANS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION. ENCLOSED GARAGE EXHAUST FANS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION. ROOFTOP AIR HANDLERS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION. FAN COIL UNITS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION. ROOF MOUNTED CONDENSERS:

A) PROVIDE FLEXIBLE CONDUIT OR MC CABLE AT EQUIPMENT CONNECTION.

FLEXIBLE CONDUIT OR MC CABLE CONNECTIONS FOR VIBRATION ISOLATION SHALL BE A MINIMUM OF TWO FEET LONG.

TEMPERATURE LIMITATION OF CONDUCTORS

ADDITIONAL ADJUSTMENTS FOR CONDUITS EXPOSED TO SUNLIGHT ON OR ABOVE ROOFTOPS SHALL BE FACTORED PER NEC TABLE 310.15(B)(2)(C)

CONDUIT & CONDUCTOR FIRE RATING

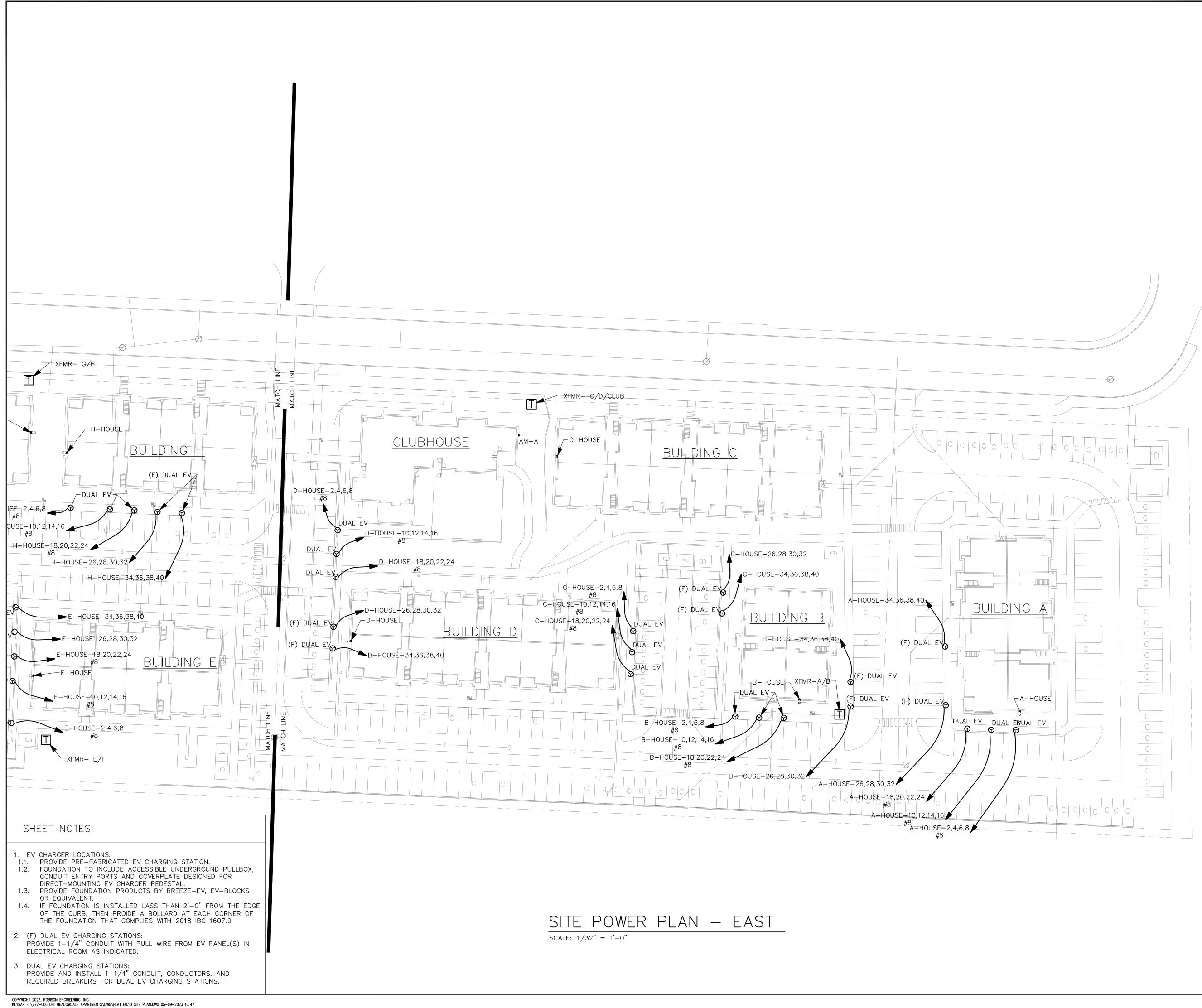
1. CONDUIT FOR ELECTRICAL CONDUCTORS BY THE FACP OR FIRE ALARM SYSTEM SHALL BE IN 2 HOUR RATED ENCLOSURES OR ENCASED IN 2-INCH OF CONCRETE AND RATED CABLE ASSEMBLIES, OR BE CONDUCTORS IN 2 HOUR-RATED RACEWAYS PER NFPA 72.

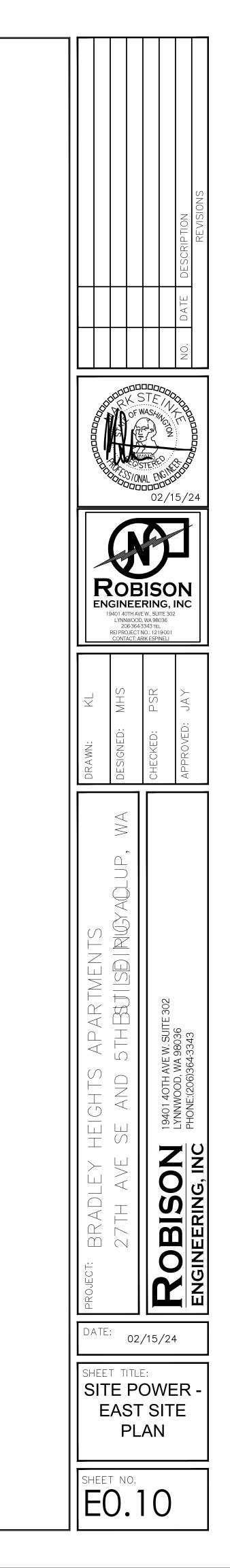
2. THE EQUIPMENT AND CONTROL WIRING SHALL BE ENCLOSED BY FIRE BARRIERS CONSTRUCTED IN ACCORDANCE WITH IBC SECTION 707 OR HORIZONTAL ASSEMBLIES CONSTRUCTED IN ACCORDANCE WITH IBC SECTION 711, OR USING A 2 HR RATED CABLE SYSTEM OR ENCLOSED WITHIN 2" OF CONCRETE.

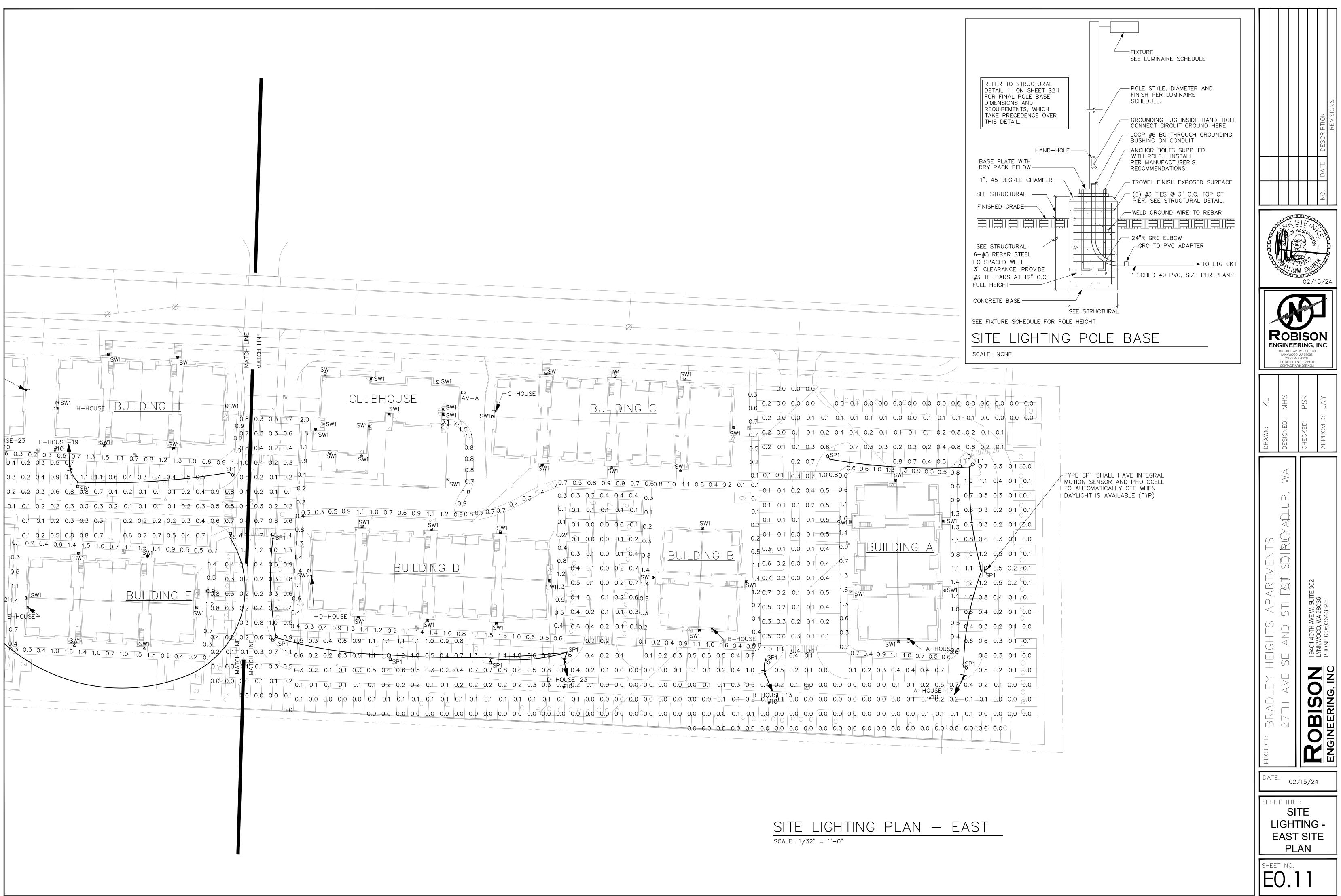
3. FIRE ALARM WIRING SHALL COMPLY WITH IBC 907.6.1. WIRING SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 70.

4. RACEWAYS FOR THE DEDICATED BRANCH CIRCUIT(S) REQUIRED FOR PRIMARY POWER TO THE FIRE ALARM CONTROL PANEL (FACP) SHALL BE IN 2 HOUR RATED ENCLOSURES OR ENCASED IN 2-INCH OF CONCRETE AND RATED CABLE ASSEMBLIES, OR BE CONDUCTORS IN 2 HOUR-RATED RACEWAYS PER IBC 907 AND NFPA 72 SECTION 10.6.11.3.1.3

			ALL ENSING	NO. DATE DESCRIPTION REVISIONS REVISIONS
_	19	GINEE 9401 40TH AV LYNNWOO 206-364 REI PROJECT	/E W., SUITE 3 D, WA 98036 ŀ3343 tel	, INC
	project: BRADLEY HEIGHTS APARTMENTS	27th ave se and 5th st Beledyalgur, wa		ENGINEERING, INC PHONE:(206)364-3343
	LEG	T TITL END, TES,	GEN	ERAL
	SHEE	t no.	D1	

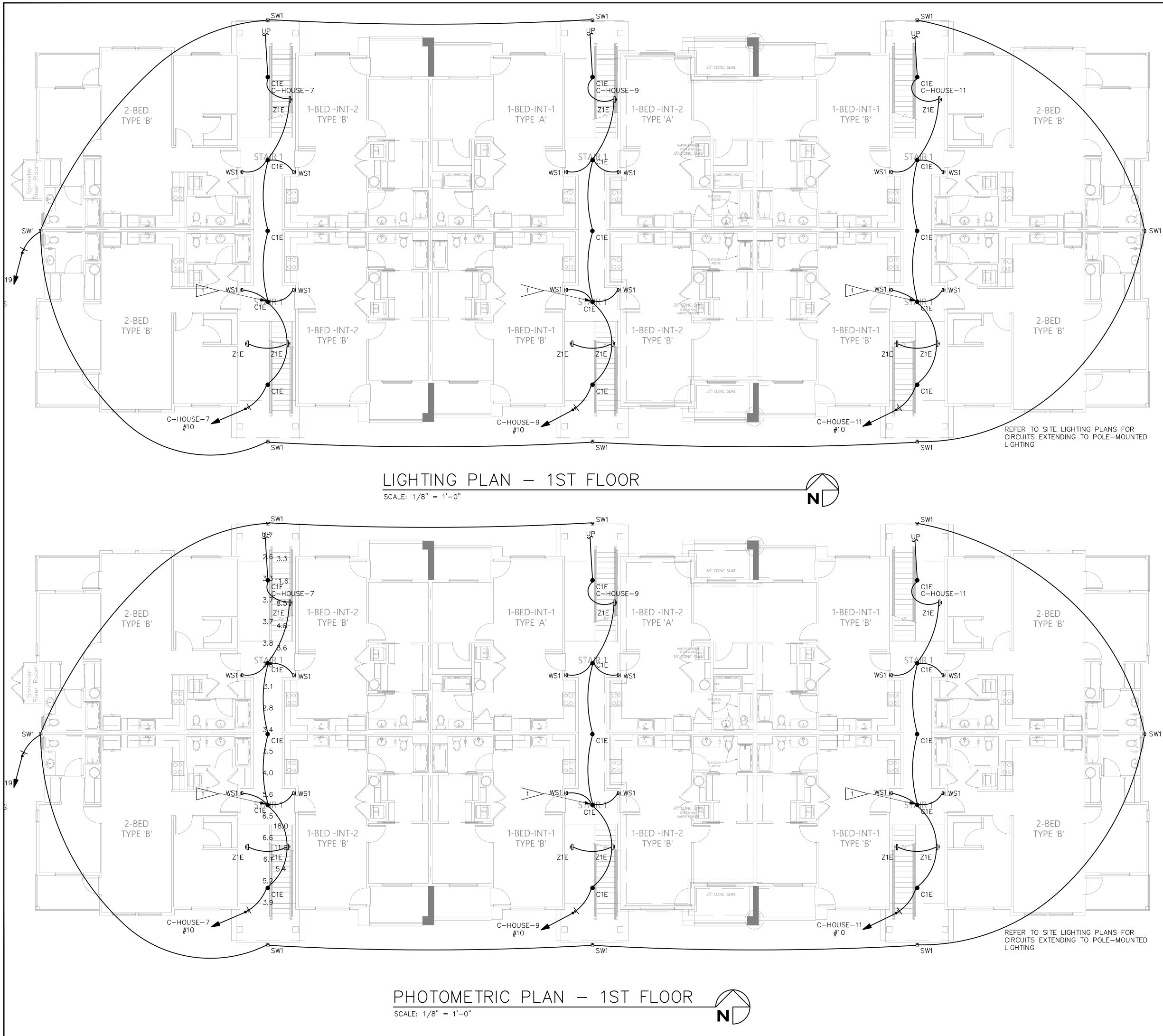






COPYRIGHT 2023, ROBISON ENGINEERING, INC.

KLYSAK F: \777-006 DHI MEADOWDALE APARTMENTS\DWG\FLAT E0.10 SITE PLAN.DWG 05-09-2023 10:47



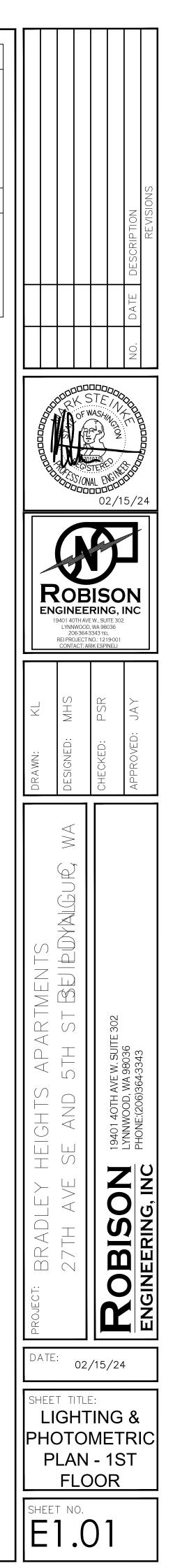
COPYRIGHT 2023, ROBISON ENGINEERING, INC. MSTEINKE G: _RESOURCE FOLDER\STEINKE LEAVENS TEMPLATES\APARTMENT 30X42\E1.00 LIGHTING.DWG 09-26-2022 11:30

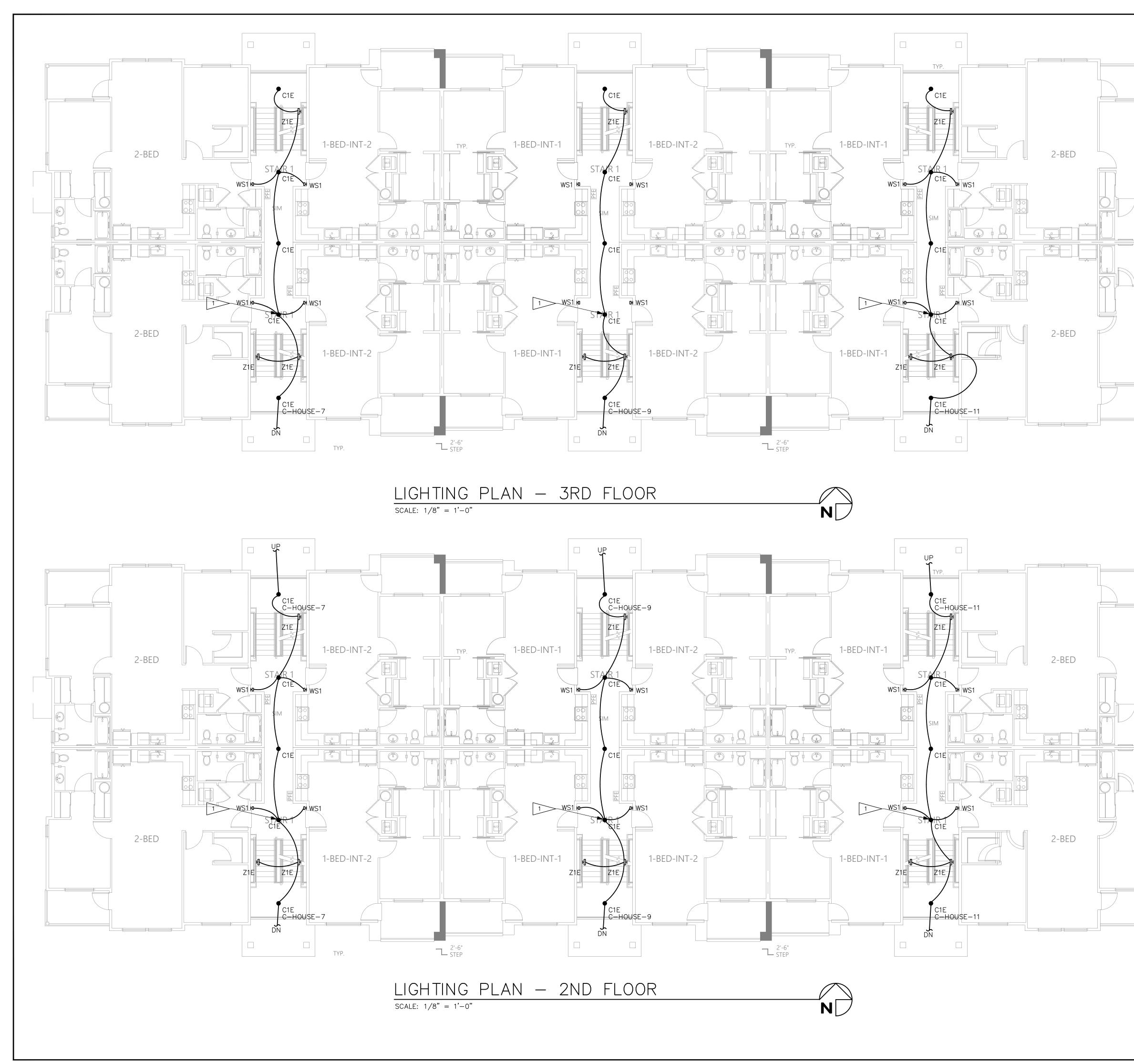
	GENERAL NOTES
1.	EMERGENCY EGRESS LIGHTING: EMERGENCY LUMINAIRES WITH 90 MINUTE BATTERY BACKUP.
2.	REFER TO SERIES E500 DRAWINGS FOR TYPICAL UNIT PLANS SHOWING ELECTRICAL AND LIGHTING LAYOUT.
3.	SEE SHEET E1.50 FOR LUMINAIRE SCHEDULE AND LIGHTING NOTES.
	FLAG NOTES <#
1.	CIRCUIT STAIRS VERTICALLY. LUMINAIRE(S) IN STAIRWELL SHALL HAVE INTEGRAL OCCUPANCY SENSOR WHICH REDUCES LIGHTING POWER OF FIXTURE(S) BY 50% WHEN SPACE IS VACANT. (TYP)
2.	EXIT SIGNS: PROVIDE UNSWITCHED HOT.

Egress Photometric Schedule				
 ERAGE DT—CANDLES	4.07			
 XIMUM DT—CANDLES	6.6			
 IMUM DT-CANDLES	1.7			
 IMUM TO MAXIMUM RATIO	0.26			
XIMUM TO MINIMUM RATIO	3.87			
ERAGE TO MINIMUM RATIO	2.39			

Egress Stair #2 Photometric Schedule					
AVERAGE FOOT-CANDLES	6.35				
MAXIMUM FOOT-CANDLES	11.6				
MINIMUM FOOT-CANDLES	3.3				
MINIMUM TO MAXIMUM FC RATIO	0.28				
MAXIMUM TO MINIMUM FC RATIO	3.55				
AVERAGE TO MINIMUM FC RATIO	1.95				

ir #1 c Schedule
11.78
18.0
5.4
0.30
3.34
2.19





	GENERAL NOTES		
	 EMERGENCY EGRESS LIGHTING: EMERGENCY LUMINAIRES WITH 90 MINUTE BATTERY BACKUP. REFER TO SERIES E500 DRAWINGS FOR TYPICAL UNIT PLANS 		
	3. SEE SHEET E1.50 FOR LUMINAIRE SCHEDULE AND LIGHTING		
	NOTES.		
	FLAG NOTES <#		PTION
	1. CIRCUIT STAIRS VERTICALLY. LUMINAIRE(S) IN STAIRWELL SHALL HAVE INTEGRAL OCCUPANCY SENSOR WHICH REDUCES LIGHTING POWER OF FIXTURE(S) BY 50% WHEN SPACE IS VACANT. (TYP)		DESCRIPTION
	2. EXIT SIGNS: PROVIDE UNSWITCHED HOT.		DATE
			D NO.
			OF WASKING OF
			S/ONAL ENGINEERE 02/15/24
			02/15/24
			BISON
		ENGIN 19401 4 LYN	NEERING, INC 10TH AVE W., SUITE 302 10WOOD, WA 98036 063643343 TEL
			OJECT NO.: 1219-001 TACT: ARIK ESPINELI
		MHX MHX	PSR JAY
			VED:
		DRAWN: DESIGNE	I I L
			-
		RTMENTS ST RELIDINNALGUE	- =))
1		BRADLEY HEIGHTS APARTMENTS 27th ave se and sth st Relidi	
			305
		APA TT2	
)TH AVE OD, WA 9
		AND	– / / / / / / / / / / / / / / / / / / /
			$\overline{)}$
		BRADLEY	DBISON NEERING, INC
μ.		RAI 7th	
		···	
		PROJECT	
		DATE:	02/15/24
			SHTING
			N - 2ND & FLOOR
		SHEET N	.02

EXTE	EXTERIOR LUMINAIRE SCHEDULE											
CALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	CRI / CCT	LAMPING	WATTAGE			
SP1	∽	16' POLE	POLE LIGHT – PARKING & DRIVE AISLE – COMFORT OPTICS – B2 U0 G2	GARDCO: P20 C A02 830 T1S AR1 120 BL30-MW PCB	MULTIPLE	INTEGRAL CONTROLS	80 / 3000K	(1) 36W LED	36			
SW1	ю	SURFACE – 12'AFF	WALL SCONCE – AREA LIGHT – B1 U0 G1	GARDCO: GWM A06 830 T3M 120 MW30 PCB	120	INTEGRAL CONTROLS	80 / 3000K	(1) 16W LED	16			

NOTES:

1. CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.

4. 'BUG' RATING ON EXTERIOR FIXTURES INDICATES 'BACKLIGHT', 'UPLIGHT', AND 'GLARE' AS STANDARDS IN CLASSIFYING OUTDOOR LIGHT FIXTURES.

CALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	CRI / CCT	LAMPING	WATTAGE
B1		SURFACE	4' NARROW WRAP — BOH	DAY-BRITE CFI: FSW440L835 UNV DIM	120	0-10V DIMMING	80 / 3000K	(1) 31.4W LED	31.4
C1E	•	SURFACE	4" SURFACE DOWNLIGHT DMF: DRDH N JO 70S EM / DRD5S 4 R 07 9 30 EM		120	0-10V DIMMING	90 / 3000K	(1) 9W LED	9
D1	o	RECESSED	RECESSED DOWNLIGHT - SLOPED CEILING	DOWNLIGHT - SLOPED DMF: DRD4M 10 9 30 FL X 0 / DRDH N 120 0-10V DIMMING 90 / 3000K (1) 12W LE					12
P1	o	PENDANT	STEM MOUNT DOWNLIGHT – SLOPED CEILING – 4' STEM	DMF: DCR T4 S X A 30 FL 0 00 30 XX O 00 [FINISH]	120	120 0-10V 90 / 3000K (1) 40W LED			
WS1	ю	SURFACE	WALL SCONCE - EM BATTERY BACKUP	TBD	120 TBD DIMMI			(1) 5W LED	5
X1	8	SURFACE	EXIT SIGN – EMERGENCY BATTERY BACKUP – HATCH INDICATES LIT FACE	LSI: EMS WB SERIES (OR EQUAL)	IS WB SERIES (OR EQUAL) MULTIPLE EM EM / EM (1) 5		(1) 5W EM	5	
X2	×,	SURFACE	COMBO EXIT SIGN	LSI: CEC (OR EQUAL)	MULTIPLE EM EM / EM (1) 5W EI		(1) 5W EM	5	
X3	₽	SURFACE	EMERGENCY LIGHT - EMERGENCY LITHONIA: ELM2LF (OR EQUAL) 120 EM EM EM (1) DAMP LOCATION RATED - MAX 35' SPACING S		(1) 5W EM	5			
X4	H	WALL	EXTERIOR EMERGENCY LIGHT - EMERGENCY ON ONLY - MAX SPACING 35'	NORA LIGHTING: NE-902LED	120	EM	35' MAX (1) 5W LED SPACING		5
Z1E	н	WALL	WALL PACK	LITHONIA: WPX1 LED P1 30K MVOLT	120	EM	70 / 3000K	(1) 11W LED	11

NOTES:

1. CONTRACTOR TO FURNISH AND INSTALL ALL FIXTURES.

 LUMINAIRE SCHEDULE IS BOD ONLY. CONTRACTOR TO SUBMIT FIXTURE MODEL OR EQUIVALENT. CONTRACTOR TO COORDINATE FIXTURE FINISHES WITH ARCHITECT/OWNER.
 FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE THE INSTALLATION.

LUMINAIRE SCHEDULE IS BOD ONLY. CONTRACTOR TO SUBMIT FIXTURE MODEL OR EQUIVALENT. CONTRACTOR TO COORDINATE FIXTURE FINISHES WITH ARCHITECT/OWNER. FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE THE INSTALLATION.

	LIGHTING CONTROLS LEGEND								
SYMBOL	CONTROL TYPE	CONTROL FUNCTION							
¤\$ \$	TOGGLE SWITCH	MANUAL ON/OFF LIGHTING CONTROL. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH SWITCH (WSEC C405.2.3). SUBSCRIPT 'k' INDICATES TAMPER RESISTANT KEYED SWITCH FOR USE BY AUTHORIZED PERSONNEL ONLY.							
\square	DIMMER SWITCH	MANUAL MULTI-LEVEL LIGHTING CONTROL. SWITCH SHALL ALSO HAVE MANUAL ON/OFF FUNCTIONALITY. SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY WHICH DIMMER. (C405.2.3)							
vs vs os os \$	TOGGLE/DIMMER SWITCH WITH OCCUPANCY SENSOR	SWITCHES LABELED 'os' OR 'vs' SHALL TURN OFF ALL CONNECTED LUMINAIRES WITHIN 20 MINUTES OF SPACE BEING VACANT. (C405.2.1.1)							
CS-01	CONTROL STATION; SEE LIGHTING CONTROL ZONE TABLE ON PLANS.	MANUAL LOCAL LIGHTING CONTROL (C405.2.1.1). CONTROL STATION SHALL HAVE CAPACITY TO CONTROL MULTIPLE ZONES AND MULTIPLE SCENES AS NEEDED. SUBSCRIPT CORRESPONDS TO 'LIGHTING CONTROLS' TABLE ON PLANS.							
©\$	SURFACE MOUNTED OCCUPANCY SENSOR	AUTOMATIC LIGHTING CONTROL SHALL TURN OFF ALL CONNECTED LUMINAIRES WITHIN 20 MINUTES OF SPACE BEING VACANT. (C404.2.1.1)							
ex PS	MULTIZONE PHOTOSENSOR	AUTOMATIC LIGHTING CONTROL SHALL AUTOMATICALLY ADJUST THE LIGHT OUTPUT OF ALL CONNECTED LUMINAIRES BASED ON THE DAYLIGHT LEVEL IN THE PRIMARY AND SECONDARY ZONES (C405.2.4). SUBSCRIPT INDICATES WHICH FIXTURES ARE TO BE CONTROLLED BY ZONE; 'x' INDICATES MULTIPLE ZONE CONTROL.							

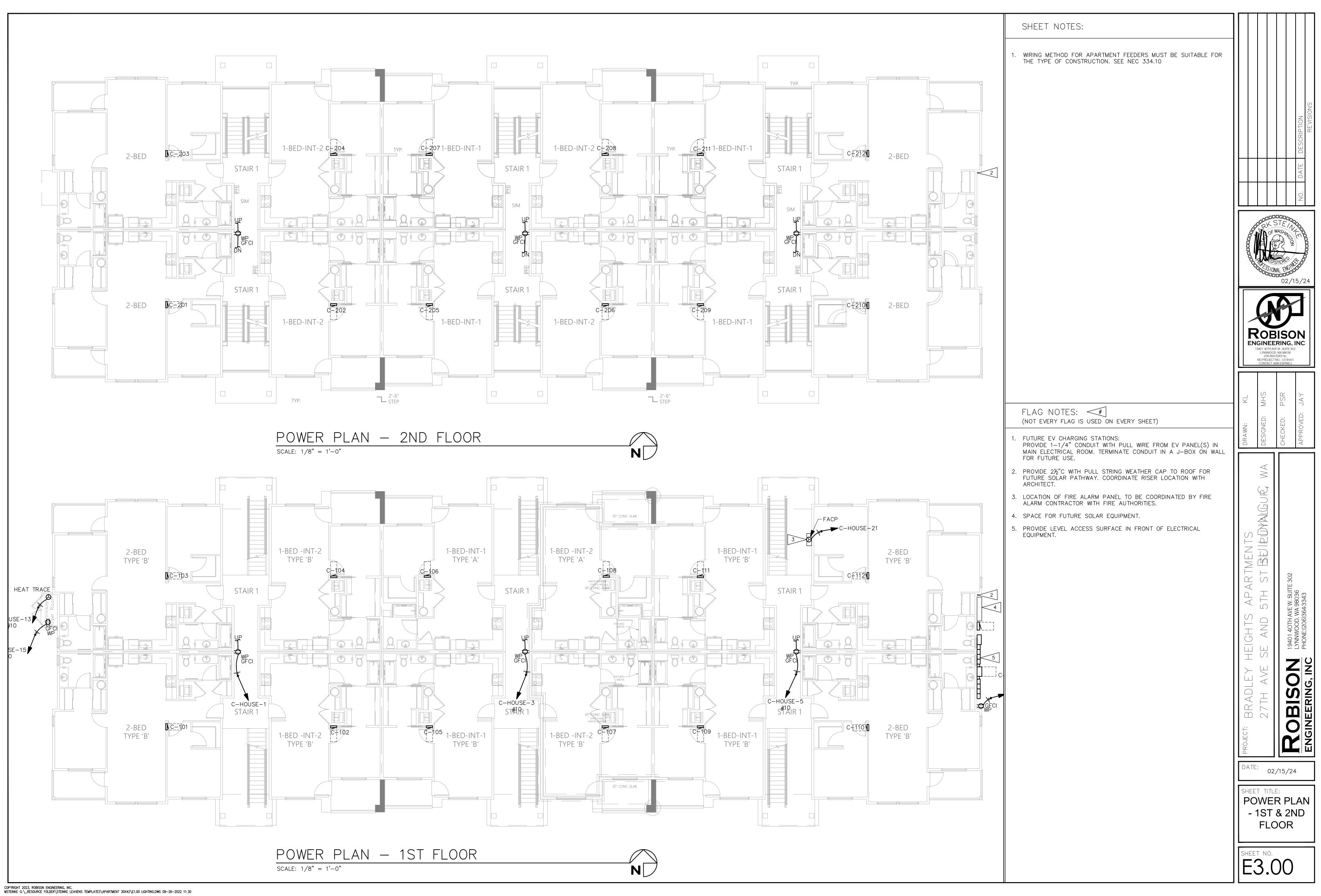
11. TH AN 12. WH LI <u>SPECI</u> . FI WI

1. CO 2. CC

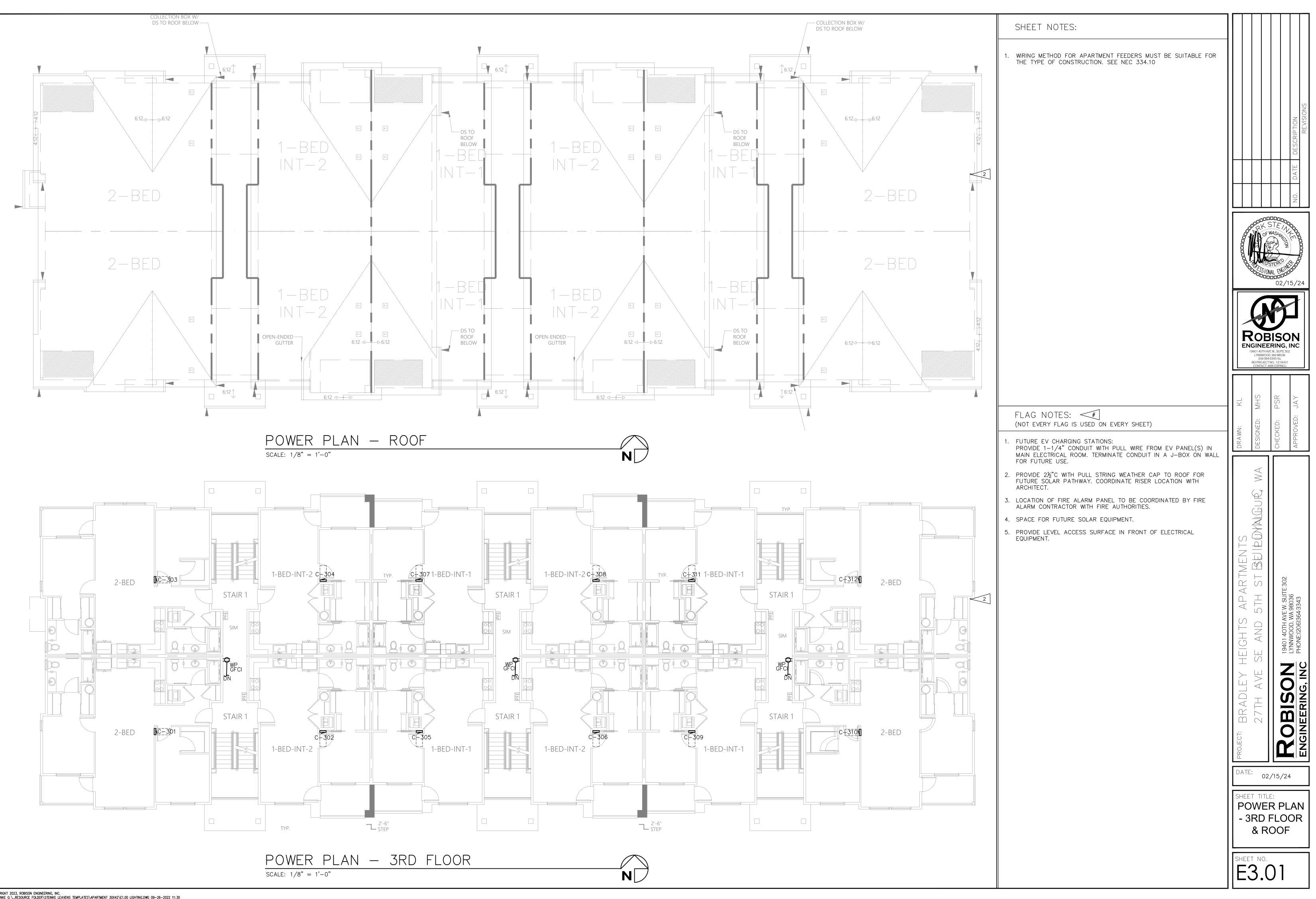
 $\overline{}$

	·····
GENERAL LIGHTING NOTES	
1. LIGHTING CONTROLS SHALL BE INSTALLED WHICH MEET ALL REQUIREMENTS OF LOCAL ENERGY CODES.	
2. EMERGENCY LIGHT FIXTURES: IN ADDITION TO SWITCH-LEG, PROVIDE UNSWITCHED HOT TO SERVE INTERNAL BATTERY AND CHARGER.	
 LOCATIONS OF OCCUPANCY SENSORS, PHOTO SENSORS, DIMMERS, AND SWITCHES ARE DIAGRAMMATIC. CONTRACTOR TO COORDINATE QUANTITIES AND OPTIMAL LOCATIONS WITH LIGHTING CONTROL MANUFACTURER AND ARCH/OWNER. 	
4. AUTOMATIC LIGHTING SHUT-OFF CONTROLS SHALL BE PROVIDED BY LOCAL OCCUPANCY SENSORS UNLESS OTHERWISE NOTED. PUBLIC SPACES ARE ACTIVE 24/7 AND THEREFORE EXEMPT FROM AUTOMATIC LIGHTING SHUT-OFF REQUIREMENTS FOR SECURITY. (WSEC C405.2)	ON VISIONS
5. DAYLIGHT ZONES ARE SHOWN ON PLANS AS DEFINED BY WASHINGTON STATE ENERGY CODE (WSEC) C405.2.4.2. SIDELIGHT DAYLIGHT ZONES ARE REFERRED TO AS 'PRIMARY' AND 'SECONDARY' ON PLANS AND DENOTED BY DASHED LINES.	SCRIPTION
6. 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.	DATE DE
7. ALL FIXTURES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.	O Z
8. CONTRACTOR SHALL BE RESPONSIBLE TO ORDER ALL NECESSARY HARDWARE, ELECTRICAL CABLE, TIMERS, TRANSFORMERS, ETC., AS REQUIRED FOR COMPLETION OF INSTALLATION OF A FULLY FUNCTIONING SYSTEM.	STELL STELL
9. CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPPING ALL FIXTURES WITH THE EXACT LAMPS SPECIFIED IN THE FIXTURE SCHEDULE.	OF WASKING THE
 WHERE FIXTURES REQUIRE REMOTE TRANSFORMERS OR BALLASTS, THE CONTRACTOR SHALL DETERMINE LOCATIONS AS REQUIRED FOR EVEN LOAD DISTRIBUTION, SERVICE ACCESS, AND VENTILATION. THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL ENGINEER FOR EXACT LOCATIONS OF TIMERS 	
AND/OR PHOTO CELLS, IF ANY.	02/15/24
12. WHERE APPLICABLE, THE CONTRACTOR SHALL AIM AND ADJUST LIGHTING FIXTURES AS DIRECTED BY THE LIGHTING DESIGNER UPON COMPLETION OF THE INSTALLATION.	
SPECIAL NOTE TO THE CONTRACTOR: 1. FIXTURE SUBMITTALS THAT DO NOT INCLUDE LAMP SPECIFICATIONS WILL BE CONSIDERED INCOMPLETE AND	
WILL NOT BE REVIEWED.	ROBISON
LIGHTING CONTROL SYSTEM REQUIREMENTS	ENGINEERING, INC 19401 40TH AVE W., SUITE 302 LYNNWOOD, WA 98036 206364-3343 TEL
1. CONTRACTOR TO PROVIDE A FULLY OPERATIONAL LIGHTING CONTROL SYSTEM.	REI PROJECT NO.: 1219-001 CONTACT: ARIK ESPINELI
 CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF DIMMING AND CONTROL MODULES WITH FIXTURE TYPES PRIOR TO INSTALLATION. 	
 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. 	DRAWN: KL DESIGNED: MHS CHECKED: PSR APPROVED: JAY
4. 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.	DRAWN: DESIGNE CHECKEI APPROV
5. PROVIDE LIGHTING CONTROL SYSTEM TO PERFORM THE FUNCTIONS DESCRIBED BELOW:	\triangleleft
5.1. LIGHTING CONTROL SCHEDULE: PROVIDE SEPARATE SWITCHING AND DIMMING CONTROL FOR LIGHTING ZONES AS INDICATED.	
 5.2. AUTOMATIC LIGHTING CONTROLS: 5.2.1. UNLESS OTHERWISE NOTED ON PLANS, OCCUPANCY SENSORS SHALL AUTOMATICALLY TURN OFF ALL CONNECTED LIGHTING WITHIN 20 MINUTES OF SPACE BEING UNOCCUPIED. OCCUPANCY SENSORS SHALL EITHER BE MANUAL ON OR SHALL BE CONTROLLED TO AUTOMATICALLY TURN THE LIGHTING ON TO NOT MORE THAN 50 PERCENT POWER EXCEPT WHERE MANUAL ON WOULD ENDANGER THE SAFETY OR SECURITY OF THE ROOM OR BUILDING OCCUPANTS. (C405.2.1.1) 5.2.2. MULTI-ZONE PHOTO-SENSORS SHALL PROVIDE SEPARATE CONTROL FOR LUMINAIRES IN EACH TYPE OF DAYLIGHT ZONE. (C405.2.4.1) 5.2.3. EXTERIOR LIGHTING CONTROLS SHALL AUTOMATICALLY TURN OFF ALL EXTERIOR LIGHTING AS A FUNCTION OF AVAILABLE DAYLIGHT. BUILDING FACADE AND LANDSCAPE LIGHTING SHALL HAVE CONTROLS THAT AUTOMATICALLY SHUT OFF THE LIGHTING FOR A MINIMUM OF 6 HOURS PER NIGHT OR NOT LATER THAN ONE HOUR AFTER BUSINESS CLOSING TO NOT EARLIER THAN ONE HOUR BEFORE BUSINESS OPENING, WHICHEVER IS LESS. OTHER LIGHTING SHALL HAVE CONTROLS CONFIGURED TO AUTOMATICALLY REDUCE THE CONNECTED LIGHTING POWER BY AT LEAST 30 PERCENT FROM NO LATER THAN 12 MIDNIGHT TO 6 AM OR FROM ON HOUR AFTER BUSINESS CLOSING TO ONE HOUR BEFORE BUSINESS OPENING OR DURING ANY PERIOD WHEN NO ACTIVITY HAS BEEN DETECTED FOR A TIME OF NO LONGER THAN 15 MINUTES. (C405.2.6) 6. MEANS OF EGRESS ILLUMINATION: AT ANY TIME THE BUILDING IS OCCUPIED, THE MEANS OF EGRESS SHALL BE ILLUMINATED AT AN INTENSITY OF NOT LESS THAN 1 FOOTCANDLE AT FLOOR LEVEL. (IBC 1008.2.1) 	EIGHTS APARTMENTS E AND 5TH ST BUIDWALGUR 19401 40TH AVE W. SUITE 302 LYNNWOOD, WA 98036 PHONE:(206)364-3343
 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. 	E AN LYNNWOG PHONE:(2
7.1. EMERGENCY PATHWAY EGRESS LIGHTING: ILLUMINATION PROVIDED ALONG THE EGRESS PATH AT FLOOR	
LEVEL SHALL AVERAGE AT LEAST 1 FOOT CANDLE. (IBC 1008.3.5) 7.2. EMERGENCY LIGHTING SHALL BE SUPPLIED BY: ELECTRICAL CONTRACTOR	
	TH TH TH
	EE B S S S S S S S S S S S S S S S S S S
	OJECT:
EXIT SIGN NOTES	DATE: 02/15/24
DURING CONSTRUCTION UPON COMPLETION OF A TYPICAL FLOOR FRAMING AND BEFORE WALL COVER,	SHEET TITLE:
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 (IBC 1013.1). CONTRACTOR SHALL PROVIDE UP TO 10% ADDITIONAL EXIT SIGNS AT NO ADDITIONAL COST.	LIGHTING
	SCHEDULES
	SHEET NO.
	E1.50

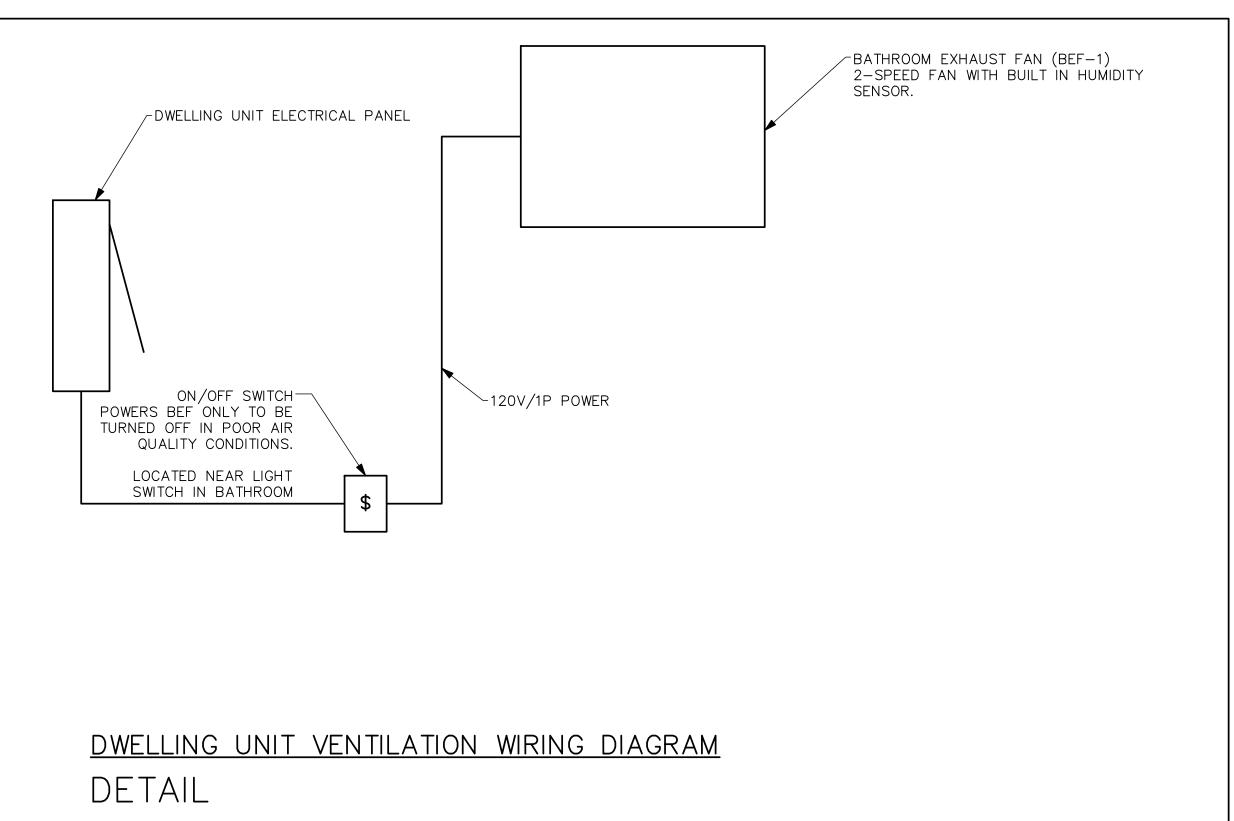








'ALLOUT	SYMBOL	MOUNTING	DESCRIPTION	MODEL	VOLTAGE	TYPE	LAMPING	WATTAGE	NOTES
U1	0	CEILING	4" DOWNLIGHT	DMF: DRD5S-4-R-10-9-30-0	120	0-10V DIMMING	(1) 12W LED 3000K	12	
U2	0	CEILING	4" DOWNLIGHT WET RATED	DMF: DRD5S-4-S-10-9-30-0	120	0-10V DIMMING	(1) 12W LED 3000K	12	
U3	н	WALL	24" VANITY LIGHT	MAXIM - 52102	120	ELV DIMMING	(1) 16W LED 3000K	16	
U4	Ю	WALL	SLIM BALCONY LIGHT	MAXIM – 26106BK	120	NON DIMMING	(1) 10W LED 3000K	10	
U5	0	SURFACE	6" FLUSH MOUNT DOWNLIGHT	MAXIM - 57413WTWT	120	0-10V DIMMING	(1) 11W LED 3000K	11	

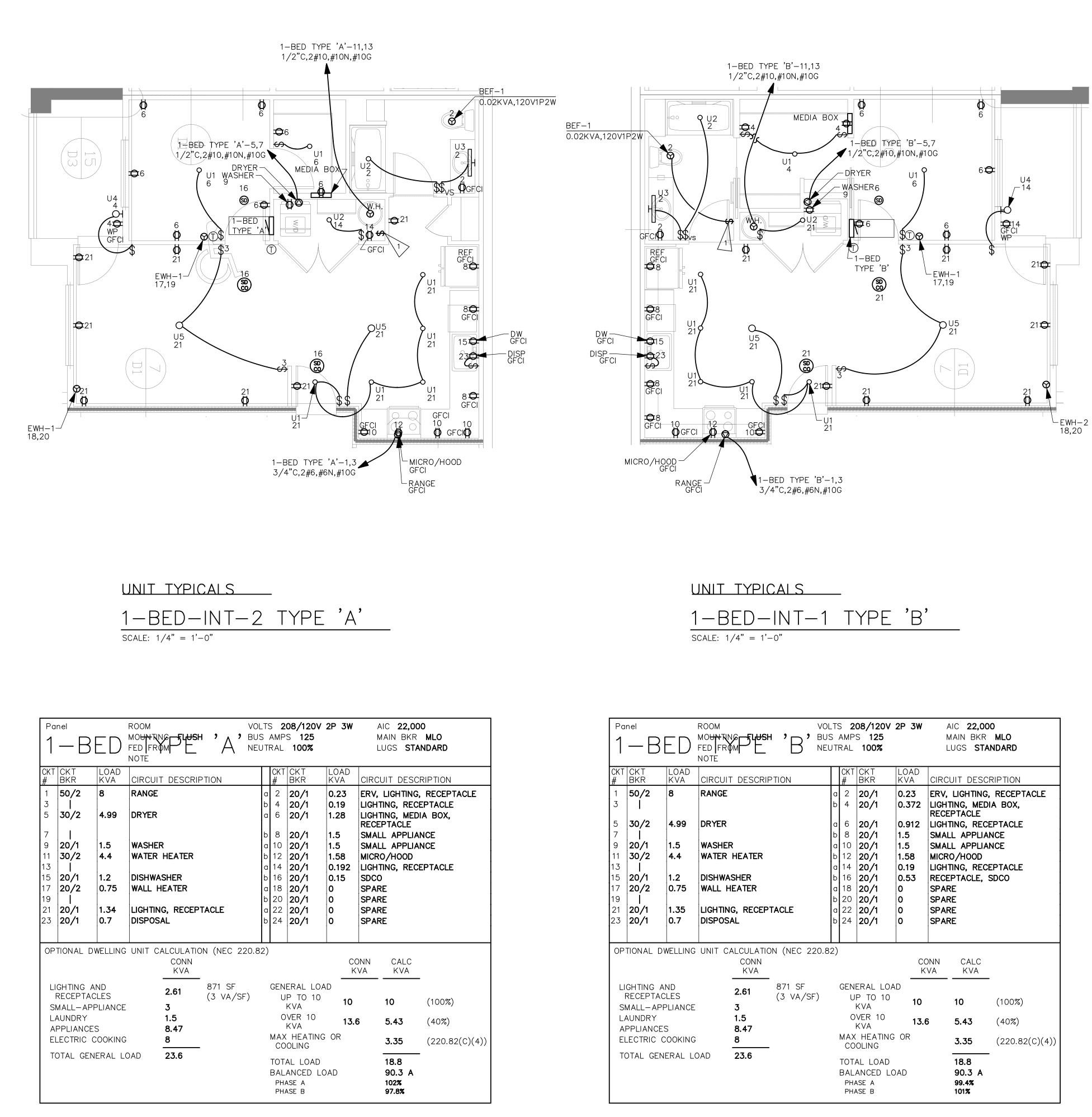


- ALL SWITCHES AND CONTRO 48" MAX TO CONTROL.
- 2. GENERAL OUTLETS MIN 18"
- 3. ALL SWITCHES/CONTROLS COUNTERTOPS 48" MAX.
- 4. ELECTRICAL SUB-PANELS I COMPLY WITH ABOVE REAC
- 5. SWITCHES FOR EXHAUST H GARBAGE DISPOSALS MUST ABOVE REACH RANGES. IN ON FACE OF CABINETS IF COMPLY.

ELECTRIC HEATERS									
EQUIP NO.	SERVICE	MOUNTING/	HEATING	ELECTRICAL	- BASIS OF DESIGN				
LQUIF NO.	SERVICE	DISCHARGE	KW	VOLTAGE	DASIS OF DESIGN				
EWH-1	BEDROOM	WALL	1	208V/1P	(1)				
EWH-2	LIVING ROOM	WALL	1.5	208V/1P	(1)				
NOTES:	(1) BROAN, CADET OR EQU	IVALENT.							

(2) PROVIDE REMOTE THERMOSTAT.

	APARTMENT NOTES:	1
Y NOTES:	1. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL LOCAL	
8" AFF. S ABOVE	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	
S IN UNITS MUST ACH RANGES.	FROM ONE UNIT SHALL NOT PASS THROUGH STUDS OF A SHARED WALL(DOUBLE STUDS) FROM AN ADJACENT UNIT(BRIDGING).	TION
HOODS AND ST COMPLY WITH INSTALL SWITCHES F REQUIRED TO	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).	ESCRIPTION
F REQUIRED TO	4. PROVIDE SUFFICIENT DUPLEX RECEPTACLES TO MEET NEC 210.52.	DATE
	5. THERMOSTATS SHALL NOT INTERFERE WITH DOOR SWINGS.	
	 ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS FOR KITCHEN APPLIANCES. COORDINATE ALL J-BOX LOCATIONS WITH APPLIANCE INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN. 	DELECTION AND A DELECTION AND
	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.	02/15/24
	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.	ROBISON ENGINEERING, INC 19401 40TH AVE W., SUITE 302 LYNNWOOD, WA 98036 2063643343 TEL REI PROJECT NO: 1219001 CONTACT: ARIK ESPINELI
	11. PROVIDE SMOKE DETECTORS AND CO ALARMS AS REQUIRED. DETECTORS AND ALARMS TO BE HARDWIRED AND PROVIDED WITH BATTERY BACKUP.	KL PSR JAY
	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.	DRAWN: KI DESIGNED: MH CHECKED: PS APPROVED: JA
	13. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LAYOUTS OF ALL DEVICES.	DR/ DES CHE APF
	14. ALL WALL PENETRATIONS SHALL BE CAULKED WITH APPROVED MATERIAL TO MAINTAIN THE FIRE RATING OF ALL WALLS AND FLOORS.	$\langle \cdot \rangle$
	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.	TS EDYALGUR,
	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.	APARTMEN THSTBU w. suite 302 38036 3343
	18. SEE ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR ADDITIONAL DETAILS AND CASEWORK DIMENSIONS.	AP, 5TH Ew. Sult A 98036
	19. DEVICE LOCATIONS IN 1ST DWELLING/RESIDENT UNIT SHALL BE REVIEWED AND APPROVED BY OWNER PRIOR TO ROUGH-IN OF REMAINING UNITS	HEIGHTS APAR SE AND 5TH ST 19401 40TH AVE W. SUITE 302 LYNNWOOD, WA 98036 PHONE:(206)364-3343
	20. CONFIRM FINAL LOCATION OF HEATERS AND THERMOSTATS IN FIELD PRIOR TO ROUGH-IN	
		G, INC
		BRADLEY 27th Ave BISOI
		ENG ENG
		DATE: 02/15/24
		SHEET TITLE:
		NOTES
		sheet NO. E5.00



COPYRIGHT 2023, ROBISON ENGINEERING, INC. MSTEINKE G: _RESOURCE FOLDER STEINKE LEAVENS TEMPLATES APARTMENT 30X42 E3.00 POWER ENLARGED.DWG 09-26-2022 11:41

UNIT TYPICALS	_
1-BED-INT-1	TYPE 'B'
SCALE: $1/4" = 1'-0"$	

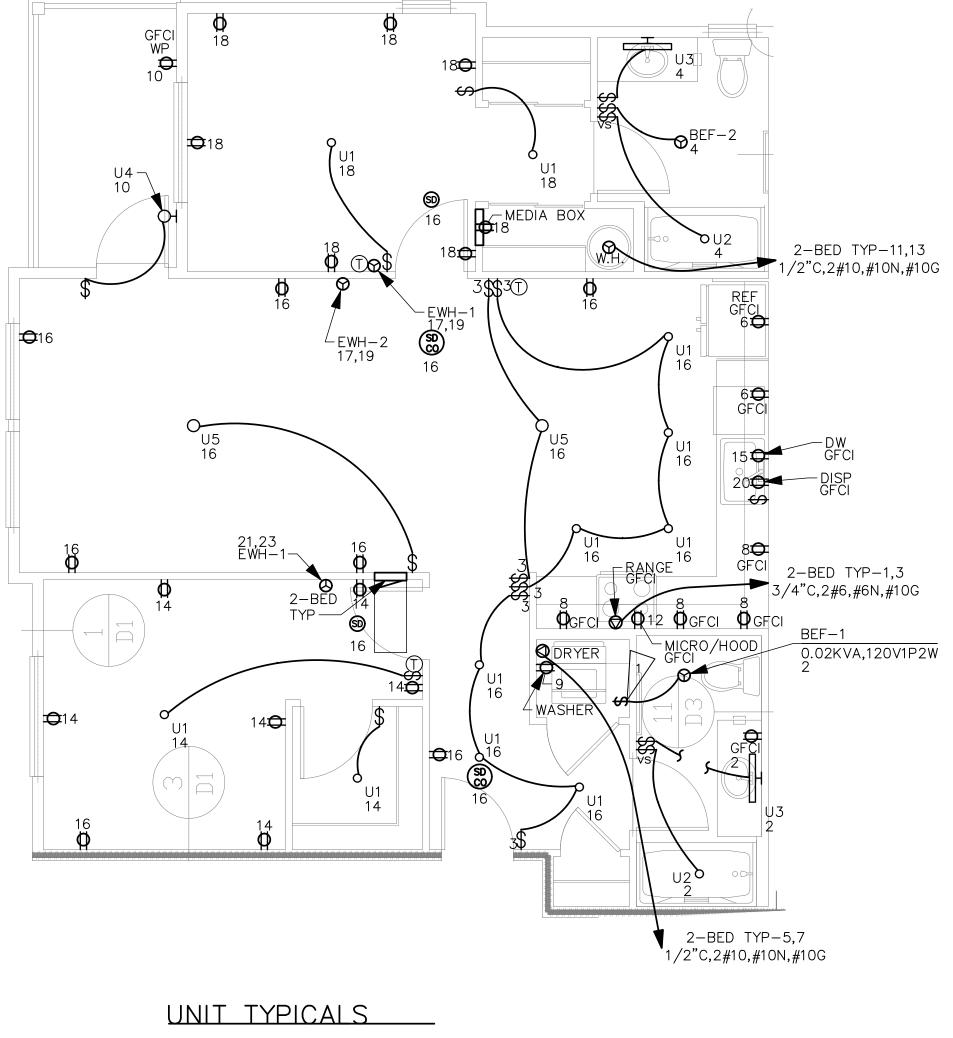
Pa 1	^{nel} — B	ΞD	ROOM MOUNTING FLUS FED FROM L NOTE		S /	٩MP	08/120V S 125 100%	2P 3W	Ν	IC 22,00 IAIN BKR UGS STA	MLO
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRI	PTION		CKT #	CKT BKR	LOAD KVA	CIRCI	JIT DESCI	RIPTION
1 3	50/2 	8	RANGE		a b	2 4	20/1 20/1	0.23 0.372	LIGHT	LIGHTING, ING, MEDI PTACLE	RECEPTACLE A BOX,
57	30/2	4.99			a b	6 8	20/1 20/1	0.912	LIGHTING, RECEPTACLE SMALL APPLIANCE		
9 11 13	20/1 30/2	1.5 4.4	WASHER WATER HEATER		a b a	10 12 14	20/1 20/1 20/1	1.5 1.58 0.19	MICRO	L APPLIAI 0/HOOD 11NG, RECE	
15 17 19	20/1 20/2	1.2 0.75	DISHWASHER WALL HEATER		b b	16 18 20	20/1 20/1	0.53 0	SPAR		SDCO
21 23	20/1 20/1	1.35 0.7	LIGHTING, RECEP DISPOSAL	TACLE				SPAR	PARE		
OP	OPTIONAL DWELLING UNIT CALCULATION (NEC 220.82) CONN KVA CONN CALC KVA KVA										
l f	LIGHTING AND RECEPTACLES SMALL-APPLIANCE 2.61 871 SF (3 VA/SF) 3					U	ERAL LOA P TO 10 KVA	.D 10		10	(100%)
A	LAUNDRY1.5APPLIANCES8.47ELECTRIC COOKING8			OVER 10 KVA 13.6 MAX HEATING OR COOLING		6	5.43 3.35	(40%) (220.82(C)(4))			
Т	TOTAL GENERAL LOAD 23.6					TOT. BAL PH/	AL LOAD ANCED LC ASE A ASE B)AD		18.8 90.3 A 99.4% 101%	

	GENERAL NOTES:					
1.	COORDINATE FINAL LOCATION OF THERMOSTATS, SWITCHES, RECEPTACLES, DATA, PHONE, LIGHT FIXTURES AND J-BOXES WITH ARCHITECTURAL ELEVATIONS AND INTERIOR DESIGN PLANS PRIOR TO ROUGH-IN.					
2.						S
3.	PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.					SCRIPTION REVISIONS
4.	ALL UNITS: PROVIDE SWITCH CONTROLLING GARBAGE DISPOSAL TO BE LOCATED ABOVE BACKSPLASH NEXT TO SINK OR ON COUNTER. SEE ARCHITECTURE.					DESCRIF
5.	BATHROOM GFCI RECEPTACLES TO HAVE INTEGRAL NIGHTLIGHT.					DATE
6.	RECESSED CEILING LIGHT IN BATHROOM SHALL BE LED RATED FOR WET LOCATIONS W/ SHATTER PROOF LENS.					NO.
7.	ALL RECEPTACLES SHALL MEET REQUIREMENTS OF NEC ARTICLE 210.	$ \Gamma$	<u> </u>	ADD RKS	STEIN	
8.	PROVIDE TELEPHONE & CABLE T.V. MEDIA TERMINATION ENCLOSURE (MEDIA BOX): PROVIDE LEVITON COMPACT MEDIA ENCLOSURE OR EQUVALENT IN WALL WITH TOP NO HIGHTER THAN 60" AFF WITH 120V RECEPTACLE ADJACENT.		000000000000		AL ENGINE	
9. ••	HORIZONTAL DISTANCE FROM PERMANENT COOKING APPLIANCE PER CFC 90.2.11.8. DETECTOR SHALL BE MINIMUM 3' HORIZONTAL DISTANCE FROM THE DOOR OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER PER CFC 90.2.11.8. PROVIDE INTERCONNECTION WIRING SUCH THAT ACTUATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THE DWELLING		ΕN	GINEE Padoi 40TH AW LYNNWOOD 206364	B B B B B B B B B C B B C B C C R I S C C R I S C C R I S C C R I S C C S I S C C R I S C C R I S C C R I S C C R I S C C R I S C C R I S C C R I S C C R I S C C S C I S C C S C I S C C I S C C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C S C C S C S C C S C C S C C S C C S C C C S C C C S C C C C C C C C C C	2 N INC 2
••	UNIT. COORDINATE WITH AHJ ON INTERCONNECTING EACH DWELLING UNIT INTO THE FIRE ALARM SYSTEM FOR THE BUILDING. COORDINATE WITH AHJ AS TO THE NUMBER AND LOCATION OF DEVICES PRIOR TO ROUGH-IN. DEVICES SHOWN ARE DIAGRAMMATIC. DISHWASHER OUTLET SHALL BE ACCESSIBLE.		KAWN: KL	SIGNED: MHS	IECKED: PSR	PPROVED: JAY
	RECEPTACLE SHALL BE LOCATED IN SPACE ADJACENT TO THE DISHWASHER. PROVIDE 7-DAY PROGRAMMABLE			DE	CH	AF
11.	THERMOSTAT FOR THE LIVING ROOM.			, WA		
#	>FLAG NOTES			IGUR		
1.	INTERLOCK ERV/BEF TO ON/OFF SWITCH. PROVIDE PERMANENT LABEL SAYING, "WHOLE HOUSE VENTILATION. LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." ADHERE PERMANENT LABEL TO WALL ABOVE WALL SWITCH. AFCI/GFCI REQUIREMENTS FOR		APARTMENTS	5th st Beleuna	W. SUITE 302	98036 3343
	DWELLING UNITS:				40TH AVE	LYNNWOOD, WA 98036 PHONE:(206)364-3343
	ALL 15 AND 20A, 120V SINGLE PHASE CIRCUITS NOT INCLUDING THE BATHROOM SHALL BE AFCI PROTECTED (210.12).			SE SE	19401 -	LYNNM PHONE
2.1	ALL DWELLING UNIT CIRCUITS IN BATHROOMS, GARAGES, OUTDOORS, KITCHENS, LAUNDRY AREAS,AND AREAS WITHIN 6' OF A SINK SHALL BE GFCI PROTECTED (210.8). I. BATHROOM CIRCUIT TO BE GFCI PROTECTED VIA A GFCI RECEPTACLE, WHILE OTHER CIRCUITS SHALL BE PROTECTED AT THE BREAKER.		: BRADLEY I	27th ave s	NOSIAC	INEERING, INC
	UTILIZE "DUAL FUNCTION" BREAKER WHEN BOTH AFCI AND GFCI PROTECTION IS REQUIRED.		TROJEC			ENGIN
) a te		/15/2	4
			IJΝ	T TITL IT P CHEI	LAN	
		۱L				

SHEET NO.

E5.01

COPYRIGHT 2023, ROBISON ENGINEERING, INC. MSTEINKE G:_RESOURCE FOLDER\STEINKE LEAVENS TEMPLATES\APARTMENT 30X42\E3.00 POWER ENLARGED.DWG 09–26–2022 11:41



2-BED TYP
SCALE: $1/4" = 1'-0"$

Ра 2	nel 2 — B	ED	ROOM MOU NT IN FED FRO NOTE		I BU	S	AMP	08/120V S 125 100%	2P 3W	1	AIC 22,00 Main BKR _UGS STA	MLO
CKT #	CKT BKR	LOAD KVA	CIRCUIT	r descrif	TION		CKT #	CKT BKR	LOAD KVA	CIRC	UIT DESC	RIPTION
1 3 5 7 9 11 13 15 17 19 21 23	50/2 30/2 20/1 30/2 20/1 20/2 20/2	8 4.99 1.5 4.4 1.2 0.75	RANGE DRYER WASHEF WATER DISHWA WALL H	HEATER SHER IEATER		a	4 8 10 12 14 16 18 20 22	20/1 20/1 20/1 20/1 20/1 20/1 20/1 20/1	0.23 0.128 1.5 1.5 0.19 1.58 1.28 1.19 1.28 0.7 0.2 0	BATH SMA SMA LIGH MICR LIGH LIGH RECE DISP SDCO	H EX FAN LL APPLIA TING, REC O/HOOD TING, REC TING, REC TING, MED EPTACLE OSAL	NCE EPTACLE EPTACLE EPTACLE
23 I b 24 20/1 0 SPARE OPTIONAL DWELLING UNIT CALCULATION (NEC 220.82) CONN CALC KVA KVA LIGHTING AND 3.52 1,173 SF GENERAL LOAD CONN CALC RECEPTACLES 3.52 1,173 SF GENERAL LOAD UP TO 10 10 (100%) SMALL-APPLIANCE 3 LAUNDRY 1.5 OVER 10 14.5 5.8 (40%) APPLIANCES 8.47 MAX HEATING OR 4 (220.82(C)(4)) (220.82(C)(4)) TOTAL GENERAL LOAD 24.5 TOTAL LOAD 19.8 BALANCED LOAD 99.7% PHASE A 99.7% 100% 100% 100% 100% 100%												

GENERAL NOTES:		
1. COORDINATE FINAL LOCATION OF THERMOSTATS, SWITCHES, RECEPTACLES, DATA, PHONE, LIGHT FIXTURES AND J-BOXES WITH ARCHITECTURAL ELEVATIONS AND INTERIOR DESIGN PLANS PRIOR TO ROUGH-IN.		
2. ADA UNITS SHALL HAVE HOOD CONTROLS INSTALLED IN THE FACE OF THE LOWER CABINET WORK.		Ň
3. PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.		TION
4. ALL UNITS: PROVIDE SWITCH CONTROLLING GARBAGE DISPOSAL TO BE LOCATED ABOVE BACKSPLASH NEXT TO SINK OR ON COUNTER. SEE ARCHITECTURE.		DESCRIPTION
5. BATHROOM GFCI RECEPTACLES TO HAVE INTEGRAL NIGHTLIGHT.		DATE
 RECESSED CEILING LIGHT IN BATHROOM SHALL BE LED RATED FOR WET LOCATIONS W/ SHATTER PROOF LENS. 		NO.
7. ALL RECEPTACLES SHALL MEET REQUIREMENTS OF NEC ARTICLE 210.	AUDID RK S	STE/N
8. PROVIDE TELEPHONE & CABLE T.V. MEDIA TERMINATION ENCLOSURE (MEDIA BOX): PROVIDE LEVITON COMPACT MEDIA ENCLOSURE OR EQUVALENT IN WALL WITH TOP NO HIGHTER THAN 60" AFF WITH 120V RECEPTACLE ADJACENT.		AL ENGINEERED 02/15/24
 9. PROVIDE COMBINATION HARDWIRED 120VAC PHOTOELECTRIC SMOKE DETECTOR AND CARBON MONOXIDE DETECTOR WITH BATTERY-BACKUP DETECTOR SHALL BE MINIMUM 6' HORIZONTAL DISTANCE FROM PERMANENT COOKING APPLIANCE PER CFC 90.2.11.8. DETECTOR SHALL BE MINIMUM 3' HORIZONTAL DISTANCE FROM THE DOOR OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER PER CFC 90.2.11.8. PROVIDE INTERCONNECTION WIRING SUCH THAT ACTUATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THE DWELLING UNIT 		Solution Sison Ring, Inc W, SUITE 302 W, WA 98036 3343 TEL N0: 1219001
 UNIT. COORDINATE WITH AHJ ON INTERCONNECTING EACH DWELLING UNIT INTO THE FIRE ALARM SYSTEM FOR THE BUILDING. COORDINATE WITH AHJ AS TO THE NUMBER AND LOCATION OF DEVICES PRIOR TO ROUGH-IN. DEVICES SHOWN ARE DIAGRAMMATIC. 10. DISHWASHER OUTLET SHALL BE ACCESSIBLE. 	DRAWN: KL Designed: MHS	нескер: PSR Pproved: JAY
RECEPTACLE SHALL BE LOCATED IN SPACE ADJACENT TO THE DISHWASHER. 11. PROVIDE 7-DAY PROGRAMMABLE		AP CH
THERMOSTAT FOR THE LIVING ROOM.	WA	
FLAG NOTES	ALGUR,	
 INTERLOCK ERV/BEF TO ON/OFF SWITCH. PROVIDE PERMANENT LABEL SAYING, "WHOLE HOUSE VENTILATION. LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." ADHERE PERMANENT LABEL TO WALL ABOVE WALL SWITCH. 	APARTMENTS 5TH ST BEILEUND	2
AFCI/GFCI REQUIREMENTS FOR DWELLING UNITS:	SHTS APAR AND 5TH S	19401 40TH AVE W. SUITE 302 LYNNWOOD, WA 98036 PHONE:(206)364-3343
1. ALL 15 AND 20A, 120V SINGLE PHASE CIRCUITS NOT INCLUDING THE BATHROOM SHALL BE AFCI PROTECTED (210.12).	HEIGHTS SE AND	19401 40 LYNNWC PHONE:((
 ALL DWELLING UNIT CIRCUITS IN BATHROOMS, GARAGES, OUTDOORS, KITCHENS, LAUNDRY AREAS,AND AREAS WITHIN 6' OF A SINK SHALL BE GFCI PROTECTED (210.8). BATHROOM CIRCUIT TO BE GFCI PROTECTED VIA A GFCI RECEPTACLE, WHILE OTHER CIRCUITS SHALL BE 	BRADLEY H 27th ave	BISON MEERING, INC
PROTECTED AT THE BREAKER. 3. UTILIZE "DUAL FUNCTION" BREAKER WHEN BOTH AFCI AND GFCI PROTECTION IS REQUIRED.	PROJECT:	
	DATE:	/15/24
	SHEET TITL	E:
		LANS & DULES

E5.(

REQUIRED ELECTRIC VEHICLE CHARGING INFRASTRUCTURE WAC 427:

- 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 = 354AVERAGE NUMBER OF PARKING SPACES PER BUILDING = 354/8 = 45; $45 \times 0.2 = 9$ 5 OUTDOOR EV CHARGERS WITH INFRASTRUCTURE

4 CONDUITS TO FUTURE EV CHARGING LOCATIONS

CAPACITY FOR 9 CHARGERS x $208V/1PH \times 40A = 74.9 \text{ KVA} = (208)A 3$ PHASE POWER @ 120/208V UTILIZING LOAD MANAGEMENT INFRASTRUCTURE, EV LOAD CAN BE REDUCED BY 50%. 208A/2 = 37.5KVA (104)A @ 208V 3 PHASE

PER WAC 427, ELECTRICAL INFRASTRUCTURE FOR EACH BUILDING SHALL BE DESIGNED TO ACCOMMODATE 104 AMPS OF EV ELECTRICAL LOAD.

GROUNDING NOTES AND REQUIREMENTS:

THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR, POWER COMPANY, PHONE COMPANY, INTERNET COMPANY, CABLE TV COMPANY, AND THE SATELLITE TV COMPANY TO ENSURE REQUIRED GROUNDING IS INSTALLED FOR EACH SYSTEM.

THIS SHALL BE DONE PRIOR TO AND DURING INSTALLATION OF FOUNDATION RE-BAR AND CONTINUE DURING THE CONSTRUCTION PHASES, TO ENSURE EACH SYSTEM HAS IT'S REQUIRED GROUNDING INSTALLED FOR PROPER OPERATION OF THE SYSTEM.

- 1. THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND PROVIDE WHAT IS REQUIRED TO DO THE FOLLOWING:
- 2. FOOTING GROUND RE-BAR COMES UP IN THE ELECTRICAL ROOM AND THE RE-BAR IS SNUGLY SECURED TO THE FOOTING RE-BAR.
- 3. THE MSB GROUNDING TIES TO THE FOOTING RE-BAR, COUNTERPOISE, BUILDING STEEL, AND WATER PIPING.
- 4. THE GROUND WIRE FOR THE COUNTERPOISE SHALL BE STRANDED, INSULATED WIRE IN CONDUIT UNTIL IT REACHES THE FIRST BAR OF THE COUNTERPOISE. BETWEEN THE COUNTERPOISE BARS IT SHALL BE A STRANDED BARE COPPER WIRE.

GEN	ERAL I	FEEDER SCHEDULE	
ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
$\langle 1 \rangle$	125	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G	A-001, A-002, A-003, A-004, A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-201, A-202, A-203, A-204, A-205, A-206, A-207, A-208, A-301, A-302, A-303, A-304, A-305, A-306, A-307, A-308, B-001, B-002, B-101, B-102, B-103, B-104, B-201, B-202, B-203, B-204, B-301, B-302, B-303, B-304, C-101, C-102, C-103, C-104, C-105, C-106, C-107, C-108, C-109, C-110, C-111, C-112, C-201, C-202, C-203, C-204, C-205, C-206, C-207, C-208, C-209, C-210, C-211, C-212, C-301, C-302, C-303, C-304, C-305, C-306, C-307, C-308, C-309, C-310, C-311, C-312
2	100	1-1/2"C,3#1/0 AL,#1/0 AL N,#6 AL G	AM-B, POOL
$\langle 5 \rangle$	1200	(4)3–1/2"C,3#500kcmil AL,#500kcmil AL N,#250kcmil AL G	A-MC, C-MC, E-MC, F-MC, G-MC
6	800	(3)3"C,3#400kcmil AL,#400kcmil AL N,#4/0 AL G	B-MC
$\langle 7 \rangle$	1600	(5)4"C,3#600kcmil AL,#600kcmil AL N,#500kcmil AL G	D-MC
(13)	400	(2)2–1/2"C,3#250kcmil AL,#250kcmil AL N,#1/0 AL G	AM-CT
(15)	1000	(4)3"C,3#350kcmil AL,#350kcmil AL N,#4/0 AL G	H-MC
(17)	400	3–1/2"C,3#500kcmil,#500kcmil N,#2G	AM-A
(18)	200	2"C,3#3/0,#3/0N,#6G	A-HOUSE, B-HOUSE, C-HOUSE, D-HOUSE, E-HOUSE, F-HOUSE, G-HOUSE, H-HOUSE

SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C 1/O AND ABOVE

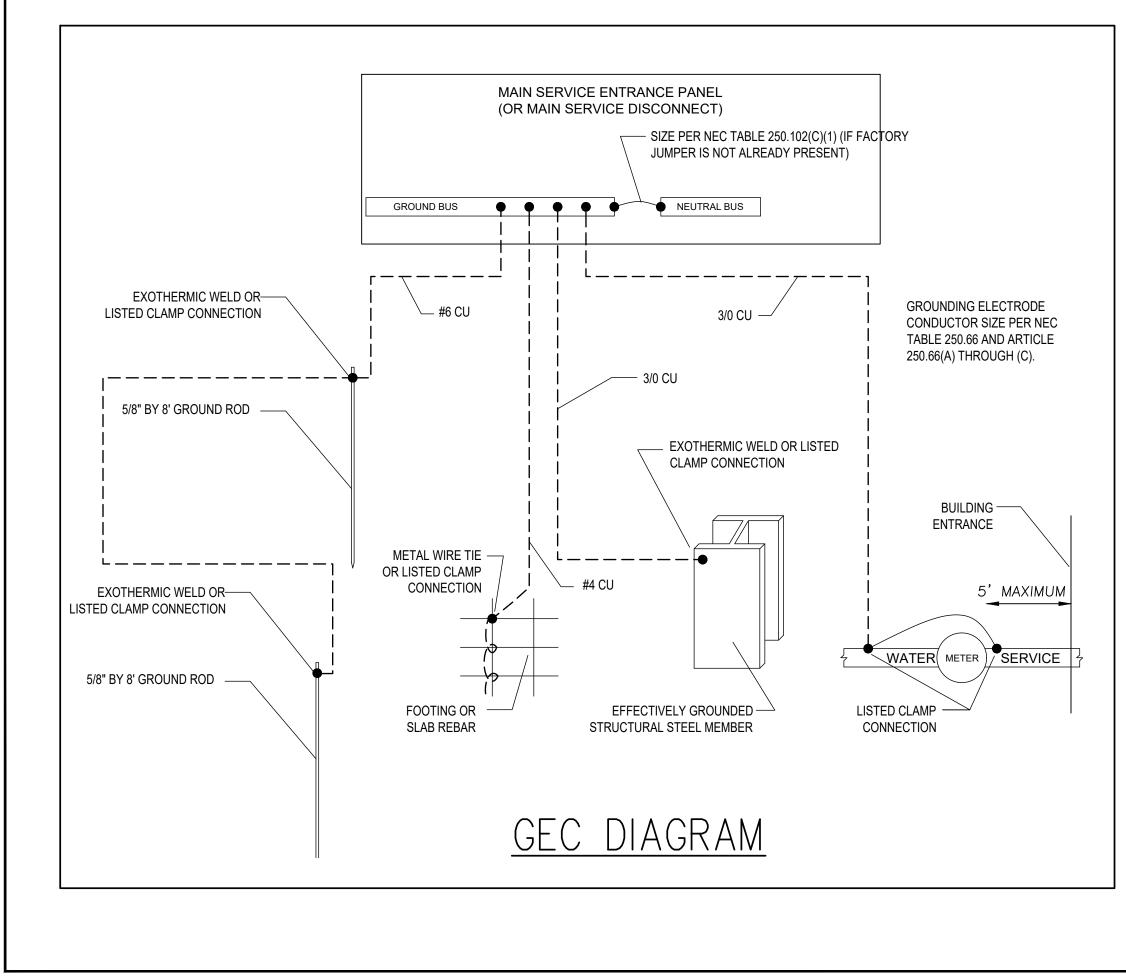
FEEDER SCHEDULE NOTES: CONDUIT FILL:

* 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.



COPYRIGHT 2023, ROBISON ENGINEERING, INC. MSTEINKE G:_RESOURCE FOLDER\STEINKE LEAVENS TEMPLATES\APARTMENT 30X42\E5.00 ONE LINE.DWG 10-03-2022 10:41

COORDINATION AND ARC FLASH STUDIES:

IMMEDIATELY UPON SELECTION OF ACTUAL EQUIPMENT BEING PROVIDED FOR THE PROJECT, THE ELECTRICAL CONTRACTOR SHALL PERFORM AN ARC FLASH ANALYSIS AND COORDINATION STUDY ON THE STANDBY DISTRIBUTION BASED ON ACTUAL EQUIPMENT TO BE PROVIDED, CONDUCTOR TYPES/SIZES/LENGTHS, ETC. COORDINATION SHALL BE CONFIRMED BASED ON FAULT NUMBERS SHOWN ON THIS DRAWING.

STUDIES SUBMITTED SHALL BE STAMPED BY A PROFESSIONAL ELECTRICAL ENGINEER HOLDING A CURRENT LICENSE FROM THE STATE OF WA.

PRELIMINARY ARC FLASH AND COORDINATION STUDIES ARE TO BE SUBMITTED WITH THE SUBMITTALS FOR THE PROTECTIVE DEVICES, PANELBOARDS, SWITCHBOARDS, AND OTHER ELECTRICAL EQPT.

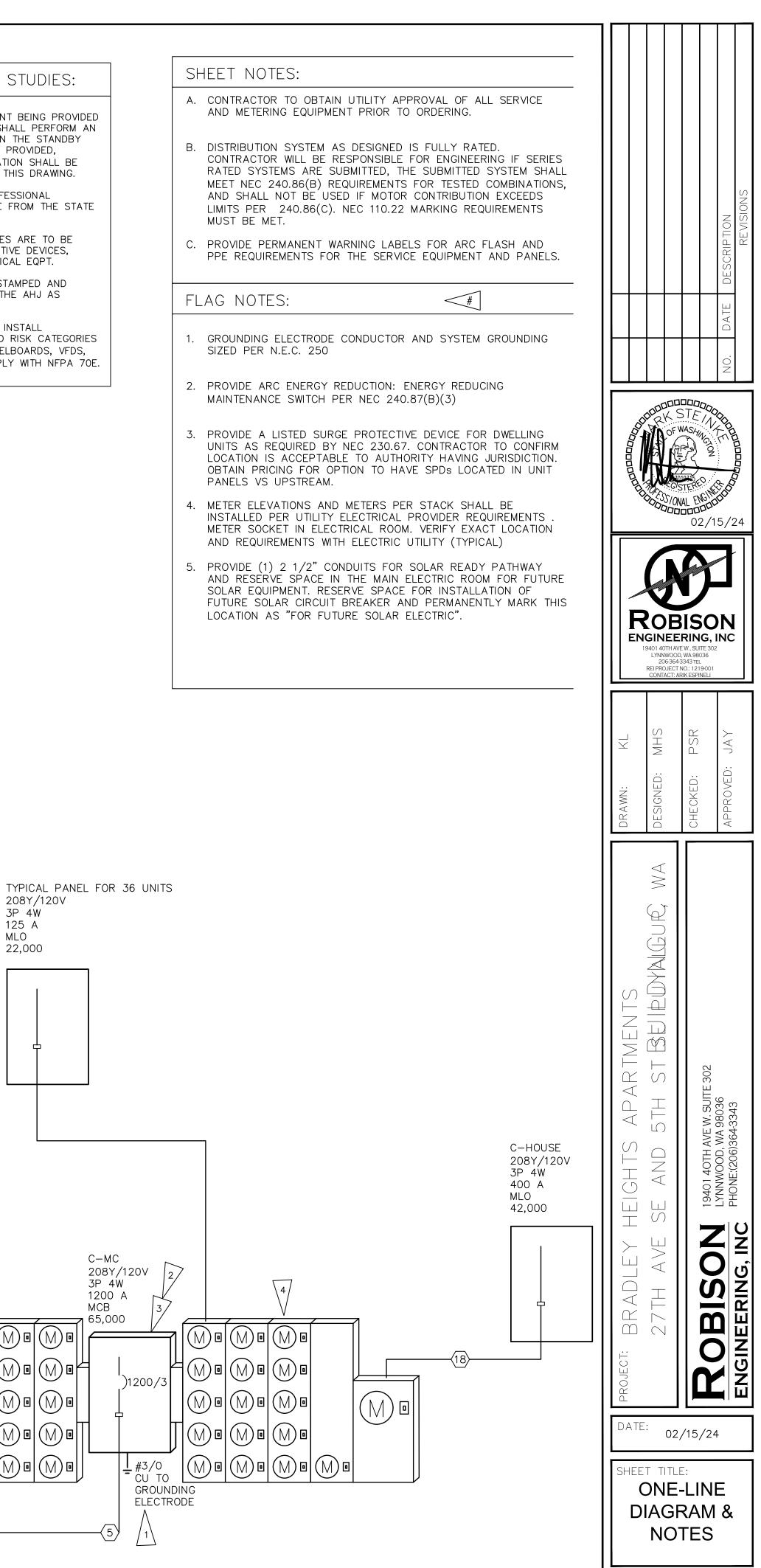
THE ELECTRICAL CONTRACTOR SHALL SUBMIT THE STAMPED AND SIGNED ARC FLASH AND COORDINATION STUDY TO THE AHJ AS REQUIRED.

THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL PERMANENT LABELS INDICATING ARC FLASH HAZARD RISK CATEGORIES ON ALL DISTRIBUTION POINTS (SWITCHBOARDS, PANELBOARDS, VFDS, DISCONNECT SWITCHES, ETC). LABELS SHALL COMPLY WITH NFPA 70E.

7	7
	$(\mathbb{M}$

ONE-LINE DIAGRAM

TO UTILITY XFMR



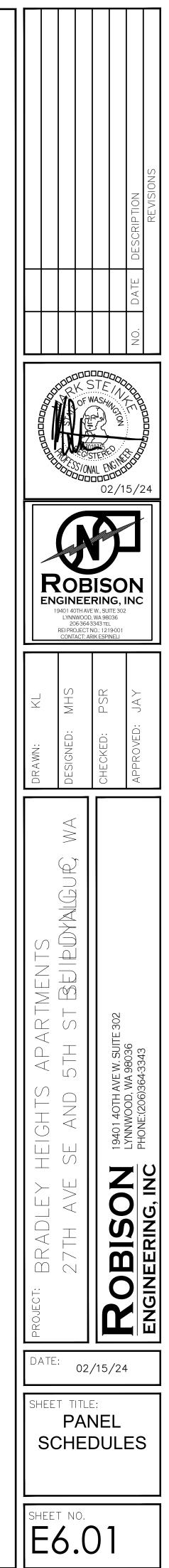
HEET NO.

E6.00

COPYRIGHT 2023, ROBISON ENGINEERING, INC. MSTEINKE G:_RESOURCE FOLDER\STEINKE LEAVENS TEMPLATES\APARTMENT 30X42\E5.00 ONE LINE.DWG 10—03—2022 10:41

Pa	nel) — -	OU	• •	NG SURF. DM C-MC	ACE	BUS	AMP	08Y/120 S 200 100%	V 3P 4W	1	AIC 42,00 Main BKR Lugs STA	MLO	
CKT #	CKT BKR	LOAD KVA		DESCRI	⊃TION		CKT #	CKT BKR	LOAD KVA	CIR	CUIT DESC	RIPTION	
" 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 5 37 39 41	20/1 20/1 20/1 20/1 20/1 20/1 20/1 20/1	0.54 0.54 0.54 0.294 0.294 0.294 0.5 0.18 0.128 0.128 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RECEPT RECEPT RECEPT LIGHTIN LIGHTIN HEAT T RECEPT RECEPT RECEPT LIGHTIN FACP SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	ACLE ACLE G G G RACE ACLE ACLE		а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с а b с с а b с с а b с с а b с с а с с с а с с с с	2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40	40/2 40/2 40/2 40/2 40/2 40/2 40/2 40/2 40/2 40/2 1 40/	6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.6	EV EV EV (F) (F) (F)	CHARGER CHARGER CHARGER CHARGER CHARGER EV CHARG EV CHARG EV CHARG EV CHARG AR BREAK	SER SER SER SER	
	GHTING ECEPTACL		CONN KVA .01 .98	CALC KVA 1.26 1.98	(125%) (50%>10)		CON HEA TOT, BAL LO PH, PH,	LOAD TINUOUS TING AL LOAD ANCED 3 AD ASE A ASE B ASE C	К 59. 0.5 0.5		CALC KVA 37.1 0.625 0.5 41.5 115 A 101% 101% 98.5%	(63%) (125%) (100%)	

TE	M NTING SURFAC FROM XFMR (I		BUS	TS 208Y , AMPS 1 TRAL 10 (200	5P 4W			AIC 65,000 Main BKR 1 2 Lugs Stand		
Т	BREAKER TRIP/POLES	CIRCUIT DESCRIP	TION		L	OAD KV B	A C	FEEDER F	RACEWAY AND	CONDUCTOR	S
	125/2	PANEL C-101			16.5	16.7			2#2/0 AL,#2/		
2 3	125/2 125/2	PANEL C-102 PANEL C-103			16.7	15.8	15.7 16.5		2#2/0 AL,#2/ ,2#2/0 AL,#2/		
1	125/2	PANEL C-104			15.8	15.7			2#2/0 AL,#2/	••	
5	125/2	PANEL C-105			45	15.8	15.7		2#2/0 AL,#2/		
,	125/2 125/2	PANEL C-106 PANEL C-107			15 15.8	15.7	15.7		,2#2/0 AL,#2/ ,2#2/0 AL,#2/	••	
3	125/2	PANEL C-108				15.7	15	1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
) 0	125/2 125/2	PANEL C-109 PANEL C-110			15.7 16.5	16.7	15.8		2#2/0 AL,#2/		
1	125/2	PANEL C-110 PANEL C-111			10.5	15.8	15.7		2#2/0 AL,#2/ 2#2/0 AL,#2/		
2	125/2	PANEL C-112			16.7		16.5	1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
3 4	125/2 125/2	PANEL C-201 PANEL C-202			16.5	16.7 15.8	15.7		2#2/0 AL,#2/ 2#2/0 AL,#2/		
4 5	125/2	PANEL C-202 PANEL C-203			16.7	10.0	16.5		,2#2/0 AL,#2/ ,2#2/0 AL,#2/		
6	125/2	PANEL C-204			15.8	15.7		1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
7 8	125/2 125/2	PANEL C-205 PANEL C-206			15.7	15.8	15.7 15.8		2#2/0 AL,#2/ 2#2/0 AL,#2/		
9	125/2	PANEL C-200 PANEL C-207			15.7	15	10.0		,2#2/0 AL,#2/ ,2#2/0 AL,#2/	**	
0	125/2	PANEL C-208			·	15.7	15	1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
21 2	125/2 125/2	PANEL C-209 PANEL C-210			15.7 16.5	16.7	15.8		2#2/0 AL,#2/ 2#2/0 AL,#2/		
3	125/2	PANEL C-210			10.5	15.8	15.7		2#2/0 AL,#2/		
4	125/2	PANEL C-212			16.7		16.5	1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
5 6	125/2 125/2	PANEL C-301 PANEL C-302			16.5	16.7 15.8	15.7		2#2/0 AL,#2/ 2#2/0 AL,#2/	••	
7	125/2	PANEL C-303			16.7	10.0	16.5		2#2/0 AL,#2/		
8	125/2	PANEL C-304			15.8	15.7		1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
9	125/2 125/2	PANEL C-305 PANEL C-306			15.7	15.8	15.7 15.8		2#2/0 AL,#2/ ,2#2/0 AL,#2/		
31	125/2	PANEL C-307			15.7	15	10.0		2#2/0 AL,#2/		
52	125/2	PANEL C-308				15.7	15	1–1/2"C,	2#2/0 AL,#2/	'O AL N,#4 A	LG
53 54	125/2 125/2	PANEL C-309 PANEL C-310			15.7 16.5	16.7	15.8		2#2/0 AL,#2/ 2#2/0 AL,#2/		
35	125/2	PANEL C-311				15.8	15.7		2#2/0 AL,#2/		
36 37	125/2	PANEL C-312			16.7	04 7		1–1/2"C,	2#2/0 AL,#2/		
/	200/3	PANEL C-HOUSE			21.2	21.3	20.8	∠ 0,3#3/	′0,#3/0N,#6G		
		TOTAL CONNE			408	404	400				
⊃ TI	ONAL MULTIFAI	MILY DWELLING CA	LCULATION (N		34) DWELLING	G UNIT	LOADS				
			KVA							KVA	
Լլն	HTING AND RE	CEPTACLES	105	34,964		CON	NECTED	LOAD		1,120	
	ALL-APPLIANC		108	(3 VA/S	or)		LLING U			36	
	INDRY		54				AND FA CULATEI			(30%) 335	
	PLIANCES CTRIC COOKIN	0	305 288			UAL	JULAIEL				
API	ATING	5	288 257	(100%)							
api ele				,	HOU	SE LOAI	DS				
api ele		CONN KVA	CALC KVA						CONN KVA	CALC KVA	
api ele		0.888	1.11	(125%)			LOAD	_	59.4	37.1	(63%)
API ELE HE	HTING	4.00	1.98	(50%>10))		TINUOU: TING	5	0.5 0.5	0.625 0.5	(125%) (100%)
	HTING CEPTACLES	1.98							0.0		
API ELE HE		1.98				I () [AL HOU	SE LOAD		41.3	
API ELE HE		1.98									
API ELE HE		1.98			тот	TAL LOA	D				
API ELE HE		1.98	KVA		ТОТ		D			KVA	
API ELE HE, LIG RE(UNIT LOAD	KVA 335 41.3		ТОТ	TAL LOA	AL LOA[) 3–PHASE		KVA 377 1,050 A	



	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.	P-3 P-3
8.	EXPOSED PIPING: PROVIDE CHROME PLATING FOR EXPOSED PIPING IN FINISHED ROOMS.	
	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.	#-
	LIGHT FIXTURE CLEARANCE: COORDINATE LOCATIONS OF MECHANICAL WORK TO PROVIDE CLEARANCES OVER LIGHTING FIXTURES FOR REMOVAL AND REPLACEMENT. CABLE TRAYS: PIPING INSTALLED ADJACENT TO ELECTRICAL CABLE TRAYS SHALL ALLOW MINIMUM	#-
13.	ACCESS OF 6" ABOVE AND TO THE SIDE OF CABLE TRAYS. MOTORS: COMPLY WITH ENERGY CODE ENFORCED BY AHJ FOR MINIMUM EFFICIENCIES UNDER FULL	
	LOAD.	HWCP-1
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.	
<u>C0</u>	ORDINATION REQUIREMENTS	W
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.	<u> </u>
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,	— V — —
5.	SCUPPER DRAINS, AND CONDENSATE DRAINS. PLUMBING FIXTURES & EQUIPMENT: COORDINATE EXACT LOCATION OF ALL PLUMBING FIXTURES &	OD
6.	EQUIPMENT WITH ARCHITECTURAL AND OTHER TRADES DOCUMENTS. 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.	PCD
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.	140
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.	FOF
10.	PRIOR TO PIPING INSTALLATION: PLUMBING CONTRACTOR TO COORDINATE PIPING LAYOUT WITH ALL OTHER TRADES.	FOR
11.	ACCESS: COORDINATE ALL ACCESS LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT TO	— — FOV — — — RV— —
12.	ENSURE ALL REQUIRED ACCESS HATCHES, ACCESS PANELS & ACCESS COVERS ARE PROVIDED. PROVIDE WATER TIGHT SEALS FOR ANY PIPING PENETRATING THE EXTERIOR FOUNDATION WALLS OR	G
13	SLABS. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.	MPG
	PROVIDE FIRE PROOFING FOR ALL PIPING PENETRATING FIRE BARRIER WALLS OR FLOOR SLABS.	——— F ———
DIS	SINFECTION OF POTABLE WATER SYSTEM REQUIREMENTS	
1.	NEW OR REPAIRED POTABLE WATER SUPPLY SYSTEMS SHALL BE DISINFECTED PRIOR TO USE.	
2.	INITIAL COLIFORM SAMPLE IS REQUIRED PRIOR TO ADMINISTERING WATER-CHLORINE SOLUTION.	
3. 3.1	SECTION 609.9 ITEMS #2 OR #3 CAN BE USED PRECEDED BY AND FOLLOWED BY ITEM #1. I. NOTE FILL PORT TO ADD CHLORINE MUST BE WHERE WATER SUPPLY ENTERS	(
4.	BUILDING AND A FLOW METER TO MEASURE SOLUTION. AFTER WATEROCHLORINE SOLUTION IS INCORPORATED INTO THE NEW OR REPAIRED WATER SUPPLY SYSTEM A 48 HOUR WAITING PERIOD MUST BE OBSERVED PRIOR	
	TO BACTERIOLOGICAL TEST. BACTERIOLOGICAL TEST SHALL BE CONDUCTED BY A LABORATORY CERTIFIED FOR DRINKING WATER IN WASHINGTON STATE AFFIRMING WATER QUALITY CONTAINS NO	
5.	COLIFORM BY SAMPLE TESTING THE FURTHEST FIXTURE FROM PUBLIC WATER	
	SOURCE AND NOT LESS THAN TWO OTHER LOCATIONS PART OF THE WATER SUPPLY SYSTEM.	
5. 6. 7.	SOURCE AND NOT LESS THAN TWO OTHER LOCATIONS PART OF THE WATER	

SYMBOLS

<u>general</u>

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)

DRAWN - SHEET NUMBER WHERE SECTION IS TAKEN

DETAIL IDENTIFICATION ----- DRAWING/SHEET NUMBER

<u>EQUIPMENT</u>

TYPICAL EQUIPMENT DESIGNATION

PIPING
WASTE BELOW GRADE
WASTE ABOVE GRADE
PUMPED WASTE
INDIRECT WASTE
SANITARY SEWER BELOW GRADE
SANITARY SEWER ABOVE GRADE
PUMPED SANITARY SEWER
VENT
STORM DRAIN
OVERFLOW STORM DRAIN
PUMPED STORM DRAIN
CONDENSATE DRAIN PUMPED CONDENSATE DRAIN
COLD WATER (CW) HOT WATER (HW), POTABLE, 120°F
HOT WATER, POTABLE,
TEMPERATURE OTHER THAN 120°F
HOT WATER CIRCULATING (HWC), POTABLE, 120°F
HOT WATER CIRCULATING, POTABLE,
TEMPERATURE OTHER THAN 120°F
FUEL OIL FILL
FUEL OIL SUPPLY
FUEL OIL RETURN
FUEL OIL VENT
RELIEF VENT
LOW PRESSURE NATURAL GAS
MEDIUM PRESSURE NATURAL GAS
IRRIGATION (NON POTABLE)
FIRE MAIN

<u>PIPE SYMBOLS</u>

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

ULJ
\sim
5
PRV
——————————————————————————————————————
<u>X</u>
BV
>
X^A
↓ ID
V U
•
O O RD OD
A
<i>—</i> /-
GM
(M)
\bigcirc
¥
Ш Т
+ P/T
DCVA
T
()

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
BALANCING/METERING VALVE
REDUCER
DIRECTION OF FLOW
PIPE ANCHOR
PIPE ALIGNMENT GUIDE
VALVE STATION OR ASSEMBLY
INDIRECT DRAIN, PIPE TO DRAIN
POINT OF CONNECTION
ROOF DRAIN, OVERFLOW DRAIN
FLOOR DRAIN
HOSE BIBB
BREAK IN PIPING OR DUCTWORK
GAS METER
INLINE WATER METER
PUMP
PRESSURE GAUGE
THERMOMETER
PRESSURE/TEMPERATURE TEST PORT
REDUCED PRESSURE BACKFLOW PREVENTER
DOUBLE CHECK VALVE ASSEMBLY
CATCH BASIN - SAND/OIL INTERCEPTO
TRENCH DRAIN
EMERGENCY GAS SHUT-OFF VALVE
SEISMIC GAS SHUT-OFF VALVE
WASHER BOX
GREASE INTERCEPTOR

		ABBREVIATI	ONS								
AD AFF A AFF A AHJ A BFF E BFP E BOH E BT E BTUH E BV E C CAP C CAP C CCAP C CCAC C CCAP C CCAC C CC	BELOW FINISHE BACKFLOW PR BACK OF HOU BOOSTER PUM BATHTUB BRITISH THERM BALANCING VA COMMON CAPACITY CATCH BASIN CONDENSATE I CAPPED FOR I CUBIC FEET PI CAST IRON CEILING, COOLI CLEANOUTS TO CONTINUE, COI CONTINUE, COI CONTINU	FLR FLOOR ED FLOOR FPM ED FLOOR FPS ED FLOOR FS ED FLOOR FS EVENTER FU SE G GARAGE DRAIN GAL GALLONS GO GARAGE DRAIN ALL UNIT PER HOUR GM GAS (LOW PRESSURE) P GAL GALLONS GD GARAGE DRAIN ALL UNIT PER HOUR GM GAR GALLONS ALL UNIT PER HOUR GM GV GATE VALVE GPG GALLONS CHAIN GWB GV GATE VALVE GV GATE VALVE		OPD G PD CV PSGD SSW DF BM R R R R S SCD PF SS SSD SSD V PPP PR R R R R S SCD PF SS SSD SSD V PF V U U R V R WCOD WSFU	OVER PUMP PRESS POINTS PRESS POUMP PUMP PUMP PUMP PUMP PUMP PUMP PUM	PRESSUE NG SURE DR OF CON SURE REI SURE REI ED STOR ED STOR ED STOR ED SANIT ED SANIT ED SANIT ED SANIT ED COI M DRAIN GE EJECT IC GAS RELIEF LESS STI SANITAR DARD RE C PRESS RELIEF LESS STI SANITAR DARD RE CH DRAIN MOSTATIC PRIMER AL HEATER SS OTHEF LESS STI SANITAR DARD RE CH DRAIN C PRESS STI SANITAR DARD RE CH DRAIN C PRESS CH DRAIN C PRESS CH DRAIN C PRESS CH DRAIN C CLEANOI HYDRAN ING MAC	INECTION DUCING V, LIEF VALV M DRAINA SQUARE I M DRAINA IARY SEW FARY WAS E SSURE BA PER MINU LD WATER FOR PUMF SHUT-OFF LOW URE/SUMI EEL/SANIT Y SEWER N C MIXING Y RWISE NO COF WIDE T JTS T	E TER DRAIN ALVE E GE NCH GAUGE GE ER TTE ACKFLOW PREVENTER TTE VALVE P PUMP TARY SEWER VALVE TED			NO. DATE DESCRIPTION REVISIONS
		DRAWING INDE	X								グ
	DWG	DESCRIPTION		NCLU T	JDEE) IN	SE	T		GINEE). WA 98036
	P0C.00 P0C.01 P0C.02 P0C.03	LEGEND, GENERAL NOTES, AND DRAWING INDEX PLUMBING NOTES AND TABLES PLUMBING CALCULATIONS PLUMBING SCHEDULES	x x x 2/15/2024						DRAWN: JM	2063643 REI PROJECT CONTACT: AF	NO.: 777-006
	P2C.00	UNDERSLAB WASTE & VENT PLAN	×								
	P2C.01 P2C.02	LEVEL 1 WASTE & VENT PLAN LEVEL 2 WASTE & VENT PLAN	× ×						\bigcirc		
	P2C.03 P2C.04	LEVEL 3 WASTE & VENT PLAN ROOF WASTE & VENT PLAN	x						ING		
									BUILDING		
	P3C.01 P3C.02	LEVEL 1 PLUMBING SUPPLY PLAN LEVEL 2 PLUMBING SUPPLY PLAN	× ×						BU		
	P3C.03	LEVEL 3 PLUMBING SUPPLY PLAN	×						л С		
	P4C.00	WASTE & VENT RISER DIAGRAMS	×						L		
	P7C.00	DETAILS	×						ME		302
									RADLEY H	202 27TH AVE SE PUYALLUP, WA 98374	Robison19401 40TH AVE W. SUITELynnwood, wa 98036ENGINEERING, INC

	ABBREVIAT	IONS			
BELOW FINISHE BACKFLOW PR BACK OF HOU BOOSTER PUM BATHTUB BRITISH THERN BALANCING VA COMMON CAPACITY CATCH BASIN CONDENSATE CAPPED FOR I CUBIC FEET P CAST IRON CEILING, COOL CLOTHES WASI CLEANOUTS COMBUSTION CONTINUE, CO CONTRACTOR CLEANOUTS COMBUSTION CONTINUE, CO CONTRACTOR CLEANOUTS COMBUSTION CONTINUE, CO CONTRACTOR CLEANOUTS COLD WATER DIAMETER DRY BULB, DE DRINKING FOU DRAIN FIXTURE DUCTILE IRON DIMENSION DOWN DOWN SPOUT DRAWING EXISTING EFFICIENCY ELECTRIC EQUIVALENT ELECTRIC WAT EXTERIOR, EXT FAHRENHEIT FLOOR CLEANO	VING JURISDICTION D FLOOR D FLOOR VENTER SE SE SE SE SE SE SE SE SE SE SE SE SE	OPD OPNG P PD POC PRV PS PSB PSD PSS PSW PW RD REF RPBP RPM S SCH SCW SD SEP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SGSV SH SO SP SF SF SGSV SH SO SP SF SF SGSV SH SC SF SGSV SH SO SP SF SF SGSV SH SC SF SC SS SS SS SS SS SS SS SS SS SS SS SS	OVERFLOW DRAIN/DECK DRAIN OVER PRESSURE DEVICE OPENING PUMP PRESSURE DROP, PLANTER DRAIN POINT OF CONNECTION PRESSURE REDUCING VALVE PRESSURE RELIEF VALVE PUMPED STORM DRAINAGE POUNDS PER SQUARE INCH GAUGE PUMPED STORM DRAINAGE PUMPED SANITARY SEWER PUMPED SANITARY WASTE PUMPED WASTE ROOF DRAIN REFERENCE REDUCED PRESSURE BACKFLOW PREVENTER REVOLUTIONS PER MINUTE SINK SCHEDULE SOFTENED COLD WATER STORM DRAIN SEWAGE EJECTOR PUMP SQUARE FOOT SEISMIC GAS SHUT-OFF VALVE SHOWER STORM OVERFLOW STATIC PRESSURE/SUMP PUMP SUDS RELIEF STAINLESS STEEL/SANITARY SEWER SIDE SANITARY SEWER STANDARD SQUARE TRENCH DRAIN THERMOSTATIC MIXING VALVE TRAP PRIMER TYPICAL UNIT HEATER UNIT SOFTHERWISE NOTED URINAL VENT VENT VENT VENT THRU ROOF WASTE, WATT, WIDE WATER CLOSET WALL CLEANOUTS WALL HYDRANT WASHING MACHINE WATER SUPPLY FIXTURE UNITS		NO. DATE DESCRIPTION REVISIONS
	DRAWING IND	EX			ジ
DWG	DESCRIPTION	SET 2024	JDED IN SET		D, WA 98036 3343 TEL
P0C.00 P0C.01 P0C.02 P0C.03	LEGEND, GENERAL NOTES, AND DRAWING INDEX PLUMBING NOTES AND TABLES PLUMBING CALCULATIONS PLUMBING SCHEDULES	x x PERMIT 2/15/2		DRAWN: JM DESIGNED: JM	CHECKED: RJ APPROVED: JR
P2C.00 P2C.01 P2C.02 P2C.03 P2C.04	UNDERSLAB WASTE & VENT PLAN LEVEL 1 WASTE & VENT PLAN LEVEL 2 WASTE & VENT PLAN LEVEL 3 WASTE & VENT PLAN ROOF WASTE & VENT PLAN	x x x x x x x x x x x x		DING C	
P3C.01 P3C.02 P3C.03 P4C.00	LEVEL 1 PLUMBING SUPPLY PLAN LEVEL 2 PLUMBING SUPPLY PLAN LEVEL 3 PLUMBING SUPPLY PLAN WASTE & VENT RISER DIAGRAMS	x x x x x		- BUIL	
P7C.00 P7C.01	DETAILS DETAILS	x x		RTMENTS	SUITE 302 36 3
				PROJECT: BRADLEY HEIGHT APA 202 27TH AVE SE PUYALLUP, WA 98374	Robison19401 40TH AVE W. SUITERobison19401 40TH AVE W. SUITELYNNWOOD, WA 98036ENGINEERING, INC

DATE: 02/15/2024

SHEET NO.

P0C.00

SHEET TITLE: LEGEND GENERAL NOTES AND DRAWING INDEX

PLUMBING TABLES

PIPE INSULATION SCHEDULE

SERVICE	OPTION	1	OF	TION 2	VAPOR RETARDER	NOTES	
SERVICE	MATERIAL	THICKNESS	MATERIAL	THICKNESS	REQUIRED	NOTES	
OOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, STORM DRAIN (IN CONDITIONED SPACE)	MINERAL-FIBER WITH JACKET	ALL SIZES: ½"	PVC/NBR	ALL SIZES: ¾"	YES	12,13	
DOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, WASTE (OUTSIDE THE CONDITIONED SPACE)	MINERAL-FIBER WITH JACKET	(R-3) 炎"PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R-3) 炎" 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	
OMESTIC HOT WATER	MINERAL-FIBER WITH JACKET	(R-3) 炎"PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R-3) ½" PIPE: ½" ALL OTHER SIZES: ¾"	NO	2,10	
OOMESTIC HOT WATER AND RECIRCULATED HOT WATER NONRESIDENTIAL)	MINERAL-FIBER WITH JACKET	½"-1¼" PIPE: 1" 1½"-4" PIPE:1.5"	PVC/NBR	1⁄2"-11⁄4" PIPE: 1" 1½"-4" PIPE:1.5"	NO	3,9	
XPOSED SANITARY DRAINS AND DOMESTIC WATER SUPPLIES	TRUEBRO LAV-GUARD	N/A	N/A	N/A	NO	11	

<u>NOTES:</u>

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 2019 CEC 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. VALVES, PUMPS, STRAINERS, AND THREADED UNIONS IN PIPING THAT IS 1 INCH OR LESS IN NOMINAL DIAMETER. 6.2.
- 6.3. PIPING FROM USER-CONTROLLED SHOWER AND BATH MIXING VALVES TO THE WATER OUTLETS. COLD WATER PIPING OF A DEMAND RECIRCULATION WATER SYSTEM. 6.4.
- TUBING FROM A HOT DRINKING-WATER HEATING UNIT TO THE WATER OUTLET. 6.5.
- 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. 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 6.8.
- MINIMUM INSULATION REQUIREMENTS OF C404.6. 7. PER 2018 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 2019 CEC 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 2019 CEC 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.

HANGER SPACING FOR WATER PIPING										
ALL SUSPENDED WATER SUPPLY PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2018 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 $\leq 1\frac{1}{2}$ "	6 FT.	10 FT.								
COPPER TUBING >2"	10 FT.	10 FT.								
CPVC <u><</u> 1"	3 FT.	10 FT.								
CPVC > 1¼"	4 FT.	10 FT.								

HANGER SPACING FOR WASTE AND VENT PIPING

ALL SUSPENDED SANITARY AND VENT PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2018 UPC TABLE 313.3:

MAX. HORIZ. MAX. VERT SPACING SPACING 4 FT. 10 FT. PVC (TYPE DWV) 4 FT. 10 FT. CAST-IRON HUBLESS* 15 FT. EVERY THER JOINT

*CAST-IRON OVER 4' SHALL BE SUPPORTED AT EVERY JOINT

PLUMBING FIX	
--------------	--

FIXTURE TYPE

SHOWERHEADS
SHUWERHEADS

- LAVATORY FAUCETS. RESIDENTIAL
- LAVATORY FAUCETS. NON-RESIDENTIAL
- KITCHEN FAUCETS GRAVITY TANK-TYPE WATER CLOSETS FLUSHOMETER TANK WATER CLOSETS
- FLUSHOMETER VALVE WATER CLOSETS ELECTROMECHANICAL HYDRAULIC WATER CLOSETS URINALS

<u>NOTES:</u>

1.

2.

3.

4

- WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS RATED AT 0.35 GPM OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.
- DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM @ 60 PSI.

NOTE TO CONTRACTOR	PRE
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.	CONTRACTORS S REVIEWING THE LOCATED AT TH WORKING SESSIC DETAILED REVIEW ISSUES, REVIEW INVESTIGATION C
CONTRACTOR SUBSTITUTIONS	PERSONS ATTEN PERSONS INTENI WILL BE ISSUED
& REVISIONS	CHANGE ORDERS THAT THE ENG

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.

SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH THE ENGINEER FOR THE PURPOSE OF WORK PRIOR TO ORDERING ANY EQUIPMENT OR PERFORMING ANY WORK. THE MEETING SHALL BE IE PROJECT SITE ON A DATE AND TIME TO BE MUTUALLY AGREED. THE MEETING WILL BE A ON. THE MEETING WILL BE FACILITATED BY THE ENGINEER AND THE AGENDA WILL INCLUDE A W OF THE PLANS AND SPECIFICATIONS, CROSS CHECK WITH OTHER TRADES FOR COORDINATION OF PROPOSED PRODUCTS, REVIEW OF PLANNED MEANS AND METHODS, AND ON-SITE OF FIELD CONDITIONS RELATIVE TO EXISTING CONDITIONS THAT COULD AFFECT THE WORK. IDING THE MEETING SHALL BE KNOWLEDGEABLE OF THE PROJECT AND SHALL BE THE SPECIFIC DED TO CONTINUE WITH THE PROJECT THROUGH TO COMPLETION. IF REQUIRED, REVISED PLANS THROUGH OFFICIAL CHANNELS. CHANGES IN THE BID PRICE WILL BE DISCUSSED, BUT NO S WILL BE ISSUED UNLESS PROCESSED THOUGH OFFICIAL CHANNELS. IT SHALL BE UNDERSTOOD INEER HAS NO AUTHORITY TO ISSUE CHANGE ORDERS. THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE

MINIMUM TIME INDICATED:

MECHANI PLUMBING ELECTRIC SPRINKLE GENERAL

TURE FLOW RATES PER 2018 UPC CH. 4 FLOW RATE NOTES 1.8 GPM @ 80 PSI 1.2 GPM @ 60 PSI 1 0.5 GPM @ 60 PSI 1.8 GPM @ 60 PSI 3 1.28 GALLONS/FLUSH 4 1.28 GALLONS/FLUSH 4 1.28 GALLONS/FLUSH 4 1.28 GALLONS/FLUSH 4 0.5 GALLONS/FLUSH

LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.

KITCHEN FAUCETS MAY TEMPORARILY INCREASE FLOW ABOVE THE MAXIMUM RATE, BUT NOT ABOVE 2.2 GPM @ 60 PSI AND MUST

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.

E-CONSTRUCTION MEETING NOTES

CAL SHEET METAL	4 HOURS
G/PIPING	4 HOURS
CÁL	4 HOURS
ER	2 HOURS
CONTRACTOR	ALL SESSIONS

CONNECTIONS: PROVIDE PLUMBING FIXTURE COI WASTE, VENT, COLD WATER, AND HOT WATER WITH DRAWINGS, MANUFACTURER'S RECOMMEND CODES. CONNECT TO EACH FIXTURE, EQUIPMEN ACCESSORIES, VALVES, VACUUM BREAKERS, RE ETC. AS REQUIRED AND AS RECOMMENDED BY REFER TO PLUMBING FIXTURE CONNECTION SCH

- 2. HOT AND COLD: WATER PIPING CONNECTION TO BE COLD WATER ON THE RIGHT HAND SIDE AND LEFT HAND SIDE.
- 3. HOT WATER: NON-CIRCULATING HOT WATER PIF 10' UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 4. VENT STACKS: COORDINATE VENT STACK WITH MAINTAIN MINIMUM 10' CLEARANCE FROM OUTSI
- 5. CLEANOUTS: PROVIDE CLEANOUTS PER CURREN REQUIRED BY LOCAL JURISDICTIONS. CLEANOUT IN WALLS/FLOORS WHERE THEY ARE NOT HIGH CLEANOUTS IN CARPETED AREAS TO BE FITTED LOCATIONS SHALL BE SUBMITTED TO ARCHITEC NOTE: NOT ALL CLEANOUTS ARE SHOWN ON T
- 6. SUDS RELIEF: PROVIDE SUDS RELIEF IN ACCOR SECTION 711.0, STATE AND LOCAL CODES.
- 7. SHUT-OFFS: PROVIDE 1/4 TURN BALL VALVE VALVES AND BRAIDED STAINLESS STEEL FLEX AND COLD WATER SUPPLY TO EACH FIXTURE. SCREWDRIVER STOPS AT BATH/SHOWERS.
- 8. TUB SPOUTS SHALL BE THREADED (NO PUSH-
- 9. TRAP ARMS: PROVIDE TRAP ARMS SUCH THAT WILL NOT EXCEED CODE REQUIREMENTS.
- 10. ADA INSULATION: AT PLUMBING PIPING EXPOSE INSULATE THE EXPOSED PIPING AND TRAPS WIT SPECIFICALLY DESIGNED FOR THIS APPLICATION REQUIREMENTS. PROVIDE HANDI-LAV GUARD OR P-TRAPS TO CLEAR WHEELCHAIR ACCESS.
- 11. GAS EQUIPMENT: GAS EQUIPMENT SHALL BE IN EQUIPMENT LISTINGS, APPLICABLE SFGC, SPC, STANDARDS.
- 12. GAS CONNECTIONS: INSTALL FLEXIBLE QUICK D FOR ALL GAS FIRED KITCHEN EQUIPMENT PER LOCAL CODES & NFPA STANDARDS. PROVIDE L SHUT-OFF VALVES FOR FIREPLACES & BBQS I LOCATIONS IN THE BUILDING.
- 13. GAS PIPING CONNECTIONS TO WATER HEATERS, FURNACES SHALL HAVE DIRT LEGS AND UNIONS APPLIANCE SIDE OF SHUTOFF VALVE.
- 14. GAS PIPING INSTALLATION: STEEL OR MALLEAE OR SMALLER SHALL BE ASSEMBLED USING THR FOR NATURAL GAS. GAS PIPING LARGER THAN WELDED FITTINGS.
- 15. GAS PIPING UNDERGROUND: WHERE INSTALLED THE OUTER FOUNDATION OR BASEMENT WALL BE ENCASED IN A PROTECTIVE PIPE SLEEVE. BETWEEN THE GAS PIPING AND THE SLEEVE SH
- 16. GAS PIPING ABOVE GROUND: WHERE PASSING WALL, GAS PIPING SHALL BE PROTECTED AGAI COATING OR WRAPPING WITH AN INERT MATERI. ENCASED IN A PROTECTIVE PIPE SLEEVE, THE BETWEEN THE PIPING AND THE SLEEVE SHALL
- 17. GAS PIPE SUPPORT: FUEL LINES SHALL BE SUF AND SHALL BE PLUMB AND SQUARE.
- 18. GAS PIPING ON ROOFTOPS SHALL BE SUPPORT THE ROOF.
- 19. GAS PIPING SHALL NOT BE BURIED UNDER A BU OTHER STRUCTURE.
- 20. GAS PIPING PROTECTIVE COATING: PAINT ALL PIPING WITH TWO COATS OF RUST INHIBITIVE PA
- 21. WATER HAMMER ARRESTORS: PROVIDE AT THE WATER LINES SERVING TWO OR MORE FIXTURES WITH PLUMBING AND DRAINAGE INSTITUTE (PDI) HAMMER ARRESTORS ARE REQUIRED FOR QUICH SUCH AS LAUNDRY WASHERS, FLUSH VALVES
- 22. TRAP PRIMERS AS SPECIFIED: PROVIDE TRAP F FOR FLOOR DRAINS, FLOOR SINKS, AREA DRAIN ARRANGE PIPING TO ACHIEVE EQUAL FLOW TO FLOOR SINK FOR TRAP PRIMERS SERVING MUL FLOOR SINKS. COORDINATE EXACT LOCATIONS ELECTRICAL ENGINEER.
- 23. P-TRAPS: ALL EXPOSED P-TRAPS SHALL BE P-TRAPS SERVING HANDICAPPED COUNTER TOP INSULATED.
- 24. THROUGHOUT THE PROJECT PROVIDE BALL VAL SHALL NOT BE USED. NO EXCEPTIONS.
- 25. HOT WATER RECIRCULATING BALANCING VALVES GOSSETT CIRCUIT SETTER (WATTS OR EQUAL) PORTS, ADJUSTMENT KNOB, DRAIN CONNECTION SHUTOFF.

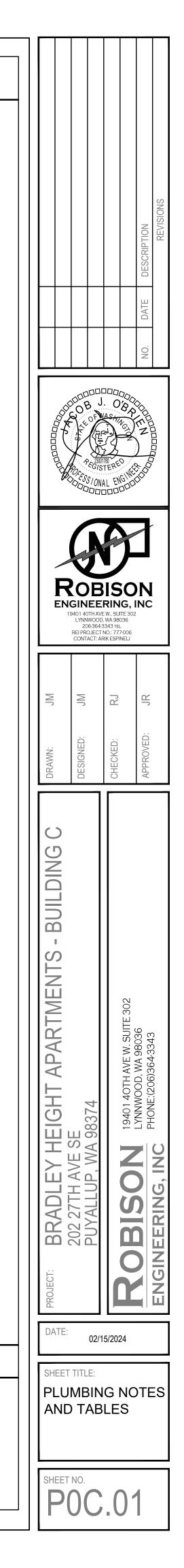
THE FOLLOWING PROJECT DESIGN IS BASED ON THE FOLLOWING CODES:

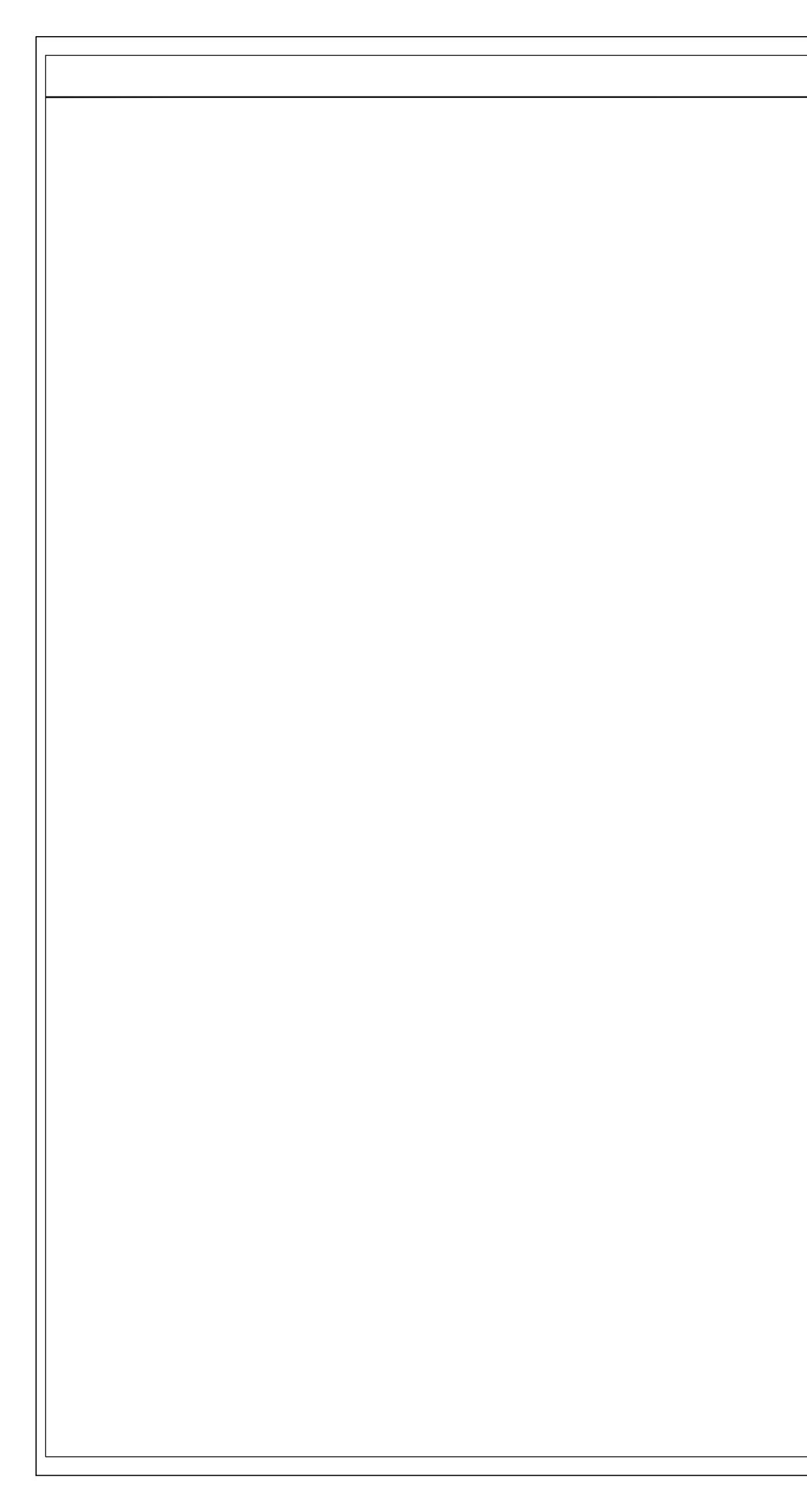
-2018 INTERNATIONAL BUILDING CODE (IBC) -2018 INTERNATIONAL MECHANICAL CODE (IMC) -2018 UNIVERSAL PLUMBING CODE (UPC) -2018 WASHINGTON STATE ENERGY CODE (WSEC) - COMMERCIAL PROVISIONS

PLUMBING NOTES

ONNECTIONS TO BUILDING SYSTEM IN ACCORDANCE IDATIONS, AND LOCAL	26.	DISASSEMBLY PROVISIONS: PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
NT, ETC. WITH ALL REGULATORS, UNIONS, Y THE MANUFACTURERS.	27.	REDUCERS: PROVIDE AS REQUIRED FROM LINE PIPE SIZE TO EQUIPMENT, TRAP, COIL, AND CONTROL VALVE CONNECTION SIZES.
CHEDULE ON PLANS. TO EACH FIXTURE SHALL	28.	VALVE TAGS: PROVIDE VALVE TAGS PER SPECIFICATIONS TO IDENTIFY VALVE AND THE AREA IT SERVES.
ND HOT WATER ON THE	29.	OFFSETS: PROVIDE FOR BRANCH LINES TO EQUIPMENT.
PIPE SHALL NOT EXCEED	30.	ALL TEMPERATURE MIXING VALVES SHALL COMPLY WITH ASSE-1070 SAFETY STANDARDS.
H HVAC EQUIPMENT TO SIDE AIR INTAKES.	31.	PROVIDE PIPE MARKER WITH DIRECTION OF FLOW. LABEL "NON—POTABLE WATER DO NOT DRINK" CLEARLY ON NON—POTABLE WATER PIPING.
ENT UPC AND AS ITS SHALL BE LOCATED HLY VISIBLE. FLOOR	32.	PROVIDE EXPANSION LOOPS/EXPANSION JOINTS IN PIPING PER 2018 UPC TABLE 313.3 AND MANUFACTURER INSTALLATION INSTRUCTIONS.
D WITH CARPET INSERTS. CT FOR APPROVAL. THE PLUMBING DRAWINGS.	33.	PROVIDE APPROVED PIPE HANGERS & PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND 2018 UPC TABLES 313.3 & 313.6. SUBMIT FOR APPROVAL.
RDANCE WITH 2018 UPC	34.	DIELECTRIC UNIONS: PROVIDE AT CONNECTIONS OF DISSIMILAR PIPE.
ANGLE STOP SHUT-OFF CONNECTORS AT HOT EXCEPTION: PROVIDE	35.	REFRIGERANT PIPING: PROVIDE SIZING & INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
-ON FITTINGS).	36.	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.
T THE MAXIMUM LENGTH	37.	PIPING & EQUIPMENT SUPPORTS/HANGERS & SEISMIC RESTRAINTS TO BE DESIGNED BY DESIGN BUILT CONTRACTOR.
SED UNDER LAVATORIES, VITH PRODUCT	38.	IF NEEDED, PROVIDE VACUUM BREAKERS AT ALL HOSE BIBBS.
N MEETING ADA OR EQUIVALENT. OFFSET	39.	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 2018 UPC 1007.0.
INSTALLED PER LOCAL CODES & NFPA	40.	INSULATION MATERIAL SHALL MEET CITY OF FERNDALE QUALITY STANDARDS.
DISCONNECT ASSEMBLIES APPLICABLE SFGC, SPC,	41.	ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE 2018 WASHINGTON STATE ENERGY CODE.
LOCKABLE GAS IN UNATTENDED PUBLIC	42.	BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH 2018 UPC 701.0 AND 903.0.
S, BOILERS AND NS PROVIDED ON	43.	ALL SANITARY SYSTEM MATERIAL SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
ABLE IRON FUEL LINES 2" IREAD SEALANT SUITABLE AN 2" SHALL HAVE	44.	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 2018 UPC 608.3.
) BELOW GRADE THROUGH OF A BUILDING, SHALL	45.	WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENTS DUE TO SEISMIC MOTION PER 2018 UPC 507.2.
THE ANNULAR SPACE SHALL BE SEALED.	46.	MATERIAL EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH 2018 IMC 602.2.1.
THROUGH AN OUTSIDE INST CORROSION BY RIAL. WHERE PIPING IS	47.	HVAC EQUIPMENT AND WATER HEATERS SHALL COMPLY WITH 2018 IMC CHAPTER 3.
ANNULAR SPACE BE SEALED.	48.	BOILERS SHALL COMPLY WITH ALL THE REQUIREMENTS OF 2018 IMC CHAPTER 10.
UPPORTED OR STRAPPED,	49.	PROVIDE EXPANSION TANKS FOR BOILERS PER 2018 IMC SECTION 1009.0.
TED AND ANCHORED TO	50.	SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER 2018 UPC 408.0.
BUILDING, SLAB OR	51.	PLUMBING FIXTURES AND FITTINGS SHALL COMPLY WITH CITY OF FERNDALE WATER CONSERVATION STANDARDS.
EXTERIOR EXPOSED GAS PAINT. COLOR: GRAY.	52.	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
E END OF HOT AND COLD ES; SIZE IN ACCORDANCE DI) REQUIREMENTS. WATER		BUILDING CONSTRUCTION TYPE.
CK CLOSING VALVES, (PUBLIC TOILETS), ETC.	53.	ALL GARAGE DRAINS, TRASH ROOMS DRAINS & GARAGE TRENCH DRAINS SHALL BE TAKEN TO SAND/OIL INTERCEPTOR(S) BEFORE CONNECTING TO THE SANITARY SEWER SYSTEM.
PRIMERS AND PIPING INS & HUB DRAINS. DEACH DRAIN AND TIPLE DRAINS AND WITH ARCHITECT &	54.	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.
CHROME-PLATED BRASS. OP LAVATORIES SHALL BE		PROVIDE REQUIRED & PROPER BACK FLOW PREVENTERS AS SPECIFIED FOR THE APPLIANCES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
LVES. GATE VALVES		 a. ICE MACHINES AND ICE MAKERS b. CARBONATED BEVERAGE DISPENSING SYSTEMS c. COFFEE BREWERS d. ESPRESSO MACHINES
ES SHOULD BE BELL &		e. WATER FILTERS f. STEAM OR HOT WATER BOILERS g. IRRIGATION SYSTEM
WITH INTEGRAL READOUT DN, AND POSITIVE		FIRE PROTECTION SYSTEMCHEMICAL TREATMENT SYSTEM
		j. SOAP/CHEMICAL DISPENSER SYSTEM k. COMMERCIAL WASHER

APPLICABLE CODES





PLUMBING

CULATIONS BASED ON 2018 UPC																				
droom Units (1 Bath)																				
FIXTURE -	TOTAL	FIXTUR CW	JRE UNITS HW	W/V	1	2	3	R	# OF FIXTURES PER UNIT	TOTAL QTY OF FIXTURES	SERVICE	CW ONLY	TURE UNITS HW ONLY	W/V ONLY						
ER CLOSET TORY	2.5 1	2.5 0.75	0 0.75	3	8	8	8 8	0	1	24	60 24	60 18	0 18	72 24						
TUB HES WASHER	4	3	3	2	8	8	8	0	1	24	96 96	72 72	72 72	48						
EN SINK W/ DISHWASHER	3	2.25	2.25	3	8	8	8	0	1	24	72	54	54	48						I I I I I I I I I I I I I I I I I I I
oom Unit (2 Bath)			 							TOTAL:	348	276	216	264						
FIXTURE -	TOTAL				1	2	3	R	# OF FIXTURES PER UNIT									<u> </u>	<u> </u>	
CLOSET	TOTAL 2.5	CW 2.5	HW 0	W/V 3	4	4	4	0	2	OF FIXTURES	SERVICE 60	CW ONLY 60	HW ONLY 0	W/V ONLY 72						
RY B	1	0.75 3	0.75 3	1	4	4	4	0	2	24 24	24 96	18 72	18 72	24 48						
S WASHER	4	3	3 2.25	3	4	4	4	0	1	12 12	48 36	36 27	36 27	36						
	3	2.25	2.25	2	4	4	4	0	I	TOTAL:		213	153	204				╧║┏		
ixtures																			SUDDOB J	. 0'8'0'
FIXTURE	TOTAL	FIXTU	JRE UNITS	W/V	1	2	3	R		TOTAL QTY OF FIXTURES	SERVICE	TOTAL FIX	TURE UNITS HW ONLY	W/V ONLY						ASHING T
В	2.5/1	2.5/1	0	0	2	0	0	0		2	3.5	3.5	0	0						
R DRAIN	0	0	0	8	1	0	0	0		1 TOTAL:	0	0	0	8					E FORESSION	TERED NEP
		/	! 							TOTAL.	3.5	3.5	0	0				$\exists L$		
TOTAL FIXTURE UNITS:	TOTAL 615.5	CW 492.5	HW 369	W/V 476														╧╵╢┖┓		X
PEAK FLOW:	145GPM																			
	SUPPLY	WASTE	 																-V	ゾ
REQUIRED SERVICE SIZE IN BUILDING:	3"	6"																	Rob	ISO
													HEIGHTS AP						ENGINEEI 19401 40TH AVE LYNNWOOD,	F.W. SLITE 302
														OM STREET T				$\dashv \parallel \parallel \parallel$	LYNNWOOD, 206-364-3 REI PROJECT N CONTACT: AR	NO.: 777-006 RIK ESPINELI
											STREET	PRESSURE, PS	61				75			
												STREET PRES					75			
												7 +/- 5 PSI FLUC ENT LOSSES, F						≥	MC MC	RJ
												METER LOSS	01				4			
												OW PREVENTE	R				10		NED:	(ED:
												RVICE LINE (ES						DRAWN:	DESIGNEI	CHECKED:
												YSTEM LENGT				50				0
												ALLOWANCE, F				12.5				
												CTION LOSS I		00'		7.0			5	
											TOTAL Z	ONE FRICTION	LOSS, PSI				4.38			
											MINIMUN	I PRESSURE A					56.63		DNI	
											MINIMUN	I PRESSURE A					56.6			
												ENT LOSSES, P		, , , , , , , , , , , , , , , , , , ,					20IL	
											THERMO	STATIC MIXING	G VALVE LOSS	3			4		n I	
												IEAD, PSI								
												LEVATION GAI				30	13.0		Z	
												RICTION LOSS				150				302
												ALLOWANCE, F				22.5			_	JITE .
												ICTION LOSS I		00'		7.0			\checkmark	W. SL
												ONE FRICTION					12.075		A	IAVE
													URTHEST AP				27.6 JRE	- <u>+</u>	=	40Th
											MINIMUN	I PRESSURE A	T FURTHEST	APARTMENT	UNIT, PSI		27.6		ПЕІСП SE A 98374	19401 40TH AVE W. SUITE 3
												RICTION LOSS								1
												D MANIFOLD, F ALLOWANCE, F				4		-	L UNAN	Z
												ALLOWANCE, P ANIFOLD TO FU		TURE		6 35		- (IJĂď.	C
												ICTION LOSS I				14.0				
																	6.3			
											MINIMUN	I PRESSURE A	I FURTHEST I	-IXTURE, PSI			21.3		PUY PUY	Ω
																		DJECT	200	
																		PRO	-	
																		D	ATE: 02/1	15/2024
																		L		5/2024
																		Sł	HEET TITLE:	
																			ALCULA	λΓΙΟΝ
																		1 1 1		
																			HEET NO.	

EQUIPMENT LOSSES, PSI		
WATER METER LOSS		4
BACKFLOW PREVENTER		10
SITE SERVICE LINE (ESTIMATE)		
PIPING SYSTEM LENGTH, FEET	50	
FITTING ALLOWANCE, FEET	12.5	
FROM STREET TO RPBP		
ZONE FRICTION LOSS FACTOR, PSI/100'	7.0	
TOTAL ZONE FRICTION LOSS, PSI		4.38
MINIMUM PRESSURE AT RPBP, PSI		56.63
FROM RPBP TO FURTHEST APARTMENT	UNIT	
MINIMUM PRESSURE AT END PREVIOUS ZONE, PSI		56.6
EQUIPMENT LOSSES, PSI		
THERMOSTATIC MIXING VALVE LOSS		4
STATIC HEAD, PSI		
TOTAL ELEVATION GAIN, FT	30	13.0
PIPING FRICTION LOSSES		
PIPING SYSTEM LENGTH, FEET	150	
FITTING ALLOWANCE, FEET	22.5	
ZONE FRICTION LOSS FACTOR, PSI/100'	7.0	
TOTAL ZONE FRICTION LOSS, PSI		12.075
MINIMUM PRESSURE AT FURTHEST APARTMENT UNIT, PSI		27.6
FROM FURTHEST APARTMENT UNIT TO FURTH	EST FIXTURE	
MINIMUM PRESSURE AT FURTHEST APARTMENT UNIT, PSI		27.6
PIPING FRICTION LOSSES		
RISER TO MANIFOLD, FEET	4	
FITTING ALLOWANCE, FEET	6	
FROM MANIFOLD TO FURTHEST FIXTURE	35	
ZONE FRICTION LOSS FACTOR, PSI/100'	14.0	
TOTAL ZONE FRICTION LOSS, PSI		6.3
MINIMUM PRESSURE AT FURTHEST FIXTURE, PSI		21.3

PIPE MATERIALS										
PIPE TYPE	MATERIAL	JOINT	NOTES							
WATER DISTRIBUTION PIPING	COPPER, TYPE L.	SOLDERED	2							
APARTMENT WATER PIPING	PEX-A	EXPANSION OR PUSH-FIT FITTINGS	2							
WASTE AND VENT PIPING	SCHEDULE 40 SOLID CORE PVC	SOLVENT CEMENT	1,3							
CONDENSATE DRAIN PIPING	COPPER, TYPE M.	SOLDERED OR PROPRESS FITTINGS								

NOTES:

ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY. 1.

PROVIDE THERMAL EXPANSION LOOPS FOR ALL WATER PIPING IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS. 2.

3. PROVIDE CAST IRON PIPING FOR WASTE DISCHARGE EXCEEDING 110 DEGREES FAHRENHEIT.

PIPE SIZING SCHEDULE - COPPER TYPE L AT 7.0 PSI/100 FEET									
	СО	LD WATER, FLUSH T	ANK		HOT WATER		CO	LD WATER, FLUSH V	ALVE
PIPE SIZE	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS
1/2"	3.0	2.8	4.0	3.0	2.8	4.0			
3/4"	9.0	7.5	5.2	8.5	7.0	4.9			
1"	22.0	16.0	6.4	16.0	12.2	5.0			
1-1/4"	45.0	27.0	7.3	27.0	18.5	5.0	9	27	7.3
1-1/2"	100.0	43.0	8.0	43.0	26.0	5.0	30	42.5	8
2"	230.0	75.0	8.0	112.0	45.0	5.0	125.0	74.0	8.0
2-1/2"	440.0	116.0	8.0	215.0	72.0	5.0	340.0	116.0	8.0
3"	750.0	160.0	8.0	350.0	100.0	5.0	680.0	160.0	8.0
4"	1600.0	280.0	8.0	800.0	175.0	5.0	1600.0	280.0	8.0
6"	5250.0	650.0	8.0	2750.0	400.0	5.0	5250.0	650.0	8.0

PIPE SIZING SCHEDULE - PEX AT 14.0 PSI/100 FEET

	COLD WATER, FLUSH TANK		HOT WATER			COLD WATER, FLUSH VALVE		ALVE	
PIPE SIZE	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS
1/2"	3.0	3.0	5.5	3.0	3.4	6.1			
3/4"	9.0	7.8	7.1	11.0	8.5	7.7	1.0	7.8	7.1
1"	21.0	15.3	8.4	20.0	14.6	8.0	2.0	15.3	8.4
1-1/4"	44.0	26.1	9.6	33.0	21.8	8.0	9.0	26.1	9.6
1-1/2"	77.0	37.9	10.0	54.0	30.3	8.0	24.0	37.9	10.0
2"	199.0	65.0	10.0	134.0	52.0	8.0	91.0	65.0	10.0
2-1/2"	375.0	99.0	10.0	270.0	79.2	8.0	239.0	99.0	10.0
3"	589.0	140.8	10.0	443.0	112.6	8.0	494.0	140.8	10.0

PLUMBING SCHEDULES

REDUCED PRESSURE BACKFLOW ASSEMBLY							
EQUIP NO.	QTY	SERVICE	INLET/OUTLET SIZE	BASIS OF DESIGN	NOTES		
RPBP-1	1	DOMESTIC WATER	3"	ZURN WILKINS 375	1,2		

<u>NOTES:</u>

1. INSTALL IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.

2. ALL DOMESTIC WATER EQUIPMENT SHALL BE NSF-61 LISTED.

HYBRID ELECTRIC HEAT PUMP WATER HEATER									
EQUIP NO.	SERVICE	UNIFORM ENERGY FACTOR	GPH RECOVERY AT 90°F TR	STORAGE (GAL)	INLET/OUTLET CONNECTION	OPERATING WEIGHT (LBS)	ELECTRICAL	BASIS OF DESIGN	NOTES
HPWH-1	APARTMENT UNITS	4.00	27	80	3⁄4"	912	208V/1P/21A	RHEEM PROPH80	1,2,3,4

<u>NOTES:</u>

1. ELECTRICAL REQUIREMENTS ARE BASED ON NON-SIMULTANEOUS OPERATION.

2. FOR WATER HEATER PIPING DIAGRAM SEE DETAIL 1/P7.00.

3. ALL DOMESTIC WATER EQUIPMENT SHALL BE NSF-61 LISTED.

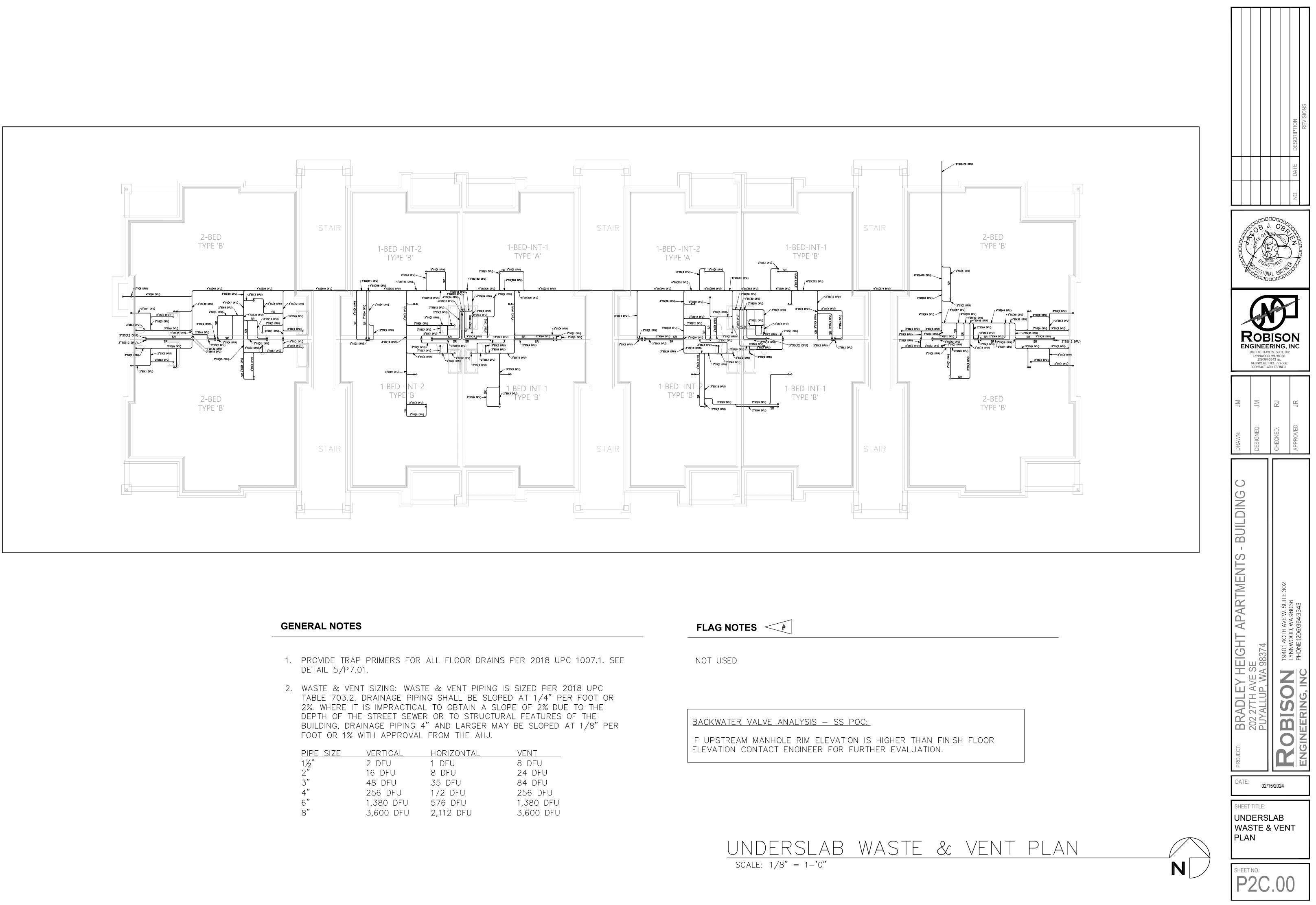
4. PROVIDE INLET AND OUTLET DUCTS FOR HEAT PUMP WATER HEATERS. SEE MECHANICAL DRAWINGS FOR ROUTING AND TERMINATION.

EXPANSION TANK								
EQUIP	SERVICE	CAPACITY	PRE-CHARGE PRESSURE,	TANK	SIZE	OPERATING WEIGHT,	BASIS OF	NOTES
NO. SERV	SERVICE	GAL.	PSI	DIAMETER	HEIGHT	LBS	DESIGN	NULS
ET-1	DOMESTIC HOT WATER	4.5	50	11	15	9	THERM-X-TROL ST-12	1

<u>NOTES:</u>

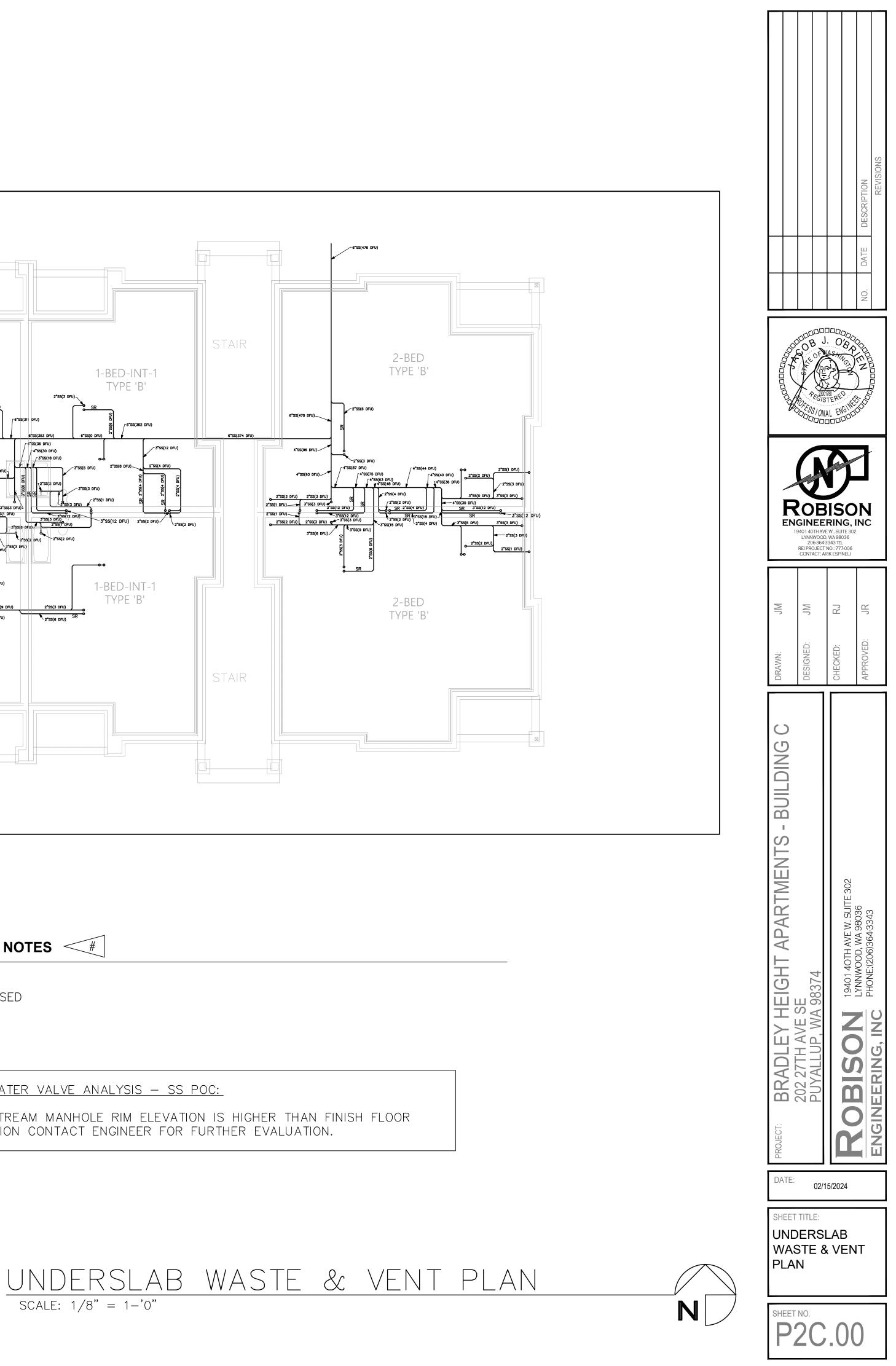
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS

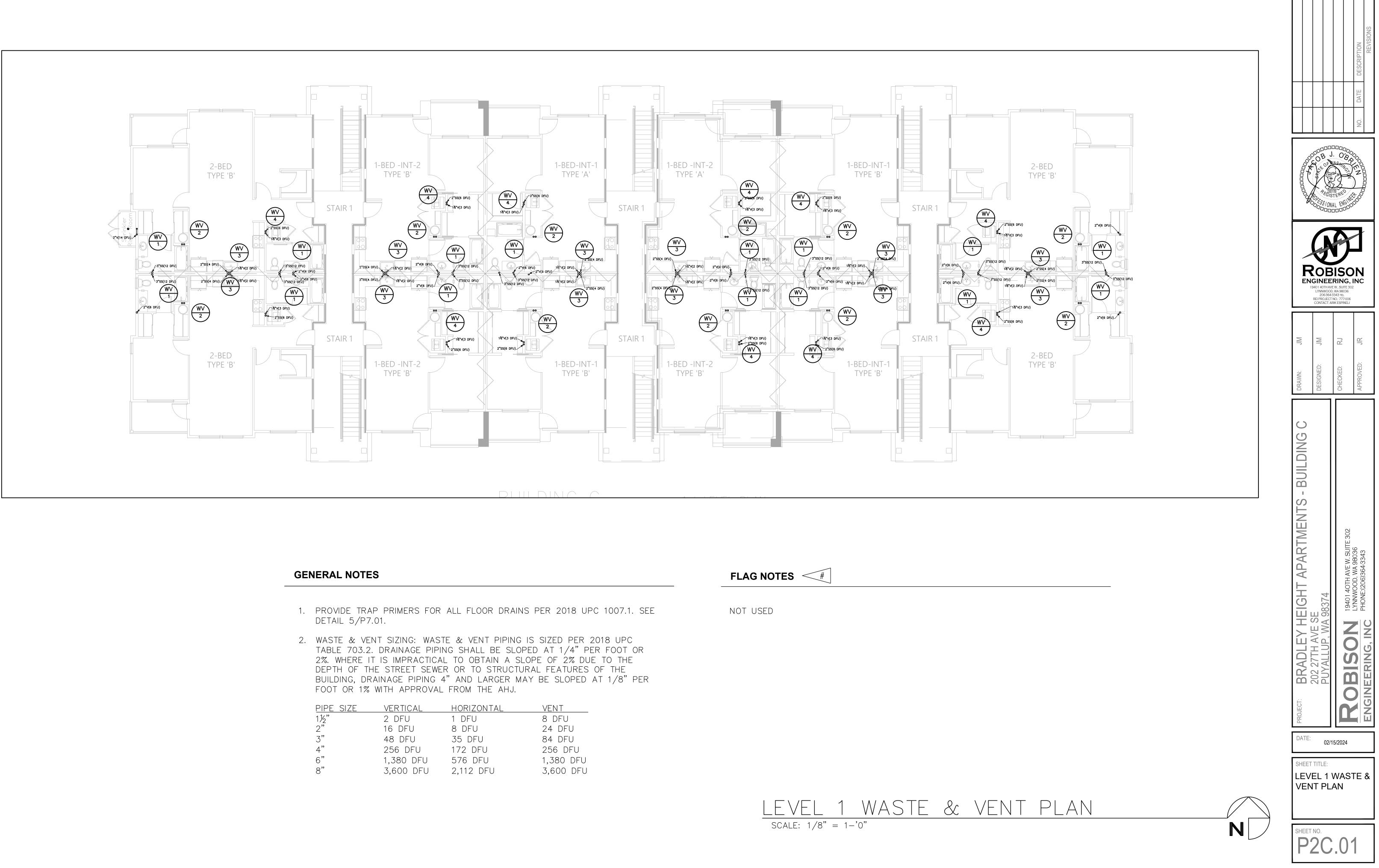
					NO. DATE DESCRIPTION	REVISIONS
PERSONAL ENGINEERIE						
	20 REI PRO	EE	RIN WA 98 343 TEI NO.: 77	G, I ITE 302 036 7-006		
PROJECT: BRADLEY HEIGHT APARTMENTS - BUILDING C 202 27TH AVE SE PUYALLUP, WA 98374 DESIGNEI				JDJOZZ 19401 40TH AVE W. SUITE 302		ENGINEERING, INC
DATE: SHEET PLU SCH	I TITL IME	.e: BIN			. ,	
P	NO.	С	.()3	3	



PIPE SIZE	VERTICAL
11/2"	2 DFU
2"	16 DFU
3"	48 DFU
4"	256 DFU
6"	1,380 DFU
8"	3,600 DFU

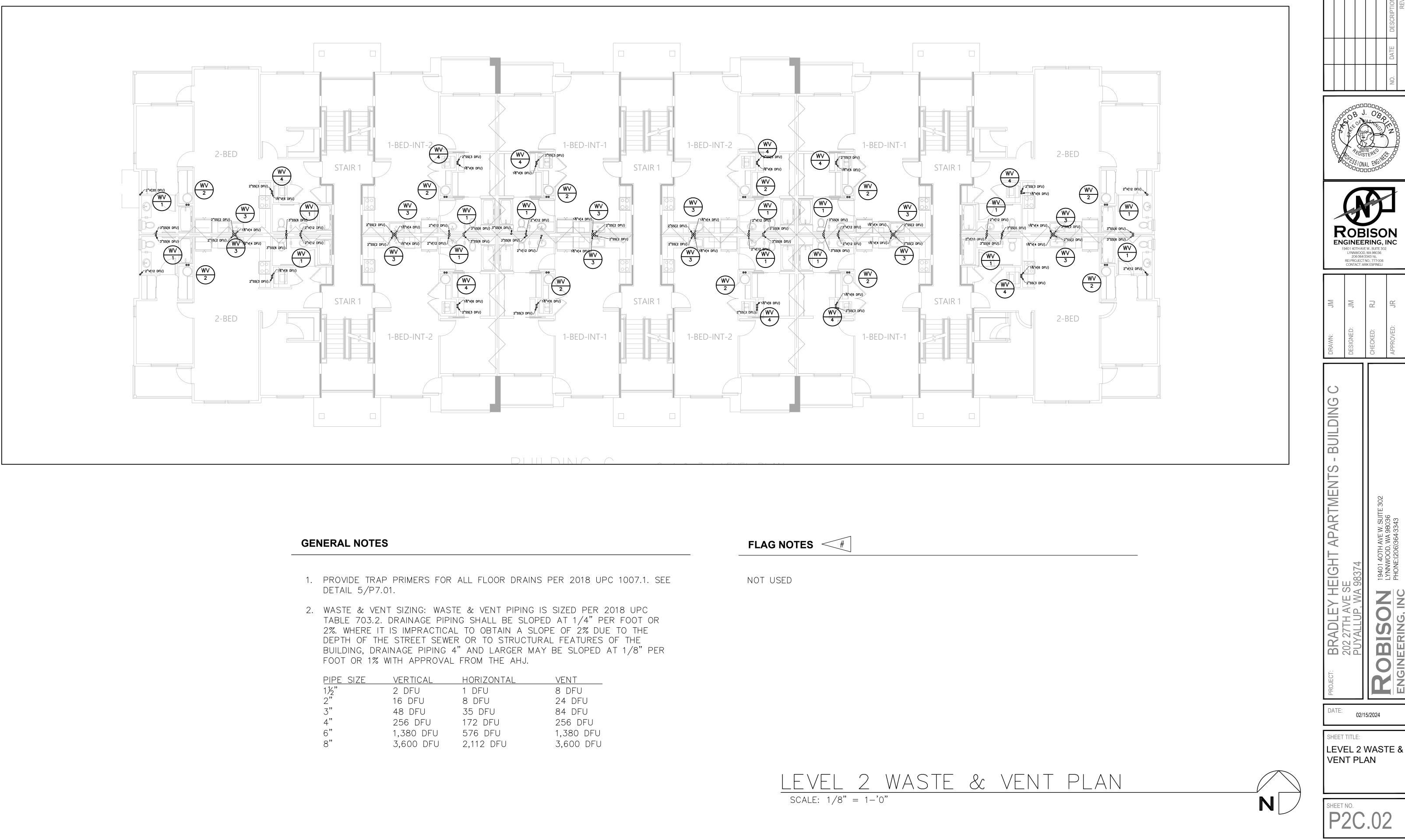
HORIZONTAL	VENT
1 DFU	8 DF
8 DFU	24 D
35 DFU	84 D
172 DFU	256
576 DFU	1,380
2,112 DFU	3,600





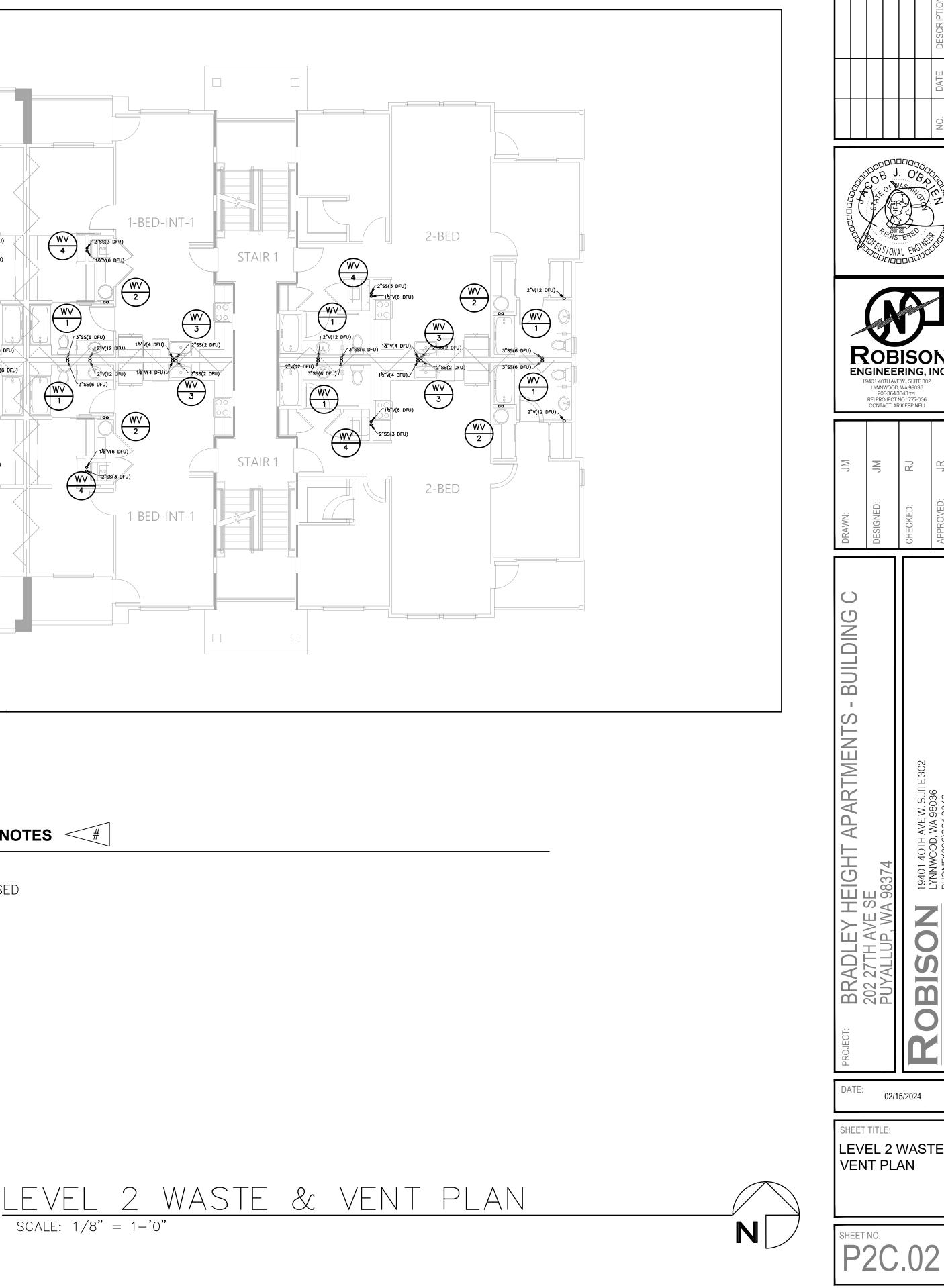
PIPE SIZE	VERTICAL
11/2"	2 DFU
2"	16 DFU
3"	48 DFU
4"	256 DFU
6"	1,380 DFU
8"	3,600 DFU

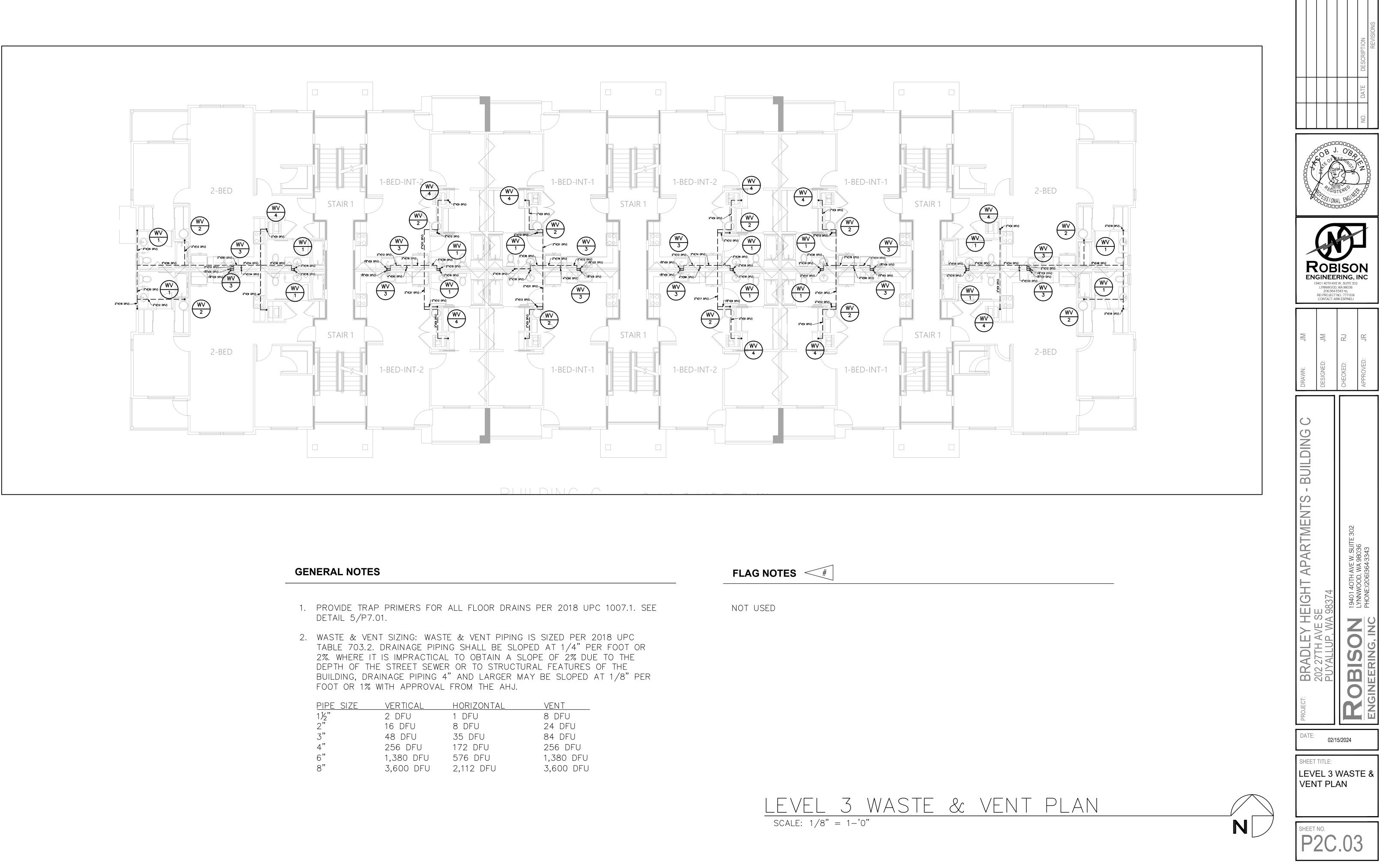
HORIZONTAL	VENT
1 DFU	8 DFU
8 DFU	24 DFU
35 DFU	84 DFU
172 DFU	256 DFU
576 DFU	1,380 DF
2,112 DFU	3,600 DF



PIPE SIZE	VERTICAL
11/2"	2 DFU
2"	16 DFU
3"	48 DFU
4"	256 DFU
6"	1,380 DFU
8"	3,600 DFU

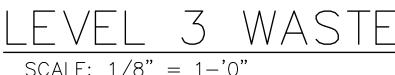
HORIZONTAL	VENT
1 DFU	8 DFU
8 DFU	24 DFU
35 DFU	84 DFU
172 DFU	256 DFU
576 DFU	1,380 DF
2,112 DFU	3,600 DF

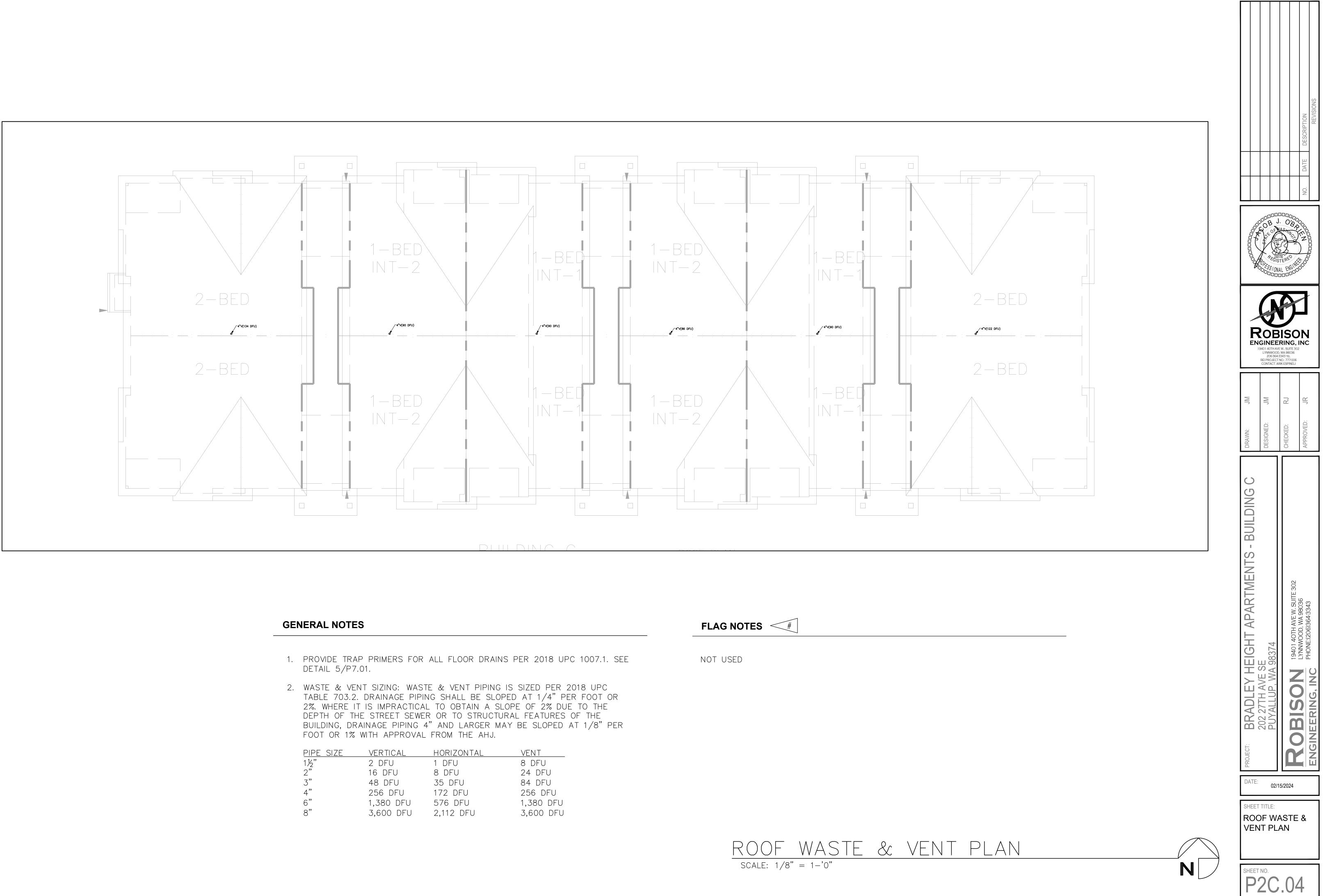




PIPE SIZE	VERTICAL
11/2"	2 DFU
2"	16 DFU
3"	48 DFU
4"	256 DFU
6"	1,380 DFU
8"	3,600 DFU

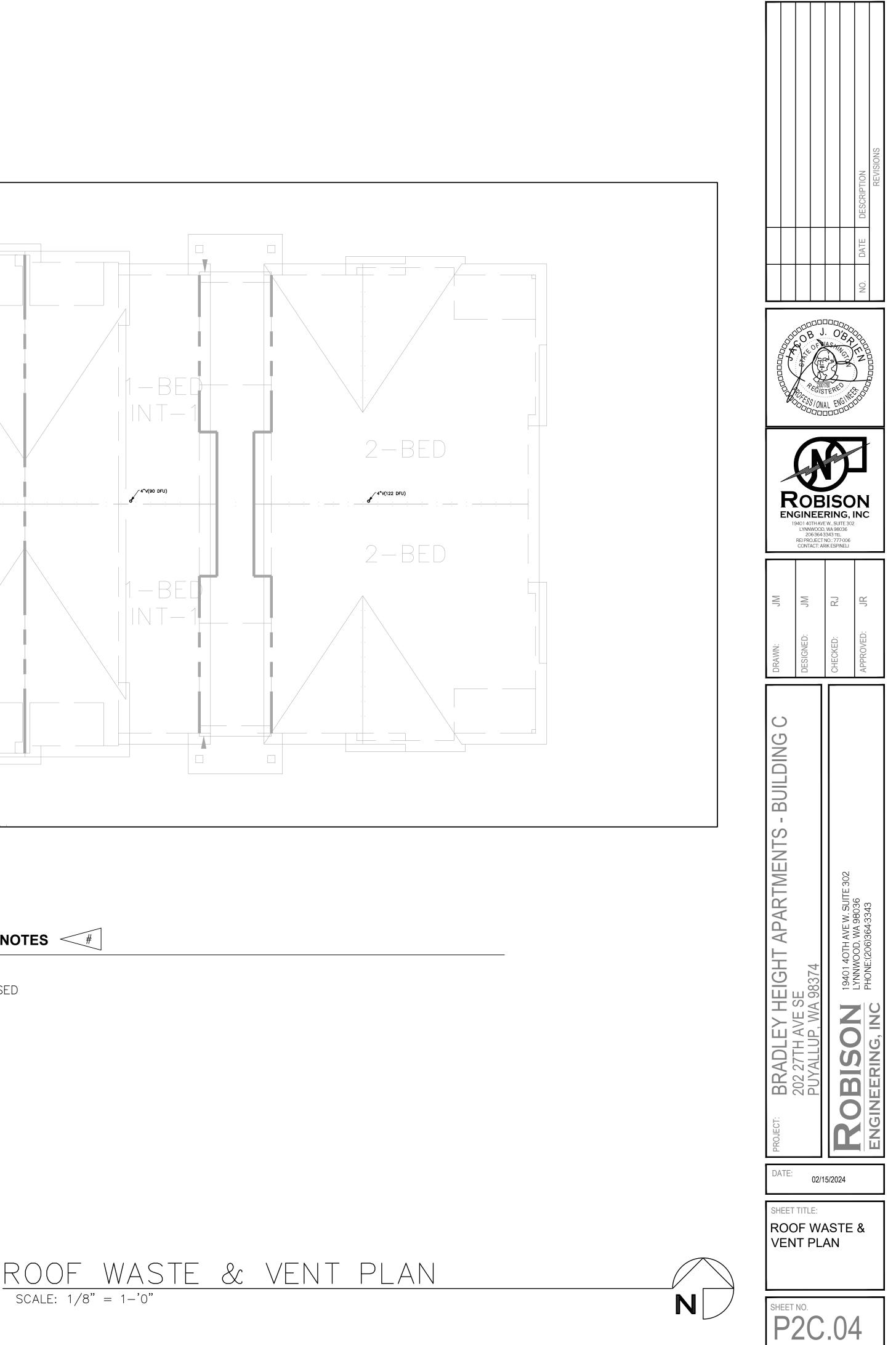
HORIZONTAL	VENT
1 DFU	8 DFU
8 DFU	24 DFU
35 DFU	84 DFU
172 DFU	256 DFU
576 DFU	1,380 DF
2,112 DFU	3,600 DF

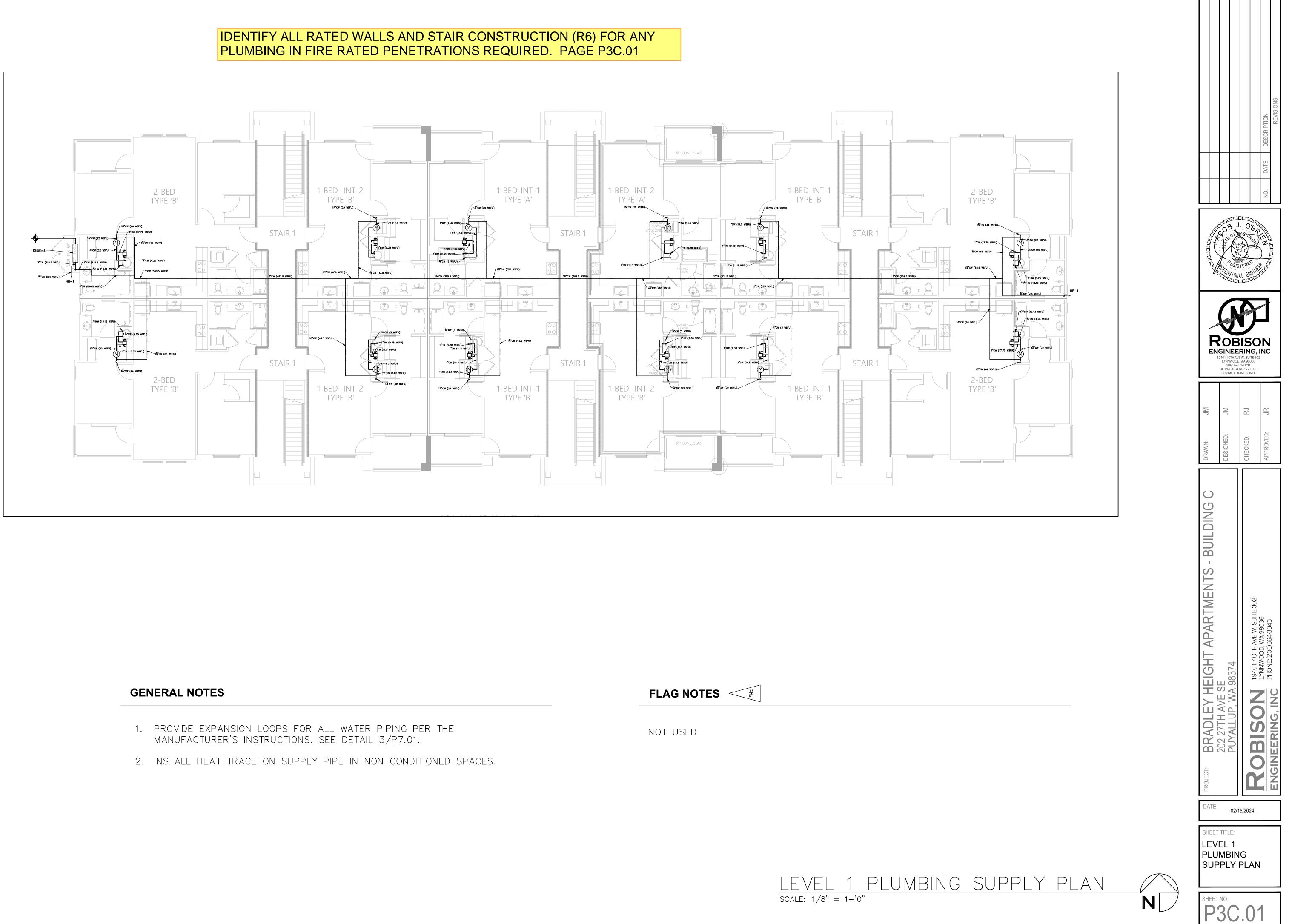


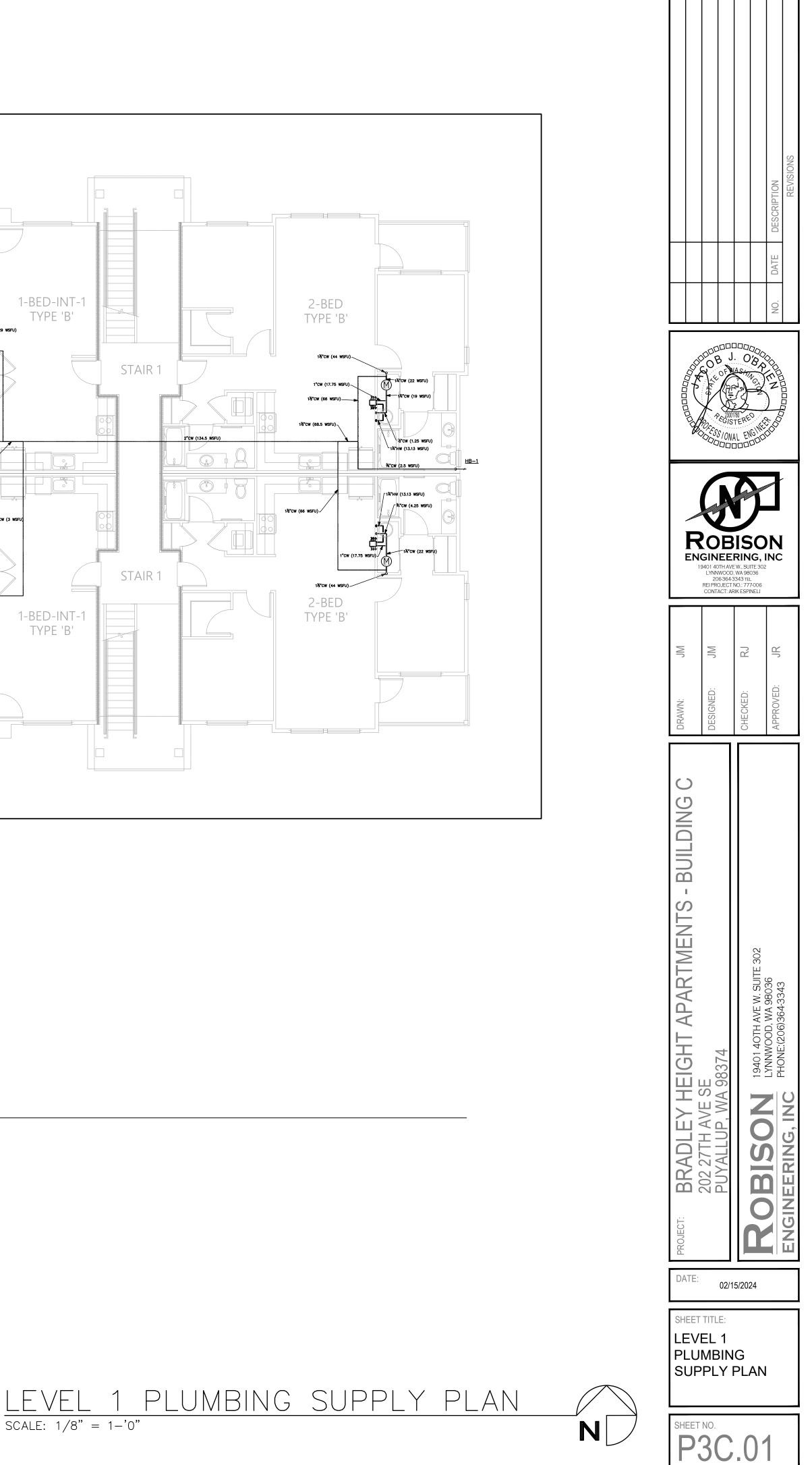


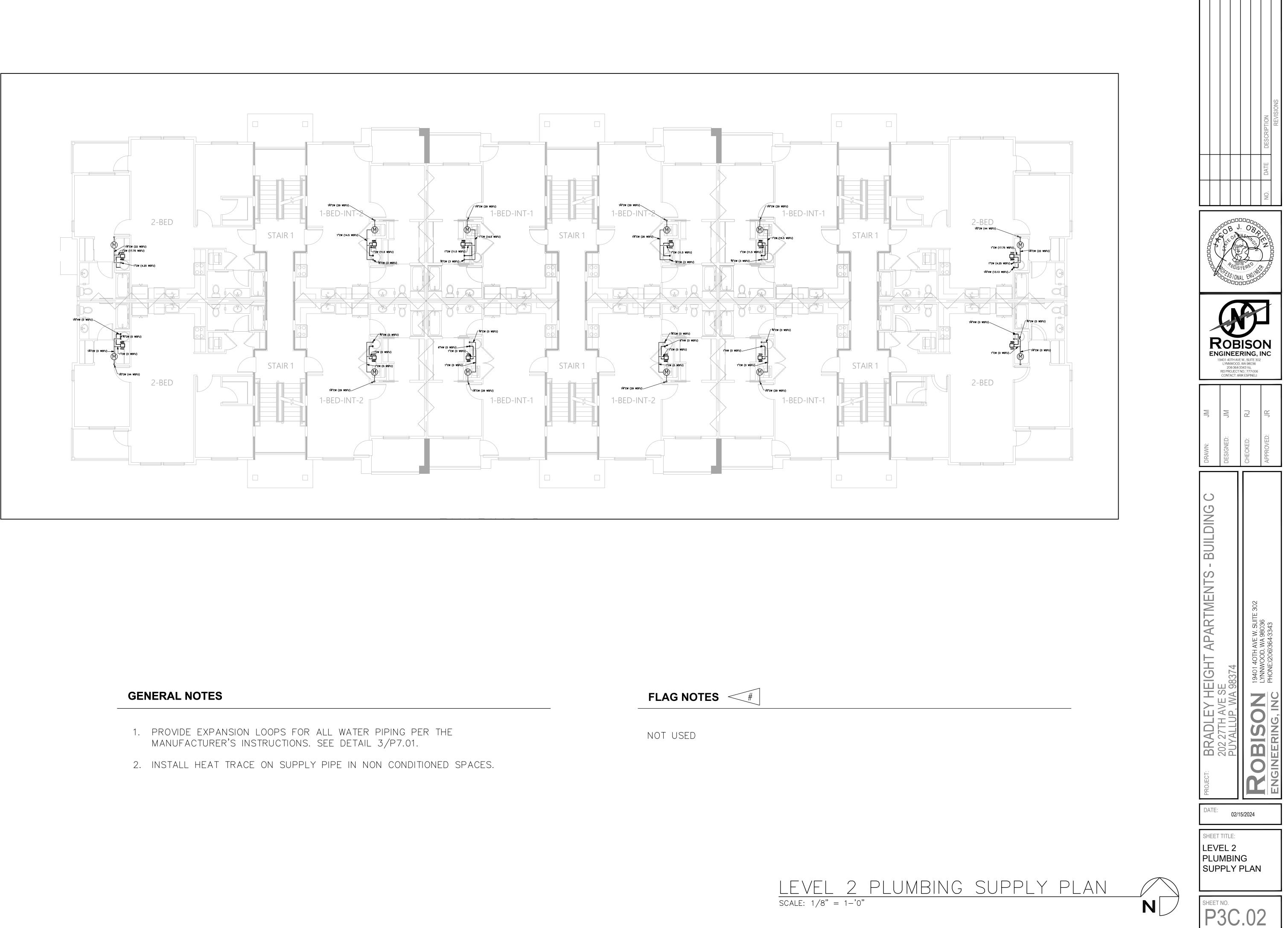
<u>pipe size</u>	VERTICAL
11/2"	2 DFU
2"	16 DFU
3"	48 DFU
4"	256 DFU
6"	1,380 DFU
8"	3,600 DFU

HORIZONTAL	VENT
1 DFU	8 DFU
8 DFU	24 DFU
35 DFU	84 DFU
172 DFU	256 DF
576 DFU	1,380 D
2,112 DFU	3,600 E

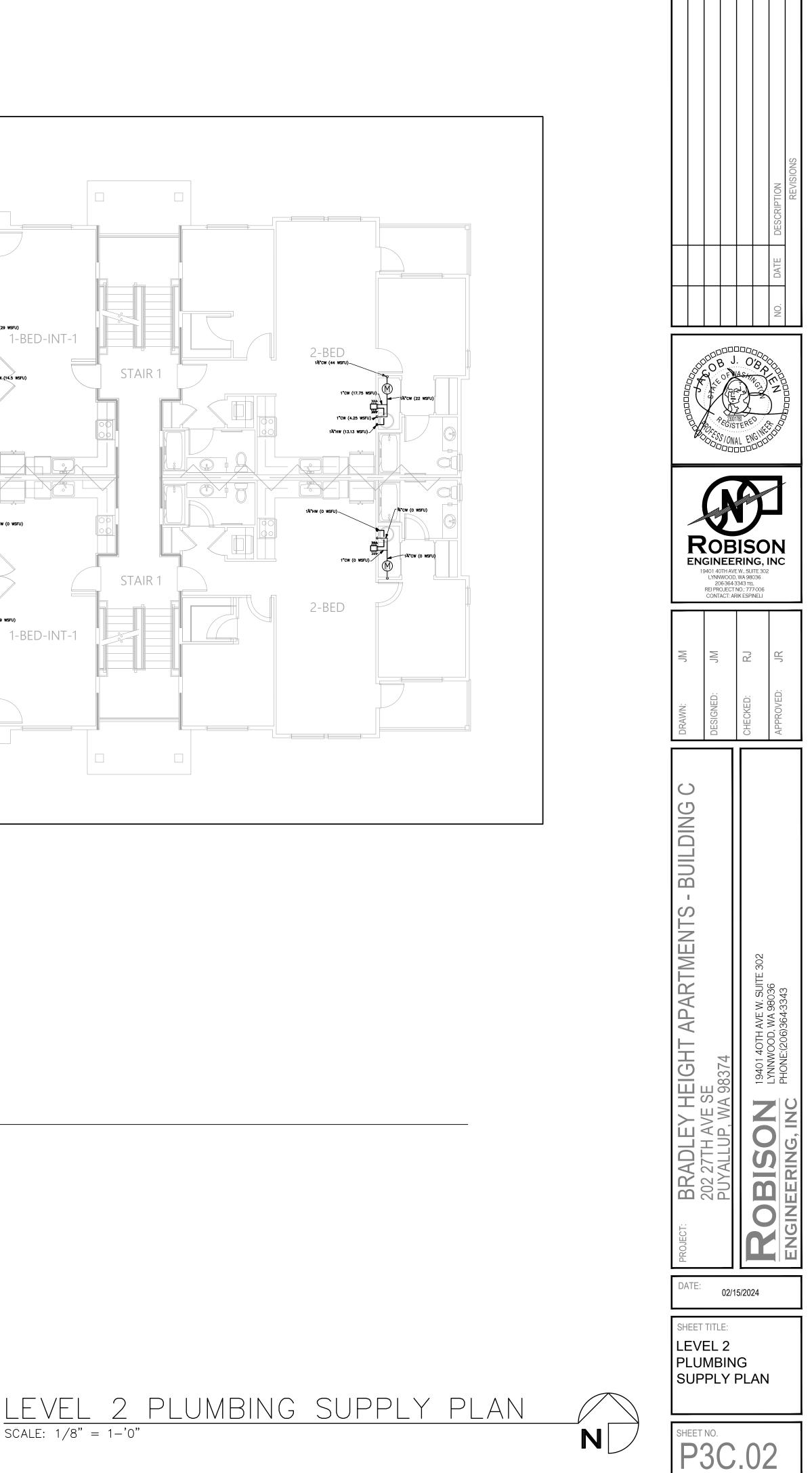


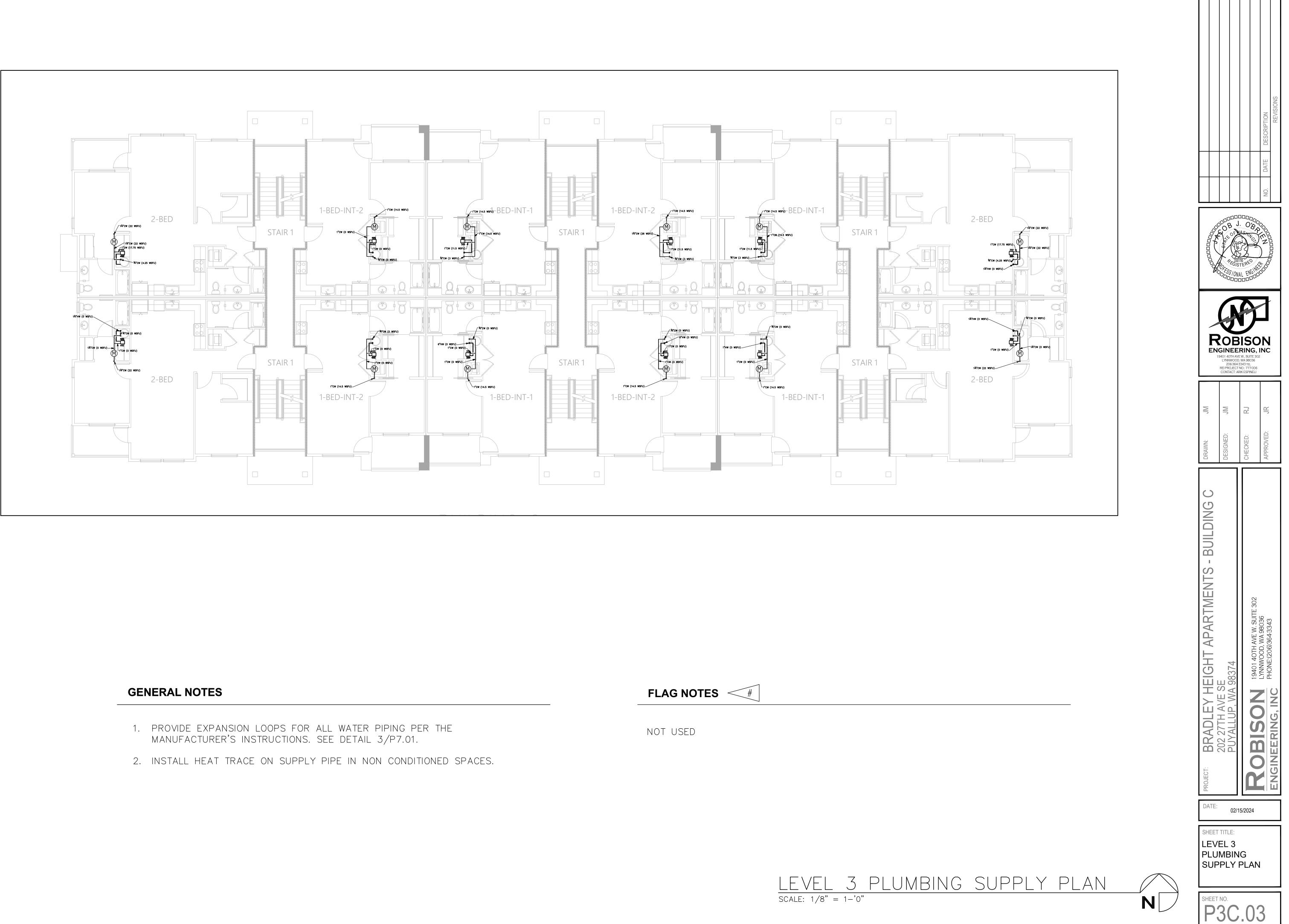




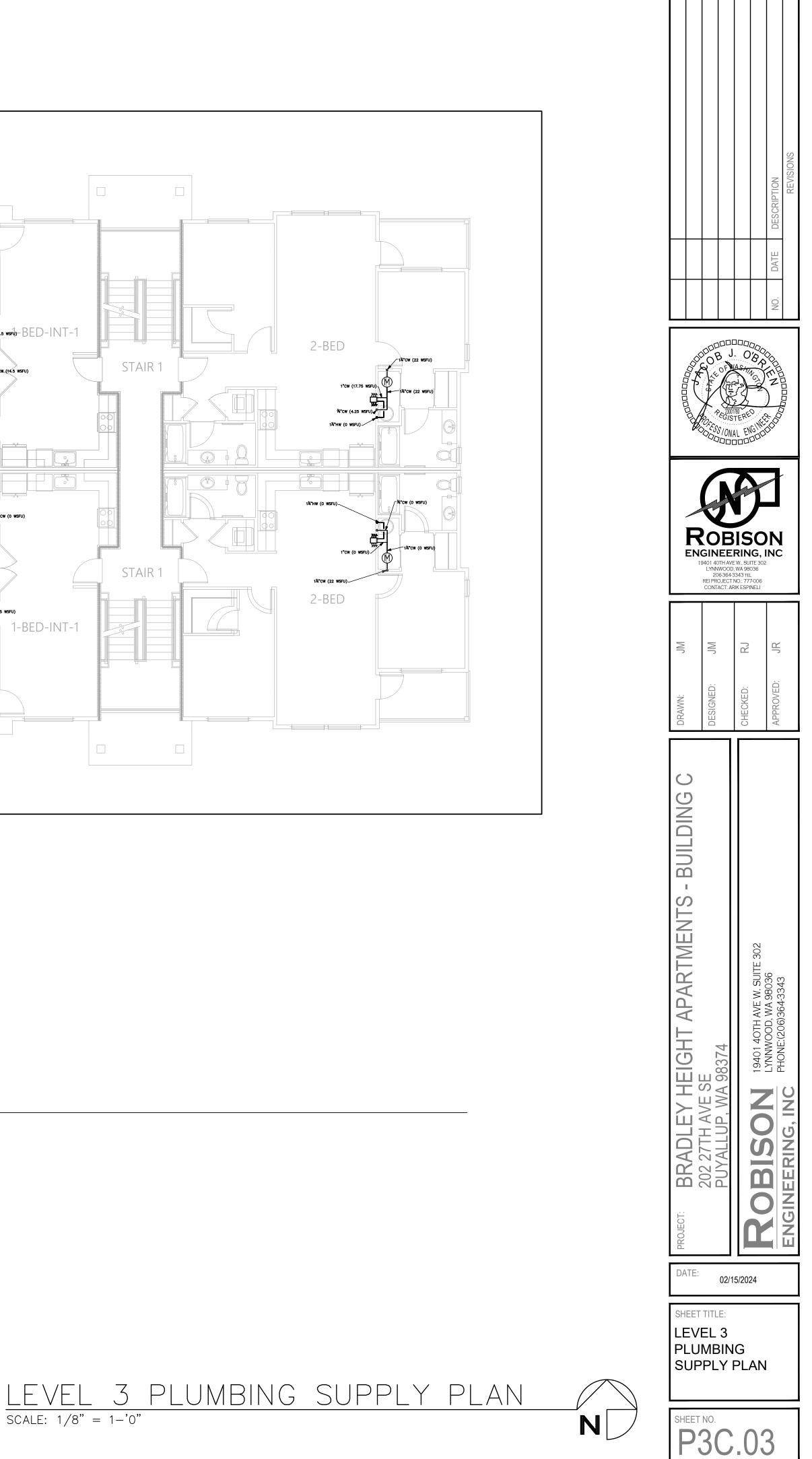












GENERAL NOTES

= WASTE & VENT RISER IDENTIFICATION (I.E. RISER "#"). REFER TO P200 SERIES FOR RISER DIAGRAMS.

- 1. SUD RELIEF PIPING WITH LENGTH OF 8FT WILL BE USED.
- 2. WASTE & VENT SIZING: WASTE & VENT PIPING IS SIZED PER 2018 UPC TABLE 703.2. DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT OR 2%. WHERE IT IS IMPRACTICAL TO OBTAIN A SLOPE OF 2% DUE TO THE DEPTH OF THE STREET SEWER OR TO STRUCTURAL FEATURES OF THE BUILDING, DRAINAGE PIPING 4" AND LARGER MAY BE SLOPED AT 1/8" PER FOOT OR 1% WITH APPROVAL FROM THE AHJ.

<u>PIPE SIZE</u>	VERTICAL	HORIZONTAL	VENT
11/2"	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

ABBREVIATION LEGEND:

SH = SHOWER(2)KS = KITCHEN SINK WITH DISHWASHER(2)WM = WASHING MACHINE(2)WC = WATER CLOSET(2)UR = URINAL(2)FD = FLOOR DRAIN(2)	2 DFU) 2 DFU) 2 DFU) 3 DFU) 3 DFU) 2 DFU) 2 DFU) 4 DFU)
	4 DFU) 4 DFU)

