



2 VIEW FROM SE

# **BEAVER HILL PIT STRUCTURE RE-BID**

# ABBREVIATIONS

ABBREVIATIONS BELOW ARE FOR ARCHITECTURAL SHEETS ONLY

∠ @ AB AC ADD ALT APPROX	ANGLE AT ANCHOR BOLT ASPHALT CONCRETE ADDITIONAL ALTERNATE APPROXIMATE	GA GALV H HM HT	GAUGE GALVANIZED HEIGHT HOLLOW METAL HEIGHT	PCC PEMB PL PLYWD PM PRE FAB PRE FIN	PRECAST CONCRETE PRE-ENGINEERED METAL BUILDING PLATE/PROPERTY LINE PLYWOOD PROTECTED METAL PREFABRICATED PRE-FINISHED
ARCH	ARCHITECTURAL	пі	height		FRE-FINISHED
BLDG BM BOT	BUILDING BEAM/BENCH MARK BOTTOM	ID IN INT	INSIDE DIAMETER INCHES INTERIOR	QTY RAD	QUANTITY
CIP CJ COL	CAST IN PLACE CONTROL JOINT/CONSTRUCTION JOINT COLUMN	JST JT	JOIST JOINT	RC RD REC REINF REQ'D	REINFORCED CONCRETE ROOF DRAIN RECESSED REINFORCING REQUIRED
CONC CONST	CONCRETE CONSTRUCTION	L LF	LENGTH LINEAR FOOT		
CONT	CONTINUOUS	LG LONG LWC	LONG LONGITUDINAL LIGHTWEIGHT CONCRETE	SCHD SECT SOG	SCHEDULE SECTION SLAB ON GRADE
D DIA DIM	DEPTH DIAMETER DIMENSION	MAX	MAXIMUM	SPEC STD	SPECIFICATION STANDARD
DS DWL	DOWNSPOUT DOWEL	MECH MEMB MFR	MECHANICAL MEMBRANE MANUFACTURER	ТНК ТОВ	THICK TOP OF BEAM
(E) EA EF EJ	EXISTING EACH EACH FACE EXPANSION JOINT	MIN MISC	MINIMUM MISCELLANEOUS	TOC TOF TOJ TOS	TOP OF CURB/TOP OF CONCRETE TOP OF FOOTING TOP OF JOIST TOP OF SLAB
EL ELEC ELEV EMBED	ELEVATION ELECTRICAL ELEVATOR/ELEVATION EMBEDDED	NA NIC NO NOM	NOT APPLICABLE NOT IN CONTRACT NUMBER NOMINAL	TOW TPG TYP	TOP OF WALL TOPPING TYPICAL
EQ EW	EQUAL EACH WAY	NTS NWC	NOT TO SCALE NORMAL WEIGHT CONCRETE	UG UNO	UNDERGROUND UNLESS NOTED OTHERWISE
FA FV FIN FLR FT FTG	FIELD ADJUSTABLE FIELD VERIFY FINISH FLOOR FEET FOOTING	O/ OA OC OD OPNG OPP	OVER OVERALL ON CENTER OUTSIDE DIAMETER OPENING OPPOSITE	W W/ W/O WWF	WIDE FLANGE STEEL BEAM WITH WITHOUT WELDED WIRE FABRIC



BUILDING REPLACEMENT COOS COUNTY 56722 HIGHWAY 101 COOS BAY, OR 97420

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CONSTRUCTION

# DATE DESCRIPTION

SEPT 2024

**REVISIONS**:

DATE:

SHEET TITLE:

TITLE SHEET, VICINITY MAP

G1.0

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7 ARCHITECTS 333 S. 4TH STREET COOS BAY, OR 97420 P: 541.269.1166 general@hge1.com www.hgel.com COOS COUNTY SURVEYOR COOS COUNTY COURTHOUSE 250 N. BAXTER COQUILLE, OR 97423 phone: (541) 396-7585 e-mail: coossurvey@co.coos.or.us INSTRUMENTS USED NIKON DTM-522 TOTAL STATION HP 48GX w/ TDS SOFTWARE AUTOCAD CÍVIL 3D 2014 INDIVIDUALS PRESENT JOSEPHA. SLACK MICHAEL L. DADO BILL HALES REGISTERED PROFESSIONAL LAND SURVEYOR MATTHEW MARTIN COOS BAY, OREGON OREGON JULY 18, 1994 MICHAEL L. DADO #2661 RENEWS: 12-31-15 20 40 SCALE : 1" = 20'БR TRUC . () BEAVER HILL PIT ROOF ROOF REPLACEMENT ВАΥ  $\circ$ 101 COOS COUNTY 55722 HIGHWAY 0 Z CT CONSTRUCTION 1 EXISTING CONDITIONS SURVEY G2.0 SCALE: 1" = 20' **REVISIONS:** # DATE DESCRIPTION DATE: SEPT 2024 SHEET TITLE: EXISTING CONDITIONS PLAN G2.0 Copyright © 2024 HGE ARCHITECTS, Inc.







HGE

ARCHITECTS





DATE: SHEET TITLE: SITE PLAN

SEPT 2024

A1.2

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NOTE: ALTERNATE BID FOR RAIN DRAINS TO (E) CATCH BASIN



SLOPE 1/4":12" AWAY FROM PIT OPENING

NOTE:

CONCRETE APRON TO MATCH EXISTING GRADE.

1 SITE PLAN A1.2 SCALE: 1" = 20'









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1 FRAME RIDGE $30' - 0''$	<b>HACHITECTS</b> <b>SALE AND AND AND AND AND AND AND AND AND AND</b>
30 - 0	
BOLLARD, TYP. MAIN LEVEL 0' - 0" PIT LEVEL 9' - 4"	JOSEPHA. SLACK JOSEPHA. SLACK COOS BAY, OREGON THE OF ORTIN
LOWER LEVEL -18' - 11"	
FRAME RIDGE	PIT ROOF STRUCTURE - REBID PLACEMENT TE DISPOSAL TRANSFER STATION S BAY, OREGON
BOLLARD TYPICAL	PROJECT NO.: 19.48.1 BEAVER HILL PIT ROOF STRUC BUILDING REPLACEMENT COOS COUNTY SOLID WASTE DISPOSAL TRANSFER STATION 55722 HIGHWAY 101, COOS BAY, OREGON
MAIN LEVEL 0' - 0"	CONSTRUCTION REVISIONS: # DATE DESCRIPTION
	DATE: SEPT 2024
L <u>OWER LEVEL</u>	SHEET TITLE: EXTERIOR ELEVATIONS
	A4.1
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# **STRUCTURAL - GENERAL NOTES**

## GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the "Oregon Specialty Structural Code (OSSC)", 2022 Edition, hereafter referred to as the IBC, as adopted and modified by the County of Coos, **Oregon** understood to be the Authority Having Jurisdiction (AHJ).

### NARRATIVE:

 DCI Engineer's scope includes a concrete foundation system to support a lightweight manufactured steel building by others.

REFERENCE STANDARDS: Refer to Chapter 35 of 2018 IBC. Where other Standards are noted in the drawings, use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard.

**DEFINITIONS**: The following definitions cover the meanings of certain terms used in these notes:

- "Architect/Engineer" The Architect of Record and the Structural Engineer of Record.
- "Structural Engineer of Record" (SER) The structural engineer who is licensed to stamp & sign the structural documents for the project. The SER is responsible for the design of the Primary Structural Sys-
- "Submit for review" Submit to the Architect/Engineer for review prior to fabrication or construction.
- "Per Plan" Indicates references to the structural plans, elevations and structural general notes.
- "Specialty Structural Engineer" (SSE) A professional engineer (PE or SE), licensed in the State where the project is located, (typically not the SER), who performs specialty structural engineering services for selected specialty-engineered elements identified in the Contract Documents, and who has experience and training in the Specialty. Documents stamped and signed by the SSE shall be completed by or under the direct supervision of the SSE.
- "Bidder-designed" Components of the structure that require the general contractor, subcontractor, or supplier who is responsible for the design, fabrication and installation of specialty-engineered elements identified in the Contract Documents to retain the services of an SSE. Submittals of "Bidder-designed" elements shall be stamped and signed by the SSE.

**SPECIFICATIONS**: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

**OTHER DRAWINGS**: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional information including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, curbs, depressions, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work. Use entire detail sheets and specific details referenced in the plans as "typical" wherever they apply. Similarly, use details on entire sheets with "typical" in the name wherever they apply.

STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the primary structure in its completed form.

COORDINATION: The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job-related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health). Contractor is responsible to adhere to OSHA regulations regarding steel erection items specifically addressed in the latest OSHA regulations. Bolting and field welding at all member connections is to be completed prior to the release of the member from the hoisting mechanism unless reviewed and approved by the General Contractor's temporary bracing and shoring design engineer.

BRACING/SHORING DESIGN ENGINEER: The contractor shall at his discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

**CONSTRUCTION LOADS**: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of **400** pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes.

DISCREPANCIES: In case of discrepancies between the General Notes, Specifications, Plans/Details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents, the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work.

ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to earthwork, foundations, shoring, and excavation. Any utility information shown on the drawings and details is approximate and not necessarily complete.

ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation (proper test report, etc.) to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless authorized by the Owner.

### DESIGN CRITERIA AND LOADS

OCCUPANCY:	Risk Category of Building per 2018 IBC Table 1		П	
WIND DESIGN:	MAIN WIND FORCE RESISTING SYSTEM			
	Ultimate Design Wind Speed, VULT (MPH)		145	
	Exposure Category		С	
	Internal Pressure Coefficient	Cpi =	+/- 0.00	
	Topographic Factor	Kzt =	1.0	
	Wind Analysis:		By SSE	

SEISMIC DESIGN:	Seismic Design Category:	SDC =	D	
			Lateral	Longitudinal
	Seismic Force Resisting System		SOMF	SOCBF
	Response Modification Factor:	R =	3.25	3.50
	System Over strength Factor: 0	mega =	2.0	2.50
	Deflection Amplification Factor:	C <sub>D</sub> =	3.25	3.00
	Site Classification per IBC 1613.3.2 & ASCE 7- Site Class =	16, Ch. 20	D	
	Seismic Importance Factor per ASCE 7-16 Tab	le 1.5-2 le =	1.0 <sup>(4)</sup>	
	Spectral Response Acceleration (Short Period)	S <sub>s</sub> =	1.87 g	
	Spectral Response Acceleration (1-Second Per	iod) <b>S</b> <sub>1</sub> =	0.876 g	
	Spectral Design Response Coefficient (Short Pe	eriod) S <sub>DS</sub> =	1.494 g	
	Spectral Design Response Coefficient (1-Secor	nd Period) <b>S</b> <sub>DI</sub> =	N/A	
	Redundancy Factor	rho=	1.3	1.3
	Design Base Shear (KIPS)		0.46*W	0.43*W
SNOW LOAD: (1)	Flat Roof Snow Load, (PSF)		р, <b>=</b>	<b>20</b> <sup>(2)</sup>
	Snow Drift Loading required by Authority Having	Jurisdiction?		Yes
	Snow Load Importance Factor		I <sub>s</sub> =	<b>1.0</b> <sup>(3) (4)</sup>
	Ground Snow Load, (PSF)		p <sub>g</sub> =	19.00
	Snow Exposure Factor		C $_{\rm e}$ =	0.90
	Thermal Factor		C <sub>t</sub> =	1.00

SEISMIC DESIGN:	Seismic Design Category:	SDC =	D	
			Lateral	Longitudinal
	Seismic Force Resisting System		SOMF	SOCBF
	Response Modification Factor:	=	3.25	3.50
	System Over strength Factor: Omega	a =	2.0	2.50
	Deflection Amplification Factor: C	<sub>D</sub> =	3.25	3.00
	Site Classification per IBC 1613.3.2 & ASCE 7-16, C Site Class =	h. 20	D	
	Seismic Importance Factor per ASCE 7-16 Table 1.5	-2 le =	<b>1.0</b> <sup>(4)</sup>	
	Spectral Response Acceleration (Short Period)	<b>S</b> <sub>s</sub> =	1.87 g	
	Spectral Response Acceleration (1-Second Period)	S <sub>1</sub> =	0.876 g	
	Spectral Design Response Coefficient (Short Period)	S <sub>DS</sub> =	1.494 g	
	Spectral Design Response Coefficient (1-Second Pe	riod) S <sub>DI</sub> =	N/A	
	Redundancy Factor	rho=	1.3	1.3
	Design Base Shear (KIPS)		0.46*W	0.43*W
SNOW LOAD: (1)	Flat Roof Snow Load, (PSF)		р, <b>=</b>	<b>20</b> <sup>(2)</sup>
	Snow Drift Loading required by Authority Having Juris	sdiction?		Yes
	Snow Load Importance Factor		I <sub>s</sub> =	<b>1.0</b> <sup>(3) (4)</sup>
	Ground Snow Load, (PSF)		р <sub> g</sub> =	19.00
	Snow Exposure Factor		C $_{\rm e}$ =	0.90
	Thermal Factor		C <sub>t</sub> =	1.00

1) Snow Load is <u>un-reducible</u> and includes 5 psf rain-on-snow surcharge where ground snow load is greater than zero and 20 psf or less per ASCE 7-16 Section 7.10.

- 2) Snow Load based on SEAO
- 3) Snow Load Importance Factor per ASCE 7-16 Table 1.5-2.

# DEFERRED SUBMITTALS

BIDDER-DESIGNED ELEMENTS Submit "Bidder-Designed" deferred submittals to the Architect and SER for review. The deferred submittals shall also be submitted to the city for approval, if required by the city.

Design of prefabricated, "bidder designed", manufactured, pre-engineered, or other fabricated products shall be complied with the following requirements:

) Design considers tributary dead, live, wind and earthquake loads in combinations required by IBC. Design within the Deflection Limits noted herein and as specified or referenced in the IBC.

- Submittal shall include:
- a. Calculations prepared, stamped and signed by the SSE demonstrating code conformance.
- provals as applicable.

GENERAL CONTRACTOR'S PRIOR REVIEW: Once the contractor has completed his review of the SSE component drawings, the SER will review the submittal for general conformance with the design of the building and will stamp the submittal accordingly. Review of the Specialty Structural Engineer's (SSE) shop drawings (component design drawings) is for compliance with design criteria and compatibility with the design of the primary structure and does not relieve the SSE of responsibility for that design. All necessary bracing, ties, anchorage, proprietary products shall be furnished and installed per manufacturer's instructions or the SSE's design drawings and calculations. These elements include but are not limited to:

Structural Deferred Submittals: Deferred submittals are required to be submitted to the city for approval under a separate application. These elements include but are not limited to:

Pre-Engineered Steel Structures (Metal Buildings)

# INSPECTIONS, QUALITY ASSURANCE VERIFICATIONS AND TEST REQUIREMENTS

INSPECTIONS: Foundations, footings, under slab systems and framing are subject to inspection by the Building Official in accordance with IBC 110.3. Contractor shall coordinate all required inspections with the Building Official.

SPECIAL INSPECTIONS, VERIFICATIONS and TESTS: Special Inspections, Verifications and Testing shall be done in accordance with IBC Chapter 17, the STATEMENT AND SCHEDULES OF SPECIAL INSPECTIONS listed in these drawings.

STRUCTURAL OBSERVATION:

SPECIAL INSPECTION AGENCY and SPECIAL INSPECTORS: Owner shall retain a WABO accredited Special Inspections agency to provide Special Inspections for the project. Special Inspectors shall be qualified persons per

IBC 1704.2.1.

# required for the following:

FABRICATION SHOP INSPECTION: Where off-site Fabrication of gravity LOAD BEARING MEMBERS & AS-SEMBLIES is performed, Special Inspector shall verify that the fabricator complies with IBC 1704.2.5.

STRUCTURAL STEEL per IBC 1704.2.5.1

A qualified Special Inspector of an "approved agency" providing Quality Assurance (QA) Special Inspections for the project shall review and confirm the Fabricator and Erector's Quality Control (QC) procedures for completeness and adequacy relative to AISC 360-10 Chapter N, the AISC 303 Code of Standard Practice, AWS D1.1-2010 Structural Welding Code, and 2015 IBC code requirements for the fabricator's scope of work.

Waiver of Special Inspection - Fabricator Approval Verification per IBC Section 1704.2.5.2: Special Inspections at the Shop may be waived where Fabricator has been audited for Quality Control by an approved inspection agency and is currently registered or otherwise accepted by the Authority Having Jurisdiction (AHJ) per IBC 1704.2.5.2 to perform both Quality Control (QC) and Quality Assurance (QA) inspections. Fabricator is approved to perform fabrication without Special Inspections and shall at the completion of fabrication provide a "Certificate of Compliance" to the Authority Having Jurisdiction stating that the work was performed in accordance with the approved Construction Documents.

- meet the minimum qualification requirements for Inspection and Nondestructive Testing NDT per
- AISC 341-10 Sections J3 and J4.
- NDT personnel shall be qualified per AISC 341-10 Section J4

- Inspection Tasks for Bolting per AISC 360-10 Section N5.6
- Not required for snug-tight joints.
- Not required for snug-tight joints.

3) Design shall conform to the specifications and reference standards of the governing code.

b. Engineered component design drawings are prepared, stamped and signed by the SSE. c. Product data, technical information and manufacturer's written requirements and Agency ap-

d. SSE may submit to the Architect/Engineer, a request to utilize relevant alternate design criteria of similar nature and generally equivalency which is recognized by the Code and acceptable to the Authority Having Jurisdiction. Submit adequate documentation of design.

Structural Observation for this project is not required per IBC Section 1704.6.

STATEMENT OF SPECIAL INSPECTIONS. Special Inspections and Testing per IBC Sections 1704 and 1705 are

 QA Agency providing Special Inspections shall provide personnel meeting the minimum qualification requirements for Inspection and Nondestructive Testing NDT per AISC 360-10 Section N4. • For Special Inspections of Steel Seismic Force Resisting Systems, QA Agency personnel shall

 QA Agency shall submit qualification documents per AISC 341-10 section J2 on projects subject to Special Inspections on Seismic Force Resisting Systems with R >3.

Provide QA Inspections per AISC 341-10 Section J5 through J10 as applicable.

Verify Fabricator and Erector Quality Control Program per AISC 360-10 Section N2.

 Prior to Bolting per AISC 360-10 Table N5.6-1and AISC 341-10 Table J7-1 of the SFRS. During Bolting per AISC 360-10 Table N5.6-2 and AISC 341-10 Table J7-2 of the SFRS.

After Bolting per AISC 360-10 Table N5.6-3 and AISC 341-10 Table J7-3 of the SFRS.

Additional Inspection tasks per AISC 360-10 Section N5.7 and AISC 341-10 Table J8-1 of the SERS

## SOILS & FOUNDATION CONSTRUCTION per IBC Section 1705.6

- Periodic inspection of soils earthwork per Table 1705.6 is required for:
  - Footing soil bearing surfaces prior to placing any reinforcing steel Excavation depth and bearing layer prior to placing any reinforcing steel.

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY: shall comply with IBC Section 1703. Inspections shall be in accordance with the requirements set forth in the approved ICC Evaluation Report and as indicated by the design requirements specified on the drawings. Refer to the POST INSTALLED ANCHORS section of these notes for anchors that are the basis of the design. Special inspector shall verify anchors are as specified in the POST INSTALLED ANCHORS section of these notes or as otherwise specified on the drawings. Substitutions require approval by the SER and require substantiating calculations and current 2012 IBC recognized ICC Evaluation Services (ES) Report. Special Inspector shall document in their Special Inspection Report compliance with each of the elements required within the applicable ICC Evaluation Services (ES) Report.

INSPECTION SUBMITTALS: Special inspection reports shall be provided on a weekly basis. Final special inspection reports will be required by each special inspection firm per IBC 1704.2.4. Submit copies of all inspection reports to the Architect/Engineer and the Authority Having Jurisdiction for review.

CONTRACTOR RESPONSIBILITY: Prior to issuance of the building permit, the Contractor is required to provide the Authority Having Jurisdiction a signed, written acknowledgement of the Contractor's responsibilities associated with the above Statement of Special Inspections addressing the requirements listed in IBC Section 1704.4. Contractor is referred to IBC Sections 1705.12.5 and 1705.12.6 for architectural and MEP building systems that may be subject to additional inspections (based on the building's designated Seismic Design Category listed in the CRI-TERIA), including anchorage of HVAC ductwork containing hazardous materials, piping systems and mechanical units containing flammable, combustible or highly toxic materials, electrical equipment used for emergency or standby power, exterior wall panels and suspended ceiling systems.

PREFABRICATED CONSTRUCTION: All prefabricated construction shall conform to IBC Section 1703.

### SOILS AND FOUNDATIONS

REFERENCE STANDARDS: Conform to IBC Chapter 18 "Soils and Foundations."

GEOTECHNICAL REPORT: Recommendations contained in Geotechnical Report by PLSA Engineering & Surveying dated July 01, 2020 were used for design.

CONTRACTOR'S RESPONSIBILITIES: Contractor shall be responsible to review the Geotechnical Report and shall follow the recommendations specified therein including, but not limited to, subgrade preparations, pile installation procedures, ground water management and steep slope Best Management Practices."

GEOTECHNICAL SUBGRADE INSPECTION: The Geotechnical Engineer shall inspect all sub-grades and prepared soil bearing surfaces, prior to placement of foundation reinforcing steel and concrete. Geotechnical Engineers shall provide a letter to the owner stating that soils are adequate to support the "Allowable Foundation Bearing Pressure(s)" shown below.

DESIGN SOIL VALUES

SIGN SOIL VALUES.		
Allowable Foundation Bearing Pressure	1500	PSF
Passive Lateral Pressure (assumed)	375	PSF/FT
Active Lateral Pressure (unrestrained, assumed)		
Coefficient of Sliding Friction (assumed)	0.35	

FOUNDATIONS and FOOTINGS: Foundations shall bear on either on competent native soil or compacted structural fill as per the geotechnical report. Exterior perimeter footings shall bear not less than 36 inches below finish grade, unless otherwise specified by the geotechnical engineer and/or the building official.

FOOTING DEPTH: Tops of footings shall be as shown on plans with vertical changes as indicated with steps in the footings; locations of steps shown as approximate and shall be coordinated with the civil grading plans to ensure that the exterior perimeter footings bear no less than 36 inches below finish grade, or as otherwise indicated by the geotechnical engineer or building official.

SLABS-ON-GRADE: All slabs-on-grade shall bear on compacted structural fill or competent native soil per the geotechnical report. All moisture sensitive slabs-on-grade or those subject to receive moisture sensitive coatings/ covering shall be provided with an appropriate capillary break and vapor barrier/retardant over the subgrade prepared and installed as noted in the geotechnical report, barrier manufacturer's written recommendations and coordinated with the finishes specified by the Architect.

### CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: Conform to:

(1) ACI 301-16 "Specifications for Structural Concrete" (2) IBC Chapter 19 "Concrete"

- (3) ACI 318-14 "Building Code Requirements for Structural Concrete"
- (4) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"

FIELD REFERENCE: The contractor shall keep a copy of ACI Field Reference manual, SP-15, "Standard Specifications for Structural Concrete (ACI 301) with Selected ACI and ASTM References."

CONCRETE MIXTURES: Conform to ACI 301 Section 4 "Concrete Mixtures" and IBC Section 1904.2.

MATERIALS: Conform to ACI 301 Section 4.2.1 "Materials" for requirements for cementitious materials, aggregates, mixing water and admixtures.

SUBMITTALS: Provide all submittals required by ACI 301 Section 4.1.2. Submit mix designs for each mix in the table below. Substantiating strength results from past tests shall not be older than 24 months per ACI 318 Section 5.3

#### TABLE OF MIX DESIGN REQUIREMENTS

Member Type/Location	Strength f'c (psi)	Test Age (days)	Maximum Aggregate	Exposure Class	Max W/C Ratio	Air Con- tent	Notes (1 to 8 Typical UNO)
Footings	3000	28	1"	-	-	-	-
Interior Slabs on Grade	3000	28	1"	-	0.50	-	9

Table of Mix Design Requirements Notes:

(1) W/C Ratio: Water-cementitious material ratios shall be based on the total weight of cementitious materials. Maximum ratios are controlled by strength noted in the Table of Mix Design Requirements and durability requirements given in ACI 318 Section 19.3.

(2) Cementitious Materials:

- a. The use of fly ash, other pozzolans, silica fume, or slag shall conform to ACI 318 Sections 19.3.2 and 26.4.2.2. Maximum amount of fly ash shall be 25% of total cementitious content unless reviewed and approved otherwise by SER.
- For concrete used in elevated floors, minimum cementitious-materials content shall conform to ACI 301 Table 4.1.2.9. Acceptance of lower cement content is contingent on providing supporting data to the SER for review and acceptance.
- c. Cementitious materials shall conform to the relevant ASTM standards listed in ACI 318 Section 26.4.1.1.1(a).
- (3) Air Content: Conform to ACI 318 Section 19.3.3.1. Minimum standards for exposure class are noted in the table. If freezing and thawing class is not noted, air content given is that required by the SER. Tolerance is  $\pm 1-\frac{1}{2}$ %. Air content shall be measured at point of placement.
- (4) Aggregates shall conform to ASTM C33.
- (5) Slump: Conform to ACI 301 Section 4.2.2.2. Slump shall be determined at point of placement.
- (6) Chloride Content: Conform to ACI 318 Table 19.3.2.1.
- (7) Non- chloride accelerator: Non-chloride accelerating admixture may be used in concrete placed at ambient temperatures below 50°F at the contractor's option.
- (8) ACI 318, Section 19.3.1.1 exposure classes shall be assumed to be F0 unless different exposure classes are listed in the Table of Mix Design Requirements that modify these base requirements.
- (9) Shrinkage Limit: Concrete used in elevated slabs and beams shall have a shrinkage limit of [0.045%] at 28 days measured in accordance with ASTM C157. Submit laboratory test results to SER for approval prior to construction.

		DRAW		)	
MARK	DESC	RIPTION	MARK	[	DESCRIPTION
F2.0	FOOTING SYMBOL FOOTING SCHEDUI		AD I	INDICATES W	IDE FLANGE COLUMN
(P1)	PILE CAP SYMBOL PILE CAP SCHEDUL				DLLOW STRUCTURAL 5) COLUMN OR
1	TILT-UP/PRECAST C CONNECTION SYM	BOL (REFER TO	0	INDICATES HO	DLLOW STRUCTURAL 6) COLUMN OR
2W4 CONNECTION DET/ SHEAR WALL SYM SHEAR WALL SCHE		BOL (REFER TO		INDICATES W	
 RFI 00	REVISION TRIANGL	E	•	INDICATES BU	JNDLED STUDS
1	TILT-UP/PRECAST C PANEL NUMBER (R PRECAST CONCRE	EFER TO TILT-UP	/	INDICATES CO	DNCRETE COLUMN
	CMU WALL REINFO (REFER TO CMU W. SCHEDULE)	RCING SYMBOL	(52)(1)	INDICATES PR CONCRETE CO	
8"	CONTINUITY PLATE (REFER TO TYPICAL		-	INDICATES M CONNECTION	OMENT FRAME
DS	INDICATES DOUBL CONNECTION (REF SHEAR PLATE CON	ER TO THE DOUE			ARTIALLY RESTRAINED AME CONNECTION
00TB	INDICATES REINFO (REFER TO THE REI SCHEDULE)			INDICATES CA CONNECTION	
(SR_)	INDICATES NUMBE REQUIRED AT COL STUD RAIL DETAILS	UMN (REFER TO	•	INDICATES DF	RAG CONNECTION
$\langle 1 \rangle$	ROOF/FLOOR DIAP SYMBOL (REFER TO NAILING SCHEDUL	) DIAPHRAGM	; ;;	INDICATES A	LEDGER
C1 COLUMN SI	STEEL/CONCRETE ( SYMBOL (REFER T COLUMN SCHEDUI	O STEEL	<del> </del>	INDICATES W BEARING WA PER KEY ON S	
-T/FTG = X'	ELEVATION SYMBO TO COMPONENT T ELEVATION REFER	DL (T/ REFERS HAT THE ENCES)			OOD OR STEEL STUD LINE AND HOLD-DOWNS SHEET
3	STUD BUBBLE (IND OF STUDS REQUIR NUMBER SPECIFIE	ED IF EXCEEDS D IN PLAN NOTE)	\$77777	INDICATES M	ASONRY/CMU WALL
<u>\$</u>	INDICATES STEP IN (REFER TO TYPICAL FOOTING DETAIL)		<u> </u>	INDICATES CO CONCRETE W	DNCRETE/TILT-UP /ALL
XX SXXX	DETAILS OR SECTION		\$====\$	INDICATES BE	EARING WALL BELOW
	VIEW (DETAIL NUM	BER/SHEET NUM	-	INDICATES EX	SISTING WALL
XX/SXX.XX	INDICATES LOCATI WALLS, SHEAR WA	LLS OR BRACED	•	POST-TENSIO	N DEAD END (PLAN)
	STRUCTURAL EXTE SINGLE ARROW - E DOUBLE ARROW -	ND OF EXTENT	← <b>+</b> →	POST-TENSIO	N STRESSING END (PLAN)
	EXTENT ALONG TH		, i i i i i i i i i i i i i i i i i i i	POST-TENSIO (IN INCHES)	N PROFILE (PLAN)
	INDICATES DIRECT	ION OF DECK SP		INTERMEDIAT	E STRESSING (PLAN)
		ABBR	EVIATIONS		
L AB ADDL ADH ALT ARCH B or BOT B/ BLDG BLKG BMU BP BRBF BRG BTWN C CB C'BORE CLOR CC CIP CLR CLG CUT CIP CLR CLG CUT CIP CLR CLG CUT CIP CLR CLG COL CONC CONST C	Angle Anchor Bolt Additional Adhesive Alternate Architectural Bottom Bottom Of Building Blocking Brick Masonry Unit Baseplate Buckling Restrained Braced Frame Bearing Between Camber Castellated Beam Counterbore Centerline Cross-Laminated Timber Cast in Place Cold Formed Steel Construction or Control Joint Complete Joint Penetration Clear Ceiling Concrete Masonry Unit Column Concrete Connection Construction Construction Construction Construction Continuous Countersink Centered Diameter Drop Beam Deformed Bar Anchor Double Demolish Development Douglas Fir Diagonal Distributed Dead Load Down Ditto Depth/Deep Drawing Existing Each Each Face	FBFacFDFloFDNForFINFinFLRFloFRPFibFRTForFTGForGAGaGALVGaGEOTECHGeGLGluGWBGyHDRHeHGRHaHDHoHORIZHoHORIZHoIDInsIEInvIFInsINTIntkKipKSFKipLFLinLLLivLBBLooLLHLovLONGITLooLNTLanMASMaMECHMeMINMiMINMiMISCMiMINMiMISCMoODOU	verglass Reinforced Plas e Retardant Treated oting ce of ge lvanized eotechnical ue Laminated Timber psum Wall Board ader em-Fir inger old-down orizontal gh Point ollow Structural Section ernational Building Cod side Diameter vert Elevation side Face erior os os Per Square Foot heal Foot ve Load ng Leg Back-to-Back ng Leg Horizontal ng Leg Vertical w Point ngitudinal minated Strand Lumber minated Veneer Lumbe asonry aximum echanical echanical echanical, Electrical, umbing ezzanine anufacturer nimum scellaneous ot In Contract il-Laminated Timber ot To Scale n Center dinary Concentric Brace ame utside Diameter	PT R RD REF REINF REQD RET SB SCBF SCHED SER SFRS SFRS SF SFRS SF SF SF SOG SP SPEC SQ SR SF SF STAGG STD STIFF STL STRUCT SWWJ STIFF STL T T STRUCT SWWJ SYM T T T/ T&B TC AX LD TCX TDS T&G THKND THRD THRD THRU TRANSV	Pounds Per Linear Foot Plywood Prefabricated Pounds per Square Foot Pounds Per Square Inch Parallel Strand Lumber Post-Tensioned Pressure Treated Radius Roof Drain Refer/Reference Reinforcing Required Retaining Site-Built Special Concentric Braced Frame Schedule Structural Engineer of Record Seismic Force- Resisting System Sheathing Similar Short Leg Back-to-Back Special Moment Frame Slab on Grade Southern Pine Specification Square Studrail Square Foot Stainless Steel Stagger/Staggered Standard Stiffener Steel Structural Solid Web Wood Joist Symmetrical Top Top Of Top & Bottom Top Chord Axial Load Top Chord Axial Load Top Chord Extension Tie Down System Tongue & Groove Thickened Threaded Through Transverse Typical Unless Noted Otherwise Unreinforced Masonry Unit
EL ELEC ELEV EMBED EQ EQUIP EW EXP EXP JT	Elevation Electrical Elevator Embedment Equal Equipment Each Way Expansion Expansion Joint Exterior	OPNG Op OPP Op OWSJ Op OWWJ Op PL Pla PAF Po PC Pre PERP Pe	Itside Face pening posite pen Web Steel Joist pen Web Wood Joist ate wder Actuated Fastene ecast rpendicular rtial Joint Penetration	VERT W W/ W/O WHS er WP WWF ±	Vertical Wide With Without Welded Headed Stud Working Point Welded Wire Fabric Plus or Minus



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FORMWORK & RESHORING: Conform to ACI 301 Section 2 "Formwork and Form Accessories." Removal of Forms shall conform to Section 2.3.2 except strength indicated in Section 2.3.2.5 shall be 0.75 f' c.

MEASURING, MIXING, AND DELIVERY: Conform to ACI 301 Section 4.3.

HANDLING, PLACING, CONSTRUCTING AND CURING: Conform to ACI 301 Section 5. In addition, hot weather concreting shall conform to ACI 305.1-06 and cold weather concreting shall conform to ACI 306.1-90.

<u>CONSTRUCTION JOINTS</u>: Conform to ACI 301 Sections. 2.2.2.5, 5.2.2.1 and 5.3.2.6. Construction joints shall be located and detailed as on the construction drawings. Submit alternate locations per ACI 301 Section 5.1.2.3a for review and approval by the SER two weeks minimum prior to forming. Use of an acceptable adhesive, surface retardant, portland cement grout or roughening the surface is not required unless specifically noted on the drawings.

<u>EMBEDDED ITEMS</u>: Position and secure in place expansion joint material, anchors and other structural and nonstructural embedded items before placing concrete. Contractor shall refer to mechanical, electrical, plumbing and architectural drawings and coordinate other embedded items.

GROUT: Use 7000 psi non-shrink grout under column base plates.

<u>POST-INSTALLED ANCHORS to CONCRETE</u>: Anchor location, type, diameter and embedment shall be as indicated on drawings. Reference the POST INSTALLED ANCHORS section for applicable Post-Installed Anchor Adhesives. Anchors shall be installed and inspected in strict accordance with the applicable ICC-Evaluation Service Report (ESR). Special inspection shall be per the TESTS and INSPECTIONS section.

CONCRETE PLACEMENT TOLERANCE: Conform to ACI 117-10 for concrete placement tolerance.

<u>FLOOR FLATNESS and FLOOR LEVELNESS</u>: Minimum values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for slabs-on-grade are required. Overall minimum values of flatness, F(F) 30; with minimum local values of flatness, F(F) 24; for suspended slabs are required. Concrete slabs that will receive wood flooring shall have a minimum F(F) 35. The preceding values are minimums unless specifications require higher values. Measured values shall be in accordance with ACI 117.

## CONCRETE REINFORCEMENT

<u>REFERENCE STANDARDS</u>: Conform to: (1) ACI 301-16 "Standard Specifications for Structural Concrete", Section 3 "Reinforcement and Reinforcement

- Supports."
  (2) ACI SP-66(04) "ACI Detailing Manual"
- (3) CRSI MSP-09, 28th Edition, "Manual of Standard Practice."
- (4) ANSI/AWS D1.4: 2005, "Structural Welding Code Reinforcing Steel."(5) IBC Chapter 19-Concrete.
- (6) ACI 318-14 "Building Code Requirements for Structural Concrete."

(7) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"

<u>SUBMITTALS</u>: Conform to ACI 301 Section 3.1.2 "Submittals." Submit placing drawings showing fabrication dimensions and placement locations of reinforcement and reinforcement supports.

MATERIALS:	
Reinforcing Bars	ASTM A615, Grade 60, deformed bars.
Weldable Reinforcing Bars	ASTM A706, Grade 60, deformed bars.
Bar Supports	CRSI MSP-09, Chapter 3 "Bar Supports."
Tie Wire	
	ASTM F1554, Gr. 36 Heavy Hex Head

FABRICATION: Conform to ACI 301, Section 3.2.2. "Fabrication", and ACI SP-66 "ACI Detailing Manual."

<u>WELDING</u>: Bars shall not be welded unless authorized. When authorized, conform to ACI 301, Section 3.2.2.2. "Welding", AWS D1.4, and provide ASTM A706, grade 60 reinforcement.

PLACING: Conform to ACI 301, Section 3.3.2 "Placement." Placing tolerances shall conform to ACI 117.

CONCRETE COVER: Conform to the following cover requirements unless noted otherwise in the drawings.

<u>SPLICES</u>: Conform to ACI 301, Section 3.3.2.7, "Splices". Refer to "Typical Lap Splice and Development Length Schedule" for typical reinforcement splices. Splices indicated on individual sheets shall control over the schedule. Mechanical connections may be used when approved by the SER.

FIELD BENDING: Conform to ACI 301 Section 3.3.2.8. "Field Bending or Straightening." Bar sizes #3 through #5 may be field bent cold the first time. Other bars require preheating. Do not twist bars. Bars shall not be bent past 45 degrees.



SHEET TITLE: STRUCTURAL GENERAL NOTES CONTINUED

S1.2

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## FOUNDATION PLAN NOTES:

1. STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1 - S1.2.

- 2. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
- 3. CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRETE: ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES; BLOCKOUTS FOR PLUMBING, SPRINKLERS AND HVAC. ALL DUCTS, CHASES AND PIPES PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS.
- 4. TOP OF SLAB (T/SLAB) ELEVATION ASSUMED 0'-0". FOR ACTUAL T/SLAB ELEVATION REFER TO CIVIL AND ARCHITECTURAL DRAWINGS. PROVIDE 6 MIL VAPOR BARRIER BELOW SLAB AT INTERIOR SPACES. PROVIDE FREE-DRAINING GRANULAR FILL PER GEOTECH REPORT.
- ALL FOOTINGS AND SLABS TO BEAR ON COMPETENT NATIVE SOIL AND/OR STRUCTURAL FILL, IMPROVED SOIL. SUBGRADE PREPARATION, STRUCTURAL FILL, DRAINAGE SYSTEM, AND OTHER REQUIREMENTS PER GEOTECH REPORT AS NOTED IN THE STRUCTURAL GENERAL NOTES.
- 6. CJ INDICATES CONTROL JOINT PER PLAN.
- 7. MOISTURE PROOF ALL CONCRETE STEM AND BASEMENT WALLS PER ARCHITECT. CONTRACTOR TO VERIFY ADDITIONAL LOCATIONS WHICH REQUIRE WATERPROOFING PER ARCHITECTURAL DRAWINGS.
- 8. TYPICAL DETAILS PER:
  - 1/S3.1TYPICAL LAP SPLICE SCHEDULE2/S3.1STANDARD HOOKS AND BAR BENDS

	SPREAD FOOTING SCHEDULE						
		SIZE					
MARK	LENGTH	WIDTH	DEPTH	REINFORCING	COMMENTS		
F8.0	8'-0"	8'-0"	3'-0"	(8) #5B EW T&B			
F9.5	9'-6"	9'-6"	3'-0"	(12) #5B EW T&B			
F10.0	10'-0"	10'-0"	3'-0"	(15) #5B EW T&B			



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SCALE: 3/4" = 1'-0" (01403A)

# LAP SPLICE AND DEVELOPMENT

LENGTH SCHEDULE

4. LAP SPLICE OF DIFFERENT SIZE BARS TO BE THE LARGER OF Ld OF THE LARGER BAR OF SPLICE LENGTH OF THE SMALLER BAR

3. TOP REINFORCING = HORIZONTAL REINFORCING WITH MORE THAN 12" OF FRESH CONCRETE BELOW OR AS NOTED ON DOCUMENTS AS "TOP BAR".

2. VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGHT CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND CLEAR COVER > db.

NOTES: 1. ALL TABULATED VALUES ARE IN INCHES.

SCALE: 3/4" = 1'-0"

BAR SIZE		ELLANEOUS BARS	TOP BARS (see note #3)		HOOKED BARS
SIZE	Ld	Splice	Ld	Splice	Ldh
f'c = 3000psi					
#3	17	22	22	28	9
#4	22	29	29	38	11
#5	28	36	36	47	14
#6	33	43	43	56	17
#7	48	63	63	81	20
#8	55	72	72	93	22
#9	62	81	81	105	25



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