

State of Idaho Department of Administration Division of Public Works

BRAD LITTLE Governor KEITH REYNOLDS Director PAT DONALDSON Administrator 502 North 4th Street Boise, ID 83720-0072 Telephone (208) 332-1900 www.dpw.idaho.gov

December 17, 2024

REQUEST FOR QUALIFICATIONS (RFQ)

ADDENDUM NUMBER ONE

- TO: TESTING AND INSPECTION PROFESSIONALS
- FROM: Martin Santoyo, DPW Project Manager
- SUBJECT: DPW PROJECT NO. 23201 North End Zone, Albertson's Stadium Boise State University (BSU) Boise, Idaho
- 1. Please note the following clarifications on page 3:

REPLACE (old language):

At a minimum, the local office/laboratory must be ISO 17025 accredited to ASTM E-329 (for soils, concrete, masonry, steel, and fireproofing). If certification for this requirement is not provided, the SOQ will be nonresponsive.

WITH (new language):

At a minimum, the local office/laboratory must maintain current AASHTO accreditation. All field personnel performing testing or inspection services on-site shall maintain current certification from the appropriate certifying agency, such as the WAQTC, ACI, ICC, AWS, etc. Current verification of each certification shall be submitted as part of the RFQ. If certification for this requirement is not provided, the SOQ will be nonresponsive.

2. Attachment for testing schedule on structural sheets (total of three sheets); attached to this addendum.

End Addendum Number One

STRUCTURAL COVER SHEET BSU NORTH END ZONE EXPANSION 1400 BRONCO LN, BOISE, ID 83706

ABBREVIATIONS				
AB. ACI	Anchor Bolt American Concrete Institute	LLH. LLV.	Long Leg Horizontal Long Leg Vertical	
ACT. ADD.	Acoustic Ceiling Tile Addition	LOC. LONG.	Locations Longitudinal	
ADD'L. AFF.	Additional Above Finish Floor	LVL. LW.	Laminated Veneer Lumber Light Weight	
AIA AISC AISI	American Institute of Architects American Institute of Steel Construction American Iron and Steel Institute	MFR. MATL.	Manufacturer Material	
ALT. AL.	American Iron and Steel Institute Alternate Aluminum	MATL. MAX. MB.	Material Maximum Machine Bolt	
ANSI AOR	American National Standards Institute Architect of Record	MECH. MEZZ.	Mechanical Mezzanine	
APA APPROX.	American Plywood Association Approximate	MIN. MISC.	Minimum Miscellaneous	
ARCH. ASTM AWS	Architect or Architectural American Society for Testing and Materials American Welding Society	MK. ML	Mark MicroLam	
BOTT.	Bottom	NF. NO. or #	Near Face Number	
BD. BLKG.	Board Blocking	NOM. NTS.	Nominal Not to Scale	
BOD. or BO DECK BM	Bottom of Deck Bending Moment	NS.	Near Side	
BPL. BRG.	Base Plate Bearing	OC. OD.	On Center Outside Diameter	
C	Channel	OPP. OSB OWSJ	Opposite Oriented Strand Board	
CF. COORD. CFS	Cubic Foot Coordinate Cold-formed Steel	PAF.	Open Web Steel Joist Powder Actuated Fastener	
CJ. CJP.	Control Joint Complete Joint Penetration	PAR. PCF.	Parallel Pounds Per Cubic Foot	
CL. CLR.	Center Line Clear	PEN. PERM.	Penetration Permanent	
COL. CONC.	Column Concrete	PERP. PL.	Perpendicular Plate	
CONN. CONST.	Connection Construction	PP. PSF.	Partial Pen. Pounds Per Square Foot	
CONT. CMU	Continuous Concrete Masonry Units	PSI. P-T	Pounds Per Square Inch Post Tension, Post Tensioned	
CY. DBA.	Cubic Yard Deformed Bar Anchor	P.T. RAD. or R.	Pressure Treated	
DIAG. DIAG.	Diagonal Diameter	RAD. of R. REF. REINF.	Radius Reference Reinforce, Reinforced,	
DIA. DIM. DF-L	Diameter Dimensions Douglas Fir-Larch	REINF.	Reinforce, Reinforced, Reinforcement or Reinforcing Required	
DWG.	Drawing	REV. RO.	Revise or Revision Rough Opening	
EA. EB.	Each Expansion Bolt	SCHED.	Schedule	
EJ. EL. or ELEV.	Expansion Joint Elevation or Elevator	SF. SHTG.	Strut Force Sheathing	
ENG. EOD. or EO DECK	Engineer Edge of Deck Engineer of Becard	SIM. SK.	Similar Sketch	
EOR EN. EQ.	Engineer of Record Edge Nail (Nailing) Equal	SPECS. SQ. SS.	Specifications Square Stainless Steel	
EQ. EQUIP. EXIST. / (E)	Equal Equipment Existing	SS. SSLT.	Stainless Steel Short Slotted Holes Transverse to Direction of Load	
EXIST. 7 (E) EXT.	Exterior	STD. STRUCT.	Standard Structural	
FAB. FD.	Fabrication Floor Drain	SYM.	Symmetrical	
FIN. FLR.	Finish Floor	T&G T AND B	Tongue and Groove Top and Bottom	
FND. FS.	Foundation Far Side	THK. THRU.	Thick Through	
FT. or ' FTG.	Feet or Foot Footing	TJI. TO.	Trus Joist I-Joist Top Of	
GALV. GC.	Galvanize General Contractor	TOC. or TO CONC. TOF. or TO FTG. TOM. or TO MASONRY	Top of Concrete Top of Footing Top of Masonry	
GEN. GLB.	General (Notes) Glu Lam Beam	TOS. or TO STL. TOW. or TO WALL	Top of Steel Top of Wall	
GR. or GRD. GYP.	Grade Gypsum	TRANSV. TYP.	Transverse Typical	
HD.	Hold-down	UNO.	Unless Noted Otherwise	
HORIZ.	Horizontal	VERT.	Vertical	
ID. IF.	Inside Diameter Inside Face	VIF.	Verify in the Field	
IN. or "	Inches	W WP.	Wide Flange Work Point	
K LESK	Kip (1,000 lbs.) LOCHSA ENGINEERING SKETCH	WT. XS	Weight	
LAM. lb. / lbs. / #	Laminated Pound / Pounds	YD.	Extra Strong Yard	
L LFRS	Angle Lateral Force Resisting System	2L	Double Angle	
LLBB.	Long Leg Back To Back		-	
	SYMBO	L LEGEND		
SLOPE	Slope Direction (down / up)	Symbols for	Concrete per ACI	
L,	Span Direction	AT	Spacing - Center to Center	
		<u> </u>	Direction in Which Bars	
98'-0"	Miscellaneous Elevation		Extend	
99'-10"	Floor or Steel Elevation		Limits of Area Covered By Bars or Post Tension	
 	Rigid Connection	Cymhola far Ol	•	
	_	Symbols for Stru	uctural Steel per AISC Brace Up	
	Masonry (CMU) Wall		Brace Op Brace Frame	
	Concrete Wall	' ' ` ~~~``	Brace Frame	
<u></u>	-			
	☐ Earth		Change (Step) in Elevation	
	 New Construction 	-(SC) 2 - 3	Slip Critical Connection	
	 Existing Construction 		Number of Bolts per Row	
	-		- Number of Rows	
^	 Existing Construction Beyond 			
			- Revision Cloud and Number	
<u>·</u> ··			- Number of Nelson Studs required	
Elevation Refer	ence Section Cut	F	Camber size	
LFRS	Lateral Force Resisting System	W12x19 [10] c=3/4"	- AISC beam designation	
Fas	tener Notation		Depth of steel joist	
	 Quantity 		Uniform Live Load (PLF)	
(2) 1 1/4"x3"		14K (240/130)		
	 Fastener Length 		- Uniform Total Load (PLF)	
	 Fastener Diameter Size 	\	Series of Steel Joist	
			Welding symbols per AWS	

DESIGN CODES 2018
1. All design and construction shall conform amendments per state, county, city. etc.
 References to ASTM and other standards Refer to the specifications for information drawings. The following standards were up
Building Code Requirements for Structu Seismic Provisional For Structural Steel Specifications For Structural Steel Build North American Specifications For The Structural Members Minimum Design Loads For Buildings A National Design Specifications For Woo
Building Code Requirements For Masor
All specifications and codes noted shall b governmental agency having jurisdiction
STRUCTURAL LOADS
SNOW LOADS:
Ground Snow Load
Importance Factor
Exposure Factor
Flat Roof Snow Load
Thermal Factor
Snow Drifts
WIND LOADS:
Basic Wind Speed
Risk Category
Exposure Internal Pressure Coefficient
WIND BASE SHEAR (ASD): Wind X (East-West) 45.84 kips
SEISMIC LOADS:
Risk Category Importance Factor
Soil Site Class Mapped Spectral Response Acceleration
SS = 0.308 g
SOIL FACTOR COEFFICIENTS: Fa = 1.300
SPECTRAL RESPONSE COEFFICIENT: SDS = 0.267 g
SEISMIC DESIGN CRITERIA: Seismic Response Coefficient:
Seismic Design Category
Analysis Procedure
Structural System
Response Modification Factor Tabulated Overstrength Factor
SEISMIC BASE SHEAR (ASD): Seismic X (East-West) 823 kips
ADDITIONAL ITEMS:
Building Location
Mean Building Height
REDUNDANCY FACTORS: North/South Direction
East/West Direction
ROOF LIVE LOADS: Roof Live Load
STORAGE LIVE LOADS:
Light Storage Heavy Storage
MISCELLANEOUS LIVE LOADS: Marquees
Guardrails/Balcony Rails
Mechanical Equipment



<u>Boise, ID</u> 201 N. Maple Grove Ste 100 Boise, Idaho 83704 Phone (208) 342-7168

1-866-606-9784 www.Lochsa.com <u>Las Vegas, NV</u> 6345 S. Jones Blvd., Ste #100 Las Vegas, NV 89118 Phone (702) 365-9312

SHEET LIST

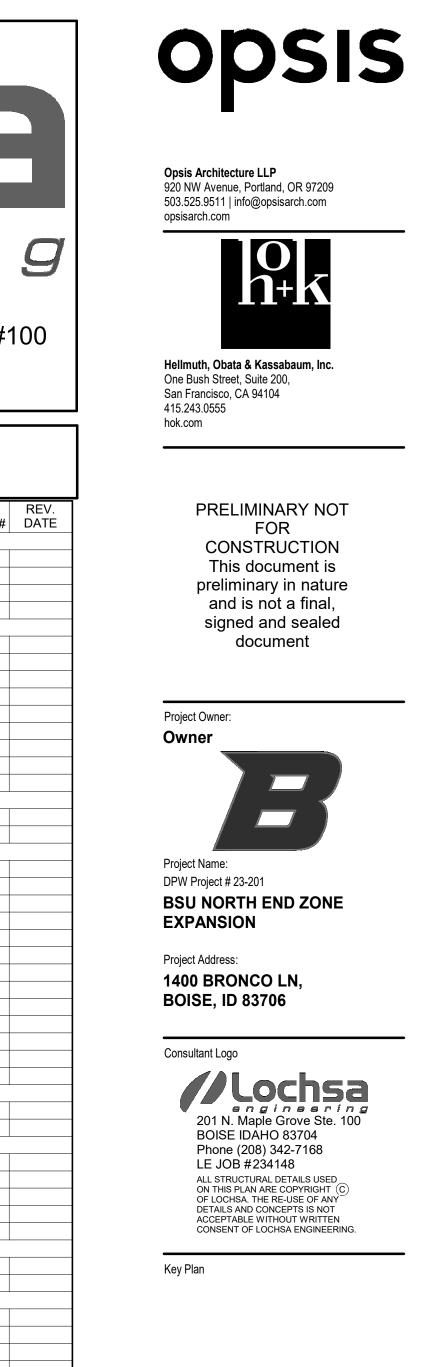
		ORIGINAL			
DWG #	DRAWING TITLE	SUBMITTAL	REV. #		
S0.01	STRUCTURAL COVER SHEET	09/06/24			
S0.01	STRUCTURAL DESIGN NOTES	09/06/24			
S0.02 S0.03	STRUCTURAL DESIGN NOTES	09/06/24			
S0.03	SPECIAL INSPECTION TABLES	09/06/24			
30.04	SPECIAL INSPECTION TABLES	09/00/24			
S1.11	OVERALL FOUNDATION PLAN	09/06/24			
	FOUNDATION PLAN - WEST SECTOR	09/06/24			
	FOUNDATION PLAN - EAST SECTOR	09/06/24			
S1.12	OVERALL MAIN CONCOURSE FRAMING PLAN	09/06/24			
S1.12A	MAIN CONCOURSE FRAMING PLAN - WEST SECTOR	09/06/24			
S1.12B	MAIN CONCOURSE FRAMING PLAN - EAST SECTOR	09/06/24			
S1.13	OVERALL ROOF FRAMING PLAN	09/06/24			
	ROOF FRAMING PLANS - WEST SECTOR	09/06/24			
	ROOF FRAMING PLANS - EAST SECTOR	09/06/24			
		00/00/21			
S2.02	ENLARGED STAIR PLANS	09/06/24			
S2.03	ENLARGED STAIR PLANS	09/06/24			
	1				
S3.11A	LEVEL 1 - COLD-FORMED STEEL PLAN - WEST SECTOR	09/06/24			
S3.11B	LEVEL 1 - COLD-FORMED STEEL PLAN - EAST SECTOR	09/06/24			
	MAIN CONCOURSE - COLD-FORMED STEEL PLAN - WEST SECTOR	09/06/24			
S3.12B	MAIN CONCOURSE - COLD-FORMED STEEL PLAN - EAST SECTOR	09/06/24			
S3.13A	ROOF - COLD-FORMED STEEL PLAN - WEST SECTOR	09/06/24			
S3.13B	ROOF - COLD-FORMED STEEL PLAN - EAST SECTOR	09/06/24			
S3.21	EXTERIOR COLD-FORMED STEEL WALL SECTIONS	09/06/24			
S3.22	EXTERIOR COLD-FORMED STEEL WALL SECTIONS	09/06/24			
S3.23	EXTERIOR COLD-FORMED STEEL WALL SECTIONS	09/06/24			
S3.51	GENERAL COLD-FORMED STEEL DETAILS	09/06/24			
S3.52	GENERAL COLD-FORMED STEEL DETAILS	09/06/24			
S3.53	GENERAL COLD-FORMED STEEL DETAILS	09/06/24			
S3.61	COLD-FORMED STEEL DETAILS	09/06/24			
		1			
S4.01	SCHEDULES	09/06/24			
S4.02	SCHEDULES - MASONRY PILASTER/LINTEL	09/06/24			
S5.01	GENERAL CONCRETE DETAILS	09/06/24			
S5.02	GENERAL SLAB DETAILS	09/06/24			
S5.11	GENERAL MASONRY DETAILS	09/06/24			
S5.21	GENERAL STRUCTURAL STEEL DETAILS	09/06/24			
S5.22	GENERAL STRUCTURAL STEEL DETAILS	09/06/24			
S6.01	FOUNDATION DETAILS	09/06/24			
S6.02	FOUNDATION DETAILS	09/06/24			
S7.01	FLOOR FRAMING DETAILS	09/06/24			
S7.02	FLOOR FRAMING DETAILS 09/06/24				
S7.03	FLOOR FRAMING DETAILS 09/06/24				
S7.04	FLOOR FRAMING DETAILS 09/06/24				
00.04		00/00/04			
S8.01	ROOF FRAMING DETAILS	09/06/24			

RAWINGS

awings and material submittals shall be submitted to the Architect and Structural Engineer of <u>prior to</u> any fabrication or construction. Electronic submittals shall be made where possible. Any	
Is containing hard copies shall include one reproducible and one copy; reproducible will be and returned. Additional copies of reviewed shop drawings are the responsibility of the general or. No modifications or substitution of drawings and specifications will be accepted via shop	-
review. <u>Contractor shall review and stamp shop drawings prior to submission to the</u> /Structural Engineer. Contractor shall review for completeness and compliance with contract	
nts including addendum's, clarifications, etc. See also note 7.	-
hop drawings to the Architect/Structural Engineer as indicated or specified for review <u>prior to</u> on. Review will be for general conformance with design intent conveyed in contract documents.	-
n engineer is required to sign and stamp shop drawings and calculations, ensure seal indicates as registered in state where project site occurs.	-
awings are not a part of contract documents, therefore, Architect's/Structural Engineer's review constitute an authorization to deviate from terms and conditions of the contract. See also note 7.	-
of submittals by the structural engineer will include checking for conformance with the design and general compliance with the information given in the construction documents. It will not eviews of the accuracy or completeness of items such as quantities, dimensions, weights or ses, fabrication processes, construction means or methods, coordination with the work of other or construction safety precautions. Review of a specific item shall not indicate that the structural	-
has reviewed the entire assembly of which the item is a component. The structural engineer be responsible for any deviations from the construction documents not brought to the structural 's attention in writing.	
Is processed by the structural engineer are not change orders	
awings will be rejected for incompleteness, lack of coordination with other portions of contract hts, lack of calculation (if required), or where modifications or substitutions are indicated without hew per paragraph A above. Resubmittals shall be clouded and dated for all changes to the I. Only clouded portions of resubmittal will be reviewed and Structural Engineer of Record's tamp applies to only these areas.	-
hop drawings and calculations to governing code authority when specifically indicated or d.	-
a copy of all shop drawings reviewed by the Architect/Structural Engineer at site during tion period.	
al Engineer requires 10 working days after receipt of shop drawings and calculations for ng.	-
imum shop drawing submittals shall include the following items plus, additional items listed in the pecifications for structural review, but not be limited to:	
Concrete mix designs Concrete construction joint plans	
Concrete reinforcing bar shop drawings and placing plans Concrete accessories material specification, size and location	
Non-shrink grout material specifications and manufacturer's installation recommendations Masonry materials and mix designs	-
Masonry reinforcing bar shop drawings and placing plans Fabrication shop AISC Certification or statement of equivalent testing and inspection procedures Structural steel mill certificates shall be available upon request	-
Structural steel shop and erection drawings	
Welding Procedure Specifications and certifications Metal deck material submittal	-
Metal deck and accessories layout	
Shoar stud lavout	i T

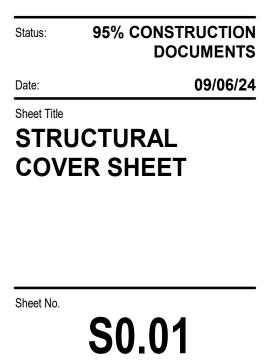
Shear stud layout

Glued laminated members (certificates shall be on site and be available upon request) Engineered wood beams (certificates shall be on site and be available upon request)



THESE DRAWINGS ARE THE PROPERTY OF OPSIS ARCHITECTURE LLP AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION. Revisions to Sheet Date No. Revision





4900-01

Job No.

FO	UNDATION
1.	The design of the foundation the following company:
	Company: Report No. Dated: Copies are available for re
2.	The foundation system is o
	Soil Bearing Capacity Frost Depth Equivalent Fluid Pressure Equivalent Fluid Pressure Passive Pressure Friction Coefficient
3.	It is recommended that the necessary testing and insp the IBC and presumptive s recommendations of chapt achievable, all work shall s
4.	The contractor shall provic seepage, etc.
5.	Drainage systems, includir Geotechnical Report and I
6.	Vapor retarder placed belo placement with Geotech a
7.	The Contractor shall provio to safely and adequately re national, state and local sa
8.	All abandoned utilities, foo Structural Engineer should the structural drawings.
9.	Footings shall be placed a footings shall be approved The Contractor shall notify Geotechnical Engineer sha depths not be approved by <u>be subject to additional en</u>
10.	All excavations shall be proper perimeter shall be mechan Geotechnical report for rec
11.	The Contractor shall not be reached full design strengt from lateral loads until atta Contractor shall provide fo

protection. Sub-base below, slabs o Geotechnical report or b recommendations of the concrete placement unde Unless otherwise noted, EXISTING UTILITIES: A. The contractor s excavation, show details are appr provide protecti 15. NEW UTILITIES: Contractor to o

13.

14

RETAINING WALLS: Grade on either Α. not exceed 12H installed per the for the design o Retaining walls В. C. Provide tempor being construct and attached to **REINFORCING S**

All reinforcing steel shal Reinforced Concrete' (A Construction' by CRSI a

	Deformed reinforcing grade 60 for deforme
	Welding of reinforcing engineer. Welding of 'Recommended Prace IBC table 1704.4.1 at
	All reinforcing bar be
	Lap splices made at approval by engineer
	Reinforcing dowels b grade as the specifie
	All reinforcing bars sl occurs.
	Welded wire fabric sl
•	Minimum lap of weld
0.	In addition to all the r allowance of two tons work as may be direc
1.	Submit shop drawing placement. Include b bar arrangement, spl concrete reinforceme
DEC	K CONNEC
	Connection of steel of
-	Use mechanical dec engineer prior to inst

Fasteners for attachmen A. Hilti X-HSN 24 B. Hilti X-ENP-19 Spacing of faste C. fasteners compa The contractor shall arra products to be used, pric Only trained installers sl on site and be made ava

JNDATION		ARCHITECTURALLY EXPOSED STRUCTURAL STEEL	CO	NCRE
The design of the foundation system is based on the following company:	the Geotechnical report (and any addenda) prepared by	1. Architecturally exposed structural steel (AESS) shall be fabricated in accordance with the requirements of ANSI / AISC 303-16 chapter 10.	1.	All aspect 'Building (
Company: Atlas Tech Report No. B231492g	nical Consultants, LLC	 The category for all AESS components shall be as indicated on the architectural drawings or specifications. 		Structural specificati
Dated: October 9,		 Fabrication Documents: Detailing for fabrication of AESS components. A. Provide erection documents clearly indicating which members are AESS members and the 	2.	Concrete designed State of lo
The foundation system is designed based on the		AESS category of each part. B. Include details that clearly identify all the requirements listed in sections 2.3 "Fabrication" and 3.3	3.	Portland c
Soil Bearing Capacity Frost Depth	5000 psf 30"	"Erection" of this specification for each part. Provide connections for exposed AESS consistent with concepts shown on the architectural or structural drawings.		sulfate - c sulfate ex
Equivalent Fluid Pressure Unconstrained Equivalent Fluid Pressure Constrained	36 psf/ft 57 psf/ft	C. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length and type of each weld. Identify grinding, finish and profile of welds as defined		0.45 and s other loca
Passive Pressure Friction Coefficient	496 psf/ft 0.45	herein.D. Indicate orientation of HSS seams and mill marks (where applicable).	4.	Fly ash m ignition sh The contra
	the services of a Geotechnical Engineer to perform rol to ensure that the recommendations of chapter 18 of	E. Indicate type, size, finish and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tensioned shear/bearing connections. [Indicate which	5.	Do not us
the IBC and presumptive soil loads noted above a recommendations of chapter 18 of the IBC and th	are complied with and achievable. If the le presumptive soil loads noted above are not	direction bolt heads should be oriented.]	6.	All concre
The contractor shall provide for proper dewatering	nd structural engineer shall be notified immediately. g of excavations from surface water, ground water,	F. Clearly indicate which surfaces or edges are exposed and what class of surface preparation is being used.	1.	Hard rock specificati mix desig
seepage, etc. Drainage systems, including foundation, roof and	surface drains, shall be installed as directed by the	G. Indicate special tolerances and erection requirements as noted on the drawings or defined herein.		aggregate designs s not excee
Geotechnical Report and IBC Section 1805.	conform to ASTM E 1643 and ASTM E 1745. Coordinate	 H. Indicate vent or drainage holes for HSS members. 4. Mock Up: Provide mock ups of the nature and extent indicated on the contract documents. 	8.	Structural
placement with Geotech and/or Architectural drav	vings.	A. Locate mockups on-site or in the fabricator'S shop as directed by Architect. Mockups shall be full size unless the Architect approves smaller models. Alternatively, when a mockup is not practical, the first piece of an element or connection can be used to determine acceptability.		
	nd design of all cribbing, sheathing and shoring required nd support any existing structures in accordance with all	B. Notify the Architect one week in advance of the dates and times when mockups will be available		Lean Mix
Structural Engineer should any foundations for ex	e with the new construction shall be removed. Notify the isting structures be encountered that are not shown on	for review. C. Demonstrate all applicable AESS characteristics for the specified category of AESS on the		Footings Stem Wa
the structural drawings. Footings shall be placed and estimated according	to depths shown on the drawings. Excavations for	elements and joints in the mock up.D. Build mockups using member sizes and materials indicated for final Work.		Slab on
footings shall be approved by the Geotechnical E The Contractor shall notify the Geotechnical Engli	ngineer prior to placing the concrete and reinforcing. neer when the excavations are ready for inspection. The npliance to the Owner. Should soil encountered at these	E. The mock up shall demonstrate weld quality and contouring of the welds at the aligned walls of the members.		Topping Pedesta
	ineer, modified footing elevations or footing designs may	F. The mock up shall demonstrate the specified surface preparation and finish coating.		Slab on
perimeter shall be mechanically compacted in lay	ng backfill and utility trench backfill within the building ers, to the approval of the Geotechnical Engineer. See	G. HSS members shall extend at least 6" from the joint in the mock-up.		*Table 19 Cat
Geotechnical report for requirements. Backfill by f		 H. Obtain Architect'S written approval of mockups before starting fabrication. I. Retain and maintain mockups during construction in an undisturbed condition as a standard for 		
reached full design strength. The Contractor shall from lateral loads until attaching floors are completed	l brace or protect all building and pit walls below grade etely in place and have reached full design strength. The red permits and the installation of such bracing and	judging the completed work. a. Approved mockups in an undisturbed condition at the time of Substantial Completion may become part of the completed work.		
protection.		5. Samples: Provide samples of specific AESS characteristics Samples may be small size samples or		Freez
Geotechnical report or by a geotechnical engineer recommendations of the geotechnical engineer ar		components of conventional structural steel demonstrating the following specific AESS characteristics. A. Continuous weld appearance.		thaw
concrete placement under slabs on grade. Unless otherwise noted, footings shall be centere	d below columns or walls.	B. Sharp edges ground smooth.C. Surface preparation.		
EXISTING UTILITIES: A. The contractor shall determine the location	on of all adjacent underground utilities prior to any	D. Fabrication mark removal.		
excavation, shoring, pile driving, or pier o	drilling. Any utility information shown on the plans and by the structural Engineer of record. Contractor is to	E. Weld show through.		
NEW UTILITIES:	I new below grade utilities and coordinate placement	EPOXY INSTRUCTIONS FOR ANCHORING REBAR AND		
	foundation at or adjacent to excavations and utilities.	BOLTS		Sulfa
A. Grade on either side of concrete walls sh not exceed 12H to 1V, uno. Backfill behir	nall not vary by more than 4", uno. Slope of backfill shall nd all retaining walls with free draining, granular fill	1. <u>Epoxy shall not be installed without prior approval of engineer</u> unless specifically detailed on the drawings.		
installed per the Geotechnical Report. Pr for the design of retaining walls are base	ovide for subsurface drainage. Design pressures used d on drained conditions.	2. Bars must be deformed or threaded for the full embedment depth in epoxy.		
	tive and passive soil pressures, see note 2.	3. Over-drill bar diameter as indicated by the Epoxy Manufacturer, and to the depth indicated on the structural drawings.		
	s the floor framing and sheathing completely installed	 4. Clean hole per manufacture requirements. 5. Any dirt, rust, and oil on the bars shall be removed. 		
NFORCING STEEL (FOR C	ONCRETE AND MASONRY)	6. During the epoxy mixing and application process, install in strict accordance with ICC Report and the		In con wate
`	n accordance with the 'Building Code Requirements for	Epoxy Manufacturer's specifications exactly.7. Vertical holes to be filled from the bottom are to use an epoxy gel. See also note 12.		
Reinforced Concrete' (ACI 318) and the Manual o Construction' by CRSI and WCRSI as modified by		8. The following epoxy systems are acceptable for use in fully grouted masonry: Hilti HIT-HY 270 – ICC ESR-4143		
Deformed reinforcing bars shall conform to the re- grade 60 for deformed weldable bars.	quirements of ASTM A615 grade 60 and ASTM A706	Simpson SET-XP – IAPMO UESR-0265 Dewalt AC100+ GOLD – ICC ESR-3200		Cor
engineer. Welding of reinforcing bars shall be with		NOTE: Hilti HIT-HY 270 or Simpson SET-XP may be used for hollow cell masonry assemblies pending engineer of record review and approval of each application and location.		reinforce
BC table 1704.4.1 all reinforcing to be welded sha	g Steel, Etc.', American Welding Society, AWS D1.4 and all conform to ASTM A706 grade 60 uno.	9. The following epoxy systems are acceptable for use in uncracked, cracked and seismic concrete applications:		
All reinforcing bar bends shall be made cold. Lap splices made at locations other than those sp	pecifically indicated on the drawings shall require	Hilti HIT-HY 200 – ICC ESR-3187 Simpson SET-XP – ICC ESR-2508 Dewalt Pure110+ – ICC ESR-3298		ISTRU ⁻
approval by engineer prior to any fabrication or co		Simpson AT-XP – IAPMO UESR-0263 Hilti HIT-RE 500 V3 – ICC ESR-3814 Dewalt AC200+ – ICC ESR-4027	1.	Unistrut ch
grade as the specified vertical reinforcing, uno.		10. Threaded anchor rods shall be ASTM F1554 Grade 55 unless noted otherwise.		standard A galvanized
occurs.	fication can be made when the final in-place inspection	11. Use of any other epoxy in a seismic / cracked concrete location will only be considered with an approved third party evaluation report that includes recognition of earthquake resistance in accordance with the current IBC.	2.	Welding o a minimun
Welded wire fabric shall conform to ASTM A185. Minimum lap of welded wire fabric shall be 6 inche	es or one full mesh and one half, whichever is greater.	12. Installation of adhesive anchors that are to be under sustained tension loading in horizontal to vertically	3.	Welders s
In addition to all the reinforcing steel indicated on allowance of two tons of reinforcing bars to be fur	the drawings, the contractor shall provide for an nished, fabricated and placed during the progression of	overhead orientation shall be done by a certified adhesive anchor installer (AAI) as certified through ACIand in accordance with ACI 318-2014 (section 17.8.2.2). Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation.	4.	All cold-for standards
work as may be directed by the Structural Engine		 Per ACI 318-2014 (Section 17.1.2) adhesive anchors shall be installed in concrete having a minimum age of 21 days at time of anchor installation. For installation sooner than 21 days consult adhesive 	5. 6.	All screws All bolts sl
placement. Include bar sizes, lengths, material, gr bar arrangement, splices and laps, mechanical co	rade, bar schedules, stirrup spacing, bent bar diagrams, ponnections, tie spacing, hoop spacing, and supports for	 manufacturer. 14. If temperature of base material at time of adhesive installation is at 45 degrees (Fahrenheit) or less, an 	7.	Manufactu
concrete reinforcement.		"acrylic" (cold weather) adhesive is required.	8.	All strut sy
CK CONNECTION, MECHAN	NICAL FASTENERS	FACADE / VENEER SYSTEMS	9.	All fittings A576, A36
Connection of steel deck diaphragms shall be as Use mechanical deck fasteners in lieu of welds or	specified on plan, unless approved otherwise. nly when specified on plan or when approved by the	1. Provide out-of-plane anchorage for all Facade / Veneer systems. The contractor is to coordinate the appropriate anchorage configuration with the Facade / Veneer system referenced within the construction	10.	Any subst Architect o
engineer prior to installation.		documents. Such considerations would include, but not be limited to: structural support framing, sheathing, rigid insulation, air gaps, joint layouts, etc.		
	g 3/8 in.) ICC ESR-2197 & ICC ESR-2776	2. Anchors are to be sized and spaced as required to resist seismic loads in accordance with ASCE 7, Chapter 13.		
	d on plans, UNO. Note that additional mechanical	3. Refer to architectural details for any further requirements.		
fasteners compared to welds might be re The contractor shall arrange for manufacturer's fi	equired. eld representative to provide installation training for all			
products to be used, prior to commencement of w				
on site and be made available to the EOR and ins				

The contractor shall submit a pin placement plan to the EOR.

Sidelap connection type and spacing shall be as indicated on plans.

ONCRETE

specifications.

All aspects of work pertaining to the concrete construction shall be in accordance with ACI 318-14, 'Building Code Requirements for Structural Concrete' and the latest edition of 'Specifications for Structural Concrete for Buildings', ACI 301, with modifications as noted on the project drawings and\or

Concrete mix designs shall be submitted to the Structural Engineer for review. All mix designs shall be designed by a qualified testing laboratory and shall be wet stamped by a Civil Engineer licensed in the State of Idaho. Base design mix per compliance requirements of ACI 318-14 Section 26.4.

Portland cement shall conform to ASTM C150 Type I or II concrete minimum, use Type V where the concrete is in contact with soil and to a height 12" min. above the soil. Concrete that will be exposed to sulfate - containing solutions shall comply with IBC Section 1904.3. Severe (S2) and Very Severe (S3) sulfate exposures as identified in the project geotechnical report, the water cement ratio shall not exceed 0.45 and shall not exceed 0.50 for Moderate (S1) sulfate exposure. Type II cement shall be used at all other locations in the structure.

Fly ash may be used in concrete mixes. The fly ash shall conform to ASTM C618 Class F. The loss of ignition shall be limited to 2%. The addition rate for fly ash shall be limited to 15% of the cement weight. The contractor shall submit all certificates showing the fly ash is in accordance with the above criteria. Do not use concrete or grout containing chlorides.

All concrete exposed to freeze - thaw cycles shall contain 6% +/- 1% of entrained air.

Hard rock concrete - aggregate shall conform to all requirements and tests of ASTM C33 and project specifications. Exceptions may be used only with approval of the Structural Engineer. Provide concrete mix design with proven shrinkage characteristics of less than 0.0005 inches/inch. Lightweight concrete aggregate shall be in accordance with ASTM C330 and project specifications. Lightweight concrete mix designs shall be tested prior to approval, for shrinkage in accordance with ASTM C157. Shrinkage shall not exceed 0.0005 inches / inch.

Structural concrete 28-day strengths & types are as follows:						
Location of Concrete	Strength, psi	Туре	EXPOSURE CATEGORY/CLASS*		SS*	
			F#	S#	W#	C#
Lean Mix	3000	Hard Rock	F0	S0	W0	C1
Footings	4000	Hard Rock	F1	S0	W0	C1
Stem Walls	4500	Hard Rock	F2	S0	W0	C0
Slab on Grade (Lowrise)	4000	Hard Rock	F0	S0	W0	C1
Topping Slab	5000	Hard Rock	F1	S0	W0	C2
Pedestal	4000	Hard Rock	F0	S0	W0	C1
Slab on Metal Deck	3500	Hard Rock	F0	S0	W0	C0

*Table 19.3.1.1 - Exposure Categories and Classes

Category	Class	Condition	
	F0	Concrete not exposed to freezing-and-thawing cycles	
Freezing and	F1	Concrete exposed to freezing-and-thawing cycles with limited exposure to water	
thawing (F)	F2	Concrete exposed to freezing-and-thawing cycles with frequent exposure to water	
	F3	Concrete exposed to freezing-and-thawing cycles with freque exposure to water and exposure to deicing chemicals	
		Water-soluble sulfate (SO ₄ ²⁻) in soil, percent by mass (1)	Dissolved sulfate (SO ₄ ²⁻) in water, ppm(2)
	S0	SO ₄ ²⁻ < 0.10	SO4 ²⁻ < 150
Sulfate (S)	S1	0.10 ≤ SO₄²- < 0.20	150 ≤ SO₄²- < 1500 or seawater
	S2	$0.20 \leq SO_4^{2-} \leq 2.00$	1500 ≤ SO₄²- ≤ 10000
	S3	SO4 ²⁻ > 2.00	SO4 ²⁻ > 10000
In contact with	W0	Concrete dry in service water and low perme	Concrete in contact with eability is not required
water (W)	W1	Concrete in contact with water and low permeability is required	
	C0	Concrete dry or protected from moisture	
Corrosion protection of reinforcement (C)	C1	Concrete exposed to moisture but not to an external source of chlorides	
	C2	Concrete exposed to moisture and an external source of chlorides from deicing chemicals, salt, brackish water, seawater, or spray from these sources	

NISTRUT

Unistrut channels or approved equal shall be fabricated from structural grade steel conforming to ASTM standard A1011 SS GR 33, or A653 GR 33. All channels shall have either a pre-galvanized or hot-dipped galvanized finish.

Welding of steel structural members connections shall be done using fillet, plug, butt or seam welds with a minimum 3/32" uno. Use AWS type 6013 welding rods. Welders shall be qualified in light ga. welding.

All cold-formed steel construction shall be in accordance with the latest American Iron and Steel Institute standards and guidelines.

All screws shall be placed 3/4" min. from any edge of strut.

All bolts shall be placed 1 1/2" min. from any edge of strut.

Manufacture of strut shall not have less than 10 years experience in manufacturing strut systems.

All strut system components must be supplied by a single manufacturer.

All fittings shall be fabricated from steel conforming to one of the following ASTM specifications: A575, A576, A36, of A635.

Any substitutions of product or manufacturer must be approved in writing ten days prior to bid date, by Architect or Engineer of record.

- The modulus of elasticity of concrete, shall be tested in accordance with ASTM C469 for framed concrete slabs and beams and shall be at least the value given by the equations in section 19.2.2.1 of ACI 318 for the specified concrete 28-day strength.
- All concrete shall be ready mix concrete and shall be mixed and delivered in accordance with ASTM C94 or ASTM C685.
- Dry pack or grout under baseplates, sill plates, etc., see specifications. Strength requirements are as required for concrete. Minimum grout strength shall be f'c = 7,000 psi.
- Concrete forms shall be laid out and constructed to provide the specified cambers indicated on the
- structural drawings. Submit shop drawings to Architect/Structural Engineer indicating locations of concrete joints for review prior to placing concrete. Place joints at locations to minimize effects of shrinkage as well as being placed
- at points of low stress. Concrete placement shall be in accordance with ACI standard 304 and project specifications. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove laitance and thoroughly wet and remove standing water in construction joints before placing new concrete. At vertical joints, slush with a coat of neat cement before placing new concrete.
- Roughen concrete surface to a full amplitude of 1/4 inch where masonry walls intersect concrete or where new concrete interfaces with existing concrete.
- If columns and walls are placed with a floor, two hours must elapse between end of column or wall placement and beginning of the floor placement.

Location of Concrete	Minimum Concrete Cover	
Concrete cast against and permanently exposed to earth	3"	
Concrete exposed to earth or weather: #6 through #18 bar #5 bar and smaller	2" 1 1/2"	
Concrete not exposed to weather or in contact with ground, UNO:		
Slabs, Walls, Joist:		
#14 and #18 bar.	1 1/2"	
#11 bar and smaller.	3/4"	
Beams, Columns:		
Primary reinforcing, ties		
stirrups, spirals	1 1/2"	
Slab on grade:	2" clear from top	
Precast concrete (Manufactured under plant	See ACI 318-14	
control conditions):	Table 20.6.1.3.3	
Prestressed concrete coverage:	See ACI 318-14	
-	Table 20.6.1.3.2	

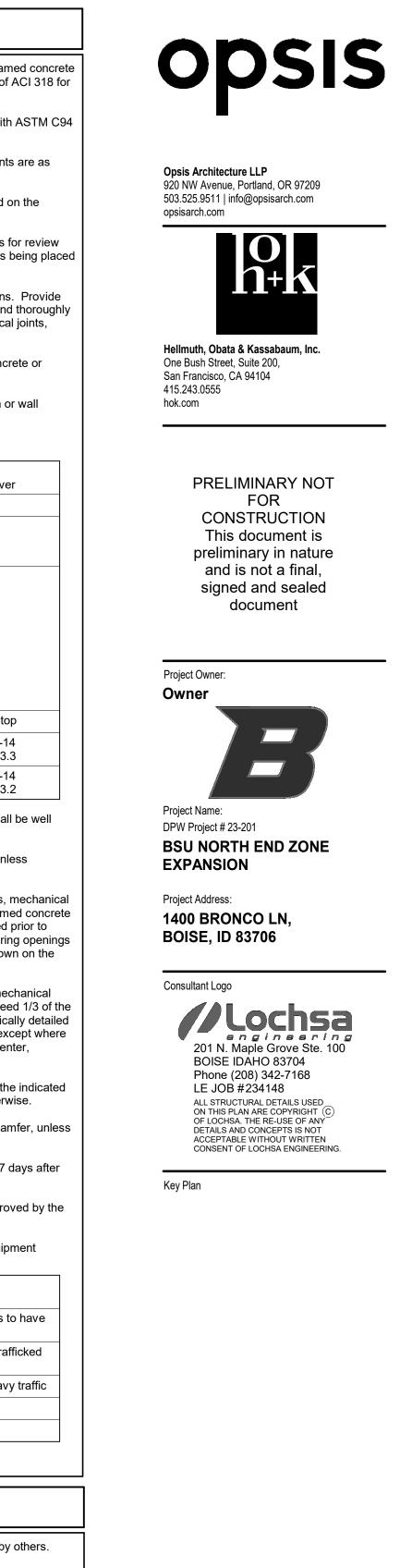
- Prior to concrete placement, all reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position. Mechanical pipes or electrical conduit shall not pass through concrete columns or beams unless
- Unless otherwise indicated in the mechanical or electrical drawings or project specifications, mechanical pipes and electrical conduits which pass through slab on grade, concrete on steel deck, framed concrete floors and walls do not require sleeves. If sleeves are required, the sleeves shall be installed prior to placing concrete. Do not cut any reinforcing which may interfere with sleeve placement. Coring openings in concrete is not permitted. Notify the Structural Engineer in advance of conditions not shown on the structural drawings.
- With the exception of slabs on grade and concrete on steel deck, the outside diameter of mechanical pipes and/or embedded electrical conduits (other than those passing through) shall not exceed 1/3 of the slab thickness and shall be centered between the top and bottom reinforcing, unless specifically detailed otherwise. Concentrations of mechanical pipes and/or electrical conduits shall be avoided except where detailed openings are provided. Conduit and pipe shall be spaced at 3" or 3 diameters on center, whichever is larger.
- For slabs on grade and concrete on steel deck no pipes or conduits shall be placed within the indicated concrete slab thickness and shall be located below he slab unless specifically detailed otherwise.
- The projecting corners of columns, beams, and walls, etc., shall be formed with a 3/4 in. chamfer, unless otherwise noted on architectural drawings or specifications.
- Maintain concrete above 50 degrees Fahrenheit and in a moist condition for a minimum of 7 days after placement unless otherwise accepted by Architect/Structural Engineer.
- Any curing compounds used on concrete that is to receive a resilient tile finish shall be approved by the Finish Applicator before use. Contractor to coordinate floor flatness and levelness with architectural drawings and/or equipment

manufacturer's requirements. The following table may be used as a minimum:				
Composite flatness, FF	Composite levelness, FL	Typical applications		
20	15	Noncritical: mechanical rooms, nonpublic areas, surfaces to thick-set tile, parking structure slabs		
25	20	Carpeted areas of commercial office buildings or lightly-traff office/industrial buildings		
35	25	Thin set flooring or warehouse floor with moderate or heavy		
45	35	Warehouse with air-pallet use, ice, or roller rinks		
>50	>50	Movie or television studios		

ELEVATORS

specifically detailed.

1.	Elevator installation is considered a deferred submittal and shall be designed and certified by
2.	All information regarding elevators shown on the project drawings are for bidding purposes or
3.	Prior to the installation, Lochsa Engineering reserves the right to review the Elevator Shop Dr Submittals and modify the structural documents accordingly.
4.	 As a minimum, the elevator supplier shall coordinate with the General Contractor and the Arc Record (AOR) for the project and will confirm or provide the following: A. Required elevator pit depth – where applicable. B. Horizontal clearances within the elevator hoist-way in both directions. C. Method of attachment to the structural elements located on the structural drawings. D. Minimum vertical clearance (i.e., overrun height) above the top floor. E. Machine room location, if any, as well as required vertical clearances. F. Locations for support of vertical elevator guide rails as well as required design loads geographical area. G. Location of elevator hoist beams as well as required design loads. I. Sump Pump/Pit Requirements shall be coordinated by AOR and Elevator Manufactu
5.	It is imperative that this information is finalized and approved prior to bid document completion
6.	Elevator supplier is responsible for the design and installation of the elevator and associated components, in compliance with all requirements of the Authority Having Jurisdiction (AHJ).



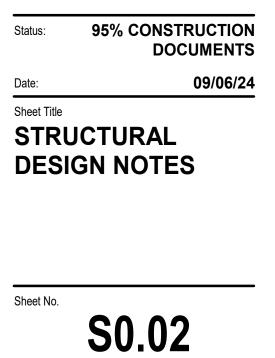
nly. Drawings

chitect of

based on

urer.

THESE DRAWINGS ARE THE PROPERTY OF OPSIS ARCHITECTURE LLP AND ARE NOT TO BE USED OR REPRODUCED IN ANY MANNER, WITHOUT PRIOR WRITTEN PERMISSION. Revisions to Sheet No. Revision Date



4900-01

Job No.

STRUCTURAL STEEL

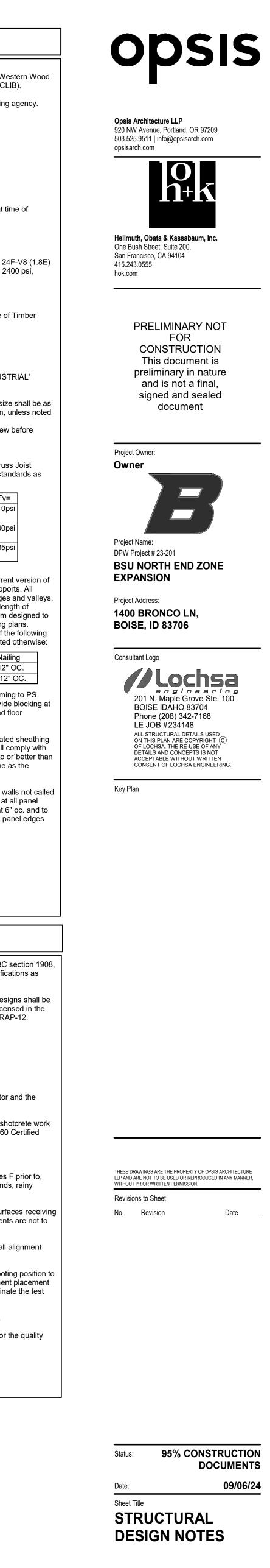
1.	Submit shop drawings to structural engineer indicating fabrication of structural steel components. Include details of cuts, connections, splices, camber, holes and other pertinent data. Include embedment drawings. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length and type of each weld. Indicate type, size and length of bolts distinguish between shop and field bolts. Identify retensioned and slip-critical high strength bolted connections.	8.	STEEL A.	DECK: Deck shall be co grade 33 minim indicated on the uno.
2.	Designing, detailing, fabrication, and erection of structural steel shall be in accordance with the American Institute of Steel Construction (latest edition and supplements). See general notes for additional information.		В.	Minimum bearin minimum bearin drawings and in
3.	Structural steel not exposed to weather shall be left unpainted unless noted otherwise in the architectural drawings and/or specifications.		C.	Minimum deck o welds at 12" oc.
4.	MATERIALS: A. Structural Steel Shapes Shall Conform to the following: Structural steel "W" shapes shall comply to ASTM Standard A992.		D.	See architectura deck openings s framing requirer
	B. Angles, plates "M" and "S" shapes, channels and bars shall comply to ASTM Standard A36, unless noted otherwise.		E.	unless specifica
	C. Steel pipe shall comply to ASTM Standard A53 grade B (Fy = 35 ksi).			from steel joists mechanical or p
	D. Rectangular and square Hollow Structural Sections (HSS) shall comply to ASTM Standard A500 grade B (Fy = 46 ksi).		F.	Steel deck man
	 E. Round Hollow Structural Sections (HSS) shall comply to ASTM Standard A500 grade B (Fy = 42 ksi). 		G.	Steel deck units units with concre deck units shall
	F. Raise - Pattern floor plates shall comply to ASTM A786.		Н.	All exterior expo zinc coated stee
	G. Steel grating by the manufacturer, supplier, or contractor designed for loads and deflections as required by the adopted code and as indicated, unless noted otherwise. As a minimum, grating is to be designed for a 300# point load, a uniform live load of 100 psf and a maximum deflection of L/360 or 1/4". Submit style and layout for approval.			G60 with the pro accessories are welds on galvar rich primer.
5.	 WELDING: A. All welding shall comply to the American Welding Society Standard (AWS D1.1 and AWS D1.8). All welded joints shall be detailed as indicated by the prequalified joint details in the Structural Welding Code. 	9.	FIREP A.	ROOFING: The application contractor. The any additional lo
	B. Weld lengths called for on plans are the net effective length required. Weld size shall be AISC minimum unless a larger size is noted. All welds shall use minimum E70XX electrodes.		В.	fireproofing. Structural framin
	C. Welding tests and inspections, see specifications.		C.	proofing per me Structural floor s
	D. Filler material covered in ANSI/AWS D1.1 TABLE 3.1.		0.	proofing. Conta
6.	BOLTING: A. Anchor bolts and rods shall conform to ASTM F1554, grade 55 unless noted otherwise.		D.	For fireproofing
	B. Bolts shall conform to ASTM A325-N TYPE 1 less than 1 1/2" dia. uno., see also note 'G' below.		E.	Do not prime pa
	C. Weather or Corrosion Resistance bolts are required to conform to A325-N Type 3.	10.	ARCH 1.	TECTURALLY EX Architecturally e requirements of
	D. Nuts shall conform to ASTM A563.		2.	All welded joints
	E. Washers shall conform to ASTM F436. Washers used in load transfer or subject to direct tension shall conform to ASTM F844.		3.	See Architectura
	F. Threaded rods shall comply to ASTM A36 uno.		lo oddi	mockup for revi
	G. Except as subsequently noted, high strength bolts need not be tightened beyond the snug-tight condition, as defined in section 8.1 of the specifications for structural joints using ASTM A325 or A490 Bolts. For connections subject to direct tension, connections for braced frames, and other connections shown or noted on the plans as SC (slip critical) or fully tensioned, bolts shall be tightened by one of the methods described in section 8.2 and to the minimum tension specified in section 8.2, Table 8.1.	11.	be finis In the e	tion to the steel in hed, fabricated ar event the allowand o the owner for th
	H. Bolt holes in steel shall be 1/16 inch larger than nominal size of bolt used, except anchor bolt holes which may be 1/8" larger or as noted on drawings.			
7.	ANCHOR STUDS, SHEAR STUDS, AND DEFORMED ANCHORS: A. Shall be manufactured by Nelson Stud Welding Co. or equal.			
	 B. Headed studs (shear and anchor) shall be made of material conforming to ASTM A108. 			
	C. Deformed anchors shall be made of material conforming to ASTM A496.			
	 Studs and anchors shall be welded according to manufacturer's recommendations. Manual arc (stick) welding of headed studs and/or deformed anchors is not allowed: Paragraphs 7.5.5 to 7.5.5.6 of AWS D1.1, are deleted. 			
DE	AOLITION NOTES] PC	OST IN	ISTALLE
1.	The Contractor shall verify all dimensions prior to start of the demolition. The Architect shall be notified of any discrepancies or inconsistencies.	1.		nical anchors sha drawings.
2.	Structure noted in the drawings as existing shall be field verified by the contractor and any discrepancies	2.		Irill as indicated by
3.	noted shall be reported to the Architect/Structural Engineer. Do not scale the drawings.	3.	Clean	hole per manufac
4.	Notes and details on the drawings shall take precedence over these general notes, typical details, and the project specifications.	4.		lowing expansion c concrete applica Simpson Strong
5.	Typical details and schedules indicated may not be specifically referenced on the drawings. The contractor is responsible to determine where each typical detail or schedule applies. If locations are found where no typical detail, typical schedule, or specific detail applies, notify the Architect/Structural Engineer.	5.	Α.	Hilti Kwik Bolt T Dewalt Power-S lowing expansion Hilti Kwik Bolt 3
6.	All work shall conform to the minimum standards of following codes:	6.	B. The fol	Dewalt Power-S
7.	The 2018 edition of the International Building Code (IBC), including City of Boise amendments and other regulating agencies which have authority over any portion of the work, and those codes and standard listed in these notes and in the project specifications.	0.	concre A. B.	lowing screw type te applications: Simpson Titen I Hilti KH-EZ – IC
8.	See the architectural drawings for the following: Size and location of door and window openings, size and location of interior and exterior non-bearing partitions, size and location of concrete curbs, floor drains, slopes, depressed areas, changes in level, chamfers, grooves, inserts, etc., size and location of floor and roof openings, floor and roof finishes, stair framing and details, dimensions not shown on the structural drawings, ceiling assemblies, exterior wall assemblies.	7.		ITW RedHead Dewalt SCREW lowing drop in typ hollow plank cond Hilti HDI-P TZ – Dewalt Mini-Und
9.	See mechanical, plumbing, and electrical drawings for the following: Pipes, sleeves, hangers, trenches, wall floor and roof openings, duct penetration etc., except as shown or noted, electrical conduit runs, boxes, outlets in walls and slabs, concrete inserts for electrical, mechanical or plumbing fixtures, size and location of machine or equipment bases, anchor bolts for mounts.	8.	А. В. С.	lowing screw type Simpson Titen I Hilti KW-EZ - IC DeWalt SCREV
10.	Observation visits (site visits) by representatives of Architect/Structural Engineer do not include inspection of construction means and methods. Site visits during construction are not continuous and detailed inspection services which are to be performed by others. Observations are performed solely for the purpose of determining if the Contractor understands design intent shown in the contract drawings.	9.	manufa	ation and inspectic acturer's instructic NICAL OF
	Observations do not guarantee Contractor's performance and are not to be construed as supervision or verification of construction.			al Contractor shal
11.	All specifications and codes noted shall be the latest approved editions and revisions by the governmental agency having jurisdiction over this project.		trash c	and all subcontra
12.	Contractor shall investigate the site during clearing and earth work operations for filled excavations or buried structures such as cesspools, cisterns, foundations, utilities, etc. If any such structures are found, the Structural Engineer shall be notified immediately.	2.	Coordi	nation shall be co
13.		1 L \ A Z /		0 7 0 0 0
10.	Construction materials shall be spread out when placed on framed floors or roofs. The construction material load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where structure has not attained design strength.			STOPS

Coordination sh	all be
ATERSTOR	Sc
Provide Flexible 91/2	PVC
Waterstop shall reclaimed mater	
Physical Proper a. b. c. d. e.	ties: (tear i ultim tensi stiffn spec
Provide factory and transitions.	
Install per manu	factur

	MASONRY	WO
cold rolled steel factory primer painted uno., and conforming to ASTM A 1008 mum (minimum yield of 38ksi), with the profile, depth, and uncoated thickness as he drawings. All metal accessories are to have the same thickness as the decking,	 All reinforced masonry materials and construction shall conform to the following: A. International Building Code Chapter 21 B. Building Code Requirements for Masonry Structures TMS 402 C. Specification for Masonry Structures TMS 602 	1.
ring of steel deck on supports shall be 2 inches. All 3" deep steel deck shall have ring of 3". Sheets shall be attached to all supporting steel members as indicated on in accordance with manufacturer's recommendations. k connection shall be 7-1/2" puddle welds per sheet and 3/16" button punch or	 All masonry block shall conform to ASTM C90 grade N-1, F'm=2000 psi min and a minimum block net compressive strength of 2000 psi, per IBC Section 2105.2 and tested in conformance with IBC Section 2105.2.2.2 Mortar shall be Type S conforming to ASTM C 270 and Articles 2.1 (materials) and 2.6A (mixing) of TMS 602, IBC Section 2105.2 and project specifications. 	
ural, mechanical, electrical, etc., for sizes and locations of deck openings and for s smaller than 12" not shown on the structural drawings. See general details for rements at deck openings. Openings larger than 12" shall not be placed in deck	 Grout shall be fine or coarse grout and shall conform to Article 2.2 (materials) and 2.6B (mixing)of TMS 602, and ASTM C476 or has a compressive strength at 28 days that meets or exceeds F'm but shall not be less than 2000 psi as tested per ASTM C1019. 	
cally shown on the structural drawings. g loads from metal deck. Provide engineered structural system to hang all loads sts or beams. This includes but is not limited to metal stud soffit or ceiling framing, r plumbing equipment, etc.	5. All masonry materials shall be submitted to the Structural Engineer for review, prior to ordering materials, in accordance with Section 1.5 of the TMS 602. Additionally, all mix designs shall be tested/designed by a qualified testing laboratory and stamped by an engineer licensed in the state the project is located.	
anufacturers shall submit shop drawings for approval. its with concrete fill shall be continuous over three or more spans. If steel deck crete fill span less than 3 spans, the deck units shall be shored, uno. steel roof	 All Masonry block shall be laid in Running Bond as defined in TMS402. Stack Bond <u>is not allowed</u> unless specifically specified on plans. Refer to architectural drawings for surface and height of units and joint type. Solid grout all masonry below grade, all cells containing reinforcing and all horizontal bond beams and 	
all be continuous over two or more spans, uno. posed or high moisture area decks are to be galvanized. Galvanized deck to be teel per ASTM A653, grade 33 minimum (minimum yield of 38 ksi) and ASTM A653, profile, depth and uncoated thickness as indicated on the drawings. All metal	 lintels for extents indicated unless noted otherwise on the drawings. In seismic design category D and above solid grout all masonry walls. Grout shall be placed in accordance with TMS 602 Section 3.5 and Table 7. 	
are to have the same thickness as the decking, uno. Upon completion of erection, all ranized steel deck areas shall be de-slagged, cleaned and touched-up with a zinc	 Masonry reinforcing bars shall be per notes under 'Reinforcing Steel'. Placement of reinforcing bars, ties and anchors shall conform to TMS 602 Section 3.4 unless noted otherwise on drawings. See also sheet S5.11. 	
on of the fireproofing to the steel members and steel deck is the responsibility of the ne contractor must enforce the requirements of the manufacturer and not impose I loads, including construction live loads, during the application and curing of the	 11. Unless noted otherwise on plans, minimum wall reinforcement shall be: A. #5 bar vertical centered in wall at 16 inches on center. Provide (2) #5 continuous vertical bars at all wall ends, corners, intersections and each side of control joints. B. Provide #5 bar each face at jambs of openings in walls. C. Provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal in a continuous 8 inch deep minimum bond beam at all floor and provide (2) #5 bars horizontal bars at a continuous 8 inch deep minimum bars at a continuous 8 inch deep mini	
ming members have been designed to accommodate a maximum of 3.0 plf of fire member. Contact engineer if proposed fireproofing system exceeds this value. or system has been designed to accommodate a maximum of 2.0 psf of fire ntact engineer if proposed fireproofing system exceeds this value. ng requirements, specifications and thickness, refer to the Architectural drawings. paint or galvanize steel or decking where fireproofing is to be applied.	 roof lines and provide (2) #5 bar horizontal in a continuous 8 inch deep minimum bond beam at 48 inches on center between floor and roof lines, above roof lines and at top of parapets. D. Provide (2) #5 bars continuous at the bottom of a 24 inch deep solid grouted masonry lintel above openings in wall and extending 24 inches beyond edges of openings. E. Provide #5 bar horizontal in a continuous 8 inch deep minimum bond beam at sills of openings in wall and extending 24 inches beyond edges of openings. Unless noted otherwise on plans provide (6) #5 bars, 3 each face in 3 grouted cells centered on beams for beams bearing at an angle to wall and (6) #5 bars, 3 each face in 3 grouted cells at end of wall for beams bearing at wall ends. 	2.
EXPOSED STRUCTURAL STEEL y exposed structural steel (AESS) shall be fabricated in accordance with the of AISC Section 10. hts shall ground smooth uno.	12. Unless noted otherwise on plans, masonry control joints shall be located such that no straight run exceeds 24'-0" and shall not be located within 24 inches of the edge of an opening in the masonry or within 24 inches of a beam bearing location. If masonry control joints are not shown on the plans, the contractor shall provide a masonry control joint shop drawing layout for review and acceptance from the architect and structural engineer prior to beginning masonry construction.	
ural drawings for additional requirements if no requirements are shown provide eview prior to commencing fabrication. included on the drawings, the contractor shall provide a 5% allowance of steel to	 13. Coring openings in masonry construction is not permitted without prior approval from the architect and structural engineer. 14. No pipes or electrical conduit shall pass through masonry lintels unless specifically detailed in plans. 	
and installed during the progression as may be directed by the structural engineer. ance is not completely exhausted, <u>the contractor should be prepared to issue a</u> the remaining portion of the allowance.	15. Mechanical pipes and electrical conduits which pass through masonry walls do not require sleeves, unless otherwise indicated in the project specifications, mechanical and/or electrical drawings. If sleeves are required, install sleeves before grouting. Do not cut any reinforcing which may interfere with sleeve placement. Notify the Structural Engineer in advance of conditions not shown on the structural drawings.	
	16. Refer to architectural drawings for the following items: Jointing Plan, Surface and height of units, Laying pattern, Mortar joint finishing, weep hole spacing and locations, etc. COLD-FORMED STEEL STRUCTURAL MEMBERS	
	1. GENERAL FRAMING A. Steel structural studs 54 mil and thicker shall have yield strength Fy = 50 ksi.	
	 B. All cold-formed steel construction shall be in accordance with the latest American Iron and Steel Institute standards and guidelines. C. Typical gap at slotted slip track shall be 3/4", uno. 	
ED MECHANICAL ANCHORS	D. Typical slotted slip track shall be 43 mil min. for exterior walls, uno. and 33 mil min. for interior walls, uno. Metal studs shall meet requirements and structural properties of S.S.M.A (ICC ESR-3064P) or approved equal.	
hall not be installed without prior approval of engineer unless specifically detailed	 E. For cold-formed steel framing, track and header sizes, spacing and locations, see plans. For conditions not shown, notify engineer. 	
by the Anchor Manufacturer, and to the depth indicated on the structural drawings.	 F. For all interior and exterior wall finishes, see architectural. G. Notching or coping of studs <u>is not</u> allowed, unless specifically noted. 	
acture requirements. on type anchors are structurally acceptable for use in uncracked, cracked, and ications:	H. For all bearing conditions, ends of studs <u>must</u> seat firmly in runner track with full contact between the stud and the adjoining track web. For additional information see note 1.K.	
ong-Bolt 2 Wedge Anchor – ICC ESR-3037 t TZ – ICC ESR-4266 r-Stud+ SD2, SD4, SD6 – ICC ESR-2502 on type anchors are structurally acceptable for use in fully grouted masonry:	I. Framing design assumes all cladding is uniformly laterally attached to each framing member and is limited to a uniform distribution of load to the framing member. The design does not include review of effects of local forces resulting from the attachment of any cladding (brick ties,attachment clips, etc.).	SHC
t 3 – ICC ESR-1385 r-Stud+ SD1 – ICC ESR-2966 /pe anchors are structurally acceptable for use in uncracked, cracked, and seismic	 J. Punch outs shall not be located within 6" from any support, bearing location or applied load. K. Non-bearing continuous track splices are to be screwed or welded as shown in the construction documents. Wire tying of stud framing components shall not be permitted. L. For ledger track conditions, the supported framing is to be within an 1/8" of track ledger web. 	1. 2.
n HD – ICC ESR-2713 ICC ESR-3027 d Tapcon – ICC ESR-2202 EW-BOLT+ – ICC ESR-3889 ype anchors are structurally acceptable for use in uncracked, cracked, and seismic	 M. For exterior and interior non-load bearing walls use steel structural wall bridging spaced evenly at 8'-0" oc. max., uno. Contractor, at their own option, may use continuous cold rolled channel bridging centered in stud punch outs. Steel structural stud wall bridging shall be a minimum same size and mil shown on the drawings, through stud punch outs. 	3. 4.
oncrete applications: Z – ICC ESR-4236 Jndercut + – ICC ESR-3912 /pe anchors are structurally acceptable for use in fully grouted masonry:	N. For exterior and interior load bearing walls use steel structural wall bridging spaced evenly at 4'-0" oc. max., except as specifically noted on the drawings. Contractor, at their own option, may use continuous cold rolled channel bridging centered in stud punch outs. Steel structural stud wall bridging shall be a minimum same size and thickness shown in the drawings, through stud	5.
h HD - ICC ESR-1056 ICC ESR-3056 EW-BOLT+ - ICC ESR-4042 stion of post installed anchors shall be performed as required by ICC reports and	 punch outs. O. Contractor to coordinate insulation inside built-up with architectural drawings prior to field erection. P. This drawing package is being submitted for approval only. Any materials ordered or constructed 	
PENINGS	 a This drawing package is being submitted for approval only. Any materials ordered or constructed based on this drawing package prior to final approval from the Architect and Engineer-of-Record is at risk of the framing contractor. Framing contractor is advised to obtain final approved drawing package prior to ordering material and/or construction. WELDING 	6.
nall coordinate locations of all mechanical openings, including, but not limited to, g shafts and ventilation shafts. Coordination shall include the Architect of Record tractors, including mechanical subcontractors, and joist and decking suppliers. completed and approved prior to bid document completion.	 A. Welding of steel structural members connections shall be done using fillet, plug, butt or seam welds with a minimum as specified in AWS D1.3. Use 70 ksi filler material. B. Welders shall be qualified in cold-formed steel welding. All welding shall be performed in accordance with the latest version of AWS D1.3 specifications for Welding of Sheet Steel Structures. 	7. 8.
	 C. Minimum weld throat thickness (t) must meet or exceed the base steel thickness of the thinnest connected part, unless noted otherwise. 3. FASTENERS AND HARDWARE 	
or TPE ribbed center bulb waterstop with the following:	A. For exterior walls use #10 Hilti self drilling screws – ICC ESR-2196 or approved equal at spacing noted on plans and details, uno.	
	 B. For interior walls use #8 Hilti self drilling screws – ICC ESR-2196 or approved equal at spacing noted on plans and details, uno. C. Anchor cold-formed steel framing to base structure with approved expansion bolts, epoxies, screws, actuated fasteners, etc. as specified in the construction documents. For additional information see the appropriate fastener notes. 	
med from virgin material and shall not contain any pigments.	D. Screws spacing and edge distance shall be 5/8" min., uno.	
Minimum) resistance 200 lbs./in. ate elongation 350%	 E. Typical top of parapet shall be 1 1/4" track x same mil stud depth as wall with #10 screw at each side of each stud, uno. F. Specified hardware shall be The Steel Network or approved equal installed per manufacturer's 	
le strength 2000 psi ess in flexure 600 psi ific gravity 1.45 (max.) fabrications for all changes of direction, intersections	 F. Specified hardware shall be The Steel Network or approved equal installed per manufacturer's recommendations, uno. G. All fasteners to cold-formed steel framing are to have a minimum three thread penetration into the supporting member. 	
fabrications for all changes of direction, intersections intersections		1

OOD				
GENE A.	RAL FRAMING All wood framing details not shown otherwise shall be constructed to the minimum standards of section 2308 of the IBC.	3.	SOLID A.) SAWN LUMBER Solid sawn lumber shall comply with the latest edition of the grading rules of the We Products Association (WWPA) or the West Coast Lumber Inspection Bureau (WCL
В.	Coordinate the size and location of all openings with mechanical and architectural drawings.		В.	All solid sawn lumber shall be stamped with the grade mark of an approved grading Solid sawn lumber shall have the following minimum grades:
C.	Provide double joists under all parallel partitions that extend over more than half the joist length and around all openings in floors or roofs uno. Provide solid blocking at all bearing points.			2x4 Studs and Blocking DF-L No. 2 2x6 Stude and Blocking DF-L No. 2
D.	All wood framing in direct contact with concrete or masonry, exposed to weather, or that rest on exterior foundation walls and are located within 8" of earth, shall be pressure-treated with an approved preservative, see IBC section 2303.1.9. Cut or drilled sections of treated material shall be treated with an approved preservative per IBC section 2303.1.9. See IBC section 2304.12 for additional requirements.			2x6 Studs and BlockingDF-L No. 2Joist, Top Plates, and BlockingDF-L No. 24x Beams and PostsDF-L No. 26x Beams and PostsDF-L No. 1
E.	Treated Wood shall be selected to prevent corrosion of metal fasteners and hangers.		C. D.	Interior nonbearing partitions may be DF-L Stud Grade. All exposed architectural lumber to be KILN DRIED (KD) uno. Moisture content at tir
F.	Allow for 1/2" of wood shrinkage/compression at each level (including foundation). Values are cumulative for the height of the building. Building systems such as mechanical, electrical, plumbing, fire sprinklers, etc. shall have flexible components that account for the potential wood shrinkage/compression. Architectural finishes shall also account for the potential wood shrinkage/compression.	4.	E.	All exposed architectural fumber to be KIEN DKIED (KD) thio. Moisture content at the manufacturing 19 percent or less. All lumber to be supplied with proper grade stamp to project. D-LAMINATED BEAMS (GLB)
G.	All stud wall top plates shall be double members spliced with 48" minimum lap with minimum of (24) 16d nails each end of splice – 48 nails total, unless noted otherwise.		A.	GLB shall be Douglas Fir, combination 24F-V4 (1.8E) at simple span beams and 24 at cantilevered or continuous beams with the following minimum properties: Fb = 24 Fv = 265 psi, Fc (Perpendicular) = 650 psi
H.	Do not notch joists, rafters or beams, except where shown in details. Obtain engineer's approval for any holes or notches not detailed. Holes through sills, plates, studs and double plates in interior, bearing and shear walls shall not exceed 1/3 the plate width. Use bored holes located in the center of the stud or plate.		В. С.	All beams shall be fabricated using waterproof exterior type adhesive. Fabrication and handling shall be in accordance with the latest American Institute of Construction (AITC) standards and ASTM D3737.
I.	Cross-bridging or solid blocking shall be spaced per the more stringent of the lumber manufacturer's recommendations or the following: a. Rafters greater than 8 inches in depth = 10 ft. oc. maximum b. Floor joists greater than 4 inches in depth = 8 ft. oc. maximum		D. E. F.	All beams shall bear the grade stamp and AITC stamp and certificate.All beams shall have standard camber uno. on the drawings.Unless noted on the drawings or specified by the architect, beams shall be 'INDUST
J. K.	Moisture content of wood products shall not exceed 19% by weight. All lumber shall be protected from weather prior to installation. Do not store lumber in direct contact with ground.		G.	appearance grade. All laminations for 'GLU-LAM' beams shall be 1 1/2 inches thick and the overall size shown on the drawings. All laminations shall be parallel to the bottom of the beam, u otherwise on the drawings.
FASTI A.	ENERS AND HARDWARE Minimum nailing, unless otherwise noted, shall conform to table 2304.10.1 of the 2018 IBC. All nails shall be common, uno. Connections listed are minimum permissible. Details govern over schedule.	5.	H. ENGINI A.	Glued Laminated wood shop drawings shall be submitted to the architect for review fabrication. NEERED LUMBER All engineered lumber, shall be manufactured and installed in accordance with Truss
В. С.	Bolts, anchor rods, and lag screws shall be centered in members, uno. Nails shall meet the requirements of ASTM F1667. Where driving of nails would cause splitting,			Engineered wood products by Weyerhueaser or approved equal manufacturing star referenced in ESR-1387, and shall have the following minimum properties:
	holes for the nails shall be pre-drilled, with a hole diameter equal to 70% of the nail diameter. Where automatic nailing is used, nail heads shall not penetrate plywood sheathing.			MemberE=Fb=Fc (PERP.)Fc (PAR.)Fv=Timber Strand, Laminated1,550,000psi2,325psi900psi2,050psi310pStrand Lumber (LSL)2,000,000psi2,000psi2,000psi2,000psi2,000psi
D. E.	 When multiple members are grouped together, fasten with: (2) rows of 16d nails at 12" oc. Use (3) rows of 16d nails at 12" oc. for depths 14" or greater. All bolts in wood shall conform to ASTM A307 bolts and shall be installed in holes bored with a bit 1/16 inch larger than the diameter of the bolt. Oversized or slotted holes are not allowed 			Parallam, Parallel Strand Lumber (PSL)2,000,000psi 2,000,000psi2,900psi 2,900psi625psi 2,900psi2,900psi 2,900psi290pMicrolam, Laminated Veneer Lumber (LVL)2,000,000psi 2,600psi2,600psi 2,600psi750psi 2,510psi2,85p
F.	unless specifically noted on plans. Bolts and nuts seating on wood shall have cut steel washers under heads and nuts. Spoil threads after installation to prevent loosening. Lag screws shall meet the requirements of ANSI / ASME standard B18.2.1. Lead holes for the threaded portion of the shank shall have a diameter equal to 70% of the shank diameter with a	6.	SHEAT A.	Plywood for roofs and floors shall be C-C or C-D sheathing conforming to the currer the Products Standard PS 1-09. Lay plywood with face grain perpendicular to suppor nailing shall be with common nails and solid 2x blocking shall be placed at all ridges All roof and floor sheathing shall be nailed with boundary nailing along the entire length.
G.	 depth equal to the screw length. Refer to 2018 NDS Section 12.1.4 for additional lag screw installation requirements. Wood screws shall meet the requirements of ANSI / ASME standard B18.2.1. Lead holes for the threaded portion of the shank shall have a diameter equal to 70% of the shank diameter with a diameter with a screw length. 			supporting members used as "Drag" members. A Drag member is a truss or beam of transmit a lateral force and/or a diaphragm chord force as indicated on the framing p Provide blocking at panel edges where indicated on plans. All plywood shall be of th nominal thickness and span/index rating and shall be nailed as follows unless notedLevelThicknessSpan RatingEdge NailingField Nail
Н.	depth equal to the screw length. Refer to 2018 NDS Section 12.1.5 for additional wood screw installation requirements. Specified hardware shall be Simpson Strong-Tie installed, see manufacturer's recommendations,		D	ROOF 5/8" 32/16 8d AT 6" OC. 8d AT 12" FLOOR 1 1/8" T&G 40/20 10d AT 6" OC. 10d AT 12"
I.	uno. Sill plate maximum anchor bolt spacing shall be 48 inches on center unless noted otherwise on plans and details. All anchor bolts (other than bolts for hold-downs) shall be 1/2" diameter with a		В.	Plywood for shear walls shall be Structural I C-C or C-D, Span Index 24/0 conformir 1-09. Thickness shall be as called for on the plans and shear wall schedule. Provide all panel edges. All walls designated as shear walls shall be connected to roof and f diaphragms with boundary nailing to provide proper shear transfer.
	minimum embedment of 9 inches into concrete uno. Anchor bolts for hold-downs shall not be considered as part of required anchor bolts for shear walls. All exterior walls shall be secured with minimum (3) anchor bolts. Interior walls may be driven shot pins according to alternate outlined herein, uno.		C.	As an alternate to plywood, American Plywood Association (APA) performance rate may be used with prior approval of the owner and architect. Rated sheathing shall c ICC-ES Report ESR-2586, Exposure 1, and shall have a span rating equivalent to o the plywood it replaces. Attachment and thickness (within 1/32") shall be the same a
J.	Anchor bolts shall have 3x3x1/4" thick slotted plate washers under each nut. Edge of plate washer to be within 1/2" of sheathing. At shear walls with sheathing on both faces alternate washer edges.		D.	plywood it replaces. Install per manufacturer recommendations. Refer to the plans and shear wall schedule for required sheathing and nailing. All wa out on plans, provide 7/16" min. APA rated sheathing on exterior surfaces nailed at edges (block unsupported edges), top and bottom plates with 8d common nails at 6
К.	 a. All nails, bolts, screws and hardware shall be hot-dipped galvanized or stainless where exposed to weather or soil. b. All nails and screws fastened to pressure-preservative-treated wood (including wood sills) shall be hot-dipped galvanized per ASTM A153 or stainless steel Type 304 or 316. c. Electrogalvanized fasteners shall not be substituted for hot-dipped galvanized. d. Sheet metal connectors in contact with pressure-treated wood shall be stainless or galvanized coated per ASTM A653 class G185. e. Stainless steel or hot-dipped galvanized connectors shall use all fasteners of the same material. 			all intermediate studs and blocking at 12" oc. Allow 1/8" gap at all APA sheathing pa and ends.
HOT P	 INS] [] [sно	DTCF	RETE
	oin fasteners shall not be installed without prior approval of engineer unless specifically detailed on awings.	1.	ACI 50	pects of work pertaining to the shotcrete construction shall be in accordance with IBC 06.2 "Specification for Shotcrete" and ACI 506R-16 "Guide to Shotcrete", with modifica
manuf	ation and special inspection of fasteners shall be performed as required by ICC reports and facturers instructions.	2.	Shotcre	on the project drawings and/or specifications. rete mix designs shall be submitted to the Structural Engineer for review. All mix designed by a qualified testing laboratory and shall be wet stamped by a Civil Engineer licer
	pins <u>shall not</u> be used for seismic anchoring or bracing applications, unless approved by the ning jurisdiction.	3.		of Idaho. Base design mix on field experience or trial mixtures as stipulated in ACI RA aterials, mixing and application shall comply with ACI 506 R-05 and ACI RAP-12.
	pins in post-tension concrete are permitted only when the supplier can show that concrete spalling to occur and are located so as to preclude damage to tendons and tendon anchorage.			Conform to the following shotcrete requirements:
edge o exterio	lans and details for spacing. Shot pins driven into concrete base material shall maintain a minimum distance at all concrete elements of 3" and minimum fastener spacing shall be 4". For interior and or framing, pins shall have a 3/4" and 1" minimum penetration respectively. Minimum concrete ess shall be 3 times the penetration depth. Concrete shall attain full design strength prior to		Objection	Aggregate size:3/8" max.Slump:1" (plus or minus 1/2").
installi all stee	ing shot pins. Shot pins driven into steel base material shall maintain a minimum edge distance at el elements of 1/2" and minimum fastener spacing shall be 1". Length of pin shall be as required to	4.		rete mixes shall contain fiber additives to be coordinated with the shotcrete applicator -mix company for the purpose of minimizing drying shrinkage.
penetr from th	rate through steel member uno. At steel thicker than 3/4", pins shall have a minimum point ration of 1/2". Shot pins driven into solid grouted masonry shall maintain a minimum 4" distance he top, bottom and edges of the wall and a minimum 1" distance from mortar joints. No more than stener may be installed in an individual CMU cell.	5.	with a r Nozzle	
	llowing shot pins are approved for non-tension, shear only use in solid grouted masonry: Hilti Low Velocity X-U (0.157" dia.) – ICC ESR-2269	6. 7.	Ensure during	rete shall be thoroughly mixed and used within 45 minutes. re that the temperature of materials and surrounding air are a minimum of 50 degrees b g and 7 days after completion of work. Suspend shotcrete operations during high winds
	llowing shot pins are approved for non-tension, shear only use in uncracked concrete: Hilti Low Velocity X-U (0.157" dia.) – ICC ESR-2269 Illowing shot pins are approved for tension and shear in steel:	8.	weathe Surface	er or excessively hot or cold temperatures when the work cannot be protected. ces to receive shotcrete shall be roughened to 1/4" amplitude, cleaned and wet. Surfa rete shall be kept damp for several hours prior to shotcrete application. Bonding agents
	Hilti Low Velocity X-U (0.157" dia.) – ICC ESR-2269	9.	be use Alignm	ed without the approval of the engineer. nent wires shall be used to establish thickness and plane of required surfaces. Install a at corners and offsets not established by forms.
		10.	Provide be ence as requ	de a minimum of 3 test panels per IBC 1908.10.2 for each mix design and each shootin countered. The panels shall be of identical thickness, reinforcement and reinforcement quired for the shotcrete work. Testing firm may require additional test panels. Coordina procedure with the testing firm prior to beginning the work.
		11. 12.	Precon A quali	nstruction tests where required, shall be performed in accordance with IBC 1908.5. lity control program sahll be implemented. ACI 506.2 should be used as the basis for t ol procedures.

- 13. Verify the bond of set shotcrete by sounding for voids with a hammer.
- 14. Maintain finished surfaces wet for 7 days.



Sheet No.

S0.03

Job No.

4900-01