Bradley Heights Apartments

A 236-Unit Apartment Development Puyallup, Washington

Bradley Heights SS LLC

PROJECT TEAM

Bradley Heights SS LLC Owner/Developer 614 Boylston Ave E

Seattle, WA 98102 (206) 557-7236

Architect: Milbrandt Architects, Inc., P.S. 25 Central Way, Suite 210

Kirkland, WA 98033 (425) 454-7130

Structural Engineer Solutions 4 Structure, Inc 11605 135th St Ct E

> Puyallup, WA 98374 (253) 268-2923 Azure Green Consultants

Civil Engineer 409 East Pioneer Puyallup, WA 98372 (253) 770-3144

Landscape Architect Nature By Design 1320 Alameda Avenue, Suite B

> Fircrest, WA 98466 (253) 460-6067

MEP Engineer Robison Engineering Inc. 19401 40th Avenue W, Suite 302

Lynnwood, WA 98036 (206) 364-3343

PROJECT INFORMATION

Site Address: 202 27th Ave SE, Puyallup, WA 98374

Construction of 236 wood framed apartment units in eight Project Description: stacked flat buildings along with a leasing amenity building.

7.785 acres (+/- 339,107 SQ. FT.)

Tax Parcel Number:1 419036006

Occupancy Type: All Apartment Buildings are R2 occupancy

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

Applicable Codes:

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

RATED ASSEMBLIES

Rated assemblies shall be provided in accordance with IBC section 420

the local jurisdiction.

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 ductin	g 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
- 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
- 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
- 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
- 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.

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
- 2. System Type: Balanced whole house fan system with energy recovery
- 3. Use: Group R occupancy.
- 4. Specifics: See mechanical plans by others.

ENERGY NOTES

Chapter 4 using climate zone catagory 5 & marine 4 for

All residential units shall comply with the Requirements By Component Table 402.1.1 Including but not limited to the following: Associated Notes/Details **Showing Compliance**

See Insul. Notes on sheets U1, Window U-Factor U2, U3, U4, U5 Ceiling R-Value 13 / D1 Wood Frame Wall R-Value R-21 int. 1, 3, 4, 7 & 8 / D1 Floor R-Value N/A

R-10, 2ft 1, 3, 5 & 6/ D2 Slab R-Value & Depth "int." (intermediate framing) denotes standard framing 16" o.c. with headers insulated with a min. of R-10 (see 6/D6)

All units need to have a certificate posted within 3 feet of the electrical distribution panel listing the following information: R-values, U-values, duct air leakage test results, building envelope air leakage test results, types and efficiencies of heating, cooling and service water heating equipment per R401.3

All insulation shall comply with table R402.4.1.1 WSEC Hot water piping shall be insulated to a minimum of R-3 per R403.5.2

Water heaters in unheated spaces, or on concrete floors shall be placed on minimum of R-10 incompressible insulated surface 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

high-efficacy lamps per R404.1 See Insulation Notes on the Unit Plans, and Insulation and Energy Notes on sheet DX.

Energy Credits used (see 2018 WSEC table 406.3 for all requirements): Fuel Normalization Credit System Type 3 -1.0 CREDITS 0.5 CREDITS Option 1.1 Efficient Building Envelope 1.0 CREDITS Option 2.1 Air Leakage Control Option 5.5 Efficient Water Heating 2.5 CREDITS Option 7.1 Appliance Package 1.5 CREDITS TOTAL PROVIDED 4.5 CREDITS

Revise to match 2018 Prescriptive Energy Code Compliance report. Page A

Report selected 1.7 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

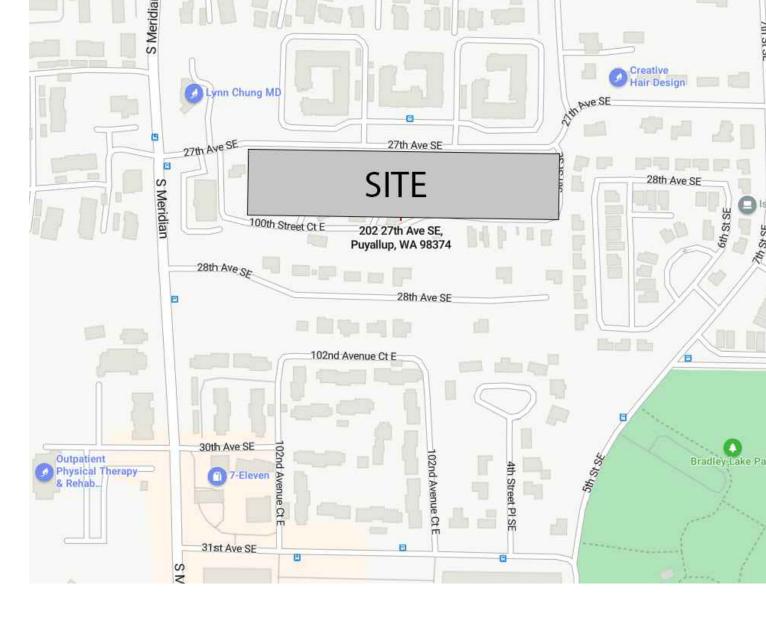
Shop drawings and calculations are required for:

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.



VICINITY MAP



Puyallup,

Heights

Apartments

25 Central Way, Suite 210

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Timberlane **Partners**

Revisions No. Date Description

Initial Publish Date: Date Plotted:

Sheet No.:

Job No.: Drawn By: TMK/HDM/APT

2-20-24

Bradley Heights Apartments

Building B Puyallup, Washington

Bradley Heights SS LLC

			Unit																								Other Unl	heated				Total	Total				
Blo	da		l	Unit Area	Deck Area	1-Bed	Unit Area	Deck Area	1-Bed	Unit Area	Deck Area	1-Bed	Unit Area	Deck Area	1-Bed	Unit Area D	eck Area	1-Bed	Unit Area	Deck Area		Unit Area	Deck Area		Unit Area	Deck Area						Heated		Total Floor	Total Building	Total Allowable	e Units Per
		oor Level		(SF)		End-Alt	(SF)	(SF)	Int-1	(SF)	(SF)	Int-2	(SF)					Int-Alt-2		(SF)	2-Bed	(SF)		2-Bed Alt		(SF)	Misc. (a)	Stair 1	Area (SF)	Stair 2	Area (SF)	Area (SF)		Area (SF)	Area (SF)	Bldg. Area (d)	Building
Α		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	78	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	28
В	3	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	A = 1
		2nd																			2	2038	132	2	2038	120		1	175	1	239	4076	666	4742	(Plus 2438 SF	(Plus 7,000 SF	
		3rd																			2	2038	132	2	1960	120		1	239	1	239	3998	730	4728	Basement)	Basement)	14
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	36
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		(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	42
E	<u> </u>	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		(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	28
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		(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	28
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	36
H	•	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	24
			6			1			60			60			5			5			63			36									Tota	I Gross SF	236179		236

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.

Unit Area Summary

Unit	Unit				
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 OF DRAWINGS

A Cover Sheet

Cover Sheet - Building Areas and Statistics

A2 Site Plan

Site Standards

A5 Grade Plane Calculations

B3 Building Floor Plans

2-Bed Unit - Basement & 1st Level Floor Plans

2-Bed Unit - 2nd & 3rd Level Floor Plans

Interior Elevations - 2-Bed

Accessibility Standards

U11 Stair 1 - Floor Plans U12 Stair 2 - Floor Plans

Foundation Plan

R2 Roof Plan

Exterior Elevations E4 Building Sections

S1.0 Structural Notes

S1.1 Structural Notes & Tables

S1.2 Sheer Wall Notes

S1.3 Sheer Wall Notes

S2.3 Foundation Plans S2.4 2nd & 3rd Floor Framing Plans

S2.5 Roof Framing Plan S3.0 Details

S3.1 Details

S4.0 Details

S4.1 Details

S5.0 Details S5.1 Details

D1 Details

D2 Details Details D3

D5 Details

D4 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 B - HVAC Plans M3.0 HVAC Enlarged Plan

E0.00 Electrical Cover Sheet E0.01 Electrical Cover Sheet

E0.10 Power Site Plan

E0.11 Lighting Site Plan

E1.00 Basement Lighting Plan

E1.01 1st Floor Lighting Plan

E1.02 2nd & 3rd Floor Lighting Plan E1.50 Lighting Notes

E3.00 Basement & 1st Floor Power Plans

E3.01 2nd & 3rd Floor Power Plans E3.02 Roof Power Plan

E5.01 Unit Electrical Plans

E5.00 Unit Plan Notes

E5.02 Unit Electrical Plans

E6.00 One-Line Diagram & Notes E6.01 Panel Schedule

POB.00 Plumbing - Legend, General Notes & Drawing Index

POB.01 Plumbing Notes & Tables

P0B.02 Plumbing Calculations P0B.03 Plumbing Schedules

P2B.00 Underslab Waste & Vent Plan

P2B.01 Basement Waste & Vent Plan

P2B.02 1st Floor Waste & Vent Plan P2B.03 2nd Floor Waste & Vent Plan

P2B.04 3rd Floor Waste & Vent Plan

P2B.05 Roof Waste & Vent Plan

P3B.01 Basement Plumbing Supply Plan

P3B.02 1st Floor Plumbing Supply Plan

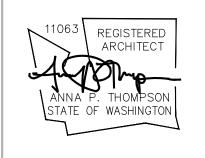
P3B.03 2nd Floor Plumbing Supply Plan P3B.04 3rd Floor Plumbing Supply Plan

P7B.00 Details

P7B.01 Details

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Bradley Heights **Apartments**

Puyallup,

Timberlane Partners

Revisions No. Date Description

Initial Publish Date:

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

Sheet No.:

Building B

Bradley Heights Apartments

> Puyallup, Wa

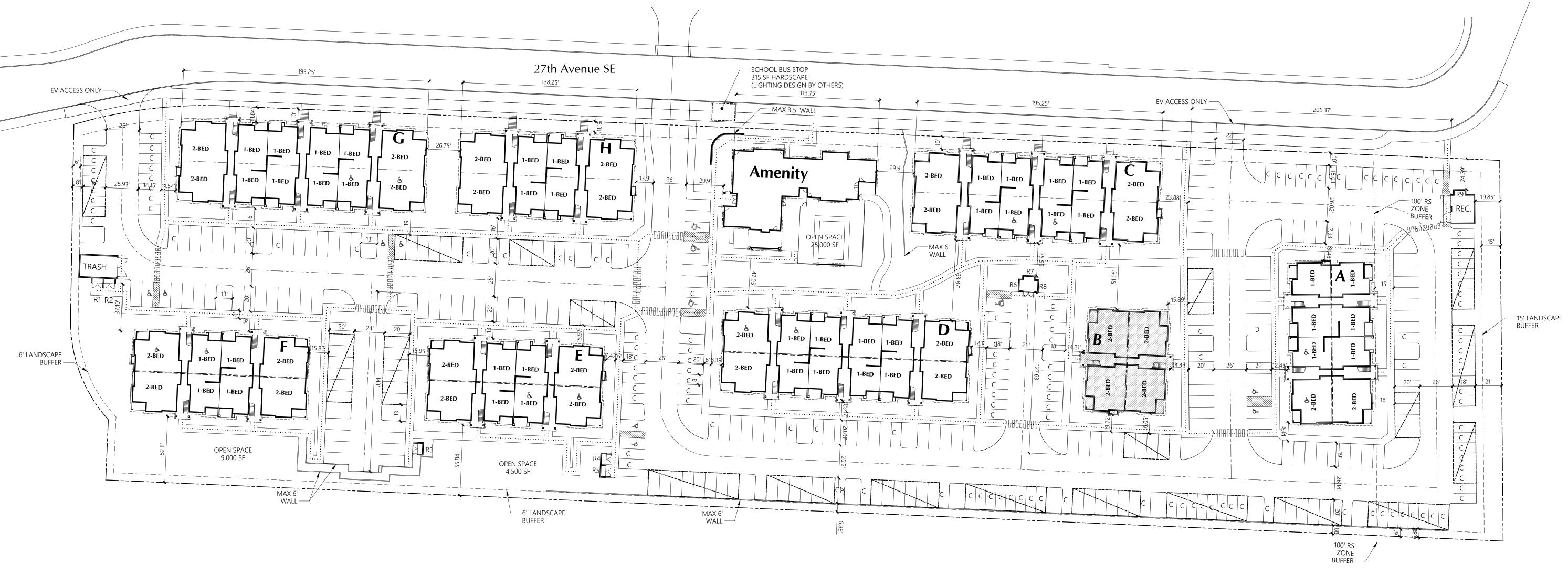
Timberlane Partners

Revisions

No. Date Description

IRI E

Sunset Garden Senior Living Apartments





236 UNITS

SITE INFORMATION

SITE ADDRESS: 202 27th Ave SE, Puyallup, WA

PARCEL #: 419036006

SITE AREA: 339,107 SF (7.785 Acres)

ZONE: RM-CORE

SETBACKS: NORTH/FRONT : 10 FT

NORTH/FRONT: 10 FT setback to buildings WEST/SIDE: 0 FT Building setback - 6 FT landscape buffer SOUTH/REAR: 0 FT Building setback - 6 FT landscape buffer EAST/SIDE: 25 FT Building setback - 15 ft landscape buffer

BUILDING HEIGHT: 50' Max

DENSITY: Min 16 units per acre (125 units) no Max density

LOT COVERAGE: Max 90%

LANDSCAPE AREA: Min 10% of net lot area (33,910 SF)

OPEN SPACE: 10% of net lot area (33,910 SF)

38,500 SF provided

PRIVATE OPEN SPACE: 60 SF per ground floor unit

10' x 6ⁱ per upper story unit

PARKING: 1.5 PARKING SPACES PER UNIT Required Parking: 354 Stalls Provided Parking: 354 Stalls

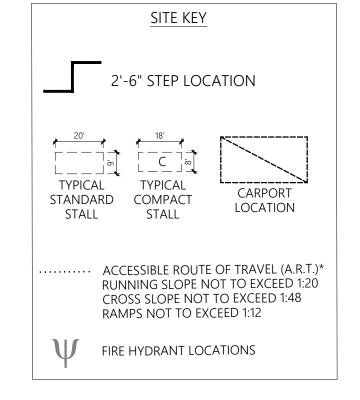
EASEMENTS: no existing easements on site

PARKIN	G SUMMAR	RY	
Parking Stalls Required	354		
Standard Stalls	118		
Compact Stalls 41.5%	100		
Parallel Stalls	0		
Carport Stalls	124		
Attached Garage Stalls	0		
Detached Garage Stalls	0		
Accessible Standard Stalls	6		
Accessible Van Stalls	5		
Accessible Parallel Stalls	0		
Accessible Carport Stalls	1		
Accessible Garage Stalls	0		
Tandem Stalls	0		
Tandem Garage Stalls	0		
Subtotal	354	1.50	Stalls / D.U.
Aprons	0		
Total Parking Stalls Provided	354	1.50	Stalls / D.U.

UNIT COUNT
1 BED 137 (58%)
2 BED 99 (42%)
TOTAL 236

Provide egress plan with all dimensions with travel distance for all floors.

Page A2



SITE NOTES

1) TYPICAL SIDEWALK WIDTH IS 6'

2) A MINIMUM CLEAR WIDTH OF 44" IS REQUIRED FOR ALL EXTERIOR ACCESSIBLE ROUTES PER WASHINGTON STATE AMENDMENT SECTION 1101.2.1

Initial Publish Date:
Date Plotted:

Sheet No.:

 Date Plotted:
 2-20-24

 Job No.:
 Drawn By:

 23-06
 APT/HDM

Δ2

BUILDING BLOCKS

CHAPTER 3

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 ROUTES SHALL COINCIDE WITH OR BE LOCATED IN THE SAME AREAS AS A GENERAL CIRCULATION PATH.

ACCESSIBLE BUILDING ENTRANCES CONNECTING ACCESSIBLE WALKWAYS AND TO THE

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 PLATFORM LIFTS.

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

(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 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.

CESSIBLE ROUTE ★ ADDITIONAL CLEARANCE IF DOOR HAS BOTH CLOSER AND LATCH MANEUVERING CLEARANCES MIN. MANEUVERING CLEARANCES SHALL COMPLY WITH THESE DIAGRAMS AND SHALL NOT INCLUDE KNEE & TOE CLEARANCE. THE FLOOR SURFACE WITHIN THE MANEUVERING CLEARANCE SHALL HAVE A SLOPE NOT GREATER THAN 1:48

LANDING

DOORWAY CLEAR WIDTH: DOOR OPENINGS SHALL PROVIDE A

CLEAR WIDTH OF 32" MIN. CLEAR OPENING OF DOORWAYS WITH

HINGE APPROACH 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 ½" MAX. IN

HEIGHT & SHALL COMPLY WITH SECTIONS 302 & 303. (See detail 1 ACC sheets) DOOR HARDWARE: HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERABLE PARTS ON SIRLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE. OPERABLE PARTS OF SUCH HARDWARE SHALL BE 34" MIN. AND 48" MAX. ABOVE

CLOSING SPEED: DOORS WITH CLOSERS SHALL BE ADJUSTED SO THAT FROM A 90° OPEN POSITION, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12° FROM THE LATCH IS 5 SECONDS MIN.

LATCH APPROACH

DOORS WITH A SPRING HINGE SHALL BE ADJUSTED SO THAT FROM A 70° OPEN POSITION THE TIME REQUIRED TO MOVE THE DOOR TO A CLOSED POSITION IS 1.5 SECONDS MIN. DOOR OPENING FORCE: HINGED, SLIDING OR FOLDING DOORS OTHER THAN FIRE DOORS SHALL HAVE AN OPENING FORCE AS FOLLOWS: INTERIOR DOORS: 5 lbs. MAX. EXTERIOR DOORS: 10 lbs. MAX.

AT LEAST AS WIDE -

LANDING

AS RAMP RUN



DETECTABLE WARNING

(IF PROVIDED)

GENERAL: RAMP RUNS SHALL HAVE A RUNNING SLOPE GREATER THAN 1:20 AND NOT STEEPER THAN 1:12. THE MAX. CROSS SLOPE OF A RAMP SHALL BE 1:48. THE MAX. RISE FOR ANY RAMP RUN SHALL BE 30". LANDINGS SUBJECT TO WET CONDITIONS SHALL BE DESIGNED TO PREVENT THE ACCUMULATION OF WATER.

CHANGES IN LEVEL: CHANGES IN LEVEL SHALL COMPLY WITH SECTION 303 (See detail 1 ACC sheets)

CLEAR WIDTH: THE CLEAR WIDTH SHALL BE 36" MIN. FOR EXTERIOR ROUTES OF TRAVEL THE CLEAR WIDTH SHALL BE 44" MIN. THE HANDRAILS SHALL NOT PROJECT INTO THE REQUIRED 60" MIN. CLEAR WIDTH OF THE RAMP RUN. LANDINGS: RAMPS SHALL HAVE LANDINGS AT THE BOTTOM & TOP OF EACH RAMP RUN WITH A MAX. SLOPE OF 1.48. CLEAR WIDTH OF LANDINGS SHALL BE AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING AND A MIN. CLEAR LENGTH OF 60". RAMPS THAT CHANGE

(See detail 1 ACC sheets) HANDRAILS: RAMP RUNS WITH A RISE GREATER THAN 6" SHALL HAVE HANDRAILS **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 BARRIER AT THE EDGE OF THE RAMP OR LANDING CONSTRUCTED SO THAT IT PREVENTS THE

DIRECTION AT THE LANDING SHALL BE SIZED TO PROVIDE A TURNING SPACE

PASSAGE OF A 4" DIAMETER SPHERE BARRIER SHALL PREVENT -PASSAGE OF 4" SPHERE

36" CLR.

RAMP RUN

EXTENDED SURFACE-AT SAME LEVEL AS RAMP SURFACE EXTENDED FLOOR SURFACE

RUN

FRONT APPROACH

CHANGE IN

DIRECTION

RAMP EDGE PROTECTION

DETECTABLE WARNINGS THE MIN. WIDTH OF CURB RAMPS SHALL BE 36". ALL ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 1:20.

DETECTABLE WARNINGS SHALL CONTRACTOR OF CURB RAMP SHALL NOT BE STEEPER THAN 1:20. 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.

CURB RAMP 1:12 MAX. SLOPE

— Flared Sides 1:10 Max. Slope

— CURB RAMP FLARES PAINTED IF

ADJACENT CURB IS PAINTED

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. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES

CENTER-TO-CENTER TOP DIAMETER 50% MIN. TO 65% MAX. OF THE -SPACING 1.6" MIN. BASE DIAMETER >TO 2.4" MAX. CHECK WITH LOCAL JURISDICTION ON WHERE DETECTABLE WARNINGS ARE REQUIRED. URRENTLY IBC & ANSI A117.1 ONLY DIAMETER REQUIRE DETECTABLE WARNINGS AT LIMITED & SPECIFIC LOCATIONS. .9" MIN.

CURB RAMPS AND DETECTABLE WARNINGS

ACCESSIBLE ROUTES **CHAPTER 4**

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

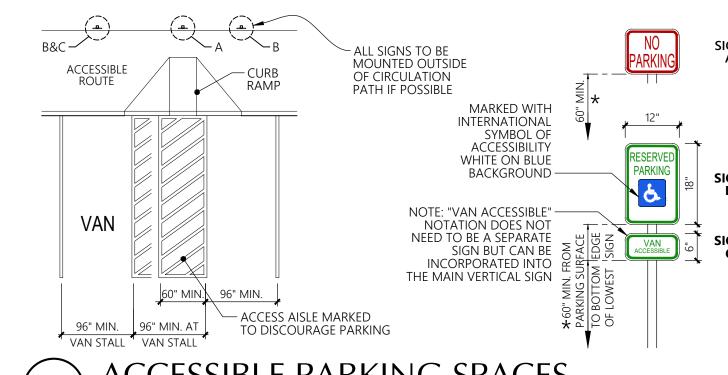
SPACES SHALL BE 60" MIN. IN WIDTH. ACCESS AISLES SERVING VAN PARKING SPACES SHALL BE 96" MIN. IN WIDTH. ACCESS AISLE: CAR AND VAN PARKING SPACES SHALL HAVE AN ADJACENT ACCESS AISLE ON EITHER SIDE OF THE PARKING SPACE. THE ACCESS AISLES SHALL BE 60" MIN. IN WIDTH FOR CAR STALLS AND 96" MIN. IN WIDTH FOR 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.

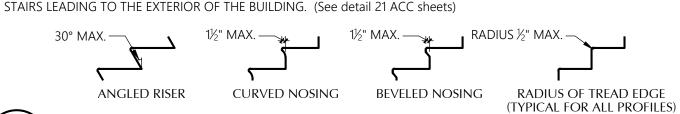


ACCESSIBLE PARKING SPACES

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

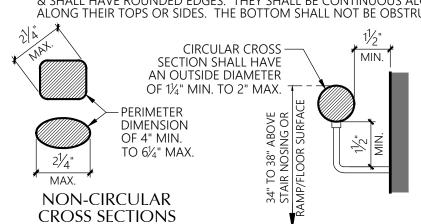


ACCESSIBLE STAIRS

HANDRAILS

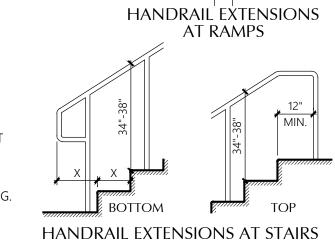
HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF STAIRS & RAMPS. THEY SHALL BE CONTINUOUS FOR THE FULL LENGTH OF EACH STAIR FLIGHT OR RAMP RUN. INSIDE HANDRAILS ON SWITCHBACKS SHALL BE CONTINUOUS BETWEEN

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



HANDRAIL EXTENSIONS EXTENSIONS SHALL EXTEND BEYOND AND IN THE SAME DIRECTION OF A STAIR FLIGHT OR RAMP RUN EXCEPT FOR THE INSIDE CONTINUOUS HANDRAIL AT SWITCHBACK STAIRS OR RAMPS HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE LANDING SURFACE, OR BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT

STAIR FLIGHT OR RAMP RUN. AT THE BOTTOM OF A STAIR FLIGHT THE HANDRAIL SHALL EXTEND AT THE SLOPE OF THE STAIR FLIGHT FOR A HORIZONTAL DISTANCE EQUAL TO ONE TREAD DEPTH BEYOND THE BOTTOM TREAD NOSING



HANDRAILS

GENERAL SITE & BLDG. ELEMENTS CHAPTER 5

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Bradley Heights **Apartments**

Puyallup,

Timberlane **Partners**

Revisions No. Date Description

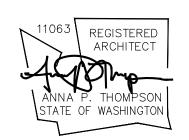
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2-20-24

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Plane Calculat

Bradley Heights Apartments

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Revisions

No. Date Description

IBC SECTION 202 DEFINITIONS

BASEMENT. A STORY THAT IS NOT A STORY ABOVE GRADE PLANE (SEE "STORY ABOVE GRADE PLANE"). THIS DEFINITION OF "BASEMENT" DOES NOT APPLY TO THE PROVISIONS OF SECTION 1612 FOR FLOOD LOADS.

STORY ABOVE GRADE PLANE. ANY STORY HAVING ITS FINISHED FLOOR SURFACE ENTIRELY ABOVE GRADE PLANE, OR IN WHICH THE FINISHED SURFACE OF THE FLOOR NEXT ABOVE IS:

- 1. MORE THAN 6 FEET (1829 MM) ABOVE GRADE PLANE; OR
- MORE THAN 12 FEET (3658 MM) ABOVE THE FINISHED GROUND LEVEL AT ANY POINT

GRADE PLANE. A REFERENCE PLANE REPRESENTING THE AVERAGE OF FINISHED GROUND LEVEL ADJOINING THE BUILDING AT EXTERIOR WALLS. WHERE THE FINISHED GROUND LEVEL SLOPES AWAY FROM THE EXTERIOR WALLS, THE REFERENCE PLANE SHALL BE ESTABLISHED BY THE LOWEST POINTS WITHIN THE AREA BETWEEN THE BUILDING AND THE LOT LINE OR, WHERE THE LOT LINE IS MORE THAN 6 FEET (1829 MM) FROM THE BUILDING, BETWEEN THE BUILDING AND A POINT 6 FEET (1829 MM) FROM THE BUILDING.

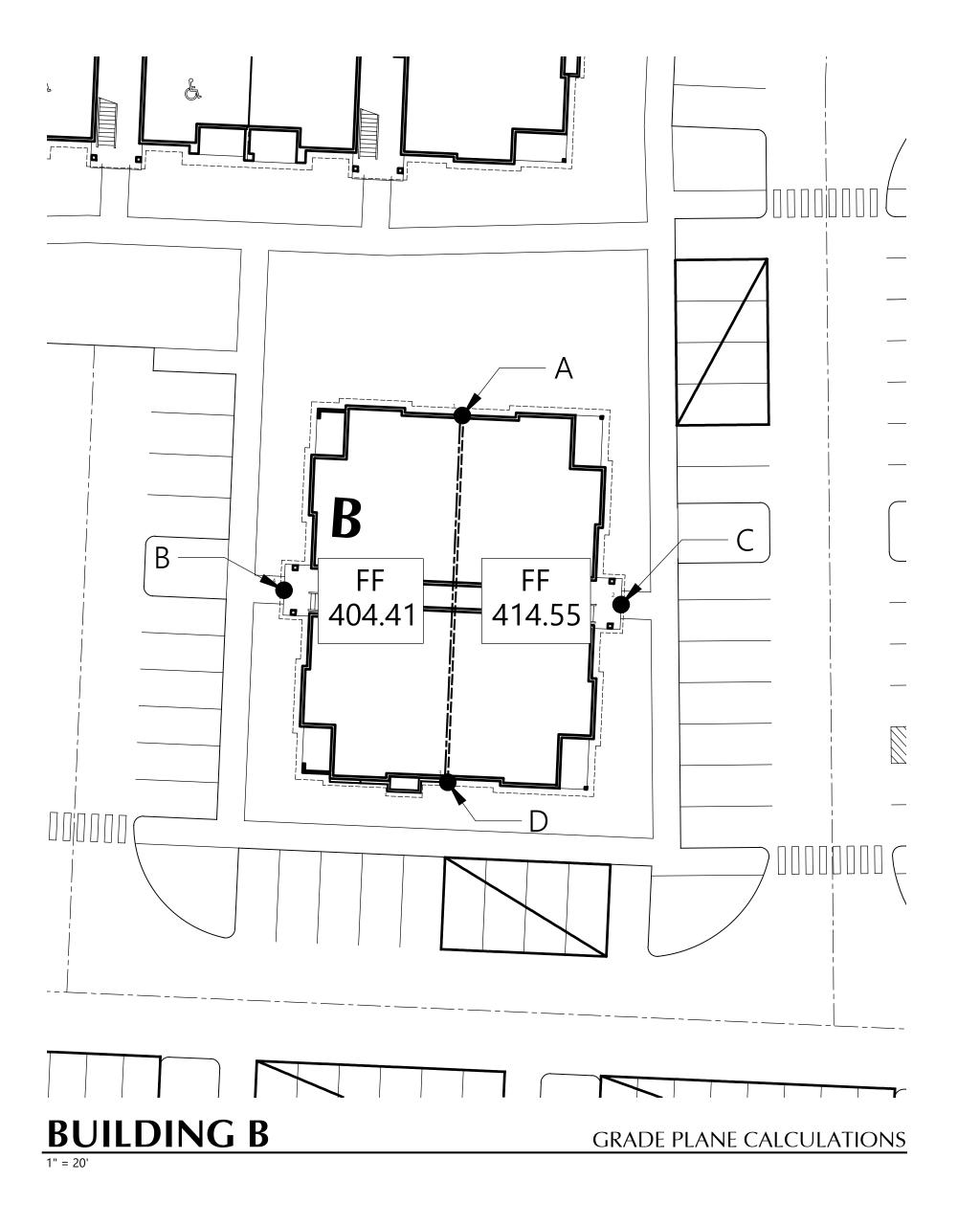
BUILDING B

AVERAGE GRADE ELEVATION AT EACH EXTERIOR WALL:

POINT A = 408.99
POINT B = 403.83
POINT C = 413.97
POINT D = 411.55
1638.34/4 = 409.60 AEG

FIRST FLOOR (FLOOR NEXT ABOVE GRADE PLANE) IS LESS THAN 6-FEET (ACTUAL 3.2 FEET) BELOW FIRST FLOOR FINISHED FLOOR ELEVATION OF 414.55.

BUILDING A QUALIFIES AS 3-STORY OVER BASEMENT

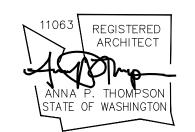




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Building B

Bradley Heights Apartments

> Puyallup, Wa

Timberlane Partners

Revisions

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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

AREA SUMMARY

ACCESSIBILITY NOTES:

MEET THE ACCESSIBILITY REQUIREMENTS OF

'TYPE B' ACCESSIBLE UNITS AS REQUIRED

BY CHAPTER 11 OF THE 2018 IBC.

ACCESSIBILITY REQUIREMENTS.

WINDOWS).

ALL GROUND FLOOR UNITS IN THIS PROJECT MUST

INCLUDED IN THE ABOVE GROUND FLOOR UNITS

REQUIREMENTS OF 'TYPE A' ACCESSIBLE UNITS

AS REQUIRED BY CHAPTER 11 OF THE 2018 IBC.

5% OF ALL UNITS NEED TO MEET THE ACCESSIBILITY

SEE BUILDING PLANS FOR LOCATION OF 'TYPE A' UNITS

SEE SHEET U9 FOR SPECIFIC ADAPTABILITY STANDARD

ENVIRONMENTAL CONTROLS, OPERATING HARDWARE

FOR BOTH 'TYPE A' AND 'TYPE B' ACCESSIBLE UNITS.

SEE INTERIOR ELEVATION SHEETS FOR ADDITIONAL

LIGHTING CONTROLS, ELECTRICAL SWITCHES,

FOR DOORS AND WINDOWS, AND PLUMBING

FIXTURE CONTROLS SHALL BE OPERABLE WITH

GRASPING, PINCHING OR TWISTING OF THE WRIST

HARDWARE, SUCH ITEMS SHALL BE 15" MINIMUM

AND 44" MAXIMUM ABOVE THE FLOOR (48" FOR

ONE HAND AND SHALL NOT REQUIRE TIGHT

TO OPERATE. EXCEPT FOR OPERABLE DOOR

Heated SF Patio/Deck SF

1019

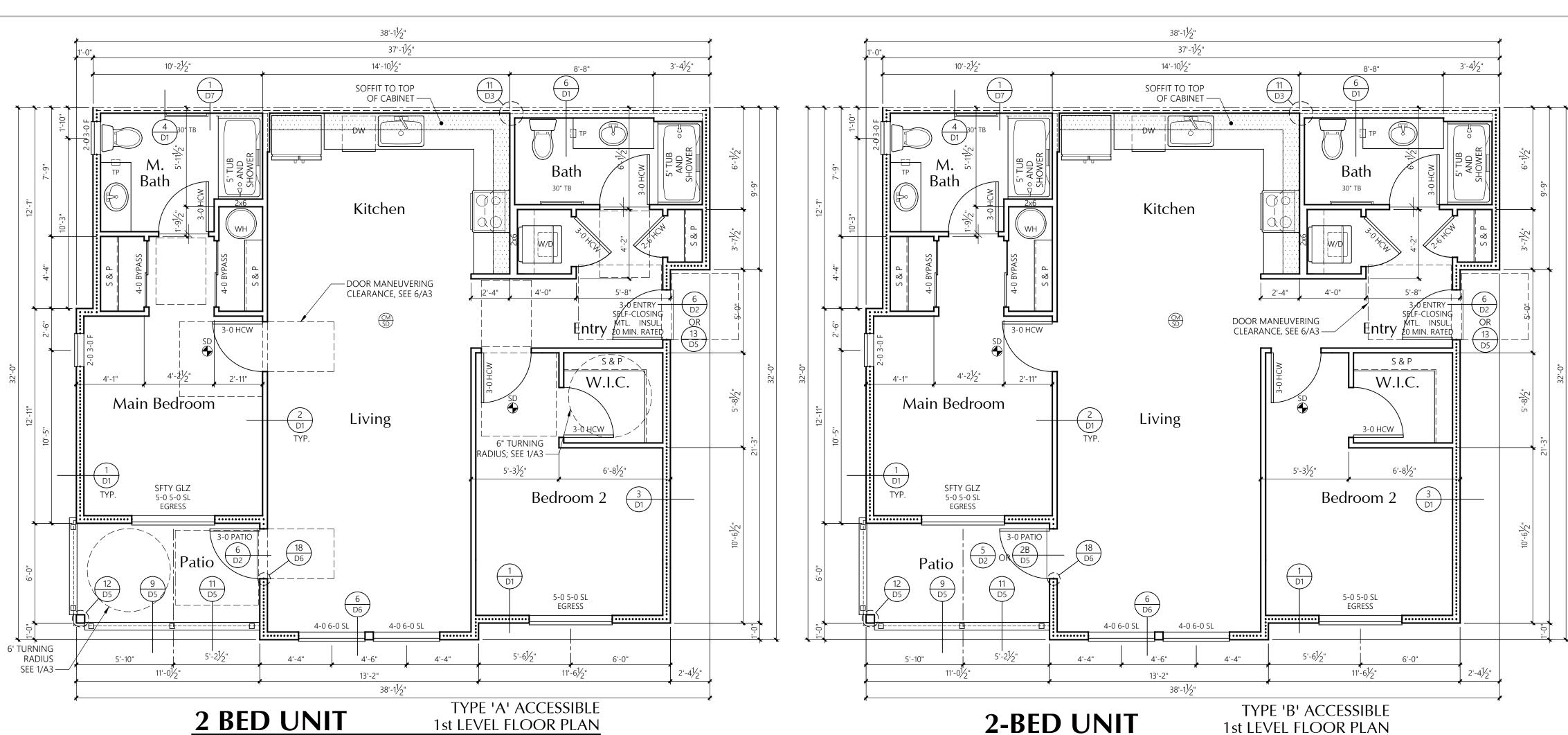
30 POUNDS TO SET DOOR IN MOTION 15 POUNDS TO OPEN DOOR TO FULL 90° FORCE MEASURED AT LATCH SIDE OF DOOR. THE DOOR CLOSER ON THE ENTRY DOOR

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.

5 POUNDS.

_____ 30X48



ALTERNATE TYPE 'A' OR 'B' ACCESSIBLE 2-BED-ALT UNIT 1st LEVEL FLOOR PLAN

SEE TYPICAL 2-BED UNIT TYPE 'A'

ACCESSIBLE FLOOR PLAN OR

TYPE 'B' ACCESSIBLE FLOOR

PLAN FOR REMAINDER OF UNIT

10'-21/2"

Main Bedroom

SFTY GLZ 5-0 5-0 SL

10'-21/5"

4'-21/2"

Main Bedroom

SFTY GLZ

Deck/

5-0 5-0 SL

Deck/

AREA SUMMARY

Heated SF | Patio/Deck SF 1019 Total SF

UNIT PLAN NOTES

FRAMING: 2x6'S AT EXTERIOR WALLS 2x4'S AT INTERIOR WALLS UNLESS NOTED OTHERWISE. NO PLUMBING SHALL BE LOCATED IN THE 1" AIR SPACE OF FIRE R-21 BATT INSULATION U.N.O. PARTITIONS OR FIRE WALLS.

3½" ACOUSTICAL INSULATION ONE

CARBON MONOXIDE/SMOKE DETECTOR

ALL ESCAPE OR RESCUE WINDOWS FROM SLEEPING ROOMS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE 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.

ALL BEDROOM AND BATHROOM DOORS SHALL BE UNDERCUT

A MINIMUM OF 1/2" ABOVE THE ADJACENT FLOOR COVERING.

WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR

THE FRONT DOOR SHALL BE OPENABLE FROM THE INSIDE

EFFORT. IT MAY BE PROVIDED WITH A NIGHT LATCH, DEAD

OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR

EXCEPT WHERE NOTED OTHERWISE, 5/8" TYPE 'X' GYPSUM

CORRIDOR WALLS, AND 1-HOUR AND 2-HOUR FIRE-RATEI

ON INTERIOR NON-RATED WALLS, EXTERIOR WALLS,

BOLT OR SECURITY CHAIN, PROVIDED SUCH DEVICES ARE

TOOL, AND MOUNTED NOT TO EXCEED 48" ABOVE THE

GYPSUM WALLBOARD SCHEDULE

WALLBOARD SHALL BE USED THROUGHOUT;

STANDARD PLATE

HEIGHT: 9'-1"

SEE ELEVATION SHEETS FOR

FLOOR TO FLOOR HEIGHTS

WINDOW HDR IS 8'-0"

SEE SHEET U8 FOR INTERIOR ELEVATIONS

AND ACCESSIBILITY REQUIREMENTS.

UNLESS NOTED OTHERWISE

FINISHED FLOOR.

SCW = SOLID CORE WD.MTL = METALHM = HOLLOW METAL

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

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

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

WINDOWS: MILGARD VINYL TYPE (VINYL) MODEL U-VALUE SLIDING FIXED

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

---- R-13 BATT INSULATION

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 SMOKE DETECTOR

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

FEET. THE MINIMUM CLEAR OPENING HEIGHT DIMENSION

PROVIDE %" 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

DOOR KEY:

CONSTRUCTION: HCW = HOLLOW CORE WD. SW = SWING BF = BIFOLDBP = BYPASS

WINDOW KEY:

INSULATION

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

EXTERIOR DOORS: MAIN ENTRY U=0.20 ALL OTHERS U=0.40

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

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

*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.

2-BED-ALT UNIT ALT. 'A' OR 'B' ACCESSIBLE RASEMENT DI ANI

5'-21/2"

8'-01/2"

4'-4"

4-0 6-0

FOR REMAINDER OF UNIT

SEE TYPICAL 2-BED UNIT TYPE 'A" ACCESSIBLE FLOOR PLAN OR TYPE 'B' ACCESSIBLE FLOOR PLAN

3'-4¹/2"

3-0 ENTRY-

SELF-CLOSING

Entry MTL. INSUL.

W.I.C

6'-81/5"

6'-0"

NON-ACCESSIBLE

3-0 HCW

Bedroom 2

5-0 5-0 SL

EGRESS

11'-6¹/2"

2nd & 3rd LEVEL FLOOR PLAN

AREA SUMMARY

Heated SF Patio/Deck SF

1019

4'-0"

38'-1½"

14'-101/2"

SOFFIT TO TOP

Kitchen

CM SD

Living

4-0 6-0 SL

4-0 6-0 SL

13'-2"

38'-11/5"

OF CABINET —

10'-2¹/2"

Main Bedroom

SFTY GLZ

5-0 5-0 SL

EGRESS

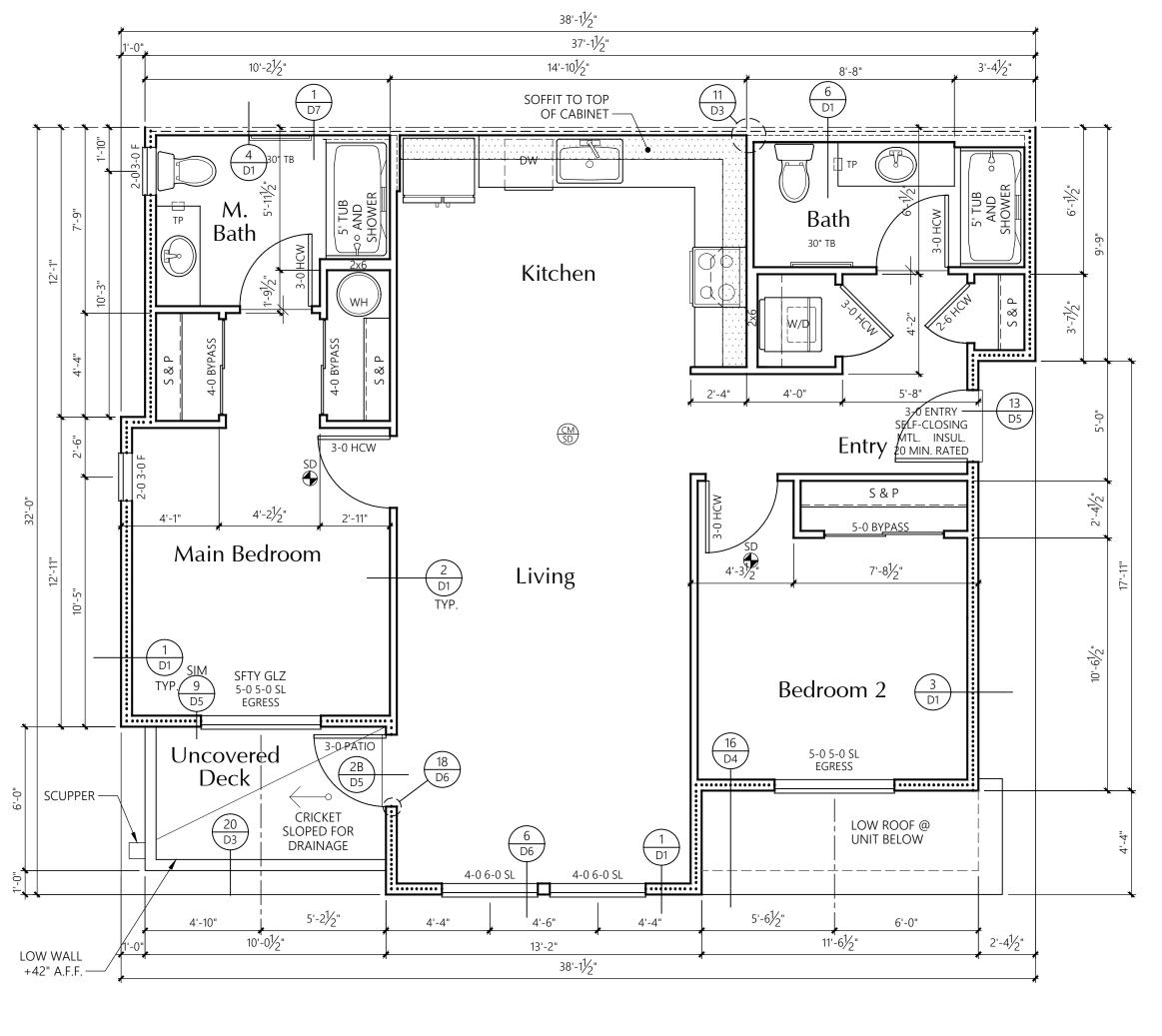
5'-10"

3-0 PATIO

37'-11/5"

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2-BED-ALT UNIT

Total
* Side

ALTERNATE 2-BED UNIT 3rd LEVEL FLOOR PLAN

AREA SUMMARY							
Heated SF Patio/Deck SF							
al SF 980 60							
de of exterior walls to which area was measured							

DOOR KEY:

 $\frac{\text{TYPE:}}{\text{SW = SWING}}$ CONSTRUCTION: HCW = HOLLOW CORE WD. BF = BIFOLDSCW = SOLID CORE WD. BP = BYPASSMTL = METALHM = HOLLOW METAL

WINDOW KEY:

FIX = FIXED/PICTURESGD = 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

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 ALL OTHERS U=0.40

U-VALUE 6310 ARGON/LoE 0.24 or BETTER DBL. SLIDER 8125 ARGON/LoE 0.24 or BETTER 6610 ARGON/LoE 0.24 or BETTER SGD

> SHALL HAVE A FLAME SPREAD INDEX OF NOT INDEX OF NOT MORE THAN 450

UNIT PLAN NOTES

2x6'S AT EXTERIOR WALLS FRAMING: 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

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.

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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 $^3\!4$ " 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

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

HEIGHT OF 70" MINIMUM ABOVE THE DRAIN INLET.

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

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.

FLOORS OVER UNHEATED SPACES - R30

THE EAVES

WINDOWS: MILGARD VINYL TYPE (VINYL) MODEL SLIDING 6110 ARGON/LoE 0.24 or BETTER FIXED SINGLE HUNG 6210 ARGON/LoE 0.24 or BETTER

NOTE: ALL CONCEALED OR EXPOSED INSULATION MORE THAN 25 AND A SMOKE-DEVELOPED

SL = SLIDERSH = SINGLE HUNG



2 -BED UNIT

TYPE 'A' & 'B' & NON-ACCESSIBLE SECONDARY BATHROOM PLAN

(4) SECONDARY

Timberlane Partners

No. Date Description

CLEAR FLOOR SPACE LEGEND TYPE B UNIT

- (B) 30x48 CLEAR FLOOR SPACE AT TUB.
- (C) 30"x48" CLEAR FLOOR SPACE CENTERED ON SINK
- 30"x48" CLEAR FLOOR SPACE BEYOND ARC OF DOOR.
- AA) 30x48 CLEAR FLOOR SPACE AT STOVE.
- (BB) 30x48 CLEAR FLOOR SPACE AT OVEN.
- 30x48 CLEAR FLOOR SPACE AT SINK.

CC 30x48 CLEAR FLOOR SPACE AT SINK.

DD 30x48 CLEAR FLOOR SPACE AT DISHWASHER.

(EE) 30x48 CLEAR FLOOR SPACE AT REFRIGERATOR.

(FF) 30x48 CLEAR FLOOR SPACE AT WORK SURFACE.

GG 30x48 CLEAR FLOOR SPACE AT WASHER/DRYER

- (DD) 30x48 CLEAR FLOOR SPACE AT DISHWASHER.
- (EE) 30x48 CLEAR FLOOR SPACE AT REFRIGERATOR.
- GG 30x48 CLEAR FLOOR SPACE AT WASHER/DRYER

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> **Bradley** Heights

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U9

NUMBER OF TYPE A UNITS 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 DEFINED IN SECTION 1107.7 OF THE IBC.

ACCESSIBLE ROUTE 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

CIRCULATION PATH. (See detail 5 ACC sheets)

TURNING SPACE & CLEAR FLOOR SPACE ALL ROOMS SERVED BY AN ACCESSIBLE ROUTE SHALL PROVIDE A TURNING SPACE EXCEPT FOR BATHROOMS THAT ARE NOT REQUIRED TO MEET

ACCESSIBILITY STANDARDS, OR CLOSETS OR PANTRIES THAT ARE 48" MAX (See detail 1 ACC sheets) **NOTE:** BALCONIES AND CORRIDORS ARE NOT ROOMS AND AS SUCH DO NOT NEED TO HAVE A TURNING SPACE

DOORS AND DOORWAYS 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 3/4" MAX. IN HEIGHT PROVIDED THEY ARE BEVELED WITH WHERE EXTERIOR SPACE DIMENSIONS OF BALCONIES ARE LESS THAN THE

REQUIRED MANEUVERING CLEARANCE, DOOR MANEUVERING CLEARANCES ARE NOT REQUIRED ON THE EXTERIOR SIDE OF THE DOOR. BATHROOM DOORS: BATHROOMS NOT REQUIRED TO BE ACCESSIBLE

ONLY NEED TO PROVIDE DOOR MANEUVERING CLEARANCE ON THE OUTSIDE OF THE DOOR. 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 ARC OF THE DOOR SWING. **OPERABLE PARTS**

LIGHTING CONTROLS, ELECTRICAL PANELBOARDS, ELECTRICAL SWITCHES & RECEPTACLE OUTLETS, ENVIRONMENTAL CONTROLS, APPLIANCE 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)

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 outlet shall not be required to comply with Section 309.

3. Floor receptacle outlets.

ı MIN.

A LAVATORY

COMPLYING WITH

PERMITTED WITHIN L

WATER CLOSET ——

CLEAR FLOOR SPACE

IF THE CLEAR FLOOR

SPACE IS INCREASED

AT WATER CLOSET

COUNTER TOP:

ALLOWED AT

ONE END OF

CLEARANCE *

★ COUNTER TOP⁷ & CABINET MUST

WALL FINISHES EXTENDED

BELOW & BEHIND CABINET

BE REMOVABLE WITH FLOOR &

AND CABINET

TO 66" IN DEPTH

30x48 CLEAR

| FLOOR SPACE

FORWARD APPROACH

PLAN

4. HVAC diffusers. Controls mounted on ceiling fans. 6. Where redundant controls other than light switches are provided for a single element, one control shall not be required to be accessible. Reset buttons & shut-offs serving appliances, piping & plumbing fixtures.

8. Electrical panelboards shall not be required to comply with Section 309.4. **WINDOWS** ONLY WINDOWS REQUIRED TO BE OPERABLE FOR NATURAL VENTILATION OR

GENERAL TYPE A UNIT NOTES

★ CABINETRY PERMITTED UNDER

THE LAVATORY PROVIDED IT IS

| removable without need for

THE LAVATORY. FLOOR FINISH

SHALL EXTEND UNDERNEATH

AND THE WALLS BEHIND AND

SURROUNDING THE CABINETRY

SHALL BE FINISHED.

BLOCKING FOR -

BARS AT SIDE

PLAN

FUTURE GRAB

AND REAR

WALLS

FAUCET CONTROLS SHALL MEET THE

REQUIREMENTS FOR OPERABLE PARTS.

LAUNDRY EQUIPMENT

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

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

ALL TOILET & BATHING FACILITIES WITHIN A TYPE A UNIT SHALL PROVIDE REINFORCEMENT FOR THE **FUTURE INSTALLATION** OF GRAB BARS AT WATER 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 THE ACCESSIBLE LEVEL OF THE DWELLING UNIT. ALARMS

ACCESSIBLE AUDIBLE AND VISIBLE ALARMS AND NOTIFICATION APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72 LISTED IN SECTION 105.2.2, BE POWERED BY A COMMERCIAL LIGHT AND POWER SOUCE, BE PERMANENTLY CONNECTED TO THE WIRING OF THE PREMISES ELECTRIC SYSTEM, AND BE PERMANENTLY INSTALLED.

VISIBLE NOTIFICATION APPLIANCES

IN GROUP R-2 OCCUPANCIES REQUIRED TO HAVE A FIRE ALARM SYSTEM, EACH 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:

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 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.

UNIT PRIMARY ENTRANCE

MIRROR

FRONT

FRONT

THIS MUST

OBSTRUCT

- Grab bar u

BLOCKING

NOTE: ALL DIMENSIONS

ARE MEASURED TO FACE

OF FINISHED SURFACE

REINFORCEMENT FOR

WHERE REAR GRAR -

A 24" GRAB BAR

OILET IS PERMISSIBLE 💳

CONTROL ON

OPEN SIDE

BAR WOULD OVERLAP

WITH A LAVATORY

REINFORCEMENT FOR

ROD

4" MAX.

FROM FRONT

EDGE OF TUB -

GRAB BAR

18" MIN.

UTURE VERTICAL

FUTURE 36" GRAB ———

CENTERED ON THE

THE ACCESSIBLE PRIMARY ENTRANCE SHALL BE ON AN ACCESSIBLE ROUTE FROM PUBLIC AND COMMON AREAS.

COMMUNICATION FEATURES SHALL BE PROVIDED AT THE UNIT PRIMARY INTRANCE. A HARD-WIRED ELECTRIC DOORBELL SHALL BE PROVIDED. A BUTTON OR SWITCH SHALL BE PROVIDED ON THE PUBLIC SIDE OF THE UNIT PRIMARY FNTRANCE WHERE A SYSTEM PERMITTING VOICE COMMUNICATION BETWEEN A VISITOR AND THE OCCUPANT OF THE UNIT IS PROVIDED AT A LOCATION OTHER THAN THE UNIT ENTRY DOOR, THE SYSTEM SHALL INCLUDE THE CAPABILITY OF SUPPORTING VOICE AND TTY COMMUNICATION WITH THE UNIT INTERFACE. A MEANS FOR VISUALLY IDENTIFYING A VISITOR WITHOUT OPENING THE UNIT TO PROVIDE AN EMERGENCY ESCAPE AND RESCUE OPENING NEED TO HAVE ENTRY DOOR SHALL BE PROVIDED. PEEPHOLES, WHERE USED SHALL PROVIDE A OPERABLE PARTS COMPLYING WITH SECTION 309. (See detail 4 ACC sheets) MINIMUM 180-DEGREE RANGE OF VIEW. PEEPHOLES SHALL BE PLACED AT A STANDARD HEIGHT FOR BOTH STANDING PERSONS AND WHEELCHAIR USERS.

TOP OF COUNTER OR RIM OF

COUNTER OR INSTALL BRACE

INTERFERE W/ CABINET REMOVA

54" MIN.

42" GRAB BAR

B) SIDE

CURTAIN —

ROD 🔪

WITHIN CARINFT - CANNOT

— (See detail 2 ACC sheets)

-FINISHED END PANEL

PROVIDE KNEE &

TOE CLEARANCE

BLOCKING

- SINK WHICHEVER IS HIGHER

MUST BE WITHIN THIS AREA - VERTICAL PROVIDE GRAE GRAB BAI BAR ALONG 18" MIN. CONTROL WALL PROVIDE BLOCKING AS NECESSARY FOR ALL GRAB BARS SIDE (D) BACK WALL B) BACK WALL C) WALL STANDARD LAYOUT ALTERNATE LAYOUT OPTIONS TRANSFER SHOWER **ROLL-IN SHOWER CONTROL WALL OPTIONS** CONTROL WALL **ALIGN GRAB BAR END WITH** 6"MAX. BACK WALL FEDGE OF SEAT -BACK WALL 6", MAX 6" MAX. **NOTE**: INSIDE FINISHED DIMENSIONS ARE MEASURED AT THE **CENTER POINTS OF** OPPOSING SIDES OF SHOWER COMPARTMENT FOLD-UP 36" MIN. SEAT **LAVATORY CLEAR FLOOR SPACE** PERMITTED IN ALIGNED WITH CLEAR FLOOR CONTROL WALL ARFA OPPOSIT FOLDING OR FIXED Seat Wall 🛧 SEAT TO BE ★ COUNTER TOP & CABINET MUST BE REMOVABLE WITH FLOOR & WALL FINISHES

EDGE OF TUB

ALL UNITS

SHOWER

CURTAIN

WHERE PROVIDED

ENTRY DOOR

PEEPHOLES

. ACCESSORY & FIXTURE MOUNTING HEIGHTS

OR SHOWER —

TOP OF SHELF

OR TOWFI BAR

ALL UNITS

WALL FIXTURES

IN BATHROOMS

MOUNTED ON WALL OR

FROM EDGE OF TOILET

ALL OTHER UNITS TYPE A UNITS

CONTROLS AND

HAND SHOWER

TOILET PAPER

DISPENSER

CONDITIONS ALLOW. MAX 9"

FROM EDGE

CURTAIN → 4" MAX. FROM

FRONT FDGE

ROD

A SINK AT 34" MAX. HEIGHT WITH CLEAR FLOOR SPACE SHALL BE PROVIDED FOR A FORWARD APPROACH (NOT NECESSARILY CENTERED ON THE SINK)

WITH KNEE AND TOE CLEARANCE. NOTE: THE KNEE & TOE CLEARANCE ONLY NEEDS TO APPLY TO ONE BOWL OF A MULTI-BOWL SINK. CABINETRY SHALL BE PERMITTED UNDER THE SINK PROVIDED IT IS

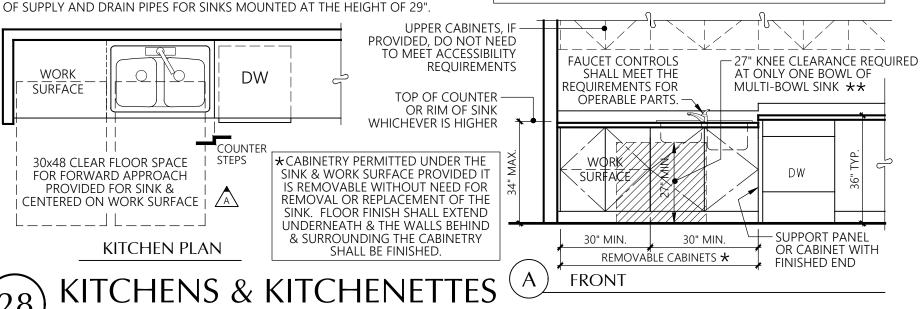
REMOVABLE AND THE FLOOR AN WALL FINISH IS EXTENDED UNDER AND BEHIND THE REMOVABLE CABINETS. **APPLIANCES**

DISHWASHER: A CLEAR FLOOR SPACE SHALL BE POSITIONED ADJACENT TO THE DISHWASHER DOOR SO THAT THE DOOR IN THE OPEN POSITION DOESN'T OBSTRUCT THE CLEAR FLOOR SPACE. COOKTOP: A CLEAR FLOOR SPACE SHALL BE PROVIDED FOR A PARALLEL APPROACH CENTERED ON THE APPLIANCE. THE LOCATION OF CONTROLS SHALL NOT REQUIRE REACHING ACROSS BURNERS. **OVEN:** A CLEAR FLOOR SPACE SHALL BE POSITIONED ADJACENT TO THE OVEN DOOR SUCH THAT THE DOOR IN THE OPEN POSITION DOES NOT OBSTRUCT THE CLEAR FLOOR SPACE. A COUNTERTOP SHALL BE LOCATED ADJACENT TO ONE SIDE OF THE OVEN. THE LOCATION OF CONTROLS SHALL NOT REQUIRE REACHING ACROSS BURNERS. REFRIGERATOR/FREEZER: A CLEAR FLOOR SPACE SHALL BE PROVIDED FOR A PARALLEL APPROACH OFFSET 24" MAX. FROM THE CENTERLINE OF THE APPLIANCE. COMBINATION REFRIGERATORS AND FREEZERS SHALL HAVE AT LEAST 50% OF THE FREEZER COMPARTMENT SHELVES INCLUDING THE BOTTOM OF THE FREEZER 54" MAX. ABOVE THE FLOOR

WHEN THE SHELVES ARE INSTALLED AT THE MAX. HEIGHT POSSIBLE IN LINEAR KITCHEN

ADJUSTABLE COUNTERTOP ALTERNATIVE AS AN ALTERNATIVE TO 34" HIGH COUNTERTOPS FOR WORK SURFACE AND SINK, A 📗 ★ NOTE: THE 30" WIDE CLEARANCE FOR FORWARD APPROACH SINK AND COUNTER THAT IS ADJUSTABLE TO VARIABLE HEIGHTS 29" MIN. AND 36" MAX. OR THAT CAN BE RELOCATED WITHIN THAT RANGE WITHOUT CUTTING THE COUNTER OR DAMAGING ADJACENT CABINETS, WALLS, DOORS AND STRUCTURAL ELEMENTS IS PERMITTED, PROVIDED ROUGH-IN PLUMBING PERMITS CONNECTIONS

AND KNEE CLEARANCE DOES NOT NEED TO BE CENTERED ON THE SINK. IF IT IS PROVIDED AT ONLY ONE BOWL OF A MULTI-BOWL SINK, ENSURE THE 30" CLEARANCE IS PROVIDED UNDER THE BOWL AND TO THE SIDE ADJACENT TO THE BOWL



THE COMPARTMENT.

GRAB BAR -

GRAB BAR CONTROLS MUST BE WITHIN THIS SIDE

— GRAB BARS

BLOCKING-

SOLID

TUB/SHOWER PLAN BATHTUB & TUB / SHOWER COMBO

TYPE A DWELLING UNITS **CHAPTER 10 SECTION 1003**

SWING-UP GRAB BAR AS SHOWN ON THE PLAN AT RIGHT. GENERAL **type b** unit notes

ALL UNITS SELECT LOCATIONS 'ALL OTHER

IN TYPE A UNITS

SHELVES COAT & BEDROOM CLOSETS

STORAGE

NUMBER OF TYPE B UNITS

UNIT PRIMARY ENTRANCE

ACCESSIBLE ROUTE

HAVE PLUMBING FIXTURES.

CHANGES IN LEVEL

INTERIOR FLOOR LEVEL.

THE DOOR OPENED 90°.

FORWARD APPROACH

PERMITTED IF REMOVABLE

CABINET IS PROVIDED

30x48 CLEAF

FLOOR SPACE

PARALLEL

APPROACH

LAVATORY

MIN.

ALLOWING REDUCTION OF **TYPE B** UNITS).

SAME REQUIREMENTS AS FOR TYPE A UNITS EXCEPT

THAT ONLY A SINGLE PEEPHOLE NEED BE PROVIDED

AT A STANDARD HEIGHT FOR STANDING PERSONS.

SAME REOUIREMENTS AS FOR TYPE A UNITS EXCEPT

FOLLOWING: A RAISED / SUNKEN FLOOR AREA IN A

MEZZANINE THAT IS NOT ENCLOSED AND DOES NOT

SAME REQUIREMENTS AS FOR TYPE A UNITS EXCEPT

IMPERVIOUS SURFACE SHALL BE 4" MAX. BELOW THE

SAME REQUIREMENTS AS FOR TYPE A UNITS EXCEPT

CLEAR OPENING WIDTH OF 313/4" MIN. MEASURED

BATHROOM DOORS: BATHROOM DOORS MAY

DOORS INTENDED FOR USER PASSAGE SHALL HAVE A

BETWEEN THE FACE OF THE DOOR & THE STOP WITH

SWING 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 ARC OF THE DOOR SWING.

YOU ARE PERMITTED TO HAVE ONE OF THE

LIVING, DINING OR SLEEPING ROOM OR A

WHERE EXTERIOR DECK, PATIO OR BALCONY

SURFACE MATERIALS ARE IMPERVIOUS, TH

LOCATIONS

IN GROUP R-2 OCCUPANCIES WHERE THERE ARE 4 OR MORE DWELLING UNITS OR SLEEPING UNITS INTENDED TO BE OCCUPIED AS A RESIDENCE IN A

UPPER STORIES OF A MULTISTORY BUILDING WITHOUT ELEVATOR SERVICE OR MULTI-STORY DWELLING UNITS (SEE IBC FOR SPECIFIC CONDITIONS

Plumbing fixture controls.

LAUNDRY EQUIPMENT

FRONT LOADING MACHINES.

TOILET AND BATHING FACILITIES

CONFIGURATIONS DETAILED BELOW.

WHERE SPACE AT THE REAR WALL DOES NOT PERMIT A 36"

WHERE SPACE AT THE SIDE WALL DOES NOT PERMIT A 42"

24" GRAB BAR IS PERMITTED SPACED 12" FROM THE REAR.

WHERE A SIDE WALL IS NOT AVAILABLE, REINFORCEMENT

SHALL BE PROVIDED FOR THE FUTURE INSTALLMENT OF A

24" GRAB BAR IS PERMITTED CENTERED ON THE TOILET.

GRAB BAR, REINFORCEMENT FOR FUTURE INSTALLMENT OF A

GRAB BAR, REINFORCEMENT FOR FUTURE INSTALLMENT OF A

GRAB BAR ALTERNATIVES

SINGLE STRUCTURE, EVERY DWELLING UNIT AND SLEEPING UNIT SHALL BE A TYPE B UNIT. THE NUMBER OF TYPE B UNITS IS PERMITTED TO BE REDUCED

IN ACCORDANCE WITH CONDITIONS DEFINED IN SECTION 1107.7 OF THE IBC. THIS REDUCTION OF TYPE B UNITS IS TYPICALLY FOR UNITS THAT ARE ON

. Controls or switches mounted on appliances.

 \star In type a units. A portion \vdash

OF STORAGE AREA FIXTURES

ACCESSIBLE REACH RANGES.

(15" MIN. - 48" MAX.)

ALL UNITS

SWITCHES, AND OUTLETS

ELECTRICAL CONTROLS

SANS SERIF -

TO 2" IN HEIGH

BRAILLE TO BE

WHERE PROVIDED

TACTILE SIGNS

AT DOORS

SHOWER MUST B

ALTERNATE

HALL BE INSTALLED WITHIN |

WITH TOILET AND BATHING AREAS WITHIN TYPE B UNITS EITHER ALL TOILET AND BATHING AREAS PROVIDED SHALL COMPLY WITH OPTION A OR ONE TOILET AND BATHING AREA SHALL COMPLY WITH OPTION B. EVERY FIXTURE PROVIDED IN ALL TOILET AND BATHING AREAS SHALL COMPLY WITH THE REQUIREMENTS LISTED ONE OF EACH TYPE OF FIXTURE PROVIDED SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS AND BE LOCATED IN A SINGLE OPTION B

TOILET/BATHING AREA.

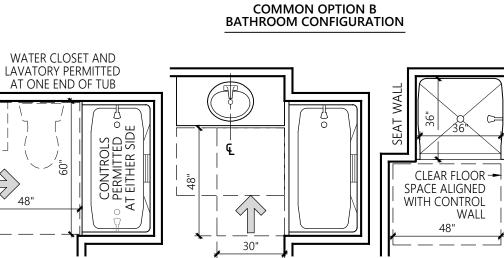
COMMON OPTION A

BATHROOM CONFIGURATION

LAVATORY OR OTHER

OBSTRUCTION PERMITTED

IN CLEAR FLOOR AREA



NOTE: OPERABLE CONTROLS FOR ALL APPLIANCES

PROVIDED INCLUDING THOSE NOT DEPICTED

HERE (INCLUDING LINT SCREENS, DETERGENT

EXHAUST FANS ETC.) MUST BE WITHIN REACH

RANGES PER ICC A117.1 SECTION 308.

SAME REQUIREMENTS AS FOR TYPE A UNITS EXCEPT FOR THESE ADDITIONAL EXCEPTIONS:

10. Within kitchens & bathrooms, lighting controls, electrical switches & receptacle outlets are

permitted to be located over cabinets with countertops 36" max. in height & 25½" max. in depth.

A 30"x48" CLEAR FLOOR SPACE SHALL BE PROVIDED. A PARALLEL APPROACH SHALL BE PROVIDED

FOR TOP LOADING MACHINES. A FORWARD OR PARALLEL APPROACH SHALL BE PROVIDED FOR

REINFORCEMENT FOR FUTURE GRAB BAR INSTALLATION SHALL BE PROVIDED FOR ALL TOILET &

SHALL BE THE SAME AS FOR TYPE A UNITS (See detail 23 ACC sheets) EXCEPT REINFORCEMENT IS

BATHING FACILITIES (Regardless of the option chosen for the fixture clearances). REINFORCEMENT

NOT REQUIRED FOR SHOWER SEATS IN SHOWERS THAT ARE LARGER THAN 36"x36" AND REINFORCEMENT AT WATER CLOSETS CAN BE MODIFIED FOR ALTERNATE GRAB BAR

RANGES & COOKTOPS REFRIGERATOR

24" GRAB BAR —

GRAB BAR

REINFORCING FOR

ALTERNATE GRAB BAR

CONFIGURATIONS

SHOWER

NOTE: NOTHING PERMITTEÏ

WITHIN FIXTURE CLEARANCE

TYPE A UNITS ONLY

APPLIANCES & CONTROLS

LOCATION OF CONTROLS SHALL NOT

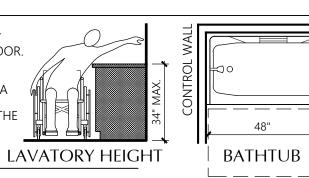
require reaching across burners –

LAUNDRY

COMPARTMENTS, WATER/ICE DISPENSERS, RANGE

WATER CLOSE BATHTUB **BATHTUB** (FRONT APPROACH) (SIDE APPROACH) OPTION A FIXTURE REQUIREMENTS LAVATORY: SAME REQUIREMENTS AS FOR OPTION A EXCEPT THAT THE HEIGHT OF THE LAVATORY SHALL BE 34" MAX. ABOVE THE FLOOR. **WATER CLOSET:** SAME REQUIREMENTS AS FOR OPTION A BATHING FIXTURES: THE ACCESSIBLE BATHING FIXTURE SHALL BE A BATHTUB WITH A CLEARANCE OF 30"x48" ALIGNED WITH THE

Control end of the tub or a shower compartment with the SAME REQUIREMENTS AS THE OPTION A SHOWER. OPTION B FIXTURE REQUIREMENTS



TYPE B - TOILET & BATHING FIXTURES

MIN. AT U-SHAPED KITCHENS. SEE MINIMUM CLEARANCE DIAGRAMS FOR TYPE A UNITS (Detail 28 ACC sheets).

1/4"=1'-0" MINIMUM CLEARANCES CLEARANCE BETWEEN ALL OPPOSING BASE CABINETS, COUNTER TOPS, APPLIANCES, OR WALLS WITHIN KITCHEN WORK AREAS SHALL BE 40" MIN. OR 60"

SINK: A CLEAR FLOOR SPACE OF 30"x48" POSITIONED FOR A PARALLEL APPROACH SHALL BE PROVIDED CENTERED ON THE SINK BOWL. NOTE: ON A MULTI-BOWL SINK THE CLEAR FLOOR SPACE SHALL BE CENTERED ON THE WHOLE SINK PLUMBING FIXTURE

DISHWASHER: A CLEAR FLOOR SPACE SHALL BE POSITIONED ADJACENT TO THE DISHWASHER DOOR SUCH THAT THE DOOR IN THE OPEN POSITION DOES NOT OBSTRUCT THE CLEAR FLOOR SPACE. **COOKTOP:** A CLEAR FLOOR SPACE SHALL BE PROVIDED FOR A PARALLEL

OVEN: A CLEAR FLOOR SPACE SHALL BE POSITIONED ADJACENT TO THE OVEN DOOR SUCH THAT THE DOOR IN THE OPEN POSITION DOES NOT OBSTRUCT THE CLEAR FLOOR SPACE. REFRIGERATOR/FREEZER: A CLEAR FLOOR SPACE SHALL BE PROVIDED FOR A PARALLEL APPROACH OFFSET 24" MAX. FROM THE CENTERLINE OF THE

trash compactor: A clear floor space positioned for a parallel OR FORWARD APPROACH SHALL BE PROVIDED.

KITCHENS AND KITCHENETTES

TYPE B DWELLING UNITS **CHAPTER 10 SECTION 1004**

INSTALLED OPPOSITE CONTROL WALL EXTENDED BELOW & BEHIND CABINET. **STANDARD** TRANSFER TYPE SHOWER PLAN ROLL-IN TYPE SHOWER PLAN SHOWER COMPARTMENTS

> AT LEAST ONE SECTION OF COUNTER SHALL PROVIDE A WORK SURFACE 30" MIN. IN LENGTH AND 34" MAX. IN HEIGHT. PROVIDE A CLEAR FLOOR SPACE FOR A FORWARD APPROACH WITH KNEE AND TOE CLEARANCE. Cabinetry shall be permitted under the work surface provided it IS REMOVABLE AND THE FLOOR AN WALL FINISH IS EXTENDED UNDER AND BEHIND THE REMOVABLE CABINETS. MINIMUM CLEARANCES

WORK SURFACE

CLEARANCE BETWEEN OPPOSING BASE CABINETS, COUNTER TOPS, APPLIANCES, OR WALLS IN KITCHEN WORK AREAS HALL BE 40" MIN. OR 60" MIN. AT U-SHAPED KITCHENS.

GALLEY KITCHEN

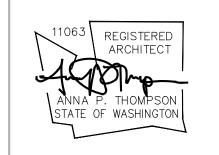
U-SHAPED KITCHEN

APPROACH CENTERED ON THE APPLIANCE.



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Puyallup,

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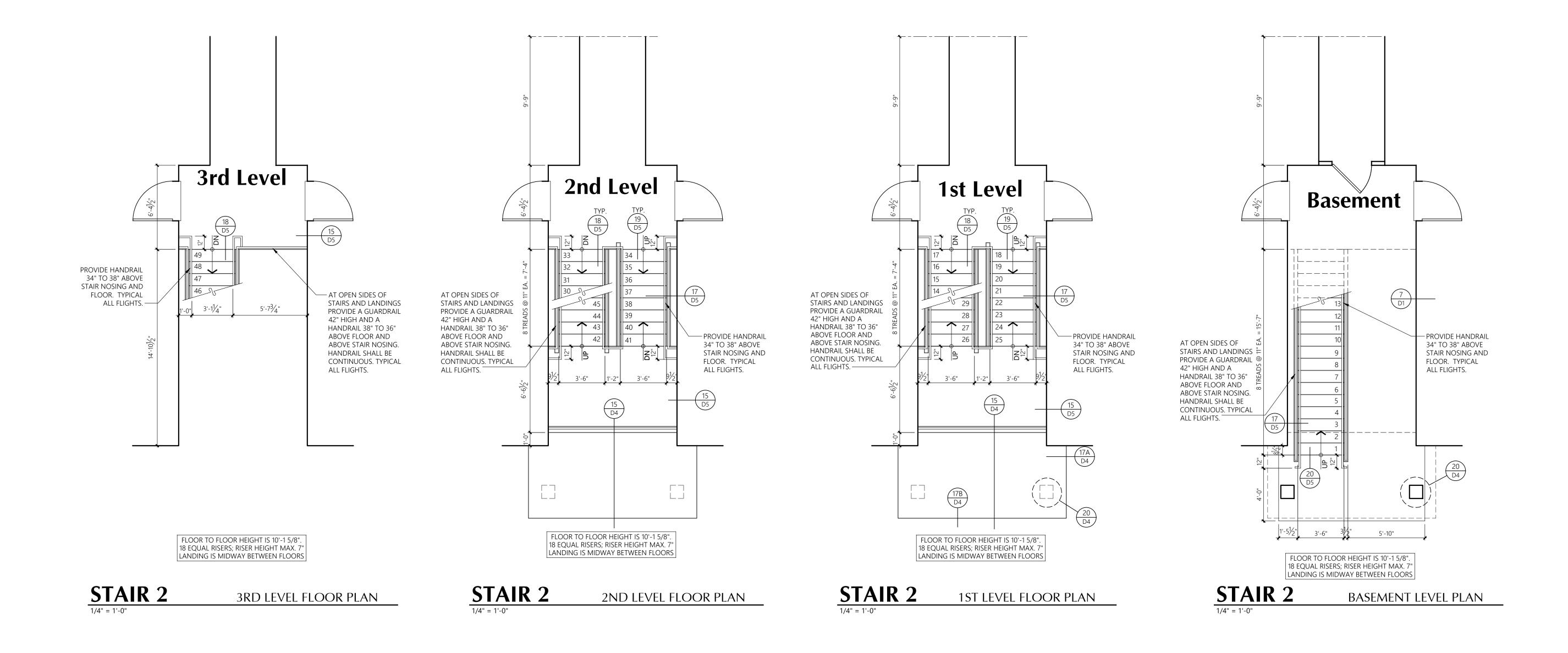


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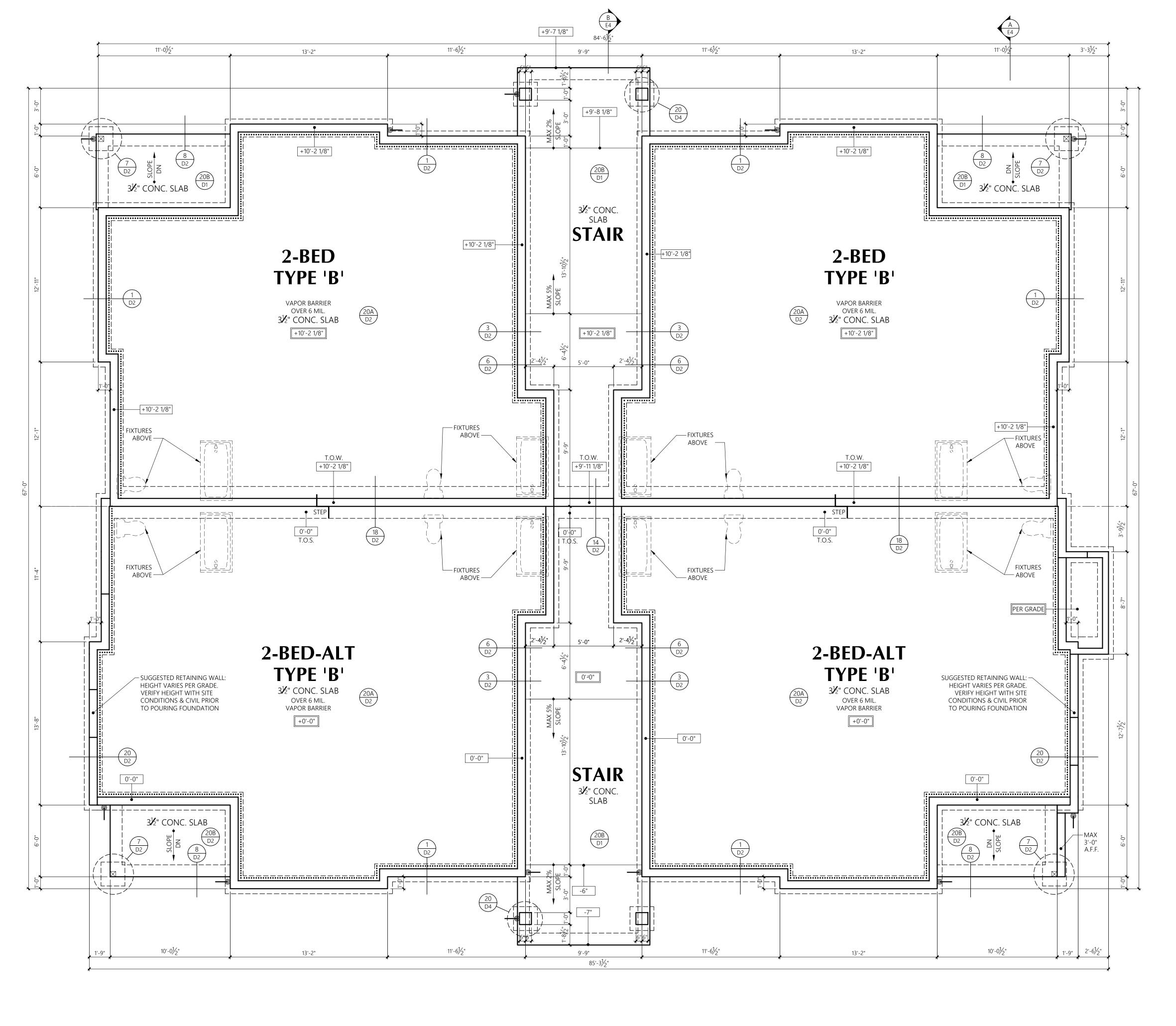
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FOUNDATION NOTES

LOCATION OF DOWNSPOUT: PROVIDE TIGHT LINE AND RISER BOOT

ELEVATION AT TOP OF CONCRETE (TOP OF FOOTING MAY VARY

BECAUSE OF EXCAVATION)

FINISH SLAB ELEVATION

FINISH SLAB ELEVATION

R-10 RIGID PERIMETER INSULATION

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Building

Bradley Heights Apartments

Puyallup,

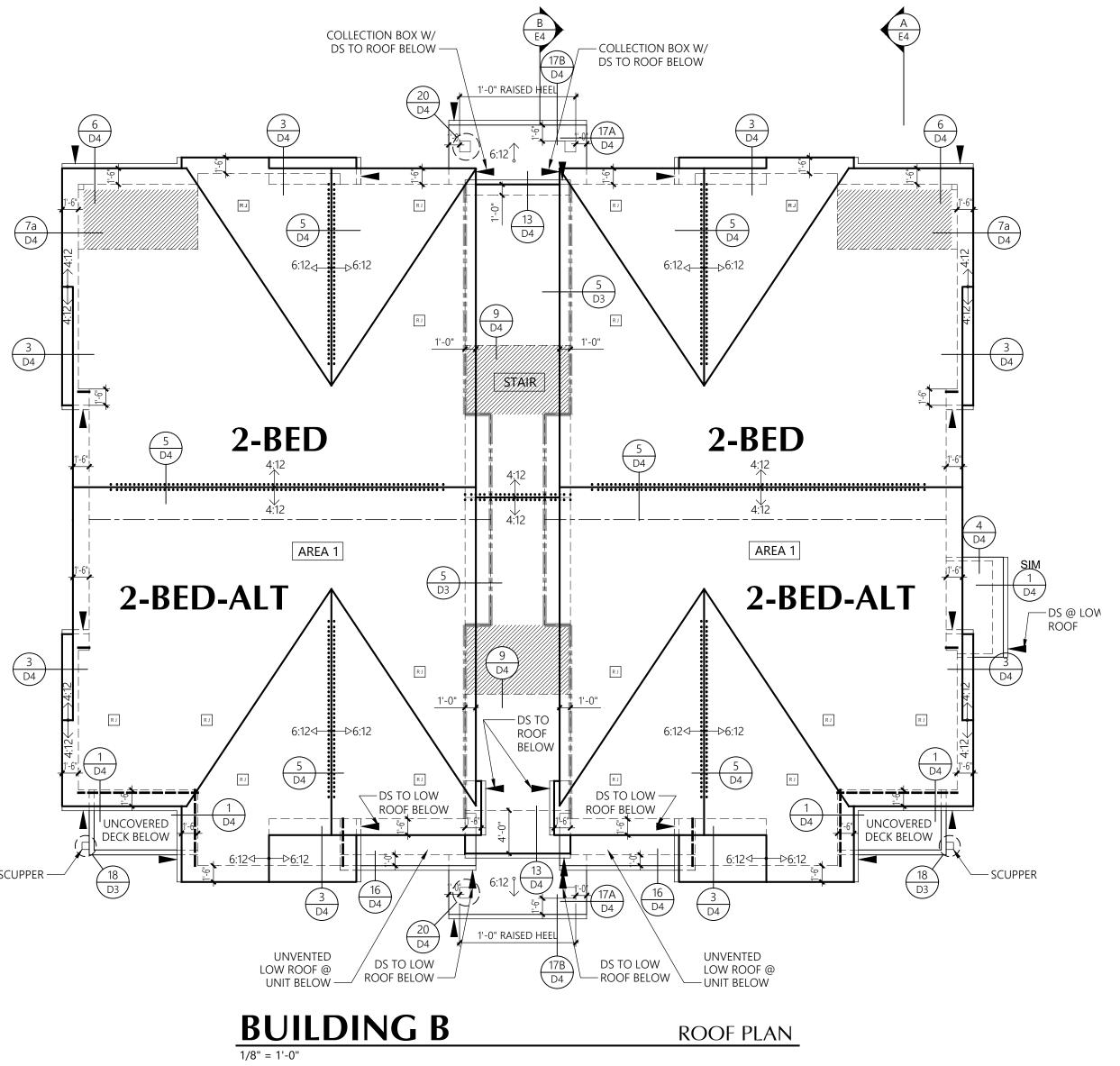
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R2



	ROOF VENTING CALCULATIONS													
Area Description	Attic Area Venting (SF) Ratio		y i veiiii		Low Eave Vent (LF)	Low Jacks (Qty)	Vented Soffit (SF)	Ridge Vent (LF)	Venting Provided (SI)					of req'd
Description	(31)	Ra	IIIO	(SI)	2.4	50.0	5.9	12.0	Lower	%	Upper	%	Total	%*
AREA 1	2,160	1/	300	1,037	20	8	58	64	790	51%	768	49%	1,558	150%
STAIR	462	1/	150	444	0	0	124	5	732	92%	60	8%	792	179%

ROOF LEGEND

ROOF JACK 50 SQ.IN. NET FREE AREA

 \longleftrightarrow 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)

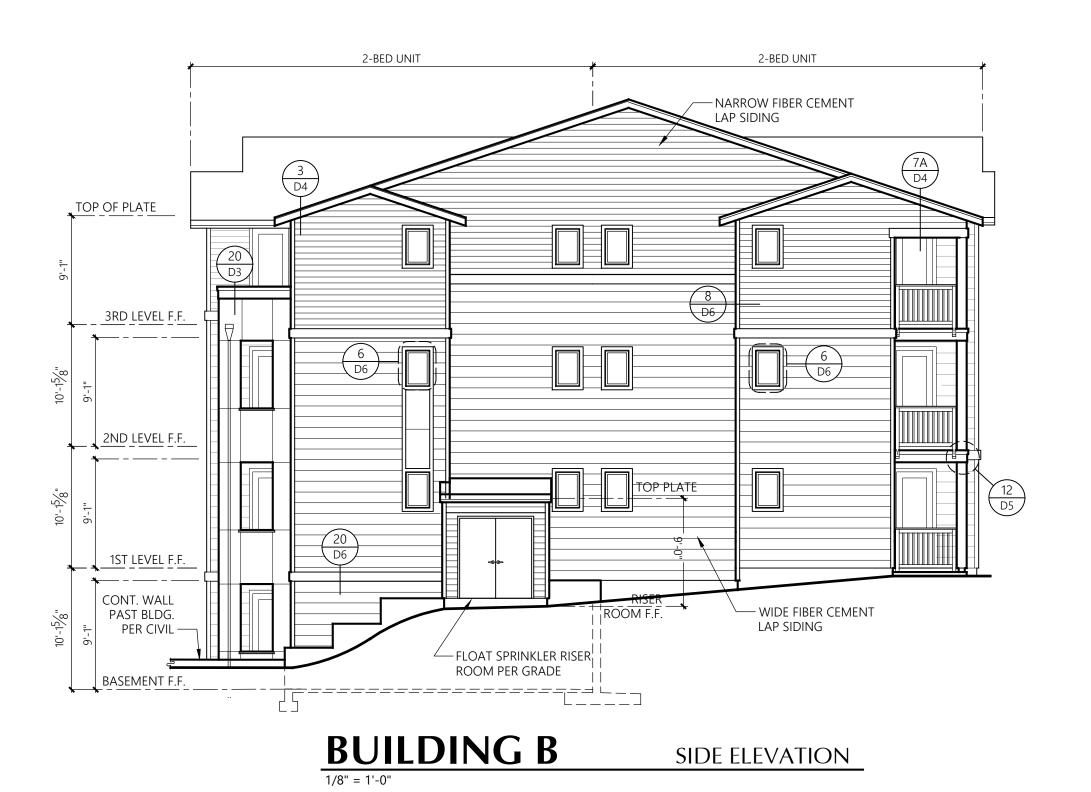
DOWNSPOUT LOCATION VENTED FIBER CEMENT SOFFIT 5.9 SQ.IN./LF. NET FREE AREA



BUILDING B FRONT ELEVATION

1/8" = 1'-0"

WINDOW HDR HEIGHT 8'-0" A.F.F. UNO

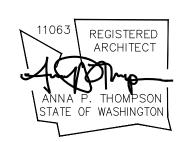




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Building B

Exterior Flevations

Bradley Heights Apartments

> Puyallup, Wa

Timberlane Partners

Revisions

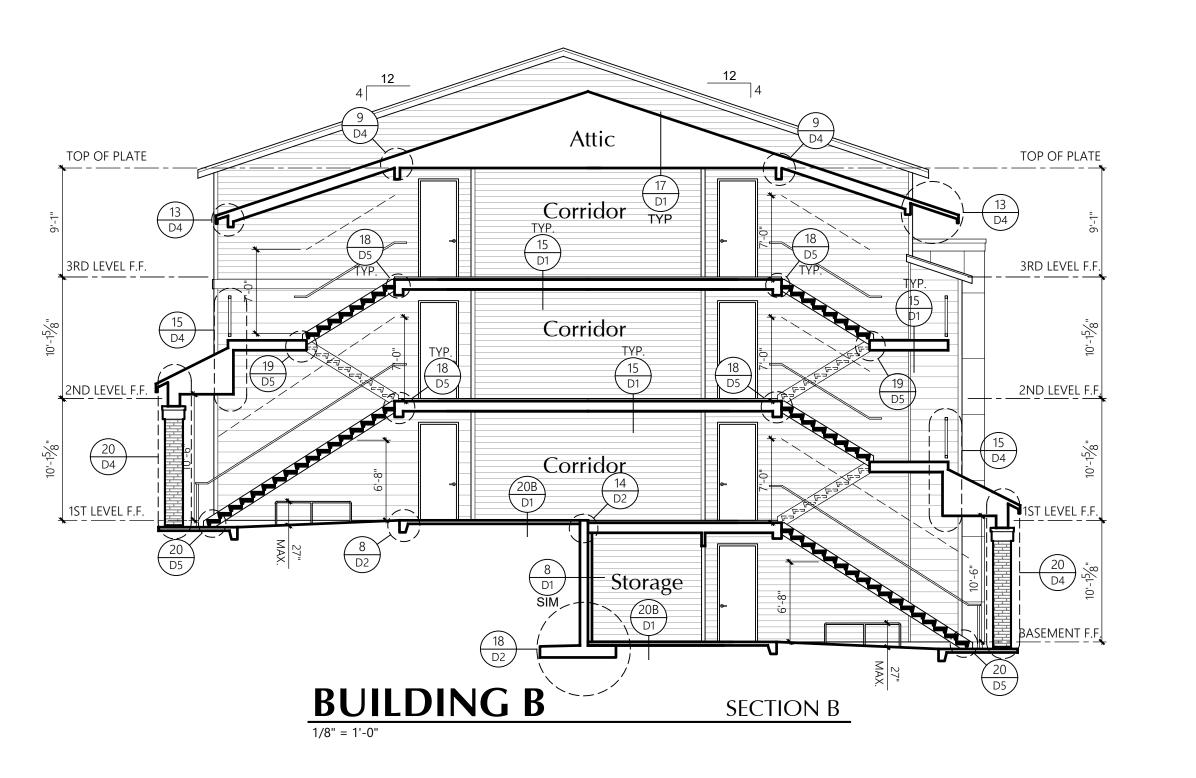
No. Date Description

Initial Publish Date:

Job No.: Drawn By:

23-06 APT/HDM/TMK

E3



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Building Sections

Bradley Heights Apartments

> Puyallup, Wa

Timberlane Partners

Revisions

No. Date Description

Initial Publish Date:

Job No.: Drawn By:

23-06 APT/HDM/TMK

Sheet No.:

E4

ALL METHODS, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE (IBC), AS AMENDED AND ADOPTED BY THE STATE OF WASHINGTON; A.C.I. 318-14; A.I.S.C. 14TH EDITION; AWS D1.1-06; A.I.T.C. 2ND EDITION; NDS 2018 WITH 2018 WIND & SEISMIC PROVISIONS AND A.I.S.I 2012 EDITION

1.2 DESIGN CRITERIA

A. VERTICAL LOADS

LIVE LOADS

ROOF (SNOW) Is $= 1.0$	25 PSF
FLOORS (RESIDENTIAL)	40 PSF
DECKS (RESIDENTIAL POST/BM SUPPORT)	60 PSF
STAIRS/EXITS	100 PSF

DEAD LOADS

ROOF	22 PSF
FLOORS (RESIDENTIAL)	26 PSF
DECKS '	47 PSF
BREEZEWAY	47 PSF

B. LATERAL LOADS:

LATERAL FORCES ARE TRANSMITTED BY DIAPHRAGM ACTION OF THE FLOORS TO SHEAR WALLS. LOADS ARE THEN TRANSFERRED TO THE FOOTINGS, WHERE ULTIMATE DISPLACEMENT IS RESISTED BY PASSIVE PRESSURE OF EARTH AND SLIDING FRICTION OF EARTH. OVERTURNING IS RESISTED BY THE DEAD LOAD OF THE STRUCTURE.

EXPOSURE B ELEVATION = 386 FEET BASIC WIND SPEED = 97 M.P.H. (3 SECOND GUST, ULTIMATE). IMPORTANCE FACTOR, Iw = 1.0SIMPLE DIAPHRAGM BUILDING, ENCLOSED

Kzt = 1.0SFISMIC:

IMPORTANCE FACTOR, IE = 1.0 OCCUPANCY CATEGORY II MAPPED SPECTRAL RESPONSE COEFFICIENTS, Ss = 1.263 AND S1 = 0.435

SPECTRAL RESPONSE COEFFICIENTS, SDs = 1.010 AND SD1 = 0.435 SEISMIC DESIGN CATEGORY = DSEISMIC RESPONSE COEFFICIENT Cs = 0.2021 (ULTIMATE STRENGTH) RESPONSE MODIFICATION FACTOR R = 6.5

1.3 SHOP DRAWINGS

SUBMIT SUFFICIENT COPIES OF SHOP DRAWINGS TO ARCHITECT/ENGINEER FOR THE FOLLOWING:

- REINFORCING STEEL (CONCRETE / MASONRY) CONCRETE / GROUT MIX DESIGNS (CONCRETE / MASONRY)
- COMPOSITE FLOOR/ROOF JOISTS P.E. ROOF/FLOOR TRUSSES
- GLUE—LAMINATED MEMBERS

SOIL SITE CLASS = C

DO NOT FABRICATE PRIOR TO ARCHITECT'S/ENGINEER'S APPROVAL. ALL SHOP DRAWINGS SUBMITTED TO THE ENGINEER SHALL BEAR THE STAMPED APPROVAL OF THE CONTRACTOR. SHOP DRAWING APPROVAL BY ANDERSONCHASE STRUCTURAL ENGINEERS SHALL NOT IMPLY THAT THE PROJECT MAY BE BUILT FROM THE SHOP DRAWINGS. RATHER. THE PROJECT PLANS SHALL BE USED FOR CONSTRUCTION. ALL PERMANENT BRACING FOR TRUSSES SHALL BE DETAILED AND DESIGNED BY THE TRUSS SUPPLIER. CONTRACTOR SHALL REVIEW SHOP DRAWINGS AND STAMP INDICATING THIS PRIOR TO REVIEW BY ENGINEER OF RECORD.

2.0 SITE WORK

2.1 SOIL DATA (PER GEOTECHNICAL REPORT DATED FEBRUARY 10, 2022 PREPARED BY GEO RESOURCES #0419036006

FOR LOCATIONS SEE SOILS REPORT. SOIL BEARING @ CONT. SPREAD FOOTINGS = 2000 PSF. ACTIVE AND PASSIVE PRESSURES ARE 35 PCF AND 300 PCF RESPECTIVELY. WHERE GEOTECHNICAL REPORT HAS NOT BEEN PROVIDED, THE ABOVE VALUES ARE ASSUMED AND THESE VALUES SHALL BE FIELD VERIFIED.

2.2 EXCAVATION

EXCAVATE PER GEOTECH REPORT, PROOFROLL SUBGRADES TO ATLEAST 92% MDD PER ASTM D1557 TEST METHOD FOR FOOTINGS DOWN TO DEPTH SHOWN ON DRAWINGS OR TO FIRM UNDISTURBED MATERIAL. AREAS OVER-EXCAVATED SHALL BE BACKFILLED WITH LEAN CONCRETE (f'c = 2000 PSI), OR BE STRUCTURALLY FILLED PER SECTION 2.3 AND SHALL BE AT THE CONTRACTOR'S EXPENSE.

2.3 BACKFILL AND COMPACTION

BACKFILL SHALL NOT BE PLACED UNTIL AFTER THE REMOVAL OF ALL FORMS, SCREEDS, OTHER WOOD DEBRIS AND MATERIAL SUBJECT TO ROT OR CORROSION. USE ONLY MATERIALS APPROVED FOR BACKFILL. IN AREAS UNDER SLABS OR FOOTINGS, MATERIAL SHOULD BE GRANULAR IN NATURE, PLACED IN 6-INCH LIFTS AND COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO COMPACTION TEST, PROCEDURE T-180. THE FILL SHOULD BE LIMITED TO CLEAN, GRANULAR MATERIAL.

3.0 CONCRETE

3.1 GENERAL

NORMAL WEIGHT CONCRETE MEETING THE REQUIREMENTS OF ACI 301-05 ESTABLISH PROPORTIONS OF CEMENT, COARSE AND FINE AGGREGATES, WATER, AND ADMIXTURES TO PRODUCE THE PROPERTIES SPECIFIED FOR EACH CONCRETE MIX TYPE PER ACI-301 ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL BATCHES. USE ADMIXTURES IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. USE AMOUNTS OF WATER-REDUCING ADMIXTURE THAT WILL PERMIT PLACING WITHOUT SEGREGATION, HONEYCOMBING OR ROCK POCKETS. THE SLUMPS SPECIFIED ARE THE SLUMPS REQUIRED AT THE POINT OF PLACEMENT INTO THE STRUCTURE. USE INTERIOR MECHANICAL VIBRATORS WITH 7000 RPM MINIMUM FREQUENCY. DO NOT OVER-VIBRATE. DO NOT MOVE THE CONCRETE HORIZONTALLY USING THE VIBRATOR. CONCRETE SHALL BE POURED MONOLITHICALLY BETWEEN CONSTRUCTION OR CONTROL JOINTS. PROTECT ALL FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE HOT OR COLD TEMPERATURES FOR SEVEN DAYS AFTER POURING. PROVIDE ENGINEER WITH PROPOSED CONSTRUCTION OR CONTROL JOINT LOCATIONS FOR HIS APPROVAL, OR USE JOINTS AS SHOWN ON THE DRAWINGS. ALL REINFORCEMENT TIE WIRES AND FORM ANCHORS SHALL BE CUT OFF FLUSH WITH THE SURFACE; SURFACES WHERE EXPOSED SHALL BE SMOOTH AND FREE FROM IRREGULARITIES.

3.2 STRENGTH

DESIGN MIXES TO PROVIDE NORMAL WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

APPLICATION	W/C RATIO	DESIGN STRENGTH F'c (PSI)	F'c PER ACI
FOOTINGS	.45	2500	4500°
FOUNDATION WALLS	.45	2500	4500°
EXT. SLABS ON GRADE	.45	2500	4500°
INT. SLABS ON GRADE	.50	2500	3000

- 1. CONCRETE EXPOSED TO WEATHER FOR EXPOSURE CLASS F2 AND SLABS ON GRADE
- SHALL HAVE A MIN F'C PER TABLE AND HAVE 5% AIR ENTRAINMENT. 2. DESIGN STRENGTH F'c (USED IN DESIGN). F'c PER ACI TABLE 19.3.2.1 FOR F2
- EXPOSURE CLASS. 3. PER IBC 1705.3 SPECIAL INSPECTION STRENGTH TESTS NOT REQUIRED FOR CONCRETE f'c>2500 WHERE STRENGTH IS INCREASED FOR DURABILITY.

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.

3.4 MATERIALS

- A. WATER REDUCING ADMIXTURES: CONCRETE USING POZZOLITH ADMIXTURES TO PRODUCE FLOWABLE CONCRETE MAY BE USED WITH THE ENGINEER'S APPROVAL AND MUST CONFORM TO ASTM-C494, POZZOLITH POLYHEED, POZZOLITH 100XR, OR POZZUTECH 20. POZZOLITH SHALL BE INCORPORATED INTO ALL CONCRETE IN EXACT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ADMIXTURES AND DOSAGES WILL VARY DEPENDING ON CLIMATIC CONDITIONS AND THE CONTRACTOR'S JOBSITE REQUIREMENTS. MAXIMUM SLUMP FOR SUCH CONCRETE SHALL NOT EXCEED 8" WITH A MINIMUM OF 10 OUNCES OF POLYHEED PER 100 OUNCES OF CEMENT. USE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- B. AIR ENTRAINMENT: CONFORM TO ASTM-C260 AND ASTM-C494, MBVR OR MICRO-AIR BY MASTER BUILDER. NO AIR ENTRAINMENT IN COLUMNS WITHOUT PRIOR WRITTEN PERMISSION BY ENGINEER OF RECORD. ENTRAIN 5% +/- 1% AIR BY VOLUME IN ALL EXPOSED CONCRETE.
- C. OTHER ADMIXTURE: NO OTHER ADMIXTURES PERMITTED UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER. NO ADMIXTURES CONTAINING CHLORIDES ARE PERMITTED.

3.5 REINFORCING STEEL

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

- A. STEEL REINFORCEMENT SHALL BE NEW, DEFORMED BILLET STEEL, MEETING ASTM STANDARD A-615, A-706 AT BOUNDARY ELEMENTS; GRADE 60 FOR #3 AND LARGER BARS UNLESS NOTED OTHERWISE ON THE PLANS. SHOP DRAWINGS SHALL BE MARKED ACCORDINGLY AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. GRADE 60 REBARS SHALL NOT BE BENT IN FIELD AFTER CONCRETE PLACEMENT. ALL BEND SHALL BE PER ACI.
- B. REINFORCEMENT IN ALL WALLS, SLABS, AND FOOTINGS SHALL BE CONTINUOUS AROUND CORNERS OR CORNER BARS PROVIDED, BOTH VERTICAL AND HORIZONTAL.
- C. LAPS: ALL TENSION SPLICES ARE ACCORDING TO ACI 318, CLASS B AND ALL COMPRESSION SPLICES ARE 30 DIAMETERS FOR I'C GREATER THAN 3000 PSI AND ARE 40 DIAMETERS FOR I'C WHICH IS LESS THAN 3000 PSI, UNLESS NOTED OTHERWISE. SEE DETAIL 17/S3.0 FOR TYPICAL SPLICE AMOUNTS BASE ON BAR SIZE.
- D. TRIM REINFORCING: AROUND ALL OPENINGS SHALL BE A MINIMUM 1-#5 TOP AND BOTTOM, EXTENDING 2'-6" BEYOND OPENING AT EACH CORNER. SEE TYPICAL DETAILS.
- WELDING: TACK WELDING OF REBAR IS NOT PERMITTED UNLESS CALLED FOR AND APPROVED BY THE ENGINEER.
- MINIMUM REINFORCING: WHERE REINFORCEMENT IS NOT SHOWN ON THE DRAWINGS, THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) SHALL BE REFERRED TO FOR PROPER REINFORCEMENT.
- G. REBAR COVER: PROVIDE CONCRETE PROTECTION FOR REINFORCEMENT AS FOLLOWS:

COVER	CONDITION
3"	CONCRETE DEPOSITED AGAINST EARTH
2"	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 MANUFACTURERS SPECIFICATION (1.5#/CU. YARD TYPICALLY) WHERE REQUIRED BY THE OWNER IN LIEU OF UTILIZING WÈLDËD WIRE FABRIC WITHIN SLABS ON GRADE.

3.6 EPOXY DOWELED REINFORCEMENT

- A. ALL REINFORCEMENT WHICH IS TO BE DOWELED INTO EXISTING CONCRETE SHALL BE INSTALLED 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 OR APPROVED EQUAL.
- B. EPOXY SHALL BE MIXED. APPLIED, AND CURED IN ACCORDANCE WITH THE MANUFACTURERS GUIDELINES. REINFORCEMENT AND CONCRETE SHALL BE CLEAN AND FREE OF IRREGULARITY. EPOXY SHALL NOT BE MIXED OR CURED IN AIR AND OR CONCRETE TEMPERATURES BELOW MINIMUM PER MANUFACTURER'S SPECIFICATIONS.
- C. EPOXY DOWELING OF REINFORCEMENT IN OVERHEAD APPLICATIONS SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

4.0 METALS 4.1 WELDING

A. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE" & D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL."

B. ALL WELDING SHALL BE DONE BY AWS/WABO (WASHINGTON STATE ASSOCIATION OF BUILDING OFFICIALS) CERTIFIED WELDERS. FOR ALL MOMENT FRAMES WELDERS SHALL HAVE ADDITIONAL CERTIFICATION SHOWING QUALIFIED IN ACCORDANCE WITH AWS D1.8, SECTION 5, WELDER QUALIFICATION, THE SUPPLEMENTAL WELDER QUALIFICATION FOR RESTRICTED ACCESS WELDING.

5.0 STRUCTURAL STEEL

ANGLES.

A. ALL DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION." STEEL SHALL CONFORM TO THE FOLLOWING, UNO:

ALL STEEL, UNO ASTM A992. ASTM A572, GRADE 50, A447,

Fy = 50 KSI OR A588 Fy = 50 KSI ONLY WPRIOR APPROVAL OF ENGINEER OF RECORD.

ASTM A36, Fy = 36 ksi

ASTM A36, Fy = 36 ksi OR

STEEL TYPES LISTED UNDER

"ALL STEEL"

CHANNELS, EMBEDMENTS IN CONCRETE AND MISC. METALS, UNO

SQUARE AND RECTANGULAR ASTM A500, GRADE B, Fy = 46 ksi STRUCTURAL TUBES

STEEL PIPE DIAMETER LESS ASTM A53, TYPE E OR S, THAN OR EQUAL TO 12" NOM GRADE B, Fy = 35 ksi

B. ALL WORK SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATION. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER BEFORE COMMENCING FABRICATION. ALL STEEL ANCHORS AND TIES AND OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. DIMENSIONAL TOLERANCE FOR BUILD-UP MEMBERS SHALL BE PER AWS D1.1. GENERAL NOTES FOR STEEL CONNECTIONS SHALL APPLY TO ALL STEEL CONNECTIONS, UNO.

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 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

C. STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONAL POINTS. MINIMUM

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS THAT INCLUDE, BUT ARE NOT LIMITED TO: ERECTION ANGLES; LIFT HOLES, AND OTHER AIDS.

INDICATOR WASHERS OR TENSION CONTROL BOLTS. ALL ASTM A307 BOLTS SHALL

BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL

- 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 SURFACES TO BE SHOP PAINTED AFTER FABRICATION.
- F. ALL STEEL BEAM COPING SHALL CONFORM TO AISC STANDARD PRACTICE.

BOLT HOLES SHALL BE STANDARD SIZE, UNO.

G. GROUT FOR BEARING PLATES SHALL BE NON-SHRINK EMBECO BY MASTER BUILDERS, INC. OR APPROVED EQUAL.

ALL EXPOSED STRUCTURAL MATERIALS OR MATERIAL IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED (SEE SECTION 7.10).

6.0 LIGHT GAUGE STEEL

7.0 CARPENTRY

Structural Notes

7.1 ROUGH CARPENTRY

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 EQUAL. OTHER MATERIALS SHALL BE AS SHOWN BELOW:

MEMBER	SPECIES
2x & 3x STUDS	STUD GRADE HEM FIR
2x JOISTS	#2 HEM FIR
4x HEADERS	#2 HEM FIR
6x HEADERS	#2 DOUGLAS FIR
4x COLUMNS	#2 HEM FIR
6x COLUMNS	#2 DOUGLAS FIR

ALL EXPOSED STRUCTURAL MATERIALS OR MATERIAL IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED (SEE SECTION 7.10).

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, 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:

ROOF TOTAL LOAD SPAN/240 OR 1.5" ROOF LIVE LOAD SPAN/360 OR 1"

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, 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.

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

- A. BOLTS SHALL BE ASTM A-307.
- 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. P-NAILS SHALL BE INSTALLED PER THE MANUFACTURERS GUIDELINES.

COMMON WIRE NAIL	PNEUMATIC NAIL	MINIMUM NAIL LENGTH	NAIL APPLICATION
16d COMMON	0.162" P-NAIL	3-1/2"	FRAMING
12d COMMON	0.148" P-NAIL	3-1/4"	FRAMING
N/A	0.131" P-NAIL	3"	FRAMING
10d COMMON	0.148" P-NAIL	2-1/2"	SHEATHING
8d COMMON	0.131" P-NAIL	2-1/2"	SHEATHING

- D. LAG SCREWS, SHEAR PLATES
- 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 WITH OTHER APPROVED MEANS OF CORROSION PROTECTION. FOR ADDITIONAL REQUIREMENTS REGARDING HARDWARE IN EXPOSED CONDITIONS SEE SECTION 7.10.

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 & 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 FND OF FACH PIECE. 3" x 3" x 0.229" WASHERS ARE REQUIRED AT ALL ANCHOR BOLTS PER 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.

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 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.

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.

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.

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

7.8 MANUFACTURED TIMBER BEAMS

A. GLULAMINATED TIMBER BEAMS (GLULAM BEAMS)

ALL 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. ALL MEMBERS SHALL 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.

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 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 MAY OCCUR DUE TO FRAMING TECHNIQUES AND LOCAL STRESS CONCENTRATIONS. ALL FULL BUILDING HEIGHT ELECTRICAL, MECHANICAL, AND PLUMBING SYSTEMS AS WELL AS EXTERIOR 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.

7.10 PRESERVATIVE TREATMENT

A. PRESERVATIVE TREATMENTS

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 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 PRODUCTS SHALL MEET OR EXCEED THE STRENGTH AND PERFORMANCE OF THE SUBSTITUTED HDG PRODUCT ORIGINALLY SPECIFIED.

B. GALVANIZATION OF HARDWARE (EXPOSED OR IN CONTACT WITH PRESERVATIVE TREATED WOOD)

PROTECTED ENVIRONMENT

ALL HARDWARE (HANGERS, NAILS, BOLTS, LAG SCREWS, FLASHING ETC ...) SHALL 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. HDG PRODUCTS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS AS APPLICABLE; ASTM A653, ASTM A123, AND ASTM A153. WHEN USING STAINLESS STEEL OR HOT-DIP GALVANIZED CONNECTORS, THE CONNECTORS AND FASTENERS SHALL BE OF THE SAME MATERIAL.

EXPOSED ENVIRONMENT

ALL HARDWARE (INCLUDING CONNECTORS) IN CONTACT WITH PRESSURE TREATED 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

A. MECHANICAL FASTENERS (PRE-DRILLED ANCHORS)

- 1. 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 GUIDFLINES AND PER ICC REPORT ESR-1771 FOR WEDGE ANCHORS OR PER ICC REPORT ESR-2713 FOR SCREW TYPE ANCHORS OR APPROVED EQUALS.
- 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.

B. EPOXY CONNECTIONS (PRE-DRILLED ANCHORS)

- 1. ADHESIVE ANCHORS SHALL BE OF THE SIZE AND LENGTH AS CALLED OUT ON THE PLANS USING THE SIMPSON SET-XP ADHESIVE ANCHORING SYSTEM PER ICC RFPORT ESR-2508 OR APPROVED EQUAL. ADHESIVE ANCHORS SHALL BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS.
- 2. ALL EPOXY ANCHORS OR FASTENERS REQUIRE SPECIAL INSPECTION.
- 3. ANCHORS SHALL BE INSTALLED IN SUCH A MANNER SO AS NOT TO INTERFERE WITH / DAMAGE REINFORCEMENT.

9.0 SPECIAL INSPECTIONS:

SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1704 OF THE 2018 IBC AND ARE 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 EXCEPTION WITH I'C GREATER THAN 2500 PSI.

C. THE PLACEMENT OF REINFORCING STEEL OF ALL STRUCTURAL FOOTINGS, COLUMNS,

WALLS, SLABS AND APPENDAGES, D. THE CONSTRUCTION OF THE LATERAL WOOD SYSTEM TO VERIFY APPROPRIATE ELEMENTS,

NAILING, HARDWARE & CONNECTIONS PRIOR TO FINAL APPROVAL. E. ALL EPOXY DOWELED APPLICATIONS.

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE A 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. 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.

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.

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 OF ALL OPENINGS FOR DUCTS, PIPES, CONDUITS, ETC., NOT SHOWN.

PROPERTY LINE

ROOF DRAIN

REFER TO ..

REINFORCED

ROUGH OPFNING

REQUIRED

SCHEDULE

SECTION

SHEET

SIMILAR

SQUARE

STAGGERED

STANDARD

STIFFENER

STRUCTURAL

TOP AND BOTTOM

UNLESS NOTED

OTHERWISE

TONGUE & GROOVE

STEEL

TREAD

THICK

TOP OF

VERIFY

WITH

VERTICAL

WITHOUT

PLATE

CENTERLINE

Revisions*

TYPICAL

STRUCTURAL

SOLIARE FOOT

SPECIFICATION

STAINLESS STEEL

ENGINEER OR RECOF

ROOM

PLYWD. PLYWOOD

P.L.

R.D.

RE:

REINF.

REQ'D.

RM

R.O.

SCHED.

SECT.

SER

SIM.

SPEC.

S.S.

STAGG.

STD.

STIFF

STL.

TR

STRUC.

T & B

T & G

THK.

TYP.

U.N.O.

VER

VERT.

W/

W/0

Abbreviations

FLOOR DRAIN

FOUNDATION

FINSH FLOOR

FOUNDATION

F.O.C. FACE OF CONCRETE

FULL SIZE

FOOTING

FURRING

GAUGE

GRADE

GYP. BD. GYPSUM BOARD

HEIGHT

HEATING, VENT AND

AIR CONDITIONING

INSIDE DIAMETER

INSULATION

INTERIOR

MAXIMUM

MINIMUM

METAL

NUMBER

NOT TO SCALE

ON CENTER

OVFRHEAD

OPENING

OPPOSITE

Sheet Index

PCT. PRE-CAST

MANUFACTURER

MISCELLANEOUS

MASONRY OPENING

OUTSIDE DIAMETER

JOINT

JOIST

GYPSUM

GALVINIZED

FOOT OR FEET

FACE OF BRICK

FINISH

FLOOR

FDN.

FLR.

FND.

F.O.B.

F.S.

FTG.

FURR.

GALV.

GYP.

INSUL.

JST.

MAX.

MFR.

MIN.

MISC.

M.O.

MTL.

N.T.S.

0.D.

OPG.

OPP.

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Foundation & Basement Floor Framing Plans - Bldg E

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Foundation & 2nd Floor Framing Plans - Bldg G

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Foundation Plan & Details - Trash Compactor Enclosure

TOTAL NUMBER OF SHEETS

* LATEST INDIVIDUAL SHEET REVISION ISSUED

3rd Floor & Roof Framing Plans - Bldg G

Roof Framing Plan - Recreation Building

ANCHOR BOL

AGGREGATE

ALTERNATE

BOARD

BUILDING

BLOCK

RFAM

ROTTOM

CONTROL JT

CONCRETE

MASONRY

CONCRETE

CONNECTION

CONTINUOUS

COMPONENTS

STRUCTURAL ENGR

PALTIMN

CONSTR. CONSTRUCTION

DEG. DEGREE

DET./DTL. DETAIL

DIAG. DIAGONAL

DIA. ø DIAMETER

DRAWING

FXISTING

EXPANSION JOINT

AND FINISH SYSTEM

E.I.F.S. EXTERIOR INSULATION

EACH

EQUAL

EACH WAY

EXPANSION

Structural Notes

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S2.21 Foundation Plan - Recreation Building

Concrete Details

Concrete Details

raming Details

raming Details

Framing Details

Framing Details

S2.16 Roof Framing Plan & Notes - Bldg F

S2.13 Roof Framing Plan & Notes - Bldg E

Roof Framing Plan & Notes - Bldg A

EL. ELEV. ELEVATION

ELEV. ELEVATION

EQUIP. EQUIPMENT

EXT. EXTERIOR

CLEAR

BLK'G. BLOCKING

BTWN. BETWEEN

ARCHITECTURA

APPROX. APPROXIMATE

AGGR.

ALT.

ARCH.

BLDG.

BLK

BM.

BOT.

C.J.

CLR.

COL.

C.M.U.

CONC.

CONN.

CONT.

DWG.

(E)

EQ.

EXP.

Sheet

S1.0

S2.7

S3.0

S4.0

S5.0

CSE

BD.

• 🗖

SO

SUBMITTAL SET ONLY NOT FOR CONSTRUCTION THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW.

Solutions 4 Structures A Structural Engineering Corporation

STRUCTURAL NOTES-TABLES

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

Ţ	WIND I	PRES	SURE	TABL	Ξ F	OF	}
CO:	MPONE	ENTS	& CL	ADDIN	G	(AS	SD)
		f	ROOF SURFACES ¹				
EFFECTIVE	POSITI	VE PRESSUR	E (PSF)	NEGA	TIVE PR	ESSURE	(PSF)
WIND AREA			ZO	NE ²			
Ī	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 -		.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
_		1	WALL SURFACES				
EFFECTIVE	POSITI'	VE PRESSUR	ESSURE (PSF) NEGATIVE PRESSURE				
WIND AREA			ZO	NE²			
Ī	4		5	4			5
10 SF	12.18		12.18	-13.21	-13.21		-16.31
20 SF	11.56		11.56	-12.59			-15.07
50 SF	10.94		10.94	-11.98			-13.83
100 SF	10.32		10.32	-11.36			-12.57
500 SF	9.08		9.08	-10.12			-10.12

NET WIND PRESSURES AT ROOF SURFACES = VALUE FROM TABLE ABOVE $\pm 2/3$ DEAD LOAD (DEAD LOAD REDUCES NEGATIVE PRESSURE ± 4 ADDS TO POSITIVE PRESSURES) ZONES ARE DEFINED BY FIGURE 30.6-1 ASCE/SE1 07-10 FOR ROOF AND WALL ELEMENTS

2018 International Building Code - Statemen	mor zorono			, (220)		
SOIL & FOUNDATIONS						
MATERIAL/ TYPE	IBC CODE	REFERENCE	FRI	EQUENCY APPLICA	BLE	
INSPECTION	REFERENCE	STANDARD		TO THIS PROJEC	Γ	SCOPE OF SERVICE
INSECTION	NEI ENENGE	STANDAND	CONT.	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 accordance with the approved soils or geotechnical report.
Prepared Fill — During Fill Preparation	Table 1705.6 Item 4	-	Х	-	YES	Inspection to determine that the materials being used and maximum lift thicknesses comply with the approved report as specified in Section 1804.2.
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	-	-	X	YES	Confirm soils suitable for the design allowable soil bearing pressure are present at bearing grade. Confirm the footing dimensions are as specified on the project plans.
Foundation Depth	Table 1705.6 Table 1705.6 Item 2	-	-	X	YES	Confirm excavation are extended to proper depth and have reached proper materials.

2018 International Building Code — Statement of Special Inspection
CONCRETE CONSTRUCTION

CONCRETE CONSTRUCTION MATERIAL/ TYPE	IBC CODE	REFERENCE	FR	EQUENCY APPLICA				
INSPECTION	REFERENCE	STANDARD	TO THIS PROJECT			SCOPE OF SERVICE		
	THE ENERGY		CONT.	PERIODIC	REQUIRED			
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	Χ	-	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	_	X	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	-	X	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	Χ	_	МО			
Concrete Placement	1910.6, 1910.7, 1910.8, Table 1705.3 Item 7	ACI 318:5.9, 5.10	X	-	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	X	-	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	X	-	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	IBC CODE	REFERENCE		QUENCY APPLICA TO THIS PROJECT		SCOPE OF SERVICE
INSPECTION	REFERENCE	STANDARD	CONT.	PERIODIC	REQUIRED	
Fabrication — Inspection of Fabricator's Quality Control Procedures	1704.2.5	1	-	X		Certificate from Independent Agency and current agreement for periodic (minimum 6 month intervals) in—plant quality assurance inspections.

2018 International Building Code - Statement of Special Inspection

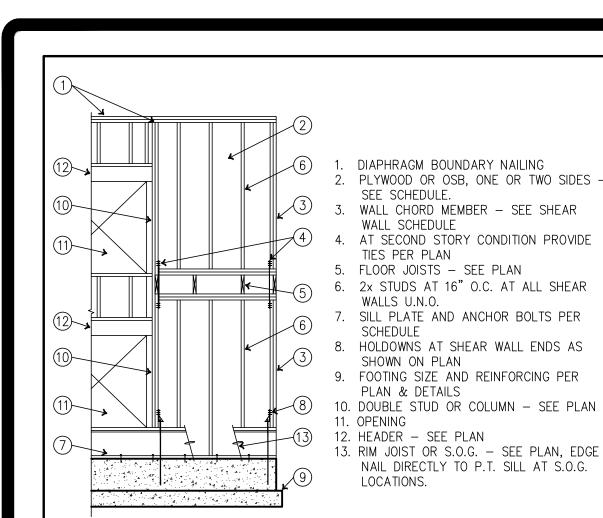
MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE REFERENCE STANDARD		FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
INSPECTION	NEFENENCE	STANDAND	CONT.	PERIODIC	REQUIRED	
Structural Steel	1705.11.1	AISC 341	Х	_	N/A	Observation of structural welding in accordance with AISC Seismic. Not required for 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	-	-	X	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	-	-	Χ	NO	Inspection of welding operations of elements of the seismic force resisting system.
Cold—formed Steel Framing	1705.11.3	-	-	Χ	NO	Inspection of screw attachments, bolting, anchoring and other fastening components within the seismic force resisting system, including struts, braces and hold—downs.

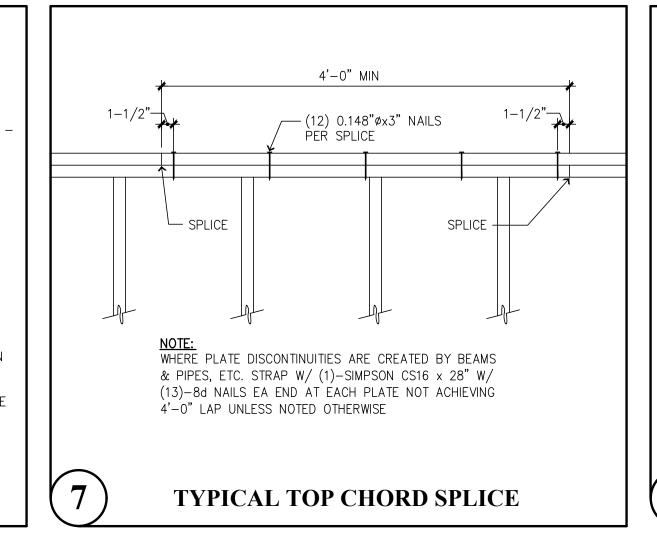
018	International	Building	Code	_	Statement	of	Special	Inspection	
TRU	CTURAL: OBSE	RVATIONS	;						

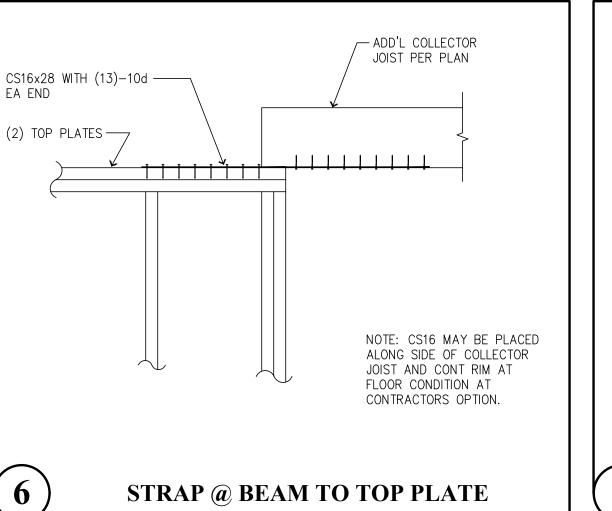
RUCTURAL: OBSERVATIONS							
MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD		FREQUENCY APPLICABL TO THIS PROJECT		SCOPE OF SERVICE	
INSFECTION	NEFENENCE	STANDARD	CONT.	PERIODIC	REQUIRED		
Strucutral Observations	1704.5	-	ı	y If required by S		Structural observations to be preformed to observe general conformance to the construction documents.	

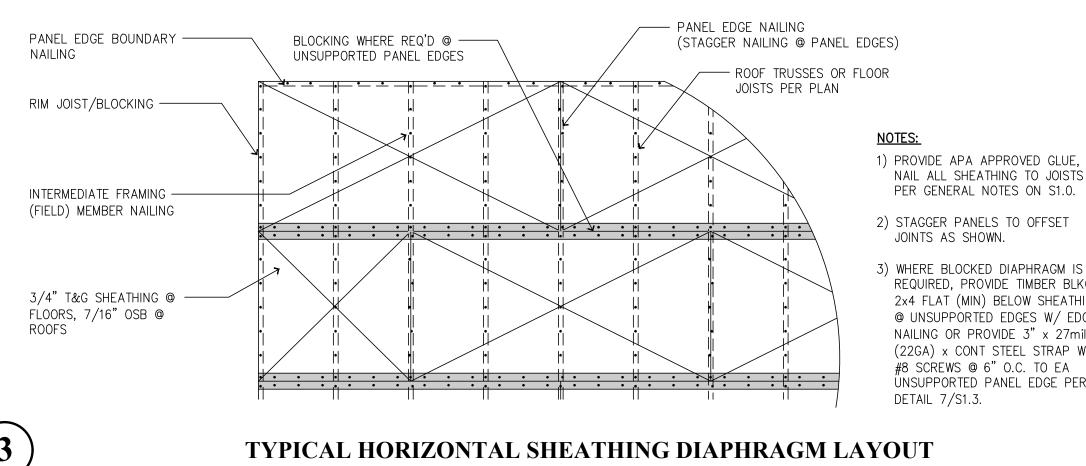


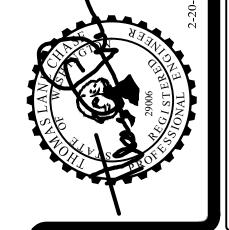
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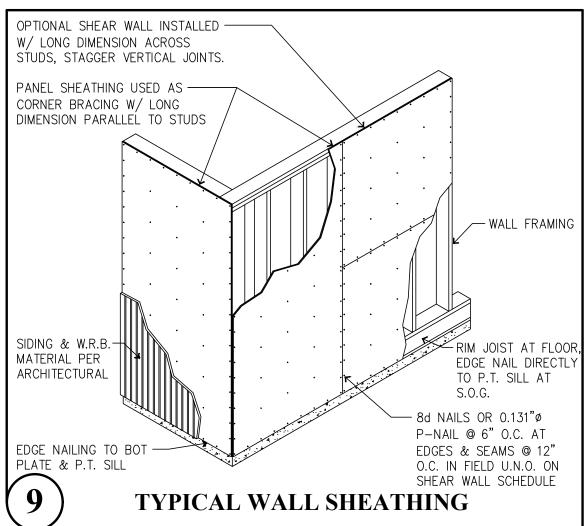




N.T.S.

2) STAGGER PANELS TO OFFSET

3) WHERE BLOCKED DIAPHRAGM IS REQUIRED, PROVIDE TIMBER BLKG 2x4 FLAT (MIN) BELOW SHEATHING @ UNSUPPORTED EDGES W/ EDGE NAILING OR PROVIDE 3" x 27mil (22GA) x CONT STEEL STRAP W/ #8 SCREWS @ 6" O.C. TO EA UNSUPPORTED PANEL EDGE PER



— STRAP PER PLAN

SECTION B

| --> A OR |

STUDS & HOLDOWN ----

acksimnail sheathing to full

HEIGHT JAMB STUD W/

PANEL EDGE NAILING

PER PLAN

SPECIAL SHEARWALL WITH OPENINGS

IF (2) SIDED

─ IF SHEATHING

EA SIDE

SHEARWALL WIDTH PER PLAN

HEADER (SEE PLAN)

SHEARWALL SHEATHING NOT SHOWN -

FOR CLARITY W/NAILING PER THE

CONTINUOUS AROUND THE OPENING

SHEARWALL TABLE TO BE

SINGLE STRAP CONNECTION

SECTION A

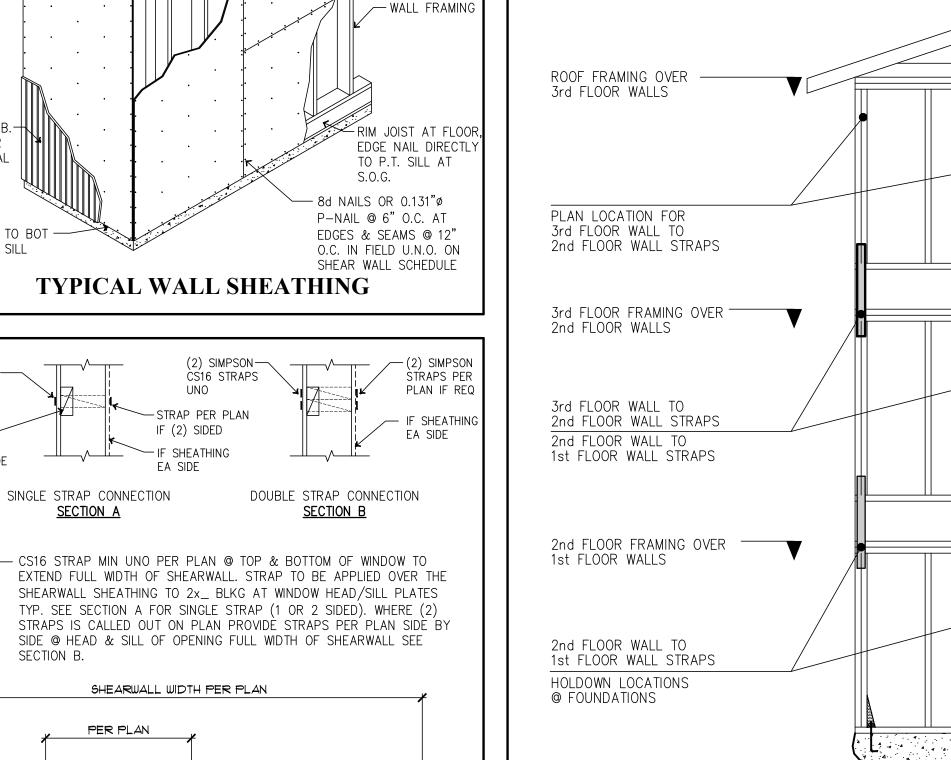
SECTION B.

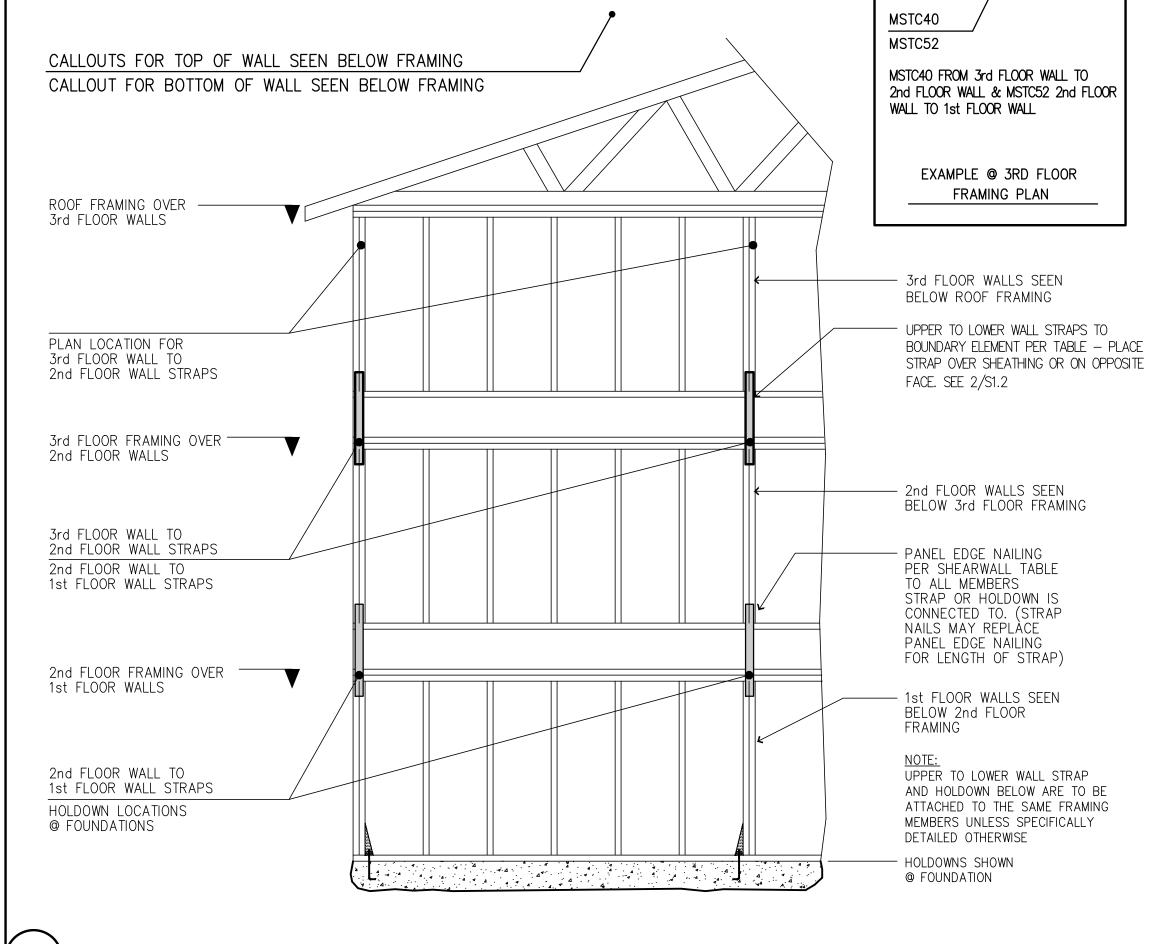
STRAP PER

2x FULL WIDTH

IF SHTG EA SIDE

TYPICAL SHEAR WALL ELEVATION





UPPER TO LOWER WALL STRAP/HOLDOWN KEY	
EDGE NAIL SHEATHING TO HOLDOWN ————————————————————————————————————	- CONTINUOUS DOUBLE TOP PLATE
CHORDS AND TO TOP PLATES SHEARWALL REFER TO SCHEDULE SHEARWALL REFER TO SCHEDULE	- HEADER
SOLID BLKG AT ALL UNSUPPORTED SOLID BLKG AT ALL UNSUPPORTED (1)2x_ R @ OPNGS (8'-0" & (2)2x_ R's @ OPNGS >8'-0" MIN	-STUDS AT 16" O.C. U.N.O.
RIM JOIST WHERE CRAWL SPACE, AT S.O.G. EDGE NAILING ATTACHES DIRECTLY TO P.T. SILL PLATE.	- MIN (1)—2x_ BEARING STUD & (1)—2x_ FULL HT STUD (UNO)
P.T. SILL PLATE, ANCHOR BOLTS PER S.W. SCHEDULE.	NOTES: 1. MAINTAIN 3/8" MIN EDGE DISTANCE FROM PLYWOOD SHEATHING TO NAILS 2. EDGE NAILING TO BE APPLIED TO
STEM WALL OR CONTINUOUS FOOTING - REFER TO PLAN TYPICAL STUD AND SHEAR WALL	ALL PANEL EDGES 3. PLACE FACE GRAIN OF PLYWOOD HORIZONTAL 4. FOR NON-SHEAR CHORD WALLS, USE SINGLE KING STUDS.

HOLDOWN TABLE BOUNDARY ELEMENT MIN EDGE DISTANCE 2x4 WALL 2x6 WALL **FASTENERS** DIAMETER **EMBEDMENT** WITHOUT ADD'L REINF 4x4 #2 HF 4x6 #2 HF (20) 16d N/A MST37 N/A N/A 4x4 #2 HF 4x6 #2 HF MST48 (32) 16d N/A N/A N/A 4x6 #2 HF 6x6 #2 DF (46) 16d N/A N/A (2)MST48 4x6 #2 HF 4x6 #2 HF MST60 (64) 16d N/A N/A N/A (2)MST60 4x6 #2 HF 6x6 #2 DF PER MFR N/A N/A N/A 4x4 #2 HF 4x6 #2 HF PER MFR 5/8" HDU2 5/8" HDU4 4x4 #2 HF 4x6 #2 HF PER MFR 4x6 #2 HF 4x6 #2 HF 5/8" PER MFR HDU8 4x6 #2 DF 6x6 #2 DF PER MFR 7/8" 6x6 #2 DF 4x6 #2 DF PER MFR 12" HDU11 4x8 #2 DF 6x6 #2 DF HDU14 PER MFR

1) STRAP HOLDOWNS MAY BE APPLIED DIRECTLY TO BOUNDARY MEMBER ON OPPOSITE SIDE OF SHEATHING OR APPLIED DIRECTLY OVER PWD/OSB SHEATHING. DO NOT LOCATE STRAPS UNDER WOOD SHEATHING OF ANY TYPE OR OVER GYPSUM SHEATHING. (DO NOT INSTALL MSTC TYPE STRAPS OVER SHEATHING, SEE 4/S1.3) 2) NAIL SHEATHING PER SHEARWALL TABLE TO EACH BOUNDARY ELEMENT PER TABLE ABOVE.

3) ALIGN FLOOR TO FLOOR STRAPS WITH HOLDOWNS AT FOUNDATION, TYP. (SEE DETAIL 5/S1.2)

- 4) HOLDOWNS/STRAPS MUST BE ATTACHED TO FULL HEIGHT MEMBERS UNLESS NOTED OTHERWISE. BOUNDARY ELEMENTS ARE IN ADDITION TO TRIMMER/BEARING STUDS CALLED OUT ON PLAN. (SEE DETAILS 1,2 & 3/S1.3)
- 5) ANCHOR BOLTS SHALL BE CAST IN PLACE AND ALL ANCHORS EXCEPT HDU2 AND HDU4 REQUIRE ADDITIONAL REBAR IF EMBEDDED IN STEMWALLS OR IF MIN EDGE DISTANCE IS LESS THAN AS NOTED USE A STANDARD WASHER WITH A STANDARD NUT ON EACH SIDE AT BOTTOM OF ANCHOR. ADDITIONAL REINFORCEMENT SHALL BE PER DETAILS

6) THREADED RODS/ANCHORS ARE ASTM A307 OR ASTM F1554 U.N.O.

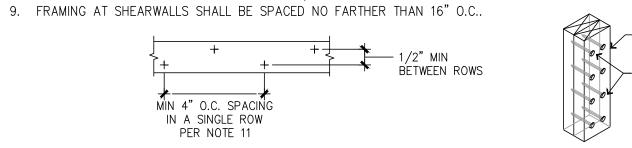
7) STRAPS/HOLDOWNS SHALL BE INSTALLED WITH THE FASTENERS SPECIFIED BY THE MANUFACTURER TO ACHIEVE THE MAXIMUM TABULATED LOAD & AS INDICATED IN THE

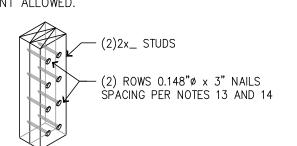
8) INSTALL HALF OF SPECIFIED FASTENERS EACH END OF STRAPS PER SIMPSON STRONGTIE.

9) SEE DETAIL 4/S1.3 FOR MSTC - HOLDOWN STRAPS FROM SHEARWALL TO BEAM & DETAIL 6/S1.3 FOR MSTC - HOLDOWN STRAPS @ END OF BEAM TO POST/COLUMN. (*) SYMBOL AT END OF MSTC STRAP CALLOUT (i.e. (2)MSTC48B3*) INDICATES STRAP IS INVERTED AND ATTACHES END OF BEAM TO POST BELOW PER

	SHEARWALL COMPONENT TABLE								
MARK	14 MARK	COMPONENTS	1/2" A.B. PL TO CONCRETE SPACING (IN)	5/8" A.B. PL TO CONCRETE SPACING (IN)	10d COMMON PL TO PL SPACING (IN)	SIMPSON A35 CLIP ANGLE SPACING (IN)	SIMPSON LTP4 CLIP ANGLE SPACING (IN)		
W1	W1P	7/16" PWD OR OSB, BLOCKED, W/ 8d NAILS @ 6" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD.	47" O.C.	68" O.C.	8.1" O.C.	30" O.C.	29" O.C.		
W2	W2P	7/16" PWD OR OSB, BLOCKED, W/ 8d NAILS @ 4" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD.	32" O.C.	47" O.C.	5.5" O.C.	20" O.C.	20" O.C.		
	W3P	7/16" PWD OR OSB, BLOCKED, W/ 8d NAILS @ 3" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD. SEE NOTE 2	25" O.C.	36" O.C.	4.3" O.C.	16" O.C.	15" O.C.		
W4	W4P	7/16" PWD OR OSB, BLOCKED, W/ 8d NAILS @ 2" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD. SEE NOTE 2	19" O.C.	28" O.C.	(2) ROWS 6.6" O.C. EA ROW	12" O.C.	12" O.C.		
W5	W5P	7/16" PWD OR OSB, BLOCKED, W/ 10d NAILS @ 2" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD. SEE NOTE 2.	16" O.C.	23" O.C.	(2) ROWS 5.6" O.C. EA ROW	10" O.C.	10" O.C.		
W6	W7P	15/32" PWD OR OSB, (2) LAYERS (ONE EACH SIDE), BLOCKED, W/ 10d NAILS @ 3" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD. SEE NOTE 2. 3 & 15	12" O.C.	18" O.C.	(2) ROWS 4.3" O.C. EA ROW	8" O.C.	8" O.C.		
	W7P	15/32" PWD OR OSB, (2) LAYERS (ONE EACH SIDE), BLOCKED, W/ 10d NAILS @ 2" O.C. @ PANEL EDGES AND @ 12" O.C. @ FIELD. SEE NOTE 2, 3, & 15	9" O.C.	14" O.C.	(2) ROWS 3" O.C. EA ROW STAGGERED	5" O.C.	5" O.C.		

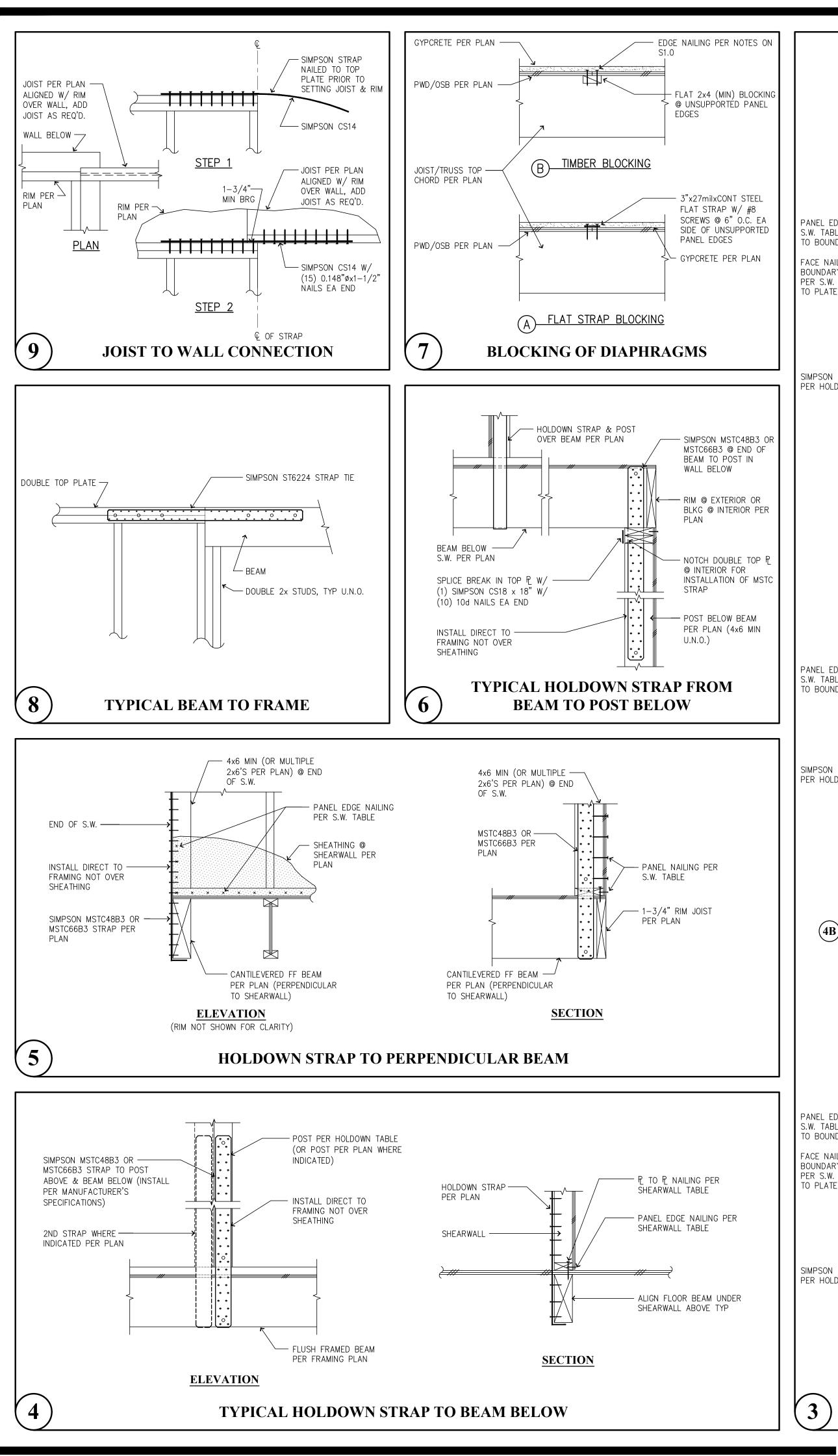
- 1. ALL NAILING PER ANSI/AF & PA SDPWS 2018 TABLE 4.3A
- 2. USE 3x_ STUDS AT ALL ABUTTING PANEL EDGES. NAILS SHALL BE STAGGERED WHERE NAILS ARE SPACED AT 2" O.C.. 3. IF CALLOUT REQUIRES BLOCKING, SHEATHING MAY BE PLACED WITH THE LONGITUDINAL DIRECTION VERTICAL. STUDS AND PLATES WILL BE CONSIDERED TO ACT AS BLOCKING.
- 4. WALL SHEATHING CALLED OUT SHALL EXTEND FOR ENTIRE WALL LENGTH AT THAT ELEVATION AND SHALL BE CONTINUOUS AROUND OPENINGS TYPICALLY.
- 5. 8d NAILS ARE TO BE .131"Ø AND 2-1/2" IN LENGTH. 10d NAILS ARE TO BE .148"Ø AND A MINIMUM OF 3" IN LENGTH. 16d NAILS ARE TO BE .162"Ø AND 3-1/4" IN LENGTH. NAILS SHALL BE INSTALLED SO AS TO NOT SPLIT THE TIMBER FRAMING.
- 6. SIMPSON A35 OR LTP4 CLIP ANGLES SHALL BE INSTALLED WITH THE APPROPRIATE FASTENERS PER THE MANUFACTURER'S SPECIFICATIONS.
- 7. USE 3"x3"x0.229" PLATE WASHERS AT ALL ANCHOR BOLTS PER SECTION 4.3.6.4.3
- 8. SPACING SHOWN ABOVE FOR ANCHOR BOLTS, NAILING AND CLIPS IS MAXIMUM AMOUNT ALLOWED.

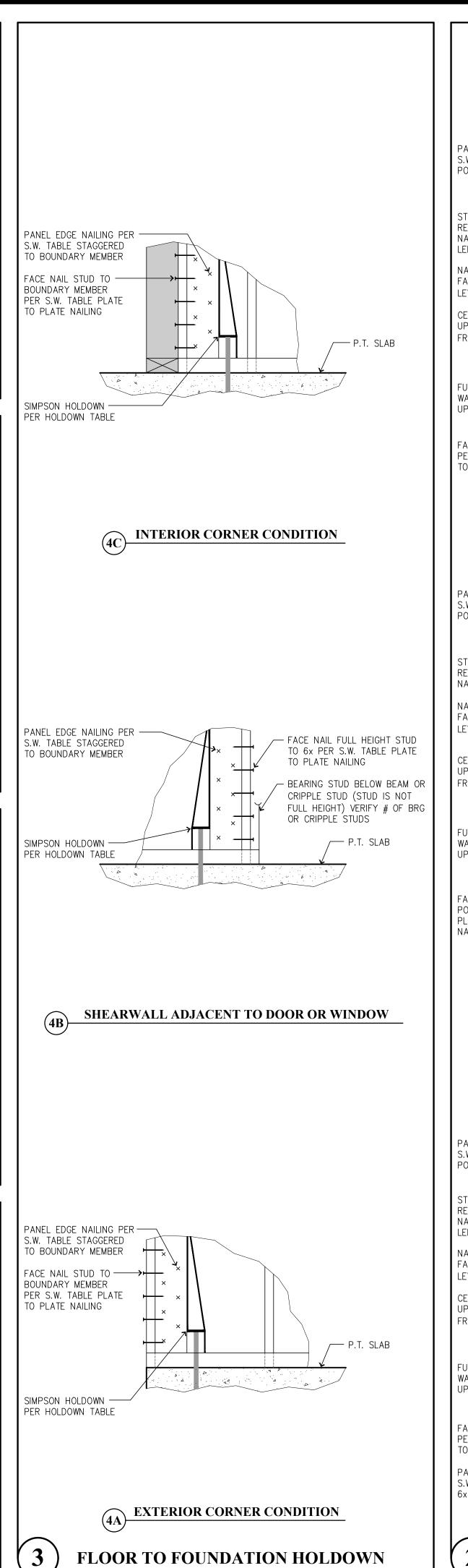


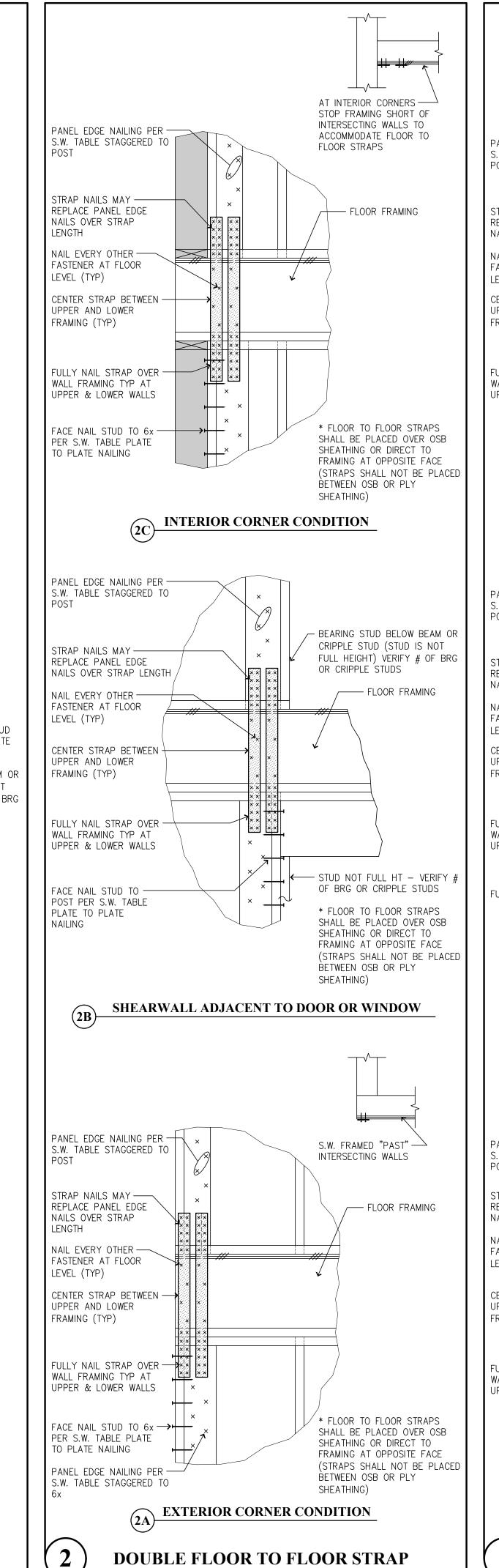


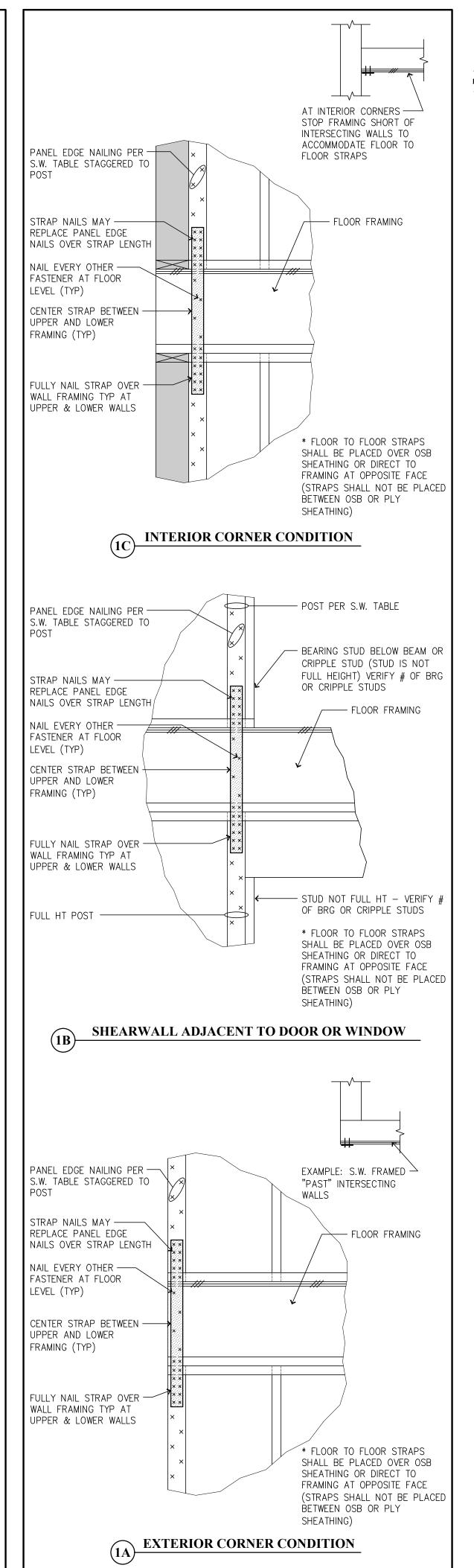
- 10. MINIMUM NAIL SPACING IN A SINGLE ROW SHALL BE 4 INCHES ON CENTER. USE (2) ROWS IF SPACING LESS THAN THIS. USE 2ND RIM BOARD, RIM JOIST OR BLOCKING WHERE THREE ROWS OF NAILING CALLED OUT.
- 11. EXTEND SHEATHING UP TO DOUBLE TOP PLATES AND INSTALL NAILS THROUGH SHEATHING INTO UPPER TOP PLATE PER TYPICAL DETAILS. NO PLATE TO PLATE NAILING REQUIRED IN DOUBLE TOP PLATES WITH THIS CONFIGURATION.
- 12. OPTIONAL TO USE (2) 2x's IN PLACE OF SINGLE 3x IN SHEARWALLS W3, W4 AND W5 W/ STITCH NAILING. 13. (2) ROWS OF 0.148" x 3" STITCH NAILING (2)2x_ STUDS TOGETHER @ 10" O.C. FOR W3 SHW, 8" O.C. FOR W4 SHW & 6" O.C. FOR W5 SHW PER SECTION 4.37 NOTE 4. 14. THE "W_P" INDICATES SHEAR WALL TYPE WITH OPENINGS. PROVIDE SHEATHING AROUND ALL OPENINGS AND ABOVE AND BELOW ALL OPENINGS. PROVIDE HORIZONTAL STRAPS & NAILING AT OPENINGS PER 8/S1.2

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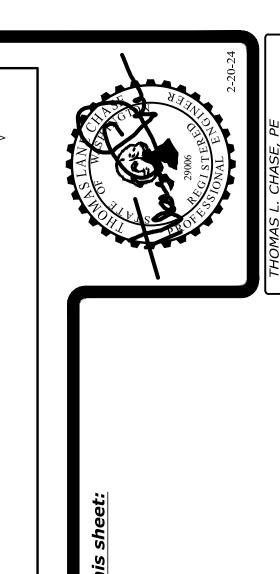








SINGLE FLOOR TO FLOOR STRAP



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S1.3

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- 2. FOR ALL UNITS TYPES SEE WALL STUD SCHEDULE FOR BEARING WALL STUD REQUIREMENTS. ALL OTHER NON-BEARING 2x4 & 2x6 WALLS ARE AT 16" O.C.
- 3. THE TRUSS AND JOIST MANUFACTURER SHALL VERIFY BEARING COMPATIBILITY (CRUSHING) WITH THE PLATE MATERIAL. TYPICALLY, COMPOSITE BEAMS SHALL BE FULLY BEARING ON 2x_ WALLS. I.E. BREAK RIM OR BLOCKING TO ALLOW

FULL BEARING OVER PLATES.

- 4. PLACE LONG DIRECTION OF ALL OSB SHEETS PERPENDICULAR TO TRUSS/RAFTER OR JOIST DIRECTION, SEE DETAIL 3/S1.2. FLOOR SHEATHING IS TO BE CONTINUOUS FROM UNIT TO UNIT. TYPICAL NAILING AT FLOOR AND ROOF DIAPHRAGMS IS PROVIDED IN THE GENERAL STRUCTURAL NOTES ON SHEETS S1.0.
- 5. W-DENOTES THE SHEARWALL TYPE, SEE THE SHEARWALL TABLE ON SHEET S1.2 INDICATES SHEARWALL LOCATION, THE CALLOUTS ON THE SHEARWALL TABLE APPLY ONLY ALONG THE LENGTH OF WALL SHOWN SHADED. PROVIDE SOLID BLOCKING IN FLOOR SPACE BELOW PERPENDICULAR SHEARWALLS
- <u>W_P</u> INDICATES SHEAR WALL TYPE WITH OPENINGS. PROVIDE SHEATHING AROUND ALL OPENINGS AND ABOVE AND BELOW ALL OPENINGS. PROVIDE HORIZONTAL STRAPS & NAILING AT OPENINGS PER 8/S1.2
- 6. THE DOUBLE TOP PLATE IS TO BE CONTINUOUS ALONG ALL EXTERIOR WALLS AND AT ALL WALL LINES CONTAINING SHEARWALLS. TYPICAL WALL TOP PLATE SPLICES SHALL BE PER DETAIL 7/S1.2 TYP.
- 7. WHERE COMPOSITE JOISTS AND BEAMS ARE USED AS DRAG STRUTS THE MANUFACTURER SHALL PROVIDE THE FRAMING MEMBERS WITH THE CAPACITY CALLED OUT ON THE PLANS.
- 8. TYPICAL FLOOR JOISTS SHALL BE 11-7/8" TJI/110 @ 16" O.C. TYP U.N.O. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ALL JOIST AND BEAM HANGERS, WEB STIFFENERS, SOLID BLOCKING, AND ADDITIONAL RIM OR JOIST MATERIAL TO ACCOMMODATE FLUSH-FRAMED CONDITIONS (F.F.), CANTILEVERED CONDITIONS, CONCENTRATED BEARING LOADS AND NAILING FROM SHEARWALLS ABOVE AND
- 9. F.F. = FLUSH-FRAMED BEAM. VERIFY FLUSH OR DROPPED BEAM CONDITION
 PER ARCHITECT
- 10. ALL BEAMS PER SCHEDULE U.N.O. ALL NON BEARING BEAMS SHALL BE A MIN OF (2)2×8 U.N.O. ALL OTHER BEAMS ARE AS MARKED ON PLANS.
- 11. AT ALL BEAM BEARING/JAMB LOCATIONS, AT MINIMUM PROVIDE BEARING (TRIMMER) STUDS AND FULL HEIGHT (KING) STUDS PER THE JAMB STUD SCHEDULE FOR EACH BUILDING IF PROVIDED. IF NO SCHEDULE, PROVIDE (1) 2X_ BEARING AND (1) 2X_ FULL HEIGHT STUD MINIMUM.
- 12. EXPOSED FRAMING SHALL BE PRESSURE TREATED (P.T.) VERTICAL & HORIZONTAL FRAMING @ WATERPROOFED WALKWAYS AND PRIVATE DECKS. ALL EXPOSED BEAM HANGERS SHALL BE POST HOT-DIPPED GALVANIZED AND HAVE CONCEALED FLANGES, VERIFY W/ ARCHITECT. SEE NOTE ON SHEET S1.0
- 13. FOR TYPICAL HOLDOWN ASSEMBLIES SEE THE HOLDOWN TABLE ON 2/S1.2 AND DETAILS ON SHEET S3.0.
- 14. SEE ARCHITECTURAL PLANS FOR STAIR FRAMING DETAILS & STAIR FRAMING DETAILS AND NOTES, CONTROL JOINTS IN CONCRETE FLOORING AND ROOF VENTILATION REQUIREMENTS AND DETAILS.
- 15. SEE CIVIL AND ARCHITECTURAL PLANS FOR TOP OF WALL HEIGHTS AND ELEVATIONS. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE DIMENSIONS ARE SHOWN ON THE STRUCTURAL PLANS, CONTRACTOR SHALL VERIFY COMPATIBILITY W/ ARCHITECTURAL PLANS. WHERE DISCREPANCY EXISTS, CONTRACTOR SHALL NOTIFY BOTH THE ENGINEER AND ARCHITECT FOR CLARIFICATION
- 16. WINDOW SUPPLIER TO VERIFY THAT WINDOW AND WINDOW FRAMES TRANSFER WIND LOADS EVENLY TO STRUCTURAL FRAMING ON ALL 4 SIDES OF WINDOW. WINDOW SUPPLIER TO VERIFY MINIMUM .005*H STORY DRIFT TOLERANCE IN PLANE OF ALL WINDOWS AND ALLOW FOR L/240 DEFLECTION (PERPENDICULAR) AT WINDOW MULLIONS.
- 17. SEE GENERAL STRUCTURAL NOTES ON S1.0 TO S1.3 FOR ADDITIONAL INFORMATION
 18. LEGEND:

	INDICATES BEAM / GIRDER TRUSS PER PLAN SEE FRAMING PLANS
	INDICATES HANGER PER MANUFACTURER
GT	INDICATES GIRDER TRUSS PER PLAN
 	INDICATES JOIST / TRUSS BEARING @ WALL / BEAM
	INDICATES JOIST / TRUSS INTERMEDIATE BEARING WALL / BEAM
K- <u></u> Z- <u></u> X	

INDICATES TYPICAL TOILET, BATHTUB & SHOWER

WITH FIXTURE LOCATIONS TO AVOID PLUMBING &

LAYOUT. CONTRACTOR TO COORDINATE JOIST LAYOUT

19. INDICATES ROOF OVERFRAMING – SEE DETAILS 5/S5.0

FRAMING CONFLICTS.

- 20. PROVIDE WALL FIREBLOCKING @ DROPPED SOFFITS SHOWN ON ARCH.
- 21. PROVIDE WALL BLOCKING FOR ALL WALL MOUNTED EQUIPMENT (SUCH AS TOWEL BARS, GRAB BARS, TOILET PAPER HOLDERS, DOOR STOPS, ETC.).
- 22. LFA INDICATES LOAD FROM ABOVE
- 23. FF INDICATES FLUSH FRAMED BEAM
- 4. INDICATES STRAP HOLDOWN, SEE SHEET 2/S1.2 FOR HOLDOWN TABLE & UPPER TO LOWER WALL STRAP/HOLDOWN KEY.
- 25. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FLOOR ELEVATIONS.
- 26. SIMPSON STRONG TIE PRODUCTS ARE CALLED OUT ON THE DRAWINGS. HOWEVER, EITHER SIMPSON OR KC METALS PRODUCTS MAY BE USED PROVIDED IT HAS SAME OR GREATER CAPACITY.

NOTE:	NOTE:
ALL JOISTS ARE 11-7/8" TJI/110 © 16" O.C. TYPICAL U.N.O. USE	ALL MULTIPLE 2× HEADERS HF #2 U.N.C ALL 4× HEADERS HF #2 U.N.O.
FACE MOUNT HANGER @ F.F. COND U.N.O.	ALL 6x HEADERS/BEAMS D.F.#2 U.N.O.
	ALL EXPOSED 6x BEAM / POSTS H.F. # P.T. HEM-FIR TREATED PER ARCH.
NOTE: P.T. 2x8 JOISTS @ 16" O.C. TYP	U.N.O.
U.N.O. @ DECKS	INDICATES CANTILEY
P.T. 2x10 JOISTS @ 16" O.C. TYP U.N.O. @ STAIR LANDINGS	HANGER @ FLUSH FRAMED BEAM OR LEDGER
	LEDUER
JOIST (CONTINUOUS) OVER BEARING WALL/HEADER	JOISTS STOP & ST (NOT CONTINUOUS)

SEE SHEET S1.2 FOR SHEARWALL AND HOLDOWN TABLES

Beam Schedule						
MARK	BEAM SIZE					
B1	4x8					
B2	4x10					
В3	6x10 DF #2					
B4	3−1/8 x 10−1/2 GLB					
B5	P.T. 4x8					
B6	P.T. 4x10					
B7	P.T. 6x10 HF#1					
B8	P.T. 3-1/8 x 10-1/2 GLB					
B9	P.T. 5-1/8 x 10-1/2 GLB					
B10	5-1/4x11-7/8 PSL					
B11	3-1/2x11-7/8 LSL					

	J	amb	Stuc	l Sch	edul	e		
TYPE	C1	C2	C3	C4	C5	C6	-	_
BEARING/FULL HT STUDS	1/2	1/3	2/1	2/2	2/3	2/4	_	-
NOTE: STUD SIZE SHOULD MATCH WALL SIZE PER PLAN.								

Wall Stud Schedule										
FRAMING LEVEL	2x6 EXTERIOR	2x6 BRG INT @ SINGLE WALL	2x6 BRG INT @ PARTY WALLS	2x4 BRG @ Single Wall	2x4 BRG @ PARTY WALLS					
R00F	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.C.					
3RD	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.C.					
2ND	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	(2)2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.C.					
BASEMENT	2x6 @ 16" O.C.	2x6 @ 12" O.C.	2x6 @ 16" O.C.	(2)2x4 HF#2 @ 12" O.C.	2x4 HF#2 @ 16" O.C.					
NOTES:					·					

- ALL STUD MATERIAL SHALL BE HEM FIR STUD GRADE OR BETTER UNLESS NOTED OTHERWISE AND PLATE MATERIAL SHALL BE HEM FIR STANDARD OR BETTER UNLESS NOTED OTHERWISE.
- THAT IS WALLS BELOW THE FRAMING LEVEL SHOWN.

 3. THIS SCHEDULE COVERS BUILDING UNITS 3 STORIES IN HEIGHT. FIRST, DETERMINE THE NUMBER OF STORIES FOR THE UNIT, SECOND, DETERMINE THE FRAMING LEVEL, THIRD, READ SCHEDULE HORIZONTALLY FOR THE WALL LOCATION.

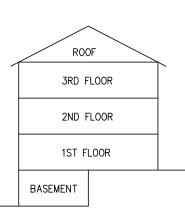
Foundation Notes

- TYPICAL DIMENSIONS ARE TO FACE OF WALL OR TO CENTERLINE OF COLUMN OR FOOTING. VERIFY ALL DIMENSIONS & ELEVATIONS WITH THE ARCHITECT.
- 2. PROVIDE FOOTING SUBSTRATE PREPARATION PER THE SOILS REPORT.
- 3. F-.- INDICATES ISOLATED FOOTING TYPICAL ISOLATED FTG SHALL BE CONSTRUCTED PER FOOTING SCHEDULE 5/S3.0.
- 4. EXTEND ALL CONTINUOUS FOOTINGS AT END WALLS 1'-0" MIN. BEYOND END OF ALL BEARING WALLS & SHEARWALLS. (TYPICAL) UNO
- 5. ALL EXTERIOR WALLS SHALL HAVE AN 8" STEMWALL AND A 18" WIDE x 8" DEEP FOOTING W/ STEEL REINFORCING 3" CLR. OF SOIL UNLESS NOTED OTHERWISE
- 6. ADD STRIP DRAINS AT FACE OF BUILDINGS WHEN WALKS SLOPE
- 7. PROVIDE #4-24" x 24" CORNER BARS TO MATCH ALL HORIZONTAL REINFORCEMENT IN STEMWALLS AND FOOTINGS. (TYPICAL)
- 8. FLOOR SLABS 4" CONC. SLAB ON GRADE 6x6 W1.2xW1.2 WWF @ CENTER—LINE OR FIBER MESH PER MANUFACTURER OVER SUBSTRATE PER SOILS ENGINEER, USE WWF WHERE INDICATED. PROVIDE CONTROL JOINTS PER DETAIL 15/S3.0 AT THE DIRECTION OF THE ARCHITECT.
- 9. ENTRY SLABS 4" CONC. SLAB (BROOM FINISH)

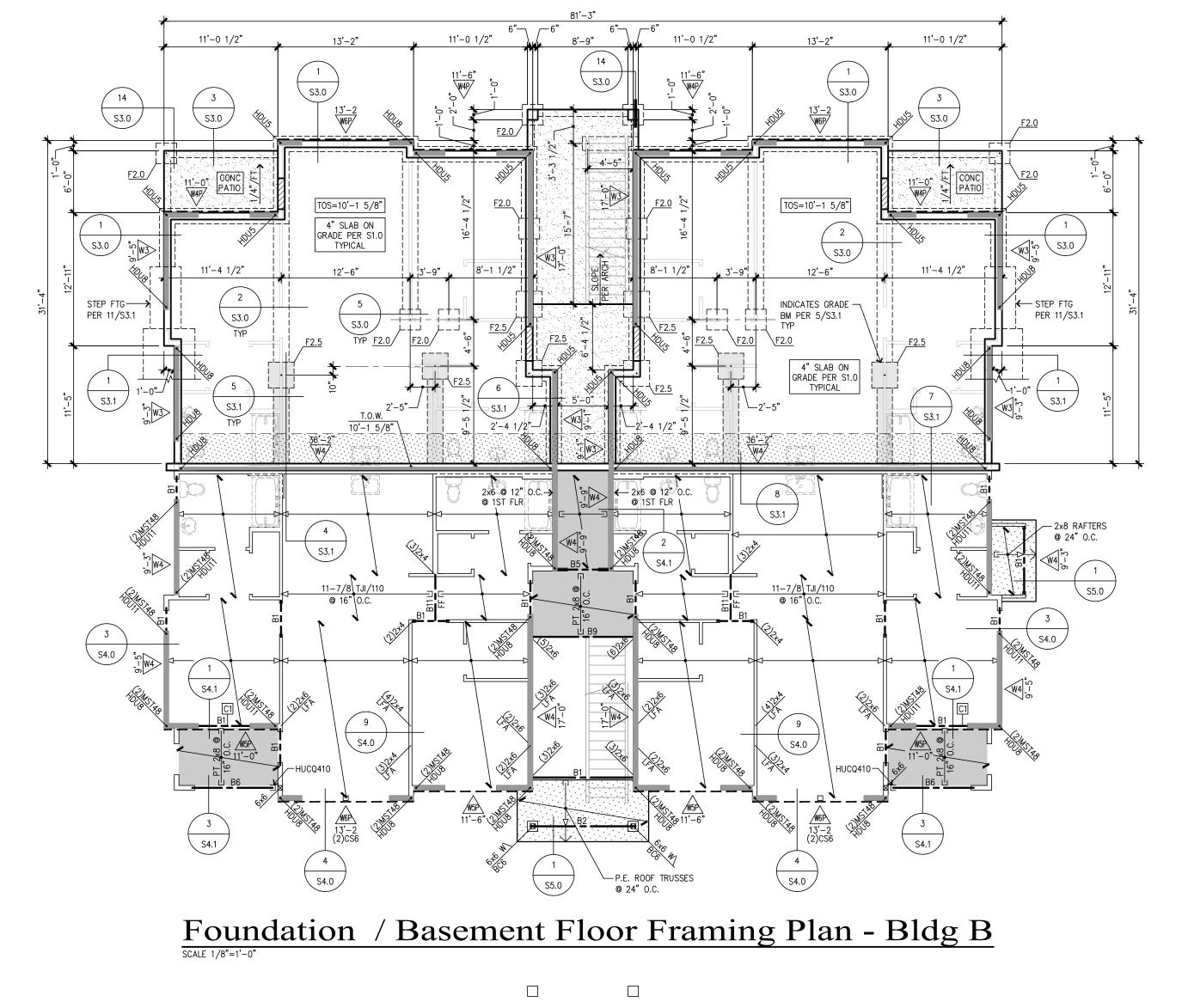
TOWARD BUILDING, CONNECT TO TIGHTLINE.

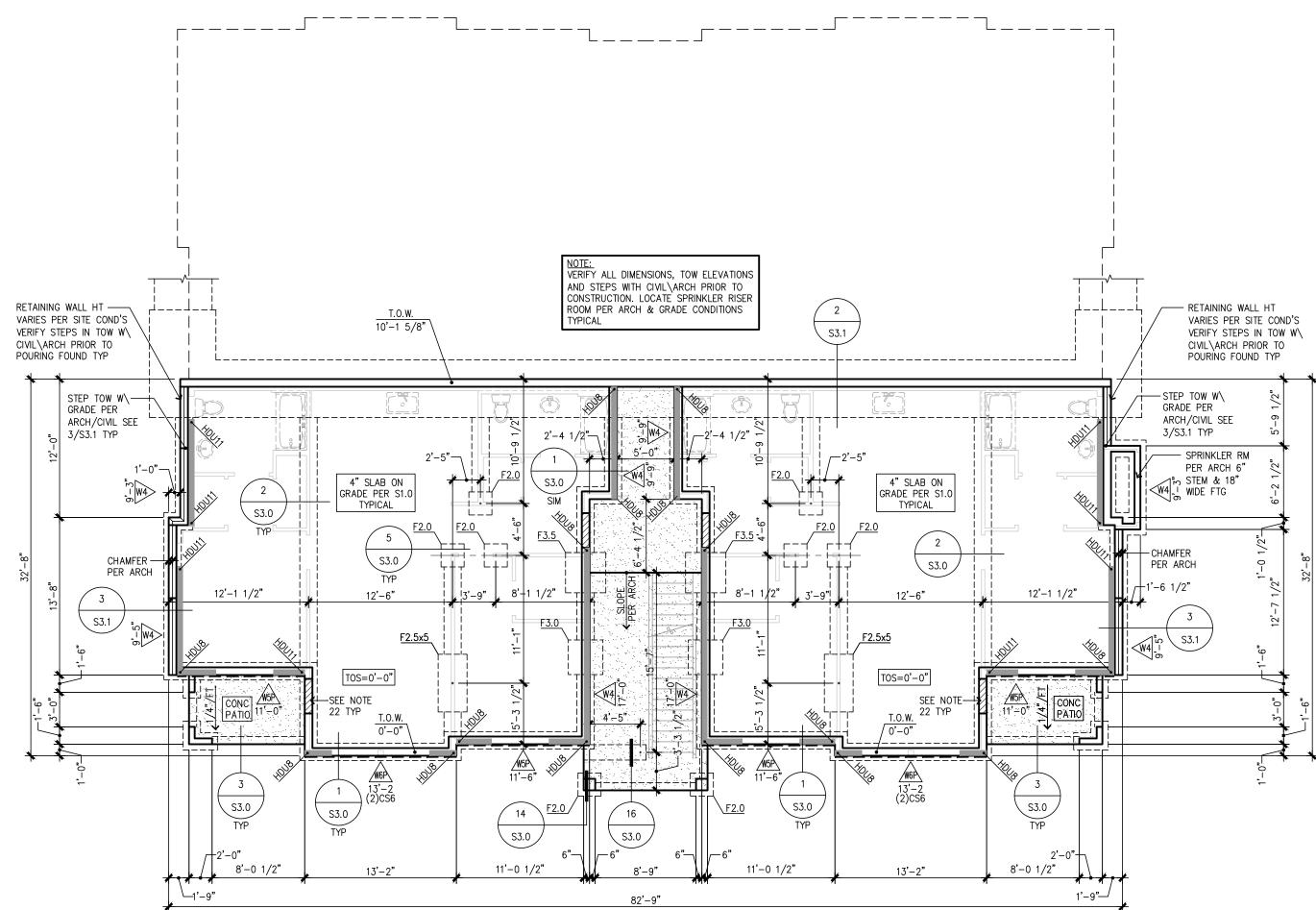
- 10. PATIO SLABS 4" CONC. W/ THICKENED EDGES. SLOPE AWAY FROM BUILDING AT 1/4"/FT. SEE 3/S3.0
- 11. ALL THICKENED SLABS FOR BEARING WALLS AND PARTY WALLS SHALL BE 18" WIDE \times 12" DEEP W/ (2) #4 BARS CONTINUOUS UNLESS NOTED OTHERWISE. DEEPEN LOCALLY AT HOLDOWNS TO OBTAIN EMBEDMENT DEPTH +3" MIN.
- 12. ALL THICKENED EDGE SLABS SHALL BE 8" WIDE x 8" DEEP W/ (1) #4 BAR CONTINUOUS (3" FROM BOTTOM) UNLESS NOTED OTHERWISE. SEE 3/S3.0.
- 13. DENOTES THE SHEARWALL TYPE, SEE THE SHEARWALL TABLE ON SHEET S1.2 INDICATES SHEARWALL LOCATION, THE CALLOUTS ON THE SHEARWALL TABLE APPLY ONLY ALONG THE LENGTH OF WALL SHOWN SHADED. PROVIDE SOLID BLOCKING IN FLOOR SPACE BELOW PERPENDICULAR SHEARWALLS.
- W_N INDICATES SHEAR WALL TYPE WITH OPENINGS. PROVIDE SHEATHING AROUND ALL OPENINGS AND ABOVE AND BELOW ALL OPENINGS. PROVIDE HORIZONTAL STRAPS & NAILING AT OPENINGS PER 8/S1.2
- 14. INDICATES HOLDOWN, SEE 2/S1.2 FOR HOLDOWN TABLE & UPPER TO LOWER WALL STRAPS HOLDOWN/KEY.
- 15. VERIFY ALL TOP OF SLAB ELEVATIONS AND BUILDING STEPS WITH ARCH/CIVIL PLANS TYPICAL.
- 16. TYPICAL PERIMETER FOOTING SHALL BE LOCATED A MIN. 18" BELOW GRADE OR AS REQUIRED BY LOCAL JURISDICTION.
- 17. SEE DETAILS FOR TYPICAL STEMWALL/FOOTING & THICKENED SLAB CONSTRUCTION.
- 18. T.O.W. = TOP OF STEMWALL T.O.F. = TOP OF FOOTING T.O.S. = TOP OF SLAB
- 19. SEE THE GENERAL STRUCTURAL NOTES ON SHEET S1.0 FOR ADDITIONAL
- 20. VERIFY WITH CIVIL GRADING PLAN FOR GARAGE SLAB ELEVATION @ GARAGE
- 21. DEEPEN FOOTINGS AS NECESSARY TO MAINTAIN MINIMUM COVER. COORDINATE WITH CIVIL GRADING PLAN FOR GRADE CONDITIONS.
- 22. INDICATES DEPRESSED TOP OF STEMWALL AT DOORWAY. POUR SLAB OVER SEE 4/S3.0.
- 23. ALL INTERSECTING FOOTINGS / STEM WALLS SHALL HAVE CORNER BARS TO MATCH HORIZ REINFORCEMENT SEE 10/S3.0

	Continu	ous Wall Footir	ng Schedule
		REINFO	RCMENT
"W"	"D"	LONGITUDINAL	TRANSVERSE
1'-6"	12"	(2)-#4 BOT	_
2'-0"	12"	(3)-#4 BOT	_
3'-0"	14"	(3)-#5 BOT	#4 @ 18" O.C. BOT



3/4 Bldg Split Key





Foundation Plan Basement - Bldg B

S2.3

CONSTRUCTION

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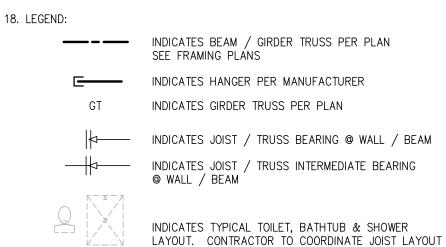
Supportation Support

- FOR ALL UNITS TYPES SEE WALL STUD SCHEDULE FOR BEARING WALL STUD REQUIREMENTS. ALL OTHER NON-BEARING 2x4 & 2x6 WALLS ARE AT 16" O.C.
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FULL BEARING OVER PLATES.

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- W-\DENOTES THE SHEARWALL TYPE, SEE THE SHEARWALL TABLE ON SHEET S1.2 INDICATES SHEARWALL LOCATION, THE CALLOUTS ON THE SHEARWALL TABLE APPLY ONLY ALONG THE LENGTH OF WALL SHOWN SHADED. PROVIDE SOLID BLOCKING IN FLOOR SPACE BELOW PERPENDICULAR SHEARWALLS. <u>W_P</u> INDICATES SHEAR WALL TYPE WITH OPENINGS. PROVIDE SHEATHING
- AROUND ALL OPENINGS AND ABOVE AND BELOW ALL OPENINGS. PROVIDE HORIZONTAL STRAPS & NAILING AT OPENINGS PER 8/S1.2
- THE DOUBLE TOP PLATE IS TO BE CONTINUOUS ALONG ALL EXTERIOR WALLS AND AT ALL WALL LINES CONTAINING SHEARWALLS. TYPICAL WALL TOP PLATE SPLICES SHALL BE PER DETAIL 7/S1.2 TYP.
- WHERE COMPOSITE JOISTS AND BEAMS ARE USED AS DRAG STRUTS THE MANUFACTURER SHALL PROVIDE THE FRAMING MEMBERS WITH THE CAPACITY
- TYPICAL FLOOR JOISTS SHALL BE 11-7/8" TJI/110 @ 16" O.C. TYP U.N.O. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ALL JOIST AND BEAM HANGERS, WEB STIFFENERS, SOLID BLOCKING, AND ADDITIONAL RIM OR JOIST MATERIAL TO ACCOMMODATE FLUSH-FRAMED CONDITIONS (F.F.), CANTILEVERED CONDITIONS, CONCENTRATED BEARING LOADS AND NAILING FROM SHEARWALLS ABOVE AND
- 9. F.F. = FLUSH-FRAMED BEAM. VERIFY FLUSH OR DROPPED BEAM CONDITION
- 10. ALL BEAMS PER SCHEDULE U.N.O. ALL NON BEARING BEAMS SHALL BE A MIN OF (2)2x8 U.N.O. ALL OTHER BEAMS ARE AS MARKED ON PLANS.
- 1. AT ALL BEAM BEARING/JAMB LOCATIONS, AT MINIMUM PROVIDE BEARING (TRIMMER) STUDS AND FULL HEIGHT (KING) STUDS PER THE JAMB STUD SCHEDULÉ FOR EACH BUILDING IF PROVIDED. IF NO SCHEDULE, PROVIDE (1) 2X_ BEARING AND (1) 2X_ FULL HEIGHT STUD MINIMUM.
- EXPOSED FRAMING SHALL BE PRESSURE TREATED (P.T.) VERTICAL & HORIZONTAL FRAMING @ WATERPROOFED WALKWAYS AND PRIVATE DECKS. ALL EXPOSED BEAM HANGERS SHALL BE POST HOT-DIPPED GALVANIZED AND HAVE CONCEALED FLANGES, VERIFY W/ ARCHITECT. SEE NOTE ON SHEET S1.0
- 3. FOR TYPICAL HOLDOWN ASSEMBLIES SEE THE HOLDOWN TABLE ON 2/S1.2 AND DETAILS ON SHEET S3.0.
- E. SEE ARCHITECTURAL PLANS FOR STAIR FRAMING DETAILS & STAIR FRAMING DETAILS AND NOTES, CONTROL JOINTS IN CONCRETE FLOORING AND ROOF VENTILATION REQUIREMENTS AND DETAILS.
- 15. SEE CIVIL AND ARCHITECTURAL PLANS FOR TOP OF WALL HEIGHTS AND ELEVATIONS. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE DIMENSIONS ARE SHOWN ON THE STRUCTURAL PLANS, CONTRACTOR SHALL VERIFY COMPATIBILITY W/ ARCHITECTURAL PLANS. WHERE DISCREPANCY EXISTS, CONTRACTOR SHALL NOTIFY BOTH THE ENGINEER AND ARCHITECT FOR
- WINDOW SUPPLIER TO VERIFY THAT WINDOW AND WINDOW FRAMES TRANSFER WIND LOADS EVENLY TO STRUCTURAL FRAMING ON ALL 4 SIDES OF WINDOW. PLANE OF ALL WINDOWS AND ALLOW FOR L/240 DEFLECTION (PERPENDICULAR) AT WINDOW MULLIONS.

17. SEE GENERAL STRUCTURAL NOTES ON S1.0 TO S1.3 FOR ADDITIONAL INFORMATION

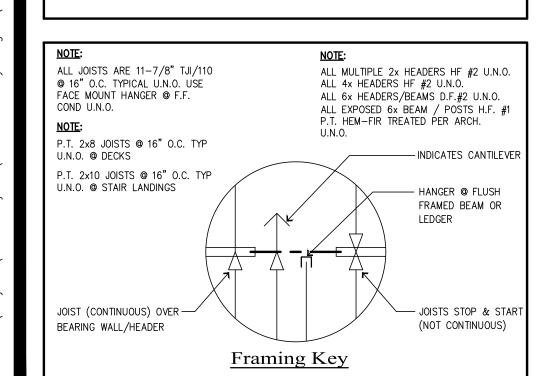


WITH FIXTURE LOCATIONS TO AVOID PLUMBING &

INDICATES ROOF OVERFRAMING - SEE DETAILS 5/S5.0

FRAMING CONFLICTS.

- PROVIDE WALL FIREBLOCKING @ DROPPED SOFFITS SHOWN ON ARCH.
- PROVIDE WALL BLOCKING FOR ALL WALL MOUNTED EQUIPMENT (SUCH AS TOWEL
- BARS, GRAB BARS, TOILET PAPER HOLDERS, DOOR STOPS, ETC.). 22. LFA INDICATES - LOAD FROM ABOVE
- 23. FF INDICATES FLUSH FRAMED BEAM
- INDICATES STRAP HOLDOWN, SEE SHEET 2/S1.2 FOR HOLDOWN TABLE % & UPPER TO LOWER WALL STRAP/HOLDOWN KEY.
- 25. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FLOOR ELEVATIONS.
- . SIMPSON STRONG TIE PRODUCTS ARE CALLED OUT ON THE DRAWINGS. HOWEVER, EITHER SIMPSON OR KC METALS PRODUCTS MAY BE USED PROVIDED IT HAS



SEE SHEET S1.2 FOR SHEARWALL AND HOLDOWN TABLES

Beam Schedule						
MARK	BEAM SIZE					
B1	4x8					
B2	4x10					
В3	6x10 DF #2					
B4	3−1/8 x 10−1/2 GLB					
B5	P.T. 4x8					
В6	P.T. 4x10					
B7	P.T. 6x10 HF#1					
B8	P.T. 3-1/8 x 10-1/2 GLB					
В9	P.T. 5−1/8 x 10−1/2 GLB					
B10	5-1/4x11-7/8 PSL					
B11	3-1/2x11-7/8 LSL					

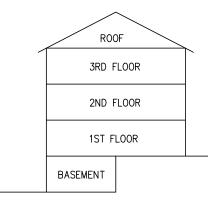
	J	amb	Stuc	l Sch	edul	e		
TYPE	C1	C2	C3	C4	C5	C6	-	_
BEARING/FULL HT STUDS	1/2	1/3	2/1	2/2	2/3	2/4	_	_

NOTE: STUD SIZE SHOULD MATCH WALL SIZE PER PLAN.

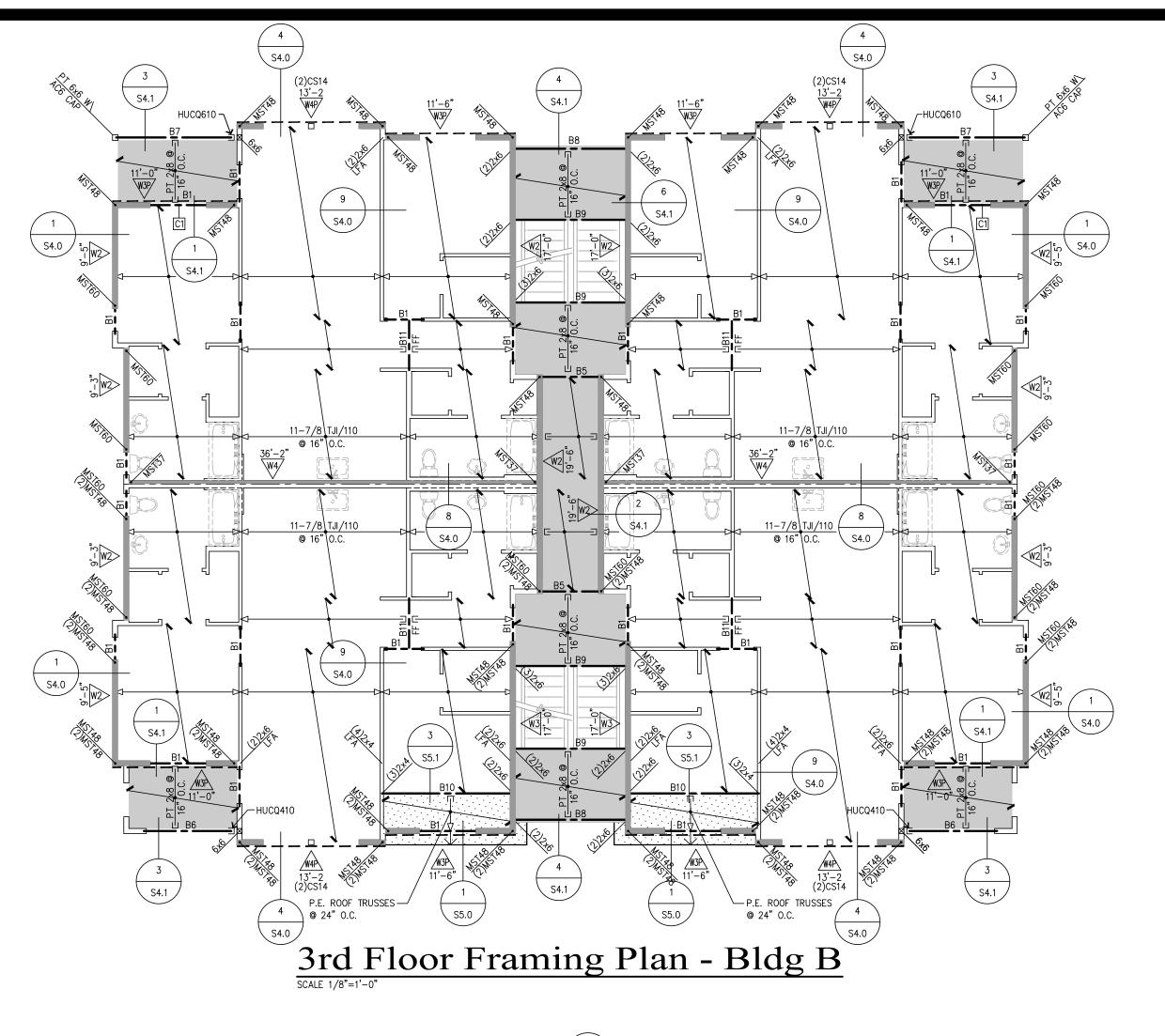
HORIZONTALLY FOR THE WALL LOCATION.

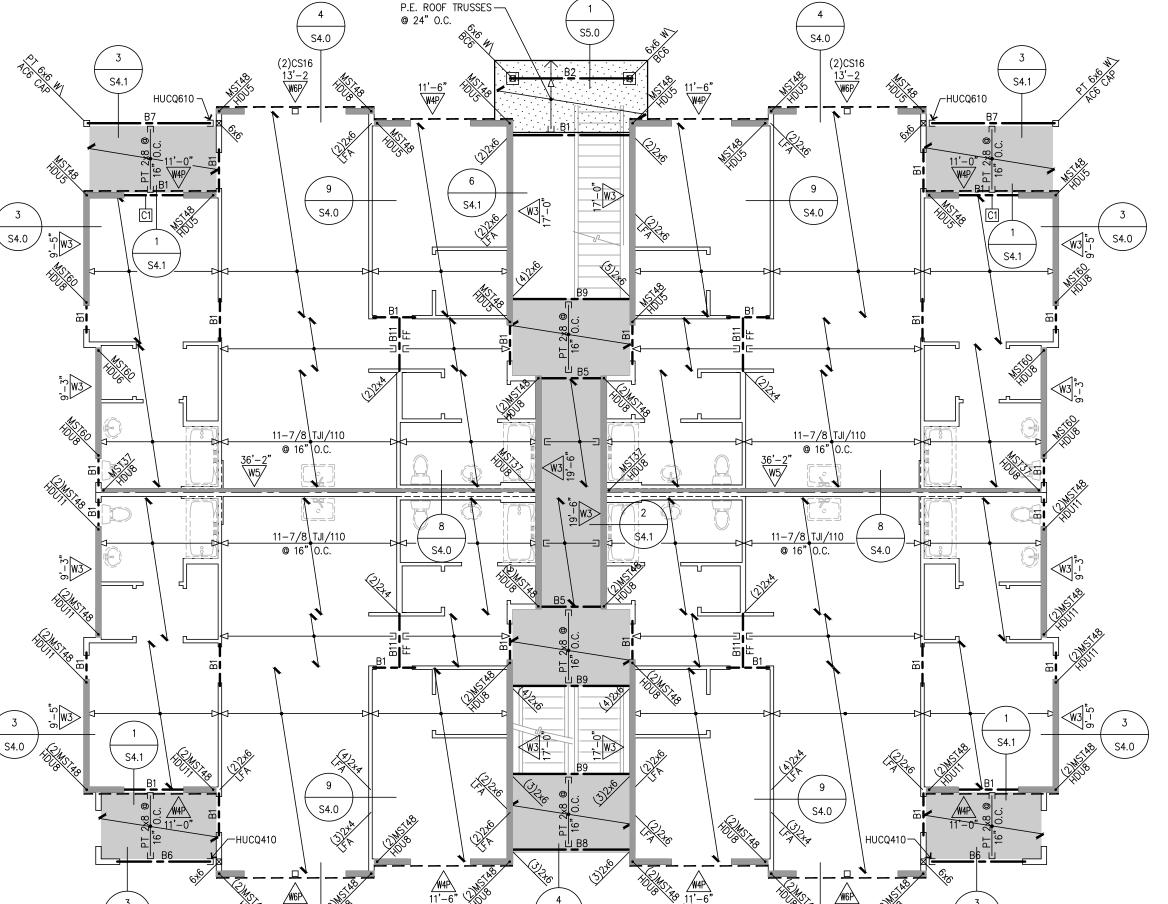
	Wall Stud Schedule									
FRAMING LEVEL	2x6 EXTERIOR	2x6 BRG INT @ SINGLE WALL	2x6 BRG INT @ PARTY WALLS	2x4 BRG © SINGLE WALL	2x4 BRG @ PARTY WALLS					
ROOF	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" 0.0					
3RD	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" 0.0					
2ND	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	(2)2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.0					
BASEMENT	2x6 @ 16" O.C.	2x6 @ 12" O.C.	2x6 @ 16" O.C.	(2)2x4 HF#2 @ 12" O.C.	2x4 HF#2 @ 16" 0.0					

ALL STUD MATERIAL SHALL BE HEM FIR STUD GRADE OR BETTER UNLESS NOTED OTHERWISE AND PLATE MATERIAL SHALL BE HEM FIR STANDARD OR BETTER UNLESS NOTED OTHERWISE. THAT IS WALLS BELOW THE FRAMING LEVEL SHOWN. THIS SCHEDULE COVERS BUILDING UNITS 3 STORIES IN HEIGHT. FIRST, DETERMINE THE NUMBER OF STORIES FOR THE UNIT, SECOND, DETERMINE THE FRAMING LEVEL, THIRD, READ SCHEDULE



3/4 Bldg Split Key

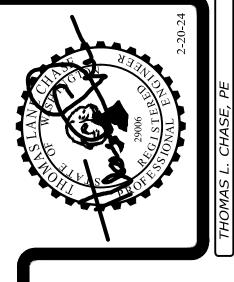




2nd Floor Framing Plan - Bldg B

SCALE 1/8"=1'-0"

\ S4.0 /



SUBMITTAL SET ONLY NOT FOR CONSTRUCTION THESE DRAWINGS ARE SUBJECT TO REVISIONS

PENDING LOCAL JURISDICTIONAL REVIEW.

- FOR ALL UNITS TYPES SEE WALL STUD SCHEDULE FOR BEARING WALL STUD REQUIREMENTS. ALL OTHER NON-BEARING 2x4 & 2x6 WALLS ARE AT 16" O.C.
- THE TRUSS AND JOIST MANUFACTURER SHALL VERIFY BEARING COMPATIBILITY (CRUSHING) WITH THE PLATE MATERIAL. TYPICALLY, COMPOSITE BEAMS SHALL BE FULLY BEARING ON 2x_ WALLS. I.E. BREAK RIM OR BLOCKING TO ALLOW FULL BEARING OVER PLATES.
- PLACE LONG DIRECTION OF ALL OSB SHEETS PERPENDICULAR TO TRUSS/RAFTER OR JOIST DIRECTION, SEE DETAIL 3/S1.2. FLOOR SHEATHING IS TO BE CONTINUOUS FROM UNIT TO UNIT. TYPICAL NAILING AT FLOOR AND ROOF DIAPHRAGMS IS PROVIDED IN THE GENERAL STRUCTURAL NOTES ON SHEETS \$1.0
- /W-\DENOTES THE SHEARWALL TYPE, SEE THE SHEARWALL TABLE ON SHEET S1.2 INDICATES SHEARWALL LOCATION, THE CALLOUTS ON THE SHEARWALL TABLE APPLY ONLY ALONG THE LENGTH OF WALL SHOWN SHADED. PROVIDE SOLID BLOCKING IN FLOOR SPACE BELOW PERPENDICULAR SHEARWALLS. <u>/W_P</u>\ INDICATES SHEAR WALL TYPE WITH OPENINGS. PROVIDE SHEATHING
- AROUND ALL OPENINGS AND ABOVE AND BELOW ALL OPENINGS. PROVIDE HORIZONTAL STRAPS & NAILING AT OPENINGS PER 8/S1.2
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- TYPICAL FLOOR JOISTS SHALL BE 11-7/8" TJI/110 @ 16" O.C. TYP U.N.O. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ALL JOIST AND BEAM HANGERS, WEB STIFFENERS, SOLID BLOCKING, AND ADDITIONAL RIM OR JOIST MATERIAL TO ACCOMMODATE FLUSH-FRAMED CONDITIONS (F.F.), CANTILEVERED CONDITIONS, CONCENTRATED BEARING LOADS AND NAILING FROM SHEARWALLS ABOVE AND
- 9. F.F. = FLUSH-FRAMED BEAM. VERIFY FLUSH OR DROPPED BEAM CONDITION
- 10. ALL BEAMS PER SCHEDULE U.N.O. ALL NON BEARING BEAMS SHALL BE A MIN OF (2)2x8 U.N.O. ALL OTHER BEAMS ARE AS MARKED ON PLANS.
- 1. AT ALL BEAM BEARING/JAMB LOCATIONS, AT MINIMUM PROVIDE BEARING (TRIMMER) STUDS AND FULL HEIGHT (KING) STUDS PER THE JAMB STUD SCHEDULÉ FOR EACH BUILDING IF PRÒVIDED. IF NO SCHEDULE, PROVIDE (1) 2X_ BEARING AND (1) 2X_ FULL HEIGHT STUD MINIMUM.
- EXPOSED FRAMING SHALL BE PRESSURE TREATED (P.T.) VERTICAL & HORIZONTAL FRAMING @ WATERPROOFED WALKWAYS AND PRIVATE DECKS. ALL EXPOSED BEAM HANGERS SHALL BE POST HOT-DIPPED GALVANIZED AND HAVE CONCEALED FLANGES, VERIFY W/ ARCHITECT. SEE NOTE ON SHEET S1.0
- 3. FOR TYPICAL HOLDOWN ASSEMBLIES SEE THE HOLDOWN TABLE ON 2/S1.2 AND DETAILS ON SHEET S3.0.
- E. SEE ARCHITECTURAL PLANS FOR STAIR FRAMING DETAILS & STAIR FRAMING DETAILS AND NOTES, CONTROL JOINTS IN CONCRETE FLOORING AND ROOF VENTILATION REQUIREMENTS AND DETAILS.
- 15. SEE CIVIL AND ARCHITECTURAL PLANS FOR TOP OF WALL HEIGHTS AND ELEVATIONS. SEE ARCHITECTURAL PLANS FOR DIMENSIONS. WHERE DIMENSIONS ARE SHOWN ON THE STRUCTURAL PLANS, CONTRACTOR SHALL VERIFY COMPATIBILITY W/ ARCHITECTURAL PLANS. WHERE DISCREPANCY EXISTS, CONTRACTOR SHALL NOTIFY BOTH THE ENGINEER AND ARCHITECT FOR
- WINDOW SUPPLIER TO VERIFY THAT WINDOW AND WINDOW FRAMES TRANSFER WIND LOADS EVENLY TO STRUCTURAL FRAMING ON ALL 4 SIDES OF WINDOW. WINDOW SUPPLIER TO VERIFY MINIMUM .005*H STORY DRIFT TOLERANCE IN PLANE OF ALL WINDOWS AND ALLOW FOR L/240 DEFLECTION (PERPENDICULAR) AT WINDOW MULLIONS.

17. SEE GENERAL STRUCTURAL NOTES ON S1.0 TO S1.3 FOR ADDITIONAL INFORMATION 18. LEGEN

END:	
	INDICATES BEAM / GIRDER TRUSS PER PLAN SEE FRAMING PLANS
<u> </u>	INDICATES HANGER PER MANUFACTURER
GT	INDICATES GIRDER TRUSS PER PLAN
 	INDICATES JOIST / TRUSS BEARING @ WALL / BEAM
	INDICATES JOIST / TRUSS INTERMEDIATE BEARING WALL / BEAM
	INDICATES TYPICAL TOILET, BATHTUB & SHOWER

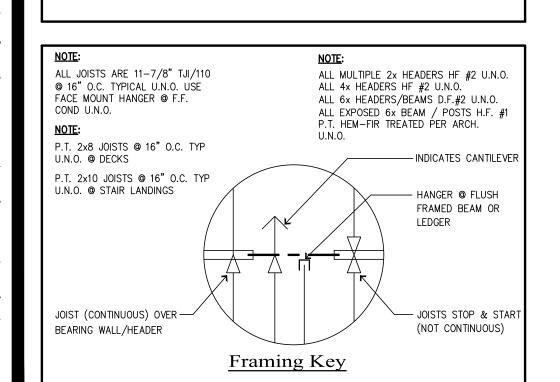
WITH FIXTURE LOCATIONS TO AVOID PLUMBING & FRAMING CONFLICTS.

LAYOUT. CONTRACTOR TO COORDINATE JOIST LAYOUT

- INDICATES ROOF OVERFRAMING SEE DETAILS 5/S5.0 PROVIDE WALL FIREBLOCKING @ DROPPED SOFFITS SHOWN ON ARCH.
- PROVIDE WALL BLOCKING FOR ALL WALL MOUNTED EQUIPMENT (SUCH AS TOWEL
- BARS, GRAB BARS, TOILET PAPER HOLDERS, DOOR STOPS, ETC.).
- 22. LFA INDICATES LOAD FROM ABOVE

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- INDICATES STRAP HOLDOWN, SEE SHEET 2/S1.2 FOR HOLDOWN TABLE
- & UPPER TO LOWER WALL STRAP/HOLDOWN KEY. 25. REFER TO ARCHITECTURAL DRAWINGS FOR ALL FLOOR ELEVATIONS.
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SEE SHEET S1.2 FOR SHEARWALL AND HOLDOWN TABLES

	Beam Schedule							
MARK	BEAM SIZE							
B1	4x8							
B2	4x10							
В3	6x10 DF #2							
B4	3-1/8 x 10-1/2 GLB							
B5	P.T. 4x8							
В6	P.T. 4x10							
В7	P.T. 6x10 HF#1							
B8	P.T. 3-1/8 x 10-1/2 GLB							
В9	P.T. 5-1/8 x 10-1/2 GLB							
B10	5-1/4x11-7/8 PSL							
B11	3-1/2x11-7/8 LSL							

Jamb Stud Schedule								
TYPE	C1	C2	C3	C4	C5	C6	_	-
BEARING/FULL HT STUDS	1/2	1/3	2/1	2/2	2/3	2/4	-	-

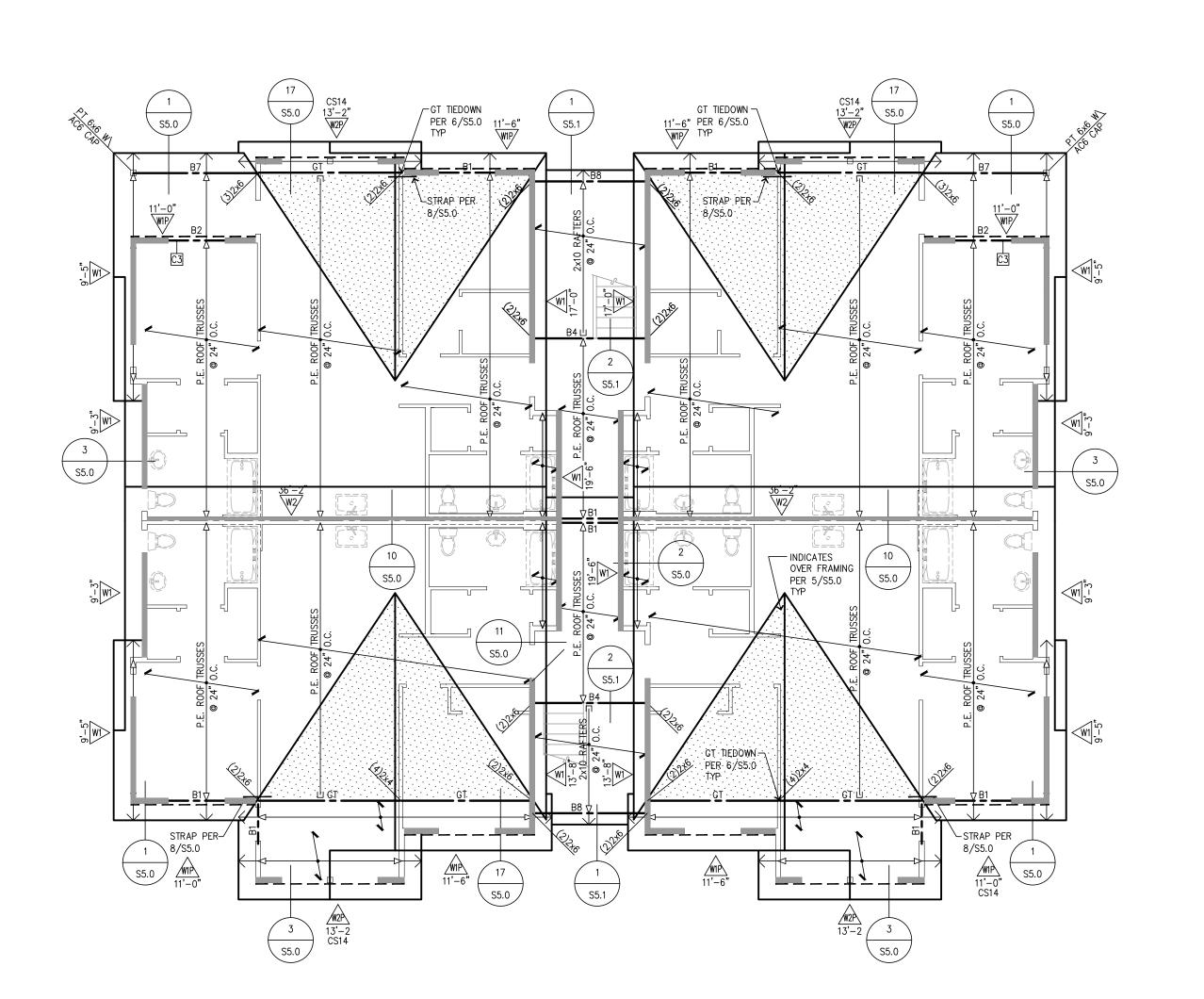
NOTE: STUD SIZE SHOULD MATCH WALL SIZE PER PLAN.

HORIZONTALLY FOR THE WALL LOCATION.

Wall Stud Schedule									
FRAMING LEVEL	2x6 EXTERIOR	2x6 BRG INT @ SINGLE WALL	2x6 BRG INT @ PARTY WALLS	2x4 BRG © Single Wall	2x4 BRG @ PARTY WALLS				
R00F	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.C				
3RD	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x6 @ 16" O.C.	2x4 HF#2 @ 16" O.C.	2x4 HF#2 @ 16" O.C				
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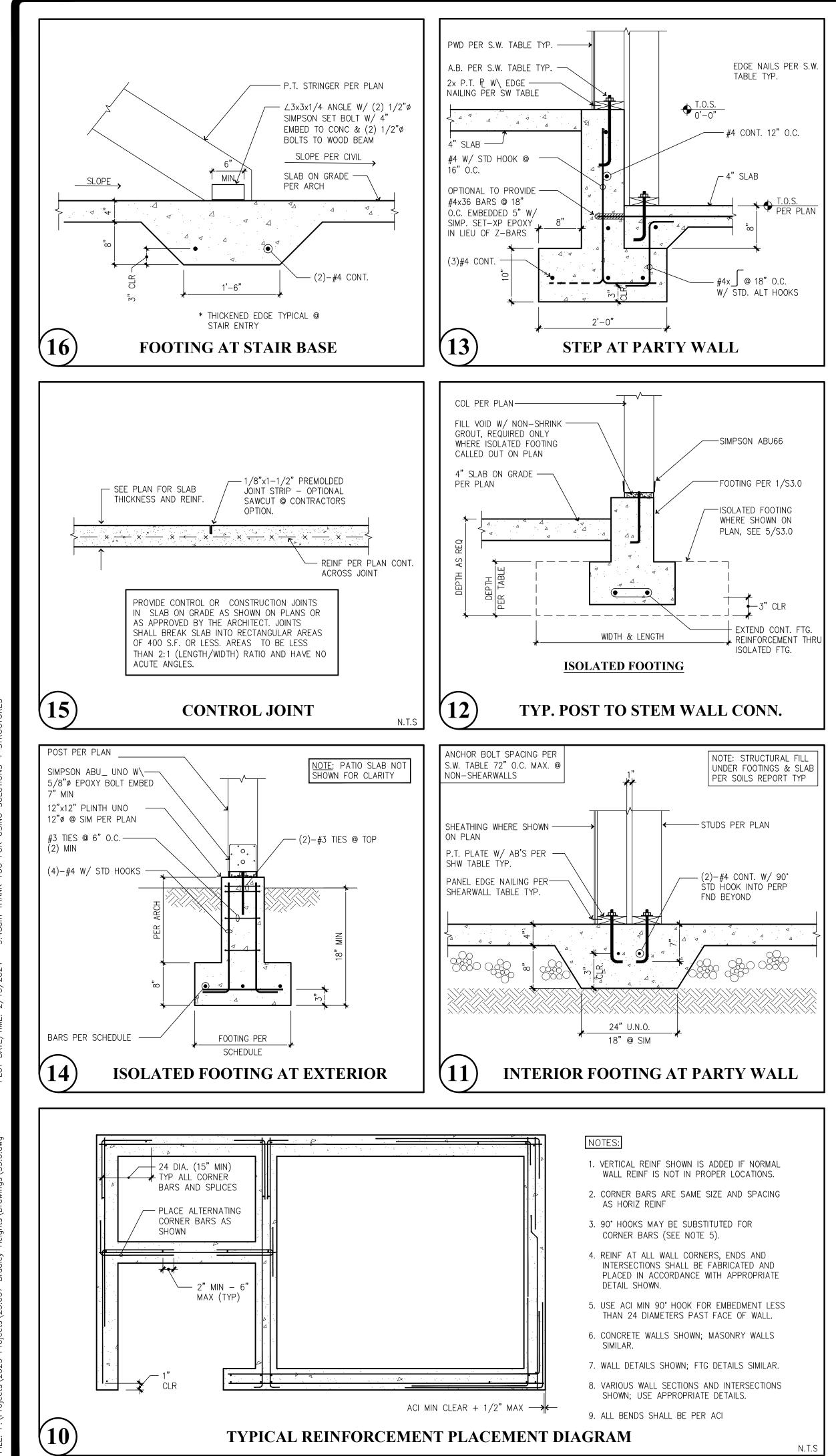
STORIES FOR THE UNIT, SECOND, DETERMINE THE FRAMING LEVEL, THIRD, READ SCHEDULE

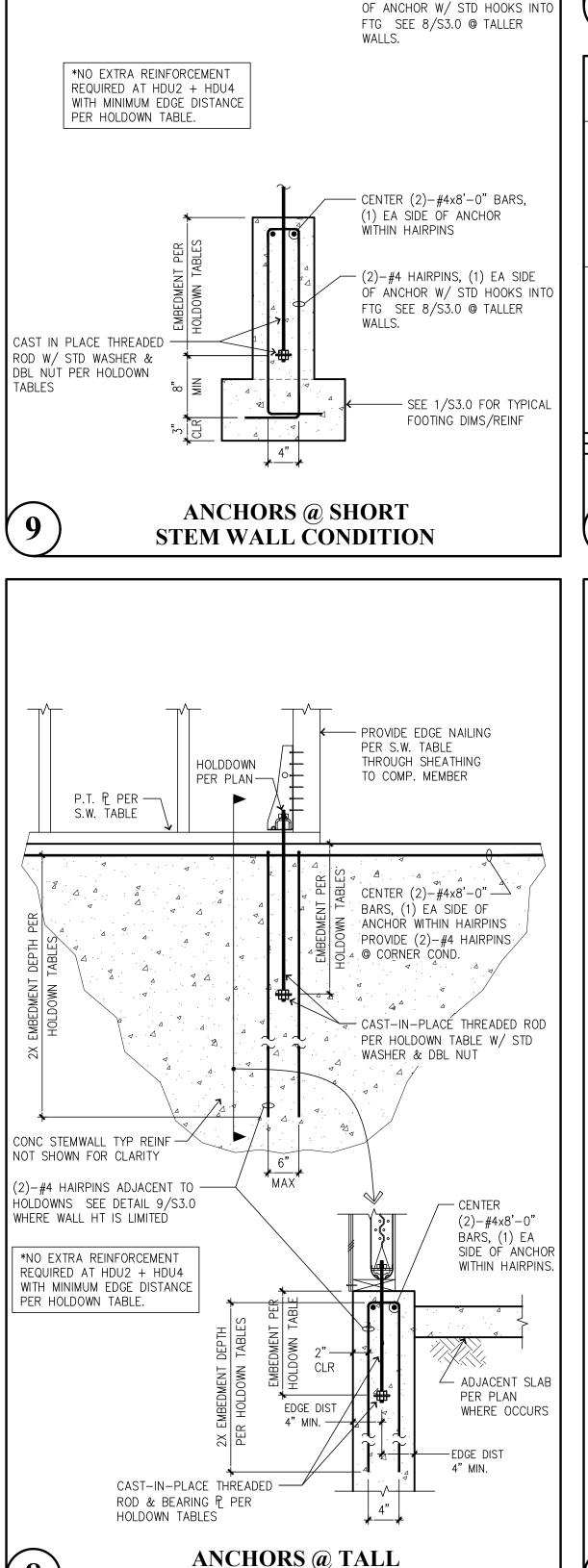


Roof Framing Plan - Bldg B

SCALE 1/8"=1'-0"

SUBMITTAL SET ONLY NOT FOR CONSTRUCTION THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW.





STEMWALL CONDITION

CAST IN PLACE THREADED $-\!-\!$

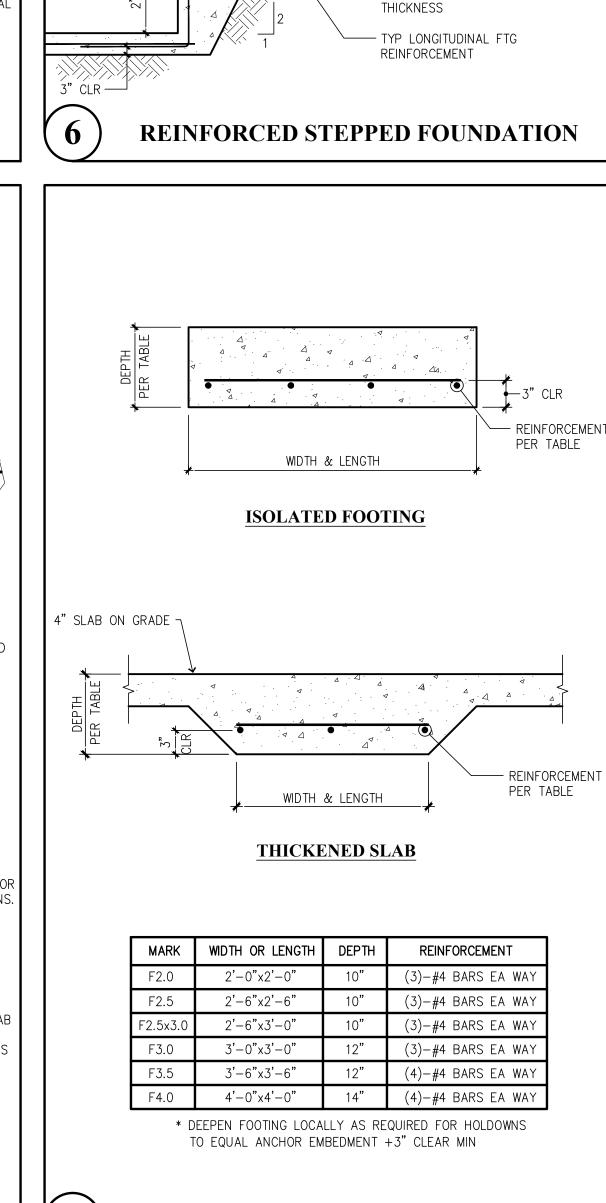
ROD W/ STD WASHER & DBL

NUT PÉR HOLDOWN TABLE

SEE 1/S3.0 -

FOR TYP FTG

DIMS/REINF



FOOTING SCHEDULE

STUDS PER PLAN ----

OSB/PWD PER S.W. TABLE -

EDGE NAILS PER S.W. TABLE -

CENTER (2)-#4x8'-0" BARS,—

I) EA SIDE OF ANCHOR

#4 STIRRUP x 📙 3" EA

STD WASHER & DBL NUT -

(NOT SHOWN FOR CLARITY)

STEMWALL W/ VERT REINF PER DETAILS —

SIDE OF HOLDOWN

WITHIN HAIRPINS

— CENTER (2)-#4x8'-0"

BARS, (1) EA SIDE OF

- STEP FOOTING DOWN @

HOLDOWNS PER 6/S3.0

DIMS NOTED

WHERE REQ'D TO MAINTAIN

(2)-#4 HAIRPINS, (1) EA SIDE

ANCHOR WITHIN HAIRPINS

----- HOLDOWN PER TABLE

P.T. 2x P PER S.W. TABLE

PER HOLDOWN TABLES

DEEPEN FOOTINGS

MATCH WIDTH OF

SHEARWALL FOOTING

4'-0" MIN

- FOOTING —

TOP OF FOOTING -

HOLDOWNS @ THICKENED

SLAB FOOTINGS

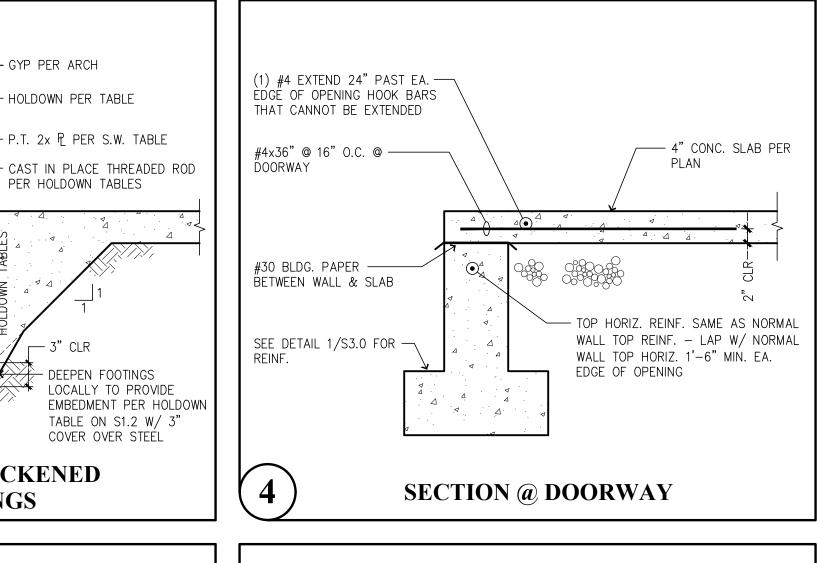
LOCALLY TO PROVIDE

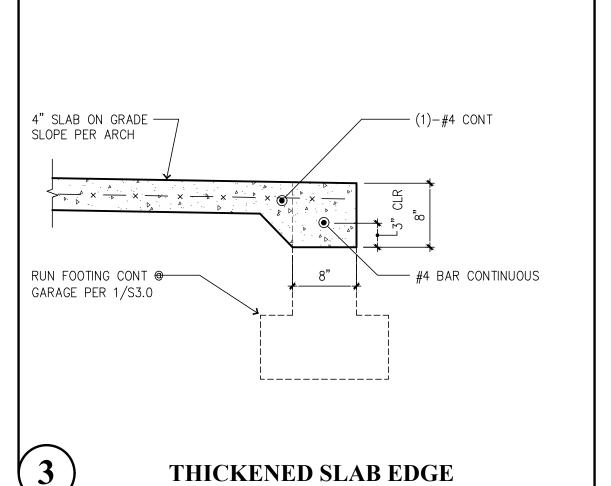
COVER OVER STEEL

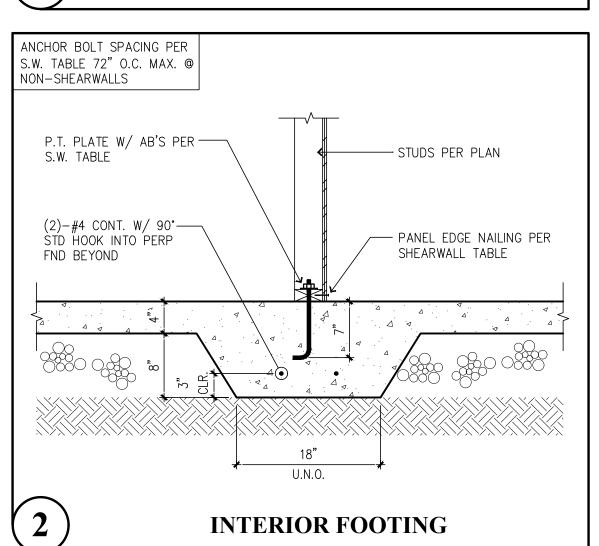
24" LAP

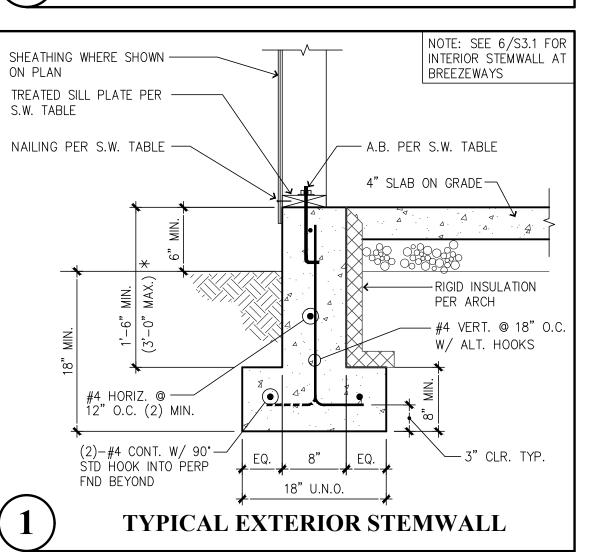
TYP @ STEP

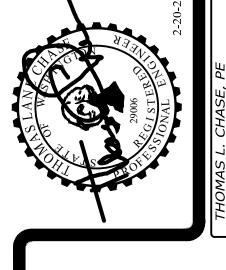
UNDISTURBE











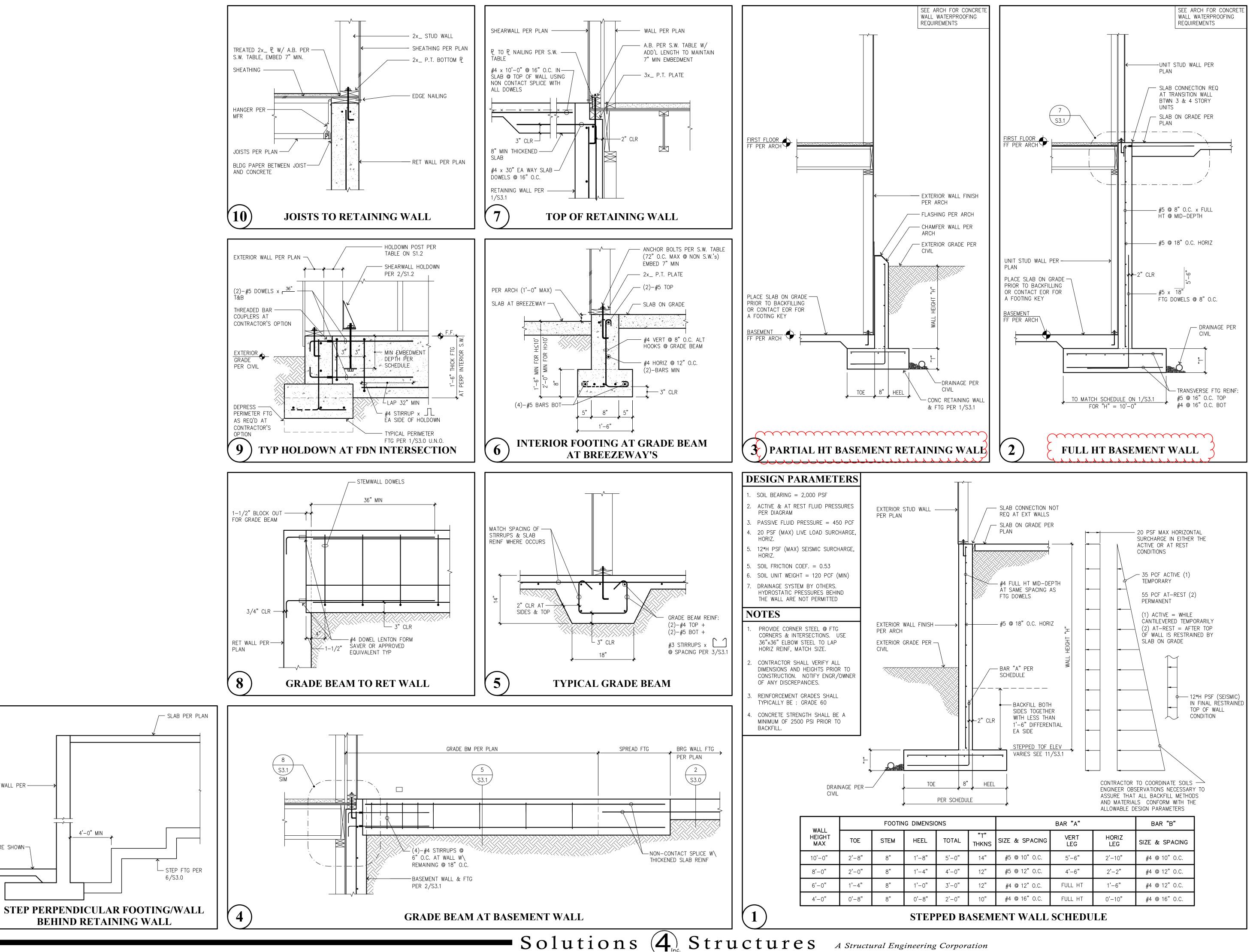
Heights
202 27th Av

 $\overline{}$

RSO

SUBMITTAL SET ONLY NOT FOR CONSTRUCTION THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW.

Solutions (4). Structures A Structural Engineering Corporation



RETAINING WALL PER ---

SLAB WHERE SHOWN -

ON PLAN

4'-0" MIN

BEHIND RETAINING WALL

SUBMITTAL SET ONLY NOT FOR

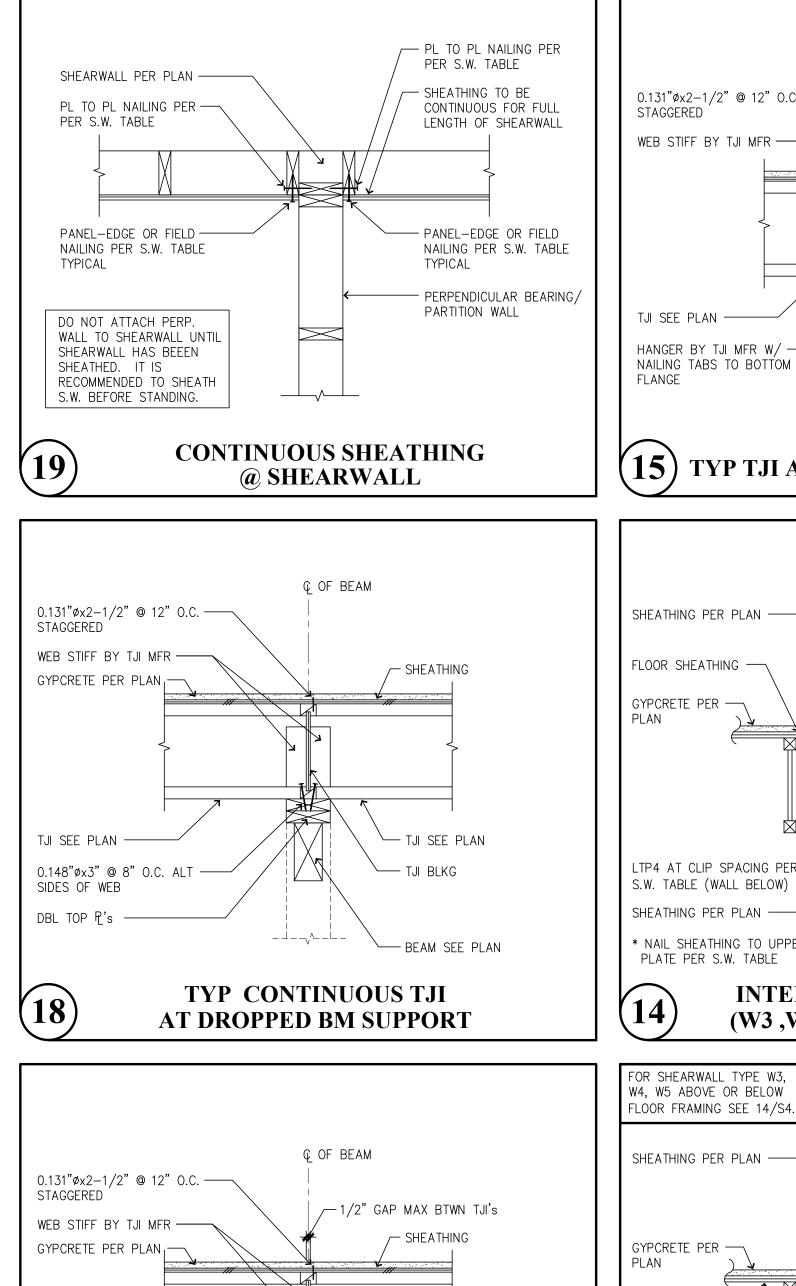
THESE DRAWINGS ARE SUBJECT TO REVISIONS

PENDING LOCAL JURISDICTIONAL REVIEW.

CONSTRUCTION

RSO

0 1



— TJI SEE PLAN

- BEAM SEE PLAN

— TJI BLKG

TYP NON CONTINUOUS TJI

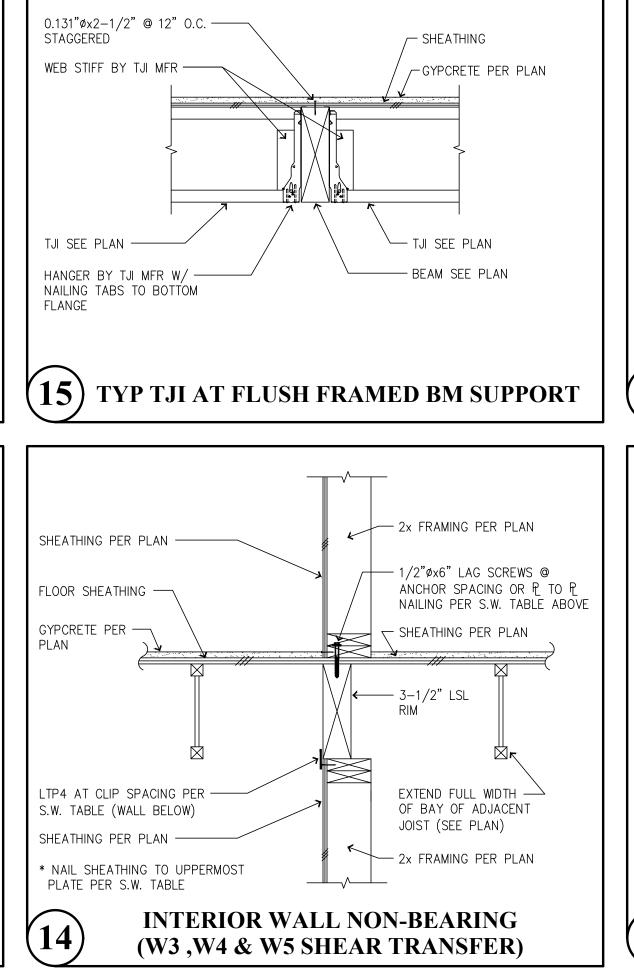
AT DROPPED BM SUPPORT

TJI SEE PLAN -

SIDES OF WEB

(17)

0.148"øx3" @ 8" 0.C. ALT



TYP BEAM AT INTERIOR ONE SIDE

— PANEL EDGE NAILING

GYPCRETE PER PLAN

- JOISTS PER PLAN

JOISTS HANGER

— 2x FRAMING PER PLAN

— ₱ TO ₱ NAILING PER

S.W. TABLE

← 1-3/4" LSL RIM

TYP INTERIOR WALL NON-BEARING

(W1, W2 SHEAR TRANSFER)

— SIMPSON A35

PER S.W. TABLE

(WALL BELOW)

EXTEND FULL WIDTH —

OF BAY OF ADJACENT

— 2x FRAMING PER PLAN

JOIST (SEE PLAN)

FLOOR SHEATHING -

PLATE PER S.W. TABLE

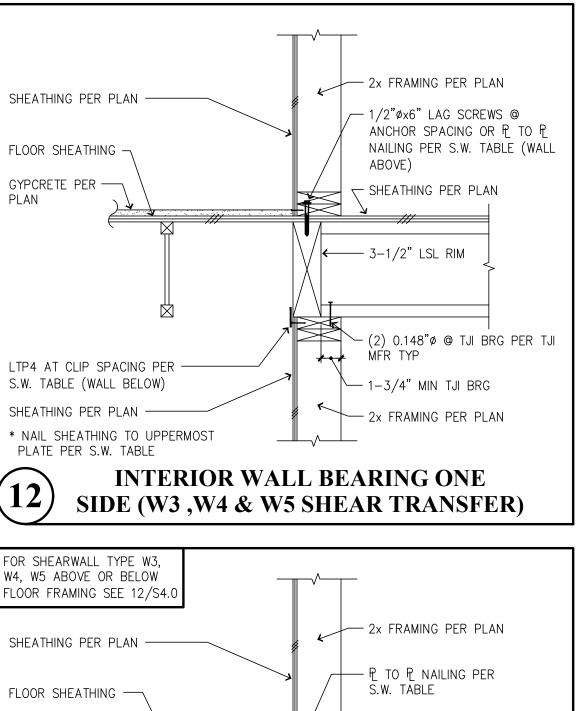
SHEATHING PER PLAN —

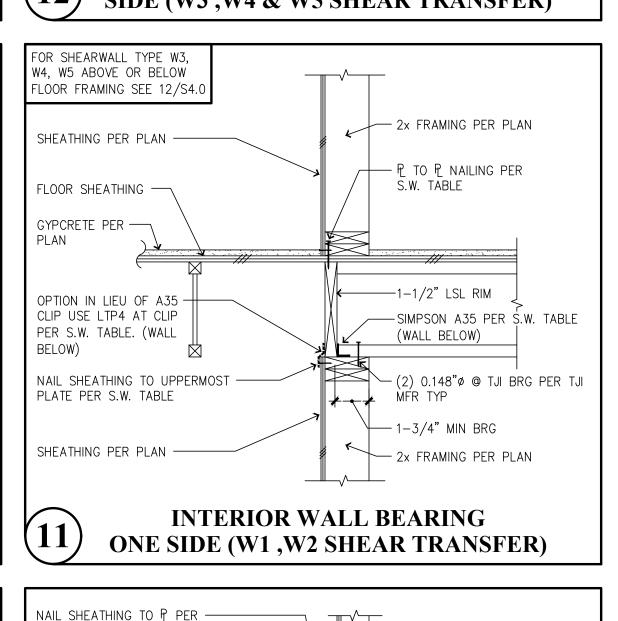
NAIL SHEATHING TO UPPERMOST —

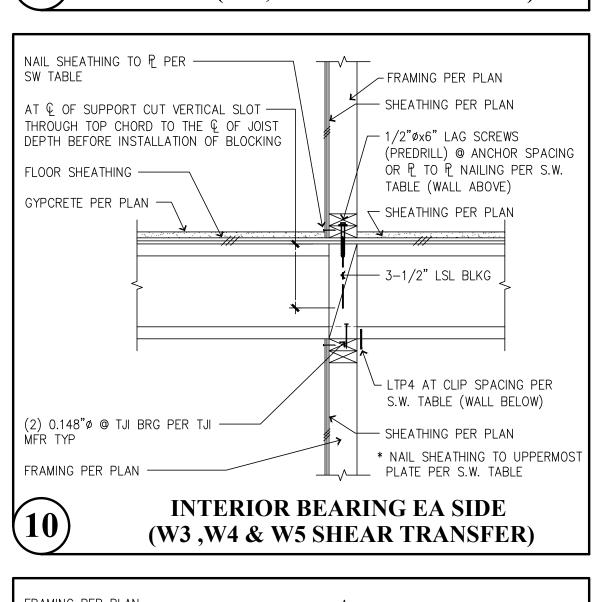
SHEATHING PER PLAN ---

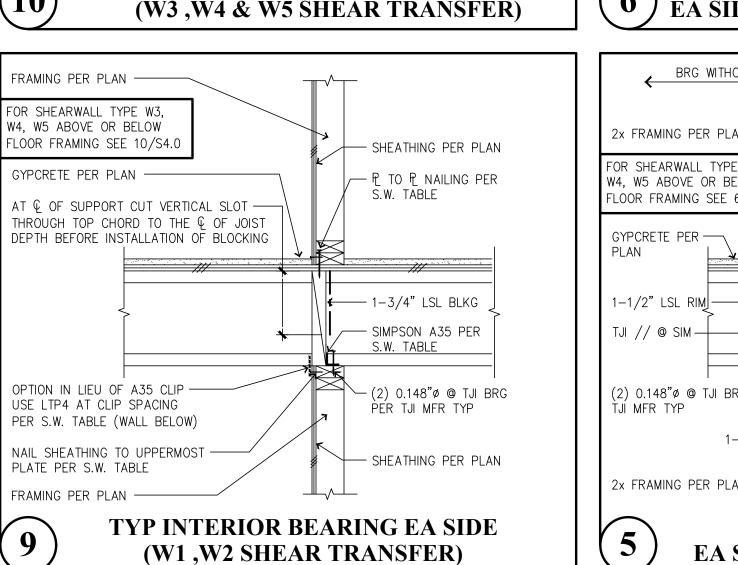
JOISTS PER PLAN -

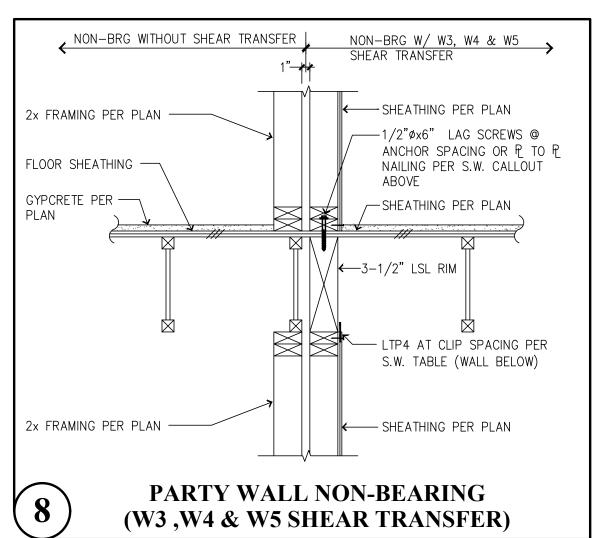
BEAM PER PLAN

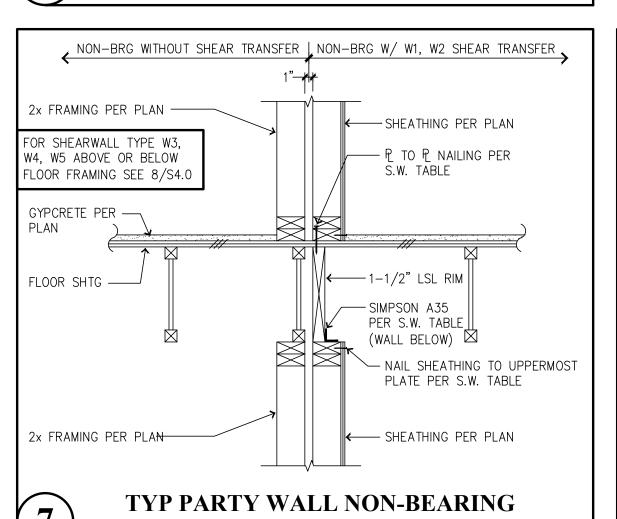


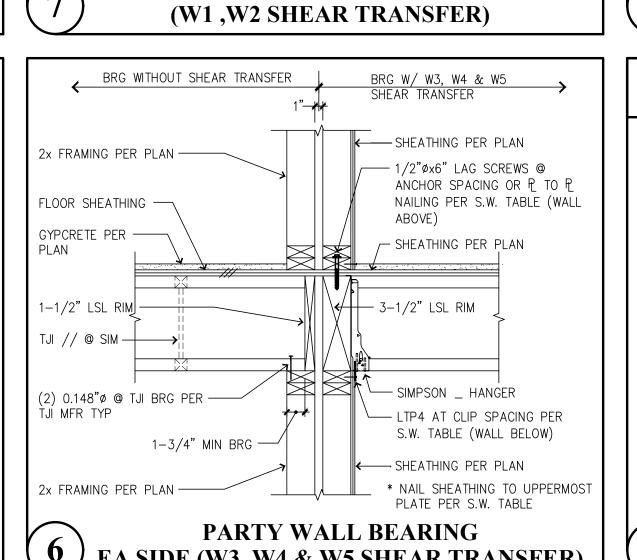


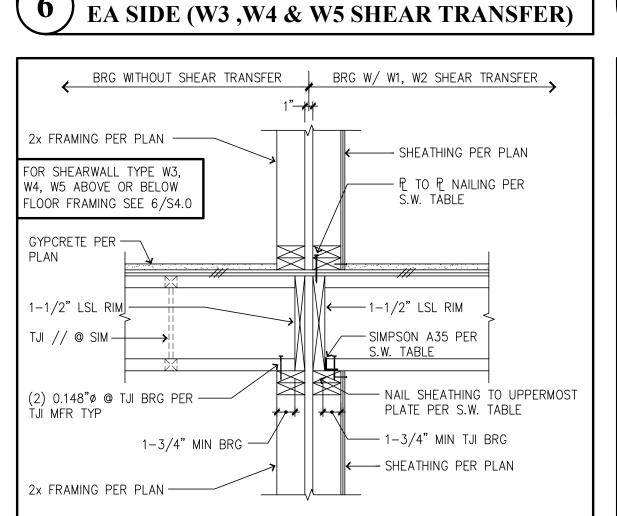


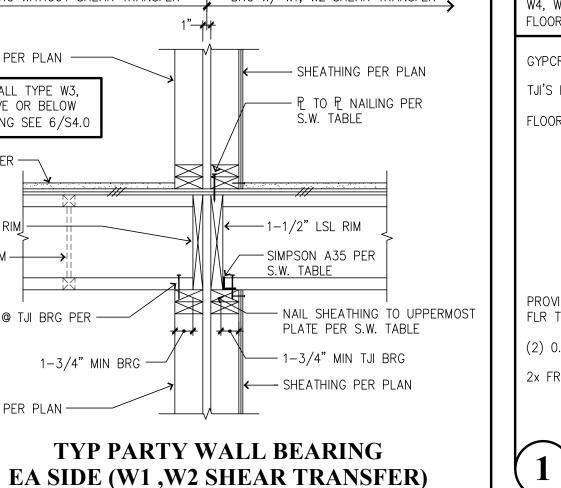


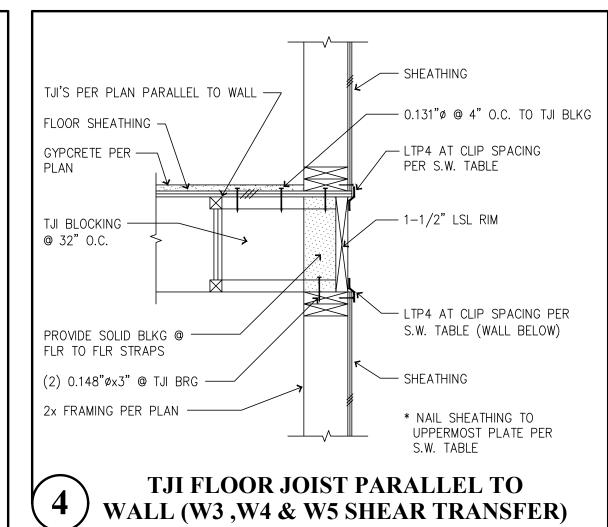


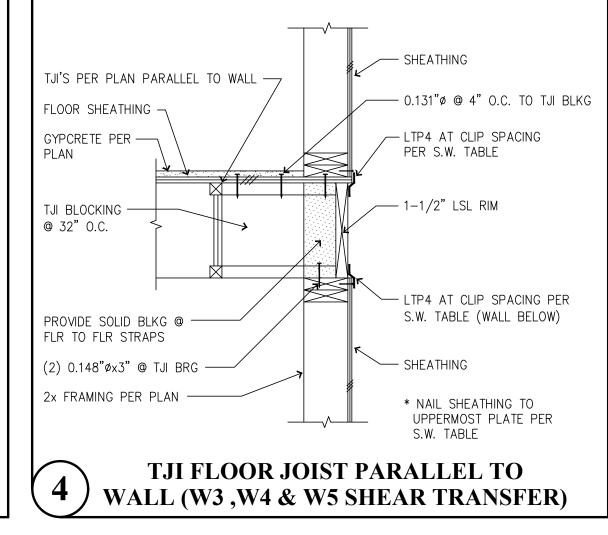


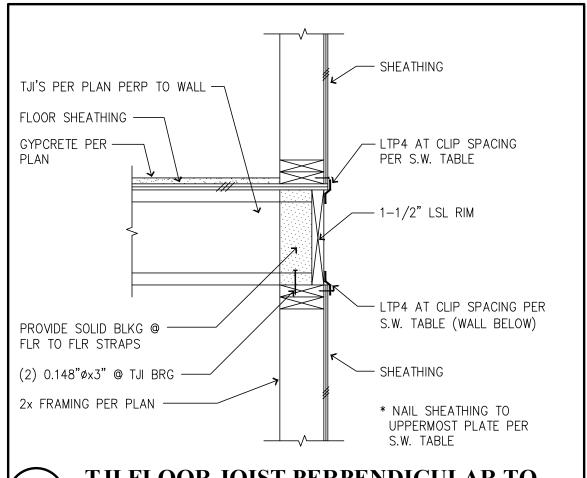




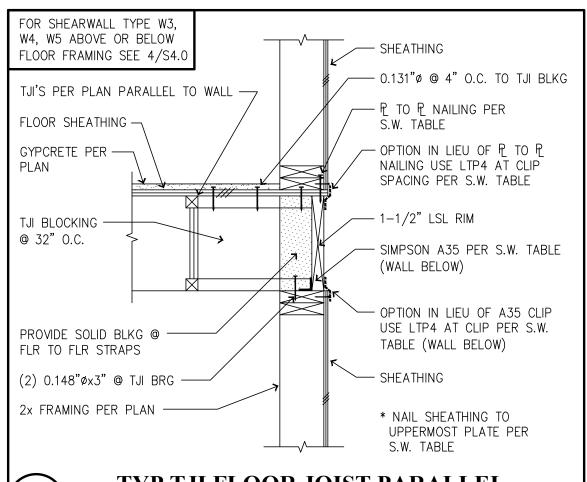




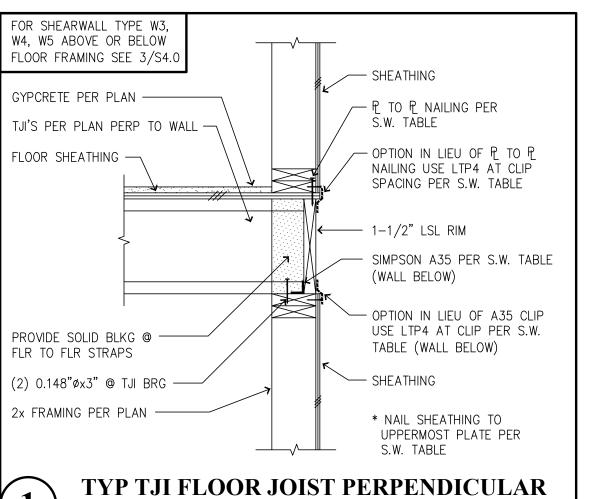




TJI FLOOR JOIST PERPENDICULAR TO WALL (W3, W4 & W5 SHEAR TRANSFER)



TYP TJI FLOOR JOIST PARALLEL TO WALL (W1, W2 SHEAR TRANSFER)



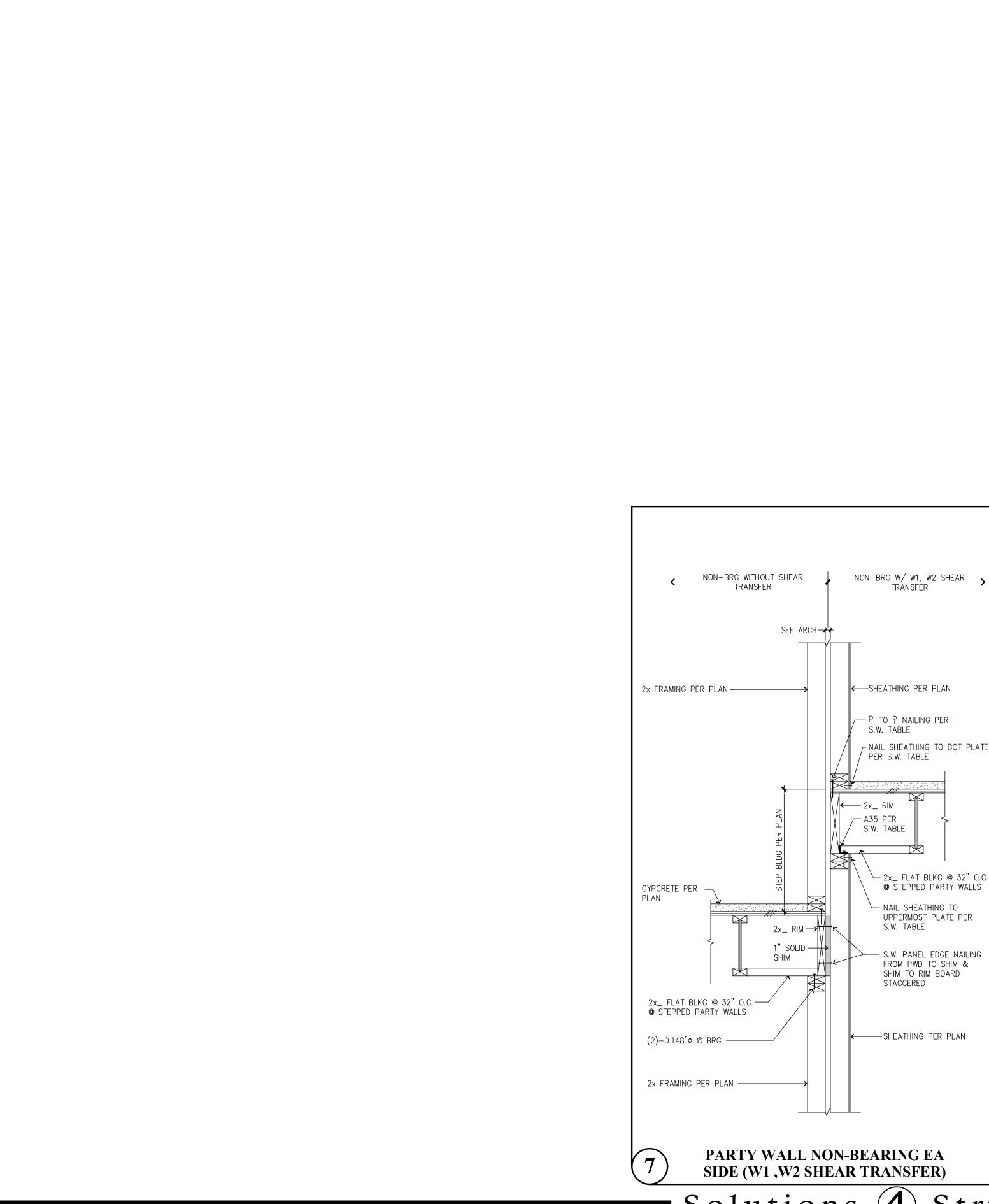
TO WALL (W1, W2 SHEAR TRANSFER)

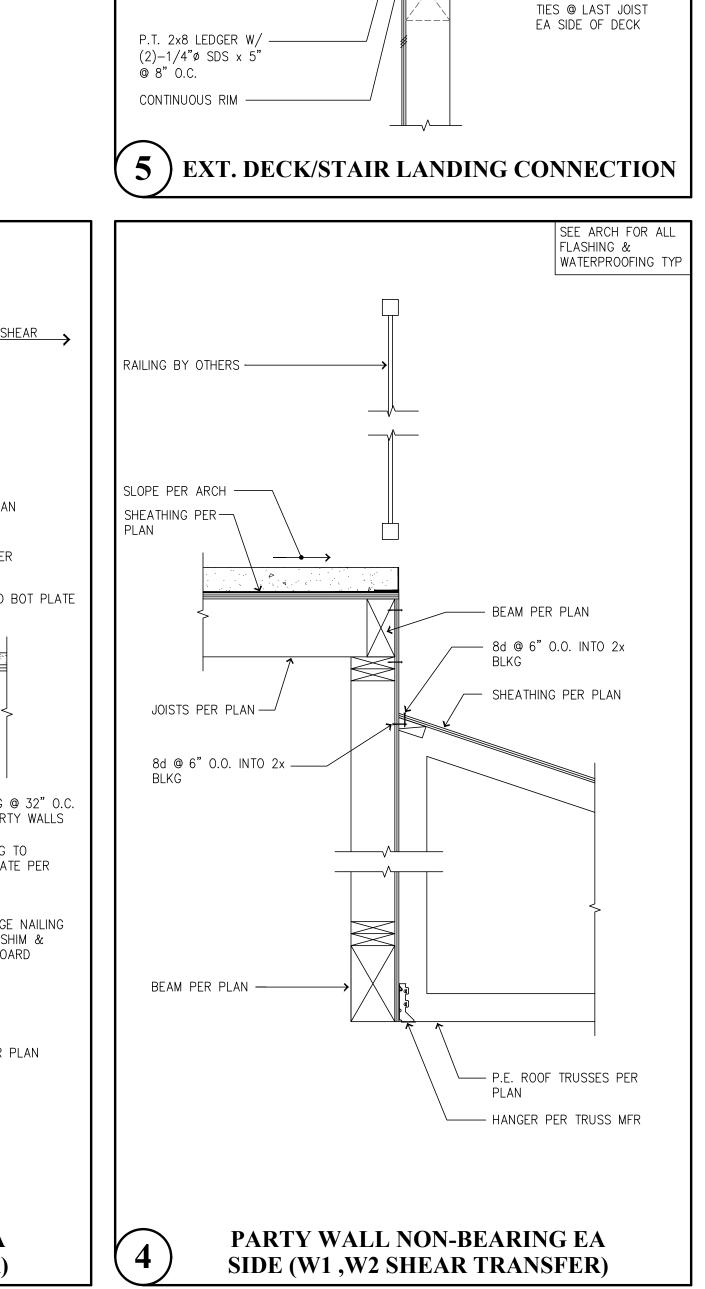
CONSTRUCTION THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW

Solutions (4) Structures A Structural Engineering Corporation

SUBMITTAL SET ONLY NOT FOR

RSO





SEE ARCH FOR MOISTURE BARRIER AT DECK TYP

3" CONC. MAX ─

P.T. 2x10 JOISTS PER PLAN

P.T. 2x10 LEDGER W/

(2)-1/4"øx5" SDS @

CONTINUOUS RIM

8" O.C.

SEE ARCH FOR

MOISTURE BARRIER AT DECK TYP

P.T. 2x8 JOISTS PER —

PLAN

SHEATHING PER

S.W. TABLE —

EDGE NAILING

SHEATHING PER -

EDGE NAILING —

S.W. TABLE

— P TO P NAILING

71 71 71 11 11 11 11 11 11 11

GYPCRETE PER PLAN

-2x BLK'G W/ SDS

SCREWS TIGHT

BETWEEN JOISTS

— JOISTS PER PLAN

FOR DETAILS AND CALLOUTS IN COMMON

FOR DETAILS AND

SEE 1 & 2/S4.0

CALLOUTS IN COMMON

SEE 1 & 2/S4.0

— ₱ TO ₱ NAILING

SHEATHING

PER PLAN ——

71 71 71 11 11 11 11 11 11

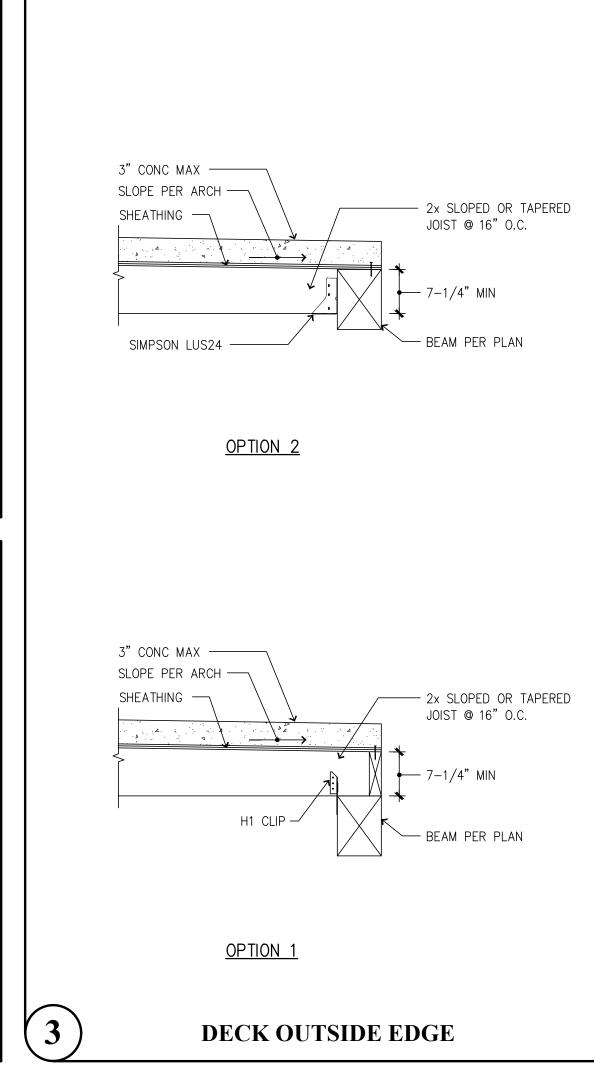
SCREWS TIGHT
BETWEEN JOISTS

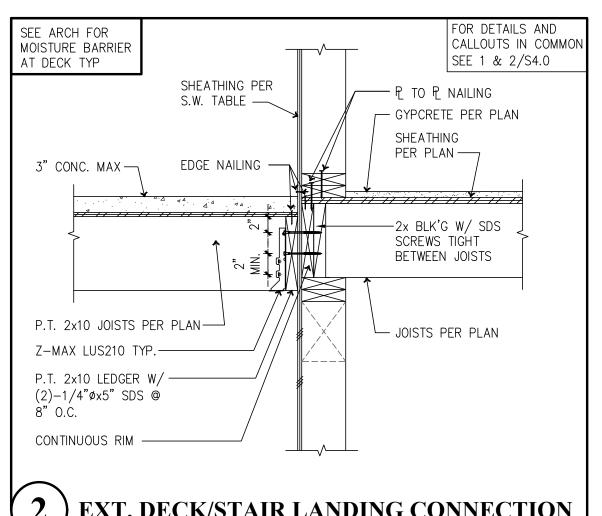
GYPCRETE PER PLAN

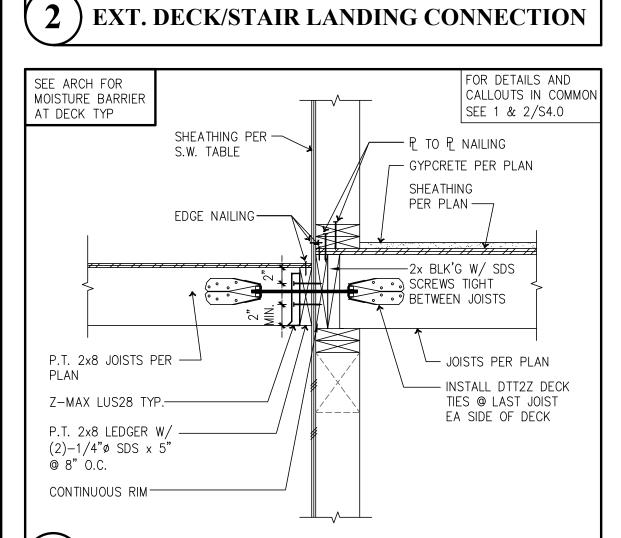
JOISTS PER PLAN

— INSTALL DTT2Z DECK

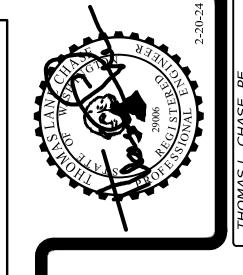
EXT. DECK/STAIR LANDING CONNECTION







EXT. DECK/STAIR LANDING CONNECTION



202 27th Ave SE
Puyallup, Washington

S (4) Structures
Physllup,
Physllup,
Physllup,

01-

PROJECT NO. : 23.007

DESIGNED BY : TLC, OGK, I

DRAWN BY : RSO

ISSUE DATE : 2-20-24

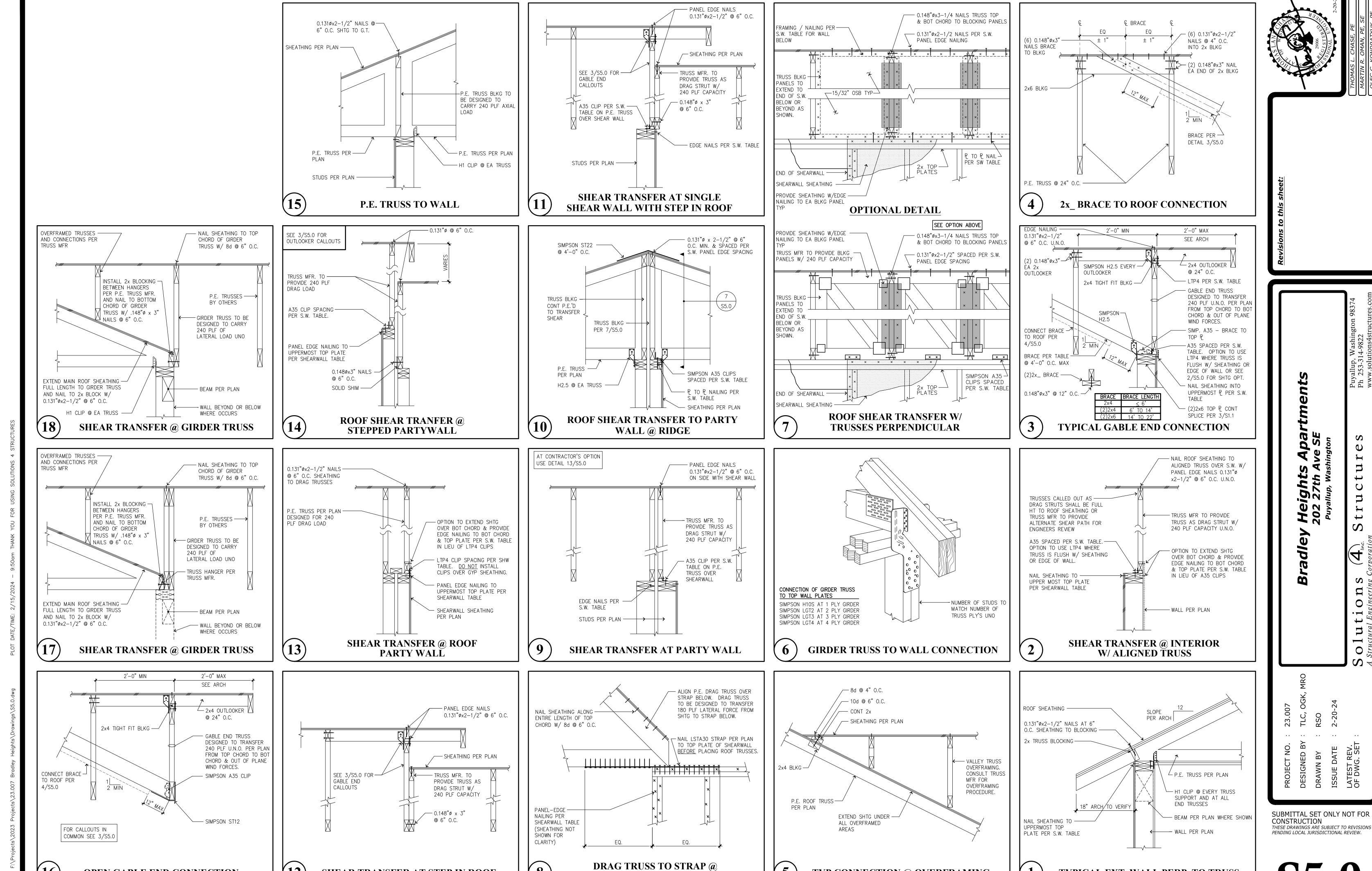
LATEST REV.

OF DWG, SET :

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S4.1

Solutions 4 Structures A Structural Engineering Corporation



SHEARWALL TOP PLATE

OPEN GABLE END CONNECTION

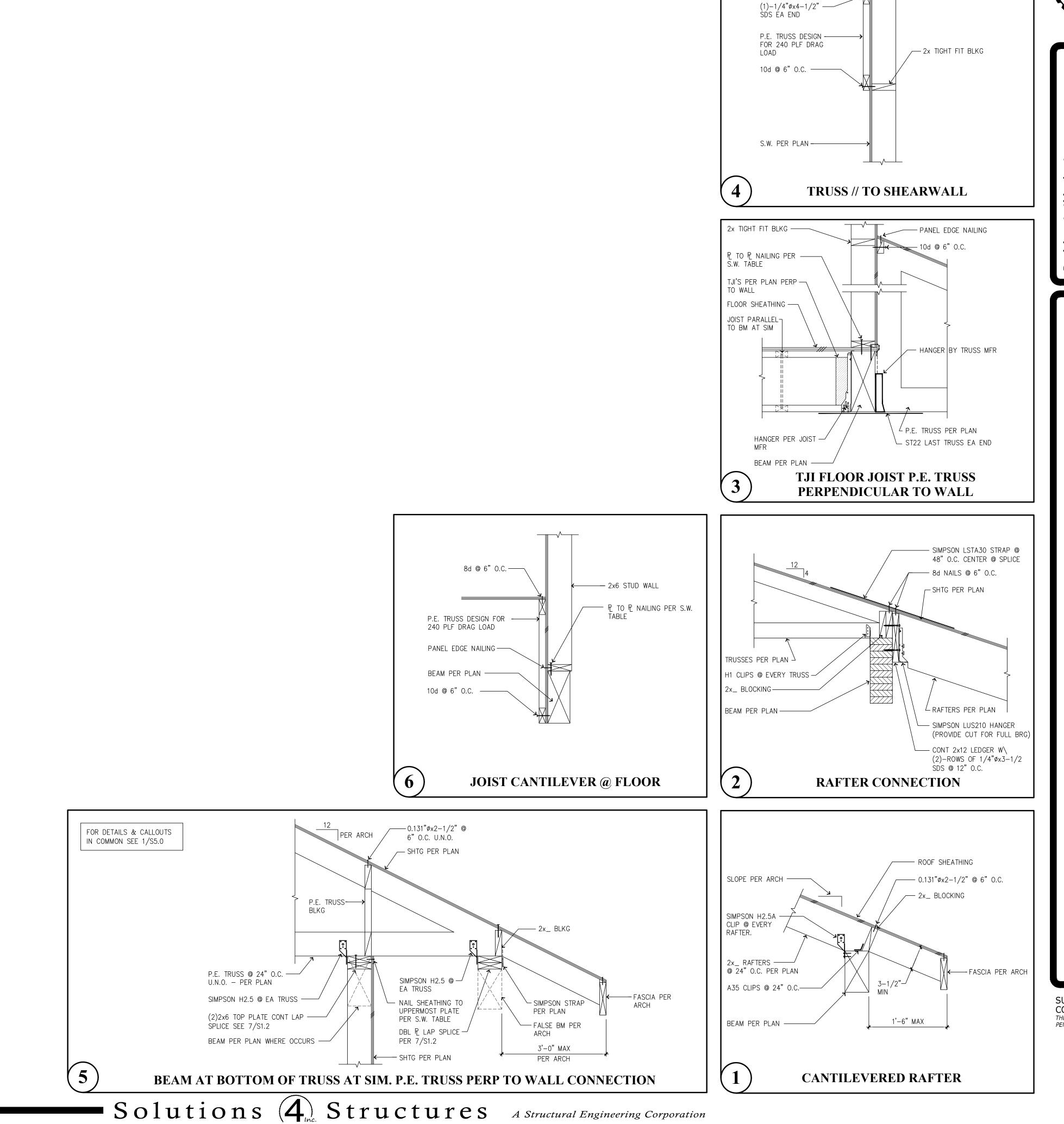
SHEAR TRANSFER AT STEP IN ROOF

- Solutions (4) Structures A Structural Engineering Corporation

TYP CONNECTION @ OVERFRAMING

TYPICAL EXT. WALL PERP. TO TRUSS

0 1



8d @ 6" O.C.——

olutions

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PENDING LOCAL JURISDICTIONAL REVIEW.

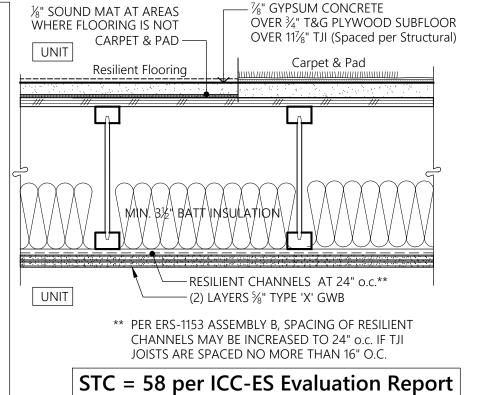
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1-HR Using Calculated Fire Resistance Method

DETAIL SIMILAR WHERE UNIT SEPARATION WALL CONTINUES DOWN TO GARAGES

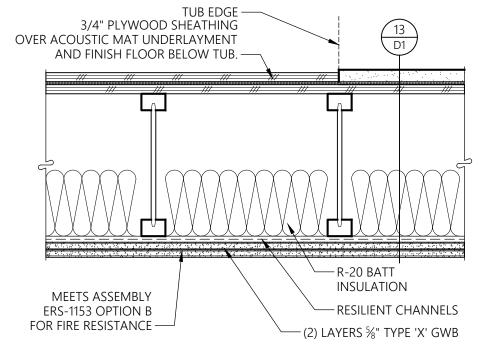
SEPARATING DWELLING UNITS

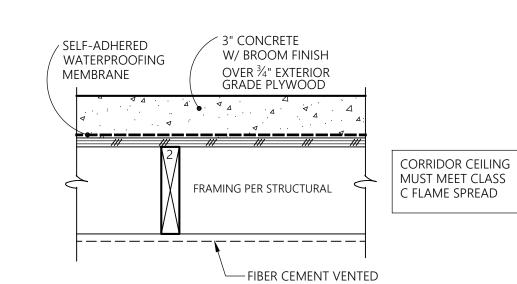
Resilient channels are required to be used as part of the ceiling attachment system, provided they are spaced 16" o.c.** and fastened perpendicular to the TJI joists using 1" long, Type S screws spaced 12" o.c. When resilient channels are used, the first layer of the ceiling membrane must be installed perpendicular to the channels and attached to the resilient channels using 1" long, Type S screws spaced 12" o.c. The second layer must be installed second layer of gypsum board must be a maximum or 12" o.c. in the field and 8" o.c. at the butt joints. Type G screws, 1½" long, must be spaced 8" o.c. and 6" from each side of the transverse joints of the second layer, the



TYP. 1-HR FLOOR/CEILING

SECTION





ASSEMBLY ALLOWED TO BE NON-RATED PER OSSC SECTIONS 705.2.2 AND 705.2.3 WITH FIRE SPRINKLERS PROTECTING DECK

WATERPROOF DECKING OVER

FRAMING PER

STRUCTURAL —

============

SECTION

- VENTED FIBER

CEMENT SOFFIT

1/2" & 3/4" EXT. GRADE PLYWOOD —

INSULATION

AT UNIT

AT 24" O.C. PROVIDE PVA WALL PRIMER (with

VAPOR RETARDER ON INSIDÉ FACE OF GWB

Ceiling provides one hour fire resistance protection for trusses.

1-HR GA File No. RC 2602

Base layer %" type X gypsum wallboard applied at right angles to wood roof trusses 24" o.c.

with $1\frac{1}{4}$ " Type W or S drywall screws 24" o.c. **Face** layer $\frac{5}{8}$ " type X gypsum wallboard or gypsum veneer base applied at right angles to trusses with $\frac{1}{8}$ " Type W or S drywall screws 12" o.c. at

joints and intermediate trusses and 1½" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Wood trusses supporting ½" wood

TYPICAL 1-HR ROOF/CEILING

structural panels applied at right angles to trusses with 8d nails. Appropriate roof covering.

perm rating not exceeding 1.0) AS CLASS II

WATERPROOF DECKING OVER

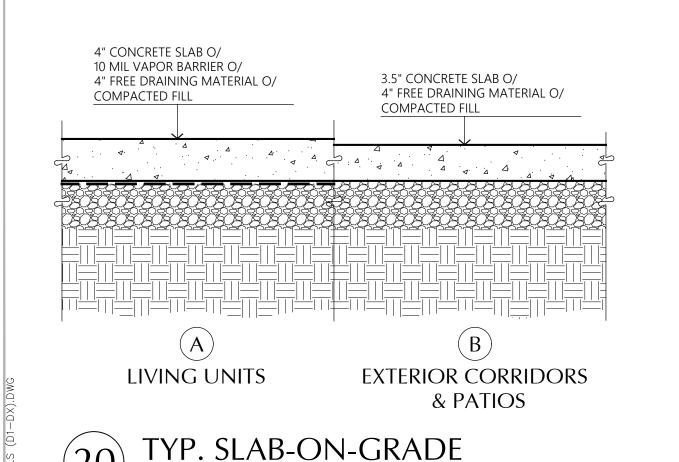
– VENTED FIBER

CEMENT SOFFIT

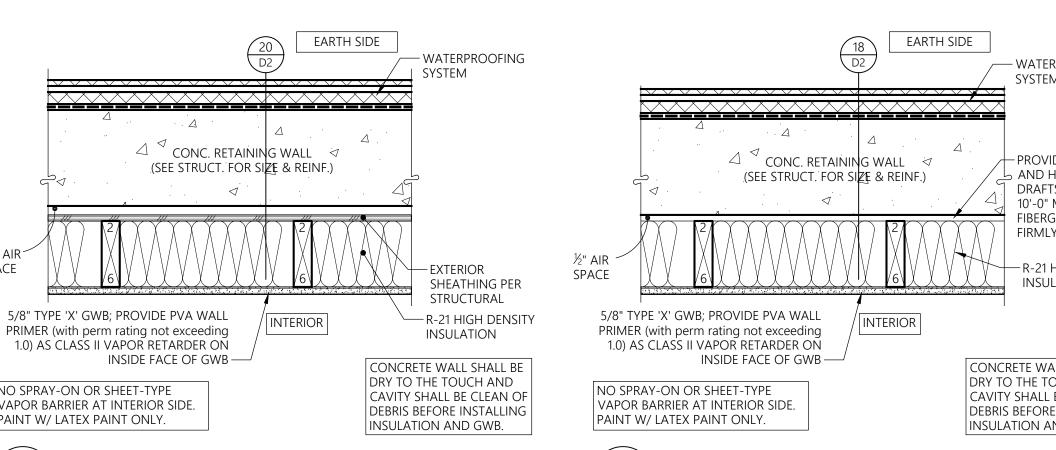
1/2" & 3/4" EXT. GRADE PLYWOOD —



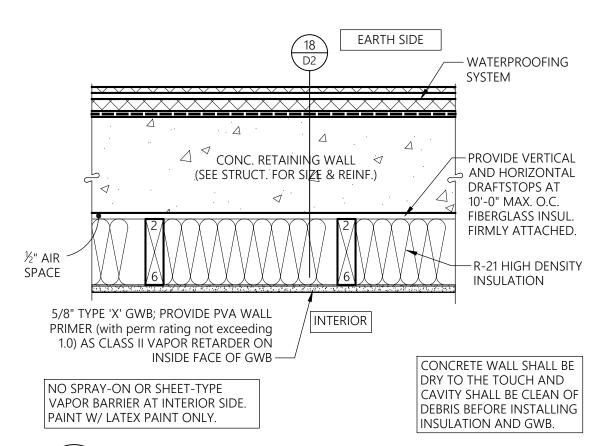












COMMON OR CORRIDOR WALL

FURRED PLUMBING WALL

CORRIDOR

2-HR GA File No. WP4136 STC 50 (TL-93-103)

Base layer ½" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to

each side of 2 x 4 wood studs 16" o.c. with 1 1/4" Type W drywall screws 12" o.c. Face layer 1/8" type X

gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1 1/8"

Type W drywall screws 12" o.c. and offset 6" from screws in base layer. Joints staggered 16" each

layer and side. At shear walls, increase fastener length by the thickness of the shear panel.

SIDING PER ELV. OVER W.R.B. NOTE: 2x6 STUDS U.N.O. ON PLANS

- ADD SHEAR PANEL WHERE

INDICATED ON SHEAR PLANS.

EXTEND SHEAR PANEL TO NEAREST

RESILIENT CHANNEL AT

DWELLING UNIT TO ACHIEVE REQUIRED SOUND RATING

(2) LAYERS %" TYPE 'X' GWB OVER 2x STUDS AT 16" O.C. TYP. EACH SIDE



* Per general note 16 greater stud sizes are permitted than those specified. (see plans for actual stud size)
‡ At shear walls, increase fastener length by the thickness of the shear panel TYP. 1-HR CORRIDOR WALL PLAN UNIT Sound STC 59 STC (W-28-69)

EXTERIOR SIDING

SEE ELEVATIONS -

EXTERIOR SHEATHING -PER STRUCTURAL

INTERIOR

NOTE: SHEAR DIAPHRAGM MAY OCCUR ON EITHER

%" GWB OVER 2x STUDS AT 16" OC. —

CORRIDOR

SIDE OF THE WALL OR

ON BOTH SIDES.

PLAN

PLAN

EXTERIOR

Thermal insulation

NHERE (ND)CATED ON PLANS:

 $-\frac{5}{8}$ " Type 'X' GWB OVER 2x6 STUDS AT 16" O.C.

TYPICAL EXTERIOR WALL

PROVIDE PVA WALL PRIMER (with perm rating not exceeding 1.0)

2X6 STUDS AT EXTERIOR

WALL U.N.O. ON PLANS

−%" GWB OVER SHEAR PANELS WHERE INDICATED

ON SHEAR PLANS

%" TYPE 'X' GWB OVER 2x STUDS AT 16" O.C.

OVER W.R.B

— ¾" TYPE 'X' GWB OVER RESILIENT CHANNELS AT

24" O.C. OVER 2x STUDS AT 16" O.C.

1-HR GA File No. WP3243 50-54 STC Sound

Type S drywall screws. One layer \(\frac{\pi}{8} \) Type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1" Type S drywall screws 8" o.c. with vertical joints located midway

Resilient channels 24" o.c. attached at right angles to ONE SIDE of 2x4* wood studs 24" o.c. with 11/4"

OPPOSITE SIDE - One layer \%" Type X gypsum wallboard or or gypsum veneer base applied parallel

or at right angles to studs with 6d cement coated nails 1 1/8" long, 0.0915" shank, 15/64" heads, 7" o.c. Vertical joints staggered 24" on opposite sides. (LOAD-BEARING)

PLAN

PLAN

AS CLASS II VAPOR RETARDER ON INSIDE FACE OF GWB

 $^{-}\%$ " GWB OVER 2x STUDS AT 16" OC.

TYP. INTERIOR WALL

GWB INSTALLED OVER SHEAR PANEL

AT SHEAR WALLS‡, SEE SHEAR PLANS -

CONTINUE SHEAR PANEL

INSULATION

between studs. 3" mineral or glass fiber insulation in stud space.

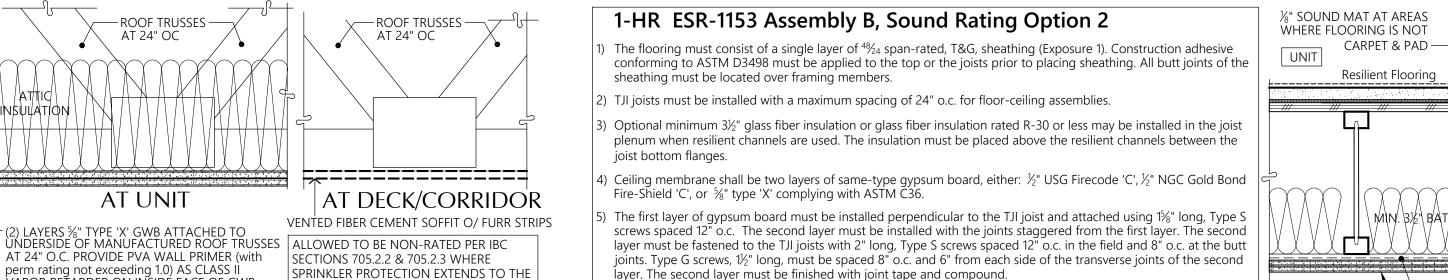
TO THE NEAREST CORNER

Using IBC Section 722, Tables 722.6.2(1) and 722.6.2(2), \(\frac{\pi}{8} \) Type 'X' GWB (40 min.) and studs at 16" o.c. (20 min.) provide 60 minutes of protection

TYP. 1-HR COMMON WALL

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

PLAN



layer. The second layer must be finished with joint tape and compound. with the joints staggered from the first layer and attached using 15/8" long, Type S screws. The screw spacing for the

second layer must be finished with joint tape and compound.

IIC = 54 With Carpet & Pad AT DWELLING UNITS

SECTION

SOFFIT BOARD

Add resilient channel and 3" insulation to achieve sound rating

TYP. 2-HR FIRE BARRIER WALL AT EXIT CORRIDOR

BATT/INSULATION

WHERE INDICATED

ON PLANS

5/8" TYPE 'X' GWB OVER

2x STUDS AT 16" O.C. TYPICAL EACH SIDE -

SPACE

EXTERIOR

- P.T. PLATE

SLOPE GRADE

AWAY FROM

4" FTG. DRAIN

SECTION

SECTION

EXT. STAIR

— %" TYPE 'X'
EXTERIOR GYP.
— SIDING SEE
ELEVATIONS
— FLASHING

D1

−½" EXPANSION

TYP. EXTERIOR WALL FOOTING

INTERIOR

CONC. SLAB

- FIRM BEARING

BUILDING



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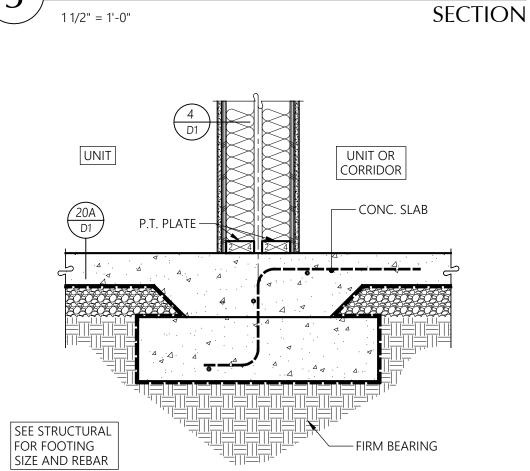
etails



Timberlane

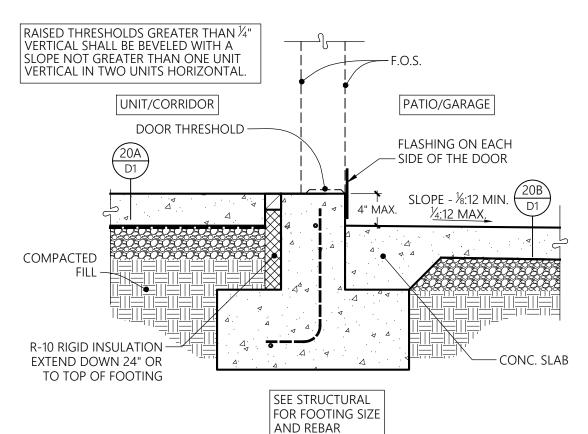
Revisions No. Date Description

Partners



TYP. STAIR WALL FOOTING





INTERIOR

SEE STRUCTURAL

AND REBAR

FOR FOOTING SIZE

R-10 RIGID INSULATION -EXTEND DOWN 24" OR

TO TOP OF FOOTING

INTERIOR

UNIT

RIGID INSULATION

DOWN 24" OR TO TOP OF FOOTING. -

SEE STRUCTURAL

FOR FOOTING SIZE

AND REBAR

P.T. PLATE –

SEE STRUCTURAL

AND REBAR

SEE UNIT

PLANS FOR LOCATION THIN

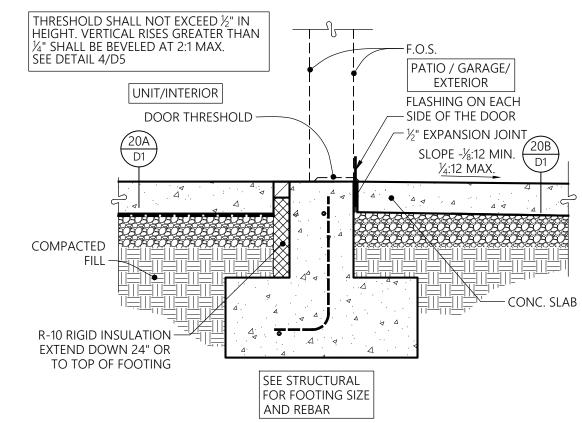
¾" TYPE 'X' GWB — RESILIENT CHANNEL —

FOR FOOTING SIZE

INTERIOR WALL FOOTING

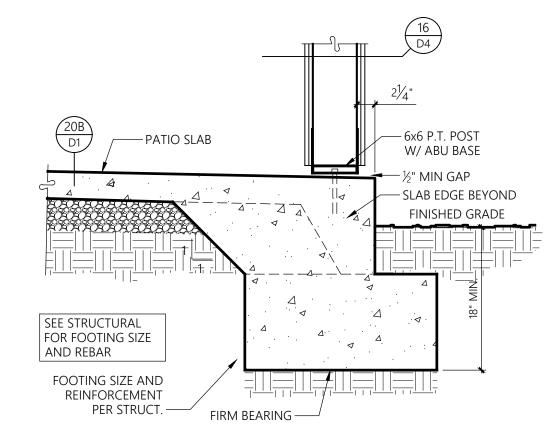
SWING DOOR THRESHOLD AT PATIO OR GARAGE

SECTION

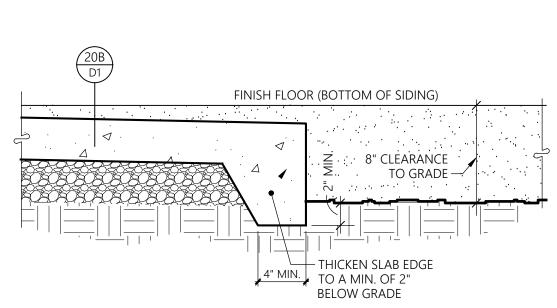


SWING DOOR THRESHOLD

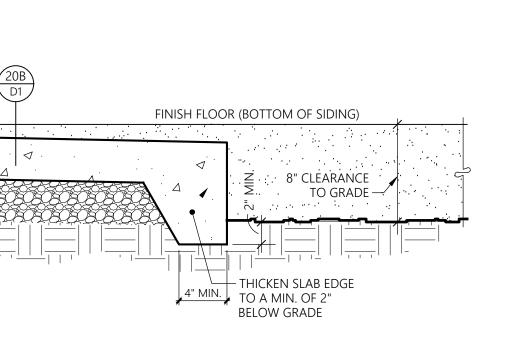
AT ACCESSIBLE ENTRANCE **SECTION**



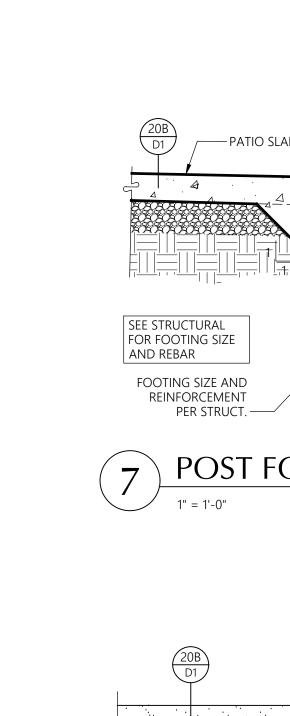
POST FOOTING AT PATIO SECTION



SECTION

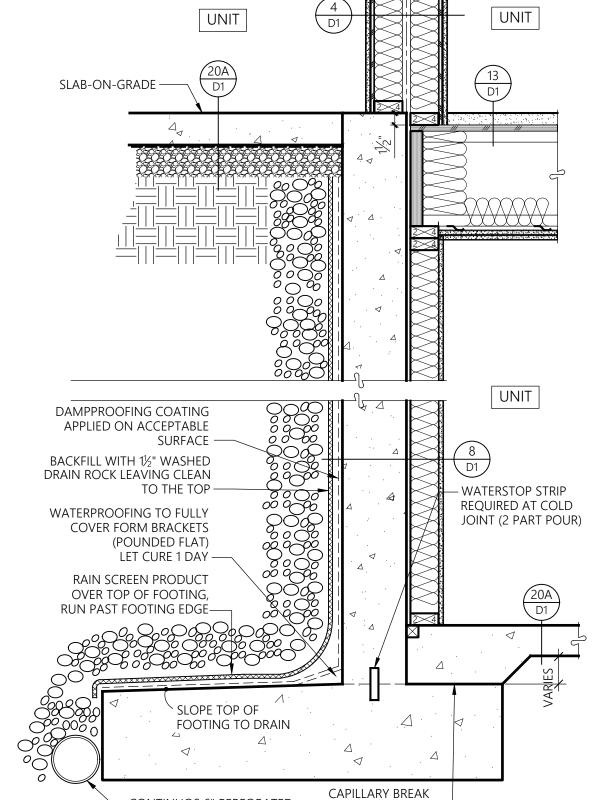


THICIKENED CONC. SLAB EDGE AT PORCH / PATIO



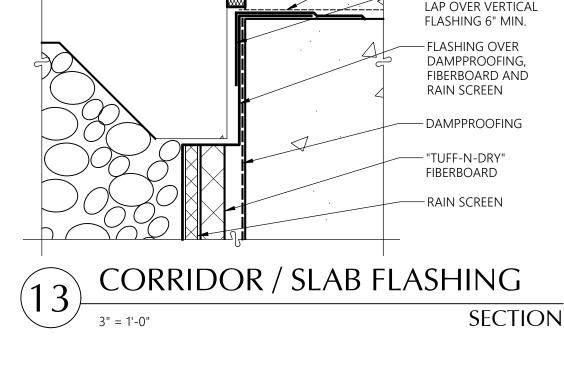
Initial Publish Date: Job No.:

Date Plotted: 2-20-24 Drawn By: 23-06 APT/HDM Sheet No.: **D2**



FACE OF CONCRETE WALL AND

CENTERLINE OF PARTY WALL -



SEE I SHEETS

FOR RETAINING WALL

3/4" FIBER BOARD

EXPANSION JOINT -

WATERPROOFING

THE INSTALLATION OF ANY

INSTRUCTIONS.

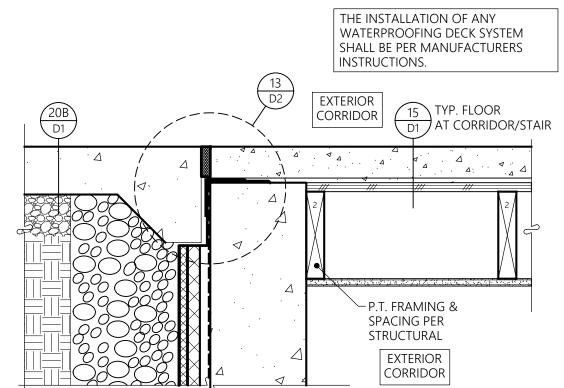
WATERPROOFING DECK SYSTEM

SHALL BE PER MANUFACTURERS

- WATER PROOFING

TOP ANGLE FLASHING

MEMBRANE



BASEMENT RETAINING WALL

BELOW SLAB -

CONTINUOS 6" PERFORATED

DRAIN PIPE AS SPECIFIED

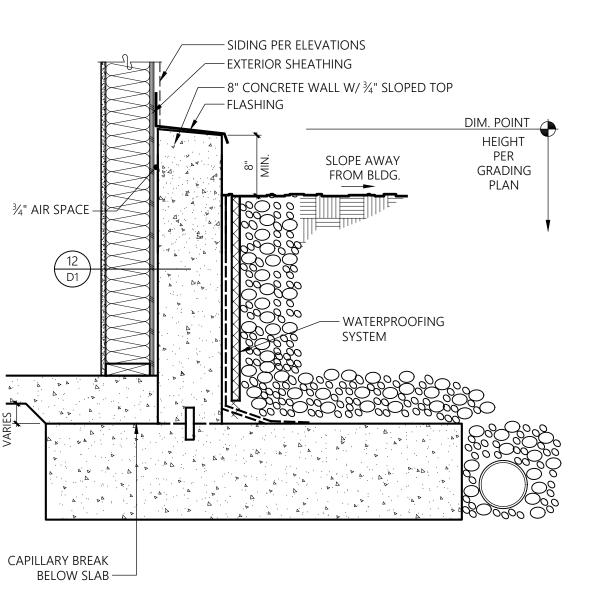
BY SOILS REPORT.

CORRIDOR / SLAB TRANSITION **SECTION** 1-1/2" = 1'-0"

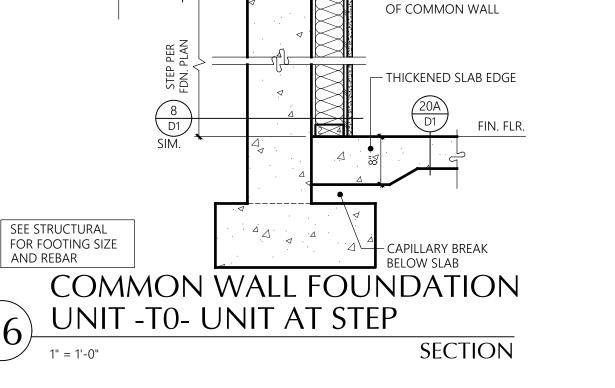
P.T. PLATE, TYP. -

FIN. FLR.

SEE STRUCTURAL ENGINEERS DESIGN, PAGE S3.1







— 1" AIRSPACE

-FACE OF CONC AT CENTERLINE

½" GYP. SHEATHING OR ¾" WOOD STRUC. PANEL OR PARTICLE

PARALLEL TRUSS

CONDITION

SECTION

UNIT SEP. WALL AT ROOF TRUSSES

- RIM JOISTS

— BLOCKING PER STRUC. AND FRAMING PLANS

BEARING

FLOOR FRAMING

— FIRE-SAFING INSUL.

AS FIREBLOCK, TYP

COMMON

COMMON WALL AT STEPPED FLOOR

PER PLANS

SECTION

NON-BEARING

SITUATION

SECTION

— BOARD OVER GABLE TRUSS

WHERE DRAFT- STOPPING

INDICATED ON ROOF PLAN

VERTICAL ROOF TRUSS

PROVIDE FIREBLOCKING AT FLOORS

AND CEILINGS USING FIBERGLASS

INSULATION FIRMLY ATTACHED

PERPENDICULAR

TRUSS CONDITION

FIREBLOCKING -

UNIT SEPAR. AT FLOOR

NON-BEARING

SITUATION

3½" ACOUST. BATT INSUL. -

FLOOR FRAMING

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

PER PLANS

1x3 CEDAR TRIM

- COMP. ROOFING

OF ROOF SHEATHING

FIBER CEMENT VENTED (D1)

SOFFIT BOARD

EXIT STAIR/CORRIDOR

— SOLID STUD GROUPINGS

TO EXTERIOR FACE

EXTERIOR

UNIT SEP. WALL AT EXT. WALL

EXTEND 1-HR FIRE RATING

(1) LAYER %" TYPE 'X' EA. SIDE CONTINUOUS TO UNDERSIDE

SECTION

PLAN

PER ROOF

PLANS

1-HR STAIR WALL AT ROOF

---- 2X8 WOOD RAKE FASCIA

MEMBER BEYOND -

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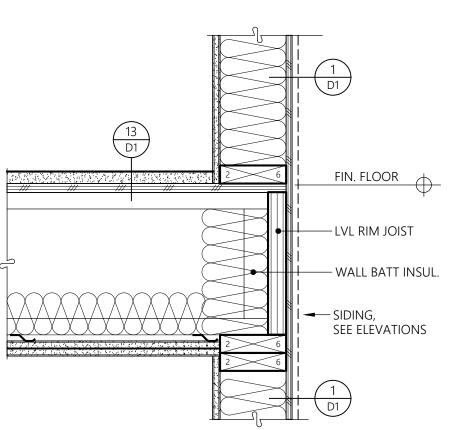
Bradley Heights **Apartments**

Timberlane Partners

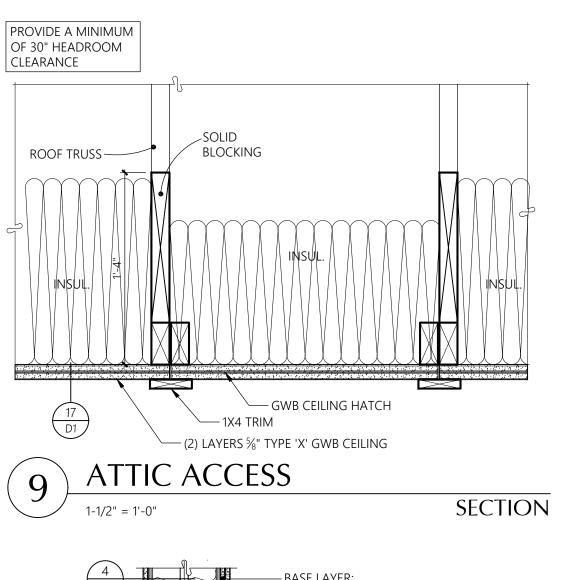
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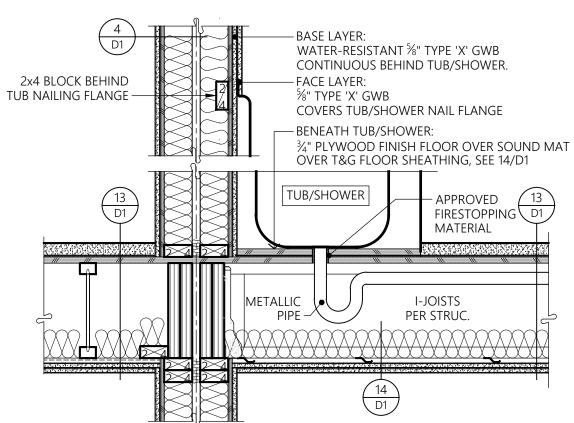
Wa

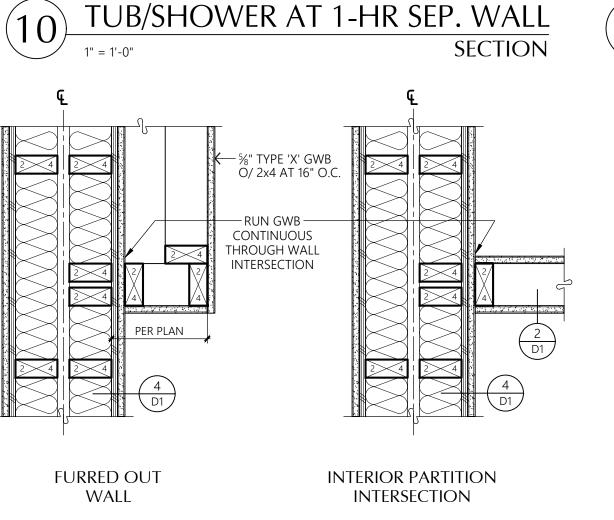
Revisions No. Date Description

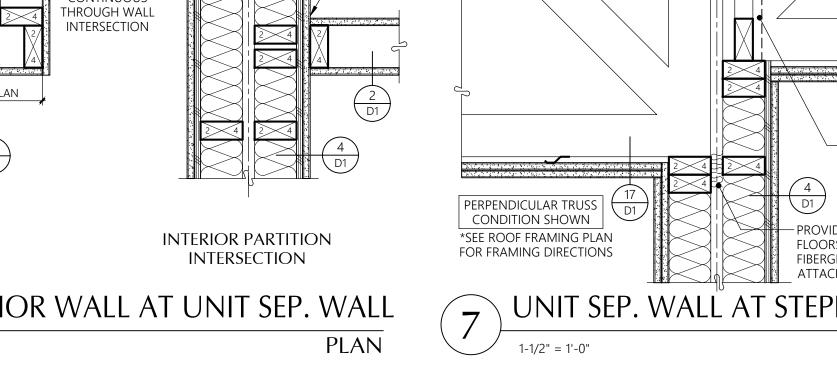


EXTERIOR WALL AT FLOOR









EXTERIOR GYP

7 \ Typ. roof/cl

UNIT

UNIT

DIFFERENT SHEAR PANEL

CONFIGURATION MAY BE

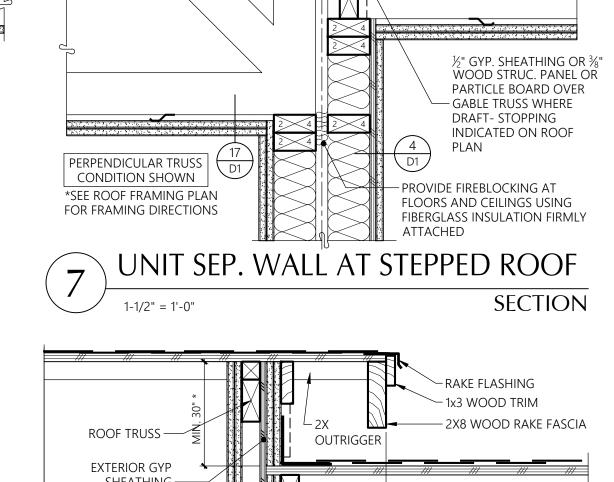
REQUIRED. SEE SHEAR PLANS.

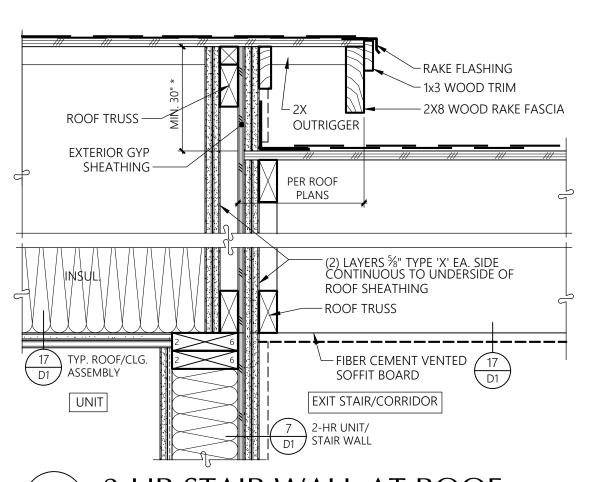
VERTICAL ROOF TRUSS

MEMBER BEYOND —

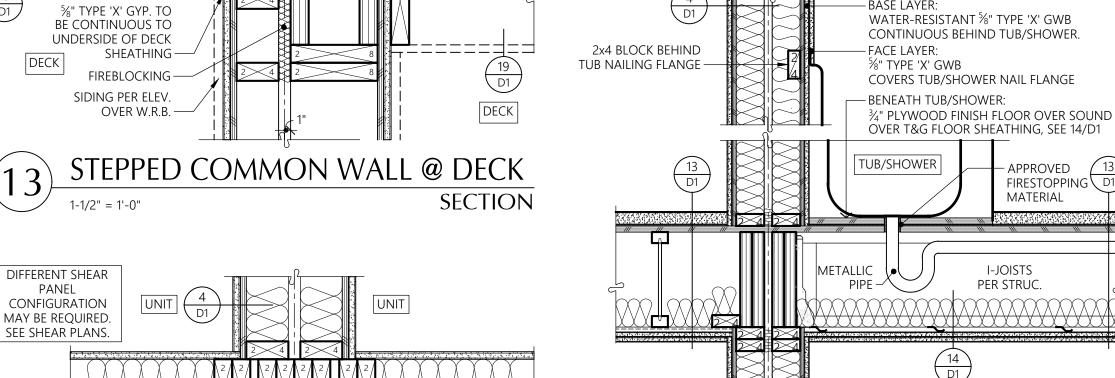
D1 ASSEMBLY

SHEATHING —









— (1) LAYER ¾" TYPE 'X' GYP. CONTINUOUS

ea. Side

SHEATHING

- SIDING PER ELEV.

HR. SEPARATION

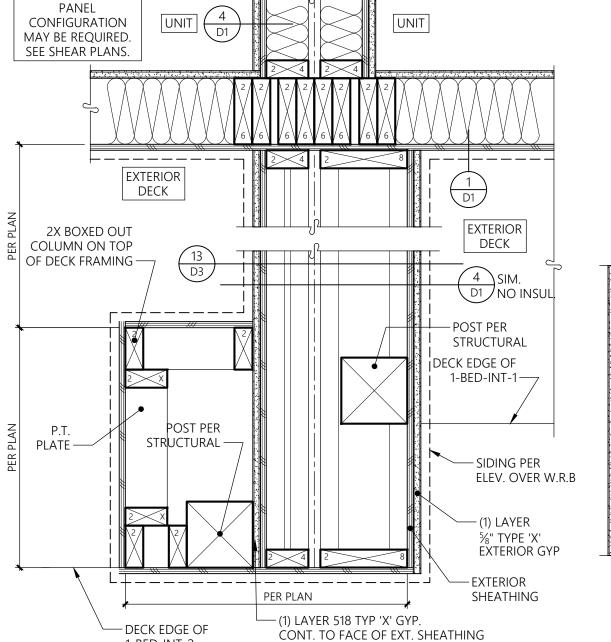
NO INSULATION

DECK

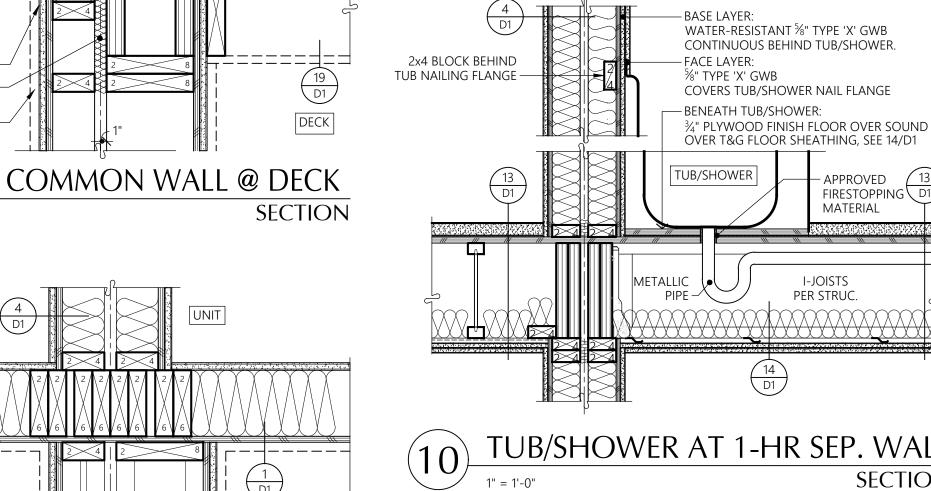
OVER W.R.B.

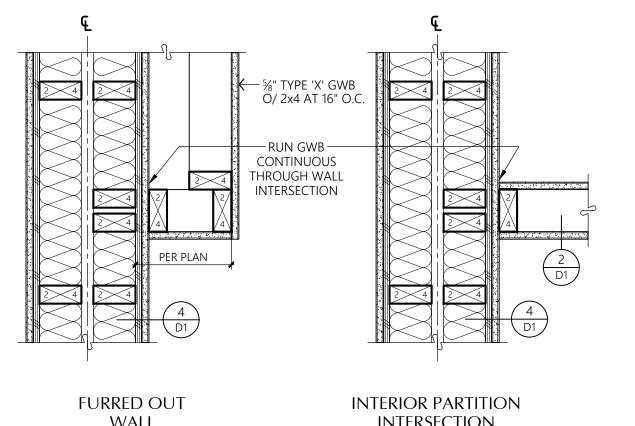
— EXTERIOR

Wall cap at uncovered decks

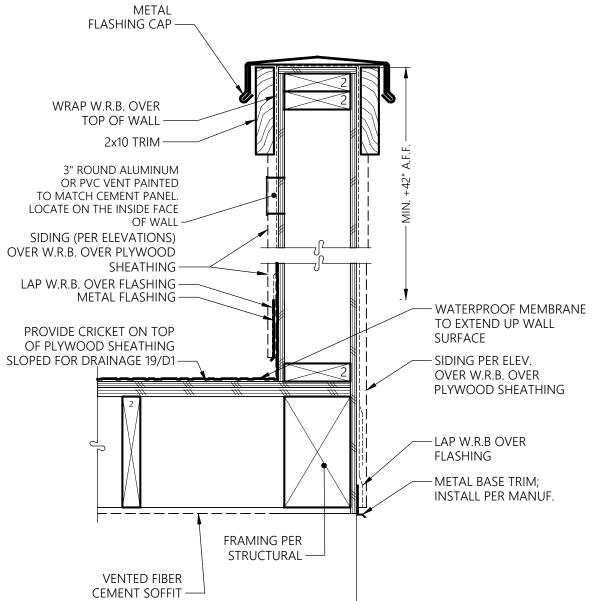












LOW WALL @ DECK EDGE

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

SECTION

SIDING PER ELEV, OVER W.R.B. OVER EXTERIOR

SHEATHING

PLYWOOD

SIDING OVER

GWB OVER

SHEATHING

PER STRUCTURE

- 2" OVERHANG OF

★ SIDING/FURRING

- P.T. POST

PLYWOOD

PAST SILL

PLINTH. SEE

FOUNDATION

— CONCRETE

PLAN

- LAP W.R.B.

– 4-SIDED

THROUGH

LOW ROOF TRUSSES

HEAD AND

- GUTTER TO EXTEND BACK TO EXT. WALL

DOWNSPOUT

SCUPPER

OVER FLASHING

- ⅓"P.T.

P.T. PLATE ——

FRAMED

WALL -

EXTERIOR

P.T. PLATE

SIDING OVER W.R.B OVER

LAP W.R.B. OVER FLASHING —

BUILDING SHEATHING —

DECK WATERPROOF

MEMBRANE TO EXTEND

OVER SCUPPER FLASHING —

METAL FLASHING —

COLUMN

PLAN

POST

SECTION AT ENGAGED

COLUMN BASE

FURRED COLUMN

19 D1

SCUPPER AT DECK

-P.T. POST PER

STRUCTURAL

WRAP W.R.B.

OVER TOP OF

OVER W.R.B. -

EXTERIOR

SIDING PER ELEV.

WALL —

LAP W.R.B.

FLASHING -

METAL FLASHING —

WATER PROOF MEMBRANE TO

EXTEND UP WALL SURFACE -

— PT 2x JOISTS. -

PLANS FOR SIZE

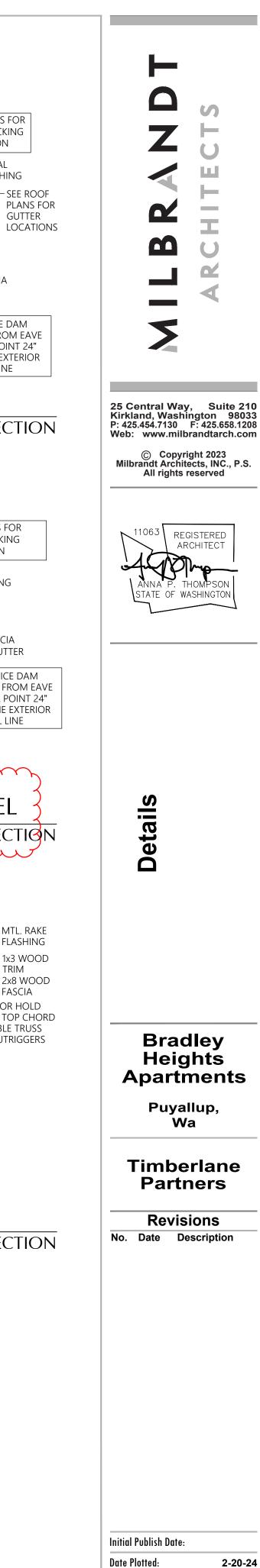
SEE FRMING

OVER

SECTION

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

D3



2-20-24

Drawn By:

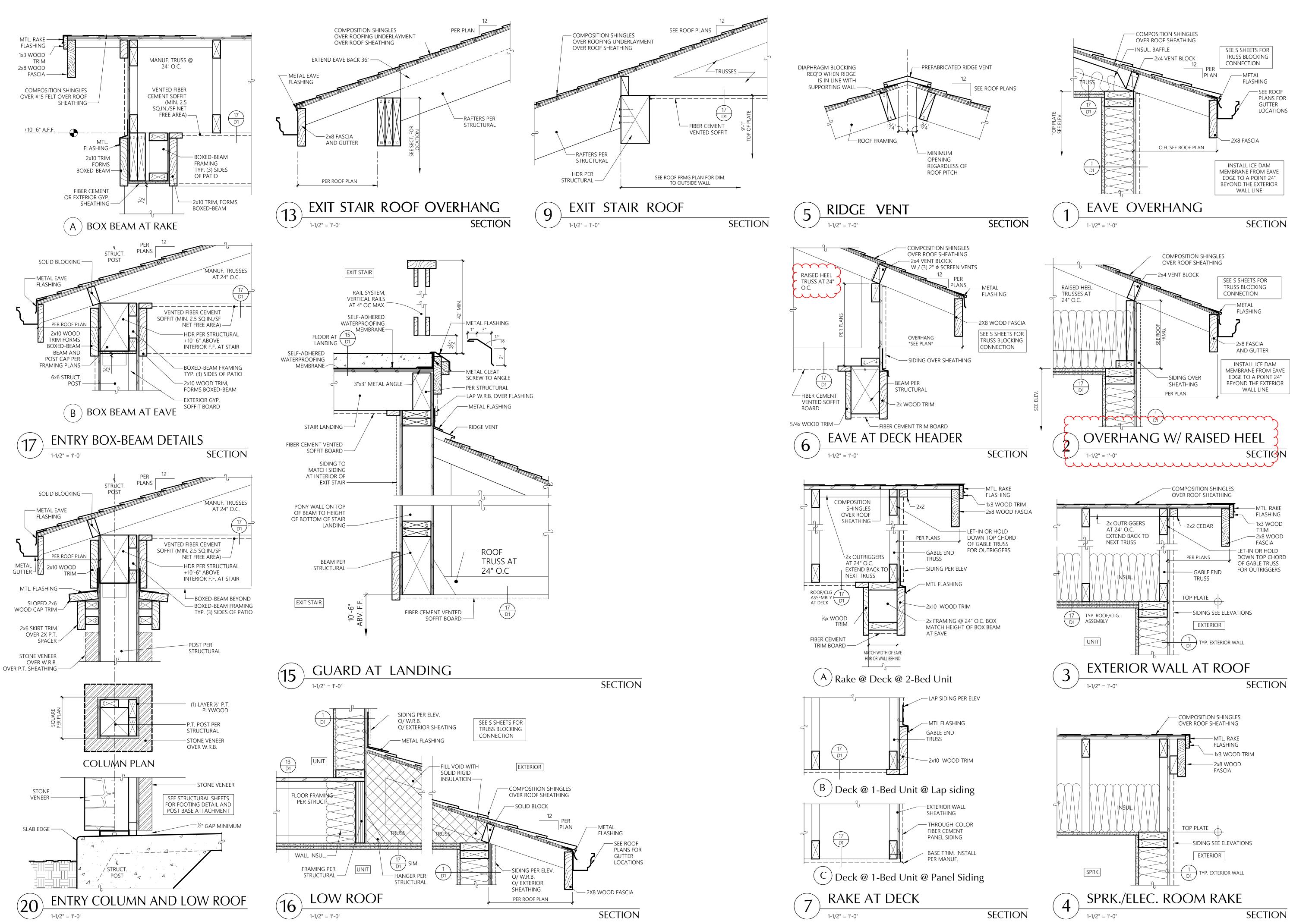
D4

APT/HDM

Job No.:

23-06

Sheet No.:



GUTTER 🛚 📶



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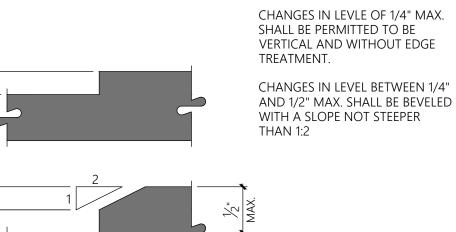
11063 \ REGISTEREF

Timberlane

Revisions No. Date Description

SECTION

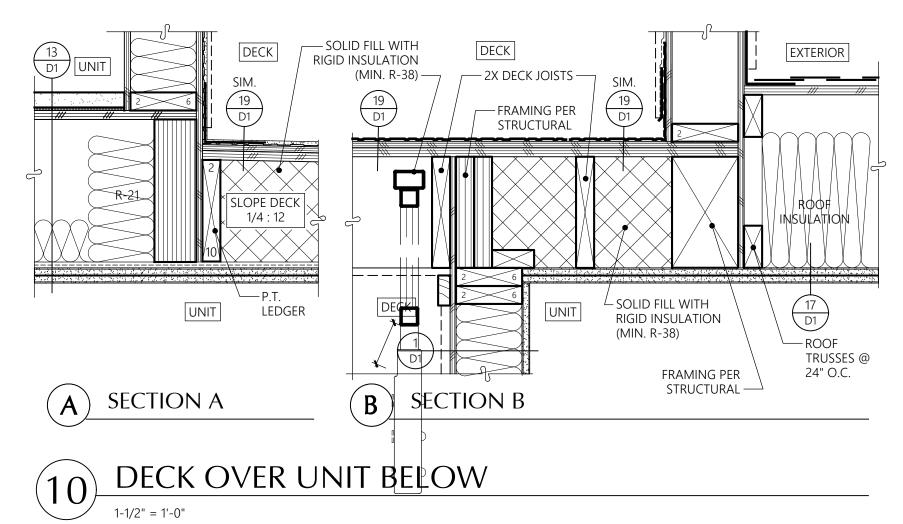
CHANGES IN LEVEL

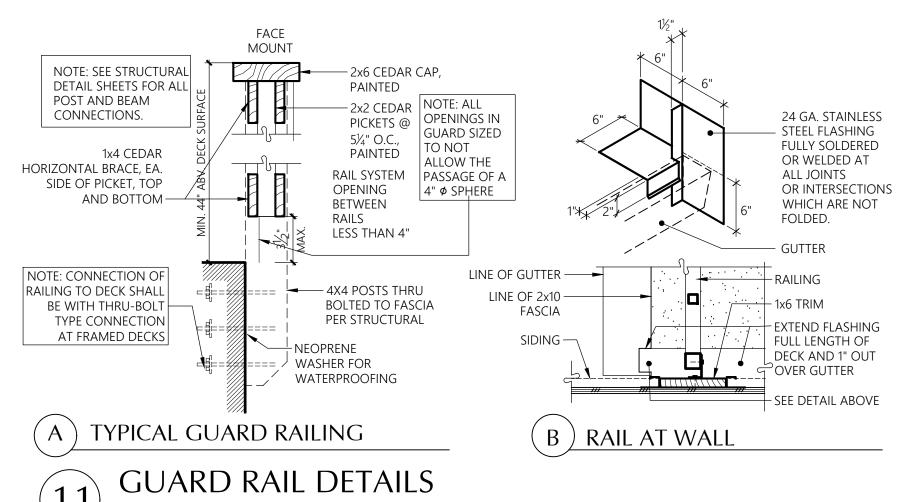


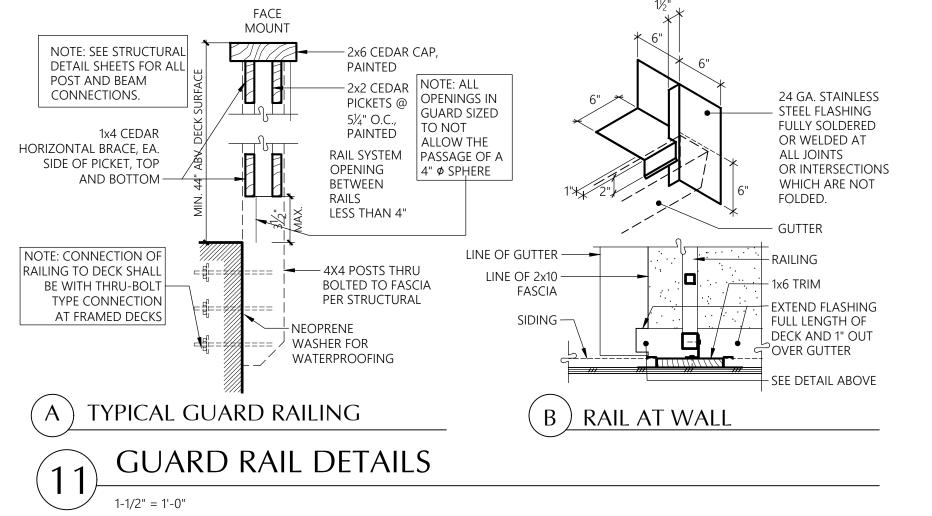
DOOR CHANGES IN LEVEL SECTION

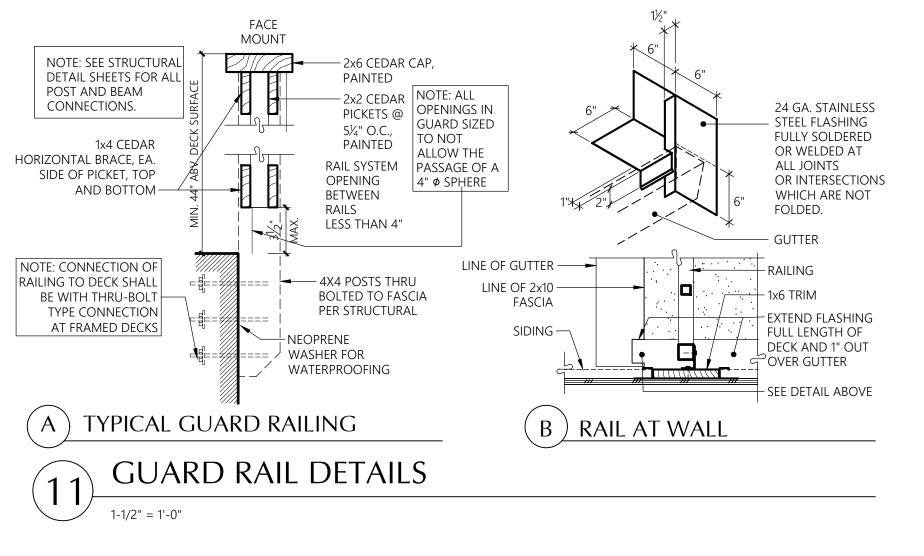
P.T. JOISTS PER FLOOR_ STRUCTURAL – FLASHING SLOPE DECK MIN. 1/4 : 12 -1X6 WOOD TRIM – P.T. LEDGER - 2X WOOD TRIM P.T. BEAM PER STRUCTURAL — FIBER CEMENT VENTED SOFFIT BOARD —

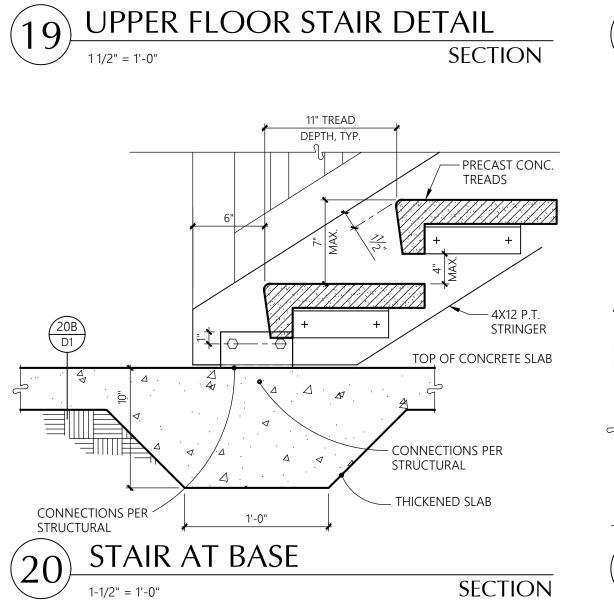












LAG SCREW INTO STUD OR BLOCKING

UNIT

METAL INSULATED DOOR

INSTALLED PER MANUF.

RECOMENDATIONS

TYP. FLOOR/CLG. -

CONSTRUCTION

UNIT

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

(2) LAYERS ¾" TYPE 'X' GWB-

TYP. FLOOR/CLG.

CONSTRUCTION

RESILIENT

CHANNELS —

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

UNIT

(2) LAYERS %" TYPE 'X' GWB—

TYP. FLOOR/CLG.

CHANNELS —

CONSTRUCTION -

RESILIENT

THRESHOLD TO TERMINATE

EXIT STAIR/CORRIDOR

TYP. FLOOR AT EXIT STAIR

OVER TRANSITION.

SEE STRUCTURAL

FOR CONNECTION

— FIBER CEMENT

BOARD

ENTRY DOOR THRESHOLD

STAIR WALL AT FLOOR

RESILIENT CHANNEL

YERS %" TYPE 'X' GWB

- 3 TYP. UNIT/

D1 EXIT STAIR WALL

VENTED SOFFIT

EXIT STAIR/CORRIDOR

EXIT STAIR/CORRIDOR

D1 AT STAIR

∕SEE STRUCTURAL

FOR LEDGER/BEARING

WALL CONNECTION.

SOFFIT BOARD

of DEXIT STAIR WALL

— 2x LEDGER.

SEE STRUCTURAL FOR LEDGER/BEARING

WALL CONNECTION.

- FIBER CEMENT

SOFFIT BOARD

EXIT STAIR/CORRIDOR

EXIT STAIR/CORRIDOR

-FIBER CEMENT VENTED

SECTION

EXIT STAIR/CORRIDOR

D1 AT STAIR

SECTION

CAPABLE OF

SUPPORTING

200 POUNDS

OUTPULL

BLOCKING

- SOLID 2x

FACE OF STUD

STAIR

BULLNOSE

STAIR

CONC. TREADS

EXTERIOR

SEE STAIR FRAMING PLANS

– BEAM PER STRUCTURAL

UPPER FLOOR STAIR DETAIL

SECTION

- FIBER CEMENT VENTED

SECTION

4x12 P.T.

STRINGER

SOFFIT BOARD

- BEAM PER STRUCTURAL

SEE STAIR FRAMING PLANS

 $1\!\!\!\!/2$ " ROUND HANDGRIP -

FIBER CEMENT

STRINGER/RAILING AT WALI

CONCRETE TREAD —

CONNECTIONS PER

CONNECTIONS

PER STRUCTURAL

STAIR

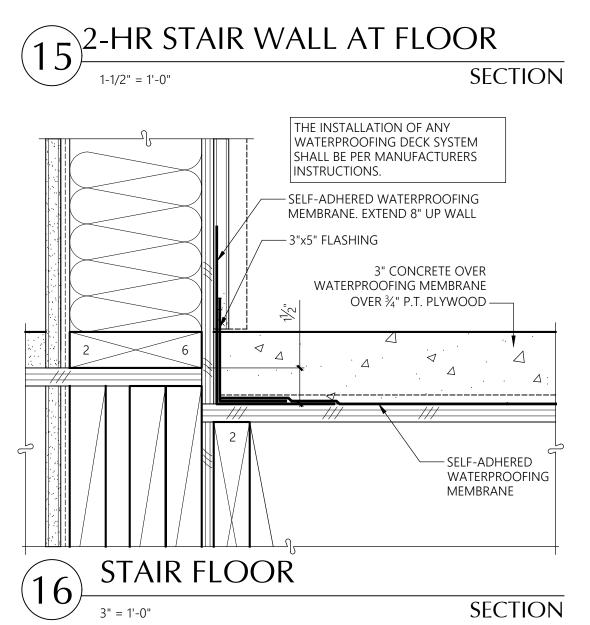
4X12 P.T.

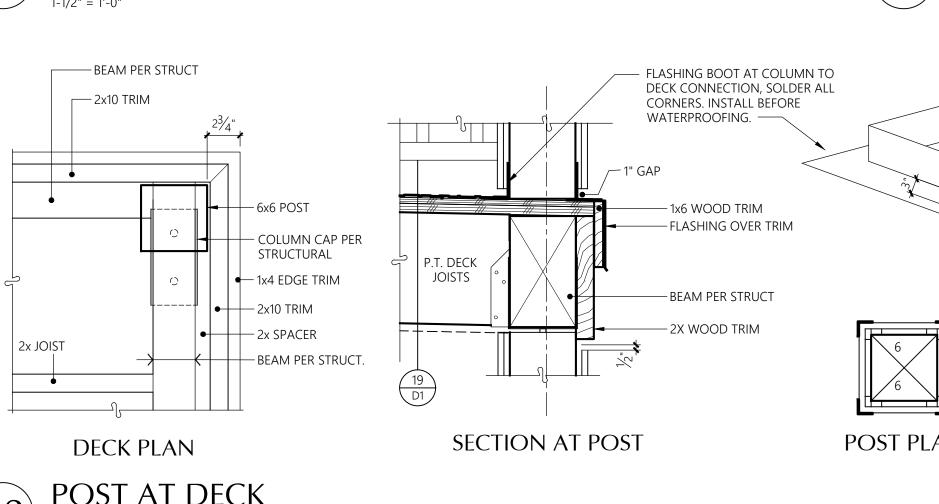
PRECAST

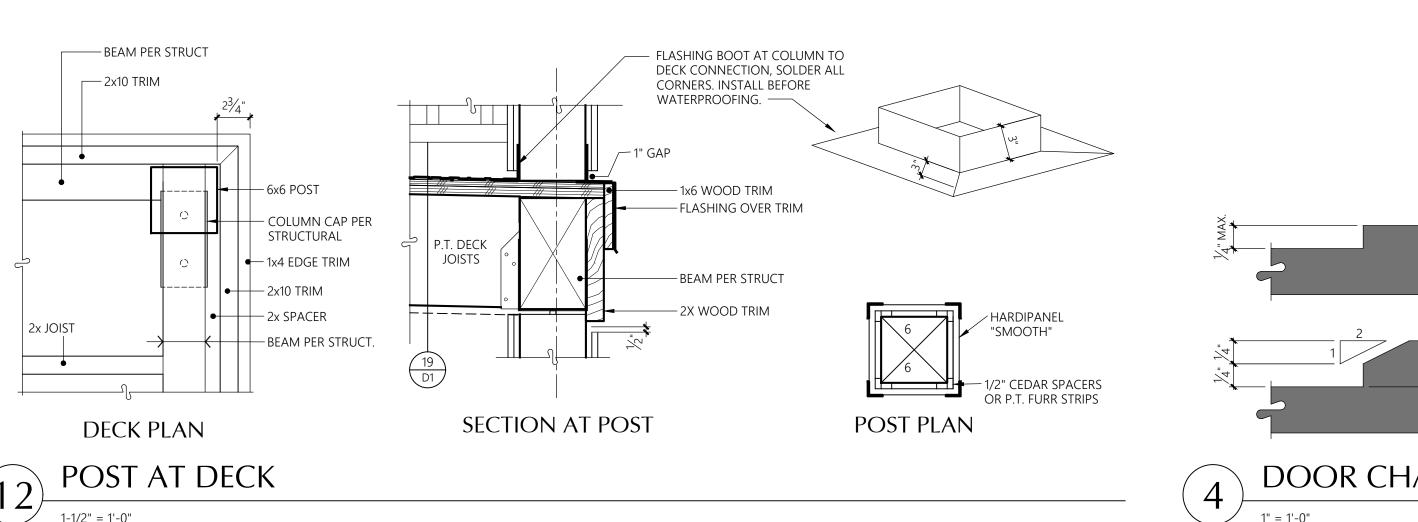
CONC. TREADS

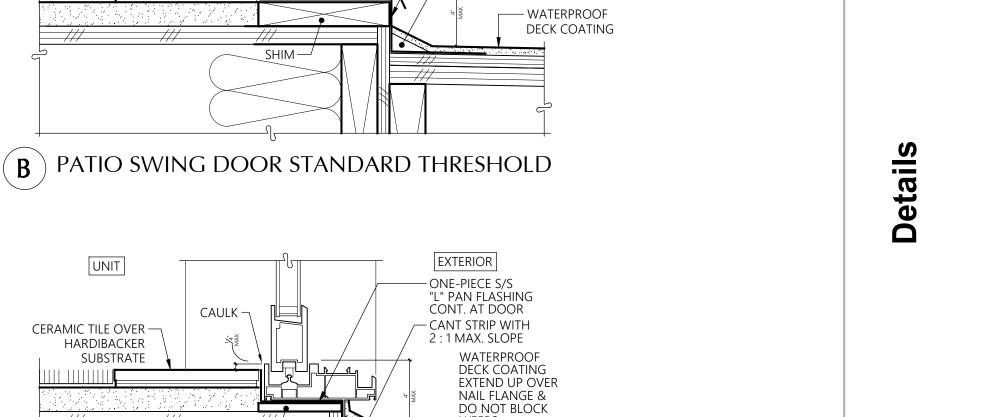
STRINGER -

STRUCTURAL -









DECK

- FLASHING, EXTEND FROM UNDER DECK COATING

UP UNDER THRESHOLD

- WATERPROOF DECK COATING

EXTERIOR

— FLASHING, EXTEND FROM

UNDER DECK COATING UP UNDER THRESHOLD

— CANT STRIP WITH

2:1 MAX. SLOPE

— DOOR THRESHOLD

2x DECK FRAMING

AT 16" O.C.

SLOPED AT 1/4:12 —

CERAMIC TILE

HARDIBACKER

FINISHED

<u>FLOOR</u>

SUBSTRATE

UNIT

PATIO DOOR -

DOOR THRESHOLD -

(**A**) PATIO SWING DOOR STANDARD THRESHOLD

SLIDING GLASS DOOR STANDARD CONDITION

DECK THRESHOLD DETAILS

NOTE: SEE STRUCTURAL DETAIL SHEETS FOR ALL

CERAMIC TILE OVER -

CERAMIC TILE OVER —

HARDIBACKER

SUBSTRATE

HARDIBACKER

SUBSTRATE

POST AND BEAM CONNECTIONS.

OVER



Partners

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

D5



Date Plotted:

23-06

Sheet No.:

SECTION

Job No.:

EXT. VENEER BASE

TYPICAL EXTERIOR CORNER

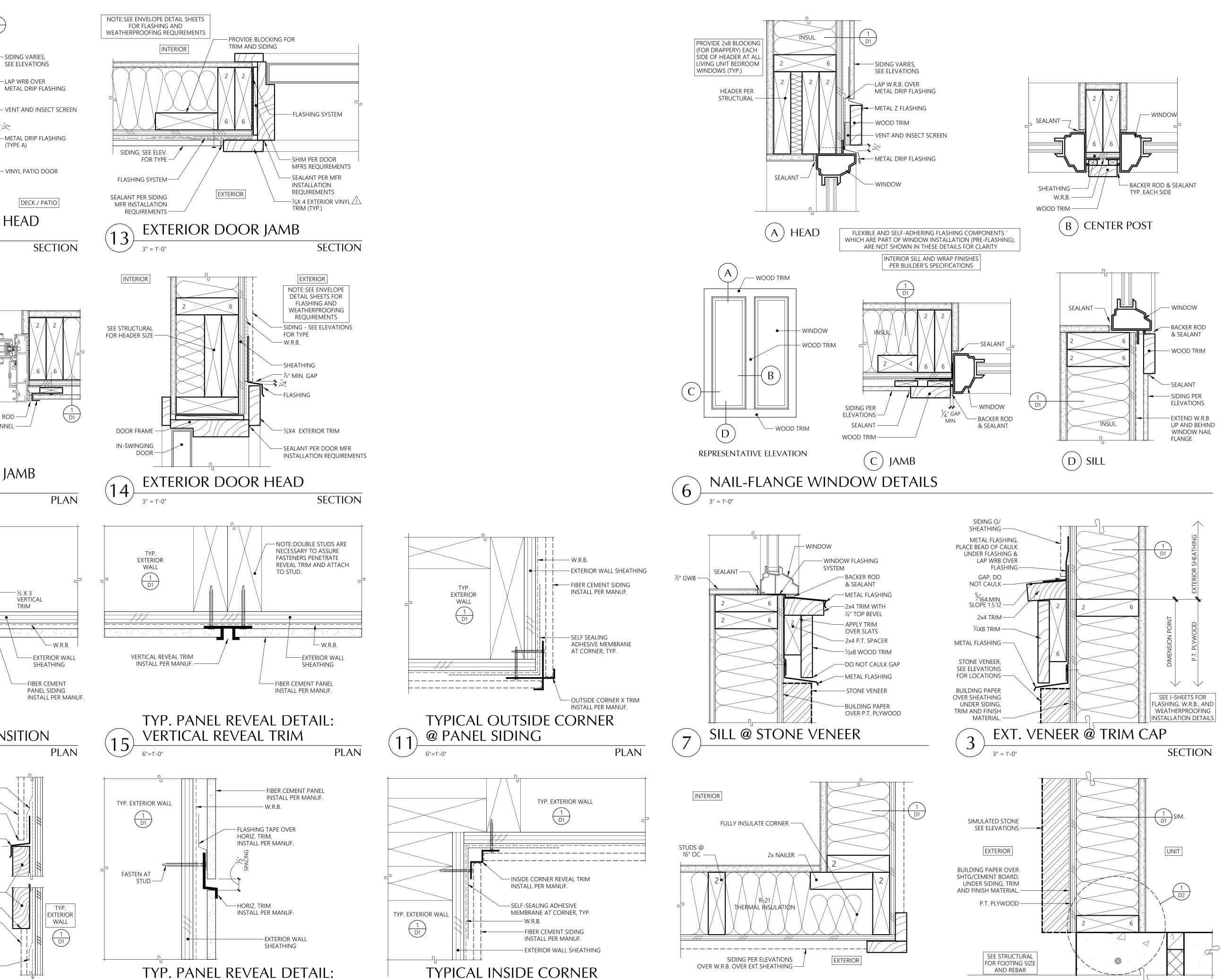
PLAN

2-20-24

Drawn By:

D6

APT/HDM



PLAN

FIBER CEMENT LAP SIDING INSTALL PER MANUF. – SEE I-SHEETS FOR FLASHING, W.R.B., AND WEATHERPROOFING INSTALLATION DETAILS TOP OF FLASHING SEE I-SHEETS FOR FLASHING, W.R.B., AND WEATHERPROOFING INSTALLATION DETAILS

SEE ELEVATIONS

-LAP WRB OVER

METAL DRIP FLASHING

DECK / PATIO

(TYPE A)

VINYL PATIO DOOR

PATIO SWING DOOR - HEAD

SEALANT & BACKER ROD —

DECK / PATIO

PATIO SWING DOOR - JAMB

-LEAVE APPROPRIATE

VERTICAL SIDING TRANSITION

LAP W.R.B. OVER (PRE-FLASH)

AND METAL FLASHING —

SIDING PER ELEV -

26 GAUGE METAL

- SEE ELEVATIONS FOR ALIGNMENT OF BELLY BAND

2x10 BELLY BAND

INSTALL W.R.B. UNDER

BELLY BAND (PRE-FLASH), SLIP

W.R.B. UP UNDER PRE-FLASH;

TYP. 4" MIN. LAP; SEAL/TAPE ALL

SEE ELEVATIONS FOR LOCAITONS —

PROVIDE APPROPRIATE GAP AND SEALANT

SIDING PER ELEV, INSTALL PER MANUF. -

BELLY BAND

FLASHING —

GAP, DO NOT CAULK -

GAP AND CAULK

METAL "J" CHANNEL

VERTICAL

SHEATHING

- FIBER CEMENT

PANEL SIDING

WALL

HORIZONTAL REVEAL TRIM

SECTION

@ PANEL SIDING

TRIM

UNIT DECK OR PATIO

METAL DRIP FLASHING

%" TYPE 'X' GWB−

BATT INSULATION -

HEADER PER STRUCTURAL -

> PATIO DOOR AND DOOR FRAME —

> > W.R.B. AND PRE-FLASHING

UNIT DECK OR PATIO

—— SIDING PER ELEVATIONS

TYP.

EXTERIOR

WALL

1 D1

100 DEGREES —

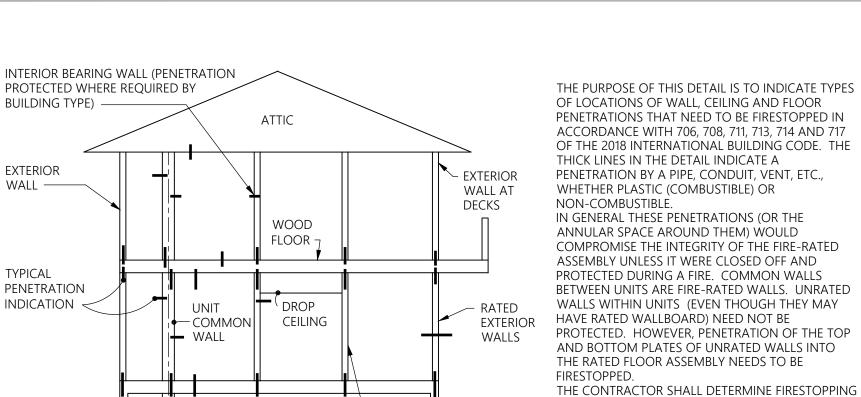
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PLAN

Wa

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

Sheet No.:



NEED NOT BE PROTECTED PENETRATION LOCATIONS FOR FIRESTOPPING

NON-BEARING

LINTERIOR

WALL

FOR EACH SITUATION, AND TESTED ASSEMBLIES

CITY IN ACCORDANCE WITH THE "DEFERRED

SUBMITTALS" SECTION ON THE COVER SHEET

SHALL BE SUBMITTED TO THE ARCHITECT AND THE

THESE FIRESTOPPING DETAILS ARE REPRESENTATIVE OF TYPICAL SITUATIONS ONLY. FOR OTHER CONDITIONS REFER TO 3M MATRIX OF UL TESTED SYSTEMS BELOW. IF CONDITION IS NOT COVERED IN THIS MATRIX, CONTACT MANUFACTURER FOR TESTED ASSEMBLY RECOMMENDATION. ALL FIRESTOP DETAILS TO BE EXECUTED BY LICENSED AND/OR CERTIFIED INSTALLER.

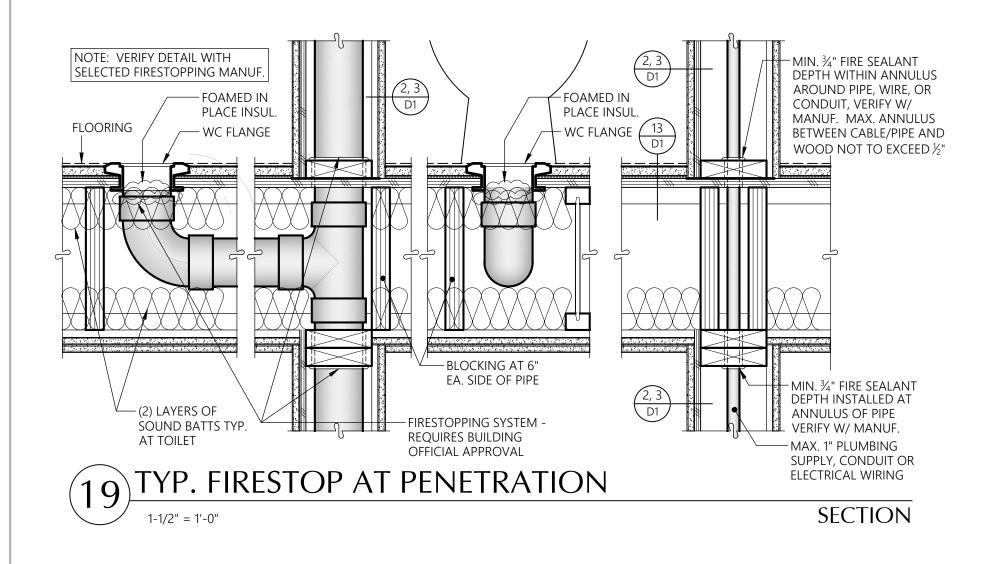
FIRESTOPPING PENETRATIONS AND VOIDS IN RATED CONSTRUCTION:

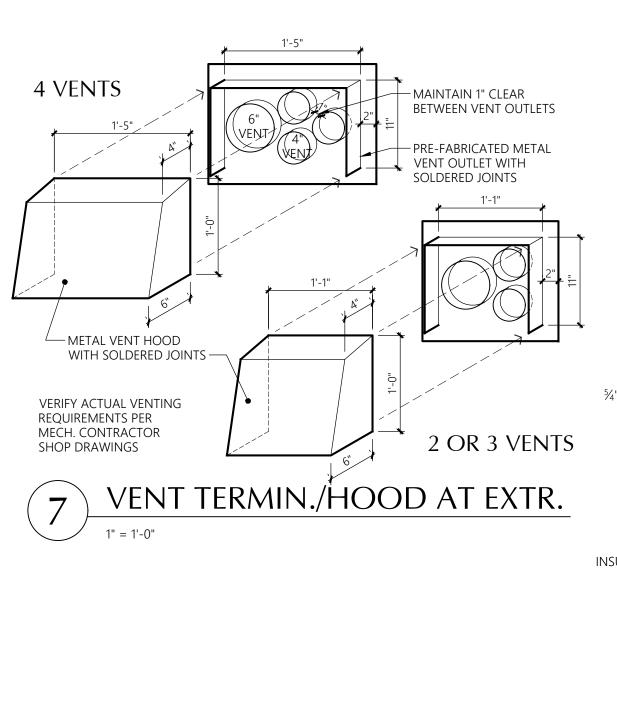
PENETRATIONS INTO

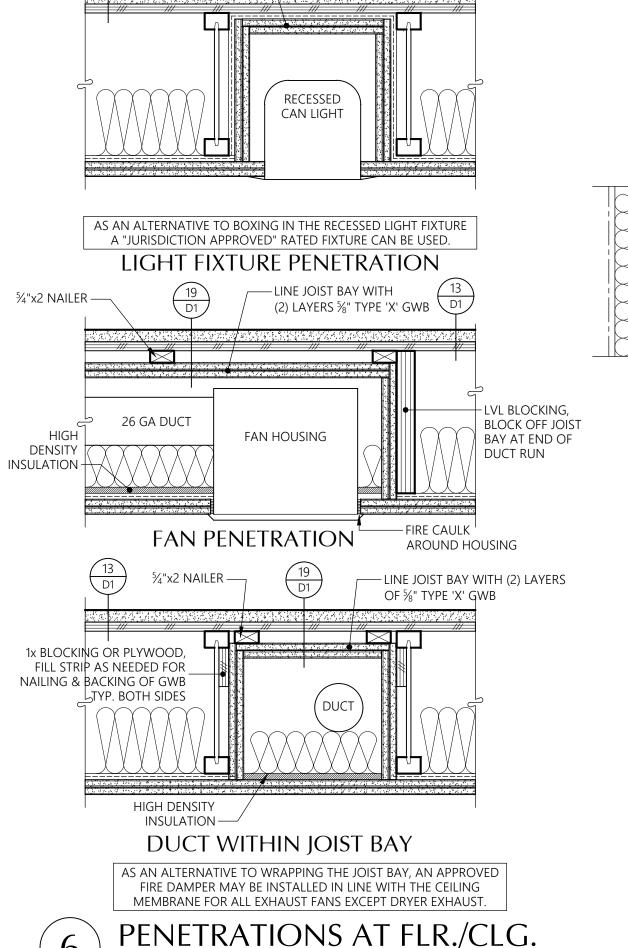
SLAB ON GRADE

MATRIX OF UL TESTED SYSTEMS:													
PENETRATING ITEM	ASSEMBLY	FIRE RATING	SYSTEM	PRODUCT	PENETRATING ITEM	ASSEMBLY	FIRE RATING	SYSTEM	PRODUCT				
METAL PIPE/CONDUIT	CONC. WALLS/FLRS	2,3,&4 HR	CAJ1044	CP25WB+	PLASTIC PIPE	CONC. WALLS/FLRS	1&2 HR	CAJ2001	*PPD				
MULTIPLE METAL	CONC. WALLS/FLRS	2 HR	CAJ1092	CP25WB+	PLASTIC PIPE	GYP. WALLS	1&2 HR	WL2002	*PPD				
METAL PIPE/CONDUIT	GYP. WALLS	1,2&3 HR	WL1001	CP25WB+	PLAS. JACKETED CABLE	CONC. WALLS/FLRS	2 HR	CAJ3021	MOLDABLE PUTTY				
MULTIPLE METAL	GYP. WALLS	1&2 HR	WL1016	CP25WB+	PLAS. JACKETED CABLE	GYP. WALLS	1&2 HR	WL3031	MOLDABLE PUTTY				
INSULATED PIPE	CONC. WALLS/FLRS	1,2,&3 HR	CAJ5001	CP25WB+	CABLE TRAYS	CONC. WALLS/FLRS	2&3 HR	CAJ4003	CP25WB+ CS195+				
INSULATED PIPE	GYP. WALLS	1&2 HR	WL5039	CP25WB+	CABLE TRAYS	GYP. WALLS	1&2 HR	WL4004	CP25WB+ CS195+				
HVAC DUCTS (RECT.)	CONC. WALLS/FLRS	2 HR	CAJ7016	CP25WB+	BUS DUCT	CONC. WALLS/FLRS	2&3 HR	CAJ6001	CP25WB+ CS195+				
HVAC DUCTS (ROUND)	CONC. WALLS/FLRS	2 HR	CAJ7003	CP25WB+	ELEC. OUTLET BOXES	GYP. WALLS	1&2 HR	ANSI UL263	MOLDABLE PUTTY				
HVAC DUCTS	GYP. WALLS	1&2 HR	WL7008	CP25WB+	CONSTRUCTION JOIN	TS:							
PVDF PLASTIC	CONC. WALLS/FLRS	2 HR	CAJ2121	FS195+ CP25WB+	GYPSUM WALL TO	CONC. DECK	1&2 HR	HWD0012	SILICONE 2000				
PVDF PLASTIC	GYP. WALLS	1&2 HR	WL2092	FS195+ CP25WB+	CONC. FLOOR TO	CONC. FLOOR	3 HR	FFD1002	SILICONE 2003				
	I	I	I	1	l .	I							

MATRIX OF UL TESTED SYSTEMS FOR FIRESTOPPING



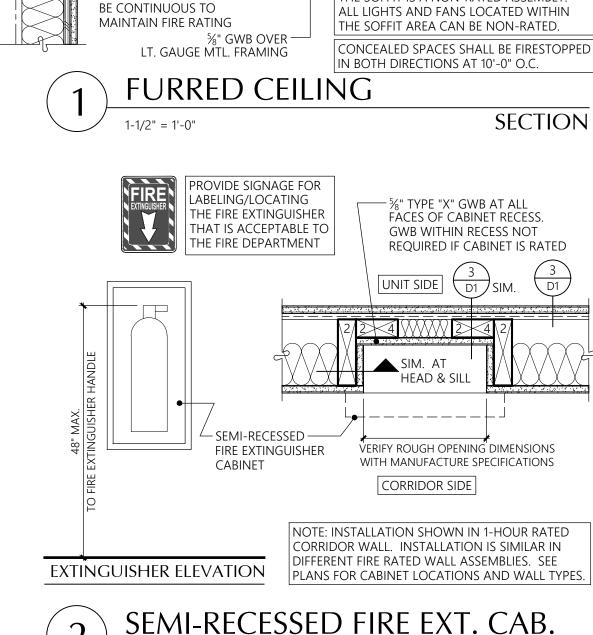




LINE JOIST BAY WITH (2) LAYERS

—½" RESILIENT CHANELS AT 24" Q.C.

5⁄8" TYPE 'X' GWB OVER



LINE JOIST BAY WITH

(2) LAYER %" TYPE 'X'

GWB AT DUCT RUNS -

GWB LAYER(S) SHALL

DUCT

FIRE CAULK AROUND PIPE WITH

AN APPROVED MATERIAL

WEB STIFFENERS,

INSTRUCTIONS -

24" O.C. -

THE SOFFIT IS A NON-RATED ASSEMBLY.

BE CONTINUOUS TO

MAINTAIN 1-HR

FLOOR RATING

SCREW ^{*}

INSTALL PER MFR'S

PROVIDE 2x4 BLKG

TO BLOCKING -

BETWEEN JOISTS AT

INSULATION AND ENERGY NOTES

Insulation - General

All insulation materials shall be installed according to the manufacturer's instructions to achieve proper densities, and maintain uniform R-values. Substantial contact of the insulation with the surface being insulated is required.

Where required, insulation shall be installed with clearances according to manufacturer's specifications. Insulation shall be installed so that required ventilation is unobstructed. For blown or poured loose fill insulation clearances shall be maintained through installation of a permanent retainer.

Slab on Grade

R-10 slab on grade insulation shall be installed inside the foundation wall.

Insulated Floors

Floor insulation shall be installed in a permanent manner in substantial contact with the surface being insulated. Insulation supports shall be installed so spacing is no more than twenty-four inches on center.

Floors separating conditioned space from unconditioned space shall have a vapor barrier installed. Vapor barrier shall be installed on the warm side of the insulation. The vapor barrier shall have a one perm dry cup rating or less (i.e. four mil. polyethylene or kraft faced material). The floor sheathing may be used as the vapor barrier if rated (and so stamped) at one perm (max.) Otherwise place vapor barrier on top of joists before placing sheathing.

Exterior Walls

All wall insulation shall fill the entire cavity. Exterior wall cavities isolated during framing shall be fully insulated to the levels of the surrounding walls. All faced insulation shall be face stapled to avoid compression.

Walls separating conditioned space from unconditioned space shall have a vapor barrier installed. Faced batt insulation shall be face stapled. Vapor barrier shall be installed on the warm side of the insulation.

Air Leakage

These air leakage notes apply to those locations separating outdoor ambient conditions from interior spaces that are heated or mechanically cooled.

Exterior joints around windows and door frames, between wall cavities and window or door frames, openings between walls and foundation, between walls and roof and wall panels; openings at penetrations of utility services through walls, floors and roof; and all other openings in the building envelope shall be sealed, caulked, gasketed, or weatherstripped to limit air leakage in a manner approved by the building official.

Doors All exterior doors or doors serving as access to an enclosed unheated area shall be weatherstripped to limit leakage around their perimeter when in a closed position.

The thermal transfer characteristics of insulated doors shall be determined per NFRC 100-91.

Windows:

Glazing U-values shall be determined in accordance with

Windows and SGD shall be double glazed vinyl type with the U-values

indicated on the unit plans. Windows shall be furnished with outdoor air inlets as indicated on the Unit Electrical plans. Inlets shall have a controllable and secure opening and be capable of a total opening area of not less than

four (4) square inches and tested by a nationally recognized standard or approved agency and located to avoid drafts. Inlets shall be screened or otherwise protected from entry by insects, leaves, or other material.

Roof/Ceilings:

Roof/Ceiling insulation: Open-Blown or poured loose fill insulation may be used in attic spaces where the slope of the ceiling is more than 4 in 12 and there is at least 44 inches of clear distance from the top of the bottom chord of the truss or ceiling joist to the underside of the sheathing. When eave vents are installed, baffling of the vent openings shall be provided so as to deflect the incoming air above the surface of the insulation. Baffles shall be rigid material, resistant to wind driven moisture. When feasible, the baffles shall be installed from the top of the outside of the exterior wall, extending inward, to a point six inches vertically above the height of noncompressed insulation, and twelve inches vertically above loose fill insulation. Baffles shall be in place at the time of framing inspection.

Where the ventilation space above the insulation is less than an average of twelve inches roof ceiling assemblies shall be provided with a vapor barrier having a 0.5 perm cup rating or less. Faced batt insulation where used as a vapor barrier shall be face stapled.

Vapor barriers shall not be required in roof/ceiling assemblies where the ventilation space above the insulation averages twelve inches or greater. Vapor barriers shall be installed on the warm side of the

GENERAL NOTES

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).
- 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.
- D. PROVIDE SHOP DRAWINGS AT NO ADDITIONAL COST TO THE OWNER.

AS REQUIRED FOR A COMPLETE OPERATING MECHANICAL

- 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
- 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.

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.
- 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 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.

EXTENT OF EXTERNAL DUCT INSULATION:

C. THE FIRST 10 FEET OF SUPPLY AND RETURN DUCTWORK FROM THE AIR HANDLER.

A. SUPPLY AND RETURN AIR IN UNCONDITIONED SPACES.

- MECHANICAL ROOMS, ELECTRICAL ROOMS, AND EQUIPMENT ROOMS NOT SPECIFIED TO BE INTERNALLY
- 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 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, 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 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 CONNECTION TO FANS, PACKAGED HVAC EQUIPMENT, EXTERNALLY ISOLATED AIR HANDLING UNITS, FAN COIL UNITS, AND SIMILAR EQUIPMENT. EXCEPTION: EQUIPMENT IN CORRIDOR CEILING SPACES WHERE FIRE RATING IS REQUIRED.
- 10. ALL DUCT WORK SHALL BE CLASSIFIED FOR LOW PRESSURE SYSTEMS PER IMC SECTION 603.
- 11. ALL DUCTS AND JOINTS SHALL BE SEALED PER IMC SECTION 603.

HVAC NOTES

1. ATTACHMENTS: AIR DISTRIBUTION OUTLETS AND LOUVERS

SHALL HAVE ALL REQUIRED ACCESSORIES AND ATTACHMENTS FOR A COMPLETE CONNECTION TO THE SPECIFIC TYPE OF STRUCTURE THAT THEY ARE BEING ATTACHED TO. THIS INCLUDES, BUT IS NOT LIMITED TO EXTERIOR BRICKS, GWB WALLS, GWB CEILING, ETC.

- 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
- 10. CORRIDOR THERMOSTAT: PROVIDE TAMPERPROOF THERMOSTATS IN CORRIDORS, DO NOT PROVIDE PLASTIC GUARDS TO MAKE THE THERMOSTATS TAMPERPROOF PROVIDE BLANK SECURABLE THERMOSTAT COVERS.

APPLICABLE CODE

BUILDING CODE:

- 2018 WASHINGTON STATE ENERGY CODE-RESIDENTIAL BY WASHINGTON ADMINSTRATIVE CODE CHAP 51-50 (WSEC)
- 2018 INTERNATIONAL RESIDENTIAL CODE WITH ADMINISTRATIVE CODE CHAP 51-51 (WSRC)
- 2018 INTERNATIONAL MECHANICAL CODE WITH ADMINISTRATIVE CODE CHAP 51-52 (WSMC)

DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS

FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

PRE-CON MEETING NOTES

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

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL 4 HOURS 4 HOURS PLUMBING/PIPING ELECTRICAL 4 HOURS 2 HOURS SPRINKLER GENERAL CONTRACTOR ALL SESSIONS

ANNOTATIONS

AIR CONDITIONING UNIT ABOVE FINISHED FLOOR AUTHORITY HAVING JURISDICTION AIR HANDLING UNIT BDD BACKDRAFT DAMPER BHP BRAKE HORSEPOWER BTUH BRITISH THERMAL UNIT PER HOUR COMMON CAP CAPACITY CC COOLING COIL CD CFILING DIFFUSER CFM CUBIC FEET PER MINUTE CLG CEILING, COOLING CO CLEANOUT COMB COMBUSTION CONT CONTINUE. CONTROL CONTR CONTRACTOR COP COEFFICIENT OF PERFORMANCE CHILLED WATER SUPPLY CWS CHILLED WATER RETURN CWR DIAMETER DB DRY BULB. DECIBEL DEG DEGREE DIM DIMENSION DISCH DISCHARGE DN DOWN EXHAUST AIR ENTERING AIR TEMPERATURE EER ENERGY EFFICIENCY RATIO EXHAUST FAN EFFICIENCY EXHAUST GRILLE. ENGINE **GENERATOR** ELEC ELECTRIC EQUIV **EQUIVALENT** ESP EXTERNAL STATIC PRESSURE EXH **EXHAUST** EXT EXTERIOR. EXTERNAL **FAHRENHEIT** FD FIRE DAMPER FCU FAN COIL UNIT FLR FLOOR FPM FEET PER MINUTE FPS FEET PER SECOND FSD FIRE/SMOKE DAMPER GRD GRILLES, REGISTERS, AND DIFFUSERS GWB GYPSUM WALLBOARD HORIZ HORIZONTAL HORSEPOWER, HEAT PUMP HRU HEAT RECOVERY UNIT HEATING, VENTILATING, AND AIR HVAC CONDITIONING HEATING AND VENTILATION UNIT HIGH WALL RETURN, HOT WATER HWR RETURN HIGH WALL SUPPLY, HOT WATER HWS SUPPLY HEAT EXCHANGER НΧ ID INDIRECT DRAIN, INSIDE DIAMETER

 KW KILOWATT LONG, LENGTH POUND LOW WALL RETURN LWR LOW WALL SUPPLY LWS THOUSAND BTU PER HOUR MBH MECH MECHANICAL MINIMUM CIRCUIT AMPACITY MCA MAXIMUM OVER CURRENT MOCP PROTECTION MTD MOUNTED

OSA OUTDOOR AIR OBD OPPOSED BLADE DAMPER OUTSIDE DIMENSION OR DIAMETER OD OPNG OPENING PD PRESSURE DROP

POINT OF CONNECTION POC PRV PRESSURE REDUCING VALVE PSIG POUNDS PER SQUARE INCH GAUGE RA RETURN AIR REF REFERENCE RELIEF FAN RG RETURN GRILLE

REVOLUTIONS PER MINUTE RPM SUPPLY AIR SCH SCHEDULE

NATIONAL

TYPICAL

TYP

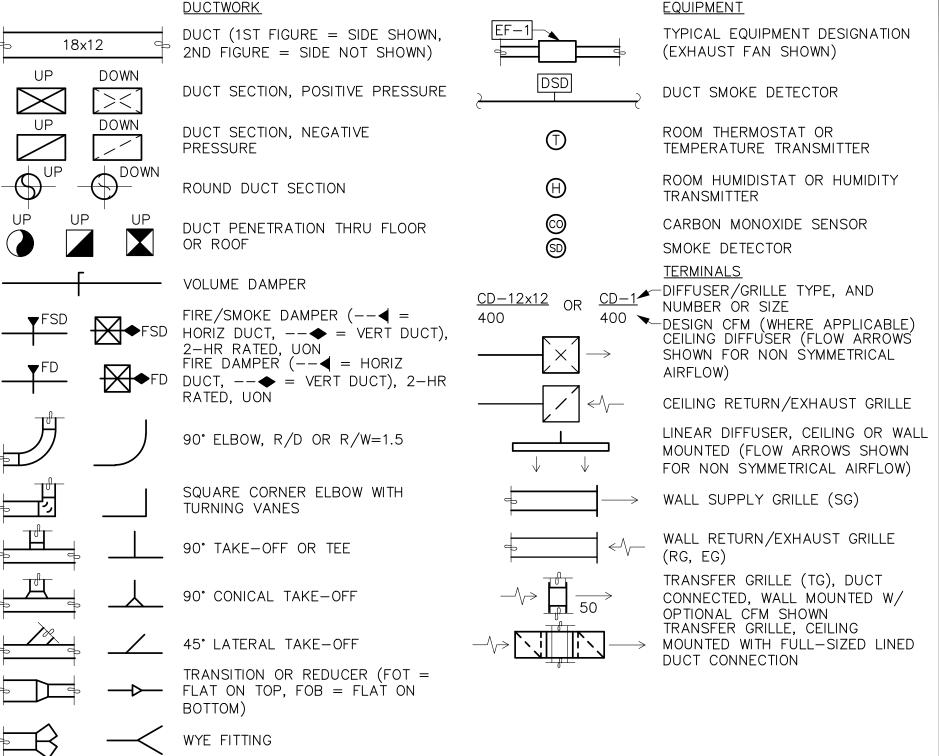
SUPPLY FAN, SQUARE FOOT SENS SENSIBLE SUPPLY GRILLE SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS

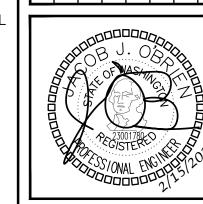
ASSOCIATION SCREENED OPENING STATIC PRESSURE SS STAINLESS STEEL, SANITARY SFWFR SQUARE TRANSFER GRILLE

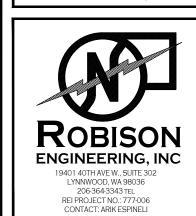
UNIT HEATER UH UON UNLESS OTHERWISE NOTED VENT VENTILATION, VENTILATOR VTR VENT THRU ROOF WASTE, WATT, WIDE

WET BULB (TEMPERATURE)

SYMBOLS







DRAWING INDEX

90° RECTANGULAR TAKE-OFF WITH

90° DIVERGING RECTANGULAR TEE,

EITHER RADIUS OR TURNING VANES

CONNECTION, EITHER RADIUS OR

PARALLEL FLOW BRANCH

ROUND DUCT INDICATOR

TURNING VANES

FLEXIBLE DUCT

45° TAPER

Sheet List Table									
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M0.1	PROJECT NOTES	Х							
M0.2	TABLES & CALCULATIONS	Х							
M0.3	MECHANICAL SCHEDULE & WSEC FORMS	Х							
M2.0	HVAC PLAN - FLOOR PLANS	Х							
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02/15/2024

LEGEND, GENERAL NOTES, & DRAWING INDEX

ENERGY CODE NOTES

WASHINGTON STATE COMMISSIONING REQUIREMENTS

C408.1.1CONSTRUCTION DOCUMENTS SHALL CLEARLY INDICATE PROVISIONS FOR COMMISSIONING PROCESS. THE CONSTRUCTION DOCUMENTS SHALL MINIMALLY INCLUDE THE FOLLOWING:

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING THE COMMISSIONING PROCESS. AT A MINIMUM, THE COMMISSIONING PROCESS IS REQUIRED TO

- INCLUDE:
 1.1. DEVELOPMENT AND EXECUTION OF THE COMMISSIONING PLAN, INCLUDING ALL
- SUBSECTIONS OF SECTION C408.1.2;
 1.2. THE CERTIFIED COMMISSIONING PROFESSIONAL'S REVIEW OF THE BUILDING
- DOCUMENTATION AND CLOSE OUT SUBMITTALS IN ACCORDANCE WITH SECTION C103.6; AND
- 1.3. THE COMMISSIONING REPORT IN ACCORDANCE WITH SECTION C408.1.3.

 2. ROLES, RESPONSIBILITIES AND REQUIRED QUALIFICATIONS OF THE CERTIFIED COMMISSIONING
- 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

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.

DESCRIPTION OF THE TESTS TO BE PERFORMED.

- 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

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

2. WHERE THROTTLING RESULTS IN NO GREATER THAN FIVE PERCENT OF THE NAMEPLATE

HORSEPOWER DRAW ABOVE THAT REQUIRED IF THE IMPELLER WERE TRIMMED.

FOLLOWING CONDITIONS:

1. ALL MODES AS DESCRIBED IN THE SEQUENCE OF OPERATION;

2. REDUNDANT OR AUTOMATIC BACK-UP MODE;

3. PERFORMANCE OF ALARMS; AND
4. MODE OF OPERATION UPON LOSS OF POWER AND RESTORATION OF POWER.

C408.3 SERVICE WATER HEATING EQUIPMENT AND CONTROLS SUBJECT TO SECTION C404 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE COMMISSIONING PROCESS SHALL MINIMALLY INCLUDE EQUIPMENT AND COMPONENTS INSTALLED TO MEET ALL ENERGY CODE REQUIREMENTS FOR DEVICES TO "START," "AUTOMATICALLY TURN OFF," "AUTOMATICALLY ADJUST," "LIMIT OPERATION," AND "LIMIT THE TEMPERATURE" AND "BE CONFIGURED TO."

C408.4 CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS SUBJECT TO SECTION C405 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE CONFIGURATION AND FUNCTION OF CONTROLLED RECEPTACLES AND LIGHTING CONTROL SYSTEMS REQUIRED BY THIS CODE SHALL BE TESTED AND SHALL COMPLY WITH SECTION C408.4.1 EXCEPTION: LIGHTING CONTROL SYSTEMS ARE EXEMPT FROM THE COMMISSIONING PROCESS IN BUILDINGS WHERE:

1. THE TOTAL INSTALLED LIGHTING LOAD IS LESS THAN 20 KW, AND 2. THE LIGHTING LOAD CONTROLLED BY OCCUPANCY SENSORS OR AUTOMATIC DAYLIGHTING

CONTROLS IS LESS THAN 10 KW.

C408.5 EQUIPMENT, COMPONENTS, CONTROLS OR CONFIGURATION SETTINGS FOR SYSTEMS WHICH ARE INCLUDED IN THE PROJECT TO COMPLY WITH SECTION C406 OR C407 SHALL BE INCLUDED

C408.6 ENERGY METERING SYSTEMS REQUIRED BY SECTION C409 SHALL COMPLY WITH SECTION C408.6 AND BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. THE COMMISSIONING PROCESS SHALL INCLUDE ALL ENERGY METERING EQUIPMENT AND CONTROLS REQUIRED BY SECTION C409.

C408.7 ALL INSTALLED REFRIGERATION SYSTEMS SUBJECT TO SECTION C410 SHALL BE INCLUDED IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1. EXCEPTIONS:

1. SELF—CONTAINED REFRIGERATION SYSTEMS ARE EXEMPT FROM THE COMMISSIONING

PROCESS.

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

WASHINGTON STATE CLOSE OUT DOCUMENTATION

C103.6 THE CONSTRUCTION DOCUMENTS SHALL SPECIFY THAT THE DOCUMENTS DESCRIBED IN THIS SECTION BE PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN A MAXIMUM 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATION OF OCCUPANCY. (C103.6.1 RECORD DOCUMENTS, C103.6.2 BUILDING OPERATIONS AND MAINTENANCE INFORMATION, C103.6.2.1 MANUALS, C103.6.3 COMPLIANCE DOCUMENTATION, C103.6.4 SYSTEMS OPERATION TRAINING)

<u>washington state energy code</u>

IN THE COMMISSIONING PROCESS REQUIRED BY SECTION C408.1.

C403.4.1 THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE.

C403.4.1.1 UNITARY AIR COOLED HEAT PUMPS SHALL INCLUDE MICROPROCESSOR CONTROLS THAT MINIMIZE SUPPLEMENTAL HEAT USAGE DURING START-UP, SET-UP, AND DEFROST CONDITIONS. THESE CONTROLS SHALL ANTICIPATE NEED FOR HEAT AND USE COMPRESSION HEATING AS THE FIRST STAGE OF HEAT. CONTROLS SHALL INDICATE WHEN SUPPLEMENTAL HEATING IS BEING USED THROUGH VISUAL MEANS (E.G., LED INDICATORS). HEAT PUMPS EQUIPPED WITH SUPPLEMENTAL HEATERS SHALL BE INSTALLED WITH CONTROLS THAT PREVENT SUPPLEMENTAL HEATER OPERATION ABOVE 40°F.

C403.4.1.2 WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

C403.7.8.1 OUTDOOR AIR SUPPLY, EXHAUST OPENINGS AND RELIEF OUTLETS AND STAIRWAY AND ELEVATOR HOISTWAY SHAFT VENTS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. SEE SECTIONS C403.10.1 AND C403.10.2 FOR DUCTWORK INSULATION REQUIREMENTS UPSTREAM AND DOWNSTREAM OF THE SHUTOFF DAMPER. EXCEPTION:

1. GRAVITY (NONMOTORIZED) DAMPERS SHALL BE PERMITTED IN LIEU OF MOTORIZED

- DAMPERS`AS FOLLOWS: 1 PRINTED AMPERS SERVING SYSTEMS LESS THAN 5 000 CFM TOTAL SUPPLY SHALL
- 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 OCCUPANCY SCHEDULES.

2. SHUTOFF DAMPERS ARE NOT REQUIRED IN:

EXHAUST CAPACITY DOES NOT EXCEED 400 CFM.

- 2.1. COMBUSTION AIR INTAKES.
 2.2. SYSTEMS SERVING AREAS WHICH REQUIRE CONTINUOUS OPERATION IN ANIMAL HOSPITALS, KENNELS AND POUNDS, LABORATORIES, GROUP H, I AND R OCCUPANCIES.
 2.3. SUBDUCT EXHAUST SYSTEMS OR OTHER SYSTEMS THAT ARE REQUIRED TO OPERATE
- CONTINUOUSLY BY THE INTERNATIONAL MECHANICAL CODE.

 2.4. TYPE I GREASE EXHAUST SYSTEMS OR OTHER SYSTEMS WHERE DAMPERS ARE PROHIBITED BY THE INTERNATIONAL MECHANICAL CODE TO BE IN THE AIRSTREAM.
- 2.5. UNCONDITIONED STAIRWELLS OR UNCONDITIONED ELEVATOR HOISTWAY SHAFTS THAT ARE ONLY CONNECTED TO UNCONDITIONED SPACES.

C403.7.8.2 RETURN AIR OPENINGS USED FOR AIRSIDE ECONOMIZER OPERATION SHALL BE EQUIPPED WITH CLASS I MOTORIZED DAMPERS.

C403.7.8.3 CLASS I DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM/SF WHEN TESTED IN ACCORDANCE WITH AMCA 500D AND SHALL BE LABELED BY AN APPROVED AGENCY FOR SUCH PURPOSE. GRAVITY (NONMOTORIZED) DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 20 CFM/SF WHERE NOT LESS THAN 24 INCHES IN EITHER DIMENSION AND 40 CFM/SF WHERE LESS THAN 24 INCHES IN EITHER DIMENSION. THE RATE OF AIR LEAKAGE SHALL BE DETERMINED AT 1.0 INCH W.G. WHEN TESTED IN ACCORDANCE WITH AMCA500D FOR SUCH PURPOSE. THE DAMPERS SHALL BE LABELED BY AN APPROVED AGENCY. GRAVITY DAMPERS FOR VENTILATION AIR INTAKES SHALL BE PROTECTED FROM DIRECT EXPOSURE TO

WIND. EXCEPTIONS

1. GRAVITY (NONMOTORIZED) DAMPERS ARE NOT REQUIRED TO BE TESTED TO VERIFY THE AIR LEAKAGE RATING WHEN INSTALLED IN EXHAUST SYSTEMS WHERE THE EXHAUST CAPACITY DOES NOT EXCEED 400 CFM AND THE GRAVITY DAMPER IS PROVIDED WITH A

2. MOTORIZED DAMPERS ON RETURN AIR OPENINGS IN UNITARY PACKAGED EQUIPMENT THAT HAVE THE MINIMUM LEAKAGE RATE AVAILABLE FROM THE MANUFACTURER.

C403.7.8.4 OUTDOOR AIR INTAKE, RELIEF AND EXHAUST SHUTOFF DAMPERS SHALL BE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO CLOSE WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE OR DURING UNOCCUPIED PERIOD WARM—UP AND SETBACK OPERATION, UNLESS THE SYSTEMS SERVED REQUIRE OUTDOOR OR EXHAUST AIR IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE OR THE DAMPERS ARE OPENED TO PROVIDE INTENTIONAL ECONOMIZER COOLING. STAIRWAY AND ELEVATOR HOISTWAY SHAFT VENT DAMPERS SHALL BE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO OPEN UPON THE ACTIVATION OF ANY FIRE ALARM INITIATING DEVICE OF THE BUILDING'S FIRE ALARM SYSTEM OF THE INTERRUPTION OF POWER TO THE DAMPER.

C403.10.1.1 DUCTS, SHAFTS AND PLENUMS CONVEYING OUTSIDE AIR FROM THE EXTERIOR OF THE BUILDING TO THE MECHANICAL SYSTEM SHALL MEET ALL AIR LEAKAGE AND BUILDING ENVELOPE INSULATION REQUIREMENTS OF SECTION C402, PLUS BUILDING ENVELOPE VAPOR CONTROL REQUIREMENTS FROM THE INTERNATIONAL BUILDING CODE, EXTENDING CONTINUOUSLY FROM THE BUILDING EXTERIOR TO THE AUTOMATIC SHUTOFF DAMPER OR HEATING OR COOLING EQUIPMENT. FOR THE PURPOSES OF BUILDING ENVELOPE INSULATION REQUIREMENTS, DUCT SURFACES SHALL BE INSULATED WITH THE MINIMUM INSULATION VALUES IN TABLE C403.10.1.1. DUCT SURFACES INCLUDED AS PART OF THE BUILDING ENVELOPE SHALL NOT BE USED IN THE CALCULATION OF MAXIMUM GLAZING AREA AS DESCRIBED IN SECTION C402.4.1. EXCEPTIONS:

1. OUTDOOR AIR DUCTS SERVING INDIVIDUAL SUPPLY AIR UNITS WITH LESS THAN 2,800 CFM

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.

OF TOTAL SUPPLY AIR CAPACITY, PROVIDED THESE ARE INSULATED TO THE MINIMUM

C403.10.1.2 ALL OTHER SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES, AND WHERE LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-8 INSULATION IN CLIMATE ZONE 4 AND R-12 INSULATION IN CLIMATE ZONE 5. WHERE LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM INSULATION VALUE AS REQUIRED FOR EXTERIOR WALLS BY SECTION C402.1.3. EXCEPTIONS:

1. WHERE LOCATED WITHIN EQUIPMENT.

2. SUPPLY AND RETURN DUCTWORK LOCATED IN UNCONDITIONED SPACES WHERE THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F AND INSULATED IN ACCORDANCE WITH TABLE C403.10.1.2.

WHERE LOCATED WITHIN CONDITIONED SPACE, SUPPLY DUCTS WHICH CONVEY SUPPLY AIR AT TEMPERATURES LESS THAN 55°F OR GREATER THAN 105°F SHALL BE INSULATED WITH A MINIMUM INSULATION R-VALUE IN ACCORDANCE WITH TABLE C403.10.1.2. EXCEPTION: DUCTWORK EXPOSED TO VIEW WITHIN A ZONE THAT SERVES THAT ZONE IS NOT REQUIRED TO BE INSULATED.

WHERE LOCATED WITHIN CONDITIONED SPACE, RETURN OR EXHAUST AIR DUCTS THAT CONVEY RETURN OR EXHAUST AIR DOWNSTREAM OF AN ENERGY RECOVERY MEDIA SHALL BE INSULATED WITH A MINIMUM R-VALUE IN ACCORDANCE WITH TABLE C403.10.1.2.

ALL DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION 603.9 OF THE INTERNATIONAL MECHANICAL CODE.

C403.10.2 DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.

C403.10.3 ALL PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.10.3. EXCEPTIONS:

1. FACTORY-INSTALLED PIPING WITHIN HVAC EQUIPMENT TESTED AND RATED IN ACCORDANCE

- WITH A TEST PROCEDURE REFERENCED BY THIS CODE.

 2. FACTORY—INSTALLED PIPING WITHIN ROOM FAN—COILS AND UNIT VENTILATORS TESTED AND RATED ACCORDING TO AHRI 440 (EXCEPT THAT THE SAMPLING AND VARIATION PROVISIONS OF SECTION 6.5 SHALL NOT APPLY) AND 840, RESPECTIVELY.
- 3. PIPING THAT CONVEYS FLUIDS THAT HAVE A DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60°F AND 105°F.
- 4. PIPING THAT CONVEYS FLUIDS THAT HAVE NOT BEEN HEATED OR COOLED THROUGH THE USE OF FOSSIL FUELS OR ELECTRIC POWER.
- 5. STRAINERS, CONTROL VALVES, AND BALANCING VALVES ASSOCIATED WITH PIPING 1 INCH OR LESS IN DIAMETER. 6. DIRECT BURIED PIPING THAT CONVEYS FLUIDS AT OR BELOW 60°F.

C403.5 AIR ECONOMIZERS SHALL BE PROVIDED ON ALL NEW COOLING SYSTEMS INCLUDING THOSE SERVING COMPUTER SERVER ROOMS, ELECTRONIC EQUIPMENT, RADIO EQUIPMENT, AND TELEPHONE SWITCHGEAR. ECONOMIZERS SHALL COMPLY WITH SECTIONS C403.5.1 THROUGH C403.5.5. NOTE: ECONOMIZERS ARE NOT REQUIRED FOR SYSTEMS THAT MEET THE REQUIREMENTS OF SECTION C403.5, EXCEPTIONS 1 THROUGH 11.

C403.5.1 ECONOMIZER SYSTEMS SHALL BE INTEGRATED WITH THE MECHANICAL COOLING SYSTEM AND BE CONFIGURED TO PROVIDE PARTIAL COOLING EVEN WHERE ADDITIONAL MECHANICAL COOLING IS REQUIRED TO PROVIDE THE REMAINDER OF THE COOLING LOAD. CONTROLS SHALL NOT BE CAPABLE OF CREATING A FALSE LOAD IN THE MECHANICAL COOLING SYSTEM BY LIMITING OR DISABLING THE ECONOMIZER OR ANY OTHER MEANS, SUCH AS HOT GAS BYPASS, EXCEPT AT THE LOWEST STAGE OF MECHANICAL COOLING. UNITS THAT INCLUDE AN AIR ECONOMIZER SHALL COMPLY WITH THE FOLLOWING:

- 1. UNIT CONTROLS SHALL HAVE THE MECHANICAL COOLING CAPACITY CONTROL INTERLOCKED WITH THE AIR ECONOMIZER CONTROLS SUCH THAT THE OUTDOOR AIR DAMPER IS AT THE 100 PERCENT OPEN POSITION WHEN MECHANICAL COOLING IS ON AND THE OUTDOOR AIR DAMPER DOES NOT BEGIN TO CLOSE TO PREVENT COIL FREEZING DUE TO MINIMUM COMPRESSOR RUN TIME UNTIL THE LEAVING AIR TEMPERATURE IS LESS THAN 45°F.
- 2. DIRECT EXPANSION (DX) UNITS WITH COOLING CAPACITY 65,000 BTUH OR GREATER OF RATED CAPACITY SHALL COMPLY WITH THE FOLLOWING:3. 2.1 DX UNITS THAT CONTROL THE CAPACITY OF THE MECHANICAL COOLING DIRECTLY
- BASED ON OCCUPIED SPACE TEMPERATURE SHALL HAVE NOT FEWER THAN TWO STAGES OF MECHANICAL COOLING CAPACITY.

 4. 2.2 OTHER DX UNITS, INCLUDING THOSE THAT CONTROL SPACE TEMPERATURE BY
- MODULATING THE AIRFLOW TO THE SPACE, SHALL BE IN ACCORDANCE WITH TABLE C403.5.1.

C403.5.2 HVAC SYSTEM DESIGN AND ECONOMIZER CONTROLS SHALL BE SUCH THAT ECONOMIZER OPERATION DOES NOT INCREASE BUILDING HEATING ENERGY USE DURING NORMAL OPERATION. EXCEPTION: ECONOMIZERS ON VAV SYSTEMS THAT CAUSE ZONE LEVEL HEATING TO INCREASE DUE TO A REDUCTION IN SUPPLY AIR TEMPERATURE. C403.5.3.1 AIR ECONOMIZER SYSTEMS SHALL BE CONFIGURED TO MODULATE OUTDOOR AIR AND RETURN AIR DAMPERS TO PROVIDE UP TO 100 PERCENT OF THE DESIGN SUPPLY AIR QUANTITY AS OUTDOOR AIR FOR COOLING.

C403.5.3.2 ECONOMIZER CONTROLS AND DAMPERS SHALL BE CONFIGURED TO SEQUENCE THE DAMPERS WITH MECHANICAL COOLING EQUIPMENT AND SHALL NOT BE CONTROLLED BY ONLY MIXED AIR TEMPERATURE. AIR ECONOMIZERS ON SYSTEMS WITH COOLING CAPACITY GREATER THAT 65,000 BTUH SHALL BE CONFIGURED TO PROVIDE PARTIAL COOLING EVEN WHEN ADDITIONAL MECHANICAL COOLING IS REQUIRED TO MEET THE REMAINDER OF THE COOLING LOAD. EXCEPTION: THE USE OF MIXED AIR TEMPERATURE LIMIT CONTROL SHALL BE PERMITTED FOR SYSTEMS THAT ARE BOTH CONTROLLED FROM SPACE TEMPERATURE (SUCH AS SINGLE ZONE SYSTEMS) AND HAVING COOLING CAPACITY LESS THAN 65,000 BTUH.

C403.5.3.3 AIR ECONOMIZERS SHALL BE CONFIGURED TO AUTOMATICALLY REDUCE OUTDOOR AIR INTAKE TO THE DESIGN MINIMUM OUTDOOR AIR QUANTITY WHEN OUTDOOR AIR INTAKE WILL NO LONGER REDUCE COOLING ENERGY USAGE. HIGH-LIMIT SHUTOFF CONTROL TYPES SHALL BE CHOSEN FROM TABLE C403.5.3.3. HIGH-LIMIT SHUTOFF CONTROL SETTINGS FOR THESE CONTROL TYPES SHALL BE THOSE SPECIFIED TO TABLE C403.5.3.3.

C403.5.3.4 SYSTEMS SHALL BE CAPABLE OF RELIEVING EXCESS OUTDOOR AIR DURING AIR ECONOMIZER OPERATION TO PREVENT OVER-PRESSURIZING THE BUILDING. THE RELIEF AIR OUTLET SHALL BE LOCATED TO AVOID RECIRCULATION INTO THE BUILDING.

C403.5.3.5 RETURN, EXHAUST/RELIEF AND OUTDOOR AIR DAMPERS USED IN ECONOMIZERS SHALL COMPLY WITH SECTION C403.7.8.

C409.1 ALL NEW BUILDINGS AND ADDITIONS SHALL HAVE THE CAPABILITY OF METERING SOURCE ENERGY FOR ON—SITE RENEWABLE ENERGY PRODUCTION IN ACCORDANCE WITH SECTION C409.2.4 AND THE END—USE ENERGY USAGE FOR ELECTRIC VEHICLE CHARGING IN ACCORDANCE WITH SECTION C409.3.4. NEW BUILDINGS AND ADDITIONS WITH A GROSS CONDITIONED FLOOR AREA OVER 50,000 SQUARE FEET SHALL COMPLY SECTION C409. BUILDINGS SHALL BE EQUIPPED TO MEASURE, MONITOR, RECORD AND DISPLAY ENERGY CONSUMPTION DATA FOR EACH ENERGY SOURCE AND END USE CATEGORY PER THE PROVISIONS OF THIS SECTION, TO ENABLE EFFECTIVE ENERGY MANAGEMENT. EXCEPTIONS:

1. TENANT SPACES SMALLER THAN 50,000 SQUARE FEET WITHIN BUILDINGS IF TENANT SPACE HAS ITS OWN UTILITY SERVICE AND UTILITY METERS.

2. BUILDINGS IN WHICH THERE IS NO GROSS CONDITIONED FLOOR AREA OVER 25,000 SQUARE FEET, INCLUDING BUILDING COMMON AREA, THAT IS SERVED BY ITS OWN UTILITY SERVICES AND METERS.

RESIDENTIAL ENERGY CODE

WHOLE-HOUSE FAN EFFICACY PER TABLE R403.6.1.
 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	OUTSIDE AIR FROM EXTERIOR OF BUILDING TO AUTOMATIC SHUT—OFF DAMPER OR HEATING OR COOLING EQUIPMENT AND GREATER THAN 2,800 CFM	MINERAL-WOOL BLANKET	NOTE 2
	OUTSIDE AIR FROM EXTERIOR OF BUILDING TO AUTOMATIC SHUT—OFF DAMPER OR HEATING OR COOLING EQUIPMENT AND LESS THAN 2,800 CFM	MINERAL-WOOL BLANKET	7.0
	OUTSIDE AIR DUCT IN UNHEATED EQUIPMENT ROOMS WITH COMBUSTION AIR LOUVERS, ISOLATED FROM CONDITIONED SPACE AT SIDES, TOP AND BOTTOM WITH R—11 INSULATION	MINERAL—WOOL BLANKET	0.0
	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

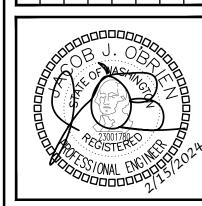
(4) EXTERAL DUCT INSULATION IS IDENTIFIABLE PER WSMC 604.7 (5) ALL DUCTWORK IS CONSTRUCTED AND SEALED PER WSMC

(5) ALL DUCTWORK IS CONSTRUCTED AND SEALED PER WSMC

(6) INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD INDEX OF 25 AND

MAXIMUM SMOKE DEVELOPED INDEX OF 50 PER WSMC 604.3

TABLE 6403.10.3. WITHING FIFE							
	INSULAT	TON TH	ICKI	VES:	S		
FLUID OPERATING TEMPERATURE	INSULATION C	ONDUCTIVITY		EL	ECTRIC	ΑL	
DANCE AND HEACE	CONDUCTIVITY BTU*IN/(H*FT ² ** F)	MEAN RATING TEMPERATURE, °F	< 1	1 TO < 1-1/2	1-1/2 TO < 4	4 TO < 8	≥ 8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 – 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	75	0.5	1.0	1.0	1.0	1.5





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SOBISON 19401.
PHONE

02/15/2024

PROJECT
NOTES

MO.1

WHOLE HOUSE VENTILATION NOTES EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH A WHOLE—HOUSE MECHANICAL VENTILATION SYSTEM THAT COMPLIES WITH SECTIONS 403.4.1 THROUGH 403.4.6. EACH DWELLING UNIT OR SLEEPING UNIT SHALL BE EQUIPPED WITH LOCAL EXHAUST COMPLYING WITH SECTION 403.4.7. ALL OCCUPIED SPACES, INCLUDING PUBLIC CORRIDORS, OTHER THAN GROUP R DWELLING UNITS AND/OR SLEEPING UNITS, THAT SUPPORT THESE GROUP R OCCUPANCIES, SHALL MEET THE VENTILATION REQUIREMENTS OF SECTION 402 OR THE MECHANICAL VENTILATION REQUIREMENTS OF SECTIONS 403.1 THROUGH 403.3. THE WHOLE HOUSE VENTILATION SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY FANS, ONE OR MORE EXHAUST FANS, OR AN ERV/HRV WITH INTEGRAL FANS; AND THE ASSOCIATED DUCTS AND CONTROLS. LOCAL EXHAUST FANS SHALL BE PERMITTED TO SERVE AS PART OF THE WHOLE-HOUSE VENTILATION SYSTEM WHEN PROVIDED WITH THE PROPER CONTROLS IN ACCORDANCE WITH SECTION 403.4.5. THE SYSTEMS SHALL BE DESIGNED AND INSTALLED TO SUPPLY AND EXHAUST THE MINIMUM OUTDOOR AIRFLOW RATES PER SECTION 403.4.2 AS CORRECTED BY THE BALANCED AND/OR DISTRIBUTED WHOLE—HOUSE VENTILATION SYSTEM COEFFICIENTS IN ACCORDANCE WITH SECTION 403.4.3 WHERE APPLICABLE. THE DWELLING UNIT WHOLE-HOUSE MECHANICAL VENTILATION MINIMUM OUTDOOR AIRFLOW RATE SHALL BE DETERMINED IN ACCORDANCE WITH EQUATION 4-10 OR TABLE 403.4.2. RESIDENTIAL DWELLING AND SLEEPING UNITS IN GROUP R-2 OCCUPANCIES SYSTEM SHALL INCLUDE SUPPLY AND EXHAUST FANS AND BE A BALANCED WHOLE-HOUSE VENTILATION SYSTEM IN ACCORDANCE WITH SECTION 403.4.6.3. THE SYSTEM SHALL INCLUDE A HEAT OR ENERGY RECOVERY VENTILATOR WITH A SENSIBLE HEAT RECOVERY EFFECTIVENESS AS PRESCRIBED IN SECTION C403.3.6 OF THE WASHINGTON STATE ENERGY CODE. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED IN ACCORDANCE WITH SECTION 403.4. THE WHOLE-HOUSE SUPPLY FAN SHALL PROVIDE DUCTED OUTDOOR VENTILATION AIR TO EACH HABITABLE SPACE WITHIN THE RESIDENTIAL UNIT. CONTROLS FOR THE WHOLE-HOUSE VENTILATION SYSTEM SHALL COMPLY WITH THE FOLLOWING: 1. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL BE CONTROLLED WITH MANUAL SWITCHES, TIMERS OR OTHER MEANS THAT PROVIDE FOR AUTOMATIC OPERATION OF THE VENTILATION SYSTEM THAT HAVE READY ACCESS FOR THE 2. THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE OFF OF THE SYSTEM BY THE OCCUPANT DURING PERIODS OF POOR OUTDOOR AIR QUALITY. CONTROLS SHALL INCLUDE PERMANENT TEXT OR A SYMBOL INDICATING THEIR FUNCTION. RECOMMENDED CONTROL PERMANENT LABELING TO INCLUDE TEXT SIMILAR TO THE FOLLOWING; "LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR." MANUAL CONTROLS SHALL HAVE READY ACCESS FOR THE OCCUPANT. 3. WHOLE-HOUSE VENTILATION SYSTEMS SHALL BE CONFIGURED TO OPERATE CONTINUOUSLY EXCEPT WHERE INTERMITTENT OFF CONTROLS ARE PROVIDED IN ACCORDANCE WITH SECTION 403.4.6.5 AND ALLOWED BY SECTION 403.4.4.2. WHOLE HOUSE VENTILATION SUPPLY AND EXHAUST FANS SPECIFIED IN THIS SECTION SHALL HAVE A MINIMUM EFFICACY AS PRESCRIBED IN THE WASHINGTON STATE ENERGY CODE. THE FANS SHALL BE RATED FOR SOUND AT A MAXIMUM OF 1.0 SONE AT DESIGN AIRFLOW AND STATIC PRESSURE CONDITIONS. DESIGN AND INSTALLATION OF THE SYSTEM OR EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION INSTRUCTIONS. A BALANCED WHOLE HOUSE VENTILATION SYSTEM SHALL INCLUDE BOTH SUPPLY AND EXHAUST FANS. THE SUPPLY AND EXHAUST FANS SHALL HAVE AIRFLOW THAT IS WITHIN 10 PERCENT OF EACH OTHER. THE TESTED AND BALANCED TOTAL MECHANICAL EXHAUST AIRFLOW RATE IS WITHIN 10 PERCENT OR 5 CFM, WHICHEVER IS GREATER, OF THE TOTAL MECHANICAL SUPPLY AIRFLOW RATE. THE FLOW RATE TEST RESULTS SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION 403.4.6.6. THE EXHAUST FAN SHALL MEET THE REQUIREMENTS OF SECTION 403.4.6.2. THE SUPPLY FAN SHALL MEET THE REQUIREMENTS OF SECTION 403.4.6.3. FOR R-2 DWELLING AND SLEEPING UNITS, THE SYSTEM IS REQUIRED TO HAVE BALANCED WHOLE-HOUSE VENTILATION BUT IS NOT REQUIRED TO HAVE DISTRIBUTED WHOLE-HOUSE VENTILATION WHERE THE NOT DISTRIBUTED SYSTEM COEFFICIENT FROM TABLE 403.4.3 IS UTILIZED TO CORRECT THE WHOLE-HOUSE MECHANICAL VENTILATION RATE. THE SYSTEM SHALL BE DESIGNED AND BALANCED TO MEET THE PRESSURE EQUALIZATION REQUIREMENTS OF SECTION 501.4. INTERMITTENT DRYER EXHAUST, INTERMITTENT RANGE HOOD EXHAUST, AND INTERMITTENT TOILET ROOM EXHAUST AIRFLOW RATES ABOVE THE RESIDENTIAL DWELLING OR SLEEPING UNIT MINIMUM VENTILATION RATE ARE EXEMPT FROM THE BALANCED AIRFLOW CALCULATION. 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 TERMINATION FITTING, LISTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, IS USED TO SEPARATE THE AIR STREAMS. A MINIMUM OF 5 FEET HORIZONTAL SEPARATION BETWEEN OTHER ENVIRONMENTAL AIR EXHAUST OUTLETS AND OTHER DWELLING OR SLEEPING UNIT FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATION FITTINGS SHALL

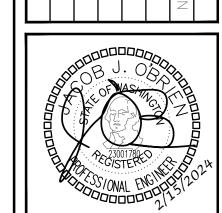
BE MAINTAINED.

CALCULATIONS

		RESI	IDENTIAL VENTILA	TION CALC	JLATIONS			
			2018	MC CRITERIA (1)		VENTILATION QUALITY	MINIMUM WHOLE HOUSE	TOTAL CFM PROVIDED
UNIT TYPE	UNIT SQUARE FOOTAGE	NUMBER OF BEDROOMS	FLOOR AREA, SQFT	NUMBER OF BEDROOMS	REQUIRED CFM (2)	ADJUSTMENT COEFFICIENT (3)	MINIMUM WHOLE HOUSE VENTILATION RATE, CFM	BY WHOLE HOUSE FAN SYSTEM
1 BEDROOM	660	1	500 - 1,000	1	30	1.5	45	55
2 BEDROOM	1000	2	500 - 1,000	2	35	1.5	53	55
NOTF:	(1) VENTILATION CRITERIA IS PER TH	F 2018 WA RESIDENTIAL CODE	SECTION M1505.4.3	•				•

(1) VENTILATION CRITERIA IS PER THE 2018 WA RESIDENTI (2) MINIMUM OSA FOR CONTINUOUSLY OPERATING FAN(S).

(3) ADJUSTMENT COEFFICIENT IS PER 2018 WRC, TABLE M1505.4.3(2) FOR A NOT BALANCED, AND NOT DISTRIBUTED WHOLE HOUSE VENTILATION SYSTEM.





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SHEET TITLE:
TABLES &
CALCULATIONS

MO.2

WSEC FORMS

MECHANIO	CAL COM	IPLIAN	NCE SUN	MMAR	Y									
2018 WSEC Complia	ance Forms for C	Commercial B	Buildings inclu	ıding Group	R2, R3 & R4 over 3 st	tories and all	R1			Adı	lministered by	r: ©2023 N	EEA, All rights reserved	
			Project Title		Bradley He	ights Apartm	ents Building B - 20	18 WSEC	For Building Dep	partment Use:		Date	Jun 16, 2023	
Dustant C Amultanut			Project Addr	ess			27th Ave SE pp, WA 98374					Date	5 un 10, 202.	
Project & Applicant Information	ı	-	Applicant Na	ame	,		k Espineli	-						
			Applicant Ph	one		206	-364-3343	,						
			Applicant Er		<u> </u>	<u> </u>	isonengineering.con							
1		For	questions abou	ut this repor	t, contact WSEC Com	nercial Techr	nical Support at 360-	539-5300 or vi	a email at com.techsuppe	ort@waenergycodes.co	om			
General Occupancy			All Group I	D D2 D3 8	& R4 over 3 stories and	all P1 Co	eneral Building Use	Type	Multifamily/Resident	ial Building Cond. F	Floor Area	I :	14,925	
General Occupancy	,		All Gloup I			an Ki Ge	eneral Bulluing Cse	Турс	Withtiamity/Resident	Project Cond. Flo			14,925	
General Project Typ	oes		New Bui		New Building or Addition	l s	Single Zone Systems	& Equipment	Alteration	Floors Above Gra			3	
					Mechanical Scope	~		or administration.	Mechanical Scope	Compliance Meth		Complia	ince Method 1 - Genera	
Mechanical Project	Description				-1	Fu	ıll mechanical desig	n for new 3 stor	ry residential building wi					
	-	'		ı										
М	lechanical Com	L		Project Ty	pe Mechanical	l Scope	Economizer Exception(s) Applied?	1 136	OAS Ventilation Provided?	Higher Eo Efficiency Op	quipment otion Applied	?	Equipment Efficiency Compliance Verification	
Scope and Method			New Building	Single Zone S Equipm		No	No Yes		NA			COMPLIES		
Additional Efficienc Credits Included (A														
Does building includ	le occupancy cla	assifications	requiring		No		Does project incl	ude DOAS eq	uipment?				Yes	
													-	
Based on project sco	ope do TSPR rec	quirements a	apply?		No	•	Do all systems co TSPR?	mply with Ap	pendix D standard refe	rence design or qualif	fy for an exce	eption to	No	
Based on project sco		-		LDING -	No SINGLE ZONE S	SYSTEMS	TSPR?		pendix D standard refe		fy for an exce			
Scope & Space C	Conditioning		NEW BUII			SYSTEMS	TSPR?		pendix D standard refe					
	Conditioning tems Category -	Unit heaters	NEW BUII			SYSTEMS	TSPR?		pendix D standard refe					
Scope & Space C Single Zone Air Syst Air Systems Summa	Conditioning tems Category -	Unit heaters	NEW BUII	ers	SINGLE ZONE S		**EQUIPMEN	T Ventila	ation CFM	Comp	pliance Ver	rification	COMPLIES	
Scope & Space C	Conditioning tems Category -	Unit heaters	NEW BUII	ers	SINGLE ZONE S	on Standard	**EQUIPMEN	T Ventila		Comp Ventilation Air Source	pliance Ver	rification		
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MECHANICAL SCHEDULES

	ELECTRIC HEATERS						
EQUIP NO.	SERVICE	SERVICE MOUNTING/ DISCHARGE		HEATING HEATING		ELECTRICAL	BASIS OF DESIGN (3)
EQUIF NO.	SERVICE	MOUNTING/ DISCHARGE	KW	VOLTAGE	DASIS OF DESIGN (5)		
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. COORDINATE FINAL LOCATION WITH ELECTRICAL DRAWINGS.

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

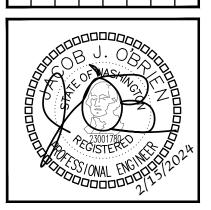
	FAN SCHEDULE								
EQUIP NO.	SERVICE	TYPE AIRFLO		ESP. IN WG	ELECTRICAL		OPERATION	WEIGHT, LBS	BASIS OF DESIGN
LQUII 110.	SLKVICE	111 6	CFM	LSI . IIV VVG	VOLTAGE	HP	OLKATION	WLIGITI, LD3	(1)(2)(3)
BEF-1	RESTROOM	CEILING MOUNTED	55/80	0.5	115V/1P	FHP	CONTINUOUS	10	GREENHECK SP-AP0511W (4)
BEF-2	restroom	CEILING MOUNTED	50	0.5	115V/1P	FHP	(2)	10	GREENHECK SP-AP0511W

NOTES: (1) PROVIDE BACKDRAFT DAMPERS ON EXHAUST FANS.

(2) 1.0 SONES MAXIMUM.

(3) VIBRATION ISOLATION: FANS < 125 LBS RUBBER ISOLATORS, FANS > 125 LBS SPRING ISOLATORS

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





DESIGNED: ABE
CHECKED: ABE
APPROVED: JOB

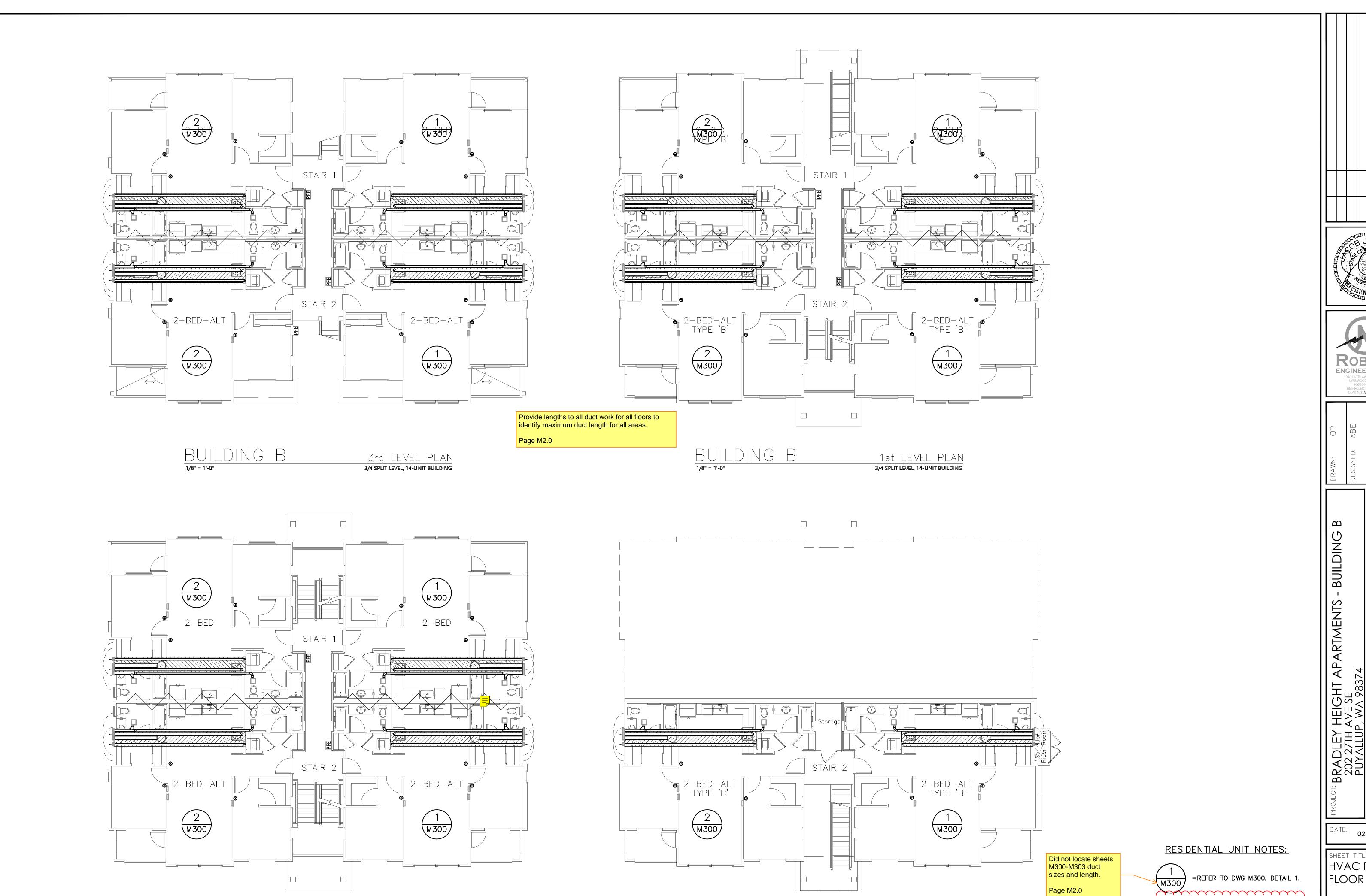
SUITE 302

IP, WA 98374
 IP, WA 98374
 IP 19401 40TH AVE W. SUITE 30 LYNNWOOD, WA 98036

E: 02/15/2024

SHEET TITLE:
MECHANICAL
SCHEDULE &
WSEC FORMS

MO.3



BUILDING B

BASEMENT LEVEL PLAN

3/4 SPLIT LEVEL, 14-UNIT BUILDING

BUILDING B

2nd LEVEL PLAN

3/4 SPLIT LEVEL, 14-UNIT BUILDING

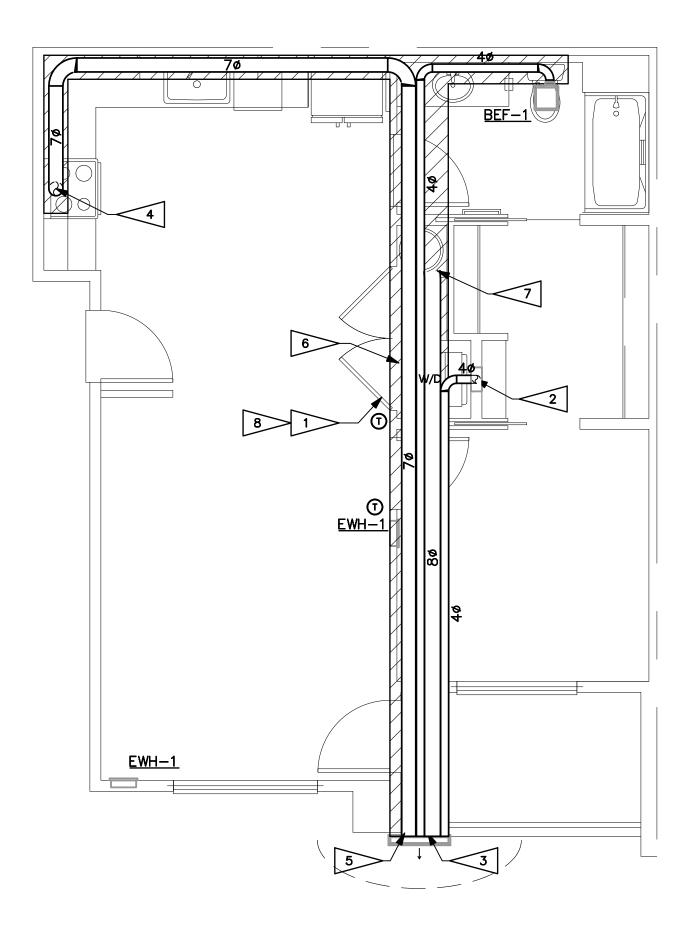
02/15/2024

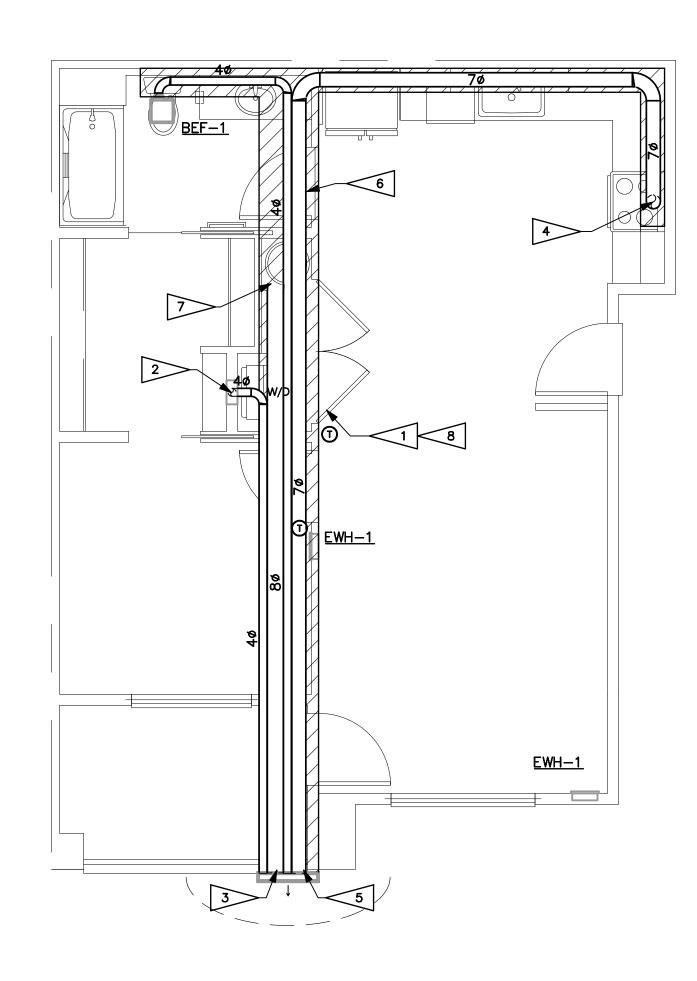
HVAC PLAN -FLOOR PLANS

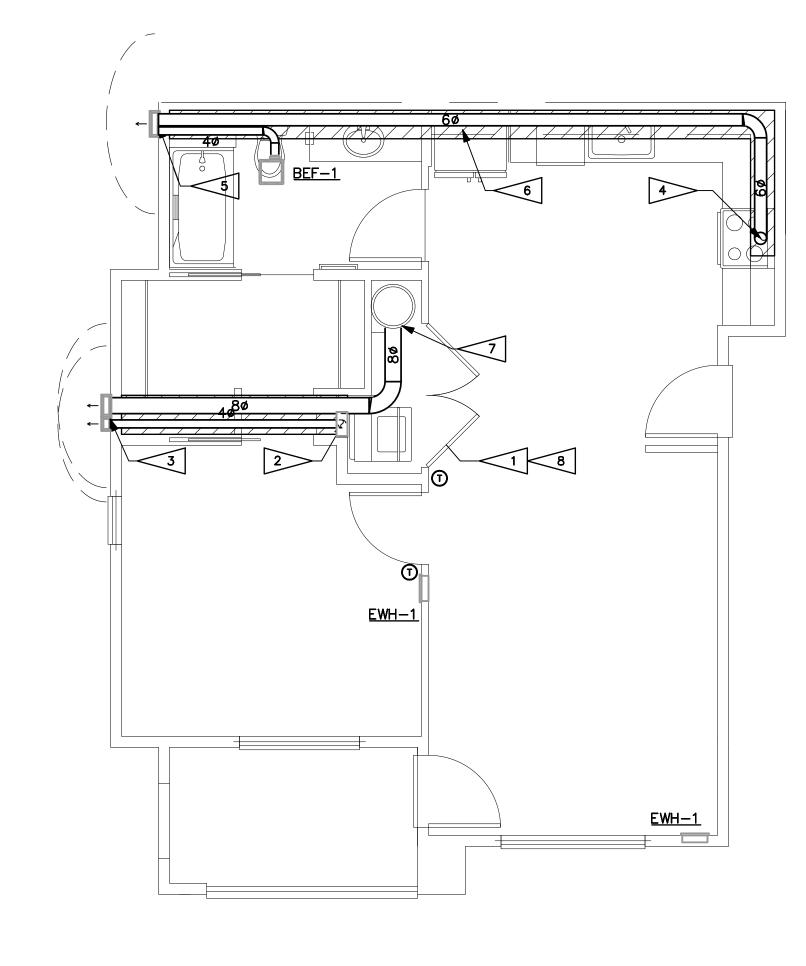
SHEET NO.

FOR DUCT SIZES WITHIN THE RESIDENTIAL UNITS, REFER TO THE ENLARGED UNIT PLANS ON DWGS M300-M303.

M2.0







HVAC ENLARGED PLANS

 $\frac{1 - BED - INT - 1}{SCALE: 1/4" = 1'-0"}$

HVAC ENLARGED PLANS

 $\frac{1 - BED - INT - 2}{SCALE: 1/4" = 1'-0"}$

Provide lengths to all duct work for all floors to identify

and verify does not exceed Table 504.8.4.1 for allowable

HVAC ENLARGED PLANS

 $\frac{1 - BED - END}{SCALE: 1/4" = 1'-0"}$

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.00.

FLAG NOTES:

 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.

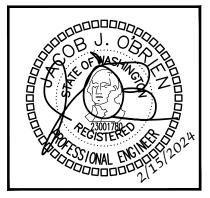
exhaust duct length.

Page M3.0

- 2. 4Ø POC TO DRYER. PROVIDE METAL DRYER BOX WHERE DUCT IS ROUTED IN 2x6 FRAMED WALL. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WSMC 504.8.4.1 FOR THE MAXIMUM ALLOWED LENGTH OF THE DRYER VENT. PROVIDE PERMANENT PLACARD OF TYPE PLAC34 SHOWING NET EQUIVALENT LENGTH. DUCT SHALL REMAIN SEPARATE FROM OTHER EXHAUST SYSTEMS UP TO TERMINATION.
- 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.

 7. 8¢ POC FOR HEAT PUMP WATER HEATER EXHAUST.
- 8 CLOSETS CONTAINING WATER HEATERS SHALL BE PROVIDED WITH MINIM
- 8. CLOSETS CONTAINING WATER HEATERS SHALL BE PROVIDED WITH MINIMUM 3/4" UNDERCUT.

NO. DATE DESCRIPTION
REVISIONS





DESIGNED: ABE
CHECKED: ABE
APPROVED: JOB

BUILDING B

DESIGNED:
CHECKED:

Y HEIGHT APARTMENTS H AVE SE
JP, WA 98374

19401 40TH AVE W. SUITE 302
I YNNWOOD WA 98036

ROJECT: BRADLEY HEIGH
202 27TH AVE SE
PUYALLUP, WA 98
ROBISON 1940

ATE: **02/15/2024**

SHEET TITLE:
HVAC
ENLARGED
PLANS

HEET NO.

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DUCT SMOKE DETECTOR	DUCT SMOKE DETECTOR	⊙ H	ELECTRO-MAGNETIC DOOR HOLDER
		DSD	DUCT SMOKE DETECTOR

,	ABBREVIATIONS
А	AMPERE
AC	ALTERNATING CURRENT, ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AIC	AMPS INTERRUPTING CAPACITY
AL AMP	ALUMINUM AMPERE
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
BLDG	BUILDING
C CKT	COIL or CONDUIT CIRCUIT
CO	CONDUIT/RACEWAY ONLY
CT	CURRENT TRANSFORMER
Cu	COPPER
CW	COOL WHITE
D	DIMMER
DED EC	DEDICATED ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EQUIP EXIST	EQUIPMENT EXISTING
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FLUOR	FLUORESCENT
GC GFCI	GENERAL CONRACTOR GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND GROUND
GRS	GALVANIZED RIGID STEEL
HID	HIGH INTENSITY DISCHARGE
HP IG	HORSEPOWER ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT AMPERES
KW	KILOWATT
LTG	LIGHTING LOW VOLTAGE
LV MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUGS ONLY
N	NEUTRAL
NEC NEMA	NATIONAL ELECTRICAL CODE (NFPA-70) NATIONAL ELECTRICAL MANUFACTURERS
INCIVIA	ASSOCIATION
NTS	NOT TO SCALE
PNL	PANEL
POC PT	POINT OF CONNECTION POTENTIAL TRANSFORMER
PVC	POLYVINYL CLORIDE
PWR	POWER
QTY	QUANTITY
RECEPT REF	RECEPTACLE REFERENCE
REF RI	ROUGH-IN
RM	ROOM
RO	RACEWAY ONLY
SHT	SHEET
SPEC SW	SPECIFICATIONS SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TYP UG	TYPICAL
UL	UNDERGROUND UNDERWRITERS LABORATORIES
LION	LINI ESS OTHERWISE NOTED

UNLESS OTHERWISE NOTED

VOLTS WATTS

WARM WHITE WEATHERPROOF

TRANSFORMER

IMPEDANCE OR ZONE

WITHOUT

TRANSFER

UON

W/O XÉMR

XFR

GENERAL

- PROVIDE ELECTRICAL INSTALLATION IN ACCORDANCE WITH THE GOVERNING ELECTRICAL CODE, LOCAL CODES, ORDINANCES AND REQUIREMENTS OF UTILITY COMPANIES FURNISHING SERVICES TO INSTALLATION.
- PROVIDE ALL WORK AND ITEMS NECESSARY FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY CONDUIT, BOX, CONDUCTOR OR SIMILAR ITEMS
- FOR A COMPLETE INSTALLATION. 3. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND DETERMINE
- 4. "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, OR MECHANICAL).

BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.

- 5. REFERENCE ARCHITECTURAL DRAWING FOR EXACT LOCATION OF DEVICES. QUESTIONS CONCERNING THE LOCATION OF DEVICES AND EQUIPMENT SHALL BE DIRECTED TO THE ARCHITECT. FAILURE TO COORDINATE REQUIREMENTS SHALL IN NO WAY RESULT IN ADDITIONAL COMPENSATION BEING PROVIDED TO THE CONTRACTOR.
- 6. WHEREVER THE WORD "PROVIDE" IS USED, IT MEANS, "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
- 7. COORDINATE LOCATION OF ELECTRICAL WITH OTHER TRADES.
- 8. REFER TO EQUIPMENT DRAWINGS FOR MECHANICAL CHARACTERISTICS (SIZE, LOCATION, ETC.) OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED. COORDINATE INSTALLATION AND LOCATION OF ALL EQUIPMENT WITH MECHANICAL CONTRACTOR. VERIFY ALL FUSE RATINGS, WIRE SIZES AND DISCONNECT SIZES PRIOR TO INSTALLATION.

MATERIALS AND METHODS

- PROVIDE RACEWAY AND WIRING ROUTED CONCEALED WITHIN BUILDING STRUCTURE WHERE POSSIBLE. WHERE RACEWAY CANNOT BE CONCEALED, IT SHALL BE INSTALLED PER PROJECT MANAGER'S DIRECTION. ALL CONDUIT SHALL BE INSTALLED IN NEAT SYMMETRICAL LINES HORIZONTAL OR PERPENDICULAR TO BUILDING COLUMNS AND ROOF LINES. CONDUITS SHALL BE GROUPED ON COMMON SUPPORTS WHEREVER POSSIBLE.
- 2. EXPOSED CONDUIT ROUTING: CONDUITS MAY BE ROUTED EXPOSED IN MECHANICAL AND ELECTRICAL ROOMS ONLY. EXPOSED CONDUITS SHALL BE SECURED A MINIMUM OF 6" ABOVE FLOOR.
- 3. OUTDOOR EXPOSED CONDUIT ROUTING: CONDUITS ROUTED ON ROOF OR EXPOSED TO WEATHER SHALL BE GRC, PVC OR LIQUID-TIGHT FLEX. PROVIDE WATER-TIGHT CONNECTIONS AND FITTINGS.
- 4. CLEARANCES: VERIFY PHYSICAL DIMENSIONS OF EQUIPMENT TO ENSURE THAT ACCESS CLEARANCES CAN BE MET.
- 5. CONNECTIONS: PROVIDE GRS, METALLIC FLEX, OR LIQUIDTITE FLEX CONDUITS FOR CONNECTIONS TO MOTORS OR MOTORIZED EQUIPMENT.
- 6. WIRING: PROVIDE MINIMUM #12 AWG WIRE SIZE. IF CONDUIT IS TO BE USED MINIMUM IS TO BE 1/2". FLEXIBLE CONDUIT AND FLEXIBLE CABLE IS PERMISSIBLE THROUGHOUT THE BUILDING.

7. WIRING: PROVIDE MINIMUM #10 AWG COPPER CONDUCTOR SIZE IN 120V BRANCH CIRCUIT RUNS OVER 75' IN LENGTH.

SITE ELECTRICAL

GENERAL NOTES

- 1. TRENCHING: COORDINATE ALL TRENCHING WORK WITH OTHER UTILITY LOCATIONS AND DRAINAGE TRENCHES.
- 2. UNDERGROUND CONDUITS: PROVIDE PVC, SCHEDULE 40, 3/4" MINIMUM. PROVIDE GRC CONDUIT TRANSITION ELBOW WHEN TURNING UP TO ABOVE GRADE.
- CONDITIONS WHICH MAY AFFECT BID. ANY ITEMS NOT FULLY UNDERSTOOD SHALL 3. DIRECT-BURIED CONDUITS: CONDUIT FOR BRANCH CIRCUITS OUTSIDE BUILDINGS NOT BENEATH DRIVEWAYS OR PARKING AREAS SHALL BE DIRECTLY BURIED WITHOUT CONCRETE ENCASEMENT. THE DEPTH TO THE TOP OF BURIED CONDUITS SHALL BE 36". PROVIDE MARKER TAPE 12" BELOW GRADE.
 - 4. BELOW SLAB: CONDUIT ROUTED BELOW ON-GRADE FLOOR SLABS SHALL BE INSTALLED PRIOR TO FLOOR SLAB POUR. ROUTE CONDUITS BELOW SLAB AS STRAIGHT AS POSSIBLE TO MINIMIZE BENDS.
 - 5. ALL CONDUITS PENETRATING THE BUILDING ENVELOPE BELOW GRADE SHALL FOLLOW WATERPROOFING REQUIREMENTS IN THE ARCHITECTURAL DRAWINGS.

<u>NEUTRALS</u>

- 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.
- 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.

<u>LIGHTING</u>

PROVIDE LIGHT FIXTURES WITH PROPER FITTING FLANGES, MOUNTING SUPPORTS, AND ACCESSORY ITEMS, UL LISTED FOR CONDITIONS OF USE.

LOW VOLTAGE LIGHTING

- 1. PROVIDE LOW VOLTAGE TRANSFORMERS IN NEARBY ACCESSIBLE CEILING SPACE.
- 2. PROVIDE LOW VOLTAGE CONDUCTORS SIZED PER MANUFACTURER'S GUIDELINES MINIMIZE VOLTAGE DROP.

LIGHTING CONTROL

- THE MAXIMUM LIGHTING POWER THAT MAY BE CONTROLLED FROM A SINGLE SWITCH OR AUTOMATIC CONTROL SHALL NOT EXCEED THAT WHICH IS PROVIDED BY A TWENTY AMPERE CIRCUIT LOADED TO NOT MORE THAN EIGHTY PERCENT. A MASTER CONTROL MAY BE INSTALLED PROVIDED THE INDIVIDUAL SWITCHES RETAIN THEIR CAPABILITY TO FUNCTION INDEPENDENTLY.
- 2. EMERGENCY FIXTURES: EMERGENCY BATTERY/CHARGER SHALL BE CONNECTED TO AN UNSWITCHED LEG OF THE DESIGNATED CIRCUIT.

INCLUDED IN SET

GENERAL REQUIREMENTS

- 1. DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED.
- 2. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. 4. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS
- AND INSTALLATION REQUIREMENTS.
- 5. PROVIDE CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE

CONTRACTOR SUBSTITUTIONS & REVISIONS

- 1. PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK.
- 2. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF
- 3. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE
- SUBSTITUTION PROPOSAL. 4. CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

PRE-CON MEETING NOTES

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

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL 4 HOURS PLUMBING / PIPING 4 HOURS ELECTRICÁL 4 HOURS **SPRINKLER** 2 HOURS GENERAL CONTRACTOR ALL SESSIONS

DRAWING INDEX

	DWG	DESCRIPTION	DD SET 04/10/23	PERMIT REVIEW SET 10/06/23	PERMIT SET 02/15/24				
	E0.00	LEGEND, GENERAL NOTES, DRAWING INDEX	X	X	X				
	E0.01	PROJECT NOTES	X	X	Χ				
-									
	E0.10 E0.11	SITE POWER PLAN — EAST SITE LIGHTING PLAN — EAST	X	X	X				
4	20.11	SHE EIGHTING FEAR EAST							
	E1.00	LIGHTING & PHOTOMETRIC PLAN-BASEMENT	X	X	Χ				
			+ ' '	, ,					
	E1.01	LIGHTING & PHOTOMETRIC PLAN-1ST FLOOR	X	X	Χ				
	E1.02	LIGHTING PLAN - 2ND & 3RD FLOOR	X	X	Χ				
	E1.50	LIGHTING NOTES & LUMINAIRE SCHEDULES	X	X	Χ				
	E3.00	POWER PLAN - BASEMENT & 1ST FLOOR	X	X	X				
	E3.01 E3.02	POWER PLAN - 2ND & 3RD FLOOR POWER PLAN - ROOF	X	X	X				
┫	23.02	TOWER TEAM - NOO!	 ^-		^				
	E5.00	UNIT PLANS NOTES	 x 	X	X				
4	E5.01	UNIT PLANS & SCHEDULES	ΙΏ	Ŷ	X				
	E5.02	UNIT PLANS & SCHEDULES	X	X	Χ				
	E6.00	ONE-LINE DIAGRAM & NOTES	$+$ \times	X	X				
	E6.00	PANELS SCHEDULES	ΙX	ΙΧ̈́	X				
1									

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

https://lni.wa.gov/licensing-permits/electrical/electrical-perm its-fees-and-inspections or Licensing information: Call 1-800-647-0982

02/15/24

ROBISON

ENGINEERING, INC

19401 40TH AVE W., SUITE 302 LYNNWOOD, WA 98036 206-364-3343 TEL

REI PROJECT NO.: 1219-001

02/15/24

HEET TITLE: LEGEND, GENERAL NOTES, DRAWING INDEX

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

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.

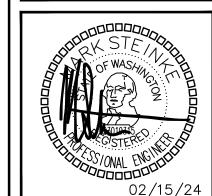
FLEXIBLE CONDUIT OR MC CABLE CONNECTIONS FOR VIBRATION ISOLATION SHALL BE A MINIMUM OF TWO FEET LONG.

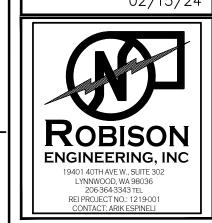
TEMPERATURE LIMITATION OF CONDUCTORS

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

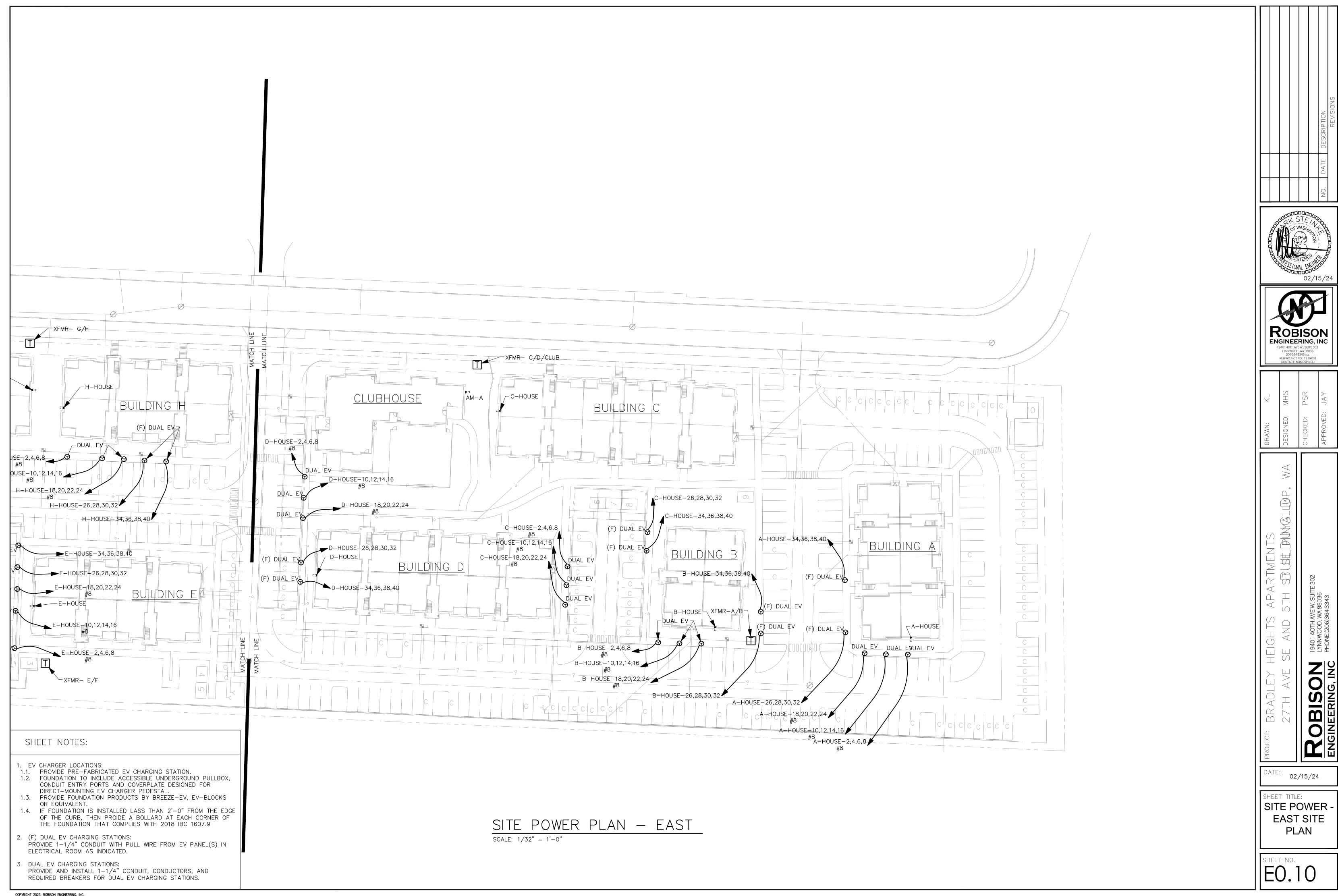


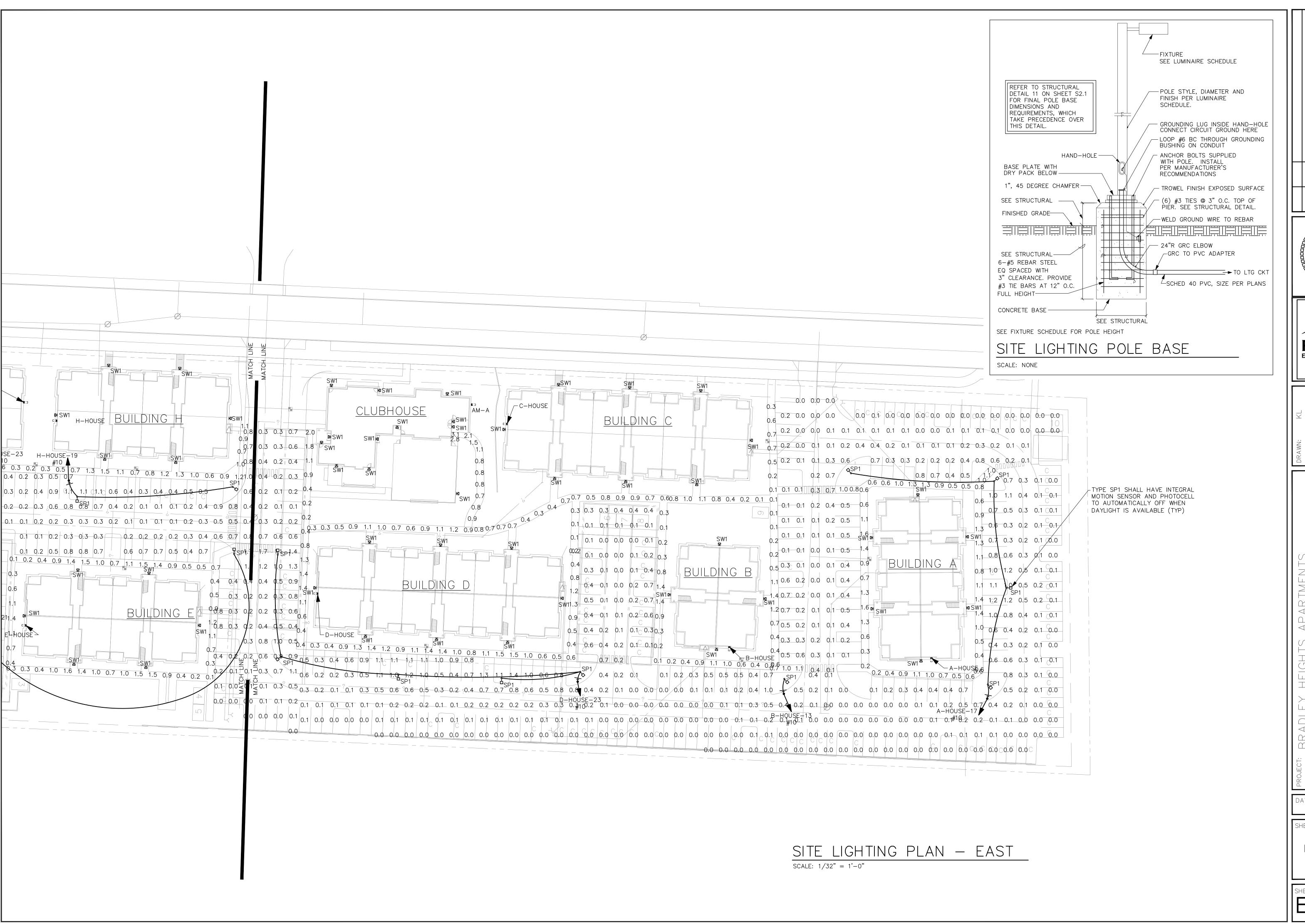


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DRAWN:	DESIGNED:	CHECKED:	APPROVED:

02/15/24

SHEET TITLE: LEGEND, GENERAL NOTES, DRAWING INDEX



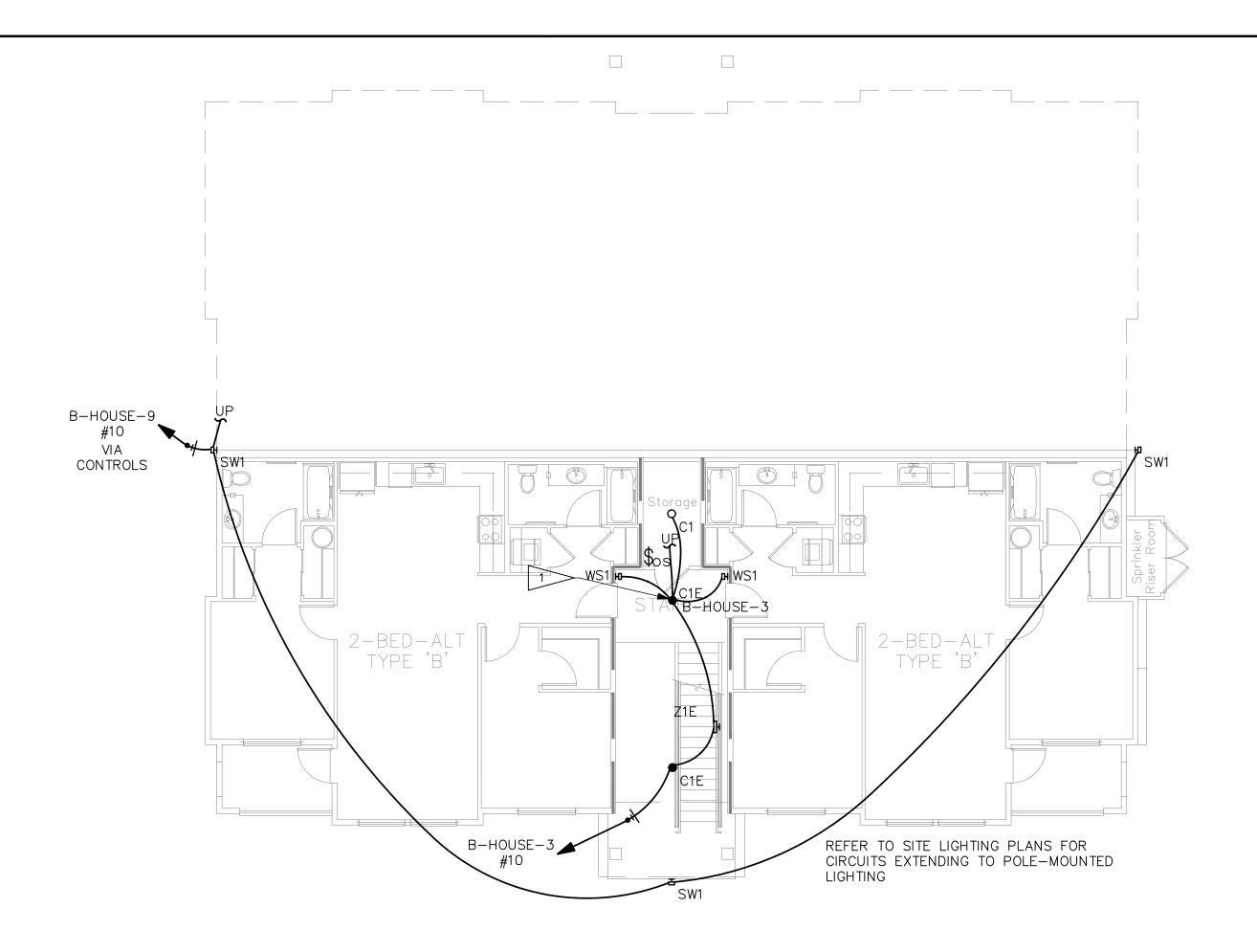


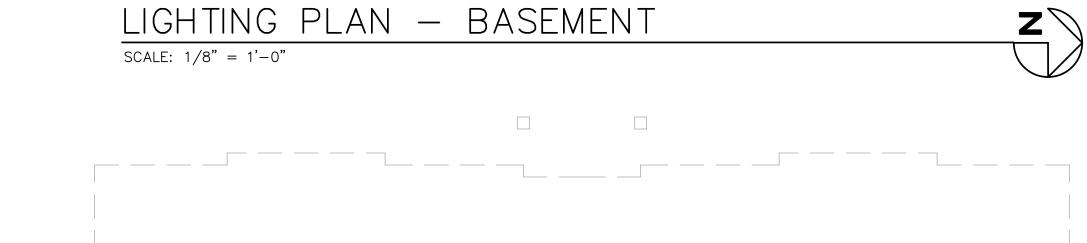


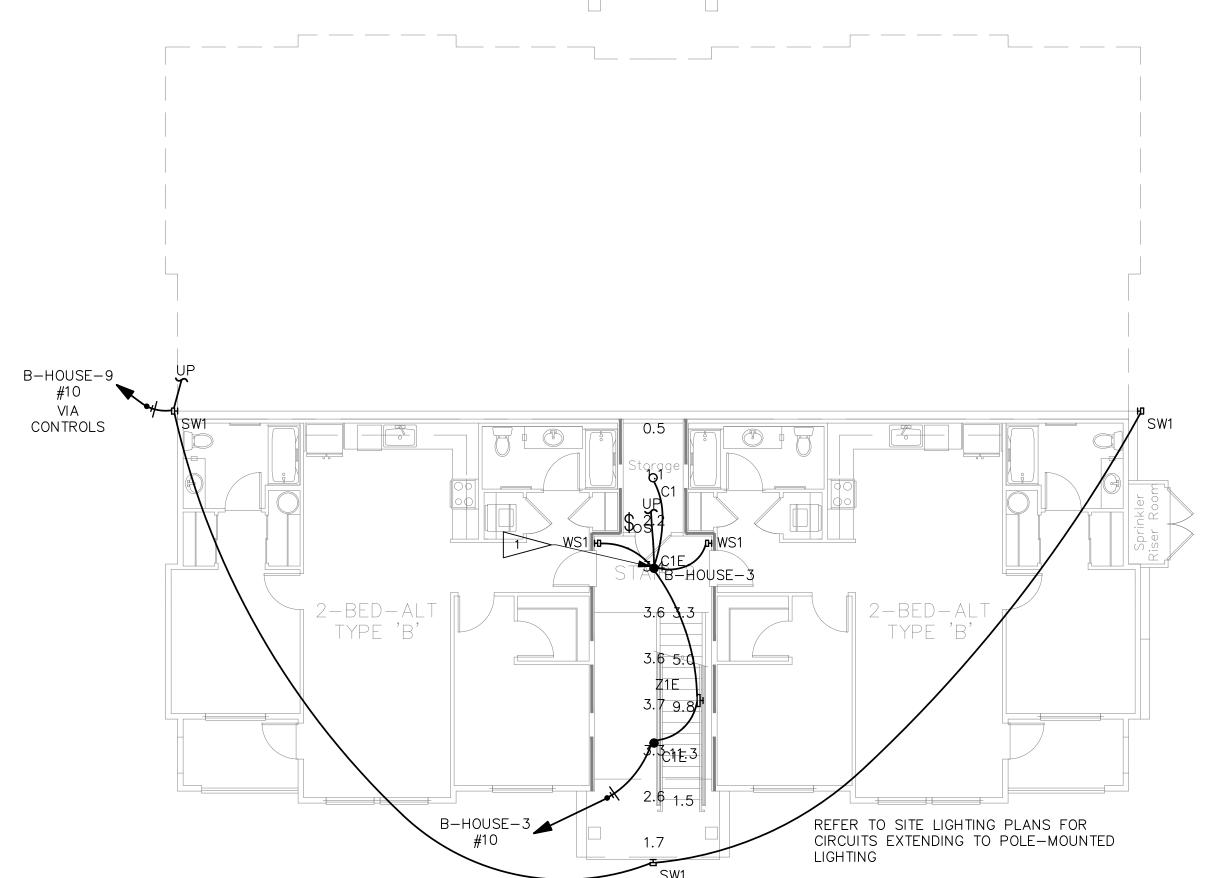
02/15/24

SITE LIGHTING -EAST SITE PLAN

SHEET NO. |E0.1|







PHOTOMETRIC PLAN - BASEMENT SCALE: 1/8" = 1'-0"



GENERAL NOTES

- 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 <#

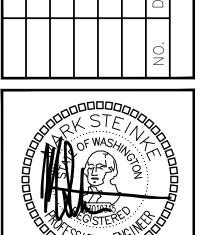
- 1. CIRCUIT STAIRS VERTICALLY. LUMINAIRE(S) IN STAIRWELL
- 2. EXIT SIGNS: PROVIDE UNSWITCHED HOT.

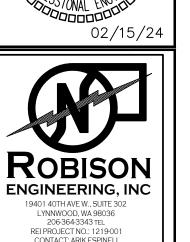
$\it Egress$	Pho	tometric
Schedul	le	
∧ \ / □ D ∧ ○ □		7.05

3.95
6.5
1.6
0.25
4.03
2.43

Egress Stairs Photometric Schedule

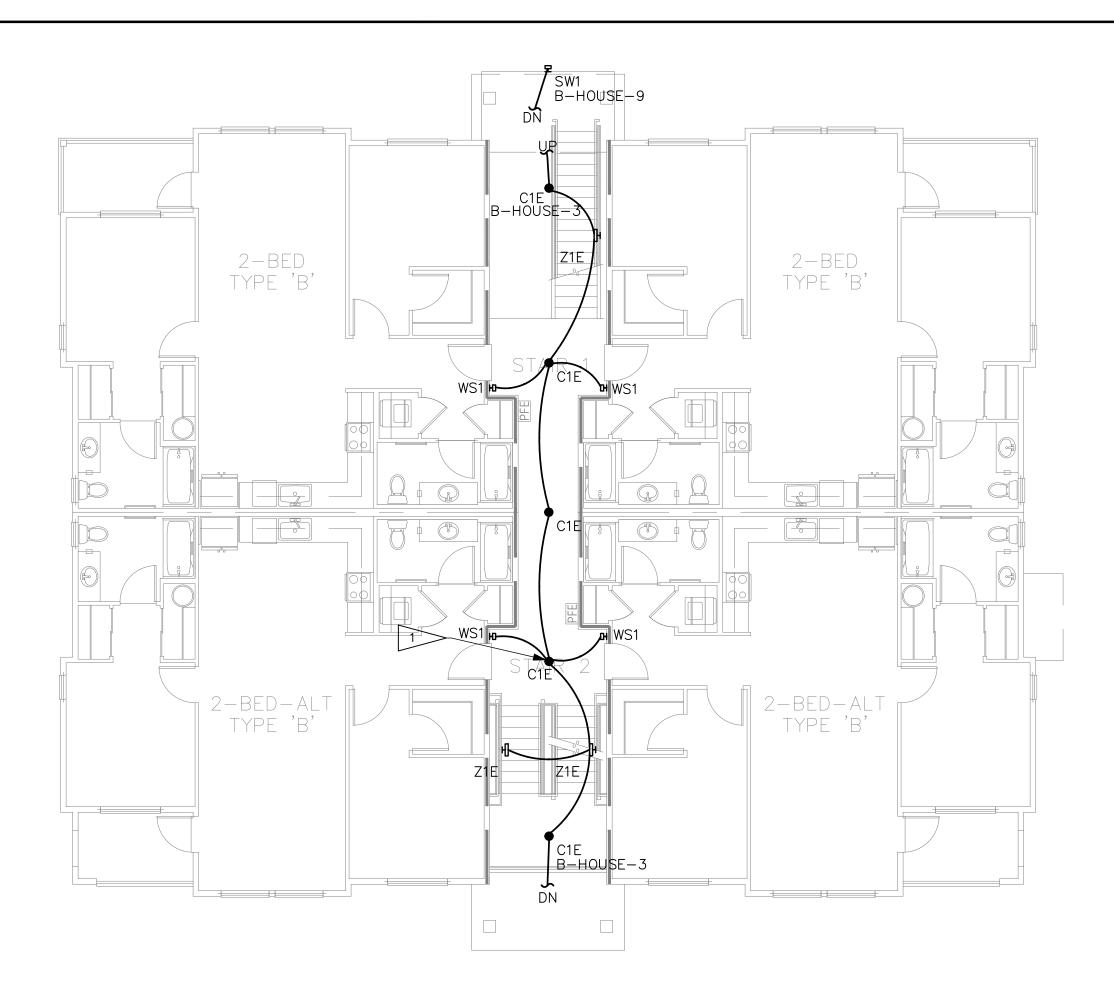
AVERAGE FOOT-CANDLES	6.18
MAXIMUM FOOT-CANDLES	11.3
MINIMUM FOOT-CANDLES	1.5
MINIMUM TO MAXIMUM FC RATIO	0.13
MAXIMUM TO MINIMUM FC RATIO	7.74
AVERAGE TO MINIMUM FC RATIO	4.22





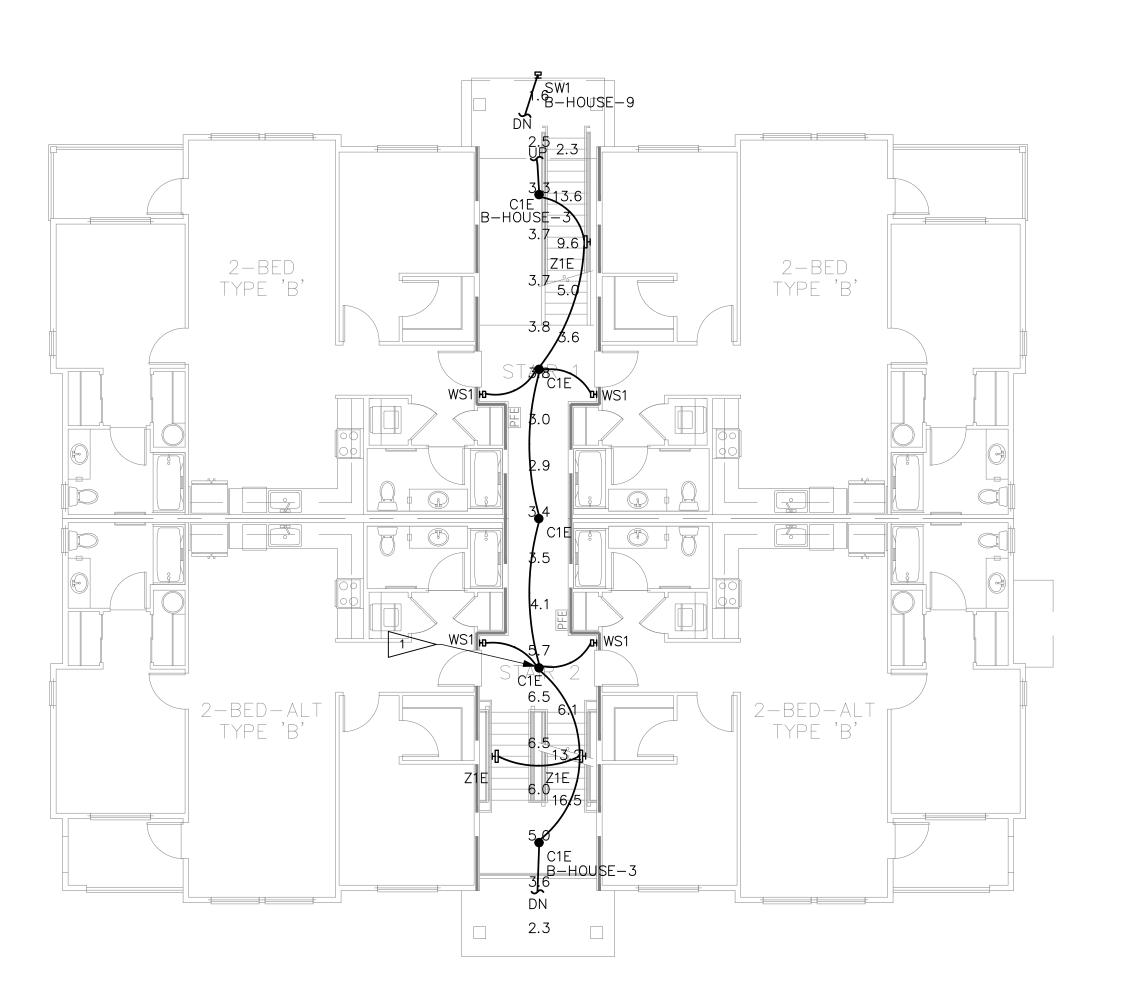
02/15/24

LIGHTING & PHOTOMETRIC PLAN -BASEMENT



LIGHTING PLAN — 1ST FLOOR SCALE: 1/8" = 1'-0"





PHOTOMETRIC PLAN — 1ST FLOOR

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



GENERAL NOTES

- 1. EMERGENCY EGRESS LIGHTING: EMERGENCY LUMINAIRES WITH 90 MINUTE BATTERY BACKUP.
- 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.

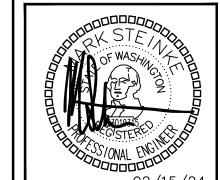
#> FLAG NOTES <#

- 1. CIRCUIT STAIRS VERTICALLY. LUMINAIRE(S) IN STAIRWELL
- 2. EXIT SIGNS: PROVIDE UNSWITCHED HOT.

Egress Pho Schedule	tometric
AVERAGE FOOT-CANDLES	3.95
MAXIMUM FOOT-CANDLES	6.5
MINIMUM FOOT-CANDLES	1.6
MINIMUM TO MAXIMUM FC RATIO	0.25
MAXIMUM TO MINIMUM FC RATIO	4.03
AVERAGE TO MINIMUM FC RATIO	2.43

Egress Sta Photometri	''				
AVERAGE FOOT-CANDLES	11.93				
MAXIMUM FOOT-CANDLES	16.5				
MINIMUM FOOT-CANDLES	6.1				
MINIMUM TO MAXIMUM FC RATIO	0.37				
MAXIMUM TO MINIMUM FC RATIO	2.71				
AVERAGE TO MINIMUM FC RATIO	1.96				

Egress Sta Photometri	irs #2 c Schedule
AVERAGE FOOT-CANDLES	6.81
MAXIMUM FOOT-CANDLES	13.6
MINIMUM FOOT-CANDLES	2.3
MINIMUM TO MAXIMUM FC RATIO	0.17
MAXIMUM TO MINIMUM FC RATIO	5.84
AVERAGE TO MINIMUM FC RATIO	2.94





2	DES	OH	APF
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	MHS	PSR	JAY

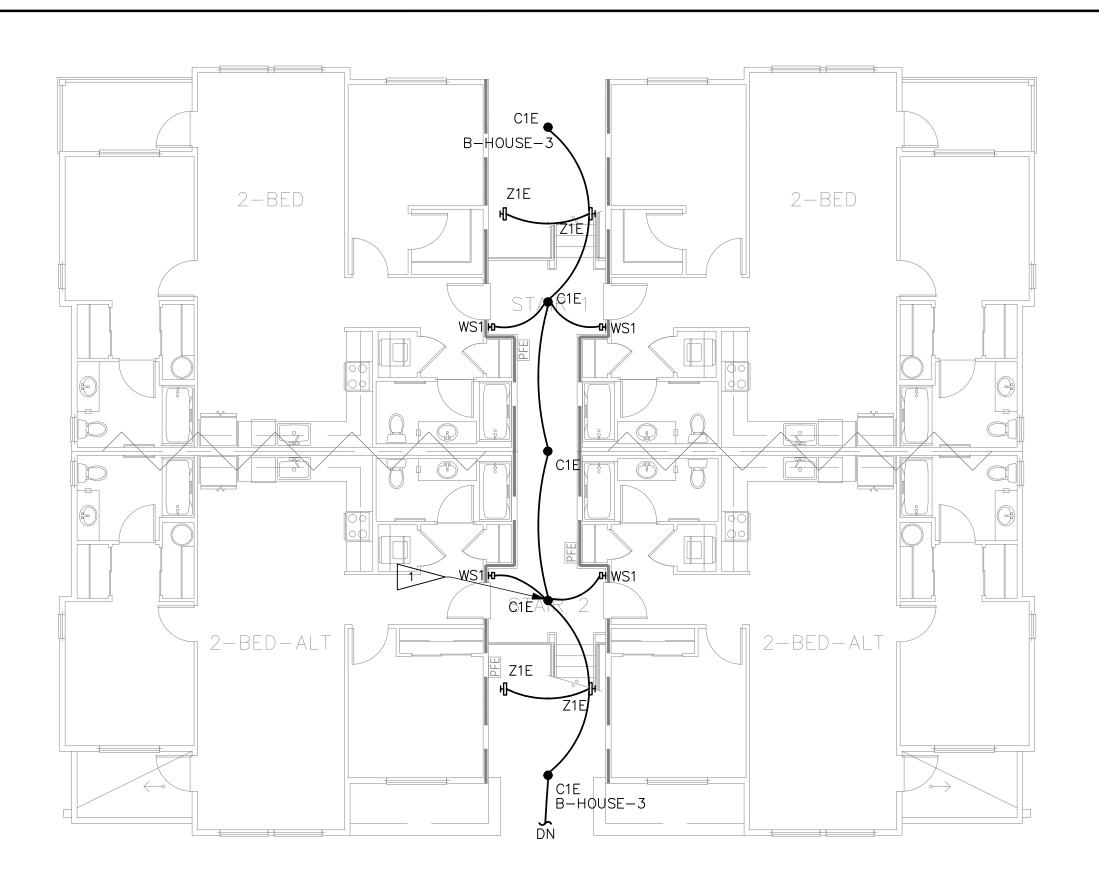
SE AND 5TH ST BEILDIMMIGUR
19401 40TH AVEW. SUITE 302
LYNNWOOD, WA 98036

Robison

ATE: 02/15/24

SHEET TITLE:
LIGHTING &
PHOTOMETRIC
PLAN - 1ST
FLOOR

SHEET NO.



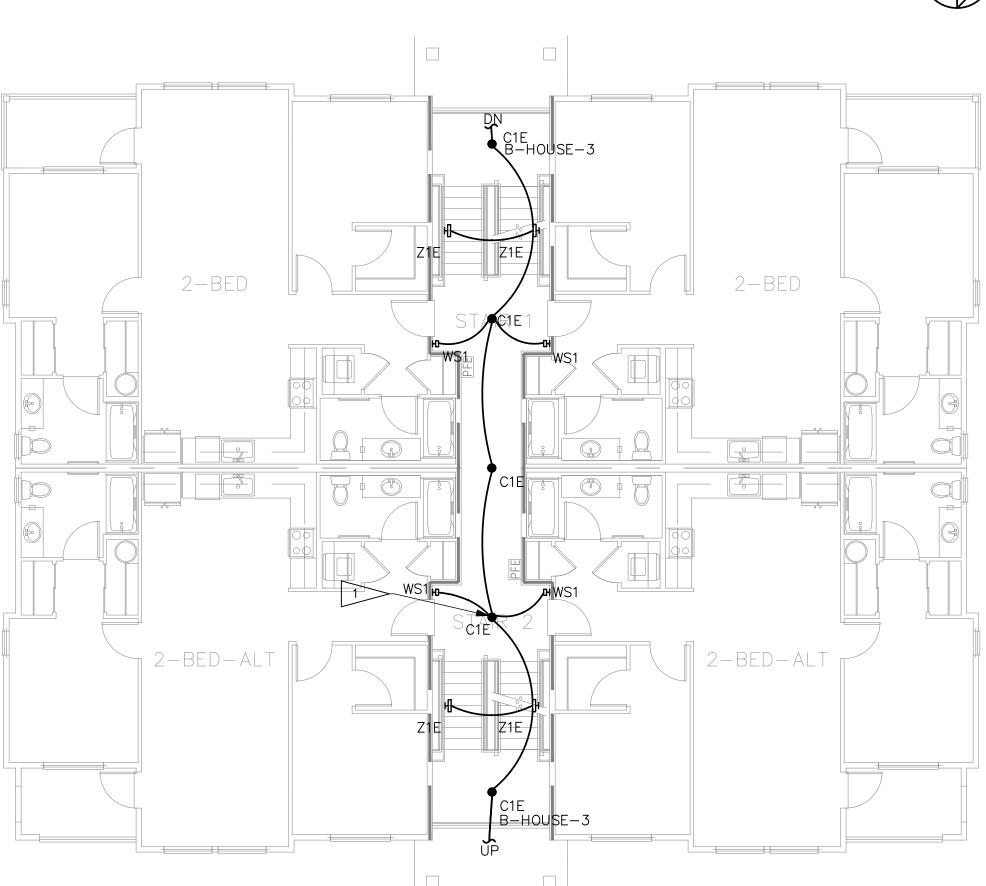
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LIGHTING PLAN - 3RD FLOOR

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





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



GENERAL NOTES

- 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
- 2. EXIT SIGNS: PROVIDE UNSWITCHED HOT.

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	DESIGNED:	CHECKED:	APPROVED:
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LIGHTING PLAN - 2ND & 3RD FLOOR

EXTE	ERIOR	LUMINA	AIRE SCHEDULE						
CALLOUT	SYMB0L	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

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. 3. FIXTURE CATALOG NUMBERS DO NOT NECESSARILY DENOTE SPECIFIC MOUNTING ACCESSORIES. CONTRACTOR TO PROVIDE ALL NECESSARY ACCESSORIES TO SUCCESSFULLY COMPLETE THE

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

GENE	CRAL I	LUMINA	IRE SCHEDULE						
CALLOUT	SYMB0L	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	٥	RECESSED	RECESSED DOWNLIGHT - SLOPED CEILING	DMF: DRD4M 10 9 30 FL X 0 / DRDH N JS 1004	120	0-10V DIMMING	90 / 3000K	(1) 12W LED	12
P1	٥	PENDANT	STEM MOUNT DOWNLIGHT — SLOPED CEILING — 4' STEM	DMF: DCR T4 S X A 30 FL 0 00 30 XX O 00 [FINISH]	120	0-10V DIMMING	90 / 3000K	(1) 40W LED	40
WS1	ю	SURFACE	WALL SCONCE - EM BATTERY BACKUP	TBD	120	TBD DIMMING	TBD / TBD	(1) 5W LED	5
X1	⊗	SURFACE	EXIT SIGN — EMERGENCY BATTERY BACKUP — HATCH INDICATES LIT FACE	LSI: EMS WB SERIES (OR EQUAL)	MULTIPLE	EM	EM / EM	(1) 5W EM	5
X2	⊗	SURFACE	COMBO EXIT SIGN	LSI: CEC (OR EQUAL)	MULTIPLE	EM	EM / EM	(1) 5W EM	5
X3		SURFACE	EMERGENCY LIGHT — EMERGENCY BATTERY BACKUP DAMP LOCATION RATED — MAX 35' SPACING	LITHONIA: ELM2LF (OR EQUAL)	120	ЕМ	EM / EM	(1) 5W EM	5
X4	Hem	WALL	EXTERIOR EMERGENCY LIGHT — EMERGENCY ON ONLY — MAX SPACING 35'	NORA LIGHTING: NE-902LED	120	ЕМ	35' MAX SPACING	(1) 5W LED	5
Z1E	Н	WALL	WALL PACK	LITHONIA: WPX1 LED P1 30K MVOLT	120	EM	70 / 3000K	(1) 11W LED	11

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.

	LIGHTI	NG 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.
D Ö	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.
(OS)	SURFACE MOUNTED OCCUPANCY SENSOR	AUTOMATIC LIGHTING CONTROL SHALL TURN OFF ALL CONNECTED LUMINAIRES WITHIN 20 MINUTES OF SPACE BEING VACANT. (C404.2.1.1)
ox 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.

GENERAL LIGHTING NOTES

- 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.
- 3. 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)
- 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.
- 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.
- 7. ALL FIXTURES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- 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.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPPING ALL FIXTURES WITH THE EXACT LAMPS SPECIFIED IN THE FIXTURE SCHEDULE.
- 10. WHERE FIXTURES REQUIRE REMOTE TRANSFORMERS OR BALLASTS, THE CONTRACTOR SHALL DETERMINE LOCATIONS AS REQUIRED FOR EVEN LOAD DISTRIBUTION, SERVICE ACCESS, AND VENTILATION.
- 11. THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL ENGINEER FOR EXACT LOCATIONS OF TIMERS AND/OR PHOTO CELLS, IF ANY.
- 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:

FIXTURE SUBMITTALS THAT DO NOT INCLUDE LAMP SPECIFICATIONS WILL BE CONSIDERED INCOMPLETE AND WILL NOT BE REVIEWED.

LIGHTING CONTROL SYSTEM REQUIREMENTS

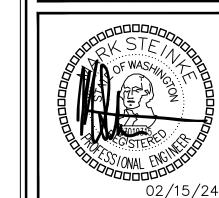
- . CONTRACTOR TO PROVIDE A FULLY OPERATIONAL LIGHTING CONTROL SYSTEM.
- 2. CONTRACTOR SHALL VERIFY THE COMPATIBILITY OF DIMMING AND CONTROL MODULES WITH FIXTURE TYPES PRIOR TO INSTALLATION.
- 3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH A LIGHTING CONTROLS VENDOR TO OBTAIN LIGHTING CONTROL SYSTEM 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.
- 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.
- 5. PROVIDE LIGHTING CONTROL SYSTEM TO PERFORM THE FUNCTIONS DESCRIBED BELOW:
- 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)
- 7. 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.
- 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

EXIT SIGN NOTES

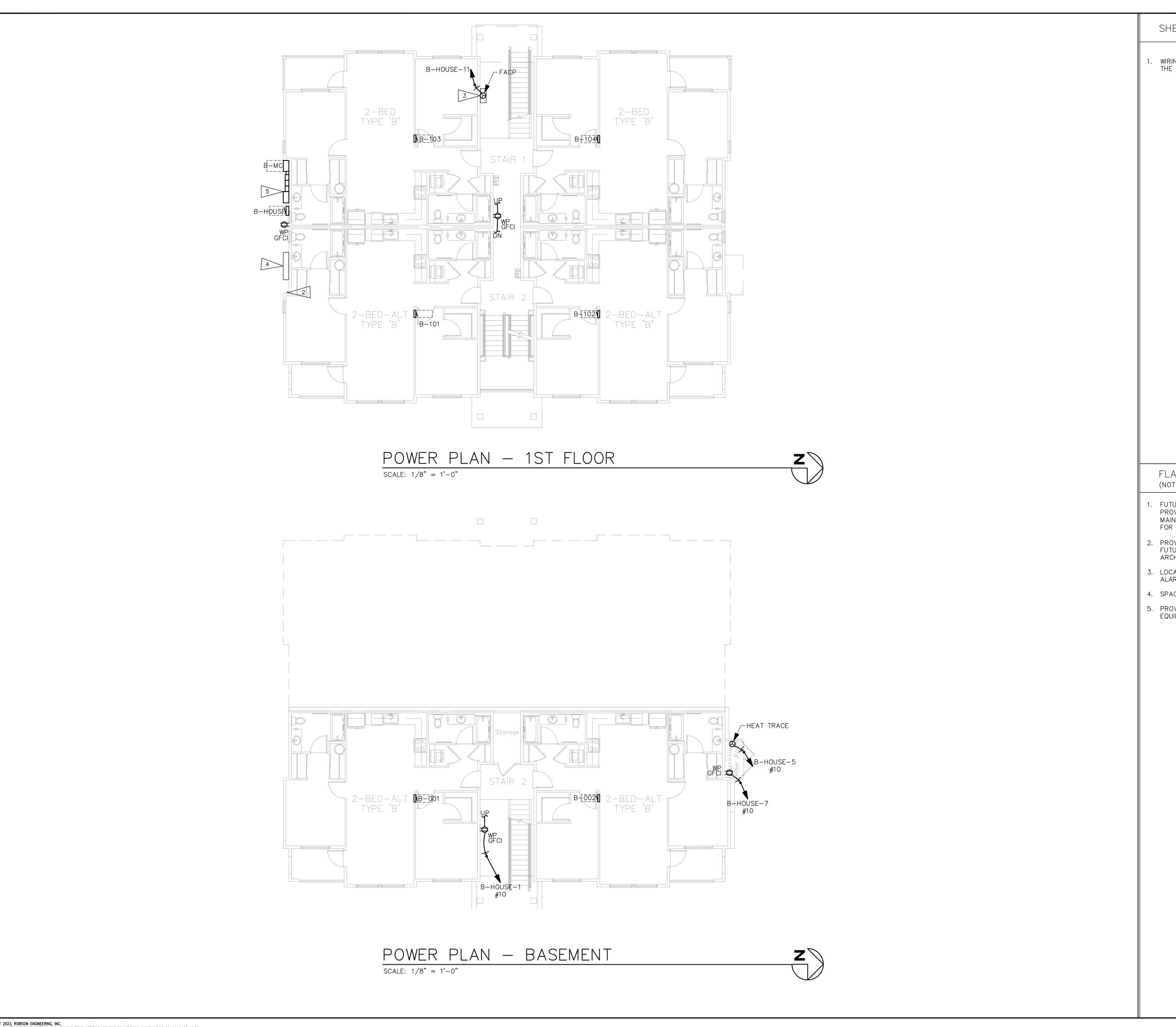
DURING CONSTRUCTION UPON COMPLETION OF A TYPICAL FLOOR FRAMING AND BEFORE WALL COVER, ELECTRICAL CONTRACTOR SHALL WALK THE EGRESS PATHS WITH THE LOCAL INSPECTOR (AHJ) TO CONFIRM THAT ALL THE EXIT SIGNS ARE LOCATED PER THE AHJ'S SATISFACTION AND IDENTIFY ANY ADDITIONAL EXIT SIGNS THAT THE AHJ WISHES TO BE INSTALLED (IBC 1013.1). CONTRACTOR SHALL PROVIDE UP TO 10% ADDITIONAL EXIT SIGNS AT NO ADDITIONAL COST.





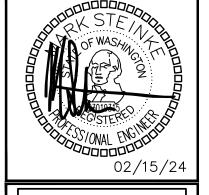
02/15/24

HEET TITLE: LIGHTING NOTES & LUMINAIRE



SHEET NOTES:

WIRING METHOD FOR APARTMENT FEEDERS MUST BE SUITABLE FOR THE TYPE OF CONSTRUCTION. SEE NEC 334.10



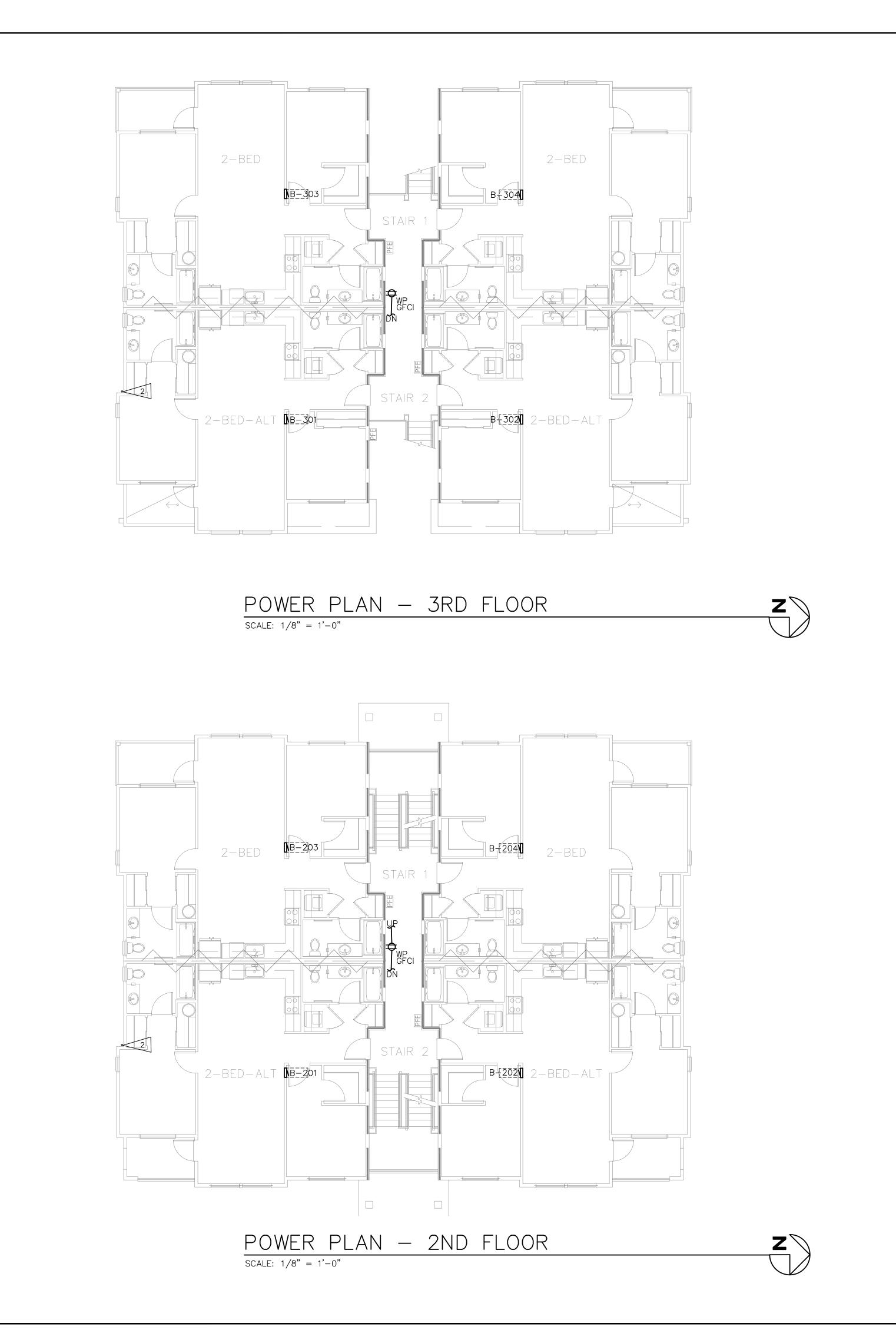


FLAG NOTES: # (NOT EVERY FLAG IS USED ON EVERY SHEET)

- FUTURE EV CHARGING STATIONS: PROVIDE 1-1/4" CONDUIT WITH PULL WIRE FROM EV PANEL(S) IN MAIN ELECTRICAL ROOM. TERMINATE CONDUIT IN A J-BOX ON WALL FOR FUTURE USE.
- PROVIDE 2½"C WITH PULL STRING WEATHER CAP TO ROOF FOR FUTURE SOLAR PATHWAY. COORDINATE RISER LOCATION WITH ARCHITECT.
- 3. LOCATION OF FIRE ALARM PANEL TO BE COORDINATED BY FIRE ALARM CONTRACTOR WITH FIRE AUTHORITIES.
- 4. SPACE FOR FUTURE SOLAR EQUIPMENT.
- 5. PROVIDE LEVEL ACCESS SURFACE IN FRONT OF ELECTRICAL EQUIPMENT.

02/15/24

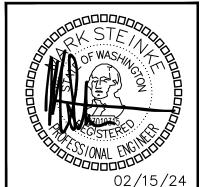
POWER PLAN - BASEMENT & 1ST FLOOR

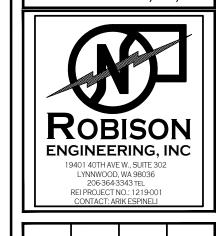


SHEET NOTES:

 WIRING METHOD FOR APARTMENT FEEDERS MUST BE SUITABLE FOR THE TYPE OF CONSTRUCTION. SEE NEC 334.10

NO. DATE NO.





FLAG NOTES: #

(NOT EVERY FLAG IS USED ON EVERY SHEET)

- 1. FUTURE EV CHARGING STATIONS:
 PROVIDE 1-1/4" CONDUIT WITH PULL WIRE FROM EV PANEL(S) IN
 MAIN ELECTRICAL ROOM. TERMINATE CONDUIT IN A J-BOX ON WALL
 FOR FUTURE USE.
- 2. PROVIDE 2½"C WITH PULL STRING WEATHER CAP TO ROOF FOR FUTURE SOLAR PATHWAY. COORDINATE RISER LOCATION WITH ARCHITECT.
- 3. LOCATION OF FIRE ALARM PANEL TO BE COORDINATED BY FIRE ALARM CONTRACTOR WITH FIRE AUTHORITIES.
- 4. SPACE FOR FUTURE SOLAR EQUIPMENT.
- 5. PROVIDE LEVEL ACCESS SURFACE IN FRONT OF ELECTRICAL EQUIPMENT.

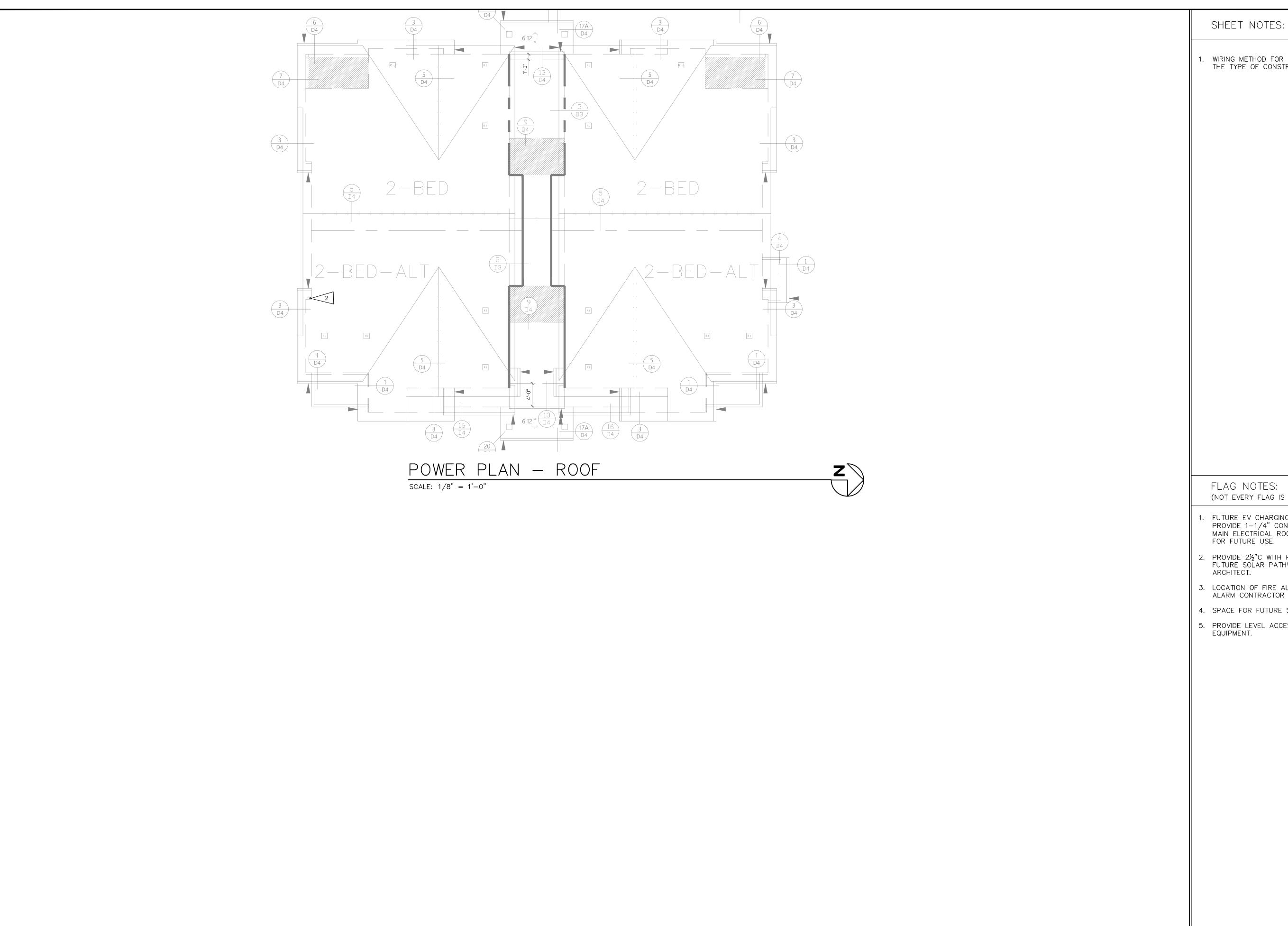
HEIGHTS APARTMENTS
SE AND 5TH ST BEILDWALLOUP
1940140TH AVEW. SUITE 302

ROBISON ENGINEERING, INC

ATE: 02/15/24

POWER PLAN
- 2ND & 3RD
FLOOR

SHEET NO. **E3.01**



WIRING METHOD FOR APARTMENT FEEDERS MUST BE SUITABLE FOR THE TYPE OF CONSTRUCTION. SEE NEC 334.10





FLAG NOTES: # (NOT EVERY FLAG IS USED ON EVERY SHEET)

- FUTURE EV CHARGING STATIONS: PROVIDE 1-1/4" CONDUIT WITH PULL WIRE FROM EV PANEL(S) IN MAIN ELECTRICAL ROOM. TERMINATE CONDUIT IN A J-BOX ON WALL FOR FUTURE USE.
- 2. PROVIDE 21/2"C WITH PULL STRING WEATHER CAP TO ROOF FOR FUTURE SOLAR PATHWAY. COORDINATE RISER LOCATION WITH
- 3. LOCATION OF FIRE ALARM PANEL TO BE COORDINATED BY FIRE ALARM CONTRACTOR WITH FIRE AUTHORITIES.
- 4. SPACE FOR FUTURE SOLAR EQUIPMENT.
- 5. PROVIDE LEVEL ACCESS SURFACE IN FRONT OF ELECTRICAL

02/15/24

POWER PLAN - ROOF

UNIT LU	JMINAIRE	E SCHEDU	JLE						
CALLOUT	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	H	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	

DWELLING UNIT VENTILATION WIRING DIAGRAM DETAIL

ELECTRIC HEATERS										
EQUIP NO.	SERVICE	MOUNTING/	HEATING	ELECTRICAL	BASIS OF DESIGN					
EQUIP NO.	SERVICE	DISCHARGÉ	KW	VOLTAGE	DASIS OF DESIGN					
EWH-1	BEDROOM	WALL	1	208V/1P	(1)					
EWH-2	LIVING ROOM	WALL	1.5	208V/1P	(1)					

(1) BROAN, CADET OR EQUIVALENT.

(2) PROVIDE REMOTE THERMOSTAT.

ACCESSIBILITY NOTES:

- 1. ALL SWITCHES AND CONTROLS 15" MIN; 48" MAX TO CONTROL.
- 2. GENERAL OUTLETS MIN 18" AFF.
- 3. ALL SWITCHES/CONTROLS ABOVE COUNTERTOPS 48" MAX.
- 4. ELECTRICAL SUB-PANELS IN UNITS MUST COMPLY WITH ABOVE REACH RANGES.
- 5. SWITCHES FOR EXHAUST HOODS AND GARBAGE DISPOSALS MUST COMPLY WITH ABOVE REACH RANGES. INSTALL SWITCHES ON FACE OF CABINETS IF REQUIRED TO COMPLY.

APARTMENT NOTES:

- 1. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL LOCAL AND NATIONAL CODES.
- 2. DEVICE BOXES ON OPPOSITE SIDES OF DEMISING WALLS SHALL BE IN SEPARATE STUD BAYS. PROVIDE BACKING EQUIVALENT TO LOWRY'S OUTLET BOX PADS. CONDUIT FROM ONE UNIT SHALL NOT PASS THROUGH STUDS OF A SHARED WALL(DOUBLE STUDS) FROM AN ADJACENT UNIT(BRIDGING).
- 3. PROVIDE ARC—FAULT PROTECTION, TAMPER PROOF AND GFCI RECEPTACLES AS REQUIRED BY CODE AND LOCAL AHJ. ARC—FAULT PROTECTION MUST BE PROVIDED FOR CIRCUITS IN THE AREAS LISTED IN NEC 210.12(A).
- 4. PROVIDE SUFFICIENT DUPLEX RECEPTACLES TO MEET NEC 210.52.
- 5. THERMOSTATS SHALL NOT INTERFERE WITH DOOR SWINGS.
- 6. ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS FOR KITCHEN APPLIANCES. COORDINATE ALL J-BOX LOCATIONS WITH APPLIANCE INSTALLATION INSTRUCTIONS PRIOR TO ROUGH-IN.
- 7. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CORD AND PLUG ASSEMBLY FOR EACH DISPOSER.
- 8. PROVIDE A DEDICATED 20 AMP CIRCUIT TO EACH UNIT BATHROOM RECEPTACLE. BATHROOM LIGHTS, FAN TO BE ON SAME CIRCUIT PER 210.11(C)(3) EXCEPTION.
- 9. HOME RUNS AND LOOPS CONNECTING LIGHT FIXTURES, WIRING DEVICES, AND HVAC EQUIPMENT ON PLANS INDICATE CIRCUITING SCHEME. SEE TYPICAL PANEL SCHEDULES FOR ACTUAL CIRCUIT NUMBERS FOR TYPICAL APARTMENT.
- 10. LIGHTS WITHIN 3' HORIZONTAL OF SHOWER OR TUB TO BE WET LOCATION RATED AND HAVE FULLY ENCLOSED TRIMS. PROVIDE GFCI PROTECTION IF THE LUMINAIRE INSTALLATION MANUAL STATES IT IS REQUIRED.
- REQUIRED. DETECTORS AND ALARMS TO BE HARDWIRED AND PROVIDED WITH BATTERY BACKUP.

 12. ELECTRICAL CONTRACTOR SHALL INSTALL RECEPTACLES

AND TV. DATA/PHONE OUTLETS UNDER COMMON COVER

11. PROVIDE SMOKE DETECTORS AND CO ALARMS AS

- PLATE WHERE POSSIBLE. PROVIDE AND INSTALL DIVIDERS AS REQUIRED FOR CABLE/POWER SEPARATION.

 13. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND
- 14. ALL WALL PENETRATIONS SHALL BE CAULKED WITH APPROVED MATERIAL TO MAINTAIN THE FIRE RATING OF ALL WALLS AND FLOORS.
- 15. ALL CONDUIT SHALL BE INSTALLED IN NEAT SYMMETRICAL LINES HORIZONTAL OR PERPENDICULAR TO BUILDING COLUMNS AND ROOF LINES. CONDUITS SHALL BE GROUPED ON COMMON SUPPORTS WHEREVER POSSIBLE.
- 16. REFERENCE MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT.

LAYOUTS OF ALL DEVICES.

- 17. ELECTRICAL CONTRACTOR SHALL VERIFY ALL FUSE RATING WIRE SIZES AND DISCONNECT SIZES WITH EQUIPMENT SERVED ON THE JOB PRIOR TO INSTALLATION.
- 18. SEE ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR ADDITIONAL DETAILS AND CASEWORK DIMENSIONS.
- 19. DEVICE LOCATIONS IN 1ST DWELLING/RESIDENT UNIT SHALL BE REVIEWED AND APPROVED BY OWNER PRIOR TO ROUGH-IN OF REMAINING UNITS
- 20. CONFIRM FINAL LOCATION OF HEATERS AND THERMOSTATS IN FIELD PRIOR TO ROUGH—IN

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	OF WASHING	
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DESIGNED: MHS CHECKED: PSR APPROVED: JAY			
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	DESIGNED:	CHECKED:	APPROVED:

STH ST BEILDUM WA

AVEW. SUITE 302

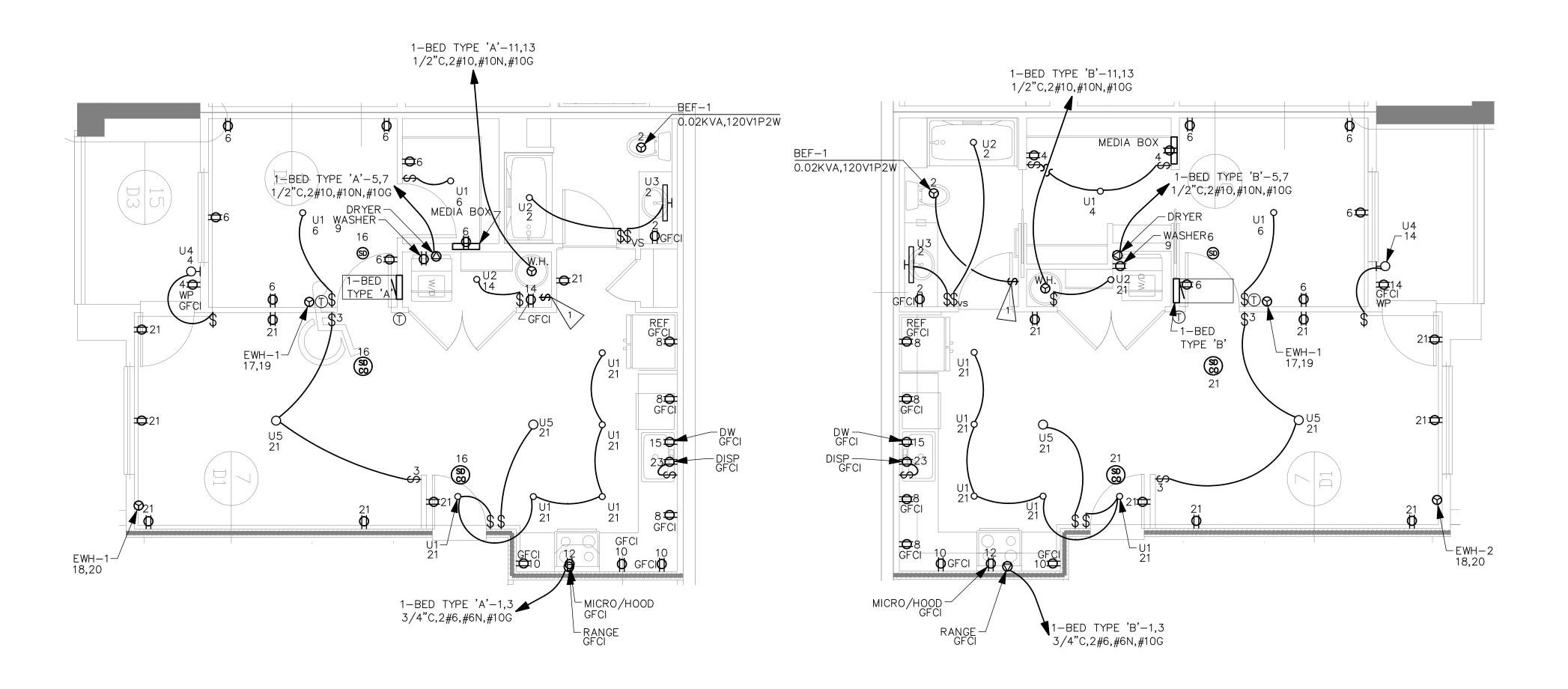
19401 4OTH AVE W. SUITE 302 LYNNWOOD, WA 98036 PHONE (206)364-3343

Robison

ATE: 02/15/24

SHEET TITLE:
UNIT PLANS
NOTES

SHEET NO. **E5.00**



UNIT TYPICALS

1-BED-INT-2 TYPE 'A'

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

Pa	201		ROOM		VOI	т		08/120V	2D 3W		AIC 22,00	^
1	-BI	ΞD			1 , , , BUS	S,	AMP:	S 125 100%	2F J#	N	MAIN BKR LUGS STA	MLO
CKT #	CKT BKR	LOAD KVA	CIRCUIT	DESCRIF	PTION		CKT #	CKT BKR	LOAD KVA	CIRC	UIT DESCI	RIPTION
1	50/2	8	RANGE			a b	2 4	20/1 20/1	0.23 0.19	LIGH	TING, RECE	
5 7	30/2	4.99	DRYER			a b	6 8	20/1	1.28 1.5	RECE	TING, MEDI EPTACLE LL APPLIAI	·
9 11	20/1 30/2	1.5 4.4	WASHER WATER			a b	10 12	20/1 20/1	1.5 1.58	SMAI MICR	L APPLIAI O/HOOD	NCE
13 15 17	20/1 20/2	1.2 0.75	DISHWAS			ара	16 18	20/1 20/1 20/1	0.192 0.15 0	SDC0 SPAF	RE	EPTACLE
19 21 23	20/1 20/1	1.34 0.7	LIGHTING DISPOSA	G, RECEP'	TACLE	рар	20 22 24	20/1 20/1 20/1	0	SPAF SPAF	RE	
OP'	 TIONAL D\	 VELLING	UNIT CA	LCULATIC CONN KVA	N (NEC 220.8	2)				ONN KVA	CALC KVA	
F SN	GHTING A RECEPTAC MALL—APF	LES		2.61 3	871 SF (3 VA/SF)		U	ERAL LOA P TO 10 KVA	.D 10		10	(100%)
	LAUNDRY 1.5 APPLIANCES 8.47				OVER 10 KVA 13.6		.6	5.43	(40%)			
	ELECTRIC COOKING 8			MAX HEATING OR COOLING				3.35	(220.82(C)(4))			
TOTAL GENERAL LOAD 23.6				TOTAL LOAD BALANCED LOAD PHASE A PHASE B				18.8 90.3 A 102% 97.8%				

UNIT TYPICALS

1-BED-INT-1 TYPE 'B'

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

Pa	nel — B	ED	ROOM MO UN TIN FED FRO NOTE	METINSI	, , , BU	S	AMP	08/120V S 125 100%	2P	3W	N	AIC 22,00 MAIN BKR .UGS STA	MLO
KT #	CKT BKR	LOAD KVA	CIRCUIT	Γ DESCRII	PTION		CKT #	CKT BKR	LOA KVA		CIRC	UIT DESCI	RIPTION
1 3 5 7 1 3 5 7 9 1 3 5 7 9 1 3 5 7	50/2 30/2 20/1 30/2 20/1 20/2 20/1 20/1	8 4.99 1.5 4.4 1.2 0.75 1.35 0.7	DISHWA WALL H	HEATER SHER EATER G, RECEP	TACLE	р арарара	# BKR KVA CIRCUIT DESCRIPTION 2 2 20/1					IA BOX, EPTACLE NCE NCE EPTACLE	
LI S L. A E	GHTING ARECEPTA MALL—AP AUNDRY PPLIANCE LECTRIC OTAL GEN	AND CLES PPLIANCE ES COOKING		2.61 3 1.5 8.47 8 23.6	ON (NEC 220.8 871 SF (3 VA/SF)		GEN U O MAX CO TOT. BAL	ERAL LOA P TO 10 KVA VER 10 KVA HEATING OLING AL LOAD ANCED LO	OR	10 13.6	ONN VA	CALC KVA 10 5.43 3.35 18.8 90.3 A 99.4% 101%	(100%) (40%) (220.82(C)(4))

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.
- 3. PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.
- 4. ALL UNITS: PROVIDE SWITCH CONTROLLING GARBAGE DISPOSAL TO BE LOCATED ABOVE BACKSPLASH NEXT TO SINK OR ON COUNTER. SEE ARCHITECTURE.
- 5. BATHROOM GFCI RECEPTACLES TO HAVE INTEGRAL NIGHTLIGHT.
- 6. RECESSED CEILING LIGHT IN BATHROOM SHALL BE LED RATED FOR WET LOCATIONS W/ SHATTER PROOF LENS.
- 7. ALL RECEPTACLES SHALL MEET REQUIREMENTS OF NEC ARTICLE 210.
- 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.
- 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.
- 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.
 RECEPTACLE SHALL BE LOCATED IN SPACE
 ADJACENT TO THE DISHWASHER.
- 11. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT FOR THE LIVING ROOM.

#>FLAG NOTES

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 DWELLING UNITS:

- . ALL 15 AND 20A, 120V SINGLE PHASE CIRCUITS NOT INCLUDING THE BATHROOM SHALL BE AFCI PROTECTED (210.12).
- . ALL DWELLING UNIT CIRCUITS IN BATHROOMS, GARAGES, OUTDOORS, KITCHENS, LAUNDRY AREAS,AND AREAS WITHIN 6' OF A SINK SHALL BE GFCI PROTECTED (210.8).
- 2.1. BATHROOM CIRCUIT TO BE GFCI
 PROTECTED VIA A GFCI RECEPTACLE,
 WHILE OTHER CIRCUITS SHALL BE
 PROTECTED AT THE BREAKER.
- 3. UTILIZE "DUAL FUNCTION" BREAKER WHEN BOTH AFCI AND GFCI PROTECTION IS REQUIRED.

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STEP STEP



DESIGNED: MHS
CHECKED: PSR
APPROVED: JAY

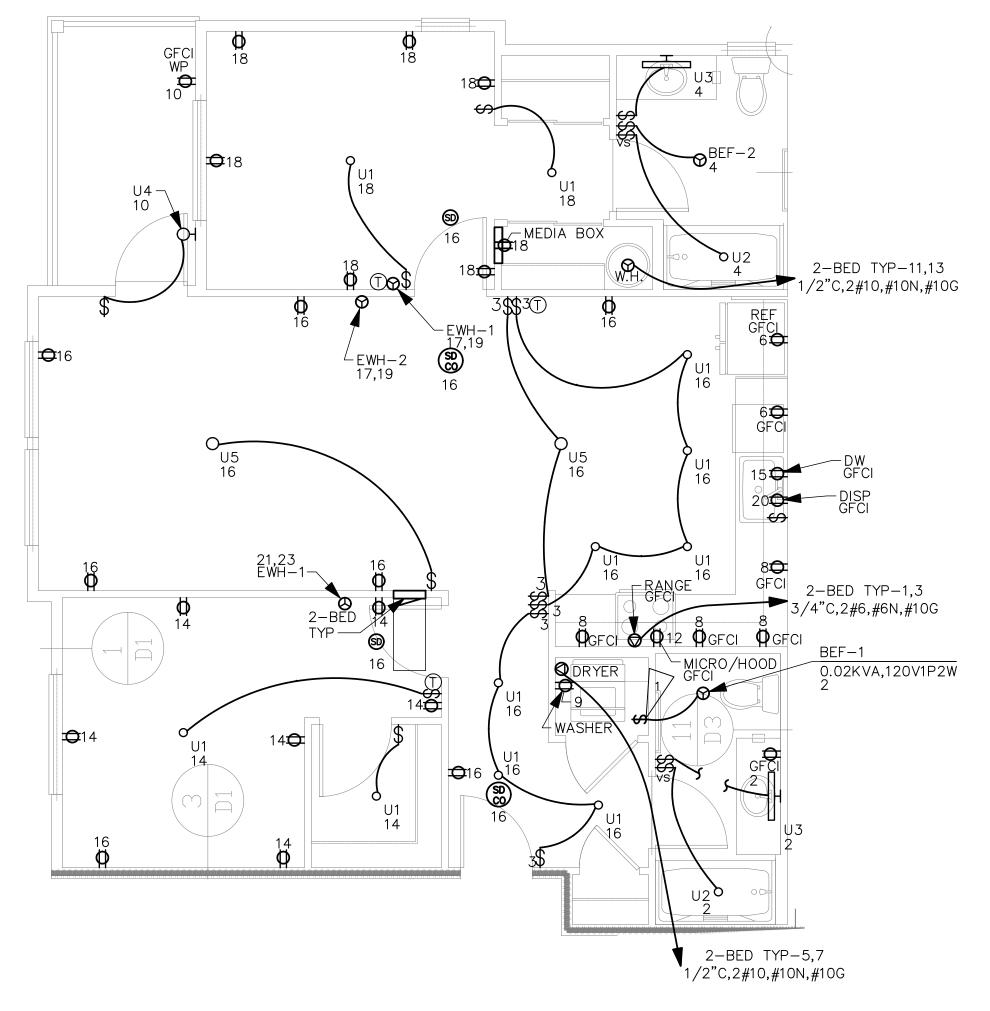
HEIGHIS APARIMENIS SE AND 5TH ST BEILDWALGUA

ROBISON 1940 LYNI PHO PHO PHO

TE: 02/15/24

SHEET TITLE:
UNIT PLANS &
SCHEDULES

E5.01



UNIT TYPICALS

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

Pai	nel . — B	ED	ROOM MOUNTING FLUS FED FROM NOTE	H BU	S A	MP	08/120V S 125 100%	2P 3W	N	AIC 22,00 Main Bkr Lugs sta	MLO
CKT #	CKT BKR	LOAD KVA	CIRCUIT DESCRI	PTION		CKT #	CKT BKR	LOAD KVA	CIRC	UIT DESC	RIPTION
1	50/2	8	RANGE		a	2	20/1	0.23	1 .	-	RECEPTACLE
3 5 7	 30/2 	4.99	DRYER		a b	4 6 8	20/1 20/1 20/1	0.128 1.5 1.5	SMAL	i EX FAN, L APPLIAI L APPLIAI	NCE
9	20/1	1.5	WASHER			10	20/1	0.19	LIGH	TING, REC	
1 3	30/2 	4.4	WATER HEATER			12 14	20/1 20/1	1.58 1.28	t	O/HOOD TING, RECI	EPTACLE
5	20/1	1.2	DISHWASHER		b	16	20/1	1.19	LIGH	TING, REC	EPTACLE
7	20/2	0.75	WALL HEATER		a	18	20/1	1.28		TING, MEDI PTACLE	A BOX,
9 21 3	 20/2 	1	WALL HEATER			22	20/1 20/1 20/1	0.7 0.2 0	DISP(SDCC SPAF		
<u></u>	TIONAL DI	WELLING	UNIT CALCULATI	ON (NEC 220.8	32)			C	ONN	CALC	
			KVA	_					<va_< td=""><td>KVA</td><td></td></va_<>	KVA	
F	GHTING A RECEPTAC MALL—APF	ELES	3.52 3	1,173 SF (3 VA/SF)	(U	ERAL LOA P TO 10 KVA	ND 10		10	(100%)
	AUNDRY	NDRY 1.5					VER 10 KVA	14.	.5	5.8	(40%)
APPLIANCES 8.47 ELECTRIC COOKING 8				MAX HEATING OR COOLING					4	(220.82(C)(4))	
TO	OTAL GEN	ERAL LO	DAD 24.5			TOT, BAL,	AL LOAD ANCED LO ASE A ASE B)AD		19.8 95.2 A 99.7% 100%	

- 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.
- CABINET WORK.
- 3. PROVIDE TAMPER RESISTANT RECEPTACLES PER NEC 406.12.
- 4. ALL UNITS: PROVIDE SWITCH CONTROLLING GARBAGE DISPOSAL TO BE LOCATED ABOVE SEE ARCHITECTURE.
- 6. RECESSED CEILING LIGHT IN BATHROOM SHALL BE LED RATED FOR WET LOCATIONS W/ SHATTER PROOF LENS.
- 7. ALL RECEPTACLES SHALL MEET
- 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.
- 9. PROVIDE COMBINATION HARDWIRED 120VAC PHOTOELECTRIC SMOKE DETECTOR AND CARBON MONOXIDE DETECTOR WITH BATTERY-BACKUP
- •• DETECTOR SHALL BE MINIMUM 3' HORIZONTAL DISTANCE FROM THE DOOR OF A BATHROOM THAT CONTAINS A
- •• PROVIDE INTERCONNECTION WIRING SUCH THAT ACTUATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THE DWELLING
- INTERCONNECTING EACH DWELLING UNIT INTO THE FIRE ALARM SYSTEM FOR THE BUILDING.
- NUMBER AND LOCATION OF DEVICES PRIOR TO ROUGH-IN. DEVICES SHOWN ARE DIAGRAMMATIC.
- 10. DISHWASHER OUTLET SHALL BE ACCESSIBLE. RECEPTACLE SHALL BE LOCATED IN SPACE ADJACENT TO THE DISHWASHER.
- THERMOSTAT FOR THE LIVING ROOM.

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.

- ALL 15 AND 20A, 120V SINGLE PHASE CIRCUITS NOT INCLUDING THE BATHROOM SHALL BE AFCI PROTECTED (210.12).
- ALL DWELLING UNIT CIRCUITS IN BATHROOMS, GARAGES, OUTDOORS, KITCHENS, LAUNDRY AREAS, AND AREAS WITHIN 6' OF A SINK SHALL BE GFCI PROTECTED (210.8).
- 2.1. BATHROOM CIRCUIT TO BE GFCI PROTECTED VIA A GFCI RECEPTACLE, WHILE OTHER CIRCUITS SHALL BE PROTECTED AT THE BREAKER.
- 3. UTILIZE "DUAL FUNCTION" BREAKER WHEN BOTH AFCI AND GFCI PROTECTION IS

ERAL	NOTES:	

- 2. ADA UNITS SHALL HAVE HOOD CONTROLS INSTALLED IN THE FACE OF THE LOWER
- BACKSPLASH NEXT TO SINK OR ON COUNTER.
- 5. BATHROOM GFCI RECEPTACLES TO HAVE INTEGRAL NIGHTLIGHT.
- REQUIREMENTS OF NEC ARTICLE 210.
- •• DETECTOR SHALL BE MINIMUM 6' HORIZONTAL DISTANCE FROM PERMANENT COOKING APPLIANCE PER CFC 90.2.11.8.
- BATHTUB OR SHOWER PER CFC 90.2.11.8.
- •• COORDINATE WITH AHJ ON
- •• COORDINATE WITH AHJ AS TO THE
- 11. PROVIDE 7-DAY PROGRAMMABLE

#>FLAG NOTES

AFCI/GFCI REQUIREMENTS FOR DWELLING UNITS:

- REQUIRED.

ROBISON

ENGINEERING, INC

19401 40TH AVE W., SUITE 302 LYNNWOOD, WA 98036 206-364-3343 TEL REI PROJECT NO.: 1219-001

02/15/24

UNIT PLANS & SCHEDULES

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 = 354

AVERAGE NUMBER OF PARKING SPACES PER BUILDING = 354/8 = 45;

45 x 0.2 = 9

5 OUTDOOR BY CHARCERS WITH INFRASTRUCTURE

5 OUTDOOR EV CHARGERS WITH INFRASTRUCTURE 4 CONDUITS TO FUTURE EV CHARGING LOCATIONS

BY 50%. 208A/2 = 37.5KVA (104)A @ 208V 3 PHASE

CAPACITY FOR 9 CHARGERS \times 208V/1PH \times 40A = 74.9 KVA = (208)A 3 PHASE POWER @ 120/208V UTILIZING LOAD MANAGEMENT INFRASTRUCTURE, EV LOAD CAN BE REDUCED

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.

GENE	GENERAL FEEDER SCHEDULE										
ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES								
1	125	1-1/2"C,2#2/0 AL,#2/0 AL N,#4 AL G	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								
(5)	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								
7	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.

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.

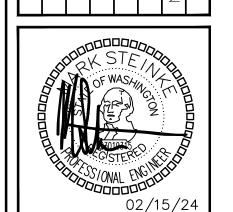
SHEET NOTES:

- A. CONTRACTOR TO OBTAIN UTILITY APPROVAL OF ALL SERVICE AND METERING EQUIPMENT PRIOR TO ORDERING.
- B. DISTRIBUTION SYSTEM AS DESIGNED IS FULLY RATED.
 CONTRACTOR WILL BE RESPONSIBLE FOR ENGINEERING IF SERIES
 RATED SYSTEMS ARE SUBMITTED, THE SUBMITTED SYSTEM SHALL
 MEET NEC 240.86(B) REQUIREMENTS FOR TESTED COMBINATIONS,
 AND SHALL NOT BE USED IF MOTOR CONTRIBUTION EXCEEDS
 LIMITS PER 240.86(C). NEC 110.22 MARKING REQUIREMENTS
 MUST BE MET.
- C. PROVIDE PERMANENT WARNING LABELS FOR ARC FLASH AND PPE REQUIREMENTS FOR THE SERVICE EQUIPMENT AND PANELS.

FLAG NOTES:

#

- 1. GROUNDING ELECTRODE CONDUCTOR AND SYSTEM GROUNDING SIZED PER N.E.C. 250
- 2. PROVIDE ARC ENERGY REDUCTION: ENERGY REDUCING MAINTENANCE SWITCH PER NEC 240.87(B)(3)
- 3. PROVIDE A LISTED SURGE PROTECTIVE DEVICE FOR DWELLING UNITS AS REQUIRED BY NEC 230.67. CONTRACTOR TO CONFIRM LOCATION IS ACCEPTABLE TO AUTHORITY HAVING JURISDICTION. OBTAIN PRICING FOR OPTION TO HAVE SPDs LOCATED IN UNIT PANELS VS UPSTREAM.
- 4. METER ELEVATIONS AND METERS PER STACK SHALL BE INSTALLED PER UTILITY ELECTRICAL PROVIDER REQUIREMENTS. METER SOCKET IN ELECTRICAL ROOM. VERIFY EXACT LOCATION AND REQUIREMENTS WITH ELECTRIC UTILITY (TYPICAL)
- 5. PROVIDE (1) 2 1/2" CONDUITS FOR SOLAR READY PATHWAY AND RESERVE SPACE IN THE MAIN ELECTRIC ROOM FOR FUTURE SOLAR EQUIPMENT. RESERVE SPACE FOR INSTALLATION OF FUTURE SOLAR CIRCUIT BREAKER AND PERMANENTLY MARK THIS LOCATION AS "FOR FUTURE SOLAR ELECTRIC".





DESIGNED: MHS
CHECKED: PSR
APPROVED: JAY

DESIGNED:

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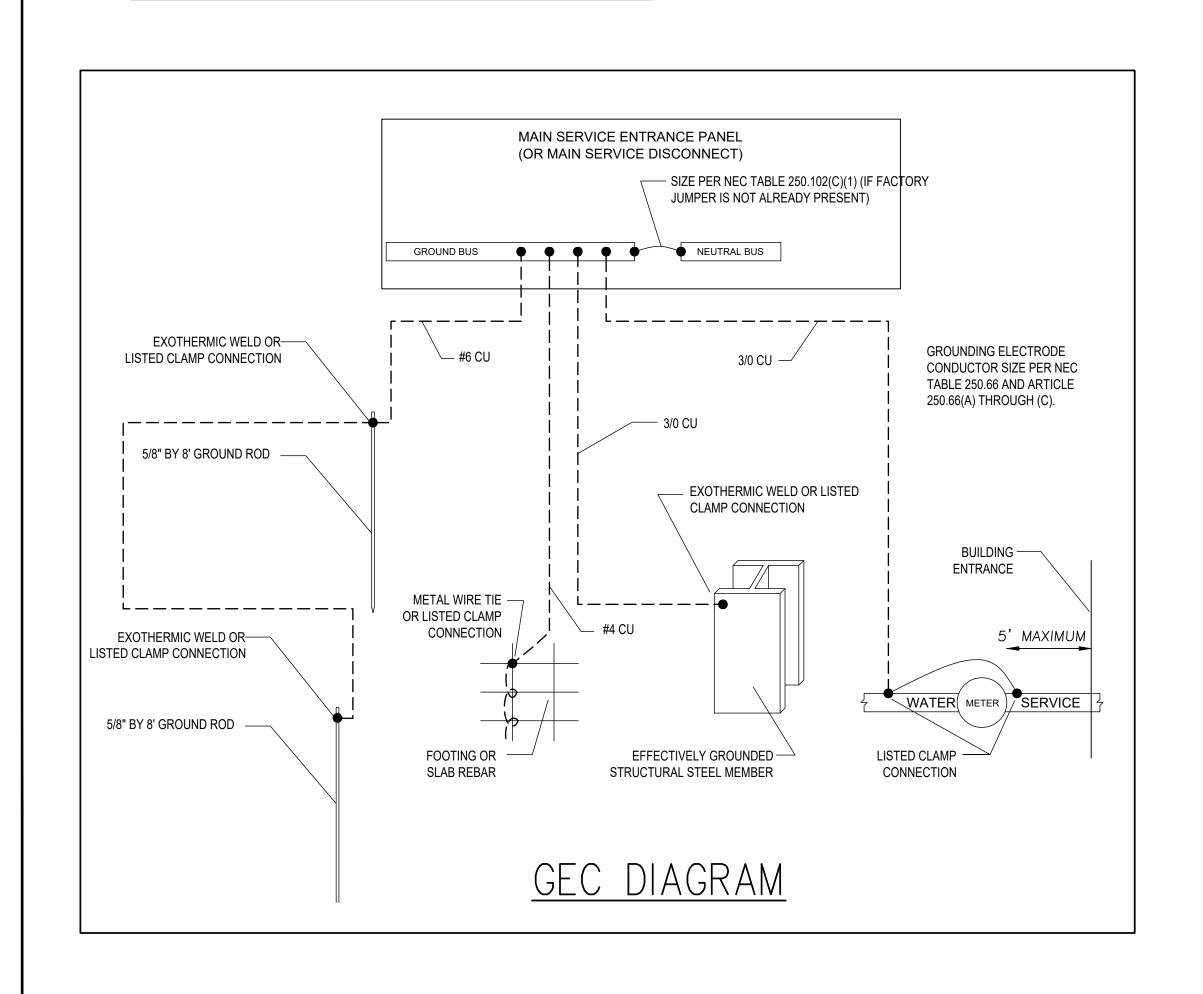
401 40TH AVE W. SUITE 302

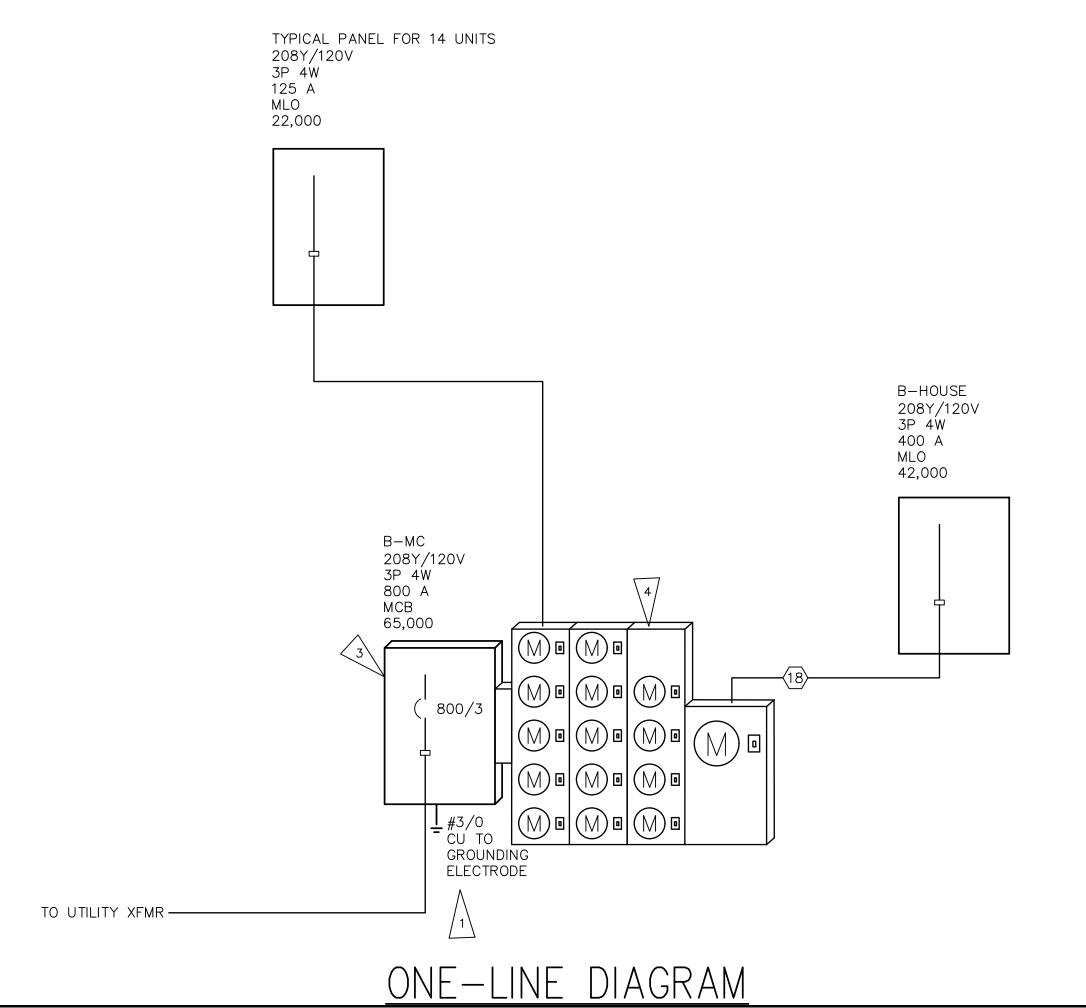
NAMMOOD WA 98036

OATE: 02/15/24

ONE-LINE
DIAGRAM &
NOTES

E6.00





Pai	nel 	HOU	ROOM MOUN TH FED FRO NOTE	NG SURF DM B-MO	ACE BU	JS	AMP	08Y/120\ S 200 100%	/ 3P 4W	1	AIC 42,00 MAIN BKR LUGS STA	MLO
KT 4	CKT BKR	LOAD KVA	CIRCUI	T DESCRI	⊃TION		CKT #	CKT BKR	LOAD KVA	CIR	CUIT DESC	RIPTION
1	20/1	0.9	RECEP1			a	2	40/2	6.6	1	CHARGER	
3	20/1	0.369	LIGHTIN			b	4	10 (0	6.6		CHARGER	
5 7	20/1 20/1	0.5 0.18	HEAT 1			c a	١ _	40/2 	6.6	EV	CHARGER	
9	20/1	0.064	LIGHTIN			b	10	40/2	6.6	EV	CHARGER	
1 3	20/1 20/1	0.5 0.036	FACP SITE LI	GHTING		c a	i	 40/2	6.6	FV	CHARGER	
5	-/1	0	SPACE			b	16	ĺĺ				
7 9	-/1 -/1	0	SPACE SPACE			c a	i	40/2	6.6	EV	CHARGER	
9 21	-/1 -/1	0	SPACE			b	1	40/2	6.6	(F)	EV CHARG	ER
3	-/1	0	SPACE			С		10 (0		(5)	EV 0114B0)
5 7	-/1 -/1	0	SPACE SPACE			a b	ł	40/2 	6.6	(F)	EV CHARG	EK
9	-/1	0	SPACE			С	30	40/2	6.6	(F)	EV CHARG	SER
31 3	-/1 -/1	0	SPACE SPACE			a b	ł	 40/2	6.6	(F)	EV CHARG	SFR
5	-/1	0	SPACE			c	36	ĺĺ				
7 9	-/1 -/1	0	SPACE SPACE			a b	38 40	-/3	0	SOL	AR BREAK	ER
.1	-/1 -/1	0	SPACE			c						
		•	CONN KVA	CALC KVA		•				ONN VA	CALC KVA	
	GHTING ECEPTAC		.469 .08	0.586 1.08	(125%) (50%>10)		CON	LOAD TINUOUS	59. 0.5		37.1 0.625	(63%) (125%)
								TING	0.5		0.5	(100%) -
								AL LOAD ANCED 3-	-PHASE		39.9	
						LO	AD ASE A			111 A 101%		
							PH	ASE B ASE C			98% 101%	

	NTING SURFAC		BL	DLTS 208Y US AMPS 8 UTRAL 10 0	300	SP 4W		AIC 65,00 MAIN BKR LUGS STA I	800	
CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIP	TION		-	OAD KV	A C	FEEDER RACEWAY AN	ND CONDUCTOR	25
 1	125/2	PANEL B-001			16.5	16.7	C	1-1/2"C,2#2/0 AL,#		
2	125/2	PANEL B-002				16.5	16.7	1-1/2"C,2#2/0 AL,#		
3	125/2	PANEL B-101			16.7		16.5	1-1/2"C,2#2/0 AL,#		
4	125/2	PANEL B-102			16.5	16.7		1-1/2"C,2#2/0 AL,#	-	
5	125/2	PANEL B-103				16.5	16.7	1-1/2"C,2#2/0 AL,#		
6	125/2	PANEL B-104			16.7		16.5	1-1/2"C,2#2/0 AL,#		
7	125/2	PANEL B-201			16.5	16.7		1-1/2"C,2#2/0 AL,#		
8	125/2	PANEL B-202				16.5	16.7	1-1/2"C,2#2/0 AL,#		
9	125/2	PANEL B-203			16.7		16.5	1-1/2"C,2#2/0 AL,#		
10	125/2	PANEL B-204			16.5	16.7		1-1/2"C,2#2/0 AL,#	2/0 AL N,#4	AL G
11	125/2	PANEL B-301				16.5	16.7	1-1/2"C,2#2/0 AL,#		
12	125/2	PANEL B-302			16.7		16.5	, , , , , , , , , , , , , , , , , , , ,		
13	125/2	PANEL B-303			16.5	16.7		1-1/2"C,2#2/0 AL,#		
14	125/2	PANEL B-304				16.5		1-1/2"C,2#2/0 AL,#		AL G
15	200/3	PANEL B-HOUSE	•		20.2	20.8	20.9	2"C,3#3/0,#3/0N,#6	G 	
		TOTAL CONNE	ECTED KVA	BY PHASE	169	187	170			
OPTI	ONAL MULTIFA	TOTAL CONNE				187	170			
OPTI	ONAL MULTIFAI			(NEC 220.8	34)	187				
OPTI	ONAL MULTIFAI			(NEC 220.8	34)				KVA	
		MILY DWELLING CA	KVA	(NEC 220.8	B4) DWELLIN	G UNIT		LOAD	KVA 453	_
	ONAL MULTIFAI	MILY DWELLING CA	LCULATION	(NEC 220.8	B4) DWELLIN	G UNIT	LOADS NECTED		453	_
LIGI SM/	HTING AND RE	MILY DWELLING CA	KVA 49.3 42	(NEC 220.8	B4) DWELLIN	G UNIT CON DWE	LOADS NECTED LLING U	JNITS	453 14	_
LIGI SM/ LAU	HTING AND RE ALL—APPLIANC JNDRY	MILY DWELLING CA	KVA 49.3 42 21	(NEC 220.8	B4) DWELLIN	G UNIT CON DWE DEM	LOADS NECTED LLING U AND FA	JNITS ACTOR	453 14 (40%)	_
LIGI SM/ LAU APF	HTING AND RE ALL—APPLIANC JNDRY PLIANCES	MILY DWELLING CA	KVA 49.3 42 21 119	(NEC 220.8	B4) DWELLIN	G UNIT CON DWE DEM	LOADS NECTED LLING U AND FA	JNITS	453 14	_
LIGI SM/ LAU APF ELE	HTING AND RE ALL—APPLIANC JNDRY PLIANCES CCTRIC COOKING	MILY DWELLING CA	KVA 49.3 42 21 119 112	(NEC 220.8 [— 16,417 (3 VA/S	B4) DWELLIN	G UNIT CON DWE DEM	LOADS NECTED LLING U AND FA	JNITS ACTOR	453 14 (40%)	_
LIGI SM/ LAU APF ELE	HTING AND RE ALL—APPLIANC JNDRY PLIANCES	MILY DWELLING CA	KVA 49.3 42 21 119	(NEC 220.8	SF SF)	CON DWE DEM CAL	LOADS NECTED LLING U AND FA CULATEI	JNITS ACTOR	453 14 (40%)	_
LIGI SM/ LAU APF ELE	HTING AND RE ALL—APPLIANC JNDRY PLIANCES CCTRIC COOKING	MILY DWELLING CA	KVA 49.3 42 21 119 112 111	(NEC 220.8	SF SF)	G UNIT CON DWE DEM	LOADS NECTED LLING U AND FA CULATEI	JNITS ACTOR D LOAD	453 14 (40%) 181	_
LIGI SM/ LAU APF ELE	HTING AND RE ALL—APPLIANC JNDRY PLIANCES CCTRIC COOKING	MILY DWELLING CA	KVA 49.3 42 21 119 112	(NEC 220.8	SF SF)	CON DWE DEM CAL	LOADS NECTED LLING U AND FA CULATEI	JNITS ACTOR	453 14 (40%) 181	_
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388	KVA 49.3 42 21 119 112 111 CALC KVA 0.485	(NEC 220.8	SF SF)	CON DWE DEM CAL	LOADS NECTED LLING L AND FA CULATEI DS	CONN KV	453 14 (40%) 181 A CALC KVA 37.1	- (63%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JNDRY PLIANCES CTRIC COOKING	MILY DWELLING CA CEPTACLES E G CONN KVA	KVA 49.3 42 21 119 112 111	(NEC 220.8	SF SF)	CON DWE DEM CAL	LOADS NECTED LLING U AND FA CULATEI DS LOAD TINUOUS	CONN KVA 59.4 S 0.5	453 14 (40%) 181 A CALC KVA 37.1 0.625	- (63%) (125%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388	KVA 49.3 42 21 119 112 111 CALC KVA 0.485	(NEC 220.8	SF SF)	CON DWE DEM CAL	LOADS NECTED LLING L AND FA CULATEI DS	CONN KV	453 14 (40%) 181 A CALC KVA 37.1	- (63%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388	KVA 49.3 42 21 119 112 111 CALC KVA 0.485	(NEC 220.8	SF SF)	CON DWE DEM CAL SE LOAL EV I CON HEA	LOADS NECTED LLING U AND FA CULATEI DS LOAD TINUOUS TING	CONN KVA 59.4 S 0.5	453 14 (40%) 181 A CALC KVA 37.1 0.625	- (63%) (125%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388	KVA 49.3 42 21 119 112 111 CALC KVA 0.485	(NEC 220.8	SF SF)	CON DWE DEM CAL SE LOAL EV I CON HEA	LOADS NECTED LLING U AND FA CULATED DS LOAD TINUOUS TING AL HOU	CONN KVA 59.4 S 0.5 0.5	453 14 (40%) 181 A CALC KVA 37.1 0.625 0.5	- (63%) (125%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388	KVA 49.3 42 21 119 112 111 CALC KVA 0.485	(NEC 220.8	SF SF)	CON DWE DEM CAL SE LOAL EV I CON HEA TOT	LOADS NECTED LLING U AND FA CULATED DS LOAD TINUOUS TING AL HOU	CONN KVA 59.4 S 0.5 0.5	453 14 (40%) 181 A CALC KVA 37.1 0.625 0.5	- (63%) (125%)
LIGI SM/ LAU APF ELE HE/	HTING AND RE ALL—APPLIANC JINDRY PLIANCES COTRIC COOKING	CEPTACLES E CONN KVA 0.388 1.08	KVA 49.3 42 21 119 112 111 CALC KVA 0.485 1.08	(NEC 220.8	SF SF)	CON DWE DEM CAL SE LOAI CON HEA TOT	LOADS NECTED LLING U AND FA CULATED DS LOAD TINUOUS TING AL HOU	CONN KV/ 59.4 S 0.5 O.5 SE LOAD	453 14 (40%) 181 A CALC KVA 37.1 0.625 0.5 39.8	- (63%) (125%)

DESIGNED: MHS
CHECKED: PSR
APPROVED: JAY

DYMEUR WA DESIGNED

9401 40TH AVE W. SUITE 302 YNNWOOD, WA 98036

TH AVE SE AND 51H SINCIPALITE SINTES

Robi

ATE: 02/15/24

PANELS
SCHEDULES

E6.01

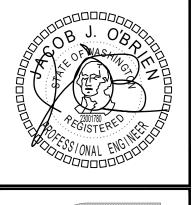
SYMBOLS GENERAL NOTES GENERAL REFERENCE TO RELATED WORK: "REF" INDICATIONS DENOTE WORK COVERED ELSEWHERE (ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL, LANDSCAPE, OR KITCHEN), OR ITEM BASED ON ARCHITECTURAL BACKGROUND A SPECIFIC MANUFACTURER'S DIMENSIONS (VERIFY). BALL VALVE (THIN LINE) 2. ELECTRICAL CHARACTERISTICS: REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL GLOBE VALVE CHARACTERISTICS (VOLTAGES, ETC. OF MECHANICAL EQUIPMENT, UNLESS OTHERWISE INDICATED. NEW PIPING (HEAVY LINE) CHECK VALVE CODES: COMPLETE INSTALLATION OF THE PLUMBING SYSTEM SHALL BE PER THE APPLICABLE BUILDING, MECHANICAL, ENERGY, PLUMBING, FIRE, AND HEALTH CODES AND REGULATIONS AS BALANCING OR PLUG VALVE EXISTING PIPING (THIN LINE) ADOPTED BY THE LOCAL AHJ. BUTTERFLY VALVE EXISTING WORK TO BE REMOVED 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 FLEXIBLE CONNECTION IN PIPING MATCHLINE OR PROPERTY LINE 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, CONNECTION TO EXISTING RELOCATING, ETC. AS REQUIRED FOR A COMPLETE OPERATING MECHANICAL SYSTEM. PRESSURE REDUCING VALVE (PRV) D. PROVIDE SHOP DRAWINGS AT NO ADDITIONAL COST TO THE OWNER. SECTION IDENTIFICATION 5. PLUMBING CONTRACTOR SHALL LOCATE AND COORDINATE EXACT LOCATION OF ALL PLUMBING AUTOMATIC CONTROL VALVE, 2-WAY EQUIPMENT WITHIN THE STRUCTURE. INDICATES DIRECTION OF CUTTING AUTOMATIC CONTROL VALVE, 3-WAY 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 LETTER INDICATES SECTION RELIEF VALVE BIDDING. (NO. INDICATES DETAIL) 7. ROOF PENETRATIONS: SEE ARCHITECTURAL DRAWINGS FOR ROOF CAP, ROOF CURB, ROOF DRAIN, SHEET NUMBER WHERE SECTION IS BALANCING/METERING VALVE OVERFLOW DRAINS AND VTR DETAILS. DRAWN 8. EXPOSED PIPING: PROVIDE CHROME PLATING FOR EXPOSED PIPING IN FINISHED ROOMS. SHEET NUMBER WHERE SECTION IS REDUCER 9. PENETRATIONS: PROVIDE ESCUTCHEON PLATES FOR EXPOSED PIPING PENETRATIONS AND SHEET DIRECTION OF FLOW METAL FLASHING FOR EXPOSED DUCTWORK PENETRATIONS. DETAIL IDENTIFICATION PIPE ANCHOR 10. SHAFT AND PLENUM CONNECTIONS: SEAL CONNECTIONS TO AIR SHAFTS AIRTIGHT. PROVIDE AIRTIGHT SEAL AROUND PENETRATIONS IN AIR PLENUMS. PIPE ALIGNMENT GUIDE - DETAIL NUMBER 11. LIGHT FIXTURE CLEARANCE: COORDINATE LOCATIONS OF MECHANICAL WORK TO PROVIDE DRAWING/SHEET NUMBER PIPE SUPPORT CLEARANCES OVER LIGHTING FIXTURES FOR REMOVAL AND REPLACEMENT. 12. CABLE TRAYS: PIPING INSTALLED ADJACENT TO ELECTRICAL CABLE TRAYS SHALL ALLOW MINIMUM VALVE STATION OR ASSEMBLY ACCESS OF 6" ABOVE AND TO THE SIDE OF CABLE TRAYS. **EQUIPMENT** INDIRECT DRAIN, PIPE TO DRAIN 13. MOTORS: COMPLY WITH ENERGY CODE ENFORCED BY AHJ FOR MINIMUM EFFICIENCIES UNDER FULL TYPICAL EQUIPMENT DESIGNATION LOAD. POINT OF CONNECTION <u>HWCP-1</u> 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 <u>PIPING</u> ROOF DRAIN, OVERFLOW DRAIN AND MAINTENANCE. RD OD WASTE BELOW GRADE COORDINATION REQUIREMENTS FLOOR DRAIN WASTE ABOVE GRADE IRRIGATION SYSTEM: COORDINATE IRRIGATION WATER DEMAND, MINIMUM WATER PRESSURE PUMPED WASTE HOSE BIBB REQUIREMENTS & CONTROL CABINET LOCATIONS WITH IRRIGATION CONTRACTOR. INDIRECT WASTE GAS: CONTRACTOR/GAS COMPANY SHALL FINALIZE GAS METER AND GAS SERVICE LOCATIONS. BREAK IN PIPING OR DUCTWORK SANITARY SEWER BELOW GRADE INSTALL SEISMIC GAS SHUT OFF VALVE PER GAS COMPANY REGULATIONS. SANITARY SEWER ABOVE GRADE GAS METER 3. UTILITIES: COORDINATE WITH SITE UTILITY CONTRACTOR AND CIVIL DRAWINGS FOR UTILITY PUMPED SANITARY SEWER CONNECTIONS AND EXTENSIONS. INLINE WATER METER VENT 4. ROOF DRAINAGE: COORDINATE WITH GENERAL CONTRACTOR FOR ROOF DRAIN AND OVERFLOWS, STORM DRAIN SCUPPER DRAINS, AND CONDENSATE DRAINS. PUMP OVERFLOW STORM DRAIN 5. PLUMBING FIXTURES & EQUIPMENT: COORDINATE EXACT LOCATION OF ALL PLUMBING FIXTURES & EQUIPMENT WITH ARCHITECTURAL AND OTHER TRADES DOCUMENTS. PUMPED STORM DRAIN PRESSURE GAUGE CONDENSATE DRAIN —— CD ——— 6. PIPING: COORDINATE EXACT LOCATION OF ALL STRUCTURAL FRAMING & FOOTINGS AND FINALIZE THE EXACT ROUTING OF ALL PIPES WITH STRUCTURAL ENGINEER AT THE SITE PRIOR TO AND THERMOMETER PUMPED CONDENSATE DRAIN DURING THE CONSTRUCTION. COORDINATE UNDER GRADE PIPING & FOUNDATION DRAINAGE PIPING WITH CIVIL ENGINEER. COLD WATER (CW) _____ PRESSURE/TEMPERATURE TEST PORT HOT WATER (HW), POTABLE, 120°F _____ 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 REDUCED PRESSURE BACKFLOW HOT WATER, POTABLE, PROJECT SITE AND ACCOUNTING FOR ELEVATION ABOVE SEA LEVEL. PREVENTER TEMPERATURE OTHER THAN 120°F APPROVALS: MECHANICAL AND PLUMBING EQUIPMENT SHALL BE APPROVED FOR INSTALLATION IN HOT WATER CIRCULATING (HWC), _____ THE PROJECT LOCATION AND SHALL HAVE ALL CERTIFICATIONS AND RATINGS TO MEET ALL DOUBLE CHECK VALVE ASSEMBLY POTABLE, 120°F ENERGY, POLLUTION, ENVIRONMENTAL, SEISMIC, APPLICABLE CODES AND REGULATIONS. THE DCVA CONTRACTOR SHALL COORDINATE WITH MANUFACTURE SUPPLIERS AND SHALL INCLUDE ALL COSTS — --- — 140 —— HOT WATER CIRCULATING, POTABLE, CATCH BASIN - SAND/OIL INTERCEPTOR REQUIRED TO MEET THE BID DOCUMENTS. TEMPERATURE OTHER THAN 120°F 9. FIRE PROTECTION: CONTRACTOR SHALL PROVIDE A FULLY DESIGNED FIRE PROTECTION SPRINKLER ——— FOF ——— FUEL OIL FILL TRENCH DRAIN 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 ——— FOS ——— FUEL OIL SUPPLY EMERGENCY GAS SHUT-OFF VALVE PIPING TO BE COORDINATED WITH OTHER TRADES. —— FOR ——— FUEL OIL RETURN 10. PRIOR TO PIPING INSTALLATION: PLUMBING CONTRACTOR TO COORDINATE PIPING LAYOUT WITH ALL SEISMIC GAS SHUT-OFF VALVE OTHER TRADES. — — FOV — — FUEL OIL VENT 11. ACCESS: COORDINATE ALL ACCESS LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT TO — — RV— — RELIEF VENT WASHER BOX ENSURE ALL REQUIRED ACCESS HATCHES, ACCESS PANELS & ACCESS COVERS ARE PROVIDED. LOW PRESSURE NATURAL GAS GREASE INTERCEPTOR 12. PROVIDE WATER TIGHT SEALS FOR ANY PIPING PENETRATING THE EXTERIOR FOUNDATION WALLS OR MEDIUM PRESSURE NATURAL GAS 13. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY. IRRIGATION (NON POTABLE) 14. PROVIDE FIRE PROOFING FOR ALL PIPING PENETRATING FIRE BARRIER WALLS OR FLOOR SLABS. FIRE MAIN DISINFECTION OF POTABLE WATER SYSTEM REQUIREMENTS PIPE SYMBOLS 1. NEW OR REPAIRED POTABLE WATER SUPPLY SYSTEMS SHALL BE DISINFECTED TOP PIPE CONNECTION PRIOR TO USE. 2. INITIAL COLIFORM SAMPLE IS REQUIRED PRIOR TO ADMINISTERING BOTTOM PIPE CONNECTION WATER-CHLORINE SOLUTION. SECTION 609.9 ITEMS #2 OR #3 CAN BE USED PRECEDED BY AND FOLLOWED BY PIPE TURNING UP ITEM #1. 3.1. NOTE FILL PORT TO ADD CHLORINE MUST BE WHERE WATER SUPPLY ENTERS PIPE TURNING DOWN/DROP BUILDING AND A FLOW METER TO MEASURE SOLUTION. 4. AFTER WATEROCHLORINE SOLUTION IS INCORPORATED INTO THE NEW OR REPAIRED PIPE CAP WATER SUPPLY SYSTEM A 48 HOUR WAITING PERIOD MUST BE OBSERVED PRIOR TO BACTERIOLOGICAL TEST. PIPE PLUG 5. BACTERIOLOGICAL TEST SHALL BE CONDUCTED BY A LABORATORY CERTIFIED FOR DRINKING WATER IN WASHINGTON STATE AFFIRMING WATER QUALITY CONTAINS NO COLIFORM BY SAMPLE TESTING THE FURTHEST FIXTURE FROM PUBLIC WATER SOURCE AND NOT LESS THAN TWO OTHER LOCATIONS PART OF THE WATER SUPPLY SYSTEM. CHLORINE LEVEL IN THE NEW OR REPAIRED WATER SUPPLY SYSTEM SHALL NOT WYE STRAINER BE LESS THAN THE MEAN AVERAGE OF THE AREA IN RELATIONSHIP FROM THE WATER PURVEYOR SOURCE. WYE STRAINER WITH CAPPED HOSE WARNING: IN CASE A WATER SOFTENER IS PART OF THE COLD WATER SYSTEM, END BLOWDOWN VALVE CONTRACTOR TO ENSURE THE WATER SOFTENER IS CONNECTED AND OPERATIONAL BEFORE STARTING THE DISINFECTION PROCESS. FAILURE TO FOLLOW THE BALL VALVE INSTRUCTIONS WILL VOID THE WATER HEATER OR HEAT PUMP WARRANTY.

ABV	ABOVE	FLR	FLOOR		OVERELOW DRAIN (DECK DRAIN
AD	AREA DRAIN	FPM	FEET PER MINUTE	OPD	OVERFLOW DRAIN/DECK DRAIN OVER PRESSURE DEVICE
AFF	ABOVE FINISHED FLOOR	FPS	FEET PER SECOND	OPD	OPENING
AHJ	AUTHORITY HAVING JURISDICTION	FS	FLOOR SINK		OPENING
BFF	BELOW FINISHED FLOOR	FT	FEET FEET	Р	PUMP
BFP	BACKFLOW PREVENTER	F I FU	FIXTURE UNITS	PD	PRESSURE DROP, PLANTER DRAIN
				POC	POINT OF CONNECTION
ВОН	BACK OF HOUSE BOOSTER PUMP	G	GAS (LOW PRESSURE)	PRV	PRESSURE REDUCING VALVE
BP		GAL	GALLONS		PRESSURE RELIEF VALVE
BT	BATHTUB	GD	GARAGE DRAIN	PS	PUMPED STORM DRAINAGE
BTUH	BRITISH THERMAL UNIT PER HOUR	GM	GAS METER	PSIG	POUNDS PER SQUARE INCH GAUGE
BV	BALANCING VALVE	GPG	GRAINS PER GALLON	PSD	PUMPED STORM DRAINAGE
C	COMMON	GPM	GALLONS PER MINUTE	PSS	PUMPED SANITARY SEWER
CAP	CAPACITY	GV	GATE VALVE	PSW	PUMPED SANITARY WASTE
CB	CATCH BASIN	GWB	GYPSUM WALLBOARD	PW	PUMPED WASTE
CD	CONDENSATE DRAIN	GWH	GAS WATER HEATER	RD	ROOF DRAIN
CFF	CAPPED FOR FUTURE	HB	HOSE BIBB	REF	REFERENCE
CFM	CUBIC FEET PER MINUTE	HD	HEAD	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
CI	CAST IRON	HDR	HUB DRAIN	RPM	REVOLUTIONS PER MINUTE
CLG	CEILING, COOLING	HEDV	HOSE END DRAIN VALVE	S	SINK
CLW	CLOTHE'S WASHER	HORIZ	HORIZONTAL	SCH	SCHEDULE
CO	CLEANOUTS	HP	HORSEPOWER	SCW	SOFTENED COLD WATER
COMB	COMBUSTION	HPCW	HIGH PRESSURE COLD WATER	SD	STORM DRAIN
CONT	CONTINUE, CONTROL	HW	HOT WATER	SEP	SEWAGE EJECTOR PUMP
CONTR	CONTRACTOR	HWC	HOT WATER RE-CIRCULATION	SF	SQUARE FOOT
COTG	CLEANOUTS TO GRADE	HWCP	HOT WATER CIRCULATION PUMP	SGSV	SEISMIC GAS SHUT-OFF VALVE
CP	CIRCULATING PUMP	HWR	HOT WATER RETURN	SH	SHOWER
CV	CHECK VALVE	HWST	HOT WATER STORAGE TANK	SO	STORM OVERFLOW
ĊW	COLD WATER	HX	HEAT EXCHANGER	SP	STATIC PRESSURE/SUMP PUMP
D	DIAMETER	ICW	INDUSTRIAL COLD WATER	SR	SUDS RELIEF
DB	DRY BULB, DECIBEL	ID	INDIRECT DRAIN, INSIDE DIAMETER	SS	
DF	DRINKING FOUNTAIN	ΙΕ	INVERT ELEVATION	SSS	STAINLESS STEEL/SANITARY SEWER
DFU	DRAIN FIXTURE UNITS	iΗW	INDUSTRIAL HOT WATER		SIDE SANITARY SEWER
DI	DUCTILE IRON	IN IN	INCH	STD	STANDARD
DIM	DIMENSION	KS	KITCHEN SINK	SQ	SQUARE
DN	DOWN	KW	KILOWATT	TD	TRENCH DRAIN
DS	DOWN SPOUT	L	LONG, LENGTH	TMV	THERMOSTATIC MIXING VALVE
DWG	DRAWING	LAV	LAVATORY	TP	TRAP PRIMER
(E)	EXISTING	LAV	POUND	TYP	TYPICAL
(E) EFF	EFFICIENCY	M	WATER METER	UH	UNIT HEATER
				UON	UNLESS OTHERWISE NOTED
ELEC	ELECTRIC	MBH	THOUSAND BTU PER HOUR	UR	URINAL
EQUIV	EQUIVALENT	MECH	MECHANICAL AND A CITY	V	VENT
EWC	ELECTRIC WATER COOLER	MCA	MIN. CIRCUIT AMPACITY	VTR	VENT THRU ROOF
EWH	ELECTRIC WATER HEATER	MOCP	MAX. OVER CURRENT PROTECTION	W	WASTE, WATT, WIDE
EXT	EXTERIOR, EXTERNAL	MPG	MEDIUM PRESSURE GAS	WC	WATER CLOSET
F	FAHRENHEIT	MTD	MOUNTED	WCO	WALL CLEANOUTS
FCO	FLOOR CLEANOUTS	(N)	NEW	WHD	WALL HYDRANT
FD	FLOOR DRAIN	ŇĆ	NORMALLY CLOSED	WM	WASHING MACHINE
FDC	FIRE DEPARTMENT CONNECTION	NO	NORMALLY OPEN	WSFU	WATER SUPPLY FIXTURE UNITS
FF	FINISHED FLOOR	OD	OUTSIDE DIMENSION/DIAMETER		
			•		

ABBREVIATIONS

DRAWING INDEX										
DWG	DESCRIPTION	INC	INCLUDED IN SET							
		PERMIT SET 2/14/2024								
P0B.00	LEGEND, GENERAL NOTES, AND DRAWING INDEX	×								
P0B.01	PLUMBING NOTES AND TABLES	X								
P0B.02	PLUMBING CALCULATIONS	X								
P0B.03	PLUMBING SCHEDULES	×								
P2B.00	UNDERSLAB WASTE & VENT PLAN	×								
P2B.01	BASEMENT WASTE & VENT PLAN	X								
P2B.02	LEVEL 1 WASTE & VENT PLAN	×								
P2B.03	LEVEL 2 WASTE & VENT PLAN	×								
P2B.04	LEVEL 3 WASTE & VENT PLAN	×								
P2B.05	ROOF WASTE & VENT PLAN	×								
P3B.01	BASEMENT PLUMBING SUPPLY PLAN	×								
P3B.02	LEVEL 1 PLUMBING SUPPLY PLAN	X								
	LEVEL 2 PLUMBING SUPPLY PLAN	X								
P3B.04		х								
P4B.00	WASTE & VENT RISER DIAGRAMS	×								
P4B.01	WASTE & VENT RISER DIAGRAMS	×								
P7B.00	DETAILS	×								
P7B.00	DETAILS	X								







_			
DRAWN:	DESIGNED:	CHECKED:	APPROVED:
M	ML	RJ	JR

 $\mathbf{\Omega}$

 $\mathbf{\Omega}$

 $\mathbf{a} \approx \mathbf{a}$

10/11/2023

LEGEND GENERAL NOTES AND DRAWING INDEX

N/A

AND STOPS FOR ADA FIXTURES

- 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.

TRUEBRO LAV-GUARD

TUBULAR PIPING INSULATION SHALL NOT BE REQUIRED FOR THE FOLLOWING:

EXPOSED SANITARY DRAINS AND DOMESTIC WATER SUPPLIES

- 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.
- PIPING FROM USER-CONTROLLED SHOWER AND BATH MIXING VALVES TO THE WATER OUTLETS.
- COLD WATER PIPING OF A DEMAND RECIRCULATION WATER SYSTEM.
- TUBING FROM A HOT DRINKING-WATER HEATING UNIT TO THE WATER OUTLET.
- PIPING AT LOCATIONS WHERE A VERTICAL SUPPORT OF THE PIPING IS INSTALLED.
- 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 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
- 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.℉) 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.

	HANGE	R SPA	CING F	OR W	/ATER	PIPING
ALL	SUSPENDED	WATER	SUPPLY	PIPE	SHALL	BE

SUPPORTED AS FOLLOW	S PER 2018 UPC	TABLE 313.3:
	MAX. HORIZONTAL	MAX. VERTICAL
	SPACING	SPACING
COPPER PIPE ≤1½"	6 FT.	10 FT.
COPPER PIPE >2"	10 FT.	10 FT.
COPPER TUBING ≤1½"	6 FT.	10 FT.
COPPER TUBING >2"	10 FT.	10 FT.
CPVC <u>≤</u> 1"	3 FT.	10 FT.
CPVC > 1¼"	4 FT.	10 FT.

HANGER SPACING FOR WASTE AND VENT PIPING

l	ALL SUSPENDED SANITARY AND VENT SUPPORTED AS FOLLOWS PER 2018		
l		MAX. HORIZ. SPACING	MAX. VERT. SPACING
1	ABS	4 FT.	10 FT.
1	PVC (TYPE DWV)	4 FT.	10 FT.
1	CAST-IRON HUBLESS*	EVERY	15 FT.
1		OTHER JOINT	
١	*CAST-IRON OVER 4' SHALL BE SUI	PORTED AT E	VERY JOINT

PLUMBING FIXTURE FLO	OW RATES PER 2018 UPC (CH. 4
FIXTURE TYPE	FLOW RATE	NOTES
SHOWERHEADS	1.8 GPM @ 80 PSI	
LAVATORY FAUCETS, RESIDENTIAL	1.2 GPM @ 60 PSI	1
LAVATORY FAUCETS, NON-RESIDENTIAL	0.5 GPM @ 60 PSI	2
KITCHEN FAUCETS	1.8 GPM @ 60 PSI	3
GRAVITY TANK-TYPE WATER CLOSETS	1.28 GALLONS/FLUSH	4
FLUSHOMETER TANK WATER CLOSETS	1.28 GALLONS/FLUSH	4
FLUSHOMETER VALVE WATER CLOSETS	1.28 GALLONS/FLUSH	4
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS/FLUSH	4
URINALS	0.5 GALLONS/FLUSH	

N/A

NOTES:

- LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.
- WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS RATED AT 0.35 GPM OR OTHER MEANS MAY BE USED TO ACHIEVE
- KITCHEN FAUCETS MAY TEMPORARILY INCREASE FLOW ABOVE THE MAXIMUM RATE, BUT NOT ABOVE 2.2 GPM @ 60 PSI AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM @ 60 PSI.
- 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.

NOTE TO CONTRACTOR

DRAWINGS ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

CONTRACTOR SUBSTITUTIONS & REVISIONS

PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE SUBSTITUTION PROPOSAL. CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

PRE-CONSTRUCTION MEETING NOTES

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

THE FOLLOWING TRADES SHALL BE REPRESENTED FOR THE MINIMUM TIME INDICATED:

MECHANICAL SHEET METAL PLUMBING/PIPING ELECTRICAL SPRINKLER

GENERAL CONTRACTOR

4 HOURS 4 HOURS 2 HOURS ALL SESSIONS

4 HOURS

- WASTE, VENT, COLD WATER, AND HOT WATER SYSTEM IN ACCORDANCE WITH DRAWINGS, MANUFACTURER'S RECOMMENDATIONS, AND LOCAL CODES. CONNECT TO EACH FIXTURE, EQUIPMENT, ETC. WITH ALL ACCESSORIES, VALVES, VACUUM BREAKERS, REGULATORS, UNIONS, ETC. AS REQUIRED AND AS RECOMMENDED BY THE MANUFACTURERS. REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE ON PLANS.
- 2. HOT AND COLD: WATER PIPING CONNECTION TO EACH FIXTURE SHALL BE COLD WATER ON THE RIGHT HAND SIDE AND HOT WATER ON THE LEFT HAND SIDE.
- HOT WATER: NON-CIRCULATING HOT WATER PIPE SHALL NOT EXCEED 10' UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 4. VENT STACKS: COORDINATE VENT STACK WITH HVAC EQUIPMENT TO MAINTAIN MINIMUM 10' CLEARANCE FROM OUTSIDE AIR INTAKES.
- CLEANOUTS: PROVIDE CLEANOUTS PER CURRENT UPC AND AS REQUIRED BY LOCAL JURISDICTIONS. CLEANOUTS SHALL BE LOCATED IN WALLS/FLOORS WHERE THEY ARE NOT HIGHLY VISIBLE. FLOOR CLEANOUTS IN CARPETED AREAS TO BE FITTED WITH CARPET INSERTS. LOCATIONS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. NOTE: NOT ALL CLEANOUTS ARE SHOWN ON THE PLUMBING DRAWINGS.
- SUDS RELIEF: PROVIDE SUDS RELIEF IN ACCORDANCE WITH 2018 UPC SECTION 711.0, STATE AND LOCAL CODES.
- 7. SHUT-OFFS: PROVIDE 1/4 TURN BALL VALVE ANGLE STOP SHUT-OFF VALVES AND BRAIDED STAINLESS STEEL FLEX CONNECTORS AT HOT AND COLD WATER SUPPLY TO EACH FIXTURE. EXCEPTION: PROVIDE SCREWDRIVER STOPS AT BATH/SHOWERS.
- 8. TUB SPOUTS SHALL BE THREADED (NO PUSH-ON FITTINGS).
- 9. TRAP ARMS: PROVIDE TRAP ARMS SUCH THAT THE MAXIMUM LENGTH WILL NOT EXCEED CODE REQUIREMENTS.
- 10. ADA INSULATION: AT PLUMBING PIPING EXPOSED UNDER LAVATORIES. INSULATE THE EXPOSED PIPING AND TRAPS WITH PRODUCT SPECIFICALLY DESIGNED FOR THIS APPLICATION MEETING ADA REQUIREMENTS. PROVIDE HANDI-LAV GUARD OR EQUIVALENT. OFFSET P-TRAPS TO CLEAR WHEELCHAIR ACCESS.
- 11. GAS EQUIPMENT: GAS EQUIPMENT SHALL BE INSTALLED PER EQUIPMENT LISTINGS, APPLICABLE SFGC, SPC, LOCAL CODES & NFPA STANDARDS.
- 12. GAS CONNECTIONS: INSTALL FLEXIBLE QUICK DISCONNECT ASSEMBLIES FOR ALL GAS FIRED KITCHEN EQUIPMENT PER APPLICABLE SFGC, SPC, LOCAL CODES & NFPA STANDARDS. PROVIDE LOCKABLE GAS SHUT-OFF VALVES FOR FIREPLACES & BBQS IN UNATTENDED PUBLIC LOCATIONS IN THE BUILDING.
- 13. GAS PIPING CONNECTIONS TO WATER HEATERS, BOILERS AND FURNACES SHALL HAVE DIRT LEGS AND UNIONS PROVIDED ON APPLIANCE SIDE OF SHUTOFF VALVE.
- 14. GAS PIPING INSTALLATION: STEEL OR MALLEABLE IRON FUEL LINES 2" OR SMALLER SHALL BE ASSEMBLED USING THREAD SEALANT SUITABLE FOR NATURAL GAS. GAS PIPING LARGER THAN 2" SHALL HAVE WELDED FITTINGS.
- 15. GAS PIPING UNDERGROUND: WHERE INSTALLED BELOW GRADE THROUGH THE OUTER FOUNDATION OR BASEMENT WALL OF A BUILDING, SHALL BE ENCASED IN A PROTECTIVE PIPE SLEEVE. THE ANNULAR SPACE BETWEEN THE GAS PIPING AND THE SLEEVE SHALL BE SEALED.
- 16. GAS PIPING ABOVE GROUND: WHERE PASSING THROUGH AN OUTSIDE WALL, GAS PIPING SHALL BE PROTECTED AGAINST CORROSION BY COATING OR WRAPPING WITH AN INERT MATERIAL. WHERE PIPING IS ENCASED IN A PROTECTIVE PIPE SLEEVE, THE ANNULAR SPACE BETWEEN THE PIPING AND THE SLEEVE SHALL BE SEALED.
- 17. GAS PIPE SUPPORT: FUEL LINES SHALL BE SUPPORTED OR STRAPPED, AND SHALL BE PLUMB AND SQUARE.
- THE ROOF. 19. GAS PIPING SHALL NOT BE BURIED UNDER A BUILDING, SLAB OR

18. GAS PIPING ON ROOFTOPS SHALL BE SUPPORTED AND ANCHORED TO

- OTHER STRUCTURE.
- 20. GAS PIPING PROTECTIVE COATING: PAINT ALL EXTERIOR EXPOSED GAS PIPING WITH TWO COATS OF RUST INHIBITIVE PAINT. COLOR: GRAY.
- 21. WATER HAMMER ARRESTORS: PROVIDE AT THE END OF HOT AND COLD WATER LINES SERVING TWO OR MORE FIXTURES; SIZE IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE (PDI) REQUIREMENTS. WATER HAMMER ARRESTORS ARE REQUIRED FOR QUICK CLOSING VALVES, SUCH AS LAUNDRY WASHERS, FLUSH VALVES (PUBLIC TOILETS), ETC.
- 22. TRAP PRIMERS AS SPECIFIED: PROVIDE TRAP PRIMERS AND PIPING FOR FLOOR DRAINS, FLOOR SINKS, AREA DRAINS & HUB DRAINS. ARRANGE PIPING TO ACHIEVE EQUAL FLOW TO EACH DRAIN AND FLOOR SINK FOR TRAP PRIMERS SERVING MULTIPLE DRAINS AND FLOOR SINKS. COORDINATE EXACT LOCATIONS WITH ARCHITECT & ELECTRICAL ENGINEER.
- 23. P-TRAPS: ALL EXPOSED P-TRAPS SHALL BE CHROME-PLATED BRASS. P-TRAPS SERVING HANDICAPPED COUNTER TOP LAVATORIES SHALL BE
- 24. THROUGHOUT THE PROJECT PROVIDE BALL VALVES. GATE VALVES SHALL NOT BE USED. NO EXCEPTIONS.
- 25. HOT WATER RECIRCULATING BALANCING VALVES SHOULD BE BELL & GOSSETT CIRCUIT SETTER (WATTS OR EQUAL) WITH INTEGRAL READOUT PORTS, ADJUSTMENT KNOB, DRAIN CONNECTION, AND POSITIVE SHUTOFF.

- CONNECTIONS: PROVIDE PLUMBING FIXTURE CONNECTIONS TO BUILDING 26. DISASSEMBLY PROVISIONS: PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
 - 27. REDUCERS: PROVIDE AS REQUIRED FROM LINE PIPE SIZE TO EQUIPMENT, TRAP, COIL, AND CONTROL VALVE CONNECTION SIZES.
 - 28. VALVE TAGS: PROVIDE VALVE TAGS PER SPECIFICATIONS TO IDENTIFY VALVE AND THE AREA IT SERVES.
 - 29. OFFSETS: PROVIDE FOR BRANCH LINES TO EQUIPMENT.
 - 30. ALL TEMPERATURE MIXING VALVES SHALL COMPLY WITH ASSE-1070 SAFETY STANDARDS.
 - 31. PROVIDE PIPE MARKER WITH DIRECTION OF FLOW. LABEL "NON-POTABLE WATER DO NOT DRINK" CLEARLY ON NON-POTABLE
 - 32. PROVIDE EXPANSION LOOPS/EXPANSION JOINTS IN PIPING PER 2018 UPC TABLE 313.3 AND MANUFACTURER INSTALLATION INSTRUCTIONS.
 - 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.
 - 34. DIELECTRIC UNIONS: PROVIDE AT CONNECTIONS OF DISSIMILAR PIPE.
 - 35. REFRIGERANT PIPING: PROVIDE SIZING & INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - 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.
 - 37. PIPING & EQUIPMENT SUPPORTS/HANGERS & SEISMIC RESTRAINTS TO BE DESIGNED BY DESIGN BUILT CONTRACTOR.
 - 38. IF NEEDED, PROVIDE VACUUM BREAKERS AT ALL HOSE BIBBS.
 - 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.
 - 40. INSULATION MATERIAL SHALL MEET CITY OF FERNDALE QUALITY STANDARDS.
 - 41. ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE 2018 WASHINGTON STATE ENERGY CODE.
 - 42. BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH 2018 UPC 701.0 AND 903.0.
 - 43. ALL SANITARY SYSTEM MATERIAL SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
 - 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.
 - 45. WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENTS DUE TO SEISMIC MOTION PER 2018 UPC
 - 46. MATERIAL EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH 2018 IMC 602.2.1.
 - 47. HVAC EQUIPMENT AND WATER HEATERS SHALL COMPLY WITH 2018 IMC
 - 48. BOILERS SHALL COMPLY WITH ALL THE REQUIREMENTS OF 2018 IMC
 - 49. PROVIDE EXPANSION TANKS FOR BOILERS PER 2018 IMC SECTION
 - 50. SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER 2018 UPC 408.0.
 - 51. PLUMBING FIXTURES AND FITTINGS SHALL COMPLY WITH CITY OF FERNDALE WATER CONSERVATION STANDARDS.
 - CONTRACTOR SHALL PROVIDE FIRESTOPPING AT PENETRATIONS AS NECESSARY TO RETAIN THE FIRE RATING OF ALL ASSEMBLIES. ALL WORK SHALL BE IN COMPLIANCE WITH CODE REQUIREMENTS FOR THE BUILDING CONSTRUCTION TYPE.
 - 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.
 - 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.

PROVIDE REQUIRED & PROPER BACK FLOW PREVENTERS AS SPECIFIED FOR THE APPLIANCES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

- ICE MACHINES AND ICE MAKERS
- CARBONATED BEVERAGE DISPENSING SYSTEMS COFFEE BREWERS
- ESPRESSO MACHINES WATER FILTERS

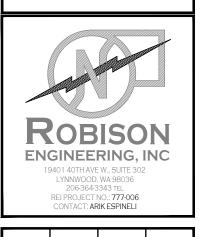
CHAPTER 3.

CHAPTER 10.

- STEAM OR HOT WATER BOILERS IRRIGATION SYSTEM
- FIRE PROTECTION SYSTEM
- CHEMICAL TREATMENT SYSTEM SOAP/CHEMICAL DISPENSER SYSTEM
- COMMERCIAL WASHER

APPLICABLE CODES

- 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



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PLUMBING NOTES

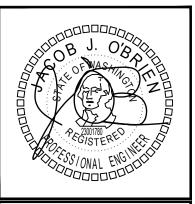
AND TABLES

PLUMBING CALCULATIONS

ALCULATIONS BASED ON 2018 UPC																		
Bedroom Unit (2 Bath)																		
FIXTURE		FIXTU	IRE UNITS		В	4	2	3	R	# OF FIXTURES	TOTAL QTY		TOTAL FIX	CTURE UNITS	•			
FIATURE	TOTAL	CW	HW	W/V]	'		3		PER UNIT	OF FIXTURES	SERVICE	CW ONLY	HW ONLY	W/V ONLY			
ATER CLOSET	2.5	2.5	0	3	2	4	4	4	0	2	28	70	70	0	84			
AVATORY	1	0.75	0.75	1	2	4	4	4	0	2	28	28	21	21	28			
ATHTUB	4	3	3	2	2	4	4	4	0	2	28	112	84	84	56			
LOTHES WASHER	4	3	3	3	2	4	4	4	0	1	14	56	42	42	42			
ITCHEN SINK W/ DISHWASHER	3	2.25	2.25	2	2	4	4	4	0	1	14	42	31.5	31.5	28			
											TOTAL:	308	248.5	178.5	238			
Public Fixtures																		
FIXTURE		FIXTU	IRE UNITS		В	1	2	3	R		TOTAL QTY		TOTAL FIX	CTURE UNITS				
TIXTORE	TOTAL	CW	HW	W/V		,			- 1		OF FIXTURES	SERVICE	CW ONLY	HW ONLY	W/V ONLY			
OSE BIB	2.5/1	2.5/1	0	0	2	0	0	0	0		2	3.5	3.5	0	0			
FLOOR DRAIN	0	0	0	8	1	0	0	0	0		1	0	0	0	8			
											TOTAL:	3.5	3.5	0	8			
			'	1					!							•	'	
	TOTAL	CW	HW	W/V														
TOTAL FIXTURE UNITS:	311.5	252	178.5	246														
PEAK FLOW:	87.5GPM																	
	SUPPLY	WASTE																
REQUIRED SERVICE SIZE IN BUILDING:	3"	6"																
	•	•	•	•	•	•	•	•	•	•		•	•		•	•	•	

BRADLEY HEIGHTS APARTMENTS - WATER SUPP CALCULATIONS ARE BASED ON 2018 UPC AP		RE
FROM STREET TO RPBP		
STREET PRESSURE, PSI		75
MINIMUM STREET PRESSURE, PSI		75
ASSUME +/- 5 PSI FLUCTUATION		
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 FURTHE	ST 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







M	2	JR
DESIGNED:	CHECKED:	APPROVED:

VE SE WA 98374

PUYALLUP, WA 98374

DEIGON 1940140

DATE: 10/11/

SHEET TITLE:
PLUMBING
CALCULATIONS

POB.02

PLUMBING SCHEDULES

	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.
- 2. PROVIDE THERMAL EXPANSION LOOPS FOR ALL WATER PIPING IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.
- 3. PROVIDE CAST IRON PIPING FOR WASTE DISCHARGE EXCEEDING 110 DEGREES FAHRENHEIT.

	PIPE SIZING SCHEDULE - COPPER TYPE L AT 7.0 PSI/100 FEET										
	CO	OLD WATER, FLUSH T	ANK		HOT WATER			COLD WATER, FLUSH VALVE			
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		

	со	LD WATER, FLUSH TA	ANK		HOT WATER		COL	D 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	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

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

NOTES:

- 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

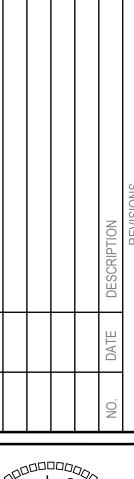
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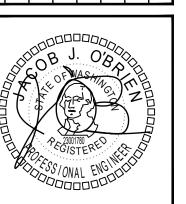
- 1. ELECTRICAL REQUIREMENTS ARE BASED ON NON-SIMULTANEOUS OPERATION.
- 2. FOR WATER HEATER PIPING DIAGRAM SEE DETAIL 1/P7.00.
- 3. ALL DOMESTIC WATER EQUIPMENT SHALL BE NSF-61 LISTED.
- 4. PROVIDE INLET AND OUTLET DUCTS FOR HEAT PUMP WATER HEATERS. SEE MECHANICAL DRAWINGS FOR ROUTING AND TERMINATION.

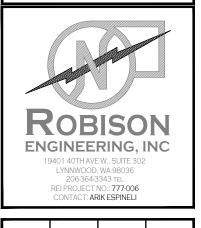
	EXPANSION TANK							
EQUIP	SERVICE	SERVICE CAPACITY	PRE-CHARGE PRESSURE,	TANK SIZE		OPERATING WEIGHT,	BASIS OF	NOTES
NO.	SERVICE	GAL.	PSI	DIAMETER	HEIGHT	LBS	DESIGN	
ET-1	DOMESTIC HOT WATER	4.5	50	11	15	9	THERM-X-TROL ST-12	1

<u>NOTE</u>

1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS







MC	R	JR.
DESIGNED:	CHECKED:	APPROVED:

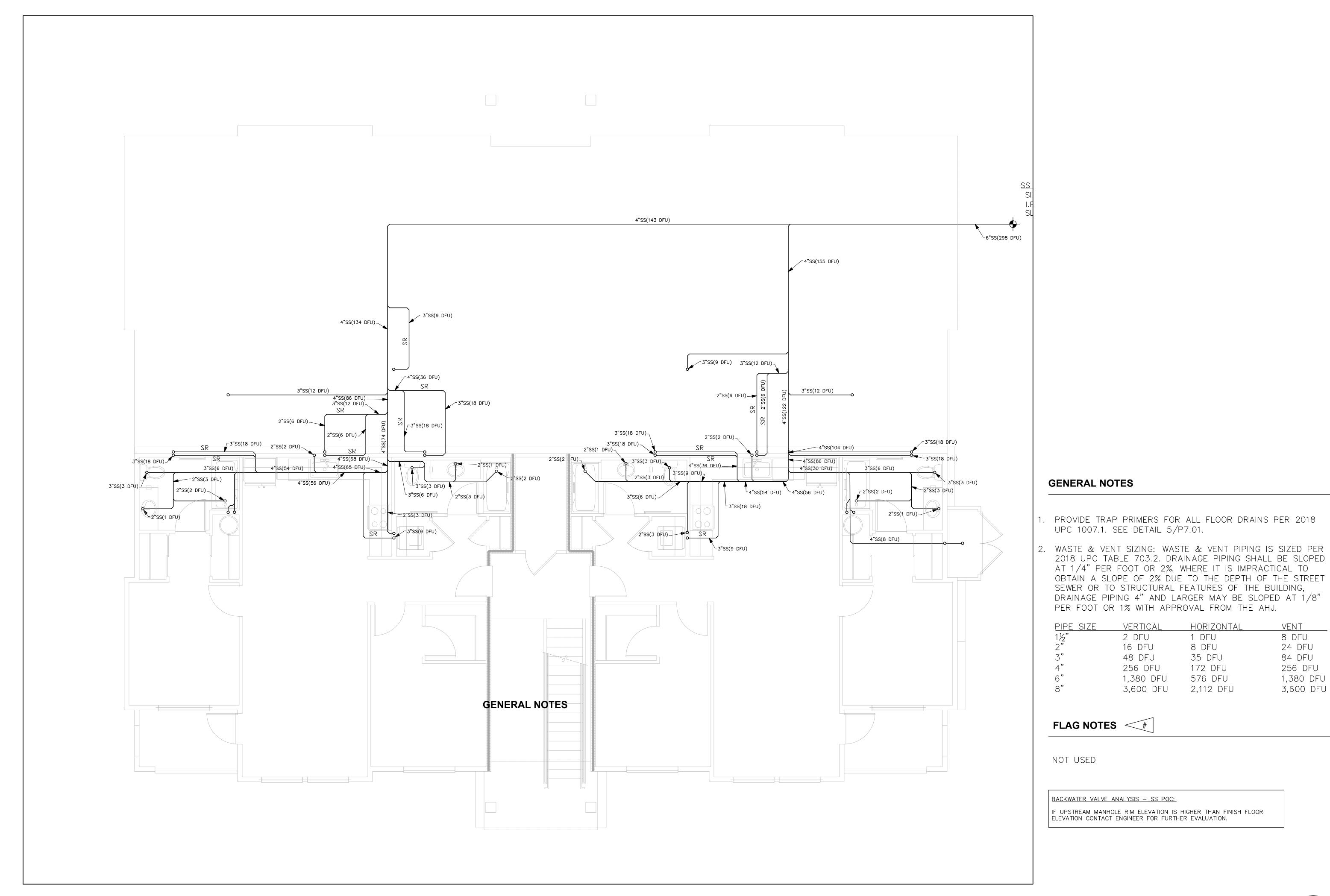
Y HEIGHT APARTMENTS - BUILDII

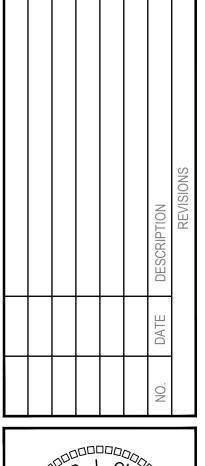
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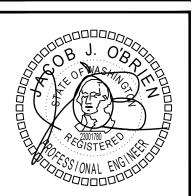
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SHEET TITLE:
PLUMBING
SCHEDULES

POB.03









MU	Z	JR
DESIGNED:	CHECKED:	APPROVED:

BUILDING

BRADL 202 27TH PLIVALLI

10/11/2023

SHEET TITLE: UNDERSLAB WASTE & VENT PLAN

UNDERSLAB WASTE & VENT PLAN SCALE: 1/4" = 1-0"

VERTICAL

2 DFU

16 DFU 48 DFU

256 DFU

1,380 DFU

3,600 DFU

HORIZONTAL

1 DFU 8 DFU

35 DFU

172 DFU

576 DFU

2,112 DFU

8 DFU

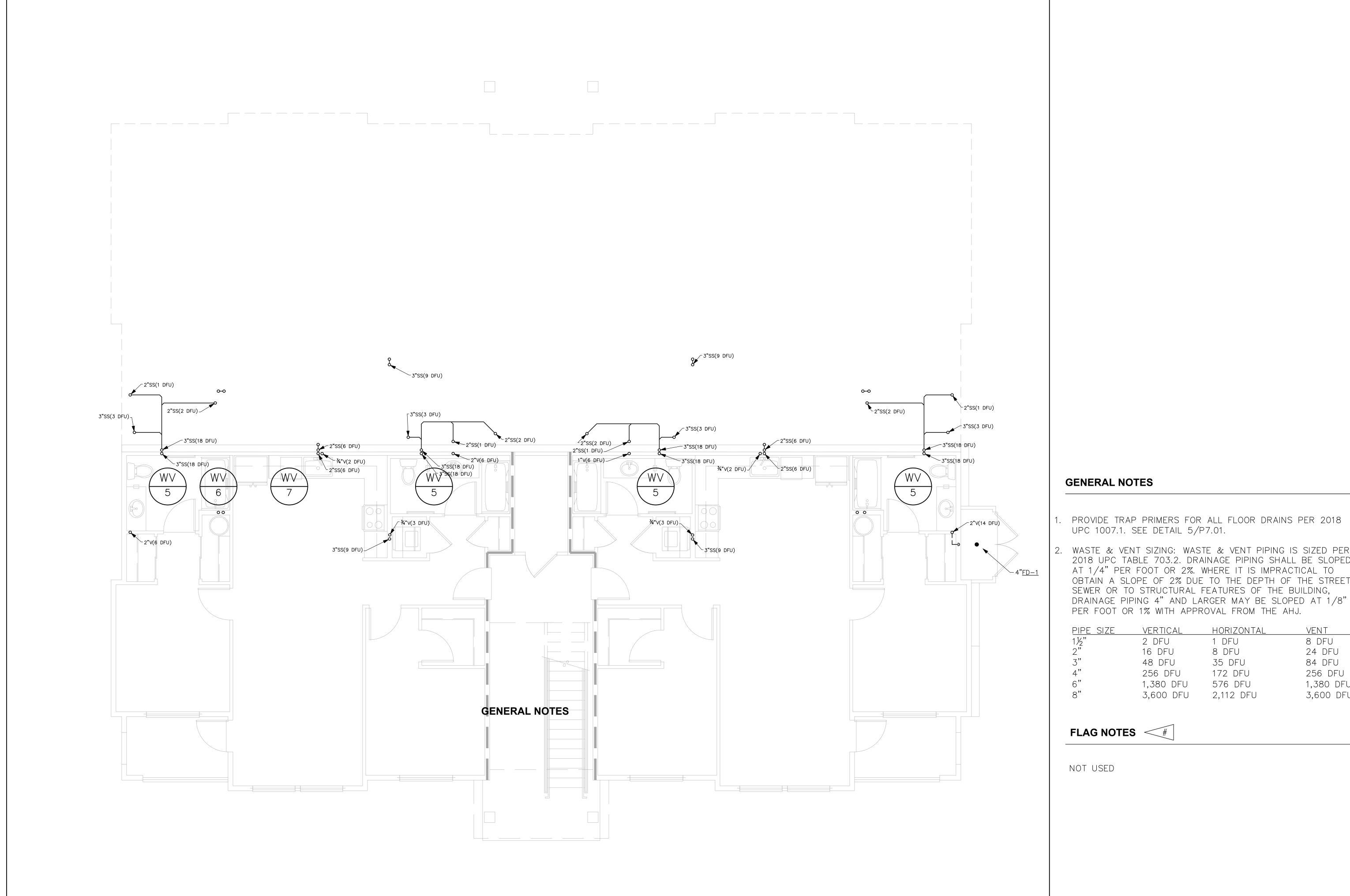
24 DFU

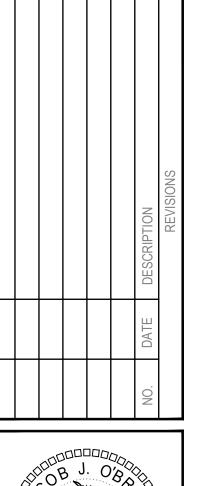
84 DFU

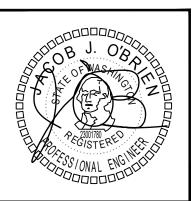
256 DFU

1,380 DFU 3,600 DFU

P2B.00









ML	RJ	JR	
DESIGNED:	CHECKED:	APPROVED:	

BUILDING B

UPC 1007.1. SEE DETAIL 5/P7.01. 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,

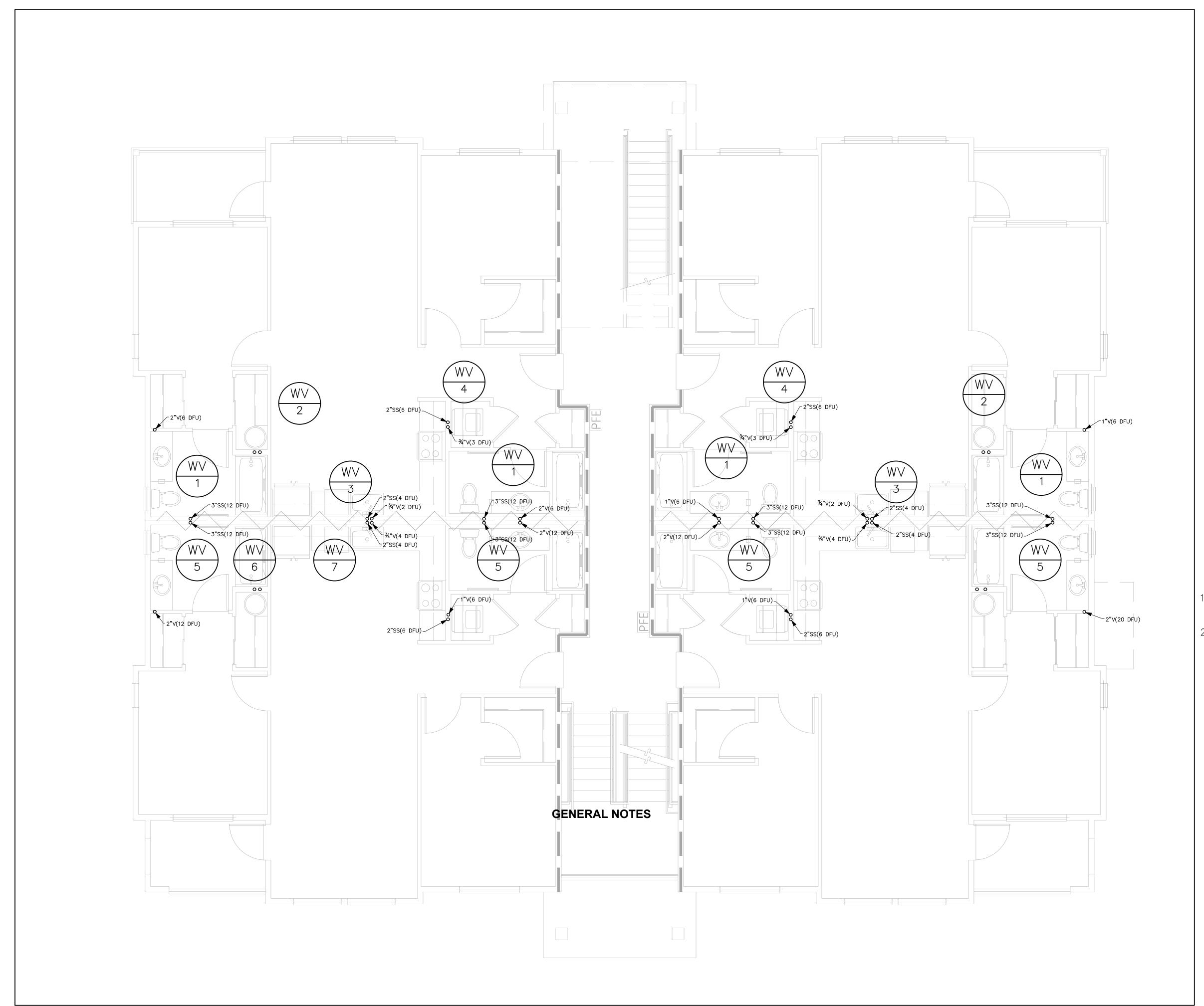
VERTICAL HORIZONTAL VENT 2 DFU 8 DFU 1 DFU 16 DFU 8 DFU 24 DFU 48 DFU 35 DFU 84 DFU 256 DFU 256 DFU 172 DFU 1,380 DFU 3,600 DFU 1,380 DFU 576 DFU 3,600 DFU 2,112 DFU

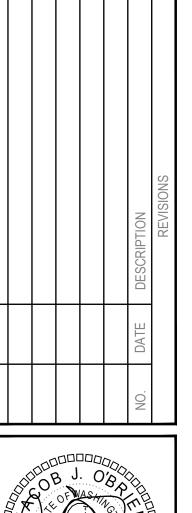
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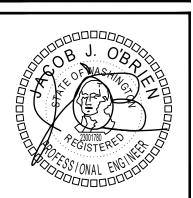
NOT USED

10/11/2023

SHEET TITLE: BASEMENT WASTE & VENT PLAN









M	RJ	JR	
DESIGNED:	CHECKED:	APPROVED:	

BUILDING B

1. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS PER 2018 UPC 1007.1. SEE DETAIL 5/P7.01.

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.

PIPE SIZE	VERTICAL	HORIZONTAL	VENT
1½"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	172 DFU	256 DFU
6"	1,380 DFU	576 DFU	1,380 DFU
8"	3,600 DFU	2,112 DFU	3,600 DFU

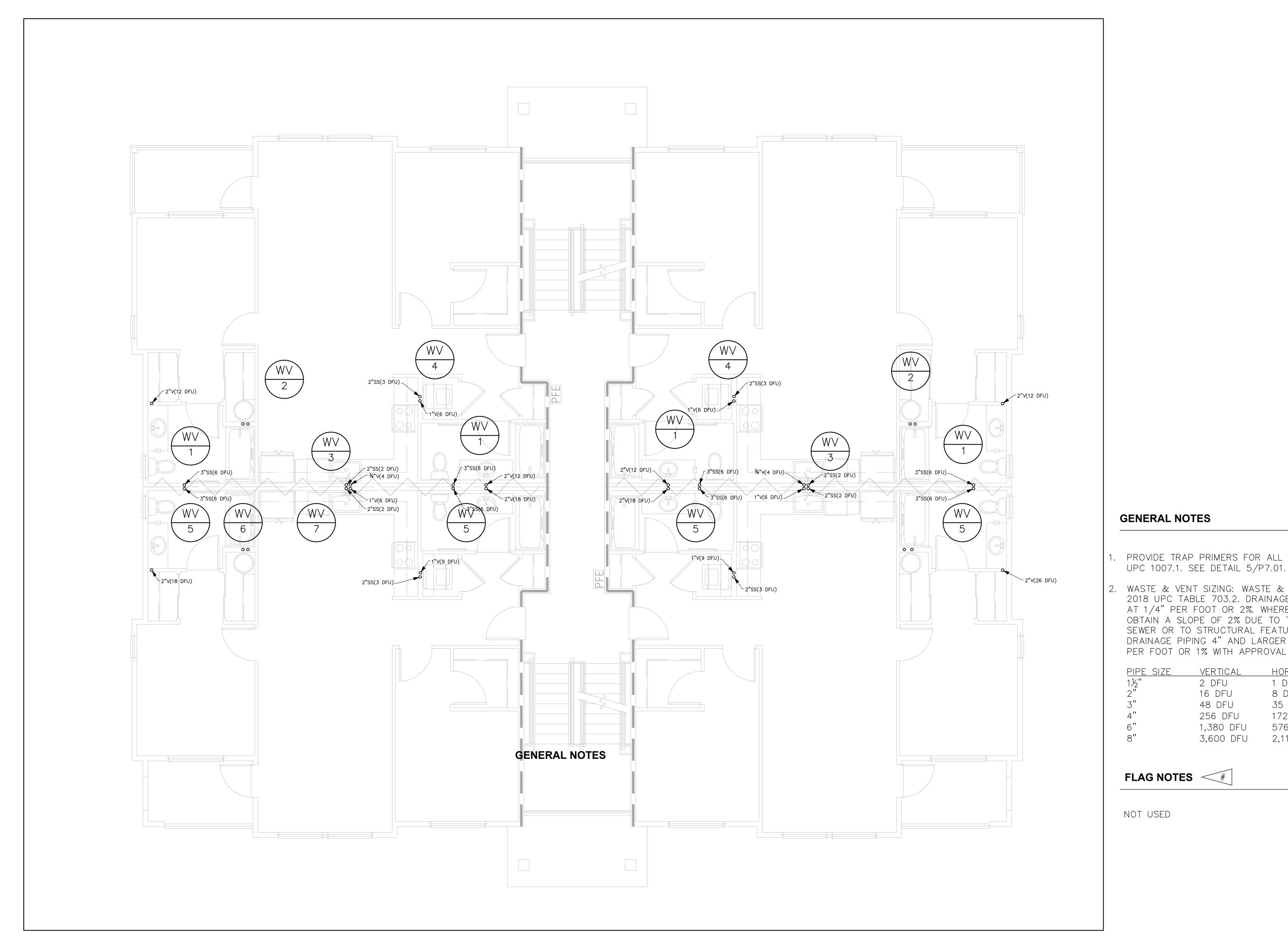
FLAG NOTES

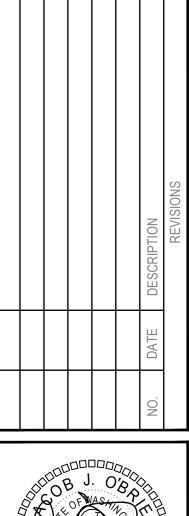
GENERAL NOTES

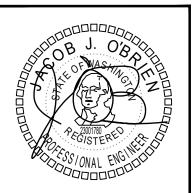
NOT USED

10/11/2023

LEVEL 1 WASTE & VENT PLAN









JM	RJ	JR
DESIGNED:	снескер:	APPROVED:

1. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS PER 2018

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.

IPE SIZE	VERTICAL	HORIZONTAL	VENT
/" 2 "	2 DFU	1 DFU	8 DFU
,,	16 DFU	8 DFU	24 DFU
,,	48 DFU	35 DFU	84 DFU
, ,	256 DFU	172 DFU	256 DFU
,,	1,380 DFU	576 DFU	1,380 DFU
,,	3,600 DFU	2,112 DFU	3,600 DFU

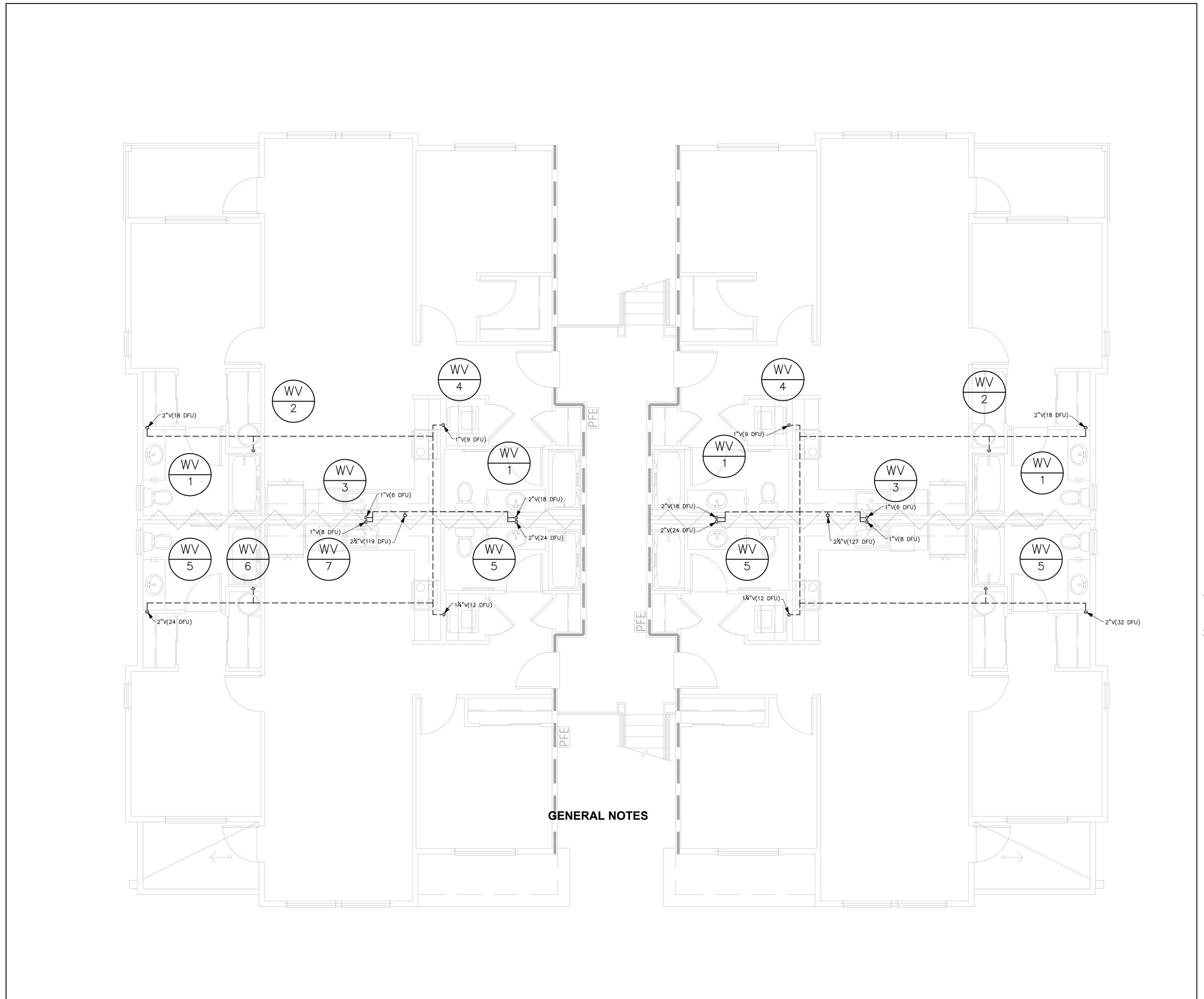
FLAG NOTES

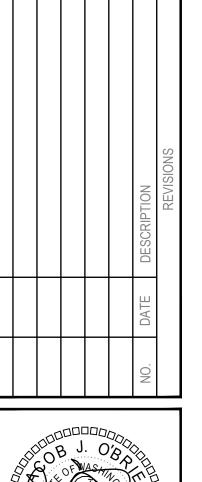
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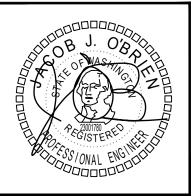
10/11/2023

LEVEL 2 WASTE & VENT PLAN

P2B.03









M	R	A R
DESIGNED:	CHECKED:	APPROVED:

1. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS PER 2018 UPC 1007.1. SEE DETAIL 5/P7.01.

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.

PIPE SIZE	VERTICAL	HORIZONTAL	VENT
1½"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	172 DFU	256 DFU
6"	1,380 DFU	576 DFU	1,380 DFU
8"	3,600 DFU	2,112 DFU	3,600 DFU

FLAG NOTES

GENERAL NOTES

NOT USED

PROJECT: BRADLEY HEIGHT APARTMENT
202 27TH AVE SE
PUYALLUP, WA 98374

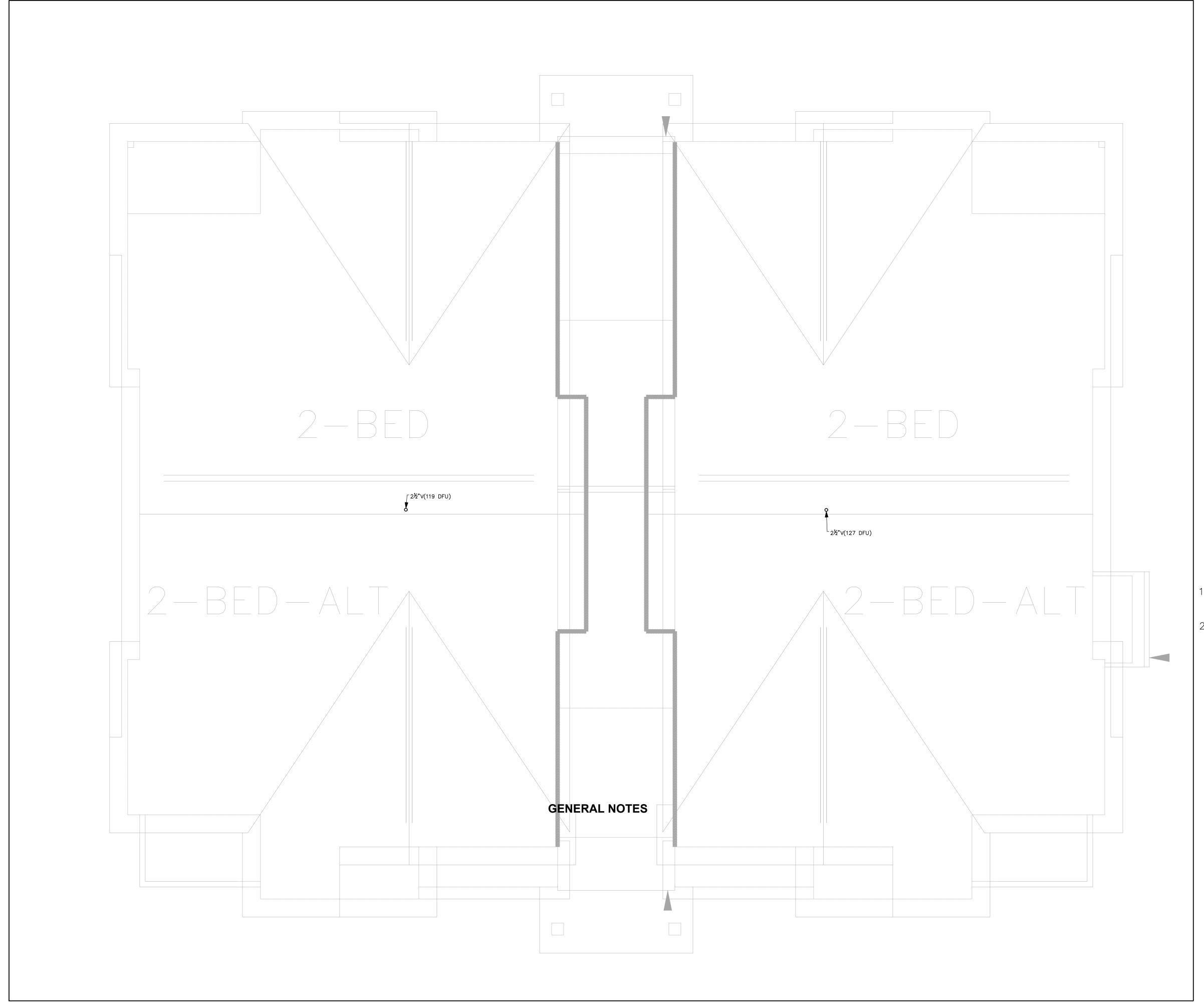
BUILDING B

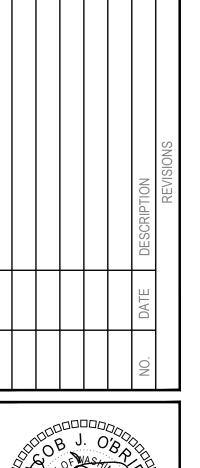
DATE: 10/11/2023

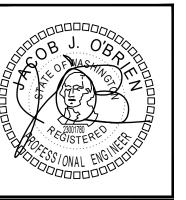
SHEET TITLE:

LEVEL 3 WASTE &

VENT PLAN









\mathbb{Z}_{\cap}	R	J.	
DESIGNED:	CHECKED:	APPROVED:	

BUILDING B

ROOF WASTE & VENT PLAN

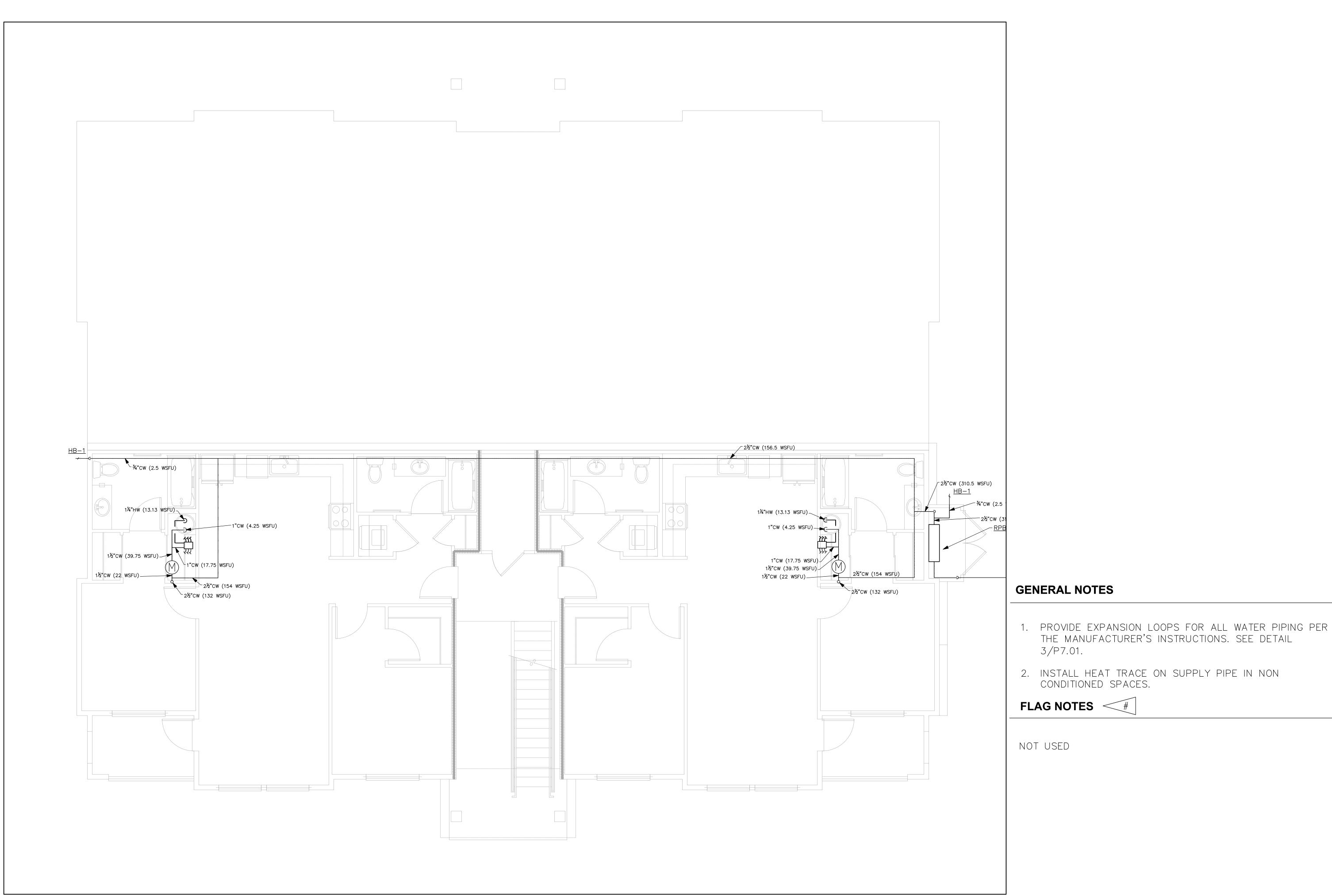
GENERAL NOTES

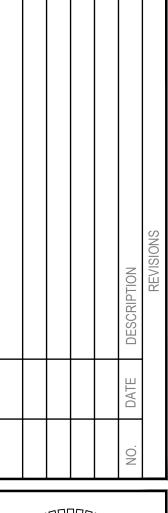
- 1. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS PER 2018 UPC 1007.1. SEE DETAIL 5/P7.01.
- 2. WASTE & VENT SIZING: WASTE & VENT PIPING IS SIZED PER 2018 UPC TABLE 703.2. DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT OR 2%. WHERE IT IS IMPRACTICAL TO OBTAIN A SLOPE OF 2% DUE TO THE DEPTH OF THE STREET 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.

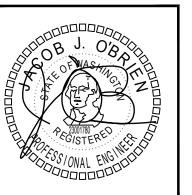
PIPE SIZE	VERTICAL	HORIZONTAL	VENT
1½"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	172 DFU	256 DFU
6"	1,380 DFU	576 DFU	1,380 DFU
8"	3,600 DFU	2,112 DFU	3,600 DFU

FLAG NOTES

NOT USED









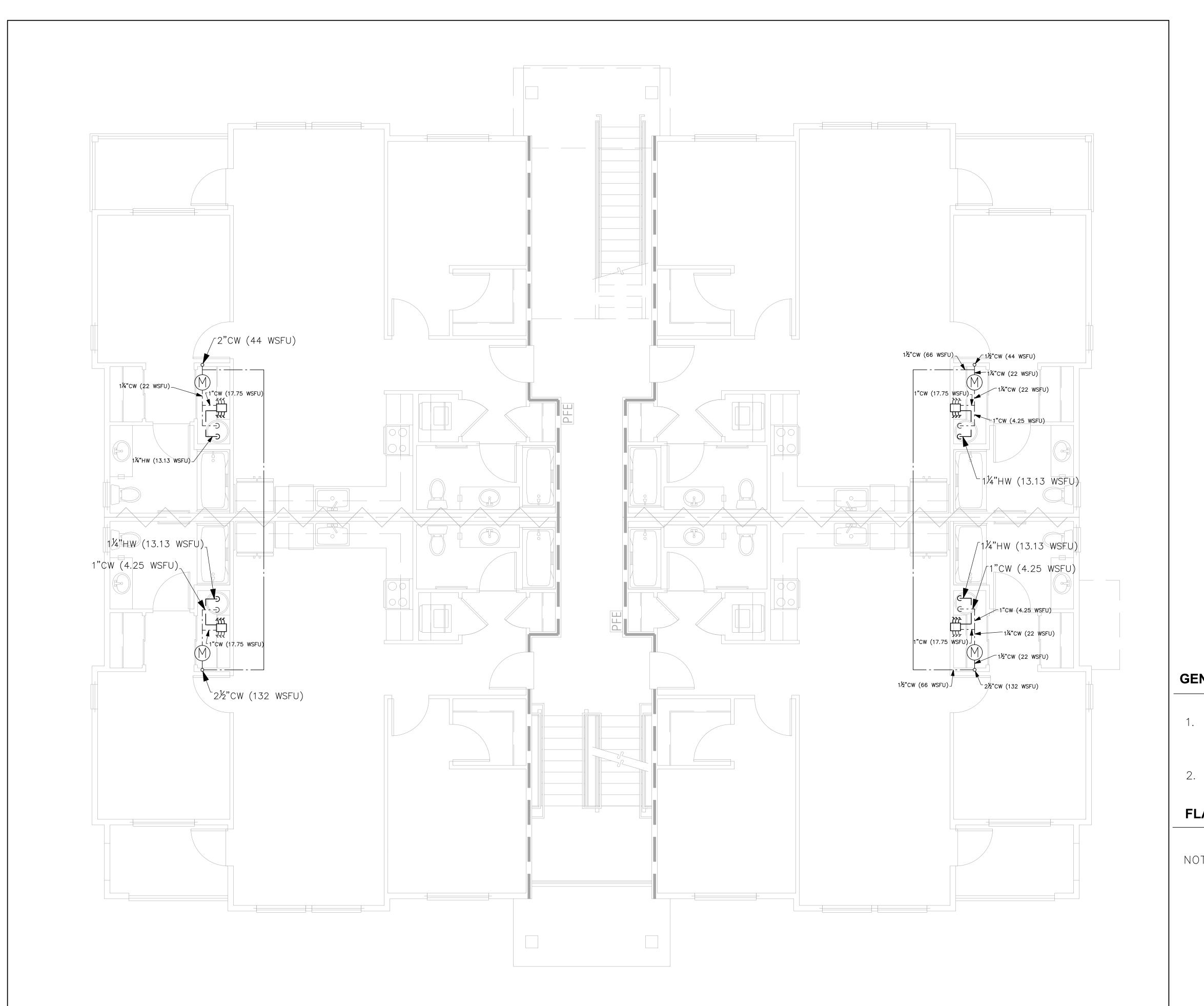
M	ML	RJ	JR
DRAWN:	DESIGNED:	:СНЕСКЕD	APPROVED:

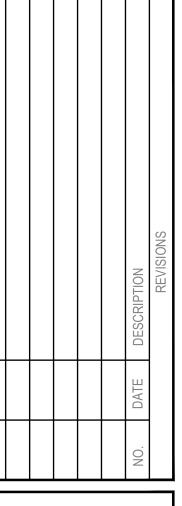
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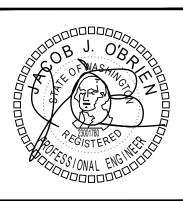
10/11/2023

SHEET TITLE: BASEMENT PLUMBING SUPPLY PLAN

BASEMENT PLUMBING SUPPLY PLAN
SCALE: 3/16" = 1-'0"









DRAWN:	M
DESIGNED:	MC
CHECKED:	RJ
APPROVED:	JR

GENERAL NOTES

- 1. PROVIDE EXPANSION LOOPS FOR ALL WATER PIPING PER THE MANUFACTURER'S INSTRUCTIONS. SEE DETAIL 3/P7.01.
- 2. INSTALL HEAT TRACE ON SUPPLY PIPE IN NON CONDITIONED SPACES.

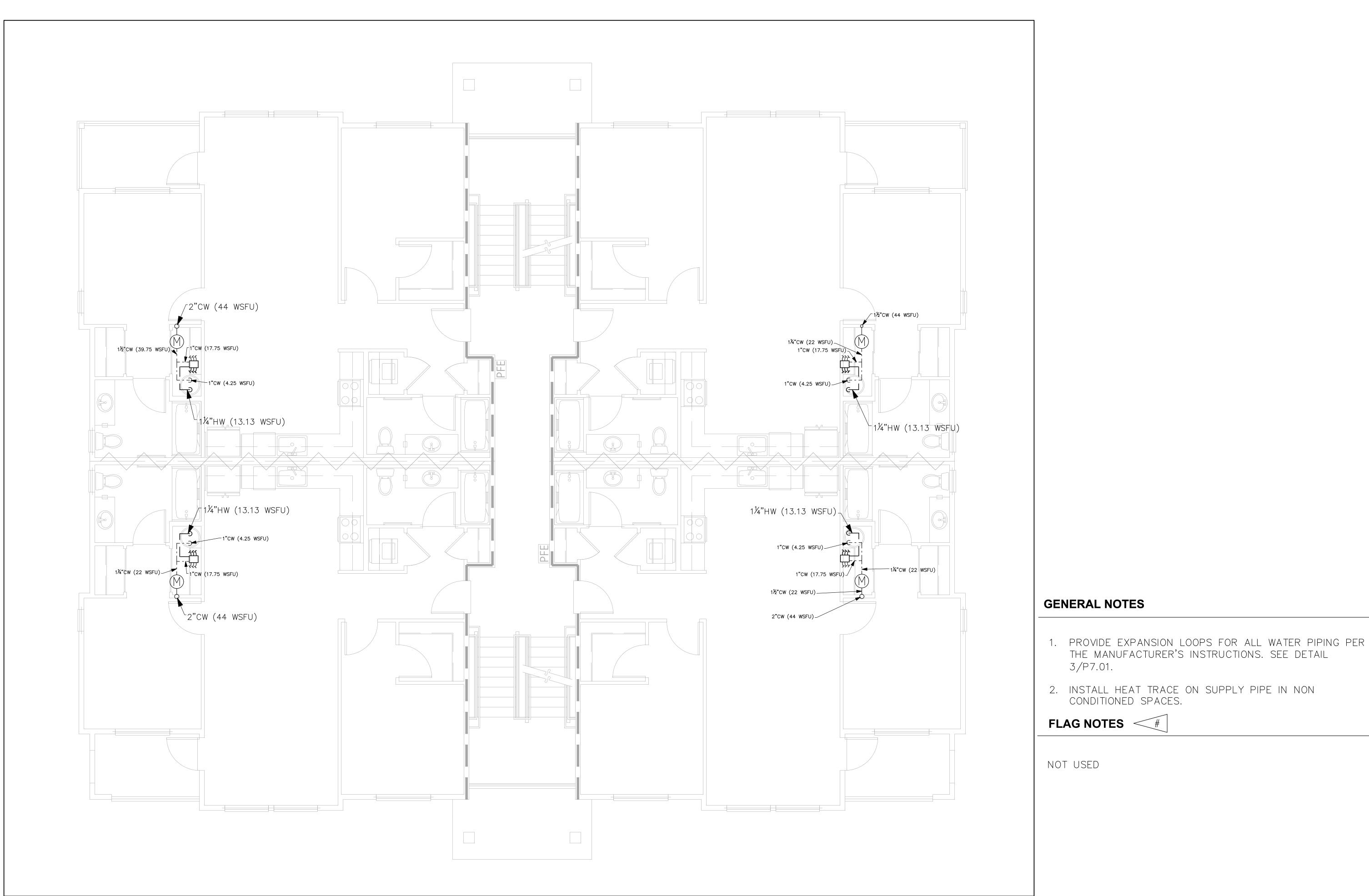
FLAG NOTES

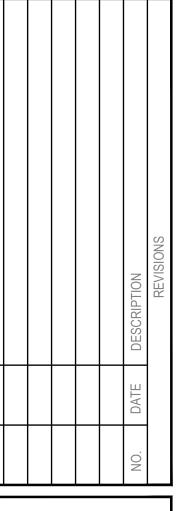
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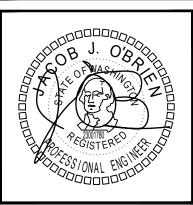
SCALE: 3/16" = 1-0"

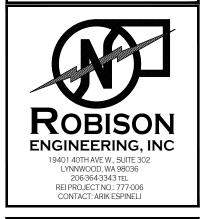
10/11/2023

SHEET TITLE: LEVEL 1 PLUMBING SUPPLY PLAN









DRAWN:	Mſ
DESIGNED:	MC
CHECKED:	RJ
APPROVED:	JR

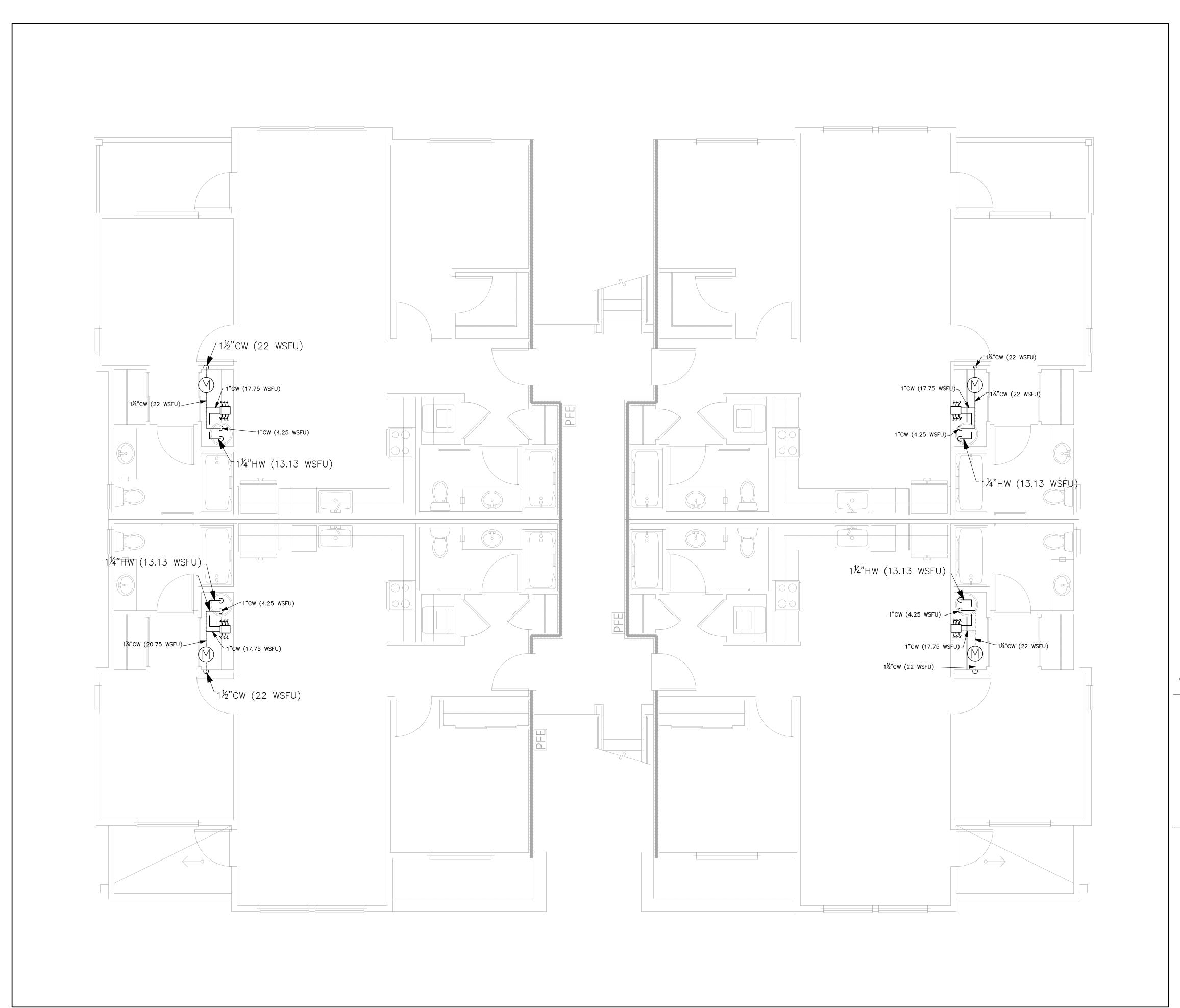
FLAG NOTES

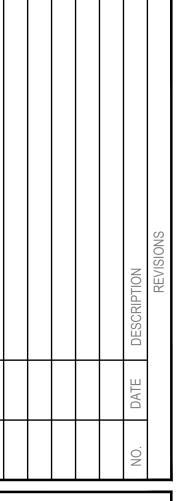
THE MANUFACTURER'S INSTRUCTIONS. SEE DETAIL

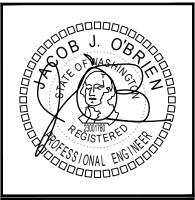
NOT USED

10/11/2023

SHEET TITLE: LEVEL 2 PLUMBING SUPPLY PLAN









DRAWN:	ML
DESIGNED:	MC
CHECKED:	RJ
APPROVED:	JR

LEY HEIGHT APARTMENTS - BUILDING H AVE SE .UP, WA 98374

GENERAL NOTES

- 1. PROVIDE EXPANSION LOOPS FOR ALL WATER PIPING PER THE MANUFACTURER'S INSTRUCTIONS. SEE DETAIL 3/P7.01.
- 2. INSTALL HEAT TRACE ON SUPPLY PIPE IN NON CONDITIONED SPACES.

FLAG NOTES

NOT USED

DATE: 10/11/2023

SHEET TITLE:

LEVEL 3

PLUMBING

SUPPLY PLAN

GENERAL NOTES

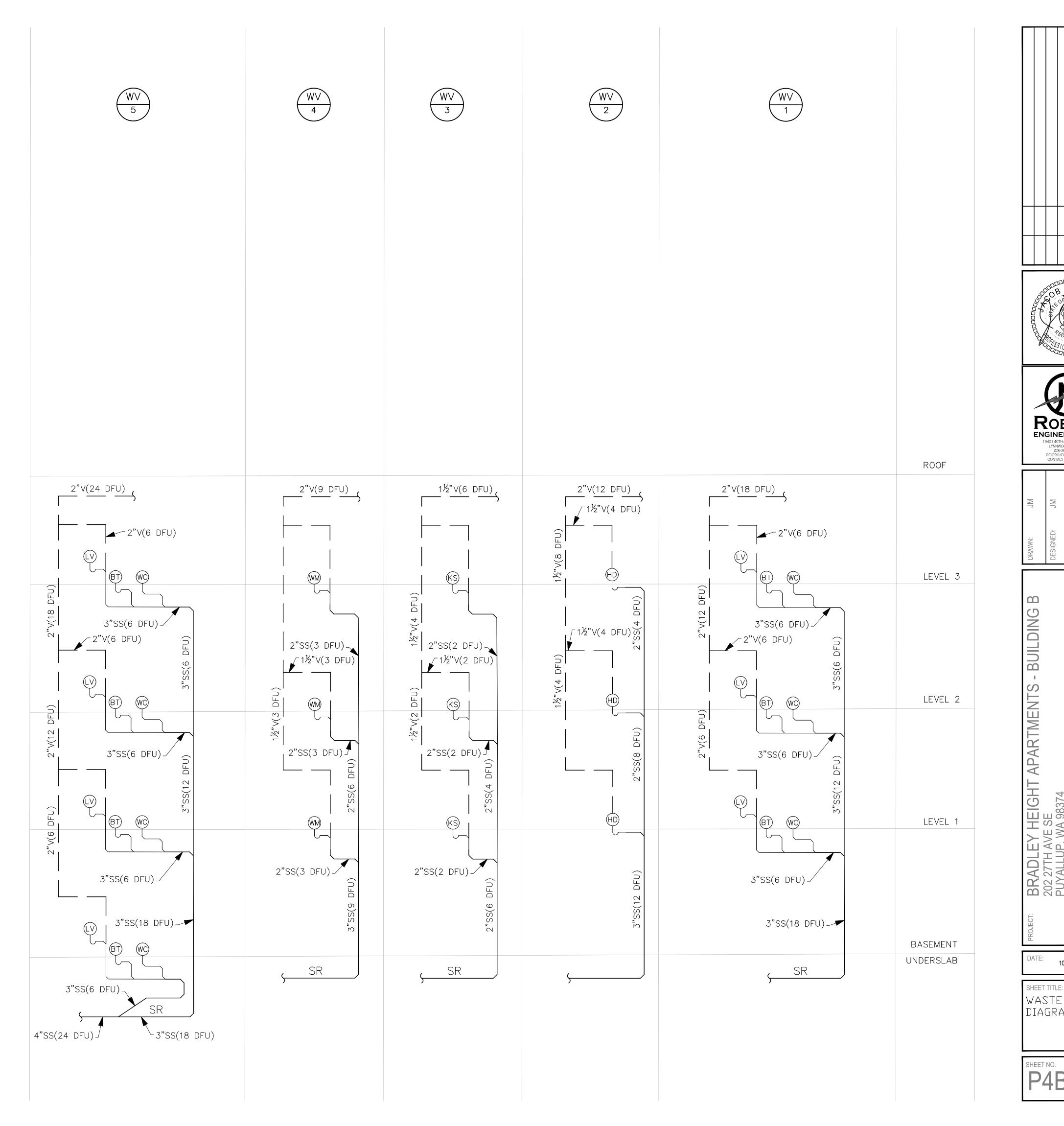


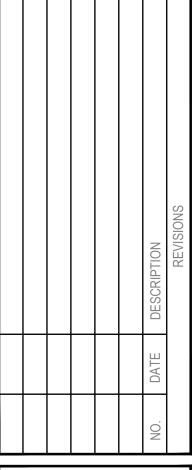
= WASTE & VENT RISER IDENTIFICATION (I.E. RISER "#"). REFER TO P200 SERIES FOR RISER DIAGRAMS.

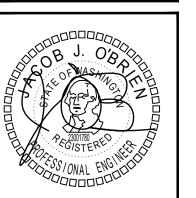
- 1. SUD RELIEF PIPING WITH LENGTH OF 8FT WILL BE USED.
- 2. WASTE & VENT SIZING: WASTE & VENT PIPING IS SIZED PER 2018 UPC TABLE 703.2. DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT OR 2%. WHERE IT IS IMPRACTICAL TO OBTAIN A SLOPE OF 2% DUE TO THE DEPTH OF THE STREET SEWER OR TO STRUCTURAL FEATURES 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	<u>vent</u>
1½"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

ABBREVIATION LEGEND:	
LV = LAVATORY BT = BATHTUB SH = SHOWER KS = KITCHEN SINK WITH DISHWASHER WM = WASHING MACHINE WC = WATER CLOSET UR = URINAL FD = FLOOR DRAIN FS = FLOOR SINK HD = HUB DRAIN	(1 DFU) (2 DFU) (2 DFU) (2 DFU) (3 DFU) (3 DFU) (2 DFU) (2 DFU) (4 DFU) (4 DFU)









DRAWN:	M
DESIGNED:	MC
CHECKED:	2
APPROVED:	J.

- BUILDING B **APARTMENTS** HEIGHT E SE

10/11/2023

SHEET TITLE: WASTE RISER DIAGRAMS

P4B.00

GENERAL NOTES

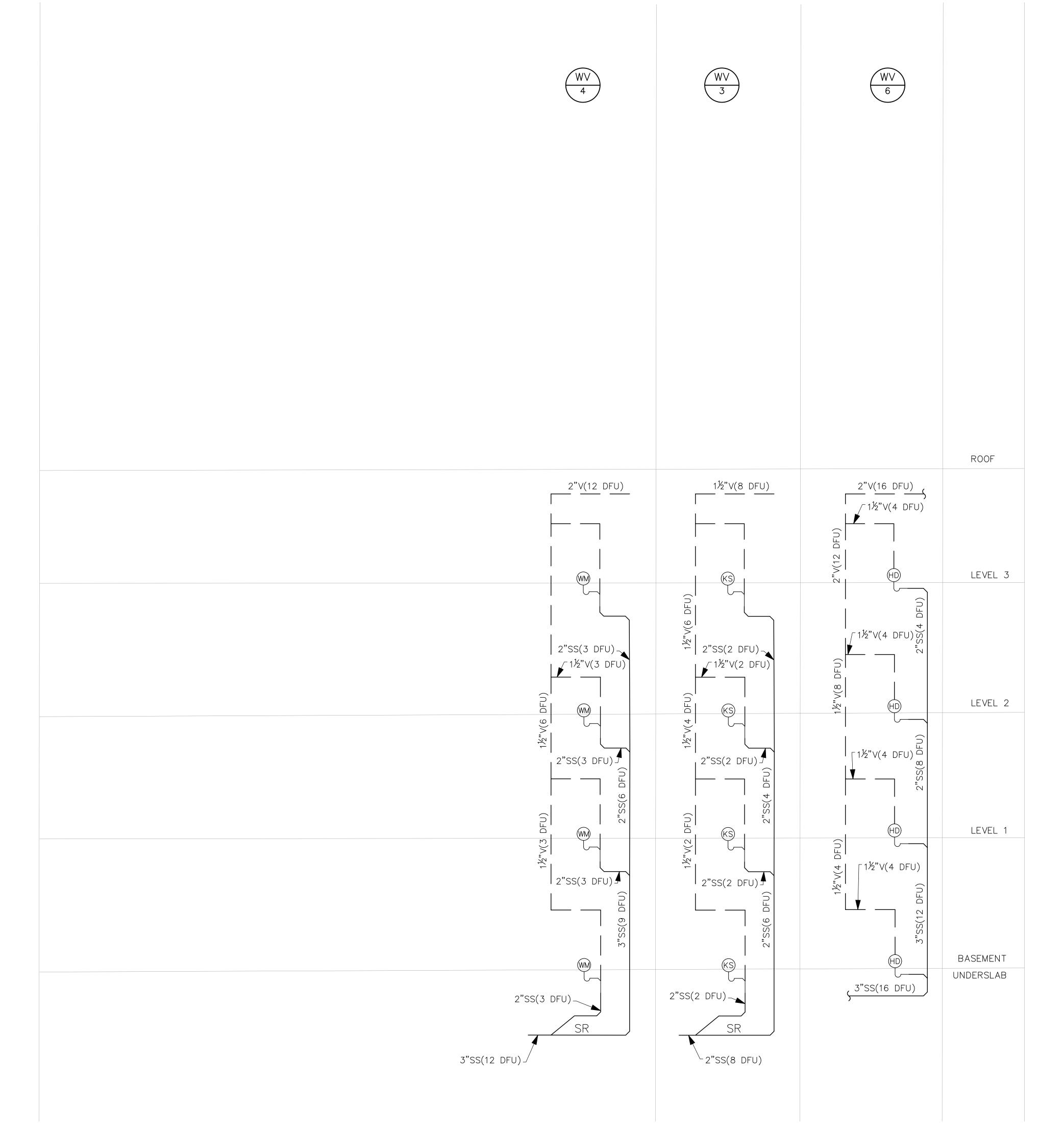


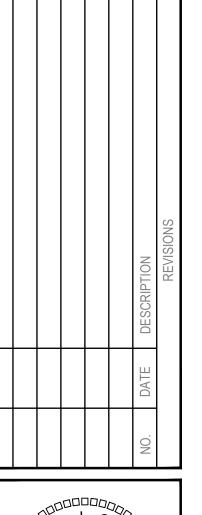
= WASTE & VENT RISER IDENTIFICATION (I.E. RISER "#"). REFER TO P200 SERIES FOR RISER DIAGRAMS.

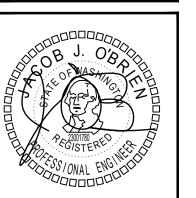
- 1. SUD RELIEF PIPING WITH LENGTH OF 8FT WILL BE USED.
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<u>PIPE SIZE</u>	VERTICAL	HORIZONTAL	<u>vent</u>
1½"	2 DFU	1 DFU	8 DFU
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3"	48 DFU	35 DFU	84 DFU
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8"	3,600 DFU	2,640 DFU	3,600 DFU

ABBREVIATION LEGEND:	
LV = LAVATORY BT = BATHTUB SH = SHOWER KS = KITCHEN SINK WITH DISHWASHER WM = WASHING MACHINE WC = WATER CLOSET UR = URINAL FD = FLOOR DRAIN FS = FLOOR SINK HD = HUB DRAIN	(1 DFU) (2 DFU) (2 DFU) (2 DFU) (3 DFU) (3 DFU) (2 DFU) (2 DFU) (4 DFU) (4 DFU)









_	DRAWN:	M
	DESIGNED:	MU
Ü	CHECKED:	RJ
	APPROVED:	JR

Y HEIGHT APARTMENTS - BUILDING B
//E SE
WA 98374

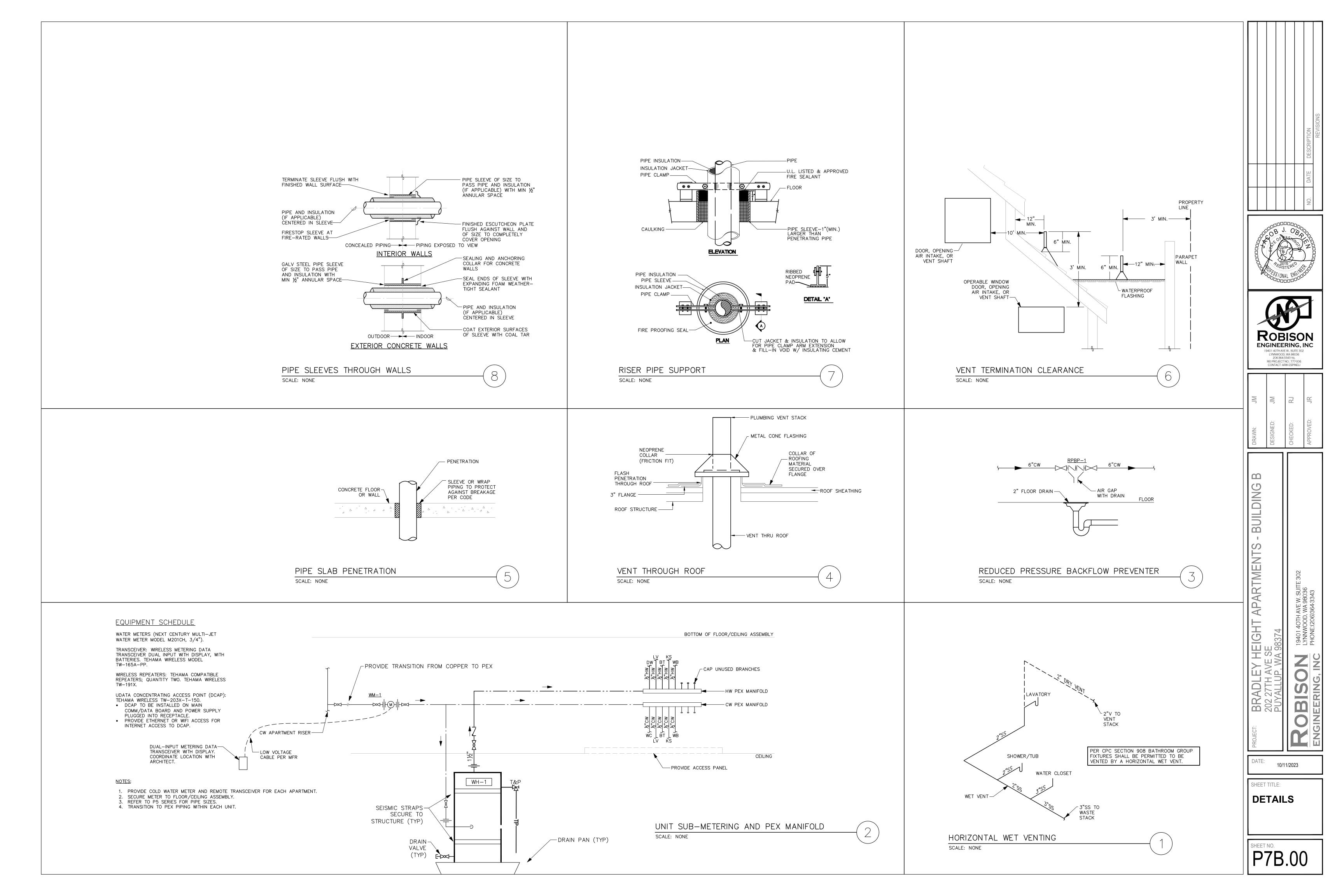
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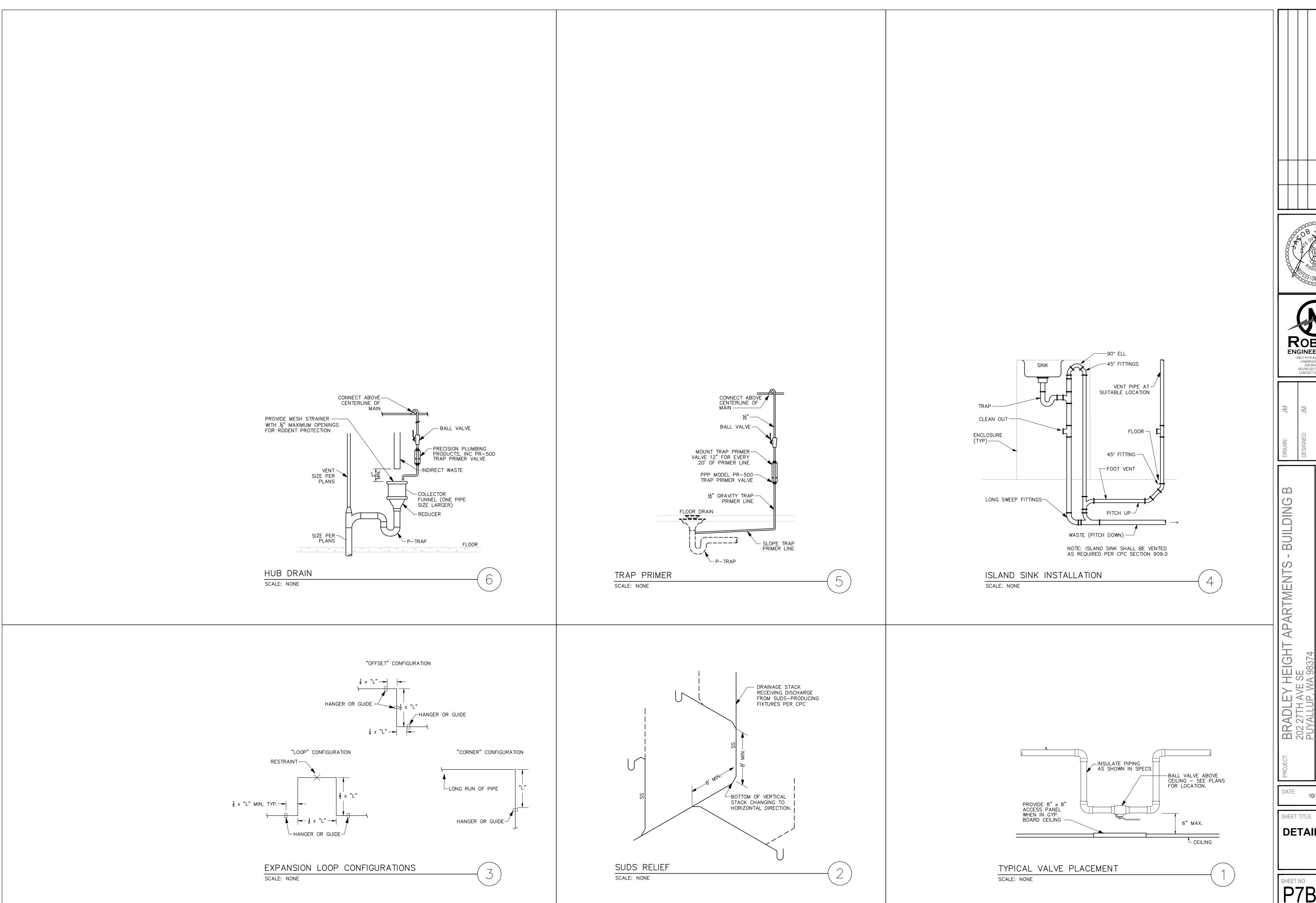
PROJECT: BRADLEY HEIGH
202 27TH AVE SE
PUYALLUP, WA 98374

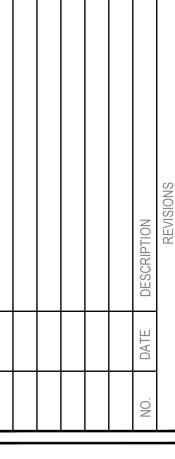
OATE: 10/11/2023

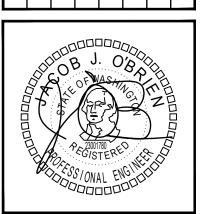
SHEET TITLE:
WASTE RISER
DIAGRAMS

SHEET NO.
P4B.01











200	JM	RJ	JR
	DESIGNED:	CHECKED:	APPROVED:

10/11/2023

DETAILS

P7B.01