

# Bradley Heights Apartments

## Trash Compactor Enclosure

Puyallup, Washington

### Bradley Heights SS LLC

#### PROJECT TEAM

Owner/Developer	Bradley Heights SS LLC 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
Civil Engineer	Azure Green Consultants 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

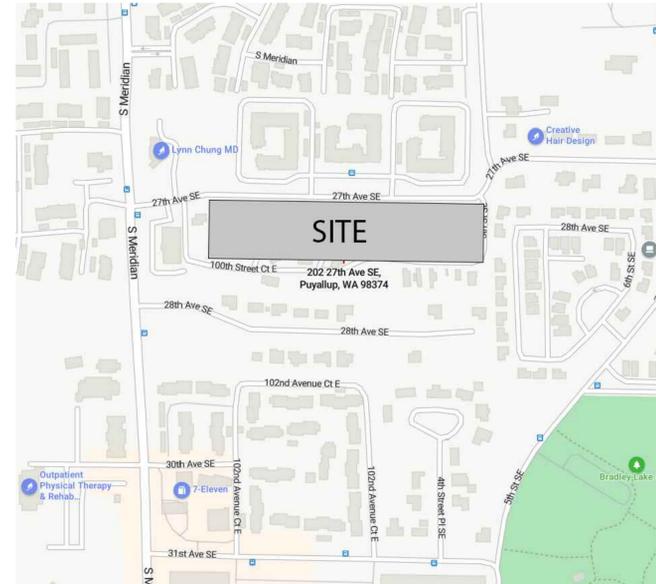
Site Address:	206 27th Ave SE, Puyallup, WA 98374
Project Description:	Construction of accessory structures for a 236-unit apartment development
Site Area:	7.785 acres (+/- 339,107 SQ. FT.)
Tax Parcel Number: I	419036006
Occupancy Type:	Compactor and Recycling Enclosures: U BBQ Shelter: A3
Type of Construction	Type V-B construction; Non-sprinklered
Applicable Codes:	2021 International Building Code 2021 Uniform Plumbing Code 2021 Washington State Energy Code 2021 International Mechanical code 2021 International Fire Code 2022 National Electrical Code ICC/ANSI A117.1-2017 Standard Washington State Amendments as modified and adopted by the local jurisdiction.

#### GENERAL NOTES

- Comply with 2021 IBC and all applicable codes and ordinances of the local jurisdiction and the State of Washington.
- Do not scale drawings.
- Verify all rough-in dimensions for equipment provided in this contract or by others.  
All rough-ins shall be approved and fireblocking shall be installed prior to framing inspection.
- Verify size and location of and provide all openings through floors and walls, furring, anchors, inserts, rough bucks and backing for surface mounted items.
- Provide furring as required to conceal mechanical and electrical work in all finished areas.
- 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.
- 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".
- Fill where required with earth free from organic material. Compact fill in 12" layers maximum.
- "Finish Floor" refers to the top of concrete slab or top of wood floor sheathing.
- Exterior walls shall be 2x6 studs at 16" o.c. and interior walls shall be 2x4 studs at 16" o.c., unless noted otherwise.
- Unless otherwise noted, plan dimensions are to face of studs and face of concrete walls.
- Refer to interior elevations for cabinet and counter lengths, dimensions, countertop materials and detail reference. Verify all existing dimensions before installation.
- Provide caulking between sole plates and subfloor and between rim joists at both top plate and subfloor.
- Hydrants shall be in service prior to start of framing.
- Through penetrations and membrane penetrations of rated wall or floor/ceiling assembly will require firestopping per 2021 IBC Section 714. See detail sheets for diagram of specifics.
- Shall be no asbestos used on this project.
- All Tub-Shower valves installed shall conform to UPC 408.3 & ASSE 1016 or ASME A112.18.1
- 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.

#### DESIGN LOADS

See structural notes. Sheet S1.0



#### VICINITY MAP



#### LIST OF DRAWINGS

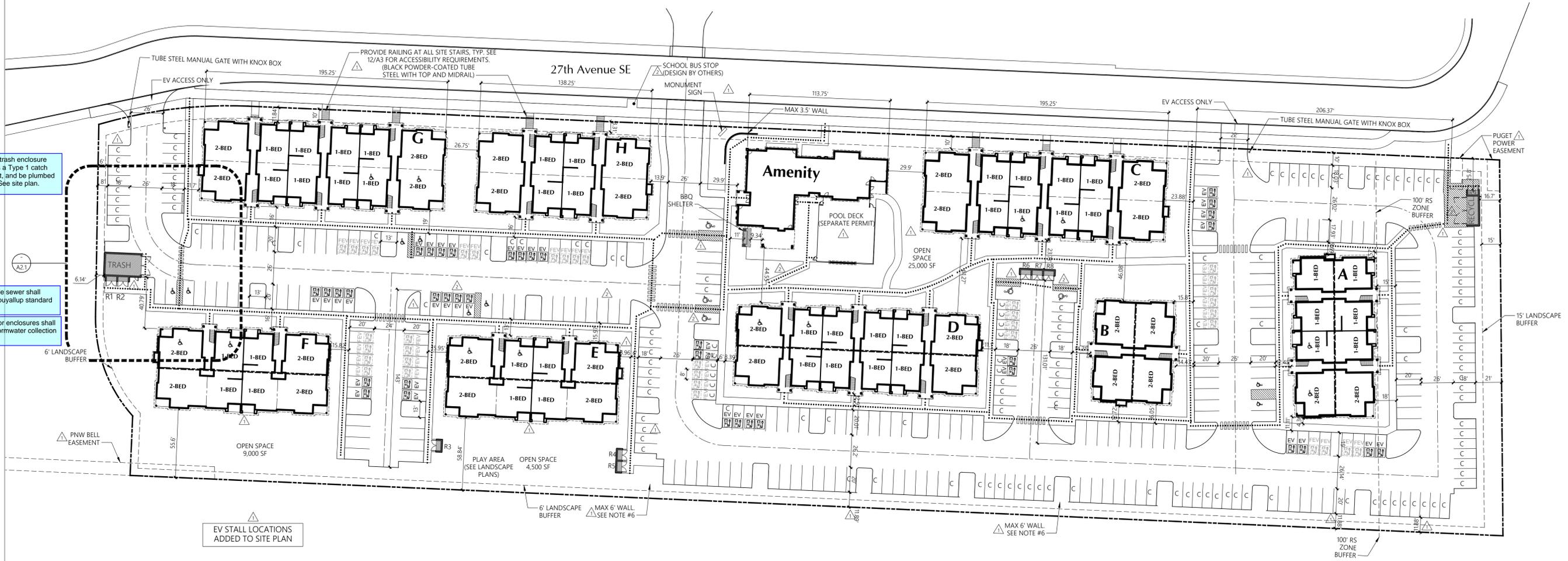
A1	Cover Sheet
A2	Site Plan
A2.1	Enlarged Site Plan
A3	Site Standards
A4	Trash Compactor Enclosure - Plans, Elevations, & Sections
S1.0	Structural Notes
S1.1	Structural Notes & Tables
S2.23	Foundation Plans & Notes
S3.0	Structural Details
S3.1	Structural Details



**Revisions**

No.	Date	Description
1	8-30-24	Owner Changes/ Permit Corrections
2	4-24-25	Permit Corrections
3	6-13-25	Owner Changes

Sunset Garden Senior Living Apartments



**SITE PLAN** 236 UNITS  
1" = 40'

**SITE INFORMATION**

SITE ADDRESS: 206 27th Ave SE, Puyallup, WA  
 PARCEL #: 419036006  
 SITE AREA: 339,107 SF (7.785 Acres)  
 ZONE: RM-CORE  
 SETBACKS: 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 6' 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

**PARKING SUMMARY**

Parking Stalls Required	354
Standard Stalls	125
Compact Stalls	41.5%
Parallel Stalls	0
Carport Stalls	117
Attached Garage Stalls	0
Detached Garage Stalls	0
Accessible Standard Stalls	7
Accessible Van Stalls	4
Accessible Carport Stalls	2
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

**EV STALL COUNT**  
 Electric Vehicle Charging stations  
 Provided: 36 Stalls (10% of provided parking)  
 Required: 0 Stalls<sup>^</sup>

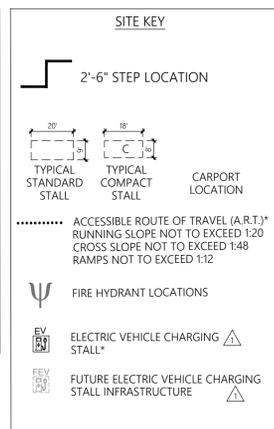
Future Electric Vehicle Stall Infrastructure  
 Provided: 36 Stalls (10% of provided parking)  
 Required: 36 Stalls (10% of provided parking)<sup>^</sup>

Electrical panels sized to accommodate 72 EV Stalls (20% of provided parking)<sup>^</sup>

<sup>^</sup> Requirements from section 429 of 2018 IBC Washington State Amendment.

PERMIT BLDG NAME	PUYALLUP ADDRESS
A	206 27TH AVE SE, BLDG J
B	206 27TH AVE SE, BLDG H
C	206 27TH AVE SE, BLDG G
D	206 27TH AVE SE, BLDG E
E	206 27TH AVE SE, BLDG C
F	206 27TH AVE SE, BLDG A
G	206 27TH AVE SE, BLDG B
H	206 27TH AVE SE, BLDG D
CLUBHOUSE	206 27TH AVE SE, BLDG F

- SITE NOTES**
- TYPICAL SIDEWALK WIDTH IS 6'
  - A MINIMUM CLEAR WIDTH OF 44" IS REQUIRED FOR ALL EXTERIOR ACCESSIBLE ROUTES PER WASHINGTON STATE AMENDMENT SECTION 1101.2.1
  - SEE SHEET A3 FOR SITE ACCESSIBILITY STANDARDS
  - SEE CIVIL SITE PLAN PERMIT DRAWINGS FOR SPECIFIC UTILITY, ROAD AND GRADING INFORMATION
  - POOL TO BE UNDER SEPARATE PERMIT
  - ANY WALLS 4' OR HIGHER REQUIRE A SEPARATE CITY BUILDING PERMIT. SEE CIVIL PLAN SET FOR SITE WALL DETAILS.
  - WHEELSTOPS TO BE PROVIDED AT ALL STALLS WHERE CURBS ARE NOT PROVIDED.

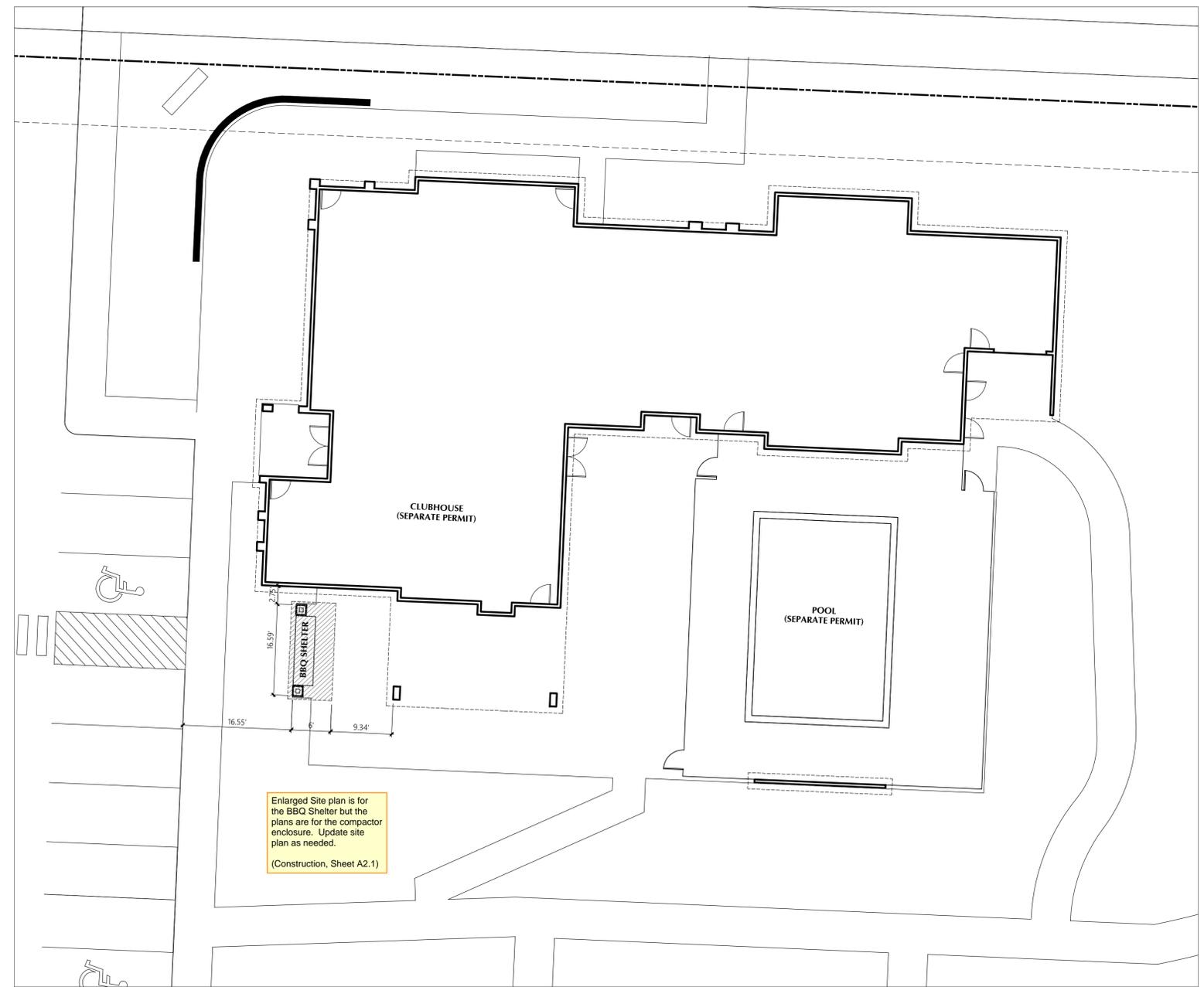


<sup>\*</sup> Future electric vehicle stalls shall provide conduit from the electrical panel to either a pull box in the vicinity of the designated future electric vehicle charging locations or stub above grade in the vicinity of the designated future electric vehicle charging locations, protected from vehicles by a wheel stop.

Interior floor of the trash enclosure shall slope towards a Type 1 catch basin, or equivalent, and be plumbed to sanitary sewer. See site plan.

Trash enclosure side sewer shall comply with city of puyallup standard detail 04.03.04.

Roof downspouts for enclosures shall be connected to stormwater collection system.



**ENLARGED SITE PLAN**

1:10

BBQ SHELTER



**Enlarged Site Plan**  
BBQ Shelter

**Bradley Heights Apartments**  
Puyallup, Wa

**Timberlane Partners**

**Revisions**

No.	Date	Description
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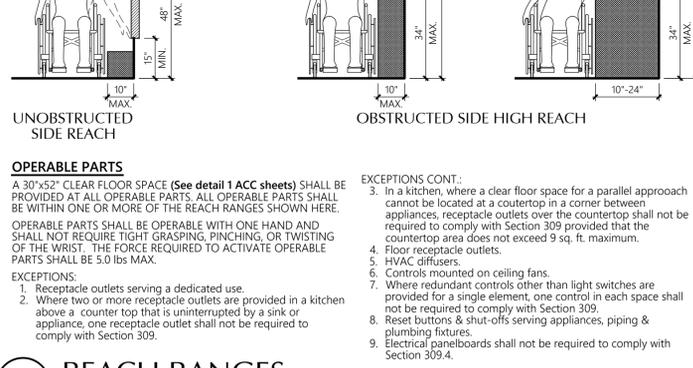
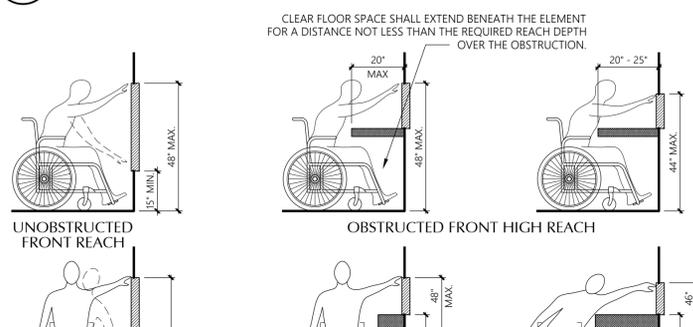
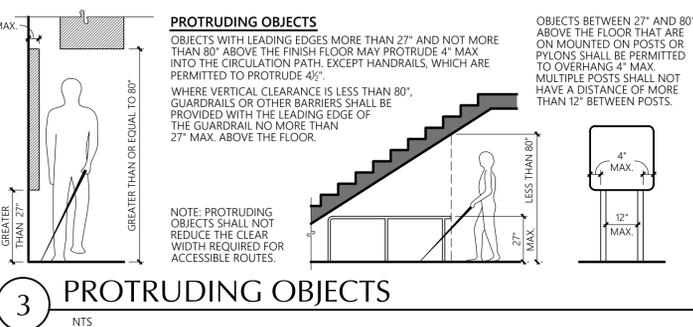
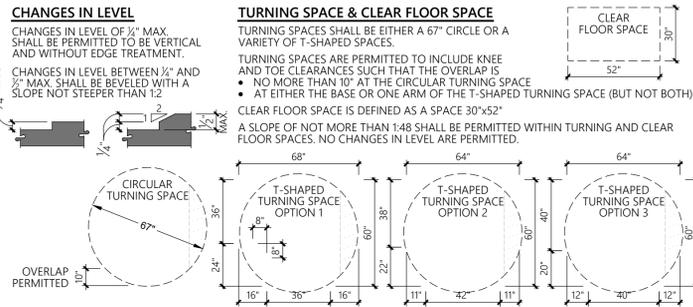
Initial Publish Date:  
Date Plotted: 2-3-26

Job No.:	Drawn By:
23-06	APT/HDM

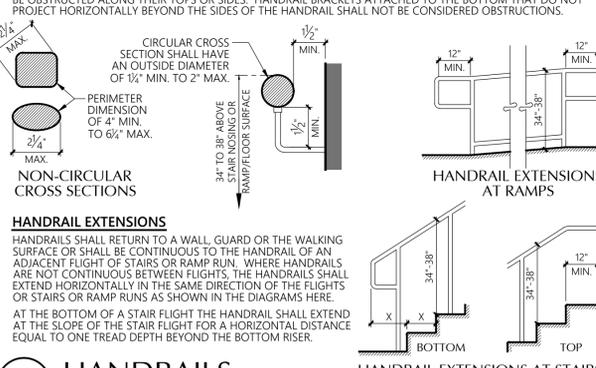
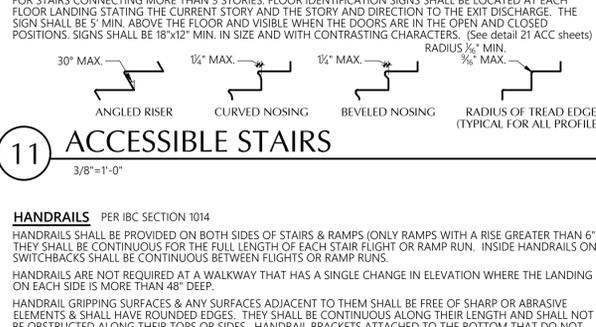
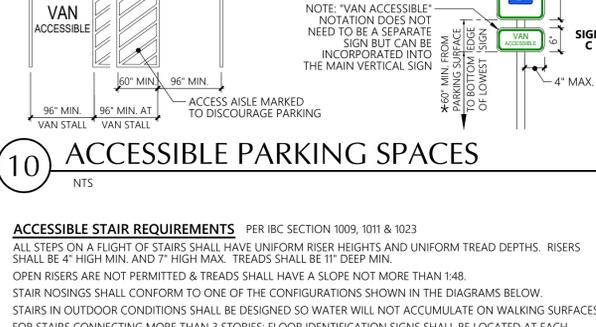
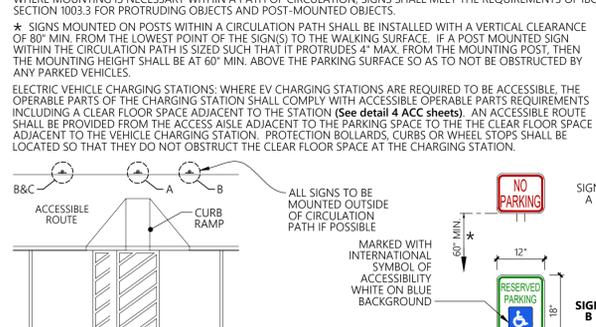
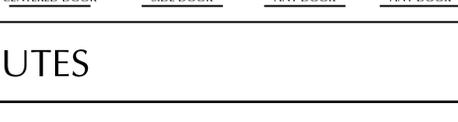
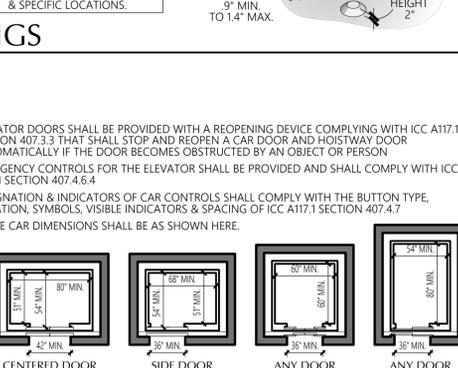
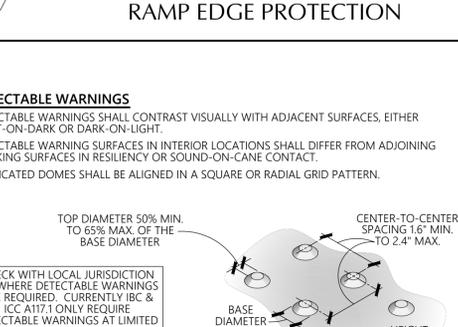
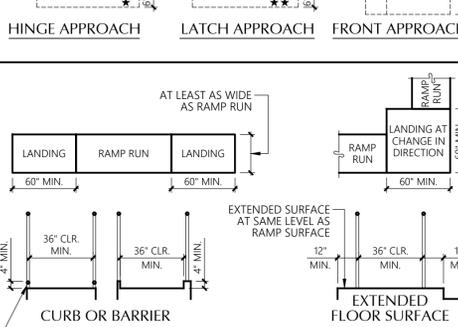
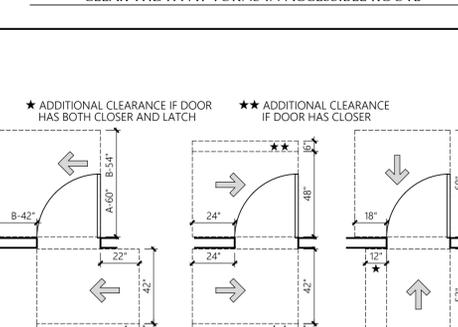
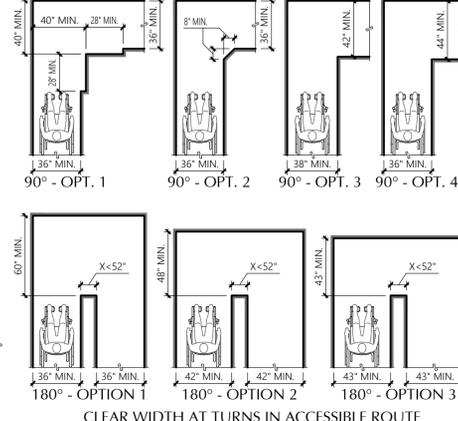
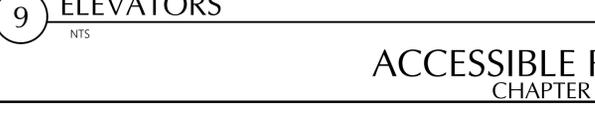
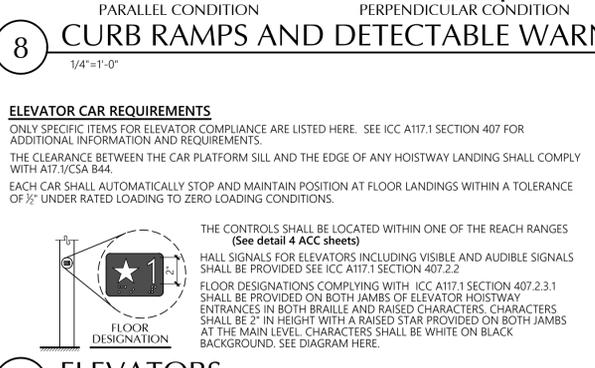
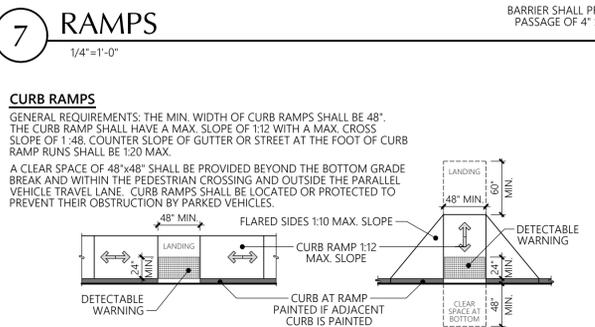
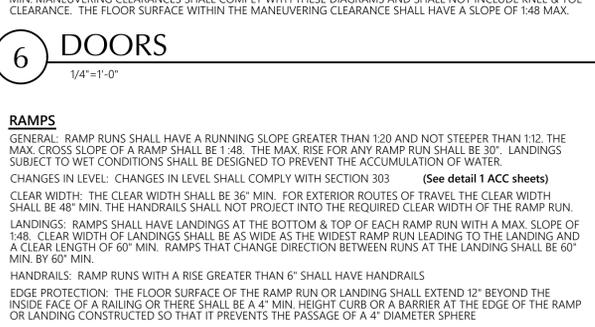
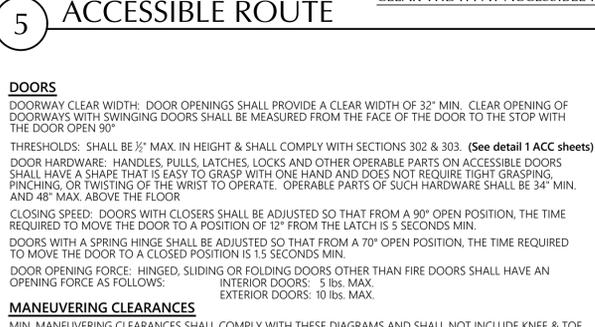
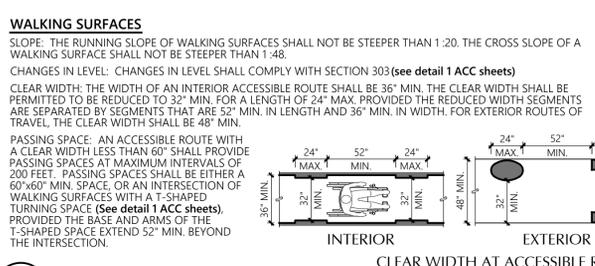
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**A2.1**

NOTE: ALL DIMENSIONS ARE FROM FINISHED SURFACE



**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 ENTRANCE SERVED.  
 WHEN A BUILDING OR PORTION OF A BUILDING IS REQUIRED TO BE ACCESSIBLE, AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED TO EACH PORTION OF THE BUILDING. TO ACCESSIBLE BUILDING ENTRANCES CONNECTING ACCESSIBLE PEDESTRIAN WALKWAYS AND TO THE PUBLIC WAY.  
 ACCESSIBLE ROUTES SHALL COINCIDE WITH OR BE LOCATED IN THE SAME AREAS AS A GENERAL CIRCULATION PATH.  
 ACCESSIBLE ROUTES SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING COMPONENTS: WALKING SURFACES WITH A SLOPE NOT STEEPER THAN 1:20; DOORS & DOORWAYS, RAMPS, CURB RAMPS EXCLUDING THE FLARED SIDES, ELEVATORS, AND PLATFORM LIFTS.

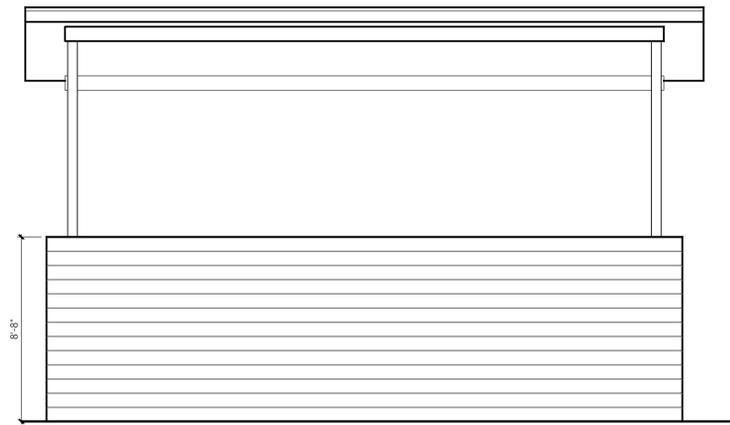


25 Central Way, Suite 210  
 Kirkland, Washington 98033  
 P: 425.454.7130 F: 425.658.1208  
 Web: www.milbrandtarch.com

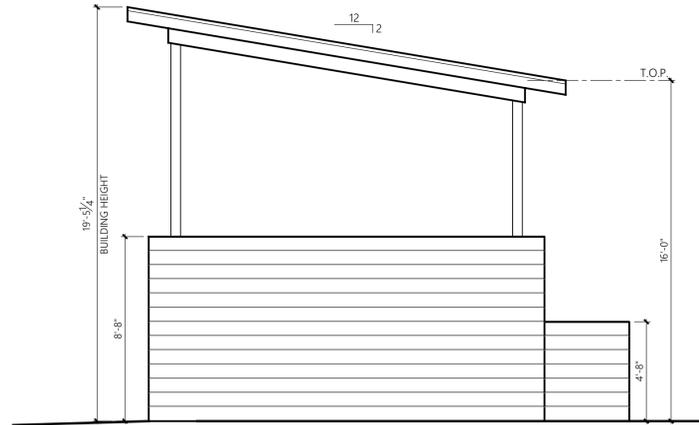
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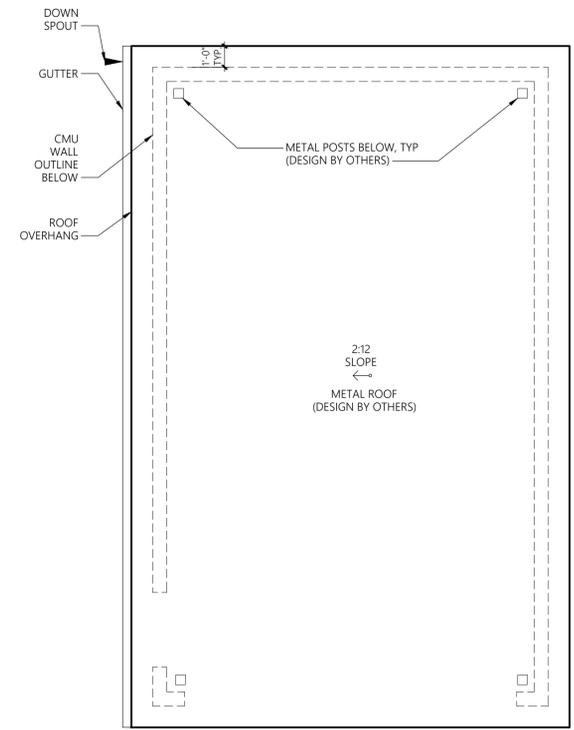
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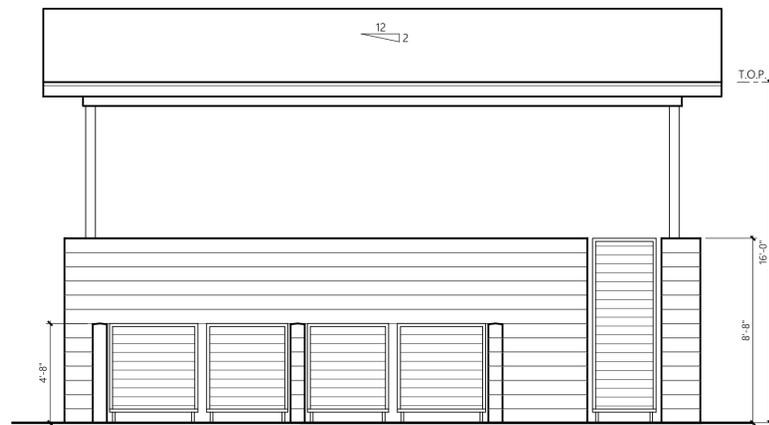
**COMPACTOR ENCLOSURE** SIDE ELEVATION  
1/4"=1'-0"



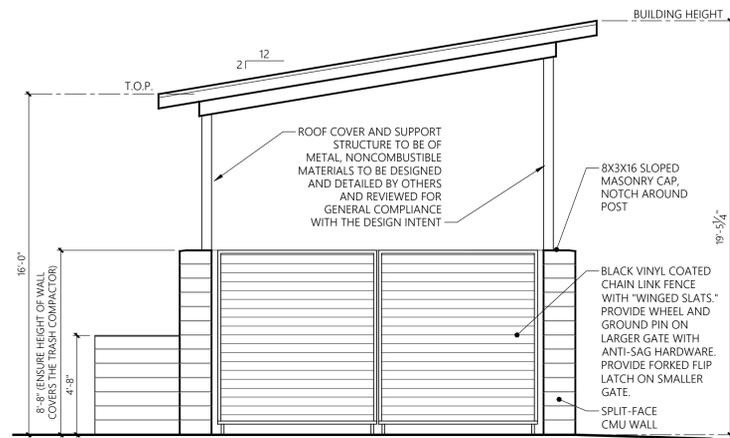
**COMPACTOR ENCLOSURE** REAR ELEVATION  
1/4"=1'-0"



**COMPACTOR ENCLOSURE** ROOF PLAN  
1/4"=1'-0"

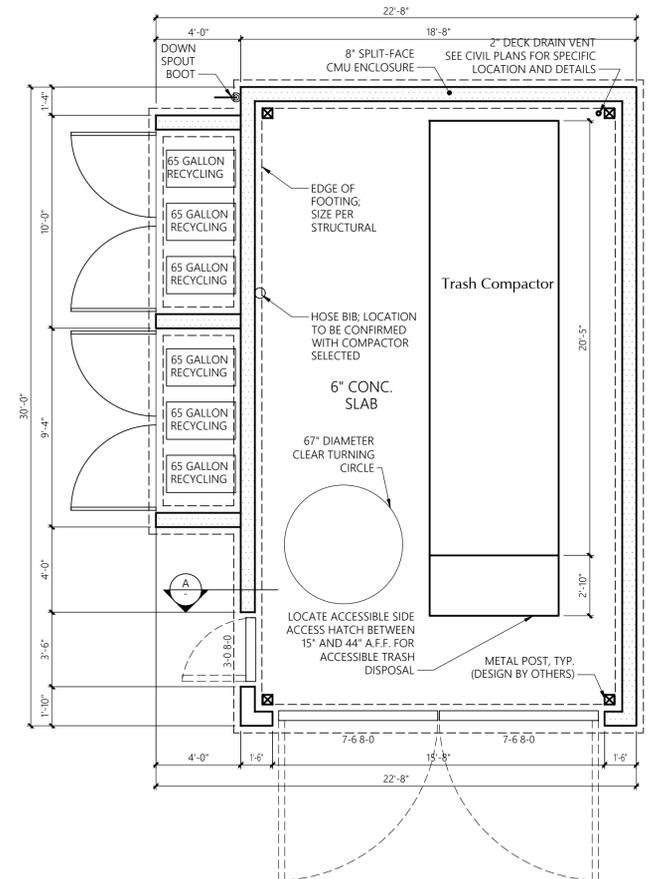


**COMPACTOR ENCLOSURE** SIDE ELEVATION  
1/4"=1'-0"



**COMPACTOR ENCLOSURE** ACCESS SIDE FRONT ELEVATION  
1/4"=1'-0"

Columns and roof construction needs to be provided with the permit set or removed from the plans.  
(Construction, Sheet A4)



**COMPACTOR ENCLOSURE** PLAN  
1/4"=1'-0"

LEGEND  
CMU WALL BELOW



**SECTION A**  
1/4"=1'-0"

# Structural Notes

## 1.0 GENERAL

THESE STRUCTURAL NOTES SUPPLEMENT THE SPECIFICATIONS, ANY DISCREPANCY FOUND AMONG THE DRAWINGS, SPECIFICATIONS, THESE NOTES, AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE CONTRACTOR'S RISK. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL BRACING AND SHORING DURING CONSTRUCTION.

## 1.1 CODES

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

1. LIVE LOADS		
ROOF (SNOW) $l_s = 1.0$	25	PSF
FLOORS (RESIDENTIAL)	40	PSF
DECKS (RESIDENTIAL POST/BM SUPPORT)	60	PSF
STAIRS/EXITS	100	PSF

### 2. DEAD LOADS

ROOF	22	PSF
FLOORS (RESIDENTIAL)	26	PSF
DECKS	47	PSF
BREZZEWAY	47	PSF

### B. LATERAL LOADS:

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

- WIND: EXPOSURE B  
ELEVATION = 386 FEET  
BASIC WIND SPEED = 97 M.P.H. (3 SECOND GUST, ULTIMATE)  
IMPORTANCE FACTOR,  $I_w = 1.0$   
SIMPLE DIAPHRAGM BUILDING, ENCLOSED  
 $K_{zt} = 1.0$
- SEISMIC: IMPORTANCE FACTOR,  $I_e = 1.0$  OCCUPANCY CATEGORY II  
MAPPED SPECTRAL RESPONSE COEFFICIENTS,  $S_s = 1.263$  AND  $S_1 = 0.435$   
SOIL SITE CLASS = C  
SPECTRAL RESPONSE COEFFICIENTS,  $S_{DS} = 1.010$  AND  $S_{D1} = 0.435$   
SEISMIC DESIGN CATEGORY = D  
SEISMIC RESPONSE COEFFICIENT  $C_s = 0.2021$  (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

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 ARCHITECT/ENGINEER'S APPROVAL SHALL NOT IMPLY THAT THE PROJECT MAY BE BUILT FROM THE SHOP DRAWINGS. 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 OR 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 PSF AND 300 PSF 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, HONEYCOMBER 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 THE 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 <sup>1</sup>
FOUNDATION WALLS	.45	2500	4500 <sup>1</sup>
EXT. SLABS ON GRADE	.45	2500	4500 <sup>1</sup>
INT. SLABS ON GRADE	.50	2500	3000

### NOTES:

- CONCRETE EXPOSED TO WEATHER FOR EXPOSURE CLASS F2 AND SLABS ON GRADE SHALL HAVE A MIN F<sub>2</sub> PER TABLE AND HAVE 5% AIR ENTRAINMENT.
- DESIGN STRENGTH  $f'_c$  (USED IN DESIGN),  $f_c$  PER ACI TABLE 19.3.2.1 FOR F2 EXPOSURE CLASS.
- 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

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

## 3.4 MATERIALS

- 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 POLYMER, POZZOLITH 100R, OR POZZOLITH 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 POLYMER PER 100 OUNCES OF CEMENT. USE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 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.
- 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.

- 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 REBAR SHALL NOT BE BENT IN FIELD AFTER CONCRETE PLACEMENT. ALL BEND SHALL BE PER ACI.
- REINFORCEMENT IN ALL WALLS, SLABS, AND FOOTINGS SHALL BE CONTINUOUS AROUND CORNERS OR CORNER BARS PROVIDED, BOTH VERTICAL AND HORIZONTAL.
- LAPS: ALL TENSION SPLICES ARE ACCORDING TO ACI 318, CLASS B AND ALL COMPRESSION SPLICES ARE 30 DIAMETERS FOR  $f_c$  GREATER THAN 3000 PSI AND ARE 40 DIAMETERS FOR  $f_c$  WHICH IS LESS THAN 3000 PSI, UNLESS NOTED OTHERWISE. SEE DETAIL 17/53.0 FOR TYPICAL SPLICE AMOUNTS BASE ON BAR SIZE.
- 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.
- 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

- FIBREMESE: PROVIDE FIBREMESE STRAINS WITHIN CONCRETE PER THE MANUFACTURERS SPECIFICATION (1.5#/CU. YARD TYPICALLY) WHERE REQUIRED BY THE OWNER IN LIEU OF UTILIZING WELDED WIRE FABRIC WITHIN SLABS ON GRADE.

## 3.6 EPOXY DOWELED REINFORCEMENT

- 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.
- 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.
- 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

- ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D11 "STRUCTURAL WELDING CODE" & D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL".
- 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

- 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, F <sub>y</sub> = 50 KSI OR A588 F <sub>y</sub> = 50 KSI ONLY W/ PRIOR APPROVAL OF ENGINEER OF RECORD.
ANGLES	ASTM A36, F <sub>y</sub> = 36 ksi
CHANNELS, EMBEDMENTS IN CONCRETE AND MISC. METALS, UNO	ASTM A36, F <sub>y</sub> = 36 ksi OR STEEL TYPES LISTED UNDER "ALL STEEL"
SQUARE AND RECTANGULAR STRUCTURAL TUBES	ASTM A500, GRADE B, F <sub>y</sub> = 46 ksi
STEEL PIPE DIAMETER LESS THAN OR EQUAL TO 12" NOM	ASTM A53, TYPE E OR S, GRADE B, F <sub>y</sub> = 35 ksi

- 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 AT OTHER MEMBERS EMBEDDED IN CONCRETE OR MASONRY SHALL BE LEFT UNPAINTED. DIMENSIONAL TOLERANCES FOR BUILD-UP MEMBERS SHALL BE PER AWS D1.1. GENERAL NOTES FOR STEEL CONNECTIONS SHALL APPLY TO ALL STEEL CONNECTIONS, UNO.

- STEEL BEAMS ARE EQUALLY SPACED BETWEEN DIMENSIONAL POINTS. MINIMUM CONNECTIONS SHALL BE A TWO-BOLT CONNECTION USING 7/8-INCH DIAMETER A325 BOLTS IN SINGLE SHEAR. OPTIONAL TO USE F1554 BOLTS WITH PRIOR APPROVAL OF ENGINEER OF RECORD. ALL HIGH-STRENGTH BOLTS SHALL BE INSTALLED TIGHTENED AND INSPECTED IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. THE CRITERIA FOR SLIP-CRITICAL CONNECTIONS SHALL APPLY TO ALL CONNECTIONS UNLESS SPECIFICALLY NOTED AS SNUG TIGHT ON THE STRUCTURAL DRAWINGS. WHERE CONNECTIONS ARE NOTED SNUG TIGHT THE CONTRACTOR MAY INSTALL PER CRITERIA FOR SNUG TIGHT BOLTS. SLIP CRITICAL CONNECTIONS SHALL USE LOAD INDICATOR WASHERS OR TENSION CONTROL BOLTS. ALL ASTM A307 BOLTS SHALL BE PROVIDED WITH LOCK WASHERS UNDER NUTS OR SELF-LOCKING NUTS. ALL BOLT HOLES SHALL BE STANDARD SIZE, UNO.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ERECTION AIDS THAT INCLUDE, BUT ARE NOT LIMITED TO: ERECTION ANGLES; LIFT HOLES, AND OTHER AIDS.

- METAL PROTECTION - ALL MISCELLANEOUS STEEL AND HARDWARE EXPOSED TO VIEW OR IN UNHATED PORTION OF BUILDING SHALL BE GALVANIZED PER ASTM A-123 WITH 1.25 OZ OF ZINC SHELTER PER SQUARE FOOT OF SURFACE AREA. ALL OTHER STEEL SURFACES TO BE SPOT PAINTED AFTER FABRICATION.
- ALL STEEL BEAM COPING SHALL CONFORM TO AISC STANDARD PRACTICE.
- GROUT FOR BEARING PLATES SHALL BE NON-SHRINK EMBOCO 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

#### 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 BY 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 OR CHANGES TO THE PROPORTIONS OF THE STRUCTURE AND LOADS AND CONDITIONS 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

- BOLTS SHALL BE ASTM A-307.
- WASHERS SHALL BE STANDARD CUT WASHERS OR MALLEABLE IRON WASHERS.
- 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
16g COMMON	0.162" P-NAIL	3-1/2"	FRAMING
12g COMMON	0.148" P-NAIL	3-1/4"	FRAMING
N/A	N/A	3"	FRAMING
10g COMMON	0.148" P-NAIL	2-1/2"	SHEATHING
8g COMMON	0.131" P-NAIL	2-1/2"	SHEATHING

## D. LAG SCREWS, SHEAR PLATES

- ANCHORS AND CONNECTORS SHALL BE SIMPSON, USP, OR OTHER ICBO APPROVED.
- 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 END OF EACH PIECE. 3" x 3" x 0.229" WASHERS ARE REQUIRED AT ALL ANCHOR BOLTS PER AFPA 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 THE 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 8g COMMON NAILS AT 6" ON CENTER @ SUPPORTED PANEL EDGES AND 0.131" DIA P-NAILS OR 8g 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 10g 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.

ROOF DIAPHRAGM: 1/2" MIN OSB (MIN PANEL INDEX = 24/16), WITH 0.131" DIA P-NAILS OR 8g COMMON NAILS AT 6" O.C. AT SUPPORTED PANEL EDGES AND AT 12" O.C. AT FIELD TYPICAL UNLESS NOTED OTHERWISE ON PLAN. WHERE REQUIRED, USE PLY-CLIPS INSTALLED PER MANUFACTURER'S GUIDELINES AND APA GUIDELINES.

FLOOR DIAPHRAGM: 3/4" TONGUE AND GROOVE OSB (MIN PANEL INDEX = 32/16), WITH 0.148" DIA P-NAILS OR 10g COMMON NAILS AT 12" ON CENTER @ SUPPORTED PANEL EDGES AND AT 12" O.C. AT FIELD TYPICAL UNLESS NOTED OTHERWISE ON PLAN. SHEATHING SHALL BE GLUE-NAILED TO FRAMING WITH APPROVED ADHESIVE PER THE ARCHITECT. FIELD NAILING SHALL BE 6" O.C. AT ALL INTERIOR SHEARWALL LOCATIONS INSTEAD OF TYPICAL 12" O.C. SPACING.

## 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 COMPRESSION 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)

#### 1. PROTECTED ENVIRONMENT

ALL HARDWARE (HANGERS, NAILS, BOLTS, LAG SCREWS, FLASHING ETC.) SHALL BE HOT-DIP GALVANIZED (HDG) TO A MINIMUM COATING LEVEL OF 0.185 (1.85 oz/42 of ZINC) WHEN IN CONTACT WITH PRESERVATIVE TREATED WOOD CONTAINING PRODUCTS SUCH AS, BUT NOT LIMITED TO, CCA, ACO, 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.

#### 2. EXPOSED ENVIRONMENT

ALL HARDWARE (INCLUDING CONNECTORS) IN CONTACT WITH PRESERVATIVE 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)

- TYPICAL MECHANICAL ANCHORS WHICH ARE INSTALLED IN CONCRETE SHALL BE AS MANUFACTURED BY THE SIMPSON, INC. AND SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURERS GUIDELINES AND PER ICC REPORT ESR-1771 FOR WEDGE ANCHORS PER ICC REPORT ESR-2713 FOR SCREW TYPE ANCHORS OR APPROVED EQUALS.
  - 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.
- EPOXY CONNECTION

# STRUCTURAL NOTES-TABLES

WIND PRESSURE TABLE FOR COMPONENTS & CLADDING (ASD)						
ROOF SURFACES <sup>1</sup>						
EFFECTIVE WIND AREA	POSITIVE PRESSURE (PSF)			NEGATIVE PRESSURE (PSF)		
	ZONE <sup>2</sup>					
	1	2	3	1	2	3
10 SF	7.80	7.80	7.80	-12.39	-21.56	-31.89
20 SF	7.04	7.04	7.04	-12.01	-19.65	-29.59
50 SF	6.27	6.27	6.27	-11.62	-17.74	-27.30
100 SF	5.51	5.51	5.51	-11.24	-15.83	-25.01
500 SF	5.51	5.51	5.51	-11.24	-15.83	-25.01

WALL SURFACES						
EFFECTIVE WIND AREA	POSITIVE PRESSURE (PSF)			NEGATIVE PRESSURE (PSF)		
	ZONE <sup>2</sup>					
	4	5	4	5	4	5
10 SF	12.18	12.18	-13.21	-16.31	-12.18	-12.18
20 SF	11.56	11.56	-12.59	-15.07	-11.56	-11.56
50 SF	10.94	10.94	-11.98	-13.83	-10.94	-10.94
100 SF	10.32	10.32	-11.36	-12.57	-10.32	-10.32
500 SF	9.08	9.08	-10.12	-10.12	-9.08	-9.08

1. NET WIND PRESSURES AT ROOF SURFACES = VALUE FROM TABLE ABOVE +2/3 DEAD LOAD (DEAD LOAD REDUCES NEGATIVE PRESSURE + ADDS TO POSITIVE PRESSURES)

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

Update Structural notes tables to current codes. Current tables list 2018. (Construction Set, S1.1)

As the engineer of record, all structural components shall be reviewed and approved by the engineer of record. (Construction Set, S1.1)

### 2018 International Building Code – Statement of Special Inspection

MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
			CONT.	PERIODIC	REQUIRED	
Site Preparation	Table 1705.6 Item 5	–	–	X	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	–	X	–	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 Item 2	–	–	X	YES	Confirm excavation are extended to proper depth and have reached proper materials.

### 2018 International Building Code – Statement of Special Inspection

MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
			CONT.	PERIODIC	REQUIRED	
Materials	1705.3.1, Table 1705.3 Item 1	Applicable ASTM material spec.; AISC 360, Section A3.3	–	X	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	–	X	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	X	–	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	–	X	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	X	–	NO	
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	–	X	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	–	–	X	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	–	X	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	–	X	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	–	X	YES	Verification of anchors post installed in hardened concrete members.

### 2018 International Building Code – Statement of Special Inspection

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

### 2018 International Building Code – Statement of Special Inspection

MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
			CONT.	PERIODIC	REQUIRED	
Structural Steel	1705.11.1	AISC 341	X	–	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	–	X	–	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 within 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 than 4" o.c.
Cold-formed Steel Framing	1705.11.3	–	–	X	NO	Inspection of welding operations of elements of the seismic force resisting system.
Cold-formed Steel Framing	1705.11.3	–	–	X	NO	Inspection of screw attachments, bolting, anchoring and other fastening components within the seismic force resisting system, including struts, braces and hold-downs.

### 2018 International Building Code – Statement of Special Inspection

MATERIAL/ TYPE INSPECTION	IBC CODE REFERENCE	REFERENCE STANDARD	FREQUENCY APPLICABLE TO THIS PROJECT			SCOPE OF SERVICE
			CONT.	PERIODIC	REQUIRED	
Structural Observations	1704.5	–	–	X	If required by jurisdiction	Structural observations to be performed to observe general conformance to the construction documents.



Revisions to this sheet:

**Bradley Heights Apartments**  
202 27th Ave SE  
Puyallup, Washington

**Solutions 4 Structures**  
A Structural Engineering Corporation

Puyallup, Washington 98374  
Ph. 253-314-9822  
www.solutions4structures.com

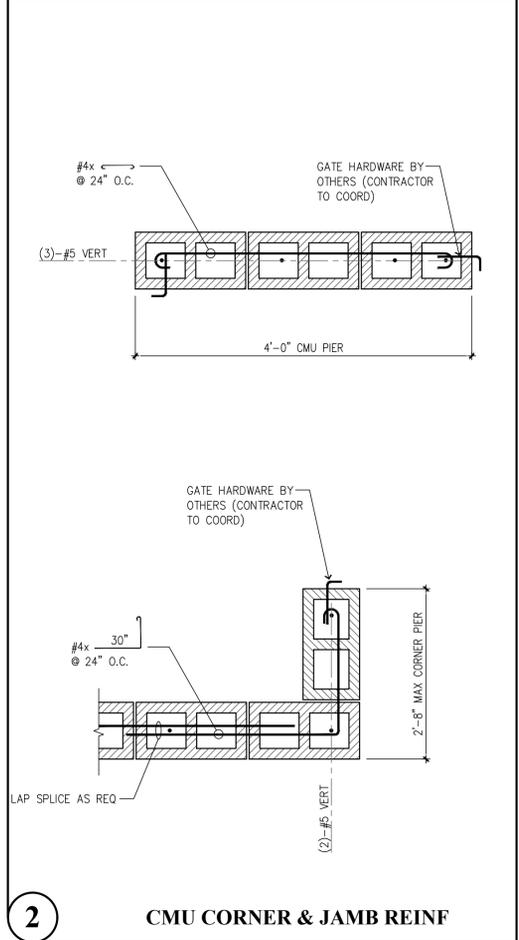
PROJECT NO. : 23-007  
 DESIGNED BY : TLC, OGG, MRO  
 DRAWN BY : RSO  
 ISSUE DATE : 2-20-24  
 LATEST REV. OF DWG. SET :  $\Delta$  2-2-26

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

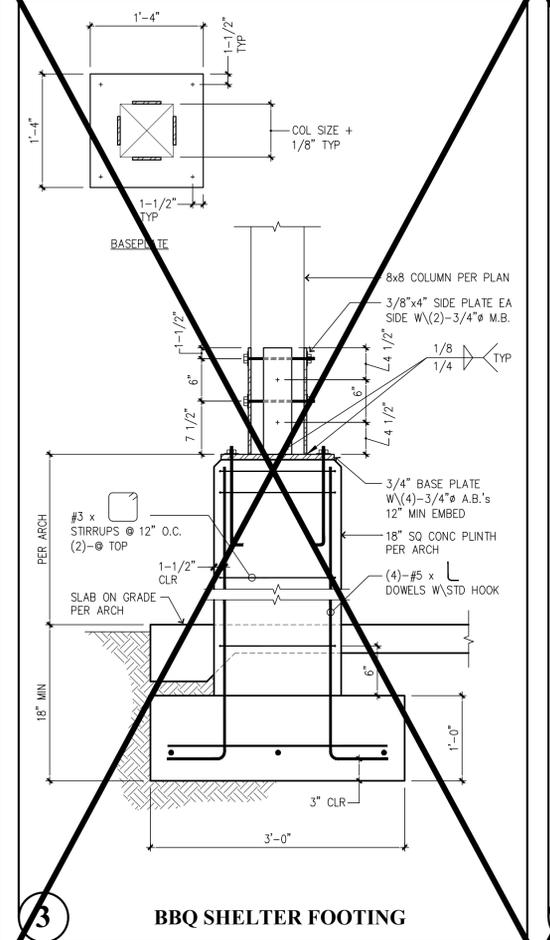
# S1.1

PLOT DATE/TIME: 2/2/2026 - 1:09pm THANK YOU FOR USING SOLUTIONS 4 STRUCTURES

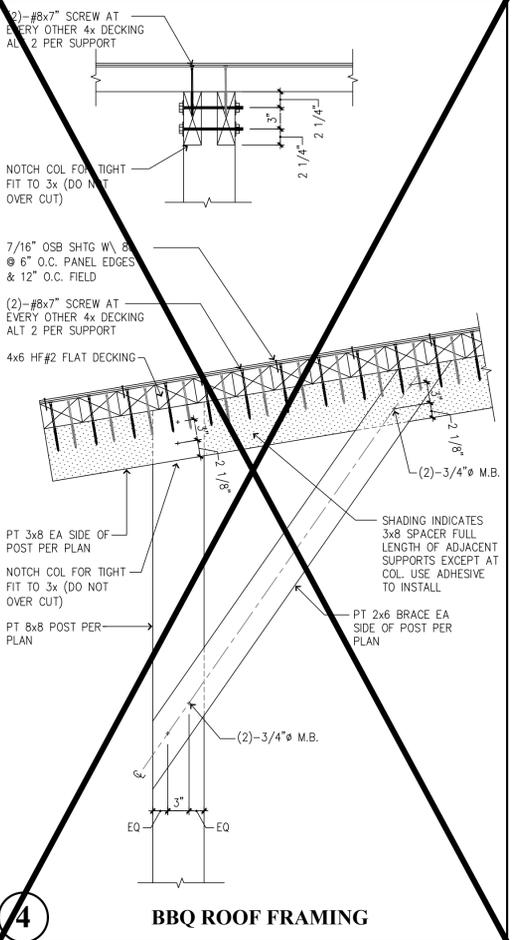
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**2** CMU CORNER & JAMB REINF

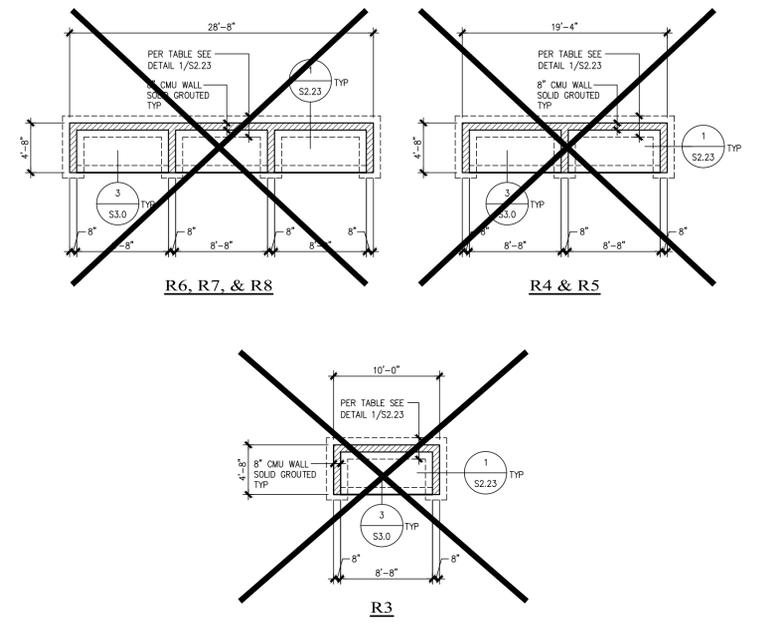


**3** BBQ SHELTER FOOTING



**4** BBQ ROOF FRAMING

- ### Foundation Notes
- TYPICAL DIMENSIONS ARE TO FACE OF WALL OR TO CENTERLINE OF COLUMN OR FOOTING. VERIFY ALL DIMENSIONS & ELEVATIONS WITH THE ARCHITECT.
  - PROVIDE FOOTING SUBSTRATE PREPARATION PER THE SOILS REPORT.
  - F-- INDICATES ISOLATED FOOTING. ISOLATED FTG SHALL BE CONSTRUCTED PER FOOTING SCHEDULE 5/S3.0.
  - EXTEND ALL CONTINUOUS FOOTINGS AT END WALLS 1'-4" MIN. BEYOND END OF ALL BEARING WALLS & SHEARWALLS. (TYPICAL) UNO
  - ALL EXTERIOR WALLS SHALL HAVE AN 8" STEMWALL AND A 36" WIDE x 12" DEEP FOOTING W/ STEEL REINFORCING 3" CLR. OF SOIL UNLESS NOTED OTHERWISE.
  - ADD STRIP DRAINS AT FACE OF BUILDINGS WHEN WALKS SLOPE TOWARD BUILDING, CONNECT TO TIGHTLINE.
  - PROVIDE #4-24" x 24" CORNER BARS TO MATCH ALL HORIZONTAL REINFORCEMENT IN STEMWALLS AND FOOTINGS. (TYPICAL)
  - FLOOR SLABS - 6" 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.
  - ENTRY SLABS - 4" CONC. SLAB (BROOM FINISH)
  - PATIO SLABS - 4" CONC. W/ THICKENED EDGES. SLOPE AWAY FROM BUILDING AT 1/4"/FT. SEE 3/S3.0
  - ALL THICKENED SLABS FOR BEARING WALLS AND PARTY WALLS SHALL BE 30" WIDE x 12" DEEP W/ (2) #4 BARS CONTINUOUS UNLESS NOTED OTHERWISE. DEEPEN LOCALLY AT HOLDINGS TO OBTAIN EMBEDMENT DEPTH +3" MIN.
  - 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.
  - VERIFY ALL TOP OF SLAB ELEVATIONS AND BUILDING STEPS WITH ARCH/CIVIL PLANS TYPICAL.
  - TYPICAL PERIMETER FOOTING SHALL BE LOCATED A MIN. 18" BELOW GRADE OR AS REQUIRED BY LOCAL JURISDICTION.
  - SEE DETAILS FOR TYPICAL STEMWALL/FOOTING & THICKENED SLAB CONSTRUCTION.
  - T.O.W. = TOP OF STEMWALL  
T.O.F. = TOP OF FOOTING  
T.O.S. = TOP OF SLAB
  - SEE THE GENERAL STRUCTURAL NOTES ON SHEET S1.0 FOR ADDITIONAL INFORMATION.
  - VERIFY WITH CIVIL GRADING PLAN FOR GARAGE SLAB ELEVATION @ GARAGE DOORWAY.
  - DEEPEN FOOTINGS AS NECESSARY TO MAINTAIN MINIMUM COVER. COORDINATE WITH CIVIL GRADING PLAN FOR GRADE CONDITIONS.
  - INDICATES DEPRESSED TOP OF STEMWALL AT DOORWAY. POUR SLAB OVER SEE 4/S3.0.
  - ALL INTERSECTING FOOTINGS / STEMWALLS SHALL HAVE CORNER BARS TO MATCH HORIZ REINFORCEMENT SEE 10/S3.0



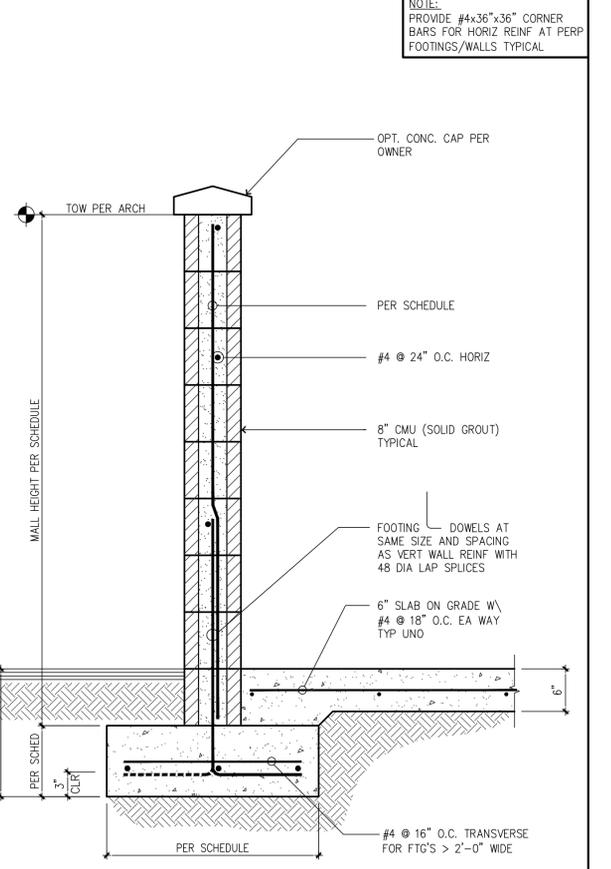
Foundation Plan - Satellite Recycle Bin Enclosures  
SCALE 1/8"=1'-0"

Footings should be identified on the plans.  
(Construction Set, Sheet S2.23a)

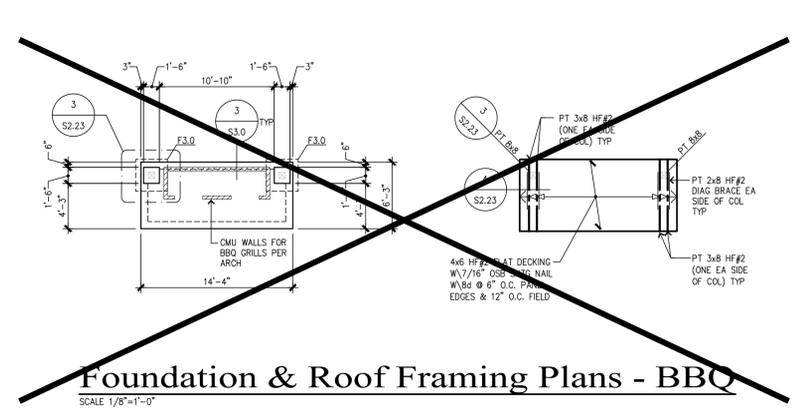
### CMU Enclosure Wall Schedule

MAX HT	FOOTING			VERT WALL REINF
	WIDTH	THICKNESS	LONGITUDINAL REINF	
9'-4"	2'-10"	12"	(3)-#5	#5 @ 32" O.C.
7'-4"	2'-4"	10"	(3)-#4	#5 @ 40" O.C.
5'-4"	1'-10"	10"	(2)-#4	#4 @ 32" O.C.

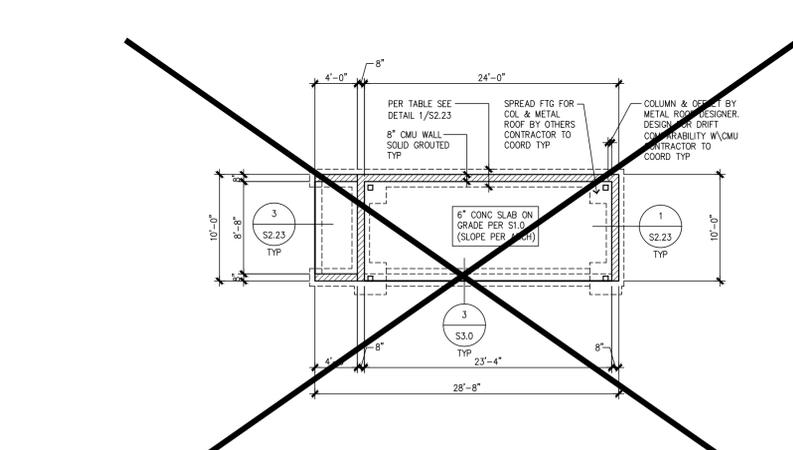
NOTES:  
1. ALLOWABLE SOIL BEARING = 2,000 PSF  
2. HORIZONTAL LOADING:  
WIND = 10 PSF (ASD)  
SEISMIC = 25 PSF  
3. 8" CMU SOLID GROUTED BLOCKS TYP UNO  
4. CONTRACTOR TO VERIFY ALL HEIGHTS AND DIMENSIONS WITH ARCHITECT PRIOR TO CONSTRUCTION



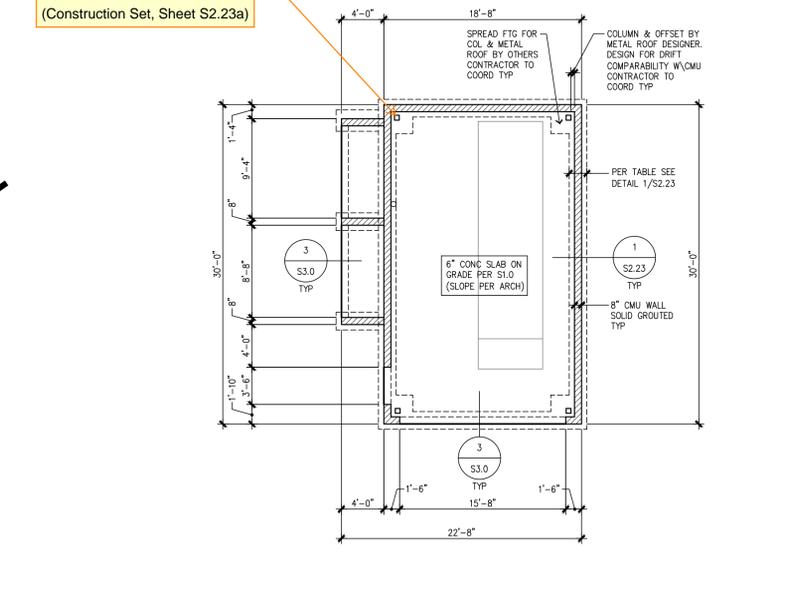
**1** TRASH COMPACTOR & RECYCLE CENTER ENCLOSURE



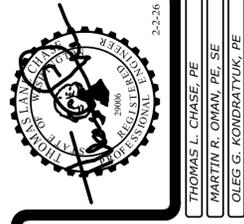
Foundation & Roof Framing Plans - BBQ  
SCALE 1/8"=1'-0"



Foundation Plan - Recycle Center  
SCALE 1/8"=1'-0"



Foundation Plan - Trash Compactor  
SCALE 1/8"=1'-0"



Revisions to this sheet:  
8-30-24 PERMIT CORRECTIONS & OWNER CHANGES  
4-24-25 PERMIT CORRECTIONS & OWNER CHANGES

**Bradley Heights Apartments**  
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Puyallup, Washington

Puyallup, Washington 98374  
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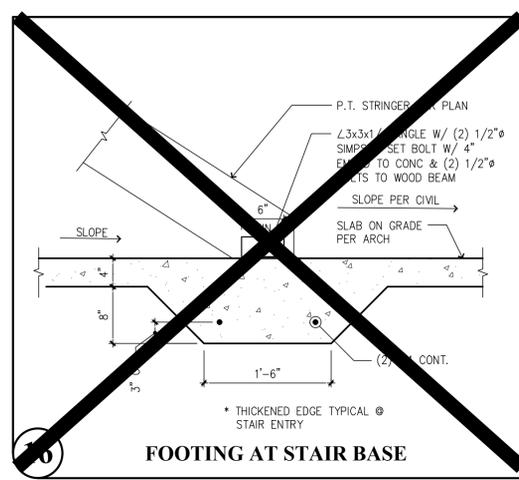
**Solutions 4 Structures**  
A Structural Engineering Corporation

PROJECT NO. : 23.007  
DESIGNED BY : TLC, ODK, MRO  
DRAWN BY : RSO  
ISSUE DATE : 2-20-24  
LATEST REV. OF DWG. SET : 2-2-26

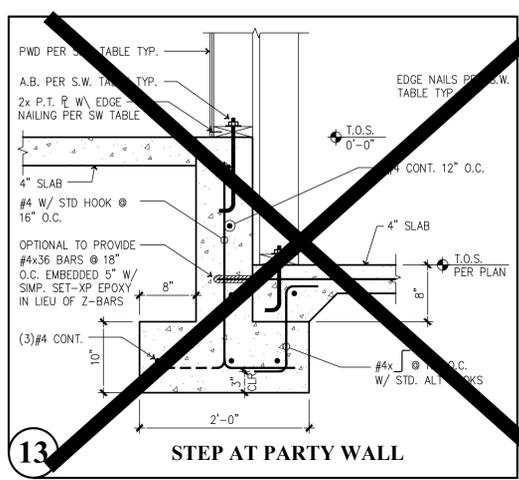
SUBMITTAL SET ONLY NOT FOR CONSTRUCTION  
THESE DRAWINGS ARE SUBJECT TO REVISIONS PENDING LOCAL JURISDICTIONAL REVIEW.

**S2.23a**

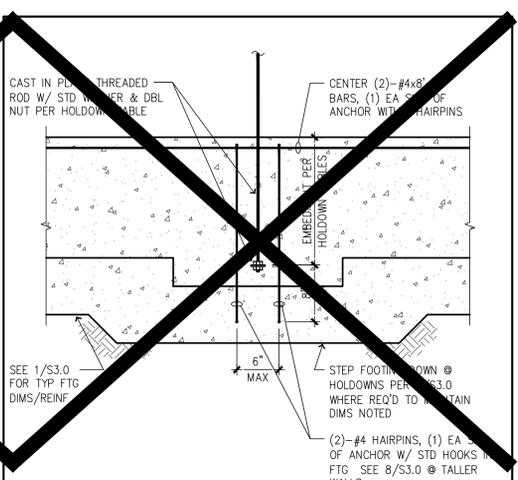
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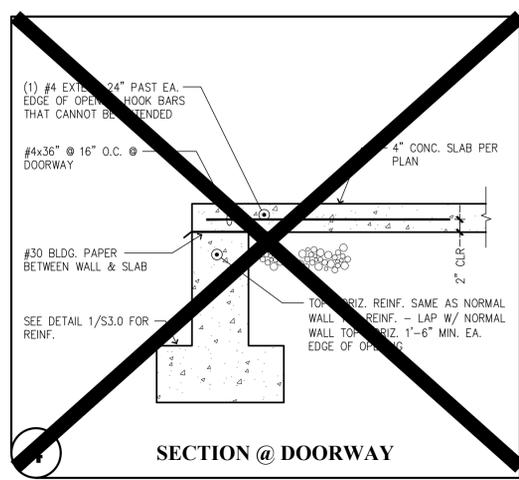
**12** FOOTING AT STAIR BASE



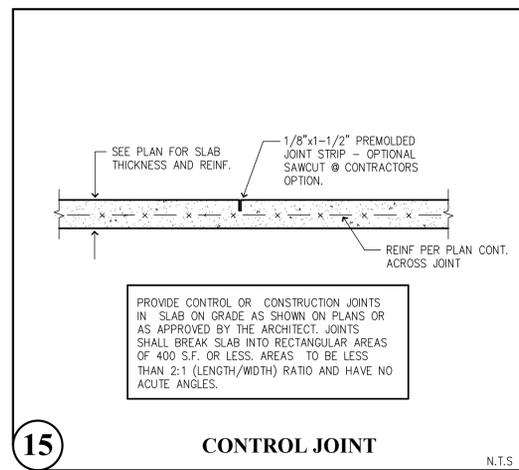
**13** STEP AT PARTY WALL



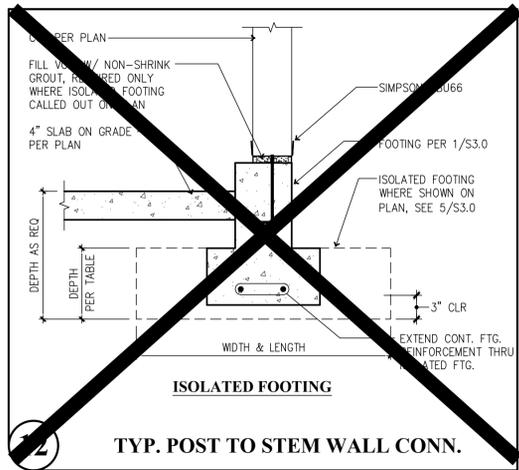
**14** HOLDOWNS @ THICKENED SLAB FOOTINGS



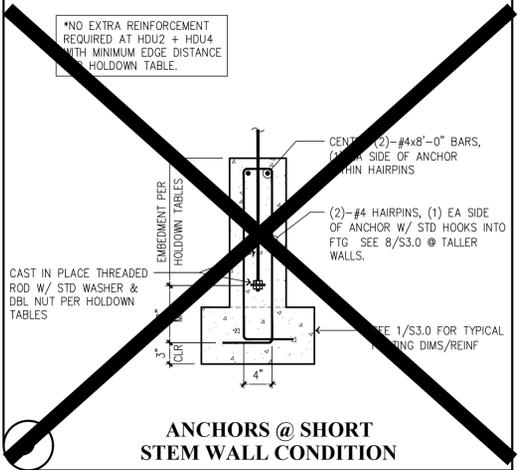
**15** SECTION @ DOORWAY



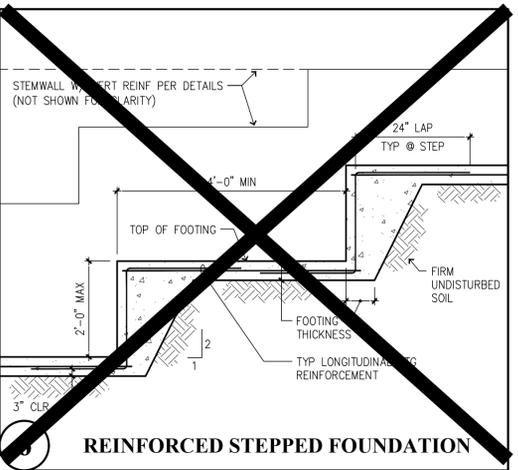
**16** CONTROL JOINT



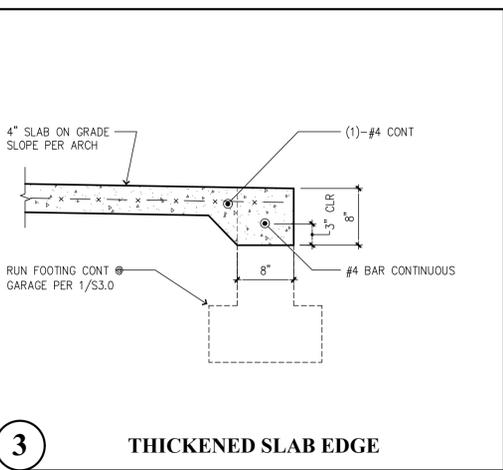
**17** TYP. POST TO STEM WALL CONN.



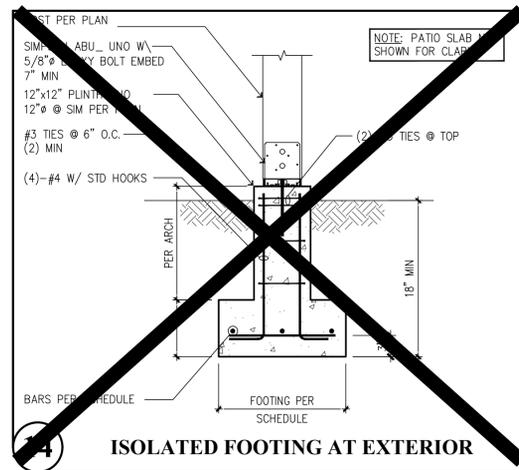
**18** ANCHORS @ SHORT STEM WALL CONDITION



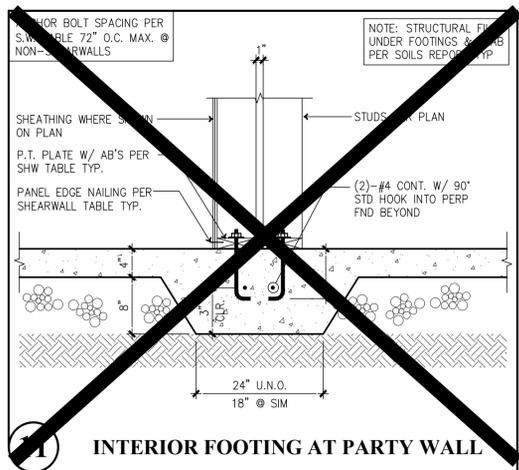
**19** REINFORCED STEPPED FOUNDATION



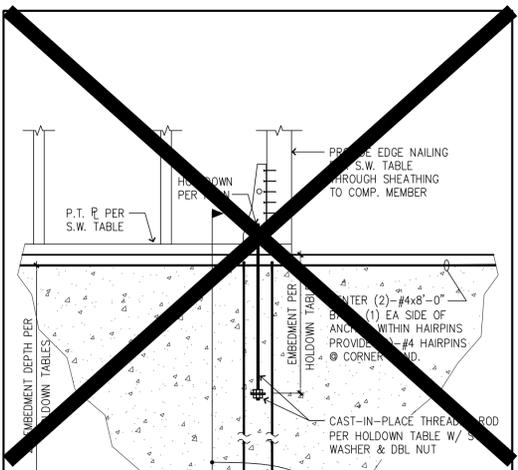
**20** THICKENED SLAB EDGE



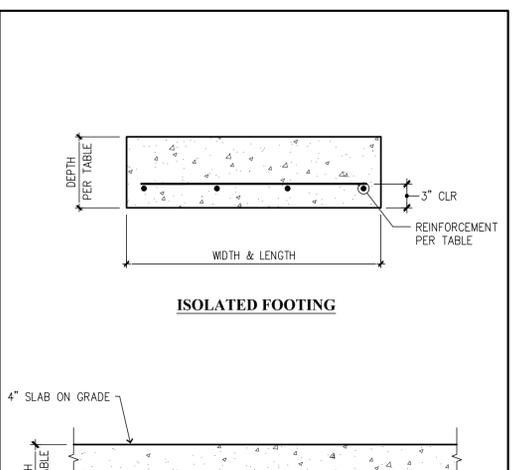
**21** ISOLATED FOOTING AT EXTERIOR



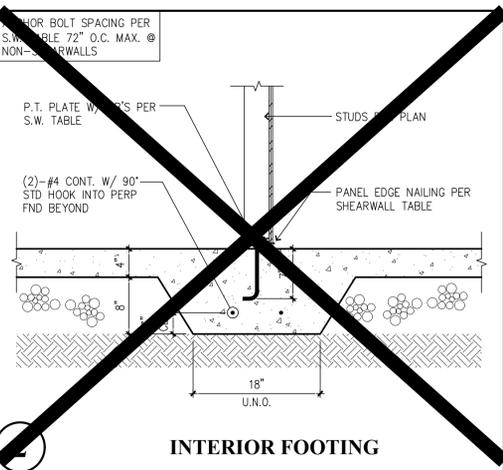
**22** INTERIOR FOOTING AT PARTY WALL



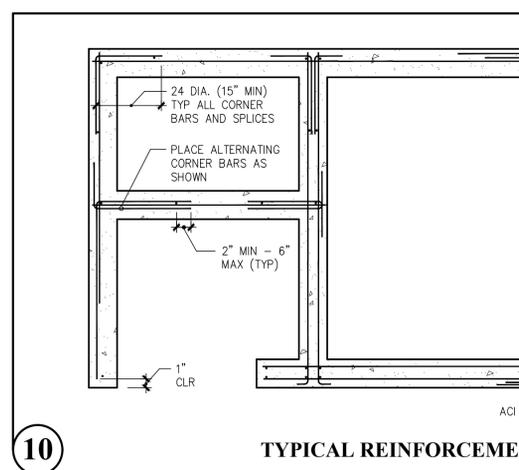
**23** ANCHORS @ TALL STEM WALL CONDITION



**24** ISOLATED FOOTING

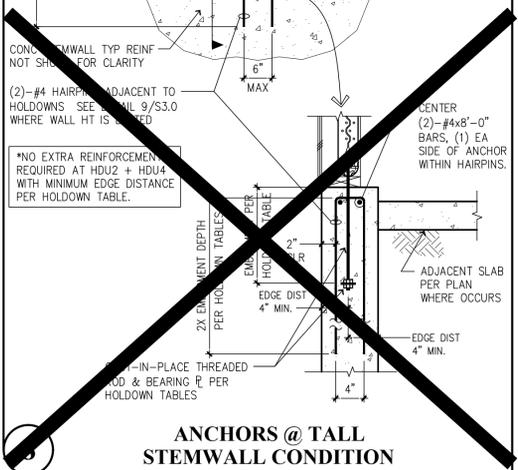


**25** INTERIOR FOOTING

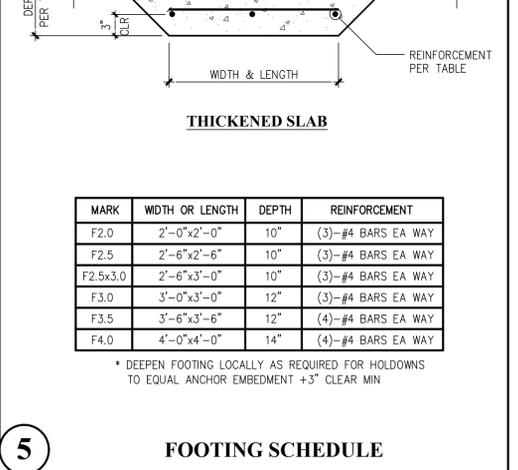


**26** TYPICAL REINFORCEMENT PLACEMENT DIAGRAM

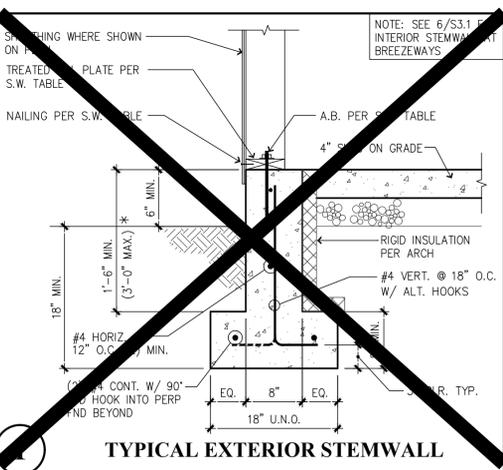
- NOTES:**
- VERTICAL REINFT SHOWN IS ADDED IF NORMAL WALL REINFT IS NOT IN PROPER LOCATIONS.
  - CORNER BARS ARE SAME SIZE AND SPACING AS HORIZ REINFT
  - 90° HOOKS MAY BE SUBSTITUTED FOR CORNER BARS (SEE NOTE 5).
  - REINFT AT ALL WALL CORNERS, ENDS AND INTERSECTIONS SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH APPROPRIATE DETAIL SHOWN.
  - USE ACI MIN 90° HOOK FOR EMBEDMENT LESS THAN 24 DIAMETERS PAST FACE OF WALL.
  - CONCRETE WALLS SHOWN; MASONRY WALLS SIMILAR.
  - WALL DETAILS SHOWN; FTG DETAILS SIMILAR.
  - VARIOUS WALL SECTIONS AND INTERSECTIONS SHOWN; USE APPROPRIATE DETAILS.
  - ALL BENDS SHALL BE PER ACI



**27** ANCHORS @ TALL STEM WALL CONDITION



**28** FOOTING SCHEDULE



**29** TYPICAL EXTERIOR STEMWALL



Revisions to this sheet:

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 202 27th Ave SE  
 Puyallup, Washington

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S3.0