General Structural Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CRITERIA

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (2018 EDITION).

2. DESIGN LOADING CRITERIA:
   GARAGES
   FLOOR LIVE LOAD (PASSENGER VEHICLES) . . . . . 40 PSF
   FLOOR CONCENTRATED LOAD (PASSENGER VEHICLES) . . . . . 3000 LBS
   HANDRAILS AND GUARDS
   GUARDRAILS/BALCONY RAILS CONCENTRATED LOAD . . . . . 200 LBS
   RESIDENTIAL - ONE AND TWO-FAMILY DWELLINGS
   FLOOR LIVE LOAD . . . . . 40 PSF
   ROOF
   ROOF LIVE LOAD . . . . . 25 PSF
   MISCELLANEOUS LOADS
   DECKS . . . . . 1.5 x AREA SERVED
   ENVIRONMENTAL LOADS
   SNOW . . . . . Ce=1.0, Is=1.0, Ct=1.1, Pg=25 PSF, Pf=20 PSF
   WIND . . . . . GCpi=0.18, 98 MPH, RISK CATEGORY II, EXPOSURE "C"
   EARTHQUAKE . . . ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
   LATERAL SYSTEM: LIGHT FRAMED SHEAR WALLS, Vs = 22 KIPS
   SITE CLASS=D, Ss=1.47, Sds=.98, S1=.51, SD1=.57, Cs=0.151
   SDC D, Ie=1.0, R=6.5

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. ARCHITECTURAL DRAWINGS ARE THE PRIME CONTRACT DRAWINGS. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATION, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.

4. PRIMARY STRUCTURAL ELEMENTS NOT DIMENSIONED ON THE STRUCTURAL PLANS AND DETAILS SHALL BE LOCATED BY THE ARCHITECTURAL PLANS AND DETAILS. VERTICAL DIMENSION CONTROL IS DEFINED BY THE ARCHITECTURAL WALL SECTIONS, BUILDING SECTION, AND PLANS. DETAILING AND SHOP DRAWING PRODUCTION FOR STRUCTURAL ELEMENTS WILL REQUIRE DIMENSIONAL INFORMATION CONTAINED IN BOTH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

6. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. CONFORM TO ASCE 37-14 "DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION".

7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL NOTES AND DETAILS SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED OR REQUEST ADDITIONAL INFORMATION. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

9. ALL STRUCTURAL SYSTEMS, WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED, SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

10. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

    CONNECTOR PLATE WOOD ROOF TRUSSES
    GLUED LAMINATED MEMBERS
    MANUFACTURED LUMBER (PSLs, LSLs, LVLs)
    PLYWOOD WEB JOISTS

11. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY; REPRODUCIBLE WILL BE MARKED AND RETURNED WITHIN TWO WEEKS OF RECEIPT WITH A NOTATION INDICATING THAT THE SUBMITTAL HAS BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE SUBMITTED ITEMS SHALL NOT BE INSTALLED UNTIL THEY HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

    SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

QUALITY ASSURANCE

12. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTIONS 110 AND 1705 OF THE INTERNATIONAL BUILDING CODE BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE ARCHITECT, AND RETAINED BY THE BUILDING OWNER. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS. SPECIAL INSPECTION OF THE FOLLOWING TYPES OF CONSTRUCTION IS REQUIRED UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL FABRICATION AND ERECTION	PER S1.3
CONCRETE CONSTRUCTION	PER S1.3
CAST-IN-PLACE DEEP FOUNDATION	PER S1.3

    PERIODIC INSPECTION: INSPECTION SHALL BE PERFORMED AT INTERVALS NECESSARY TO CONFIRM THAT WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE WITH REQUIREMENTS.
    CONTINUOUS INSPECTION: INSPECTOR SHALL BE ONSITE AND OBSERVE THE WORK REQUIRING INSPECTION AT ALL TIMES THAT WORK IS PERFORMED.

GEOTECHNICAL

13. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH RECOMMENDATIONS GIVEN IN THE SOILS REPORT OR AS DIRECTED BY THE SOILS ENGINEER. FOOTINGS SHALL BEAR ON SOLID UNDISTURBED EARTH OR COMPACTED STRUCTURAL FILL AT LEAST 18" BELOW LOWEST ADJACENT FINISHED GRADE. FOOTING DEPTHS/ELEVATIONS SHOWN ON PLANS (OR IN DETAILS) ARE MINIMUM AND FOR GUIDANCE ONLY; THE ACTUAL ELEVATIONS OF FOOTINGS MUST BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD WORKING WITH THE TESTING LAB AND SOILS ENGINEER. BACKFILL BEHIND ALL RETAINING WALLS WITH FREE DRAINING GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE AS NOTED IN THE SOILS REPORT.

LATERAL EARTH PRESSURE (RESTRAINED/UNRESTRAINED)	55 PCF/45 PCF
ALLOWABLE PASSIVE EARTH PRESSURE (FS NOT INCLUDED)	250 PCF
TRAFFIC SURCHARGE PRESSURE (UNIFORM LOAD)	90 PSF
SEISMIC SURCHARGE PRESSURE (UNIFORM LOAD)	10H PSF
4"ø PILE CAPACITY	10 TONS
3 2"ø PILE CAPACITY	2 TONS

    SOILS REPORT REFERENCE:

    3 EMAIL CONFIRMATION FROM MARC MCGINNIS, DATED APRIL 10, 2023.

    TRANSMITTAL LETTER - GEOTECHNICAL ENGINEERING STUDY
    JN 20279
    PREPARED BY:
    GEOTECHNICAL CONSULTANTS, INC.
    October 6, 2020

14. PIN PILES SHOWN ON THE PLAN SHALL BE 4" DIAMETER, SCHEDULE 40, UNLESS OTHERWISE NOTED. THE MAXIMUM CAPACITY OF 4" PILES SHALL BE 10 TONS. ALL PILES SHALL BE DRIVEN TO REFUSAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. PILES USED IN COMMON TO RESIST LATERAL EARTH PRESSURES SHALL HAVE THE ADDITIONAL REQUIREMENT OF BEING EMBEDDED A MINIMUM OF 10 FEET BELOW RETAINED GRADE. THE MAXIMUM PILE ECCENTRICITY SHALL BE 2 INCHES. GEOTECHNICAL SPECIAL INSPECTION SHALL BE SUBJECT TO THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND THE BUILDING DEPARTMENT. SEE PLANS FOR OTHER SIZES AND CRITERIA.

    3 2"ø PIN PILES (WHERE OCCURS ON THE PLAN) SHALL BE EXTRA-STRONG, GRADE A, GALVANIZED, UNLESS OTHERWISE NOTED, AND SHALL BE DESIGNED AND INSTALLED UNDER THE STRICT REQUIREMENTS OF DIRECTOR'S RULE 10-2009. THE MAXIMUM CAPACITY OF 2" PILES SHALL BE 2 TONS. ALL PILES SHALL BE DRIVEN TO REFUSAL. AS A MINIMUM, PILE REFUSAL SHALL BE DEFINED AS 1 INCH OF PENETRATION IN 60 SECONDS DURING CONTINUOUS DRIVING OF A 90 LB JACK HAMMER UNDER THE FULL WEIGHT AND EFFORT OF THE OPERATOR. THE MAXIMUM PILE ECCENTRICITY SHALL BE 2 INCHES. GEOTECHNICAL SPECIAL INSPECTION SHALL BE SUBJECT TO THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND THE BUILDING DEPARTMENT (DIRECTOR'S RULE). SEE PLANS FOR OTHER SIZES AND CRITERIA

CONCRETE

15. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 301, INCLUDING TESTING PROCEDURES. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF f'c = 3,000 PSI AND MIX SHALL CONTAIN NOT LESS THAN 5-1/2 SACKS OF CEMENT PER CUBIC YARD AND SHALL BE PROPORTIONED TO PRODUCE A SLUMP OF 5" OR LESS. REQUIRED CONCRETE STRENGTH IS BASED ON THE DURABILITY REQUIREMENTS OF SECTION 1904 OF THE IBC. DESIGN STRENGTH IS f'c = 2,500 PSI.

16. ALL CONCRETE WITH SURFACES EXPOSED TO WEATHER OR STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260, C494, AND C618. TOTAL AIR CONTENT FOR FROST-RESISTANT CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318-14, TABLE 19.3.2.1 MODERATE EXPOSURE, F1.

17. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENT S1), GRADE 60, FY = 60,000 PSI. EXCEPTIONS: ANY BARS SPECIFICALLY SO NOTED ON THE DRAWINGS SHALL BE GRADE 40, FY = 40,000 PSI. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185. SPIRAL REINFORCEMENT SHALL BE DEFORMED WIRE CONFORMING TO ASTM A615, GRADE 60, FY = 60,000 PSI.

18. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 315-99 AND 318-14. LAP ALL CONTINUOUS REINFORCEMENT #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS #5 AND SMALLER 40 BAR DIAMETERS OR 2'-0" MINIMUM. LAPS OF LARGER BARS SHALL BE MADE IN ACCORDANCE WITH ACI 318-14, CLASS B. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.

    NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

19. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

    FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH . . . . . 3"
    FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER) . . . . 2"
    FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#5 BARS OR SMALLER). . 1-1/2"
    COLUMN TIES OR SPIRALS AND BEAM STIRRUPS . . . . . 1-1/2"
    SLABS AND WALLS (INT. FACE). . . GREATER OF BAR DIAMETER PLUS 1/8" OR 3/4"

20. CONCRETE WALL REINFORCING--PROVIDE THE FOLLOWING UNLESS DETAILED OTHERWISE:

6" WALLS	#4 @ 16 HORIZ.	#4 @ 18 VERTICAL	1 CURTAIN
8" WALLS	#4 @ 12 HORIZ.	#4 @ 18 VERTICAL	1 CURTAIN
10" WALLS	#4 @ 18 HORIZ.	#4 @ 18 VERTICAL	2 CURTAINS
12" WALLS	#4 @ 16 HORIZ.	#4 @ 18 VERTICAL	2 CURTAINS

21. CAST-IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS. SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE, AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES, BOTH CAST-IN-PLACE AND PRECAST.

22. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (3000 PSI MINIMUM).

ANCHORAGE

23. EXPANSION BOLTS INTO CONCRETE SHALL BE "STRONG-BOLT 2" WEDGE ANCHORS AS MANUFACTURED BY THE SIMPSON STRONG TIE COMPANY AND INSTALLED IN STRICT CONFORMANCE TO ICC-ES REPORT NUMBER ESR-3037, INCLUDING MINIMUM EMBEDMENT REQUIREMENTS. BOLTS INTO CONCRETE MASONRY OR BRICK MASONRY UNITS SHALL BE INTO FULLY GROUTED CELLS. PERIODIC SPECIAL INSPECTION IS REQUIRED TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, ANCHOR LOCATION, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT, AND ADHERENCE TO THE INSTALLATION INSTRUCTIONS.

24. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BAR) SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED USING "AT-XP" AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. INSTALL IN STRICT ACCORDANCE WITH IAMPO REPORT NO. ER-0281. MINIMUM BASE MATERIAL TEMPERATURE IS 14 DEGREES, F. RODS SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED. PERIODIC SPECIAL INSPECTION OF INSTALLATION IS REQUIRED TO VERIFY ANCHOR OR EMBEDDED BAR TYPE AND DIMENSIONS, LOCATION, ADHESIVE IDENTIFICATION AND EXPIRATION, HOLE DIMENSIONS, HOLE CLEANING PROCEDURE, ANCHOR EMBEDMENT, AND ADHERENCE TO THE INSTALLATION INSTRUCTIONS. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR HORIZONTAL AND OVERHEAD INSTALLATIONS.

25. CONCRETE SCREW ANCHORS INTO CONCRETE AND CONCRETE MASONRY UNITS SHALL BE "TITEN HD" HEAVY DUTY SCREW ANCHOR AS MANUFACTURED BY THE SIMPSON STRONG-TIE COMPANY, INSTALLED IN STRICT ACCORDANCE WITH ICC-ES REPORT NO. ESR-2713 (CONCRETE), NO. ESR-1056 (CMU), INCLUDING MINIMUM EMBEDMENT REQUIREMENTS. SCREW ANCHORS INTO CONCRETE MASONRY UNITS SHALL BE INTO FULLY GROUTED CELLS. SPECIAL INSPECTION IS REQUIRED.

MASONRY

26. ADHERED MASONRY VENEER, 2-5/8" MAXIMUM THICKNESS, SHALL BE ADHERED TO BACKING WALLS PER SECTION 1405.10 OF THE INTERNATIONAL BUILDING CODE. ADHERED MASONRY SHALL BE ABLE TO DEVELOP SHEAR STRENGTH OF 50 PSI MINIMUM BETWEEN THE BACKING AND THE UNIT IN ACCORDANCE WITH ASTM C 482 OR SHALL BE ADHERED PER ARTICLE 3.3C OF TMS602/ACI530.1/ASCE 6.

STEEL

27. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON:

    A. AISC 360 AND SECTION 2205.2 OF THE INTERNATIONAL BUILDING CODE.
    B. APRIL 14, 2010 AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AMENDED AS FOLLOWS: AS NOTED IN THE CONTRACT DOCUMENTS, BY THE DELETION OF PARAGRAPH 4.4.1, AND REVISE REFERENCE FROM "STRUCTURAL DESIGN DRAWINGS" TO "CONTRACT DOCUMENTS" IN PARAGRAPH 3.1.
    C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

28. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	FY
A. WIDE FLANGE SHAPES	A992	50 KSI
B. OTHER SHAPES, PLATES, AND RODS	A36	36 KSI
C. OTHER SHAPES AND PLATES (NOTED GRADE 50 ON PLANS)	A572 (GRADE 50)	50 KSI
D. PIPE COLUMNS	A53 (E OR S, GR.B)	35 KSI
E. STRUCTURAL TUBING	A500 (GR.B)	
-SQUARE OR RECTANGULAR		46 KSI
-ROUND		42 KSI
-ANY SHAPE	ASTM A1085	50 KSI
F. CONNECTION BOLTS (3/4" ROUND, UNLESS SHOWN OTHERWISE)	A325-N	

29. ARCHITECTURALLY EXPOSED STRUCTURAL STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

30. ALL STEEL EXPOSED TO THE WEATHER OR IN CONTACT WITH GROUND SHALL BE CORROSION PROTECTED BY GALVANIZATION OR PROVIDED WITH EXTERIOR PAINT SYSTEM, UNLESS OTHERWISE NOTED.

31. SHOP PRIME ALL STEEL EXCEPT:

    A. STEEL ENCASED IN CONCRETE.
    B. SURFACES TO BE WELDED.
    C. CONTACT SURFACES AT HIGH-STRENGTH BOLTS.
    D. MEMBERS TO BE GALVANIZED.
    E. MEMBERS WHICH WILL BE CONCEALED BY INTERIOR FINISHES.
    F. SURFACES TO RECEIVE SPRAYED FIREPROOFING.
    G. SURFACES TO RECEIVE OTHER SPECIAL SHOP PRIMERS.

32. ALL A-325N CONNECTION BOLTS NEED ONLY BE TIGHTENED TO A SNUG TIGHT CONDITION, DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH.

33. ALL ANCHORS EMBEDDED IN MASONRY OR CONCRETE SHALL BE A307 HEADED BOLTS OR A36 THREADED ROD WITH AN ASTM 563 HEAVY HEX NUT TACK WELDED ON THE EMBEDDED END.

34. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS AND SHALL BE PERFORMED BY WABO CERTIFIED WELDERS USING E70XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT -20 DEGREES F AND 40 FT - LBS AT 70 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.

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DAN J. SAY — STATE OF WASHINGTON — 23000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

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ISSUE:
65% CD Set

SHEET TITLE:
General Structural Notes

SCALE: -
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: S1.1

General Structural Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

WOOD

35. FRAMING LUMBER SHALL BE S-DRY, KD, OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD "GRADING RULES FOR WEST COAST LUMBER NO. 17", OR WWPA STANDARD, "WESTERN LUMBER GRADING RULES 2011". FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS AND BEAMS	(2X & 3X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASE VALUE, Fb = 850 PSI
	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1000 PSI
BEAMS	(INCL. 6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fb = 1350 PSI
POSTS	(4X MEMBERS)	DOUGLAS FIR-LARCH NO. 2 MINIMUM BASE VALUE, Fc = 1350 PSI
	(6X AND LARGER)	DOUGLAS FIR-LARCH NO. 1 MINIMUM BASE VALUE, Fc = 1000 PSI
STUDS, PLATES & MISC. FRAMING:		DOUGLAS-FIR-LARCH OR HEM-FIR NO. 2

36. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND ANSI/AITC STANDARDS. EACH MEMBER SHALL BEAR AN AITC OR APA-EWS IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC OR APA-EWS CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fb = 2,400 PSI, Fv =265 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fb = 2400 PSI, Fv = 265 PSI.

37. MANUFACTURED LUMBER, PSL, LVL, AND LSL SHOWN ON PLAN ARE BASED PRODUCTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION IN ACCORDANCE WITH ICC-ES REPORT ESR-1387. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

PSL (2.0E)	Fb = 2900 PSI,	E = 2000 KSI,	Fv = 290 PSI
LVL (2.0E)	Fb = 2600 PSI,	E = 2000 KSI,	Fv = 285 PSI
LSL (1.55E)	Fb = 2325 PSI,	E = 1550 KSI,	Fv = 310 PSI

ALTERNATE MANUFACTURED LUMBER MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

MANUFACTURED LUMBER PRODUCTS SHALL BE INSTALLED WITH A MOISTURE CONTENT OF 12% OR LESS. THE CONTRACTOR SHALL MAKE PROVISIONS DURING CONSTRUCTION TO PREVENT THE MOISTURE CONTENT OF INSTALLED BEAMS FROM EXCEEDING 12%. EXCESSIVE DEFLECTIONS MAY OCCUR IF MOISTURE CONTENT EXCEEDS THIS VALUE.

38. PREFABRICATED PLYWOOD WEB JOIST DESIGN SHOWN ON PLANS IS BASED ON JOISTS MANUFACTURED BY THE WEYERHAEUSER CORPORATION. ALTERNATE PLYWOOD WEB JOIST MANUFACTURERS MAY BE USED SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND STRUCTURAL ENGINEER. ALTERNATE MANUFACTURER'S PRODUCTS SHALL BE COMPATIBLE WITH THE JOIST HANGERS AND OTHER HARDWARE SPECIFIED ON PLANS, OR ALTERNATE HANGERS AND HARDWARE SHALL SUBMITTED FOR REVIEW AND APPROVAL. SUBSTITUTED ITEMS SHALL HAVE ICC-ES REPORT APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES.

39. PREFABRICATED CONNECTOR PLATE WOOD ROOF TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH THE "NATIONAL DESIGN STANDARD FOR METAL PLATE-CONNECTED WOOD TRUSS CONSTRUCTION, ANSI/TPI 1" BY THE TRUSS PLATE INSTITUTE FOR THE SPANS AND CONDITIONS SHOWN ON THE PLANS. LOADING SHALL BE AS FOLLOWS:

TOP CHORD LIVE LOAD	25 PSF
TOP CHORD DEAD LOAD	10 PSF
BOTTOM CHORD DEAD LOAD	5 PSF
TOTAL LOAD	40 PSF
WIND UPLIFT (TOP CHORD)	5 PSF
BOTTOM CHORD LIVE LOAD (BOTTOM CHORD LIVE LOAD DOES NOT ACT CONCURRENTLY WITH THE ROOF LIVE LOAD)	10 PSF

WOOD TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES (GANGNAIL OR EQUAL). SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. SUBMITTED DOCUMENTS SHALL BE SIGNED AND STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON. PROVIDE FOR SHAPES, BEARING POINTS, INTERSECTIONS, HIPS, VALLEYS, ETC., SHOWN ON THE DRAWINGS. EXACT COMPOSITION OF SPECIAL HIP, VALLEY, AND INTERSECTION AREAS (USE OF GIRDER TRUSSES, JACK TRUSSES, STEP-DOWN TRUSSES, ETC.) SHALL BE DETERMINED BY THE MANUFACTURER UNLESS SPECIFICALLY INDICATED ON THE PLANS. PROVIDE ALL TRUSS TO TRUSS AND TRUSS TO GIRDER TRUSS CONNECTION DETAILS AND REQUIRED CONNECTION MATERIALS. PROVIDE FOR ALL TEMPORARY AND PERMANENT TRUSS BRACING AND BRIDGING.

40. PLYWOOD SHEATHING SHALL BE GRADE C-D, EXTERIOR GLUE OR STRUCTURAL II, EXTERIOR GLUE IN CONFORMANCE WITH DOC PS 1 OR PS 2. ORIENTED STRAND BOARD OF EQUIVALENT THICKNESS, EXPOSURE RATING AND PANEL INDEX MAY BE USED IN LIEU OF PLYWOOD.

ROOF SHEATHING SHALL BE 1/2" (NOMINAL) WITH SPAN RATING 32/16.

FLOOR SHEATHING SHALL BE 3/4" (NOMINAL) WITH SPAN RATING 48/24.

WALL SHEATHING SHALL BE 1/2" (NOMINAL) WITH SPAN RATING 24/0.

PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING.

REFER TO WOOD FRAMING NOTES BELOW FOR TYPICAL NAILING REQUIREMENTS.

41. ALL WOOD IN DIRECT CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE OR (2) LAYERS OF ASPHALT IMPREGNATED BUILDING PAPER SHALL BE PROVIDED BETWEEN UNTREATED WOOD AND CONCRETE OR MASONRY.

42. PRESERVATIVE TREATED WOOD SHALL BE TREATED PER AWPA STANDARD U1 TO THE USE CATEGORY EQUAL TO OR HIGHER THAN THE INTENDED APPLICATION. TREATED WOOD FOR ABOVE GROUND USE SHALL BE TREATED TO AWPA UC3B. WOOD IN CONTINUOUS CONTACT WITH FRESH WATER OR SOIL SHALL BE TREATED TO AWPA UC4A. WOOD FOR USE IN PERMANENT FOUNDATIONS SHALL BE TREATED TO AWPA UC4B.

43. FASTENERS AND TIMBER CONNECTORS USED WITH TREATED WOOD SHALL HAVE CORROSION RESISTANCE AS INDICATED IN THE FOLLOWING TABLE, UNLESS OTHERWISE NOTED.

WOOD TREATMENT	CONDITION	PROTECTION
HAS NO AMMONIA CARRIER	INTERIOR DRY	G90 GALVANIZED
CONTAINS AMMONIA CARRIER	INTERIOR DRY	G185 OR A185 HOT DIPPED OR CONTINUOUS HOT-GALVANIZED PER ASTM A653
CONTAINS AMMONIA CARRIER	INTERIOR WET	TYPE 304 OR 316 STAINLESS
CONTAINS AMMONIA CARRIER	EXTERIOR	TYPE 304 OR 316 STAINLESS
AZCA	ANY	TYPE 304 OR 316 STAINLESS

INTERIOR DRY CONDITIONS SHALL HAVE WOOD MOISTURE CONTENT LESS THAN 19%. WOOD MOISTURE CONTENT IN OTHER CONDITIONS (INTERIOR WET, EXTERIOR WET, AND EXTERIOR DRY) IS EXPECTED TO EXCEED 19%. CONNECTORS AND THEIR FASTENERS SHALL BE THE SAME MATERIAL. COMPLY WITH THE TREATMENT MANUFACTURERS RECOMMENDATIONS FOR PROTECTION OF METAL.

44. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NUMBER C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE ICC-ES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER FOR MAXIMUM LOAD CARRYING CAPACITY. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

ALL 2X JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "LUS" SERIES JOIST HANGERS. ALL TJI JOISTS SHALL BE CONNECTED TO FLUSH BEAMS WITH "ITS" SERIES JOIST HANGERS. ALL DOUBLE-JOIST BEAMS SHALL BE CONNECTED TO FLUSH BEAMS WITH "MIT" SERIES JOIST HANGERS.

WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS OR BOLTS IN EACH MEMBER.

ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

45. WOOD FASTENERS

A. NAIL SIZES SPECIFIED ON DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
6d	2"	0.113"
8d	2-1/2"	0.131"
10d	3"	0.148"
12d	3-1/4"	0.148"
16d BOX	3-1/2"	0.135"

IF CONTRACTOR PROPOSES THE USE OF ALTERNATE NAILS, THEY SHALL SUBMIT NAIL SPECIFICATIONS TO THE STRUCTURAL ENGINEER (PRIOR TO CONSTRUCTION) FOR REVIEW AND APPROVAL.

NAILS - PLYWOOD (APA RATED SHEATHING) FASTENERS TO FRAMING SHALL BE DRIVEN FLUSH TO FACE OF SHEATHING WITH NO COUNTERSINKING PERMITTED. TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30 DEGREES WITH THE MEMBER AND STARTED 1/3 THE LENGTH OF THE NAIL FROM THE MEMBER END.

B. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG BOLTS BEARING ON WOOD. INSTALLATION OF LAG BOLTS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION WITH A LEAD BORE HOLE OF 60 TO 70 PERCENT OF THE SHANK DIAMETER. LEAD HOLES ARE NOT REQUIRED FOR 3/8" AND SMALLER LAG SCREWS.

46. NOTCHES AND HOLES IN WOOD FRAMING:

A. NOTCHES ON THE ENDS OF SOLID SAWN JOISTS AND RAFTERS SHALL NOT EXCEED ONE-FOURTH THE JOIST DEPTH. NOTCHES IN THE TOP OR BOTTOM OF SOLID SAWN JOISTS SHALL NOT EXCEED ONE-SIXTH THE DEPTH AND SHALL NOT BE LOCATED IN THE MIDDLE THIRD OF THE SPAN. HOLES BORED IN SOLID SAWN JOISTS AND RAFTERS SHALL NOT BE WITHIN 2 INCHES OF THE TOP OR BOTTOM OF THE JOIST, AND THE DIAMETER OF ANY SUCH HOLE SHALL NOT EXCEED ONE-THIRD THE DEPTH OF THE JOIST.

B. IN EXTERIOR WALLS AND BEARING PARTITIONS, ANY WOOD STUD IS PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. A HOLE NOT GREATER IN DIAMETER THAN 40 PERCENT OF THE STUD WIDTH IS PERMITTED TO BE BORED IN ANY WOOD STUD. IN NO CASE SHALL THE EDGE OF THE BORED HOLE BE NEARER THAN 5/8 INCH TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION OF STUD AS A CUT OR NOTCH.

C. NOTCHES AND HOLES IN MANUFACTURED LUMBER AND PREFABRICATED PLYWOOD WEB JOISTS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS UNLESS OTHERWISE NOTED.

47. WOOD FRAMING NOTES--THE FOLLOWING APPLY UNLESS OTHERWISE SHOWN ON THE PLANS:

A. ALL WOOD FRAMING DETAILS NOT SHOWN OTHERWISE SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE INTERNATIONAL BUILDING CODE, THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE AWC "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION". MINIMUM NAILING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO IBC TABLE 2304.10.1. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS.

B. WALL FRAMING: REFER ARCHITECTURAL DRAWINGS FOR THE SIZE OF ALL WALLS. ALL STUDS SHALL BE SPACED AT 16" O.C. UNO. TWO STUDS MINIMUM SHALL BE PROVIDED AT THE END OF ALL WALLS AND AT EACH SIDE OF ALL OPENINGS, AND AT BEAM OR HEADER BEARING LOCATIONS. TWO 2x8 HEADERS SHALL BE PROVIDED OVER ALL OPENINGS NOT OTHERWISE NOTED. SOLID BLOCKING FOR WOOD COLUMNS SHALL BE PROVIDED THROUGH FLOORS TO SUPPORTS BELOW. PROVIDE CONTINUOUS SOLID BLOCKING AT MID-HEIGHT OF ALL STUD WALLS OVER 10'-0" IN HEIGHT.

ALL WALLS SHALL HAVE A SINGLE BOTTOM PLATE AND A DOUBLE TOP PLATE. END NAIL TOP PLATE TO EACH STUD WITH TWO 16d NAILS, AND TOENAIL OR END NAIL EACH STUD TO BOTTOM PLATE WITH TWO 16d NAILS. FACE NAIL DOUBLE TOP PLATE WITH 16d @ 12" O.C. AND LAP MINIMUM 4'-0" AT JOINTS AND PROVIDE EIGHT 16d NAILS @ 4" O.C. EACH SIDE JOINT.

ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH TWO ROWS OF 16d NAILS @ 12" ON-CENTER, OR ATTACHED TO CONCRETE BELOW WITH 5/8" DIAMETER ANCHOR BOLTS @ 4'-0" ON-CENTER EMBEDDED 7" MINIMUM, UNLESS INDICATED OTHERWISE. INDIVIDUAL MEMBERS OF BUILT-UP POSTS SHALL BE NAILED TO EACH OTHER WITH TWO ROWS OF 16d @12" ON-CENTER. UNLESS OTHERWISE NOTED, GYPSUM WALLBOARD SHALL BE FASTENED TO THE INTERIOR SURFACE OF ALL STUDS AND PLATES WITH NO. 6 X 1-1/4" TYPE S OR W SCREWS @ 8" ON-CENTER. UNLESS INDICATED OTHERWISE, 1/2" (NOMINAL) APA RATED SHEATHING (SPAN RATING 24/0) SHALL BE NAILED TO ALL EXTERIOR SURFACES WITH 8d NAILS @ 6" ON-CENTER AT PANEL EDGES AND TOP AND BOTTOM PLATES (BLOCK UN-SUPPORTED EDGES) AND TO ALL INTERMEDIATE STUDS AND BLOCKING WITH 8d NAILS @ 12" ON-CENTER ALLOW 1/8" SPACING AT ALL PANEL EDGES AND PANEL ENDS.

C. FLOOR AND ROOF FRAMING: PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH AND AROUND ALL OPENINGS IN FLOORS OR ROOFS UNLESS OTHERWISE NOTED. PROVIDE SOLID BLOCKING AT ALL BEARING POINTS. TOE-NAIL JOISTS TO SUPPORTS WITH TWO 16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI JOIST BEAMS TOGETHER WITH TWO ROWS 16d @ 12" ON-CENTER.

UNLESS OTHERWISE NOTED ON THE PLANS, PLYWOOD ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED AT 6" ON-CENTER WITH 8d NAILS TO FRAMED PANEL EDGES, STRUTS AND OVER STUD WALLS AS SHOWN ON PLANS AND @ 12" ON-CENTER TO INTERMEDIATE SUPPORTS. PROVIDE APPROVED PLYWOOD EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED T&G JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF FLOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16d @ 12" ON-CENTER UNLESS OTHERWISE NOTED.

48. TONGUE-AND-GROOVE STRUCTURAL ROOF AND FLOOR DECKING SHALL BE INSTALLED AS FOLLOWS: 2X DECKING SHALL BE TOENAILED THROUGH THE TONGUE AND FACE -NAILED WITH ONE 16d NAIL PER PIECE PER SUPPORT. 3X AND 4X DECKING SHALL BE TOENAILED WITH ONE 40d COMMON NAIL AND FACENAILED WITH ONE 60d COMMON NAIL PER SUPPORT. COURSES SHALL BE SPIKED TOGETHER WITH 8" SPIKES @ 30" O.C. (MAXIMUM) AND @ 10" (MAXIMUM) FROM THE END OF EACH PIECE. SPIKES SHALL BE INSTALLED IN PREDRILLED EDGE HOLES. DECKING SHALL BE PLACED WITH A CONTROLLED RANDOM LAYOUT UNLESS OTHERWISE NOTED AND SHALL EXTEND ACROSS A MINIMUM OF THREE SPANS. EACH PLANK SHALL BEAR ON AT LEAST ONE SUPPORT. ALL JOINTS SHALL BE END MATCHED AND ALL PLANKS NAILED TOGETHER WITHIN ONE FOOT OF EACH SIDE OF THE END JOINT. END JOINTS IN ADJACENT PLANKS SHALL BE AT LEAST TWO FEET APART AND END JOINTS IN ALTERNATE PLANKS SHALL BE MORE THAN ONE FOOT APART WHEN MEASURED ALONG THE LENGTH OF THE DECKING. END JOINTS NOT OCCURRING OVER SUPPORTS SHALL BE MATCHED TONGUED AND GROOVED OR SHALL BE CONNECTED WITH 10 GAUGE METAL SPLINES DRIVEN INTO PRE-CUT SLOTS. TONGUE AND GROOVE JOINTS SHALL BE GLUED WITH CONSTRUCTION ADHESIVE WHERE NOTED ON PLAN. 1

STRUCTURAL ENGINEERING

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DAN J. SAY — STATE OF WASHINGTON — 23000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:

Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:

Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE: 65% CD Set

SHEET TITLE: General Structural Notes

SCALE: -
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: S1.2

Statement of Special Inspections

Special inspections shall be provided per the requirements of IBC section 1705 and as noted herein

SOILS

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X		IBC 1705.6
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X		
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X		
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X		

DRIVEN DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
1. VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS	X			IBC 1705.7
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS AS REQUIRED	X			
3. OBSERVE DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	X			
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT	X			
5. SEE STEEL CONSTRUCTION INSPECTION REQUIREMENTS FOR STEEL PILE ELEMENTS				IBC 1705.2
6. SEE CONCRETE CONSTRUCTION INSPECTION REQUIREMENTS FOR CONCRETE AND CONCRETE FILLED ELEMENTS				IBC 1705.3
7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE				

CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	COMMENTS	REFERENCES
1. OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT	X			IBC 1705.8
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, BELL DIAMETERS (if applicable), LENGTHS, EMBEDMENT INTO BEDROCK (if applicable) AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES	X			
3. SEE CONCRETE CONSTRUCTION INSPECTION REQUIREMENTS FOR CONCRETE ELEMENTS				IBC 1705.3

STRUCTURAL STEEL

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	COMMENTS	REFERENCE
1. FABRICATED AND ERECTED STEEL:				
a. COMPLIANCE WITH DETAILS SHOWN ON CONSTRUCTION DOCUMENTS		X		AISC 360, SECTION N5
b. APPLICATION OF JOINT DETAILS AT EACH CONNECTION		X		
2. INSPECTION OF HIGH STRENGTH BOLTING:				
a. SNUG-TIGHT JOINTS		X		IBC 1705.2.1 AISC 360, SECTION M2.5 SECTION N5.6
b. PRE-TENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION		X		
c. PRE-TENSIONS AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION	X			
3. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATIONS IN THE APPROVED CONSTRUCTION DOCUMENTS		X		AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		X		
4. INSPECTION OF WELDING:				
a. COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELD	X			IBC 1705.2.1 AWS D1.1 AISC 360 SECTION N5.4
b. MULTIPASS FILLET WELDS	X			
c. SINGLE PASS FILLET WELDS > 5/16"	X			
d. PLUG AND SLOT WELDS	X			
e. SINGLE PASS FILLET WELDS ≤ 5/16"		X		
5. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:				
a. DETAILS SUCH AS BRACING AND STIFFENING		X		IBC 1705.2.1
b. MEMBER LOCATIONS		X		
c. APPLICATION OF JOINT DETAILS AT EACH CONN.		X		
6. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS:				
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		X		AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED		X		

CONCRETE AND CONCRETE REINFORCING

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	COMMENTS	REFERENCE
1. INSPECTION OF REINFORCING STEEL INCLUDING PRESTRESSING TENDONS, AND PLACEMENT		X		IBC 1908.4 ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3
2. INSPECTION OF ANCHORS CAST IN CONCRETE		X		ACI 318: 17.8.2
3. INSPECTION OF POST-INSTALLED ANCHORS IN HARDENED CONCRETE MEMBERS:				
a. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS	X		SEE ICC-ES ESR REPORT FOR ADDITIONAL REQUIREMENTS	ACI 318: 17.8.2.4
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 3-a		X	SEE ICC-ES ESR REPORT FOR ADDITIONAL REQUIREMENTS	ACI 318: 17.8.2
4. VERIFYING USE OF REQUIRED DESIGN MIX		X		IBC 1904.1 IBC 1904.2 IBC 1908.2 IBC 1908.3 ACI 318: Ch. 19, 26.4.3, 26.4.4
5. INSPECTION DURING CONCRETE MIXING:				
a. CONCRETE MIXES PREPARED IN A BATCH PLANT THAT IS NOT CERTIFIED BY THE CITY OF SEATTLE		X	CITY OF SEATTLE ONLY, NOT REQUIRED IF THE PROPORTIONS OF INGREDIENTS ARE ESTABLISHED IN ACCORDANCE WITH SBC 1905.1.10 OR IF THE MIX HAS BEEN GRANTED CONTINUOUS APPROVAL BY THE BUILDING OFFICIAL	SBC 1705.3.3
b. MIXES WITH f'c > 6000psi		X		
c. STRUCTURAL LIGHT WEIGHT CONCRETE		X		
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X			IBC 1908.10 ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X			IBC 1908.6 -1908.8 ACI 318: 26.5
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X		IBC 1908.9 ACI 318: 26.5.3-26.5.5
9. INSPECT ERECTION OF PRE-CAST CONCRETE MEMBERS		X		ACI 318: 26.9
10. VERIFICATION OF IN-SITU CONCRETE STRENGTH PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X		ACI 318: 26.11.2
11. INSPECT FORMWORK FOR GENERAL CONFORMITY TO APPROVED PLANS FOR SIZE, SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X		ACI 318: 26.11.1.2(b)
12. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706		X		AWS D1.4 ACI 318: 26.6.4
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16", OTHER THAN C & D		X		
c. WELDING OF REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT	X			
d. WELDING SHEAR REINFORCEMENT	X			
e. WELDING OF OTHER REINFORCEMENT STEEL	X			
13. MECHANICAL COUPLERS FOR REINFORCING			SEE ICC-ES ESR REPORT FOR REQUIREMENTS	

NOTES

1. TESTING AND SPECIAL INSPECTION REPORTS SHALL BE PREPARED FOR EACH INSPECTION ITEM ON A DAILY BASIS WHENEVER WORK IS PERFORMED ON THAT ITEM. REPORTS SHALL BE DISTRIBUTED TO OWNER, CONTRACTOR, BUILDING OFFICIAL, ARCHITECT, AND STRUCTURAL ENGINEER.
2. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED BY THE STRUCTURAL ENGINEER OF RECORD OR DESIGNATED REPRESENTATIVE IN ACCORDANCE WITH IBC 1704.6. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED AS FOLLOWS:
   a. PERIODIC VISUAL OBSERVATION OF STRUCTURAL SYSTEMS FOR GENERAL CONFORMANCE TO CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTON STAGES
   b. REVIEW OF TESTING AND INSPECTION REPORTS
   c. REPORTS SHALL BE PREPARED FOR EACH SITE VISIT AND SHALL BE DISTRIBUTED TO ARCHITECT.
3. WHERE APPLICABLE, SEE ALSO IBC SECTION 1705.11, SPECIAL INSPECTION FOR WIND RESISTANCE AND IBC SECTION 1705.12, SPECIAL INSPECTION FOR SEISMIC RESISTANCE
4. "STRUCTURAL STEEL" REFERS TO STEEL CONSTRUCTION DEFINED BY AISC 303, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES."

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DAN J. SAY — STATE OF WASHINGTON — 43000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
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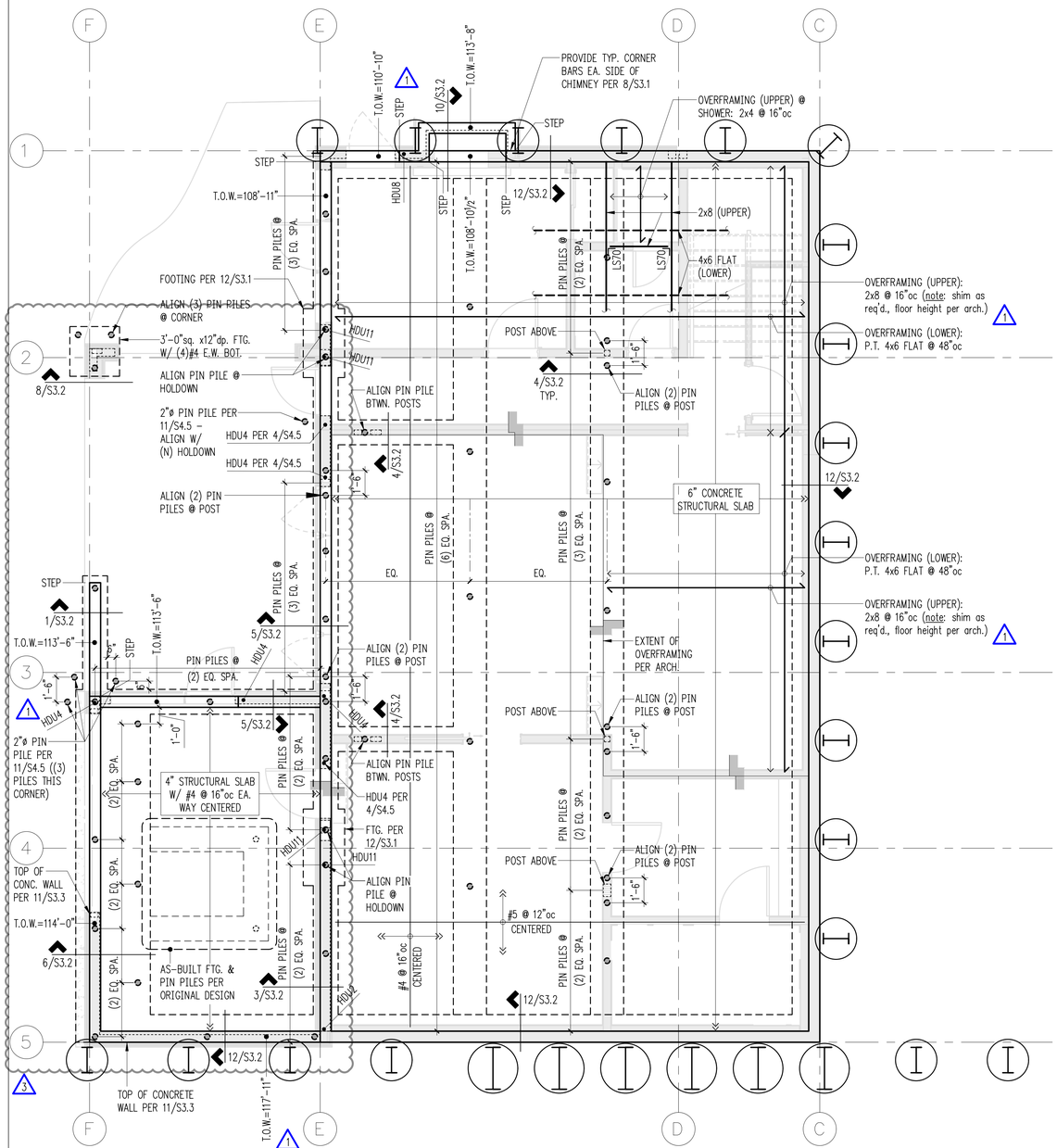
ISSUE: 65% CD Set

SHEET TITLE: Special Inspection Notes

SCALE:
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: S1.3



Legend

- STRUCTURAL WALL OR POST ABOVE
- STEM WALL & FOOTING
- HDUx — HOLDOWN PER 12/S3.1
- SHORING PILE PER SH2.1
- 4"ø PIN PILE (47 total this sheet) 2 NOTE: PIN PILES SUBSTITUTED FOR AUGER CAST PILES; PILES PER GEOTECH REPORT
- T.O.W. — TOP OF WALL ELEVATION. ELEVATIONS ARE ESTIMATES, CONTRACTOR TO CONFIRM W/ ARCHITECT & ACTUAL SITE CONDITIONS

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
4. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
5. INTERIOR SLABS ON GRADE PER PLAN. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
6. GEOTECHNICAL SPECIAL INSPECTOR SHALL BE CONTINUOUSLY PRESENT DURING PIN PILE INSTALLATION AND LOAD TESTING.
7. AT LEAST 3% OF THE PIN PILES, BUT NO MORE THAN 5 PILES, SHALL BE LOAD TESTED TO TWICE THE DESIGN PILE LOAD. ALL LOAD TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN ASTM D1143.
8. WOOD OVERFRAMED FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER MINIMUM (1) LAYER 1/2" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, UON
9. NAIL FLOOR SHEATHING W/ 8d @ 6"oc AT FRAMED PANEL EDGES AND AT 12"oc IN FIELD

Lower Foundation Plan

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

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DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

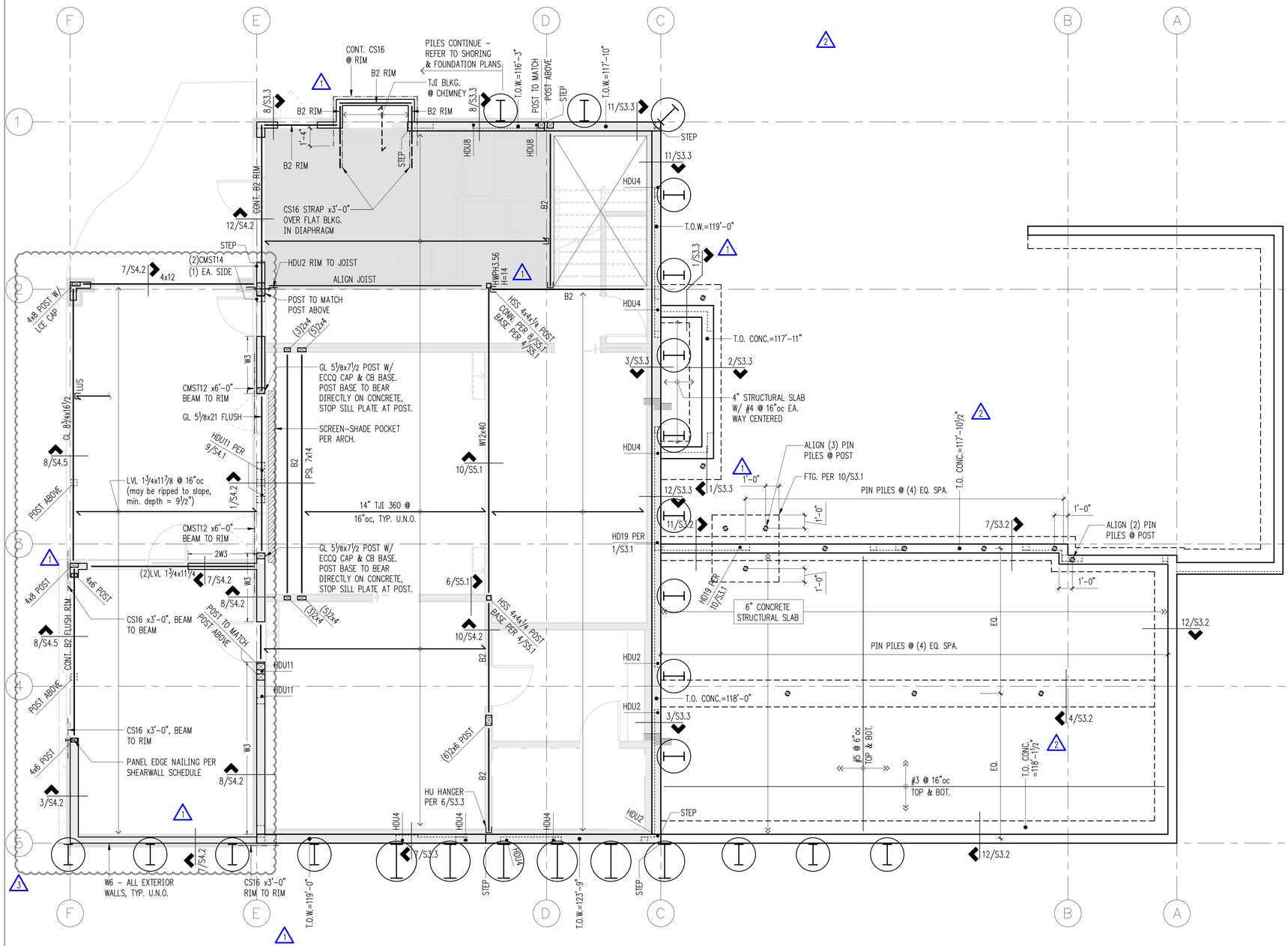
PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
Lower Foundation Plan

SCALE: 1/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:
S2.1



Beam Schedule

MARK	BEAM	HANGER	BRG. STUDS
B1	LSL 1¾x14	HU11	2
B2	LSL 3½x14	HHUS410	3
B3	(3)LVL 1¾x14	HGUS5.50/14	4
B4	(4)LVL 1¾x14	HGUS7.25/14	5

Legend

- STRUCTURAL WALL OR POST BELOW
- STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- STEM WALL & FOOTING
- Wx — SHEARWALL PER 12/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- HANGER
- Bx — BEAM PER SCHEDULE, THIS SHEET
- BLOCKED FLOOR DIAPHRAGM: 2x4 FLAT BLKG. AT ALL PLYWOOD PANEL EDGES. NAIL ALL PLYWOOD PANEL EDGES W/ 8d @ 4"oc & @ 12"oc FIELD
- HDUx — HOLDOWN PER 12/S3.1, U.N.O.
- SHORING PILE PER SH2.1
- 4"ø PIN PILE (13 total this sheet) NOTE: PIN PILES SUBSTITUTED FOR AUGER CAST PILES; PILES PER GEOTECH REPORT
- T.O._ — TOP OF CONCRETE ELEVATION. ELEVATIONS ARE ESTIMATES, CONTRACTOR TO CONFIRM W/ ARCHITECT & ACTUAL SITE CONDITIONS

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 18" MINIMUM BELOW EXTERIOR GRADE.
4. INTERIOR SLABS ON GRADE PER PLAN. BELOW SLAB PROVIDE A 10-MIL VAPOR BARRIER OVER 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
5. EXTERIOR SLABS ON GRADE SHALL BE 4" MINIMUM THICKNESS. REINFORCE WITH #3 AT 16" O.C. CENTERED IN SLAB. BELOW SLAB PROVIDE 6" MINIMUM FREE DRAINING GRAVEL OVER FIRM NATIVE SOILS OR STRUCTURAL FILL.
6. TYPICAL FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 3/4" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
7. NAIL FLOOR SHEATHING W/ 8D AT 6" OC AT FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" OC IN FIELD.
8. PROVIDE BLOCKING/BRIDGING AT 8'-0" O.C. IN FLOOR FRAMING
9. "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
10. PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.
11. PROVIDE LCE COLUMN CAP AND BASE AT ALL BEAM TO COLUMN CONNECTIONS U.O.N.
12. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
13. GEOTECHNICAL SPECIAL INSPECTOR SHALL BE CONTINUOUSLY PRESENT DURING PIN PILE INSTALLATION AND LOAD TESTING.
14. AT LEAST 3% OF THE PIN PILES, BUT NO MORE THAN 5 PILES, SHALL BE LOAD TESTED TO TWICE THE DESIGN PILE LOAD. ALL LOAD TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN ASTM D1143.

Main Floor Framing/Upper Foundation Plan

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

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DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
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SHEET TITLE:
Main Floor Framing/Upper Foundation Plan

SCALE: 1/4" = 1'-0" U.N.O.
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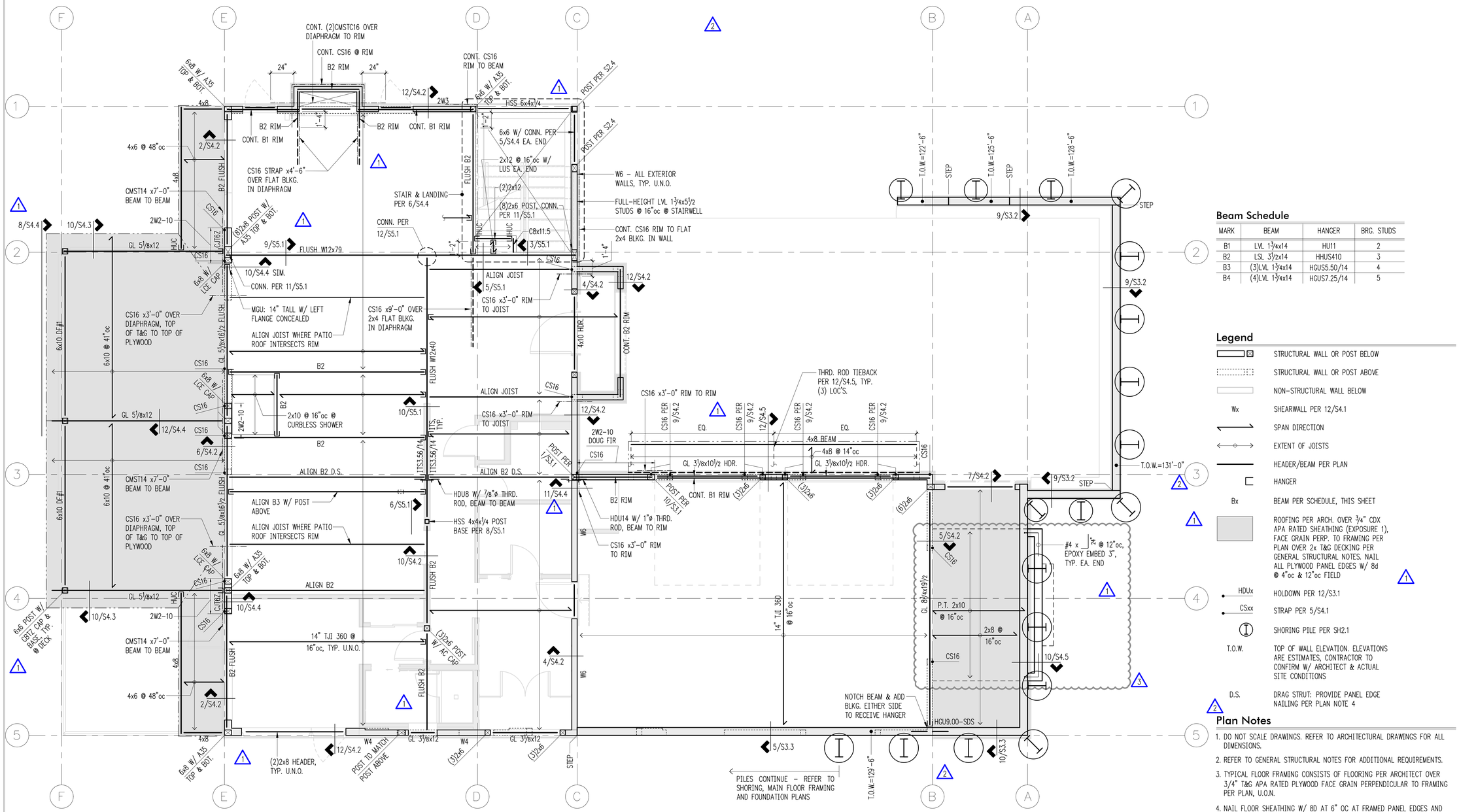
S2.2



Upper Floor Framing Plan

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

Beam Schedule

MARK	BEAM	HANGER	BRG. STUDS
B1	LVL 1¾x14	HU11	2
B2	LSL 3½x14	HHUS410	3
B3	(3)LVL 1¾x14	HGUS5.50/14	4
B4	(4)LVL 1¾x14	HGUS7.25/14	5

Legend

- STRUCTURAL WALL OR POST BELOW
- STRUCTURAL WALL OR POST ABOVE
- NON-STRUCTURAL WALL BELOW
- Wx — SHEARWALL PER 12/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- HANGER
- Bx — BEAM PER SCHEDULE, THIS SHEET
- ROOFING PER ARCH. OVER ¾" CDX APA RATED SHEATHING (EXPOSURE 1), FACE GRAIN PERP. TO FRAMING PER PLAN OVER 2x T&G DECKING PER GENERAL STRUCTURAL NOTES. NAIL ALL PLYWOOD PANEL EDGES W/ 8d @ 4"oc & 12"oc FIELD
- HDUx — HOLDOWN PER 12/S3.1
- CSxx — STRAP PER 5/S4.1
- SHORING PILE PER SH2.1
- T.O.W. — TOP OF WALL ELEVATION. ELEVATIONS ARE ESTIMATES, CONTRACTOR TO CONFIRM W/ ARCHITECT & ACTUAL SITE CONDITIONS
- D.S. — DRAG STRUT: PROVIDE PANEL EDGE NAILING PER PLAN NOTE 4

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. TYPICAL FLOOR FRAMING CONSISTS OF FLOORING PER ARCHITECT OVER 3/4" T&G APA RATED PLYWOOD FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
4. NAIL FLOOR SHEATHING W/ 8D AT 6" OC AT FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12" OC IN FIELD.
5. PROVIDE BLOCKING/BRIDGING AT 8'-0" O.C. IN FLOOR FRAMING
6. "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
7. PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.
8. PROVIDE LCE COLUMN CAP AND BASE AT ALL BEAM TO COLUMN CONNECTIONS U.O.N.
9. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.

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APPROVED: DJS

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DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
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ISSUE: 65% CD Set

SHEET TITLE: Upper Floor Framing Plan

SCALE: 1/4" = 1'-0" U.N.O.
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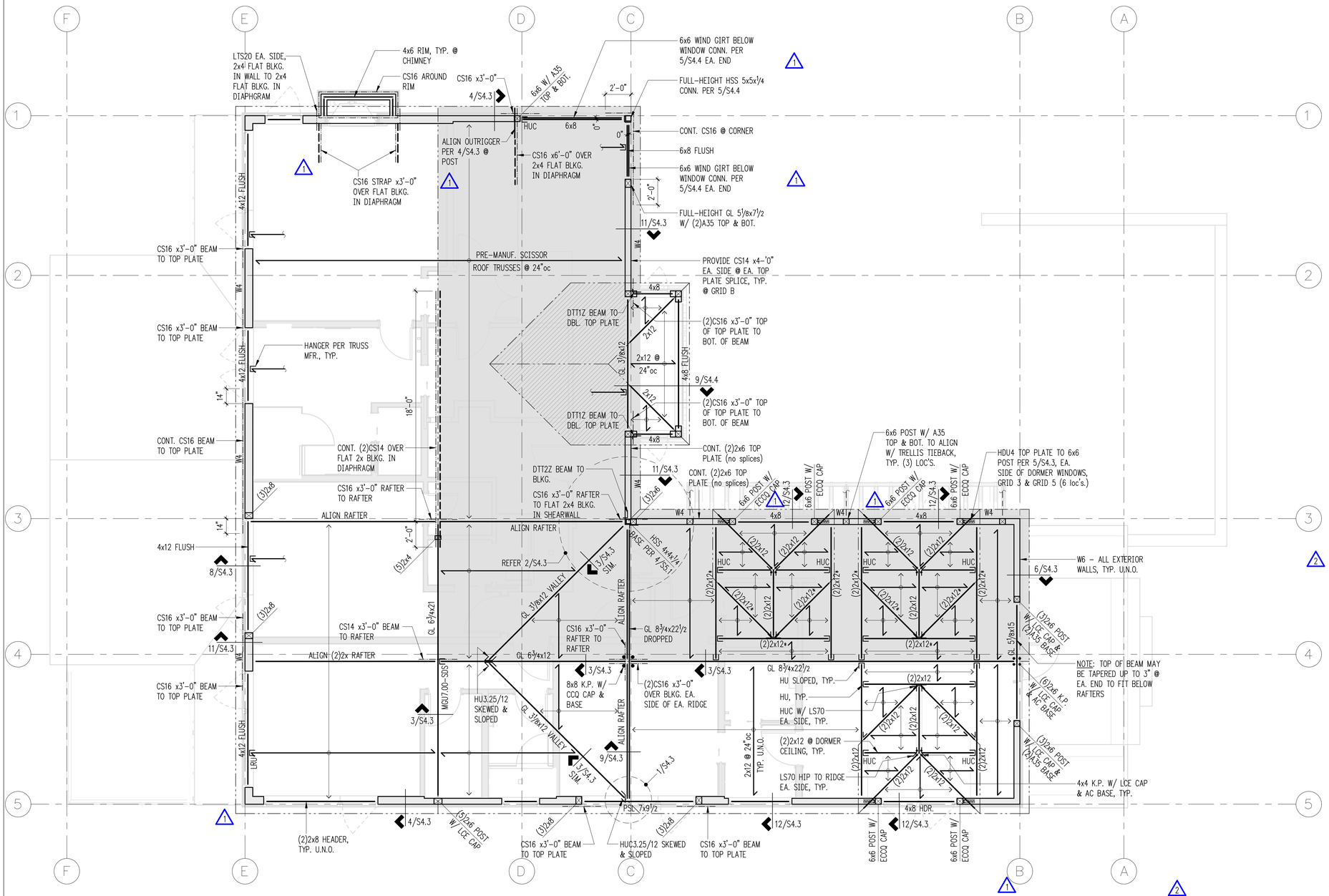
SHEET NO: S2.3



Legend

- STRUCTURAL WALL OR POST BELOW
- NON-STRUCTURAL WALL BELOW
- Wx — SHEARWALL PER 12/S4.1
- SPAN DIRECTION
- EXTENT OF JOISTS
- HEADER/BEAM PER PLAN
- HANGER
- G.T. — GIRDER TRUSS
- OVERFRAME W/ 2x6 @ 24"oc. POST DOWN TO FRAMING BELOW @ 4'-0"oc
- * TOP OF BEAMS MAY BE NOTCHED 1"x1" @ 6"oc. NOTCHES SHALL BE CENTERED BETWEEN DIAPHRAGM NAILING PER PLAN NOTE 8
- BLOCKED ROOF DIAPHRAGM: 2x4 FLAT BLKG. AT ALL PLYWOOD PANEL EDGES. NAIL ALL PLYWOOD PANEL EDGES W/ 8d @ 6"oc & @ 12"oc FIELD

Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
3. "W_" INDICATES PLYWOOD SHEARWALL BELOW FRAMING SHOWN. REFER TO SHEARWALL SCHEDULE FOR WALL ATTACHMENTS. ALL EXTERIOR WOOD FRAMED WALLS ARE W6, U.O.N.
4. PROVIDE (2) BEARING STUDS AT EACH END OF ALL HEADERS AND BEAMS OVER 3'-0" IN LENGTH, U.O.N.
5. PROVIDE LCE COLUMN CAP AND BASE AT ALL BEAM TO COLUMN CONNECTIONS U.O.N.
6. ALL POSTS ABOVE SHALL BEAR FULLY ON BEAMS OR POSTS BELOW AND SHALL HAVE FULL CONTINUOUS BEARING THROUGH FLOORS TO FOUNDATION.
7. TYPICAL ROOF FRAMING CONSISTS OF ROOFING PER ARCHITECTURAL DRAWINGS OVER 1/2" CDX OR 7/16" O.S.B. APA RATED SHEATHING (EXPOSURE 1), FACE GRAIN PERPENDICULAR TO FRAMING PER PLAN, U.O.N.
8. NAIL ROOF SHEATHING WITH 8D AT 6" O.C. AT ALL FRAMED PANEL EDGES AND OVER SHEARWALLS, AND AT 12"O.C. FIELD.
9. PROVIDE H1 AT ENDS OF ALL RAFTERS OR TRUSSES, U.O.N.

Roof Framing Plan

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

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DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

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PROJECT TITLE:

Clarkson Residence

8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
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PH 206.239.0850

ISSUE: 65% CD Set

SHEET TITLE: Roof Framing Plan

SCALE: 1/4" = 1'-0" U.N.O.
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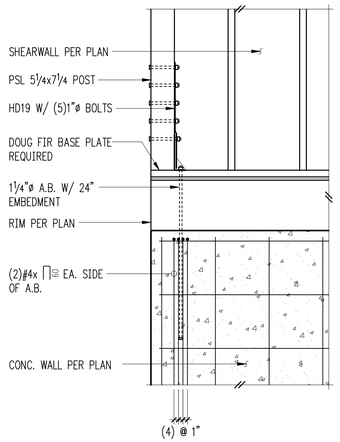
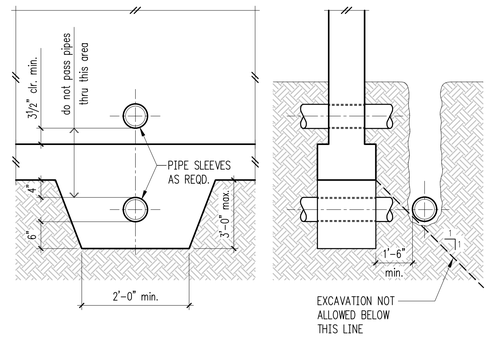
PROJECT NO: 01519-2021-11

SHEET NO: S2.4



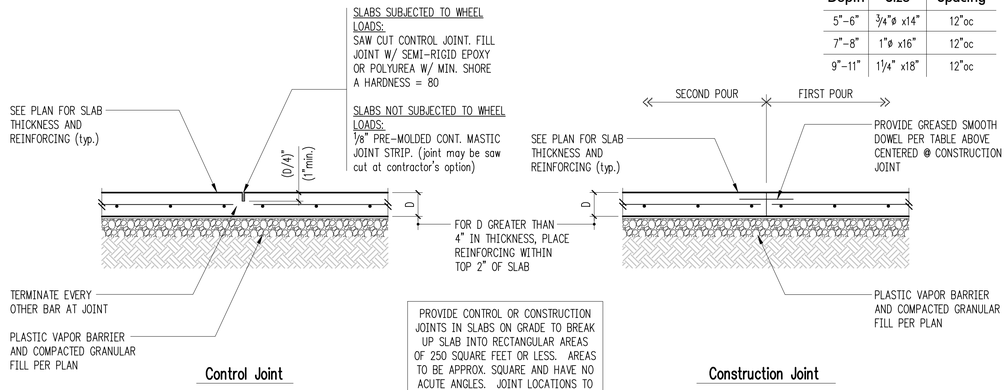
Typical HD19 Holdown 1



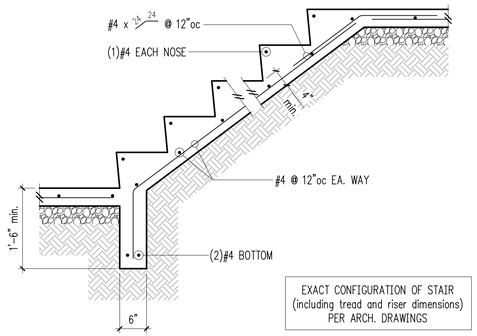
Pipe and Trench Locations 2

Table

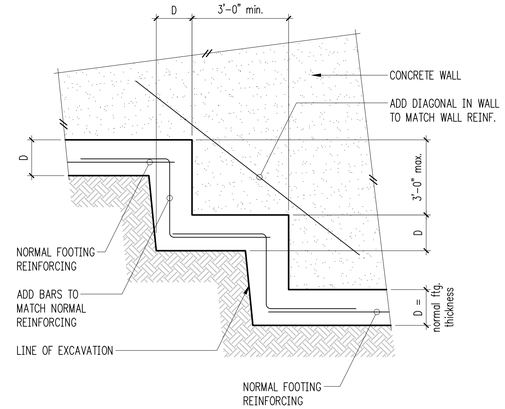
Slab Depth	Dowel Size	Dowel Spacing
5"–6"	¾"ø x14"	12"oc
7"–8"	1"ø x16"	12"oc
9"–11"	1¼" x18"	12"oc



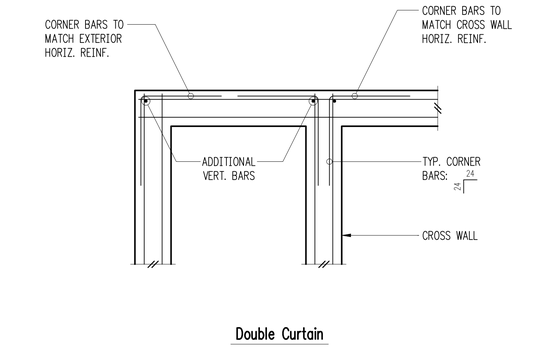
Typical Slab Joints (rebar) 4



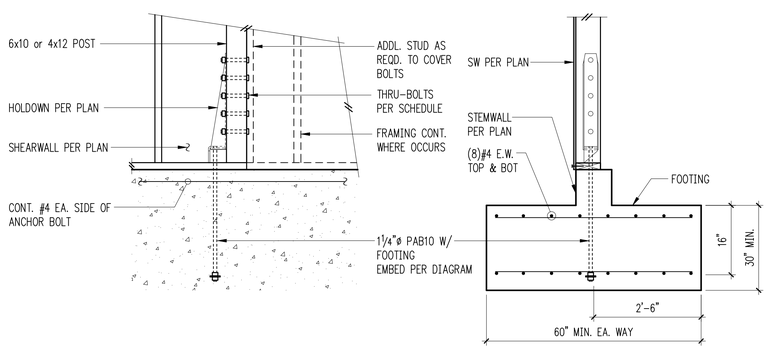
Typical Stair On Grade 5



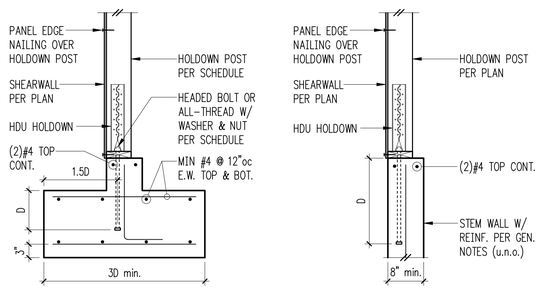
Typical Stepped Footing 6



Typical Corner Bars at Concrete Walls and Footings 8



Typical HD19 Holdown 10



Holdown Schedule

Plan Mark	Screws	Anchor Bolt	Min. A.B. Embed (D)		Holdown Post ①	
			Stem Wall	Footing	if 2x4	if 2x6
HDU2-SDS2.5	(6)SDS ¼"x2½"	⅝"ø	12"	4"	(2) 2x4	(2) 2x6
HDU4-SDS2.5	(10)SDS ¼"x2½"	⅝"ø	SB⅝x24	6"	4x4	4x6
HDU5-SDS2.5	(14)SDS ¼"x2½"	⅝"ø	SB⅝x24	7"	4x4	4x6
HDU8-SDS2.5	(20)SDS ¼"x2½"	⅞"ø	SSTB28	8"	4x6	6x6
HDU11-SDS2.5	(30)SDS ¼"x2½"	1"ø	SB1x30	10"	4x8	6x6
HDU14-SDS2.5	(36)SDS ¼"x2½"	1"ø	N/A	12"	4x8	6x6

① MINIMUM SIZE OF POST AT END OF WALL UNLESS OTHERWISE NOTED ON FRAMING PLANS.

Typical HDU Holdown 12

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DAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

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Typical Concrete Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
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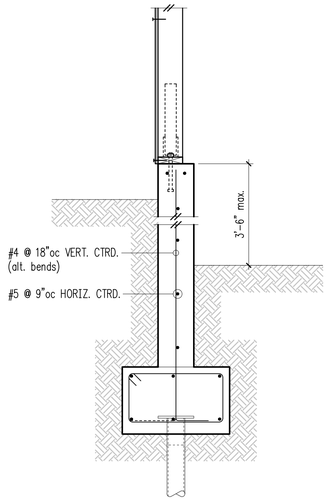
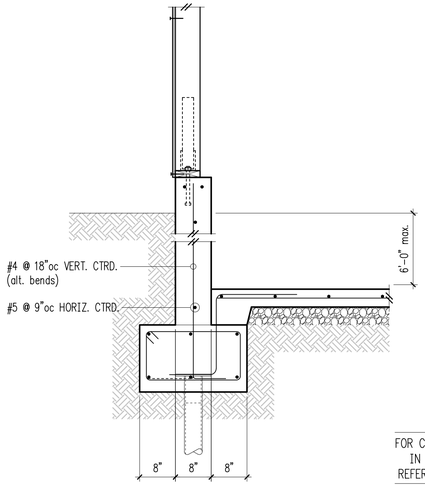
SHEET NO:
S3.1



FOR CALLOUTS
IN COMMON
REFER 11/S3.2

1



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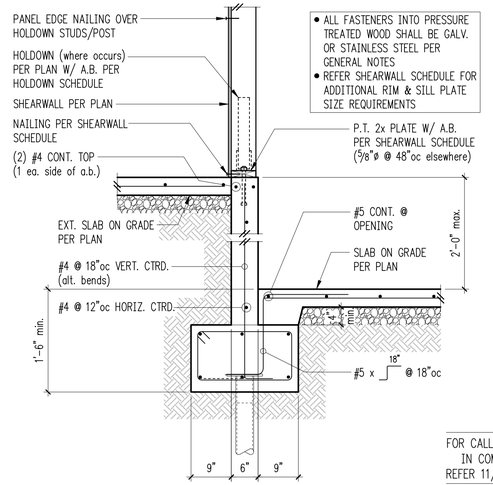

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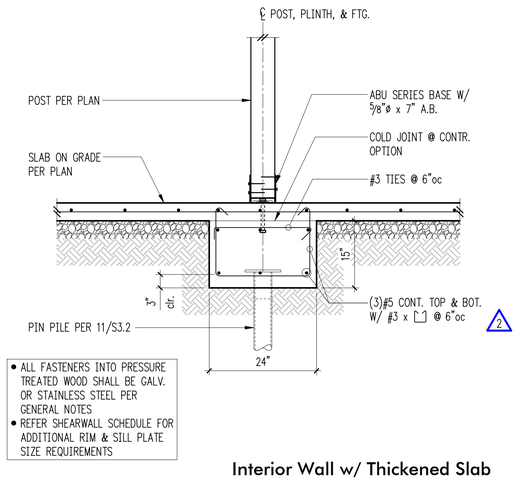
REFER 11/S3.2

Exterior Wall w/ Slab on Grade & High Grade 3



Interior Wall w/ Thickened Slab 4

FOR CALLOUTS
IN COMMON
REFER 3/S3.2

5

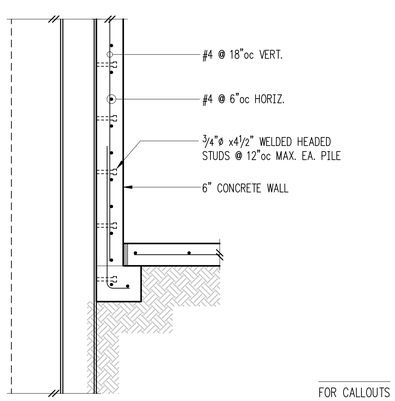
2

6

FOR CALLOUTS
IN COMMON
REFER 11/S3.2

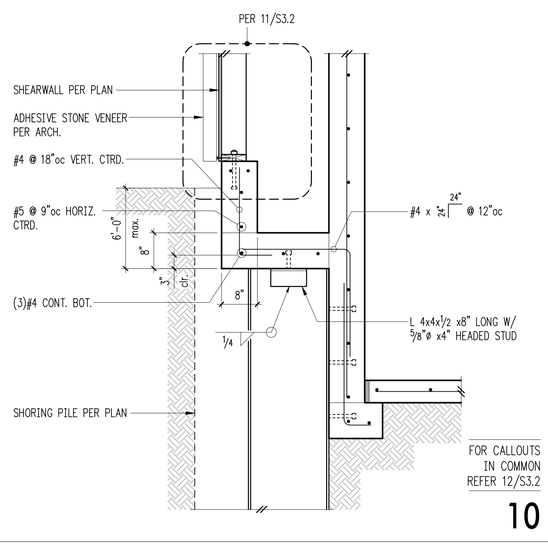
7

Deck or Canopy Post Footing 8



FOR CALLOUTS
IN COMMON
REFER 12/S3.2

Wall Footing at Permanent Shoring Piles at Site Walls 9



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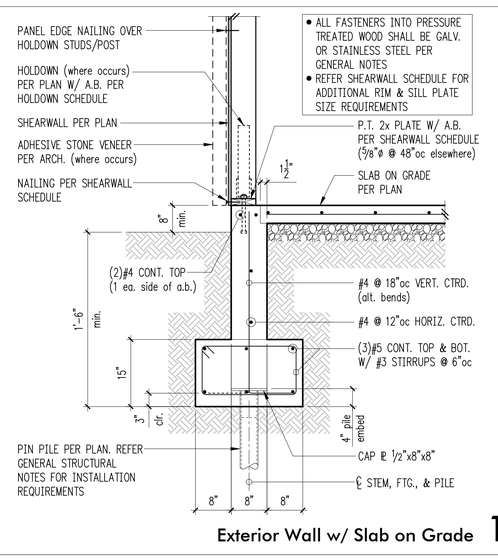
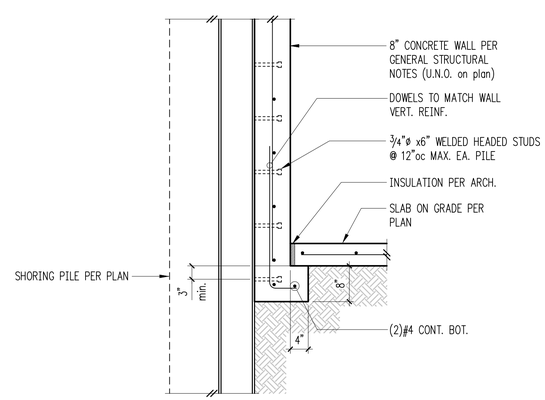


Exterior Wall w/ Slab on Grade 11



Typical Wall Footing at Permanent Shoring Piles 12

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ISSUE:
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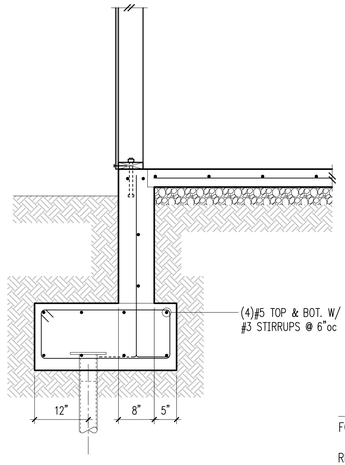
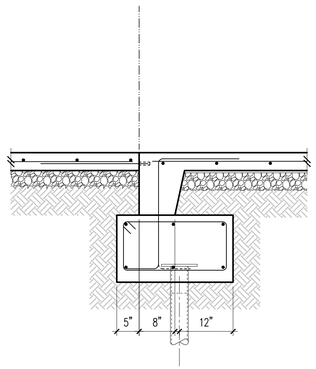


FOR CALLOUTS IN COMMON REFER 11/S3.2 (2)

1



FOR CALLOUTS IN COMMON REFER 7/S3.2 (2)

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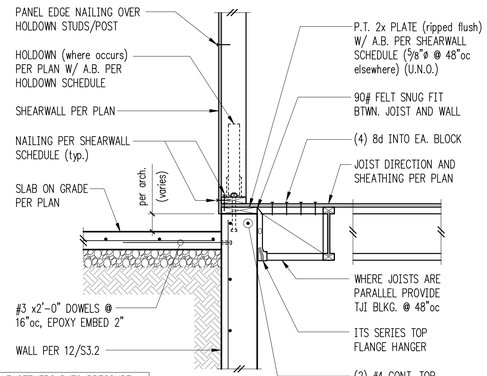
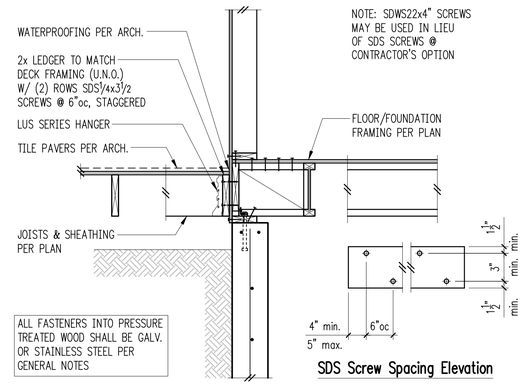


- ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES
- REFER SHEARWALL SCHEDULE FOR ADDITIONAL RIM & SILL PLATE SIZE REQUIREMENTS

Exterior Framing (w/TJI) at Basement (High Grade) 3

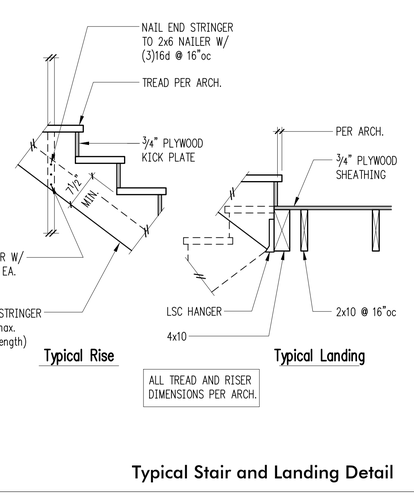


ALL FASTENERS INTO PRESSURE TREATED WOOD SHALL BE GALV. OR STAINLESS STEEL PER GENERAL NOTES

Typical Deck Ledger Detail 4

SDS Screw Spacing Elevation

NOTE: LEDGER FASTENER SPACING MAY BE OFFSET UP TO 3" TO AVOID INTERFERENCE W/ JOIST HANGER



FOR CALLOUTS IN COMMON REFER 12/S3.3

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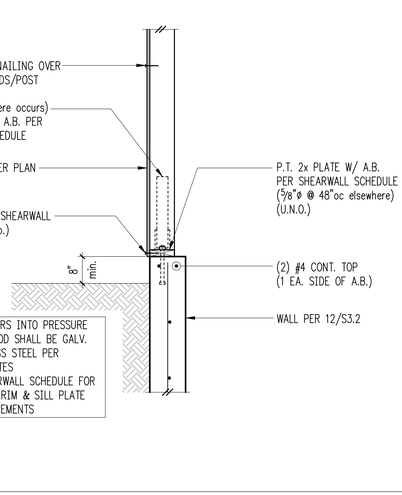

FOR CALLOUTS IN COMMON REFER 11/S3.3

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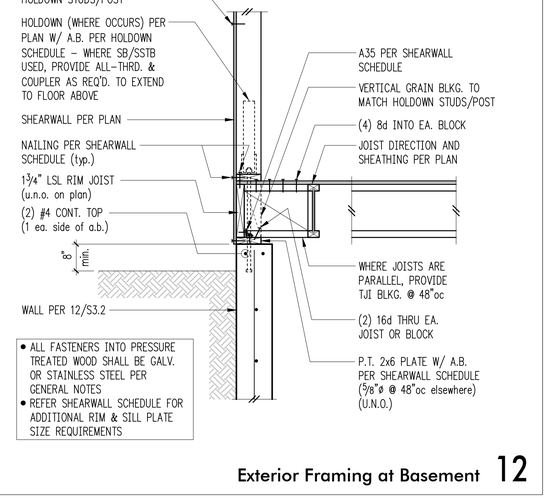

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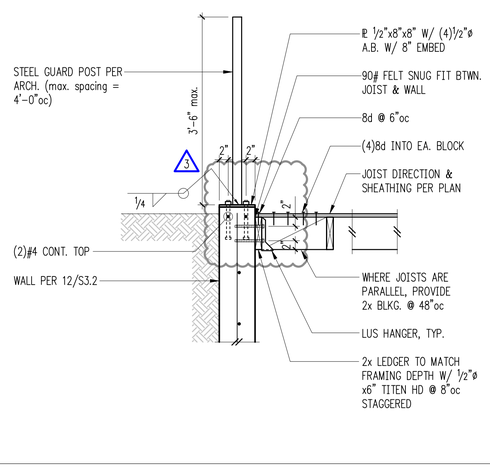
Exterior Framing at Basement w/ Pony Wall 8

ALL TREAD AND RISER DIMENSIONS PER ARCH.

Typical Stair and Landing Detail 9



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11

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Exterior Framing at Basement 12

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DAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
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DPD:

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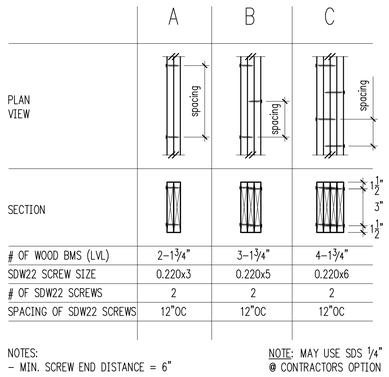
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
Foundation Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: S3.3

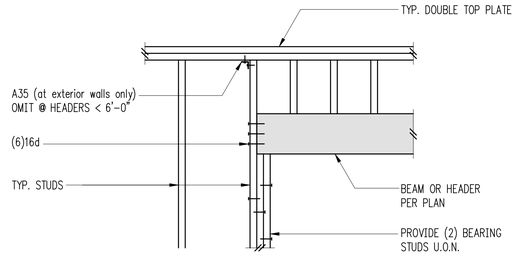


	A	B	C
# OF WOOD BMS (LVL)	2–1¾"	3–1¾"	4–1¾"
SDW22 SCREW SIZE	0.220x3	0.220x5	0.220x6
# OF SDW22 SCREWS	2	2	2
SPACING OF SDW22 SCREWS	12"OC	12"OC	12"OC

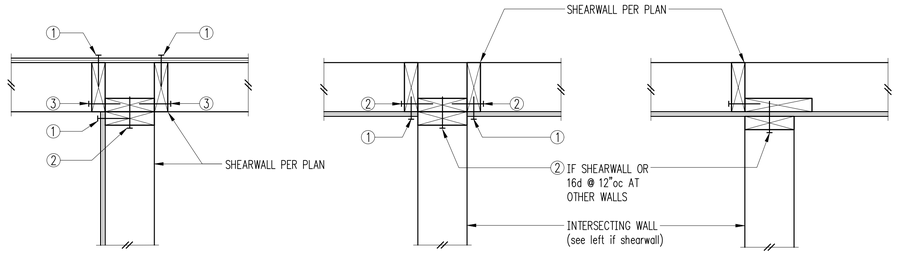
NOTES:
– MIN. SCREW END DISTANCE = 6"

NOTE: MAY USE SDS ¼" @ CONTRACTORS OPTION

Sistering Schedule for Multi Beams (SDWS) 1



Typical Header Support w/2 Bearing Studs 2

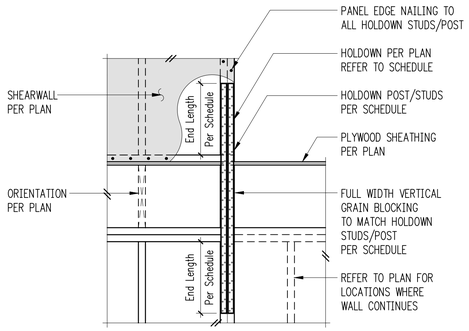


① PLYWOOD PANEL EDGE NAILING PER SHEARWALL SCHEDULE

② BASE PLATE NAILING PER SHEARWALL SCHEDULE

③ 16d @ 8"oc

Typical Shearwall Intersections 4

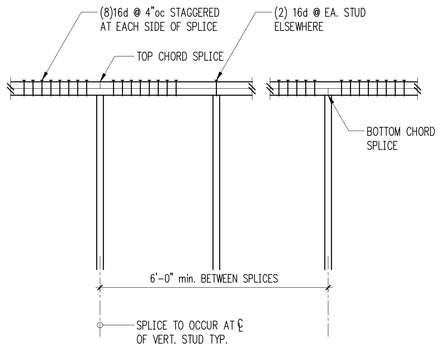


Holdown Strap Schedule

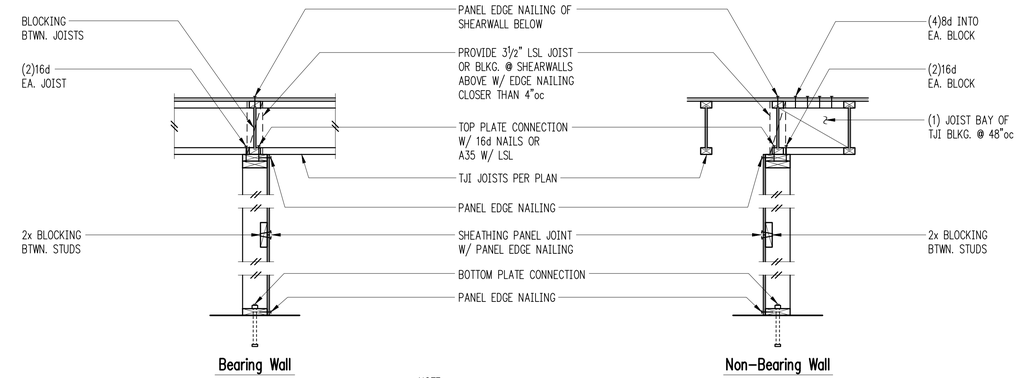
Plan Mark	End Length	#Nails Ea. End Length	Holdown Studs/Post		
			if 2x4	if 2x6	if 2x8
CS16	1'–2"	(13) 8d	(1) 2x4	(1) 2x6	(1) 2x8
CMST14	2'–6"	(33) 10d	4x6	4x6	4x8
CMST12	3'–3"	(43) 10d	4x8	6x6	6x8

2

Typical Holdown Schedule 5

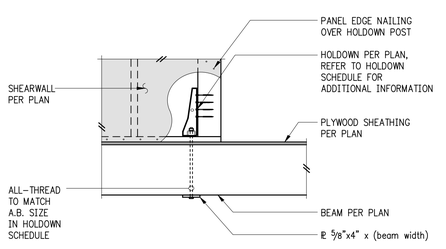


Typical Top Plate Splice 6

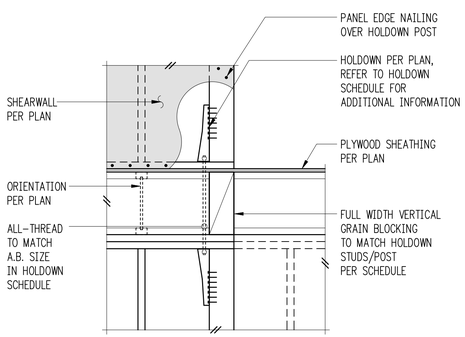


NOTE:
SEE SHEARWALL SCHEDULE FOR ALL NAILING AND CONNECTIONS, NOT OTHERWISE NOTED

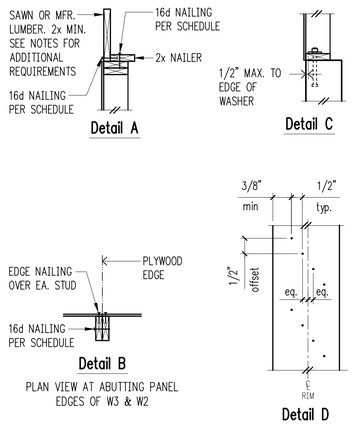
Typical Shearwall Construction 8



HDU at Floor Beam 9



Typical HDU Holdowns 10



Shearwall Schedule ①②③⑥⑦⑧

Mark	Sheathing	Panel Edge Nailing	Top Plate Connection		Base Plate Connection	
			if TJI	if Wood ⑨	at Wood ⑪⑫	at Concrete
W6	15/32" CDX PLYWOOD	8d @ 6"oc	16d @ 6"oc	A35 @ 24"oc ⑩	16d @ 6"oc	5⁄8"ø A.B. @ 48"oc
W4	15/32" CDX PLYWOOD	8d @ 4"oc	16d @ 4"oc	A35 @ 16"oc ⑩	(2)rows 16d @ 6"oc	5⁄8"ø A.B. @ 32"oc
W3 ④	15/32" CDX PLYWOOD	8d @ 3"oc	(2)rows 16d @ 4"oc	A35 @ 12"oc ⑩	(2)rows 16d @ 6"oc	5⁄8"ø A.B. @ 24"oc
W2 ④	15/32" CDX PLYWOOD	8d @ 2"oc	(2)rows 16d @ 4"oc	A35 @ 9"oc ⑩	(2)rows 16d @ 4"oc ⑬	5⁄8"ø A.B. @ 16"oc
2W3 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 3"oc EA. SIDE	n/a	A35 @ 6"oc	(3)rows 16d @ 4"oc ⑭	5⁄8"ø A.B. @ 16"oc
2W2 ⑤	15/32" CDX PLYWD. EA. SIDE	8d @ 2"oc EA. SIDE	n/a	HGA10KT @ 8"oc	(3)rows 16d @ 4"oc ⑭	5⁄8"ø A.B. @ 12"oc
2W2–10 ⑤⑮	15/32" CDX PLYWD. EA. SIDE	10d @ 2"oc EA. SIDE	n/a	HGA10KT @ 6"oc	(4)rows 16d @ 4"oc ⑬	5⁄8"ø A.B. @ 12"oc

① BLOCK PANEL EDGES WITH 2x MIN. LAID FLAT AND NAIL PANELS TO INTERMEDIATE SUPPORTS WITH 8d @ 12"o.c.
② 8d NAILS SHALL BE 0.131"ø x 2 1/2" (common) – 16d NAILS SHALL BE 0.135"ø x 3 1/2" (box) – 10d NAILS SHALL BE 0.148"ø x 3" (common).
③ EMBED ANCHOR BOLTS AT LEAST 7". EXPANSION BOLTS MAY BE SUBSTITUTED FOR ANCHOR BOLTS WITH 4" EMBEDMENT. TITEN HD SCREW ANCHORS MAY BE SUBSTITUTED FOR ANCHOR BOLTS W/ 4" EMBEDMENT. ALL BOLTS SHALL HAVE 3" x 3" x 1/4" MIN. PLATE WASHERS. PLATE WASHERS SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE WITH SHEATHING. SEE DETAIL C.
④ 3x STUDS OR DOUBLE STUDS NAILED TOGETHER W/ BASE PLATE NAILING ARE REQUIRED AT ABUTTING PANEL EDGES OF W3 AND W2. SEE DETAIL B. WHERE 3x STUDS ARE USED FOR W2, STAGGER NAILS AT ADJOINING PANEL EDGES.
⑤ 3x FOUNDATION SILL PLATES ARE REQUIRED FOR 2W3 AND 2W2. 3x STUDS ARE REQUIRED AT ABUTTING PANEL EDGES AND PANEL JOINTS SHALL BE OFFSET EACH SIDE OF WALL. STAGGER NAILS AT ADJOINING PANEL EDGES. 3x STUD, MIN., REQUIRED AT END OF SHEARWALL.
⑥ TWO STUDS MINIMUM ARE REQUIRED AT EACH END OF ALL SINGLE–SIDED SHEARWALLS. ALL END STUDS SHALL RECEIVE PANEL EDGE NAILING. SEE PLANS AND HOLDOWN SCHEDULE FOR ALTERNATE REQUIREMENTS.
⑦ ALL EXTERIOR WALLS SHALL BE W6, UNLESS NOTED OTHERWISE.
⑧ 7/16" O.S.B. MAY BE SUBSITUTED FOR 15/32" CDX, EXCEPT AT 10d PANEL EDGE NAILING.
⑨ LTP4's (HORIZIONTAL ORIENTATION) W/ 8d COMMON MAY BE SUBSTITUTED FOR A35's AT CONTRACTORS OPTION.
⑩ A 2x NAILER ATTACHED W/ BASE PLATE NAILING PER DETAIL A MAY BE SUBSTITUTED FOR A35's AT CONTRACTORS OPTION.
⑪ AT MULTI–ROW NAILING, MINIMUM OFFSET BETWEEN ROWS AND ROW SPACING 1/2", SEE DETAIL D.
⑫ LVL RIMS PERMITTED AT SINGLE SIDED SHEAR WALLS ONLY.
⑬ PROVIDE (3) ROWS 16d @ 6"oc AT LVL RIMS.
⑭ MINIMUM RIM OR JOIST 3½" WIDE BELOW SHEARWALL.
⑮ STUDS AND PLATES SHALL BE DOUGLAS FIR–LARCH NO. 2 AT 2W2–10 SHEARWALL.

Shearwall Schedule 12

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DAN J. SAY — STATE OF WASHINGTON — 23000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

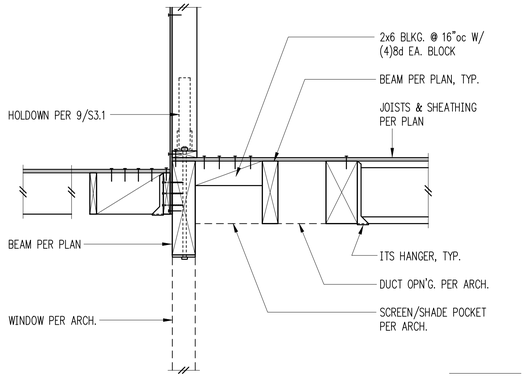
ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
Typical Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11

SHEET NO:
S4.1



FOR CALLOUTS IN COMMON REFER 5/S4.2

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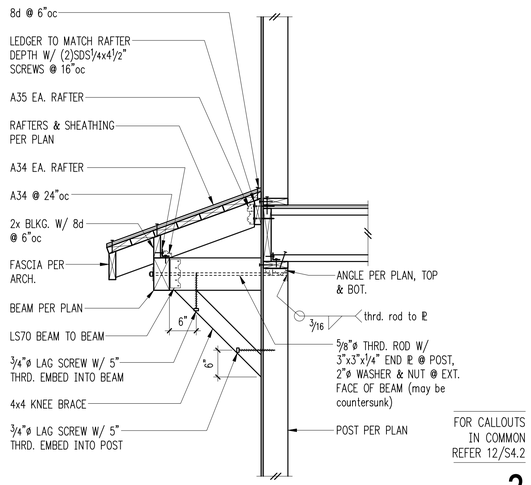

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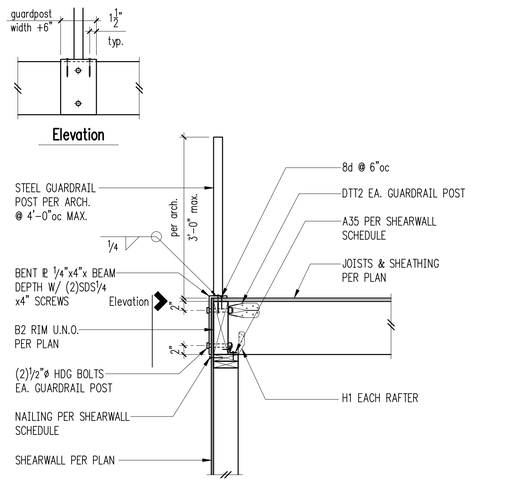
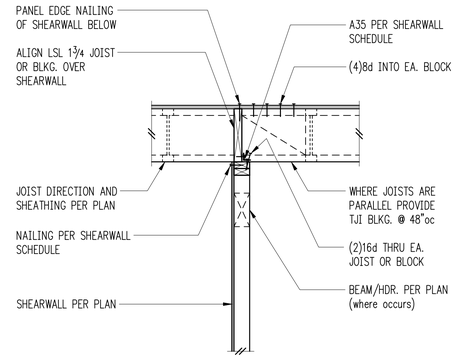
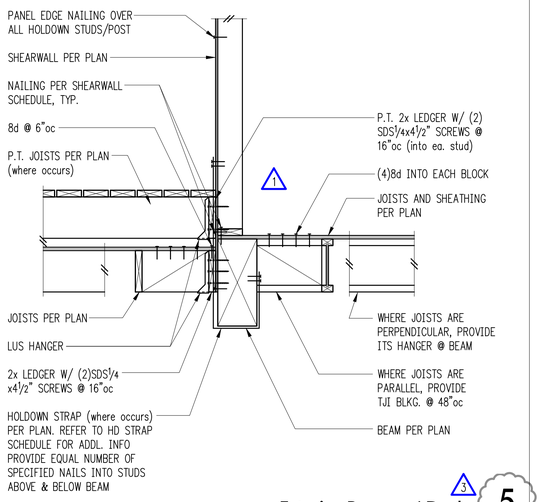


Joists Perpendicular to Exterior Wall 1 3



Interior Shearwall Below 4

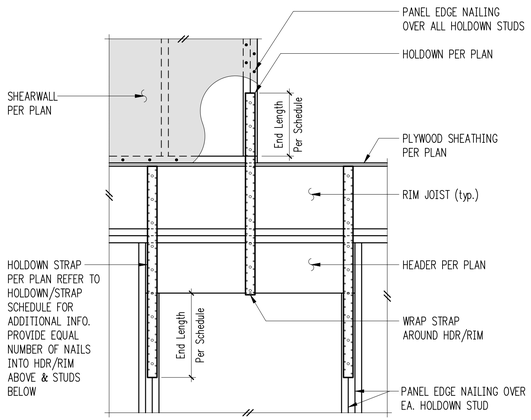


Exterior Beam w/ Deck 3 5

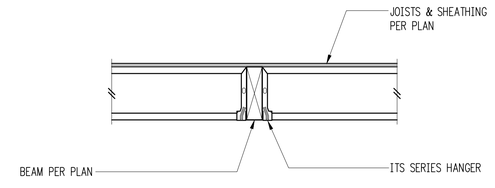
Rafters Parallel to Exterior Wall 6

Joists Parallel to Exterior Wall 1 7

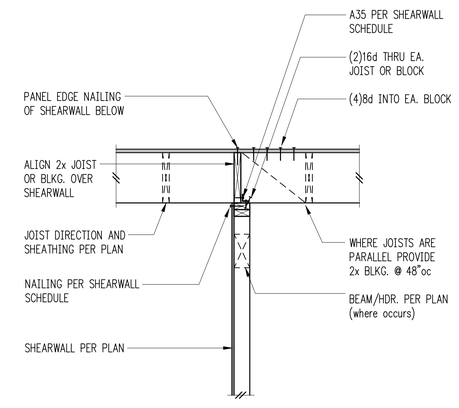
Typical Deck Ledger Detail 8



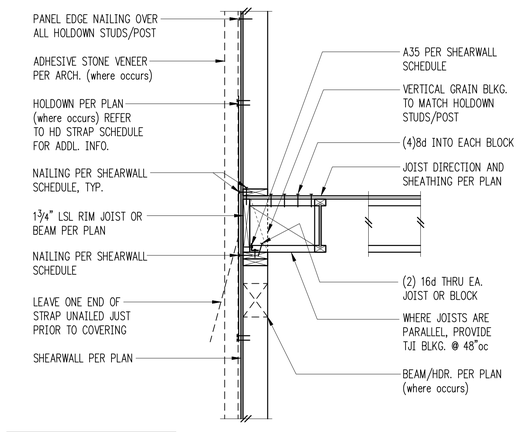
Typical Strap over Beam 9



Typical Flush Beam 10



Interior Shearwall Below Floor 11



- REFER TO SHEARWALL SCHEDULE FOR ADDITIONAL RIM & SILL PLATE SIZE REQUIREMENTS

Exterior Floor Framing 12

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DATE: June 22, 2022
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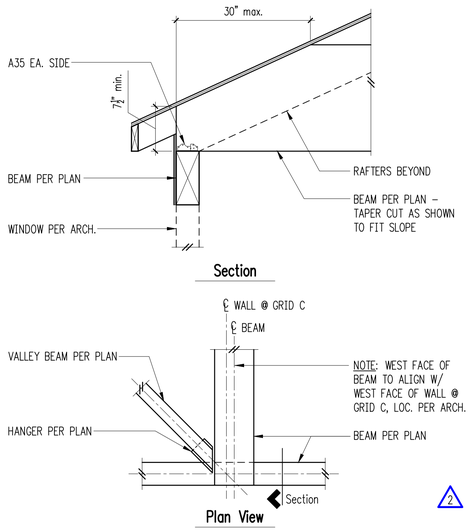
S4.2



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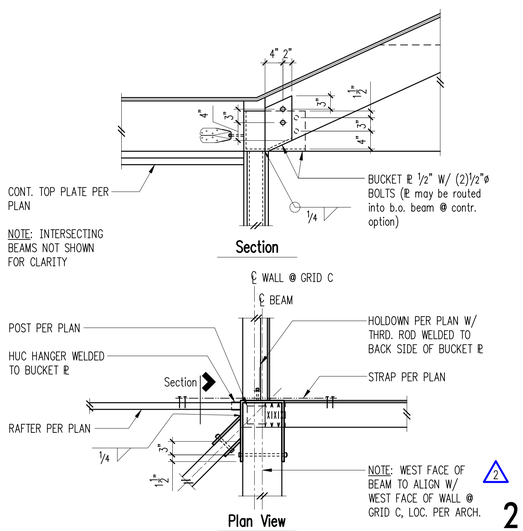

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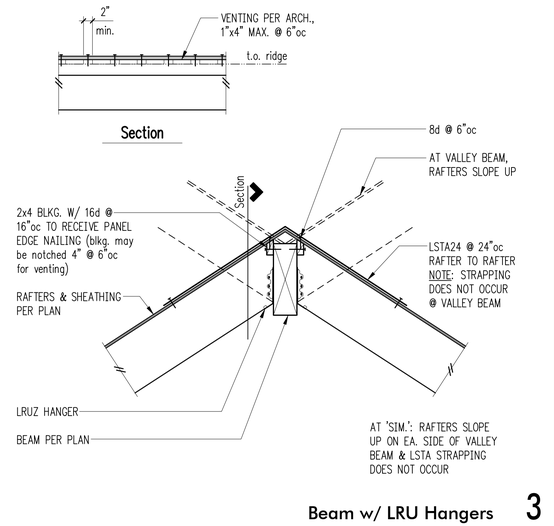
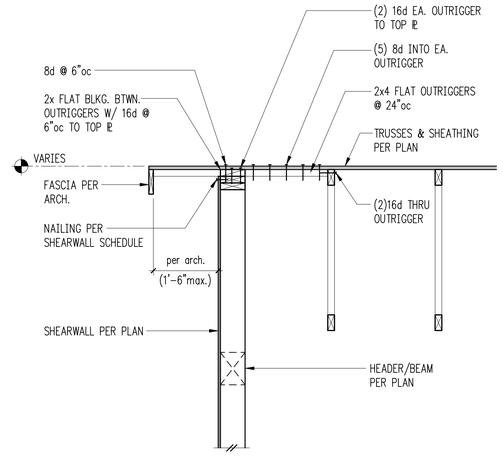
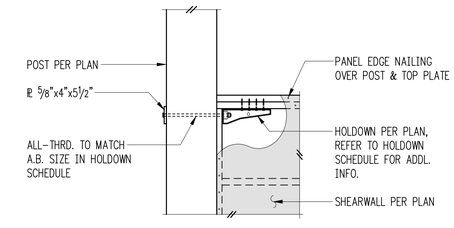


Beam w/ LRU Hangers 3



Trusses Parallel to Exterior Wall w/ Flat Outrigger 4



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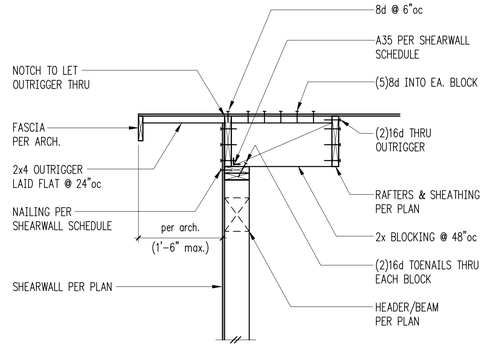

Exterior Non-Bearing Wall 6

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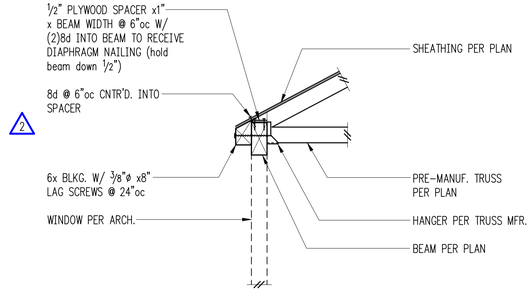

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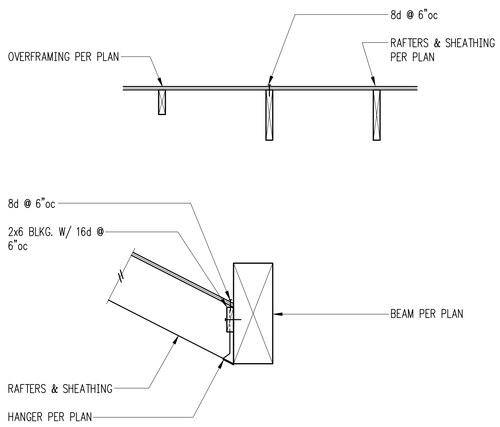

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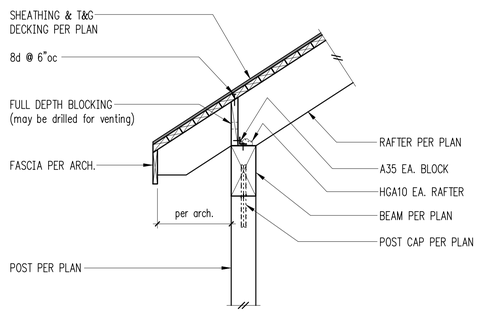

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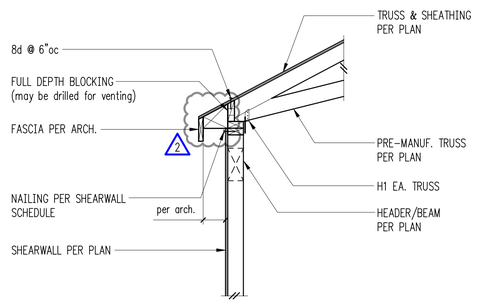
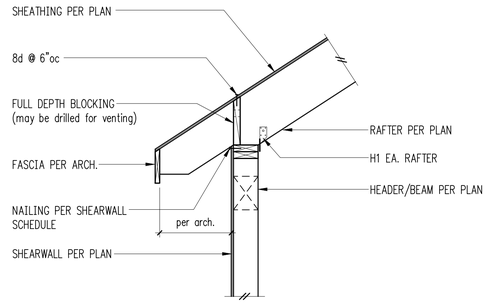
Beam & Post 10



Scissors Trusses Exterior Bearing Wall 11



Exterior Bearing Wall 12

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2124 Third Avenue - Suite 100 - Seattle, WA 98121
p: 206.443.6212 ssfengineers.com
934 Broadway - Tacoma, WA 98402
p: 253.284.9470 ssfengineers.com

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DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

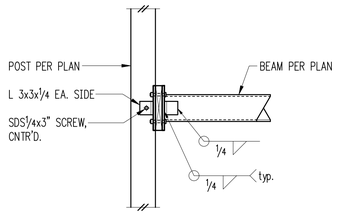
PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:
S4.3



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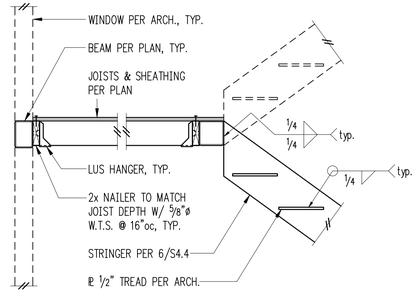

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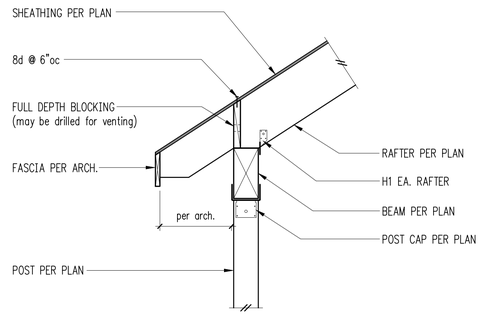
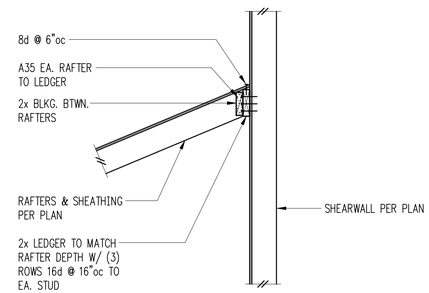
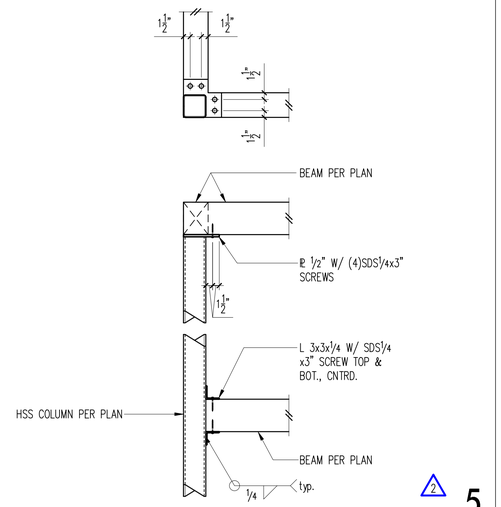


Beam & Post 3



Light Roof Ledger 4



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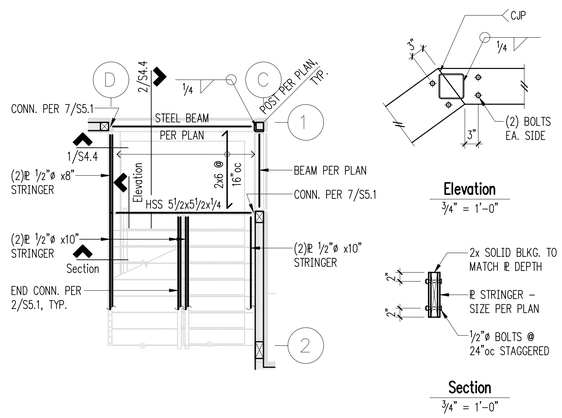
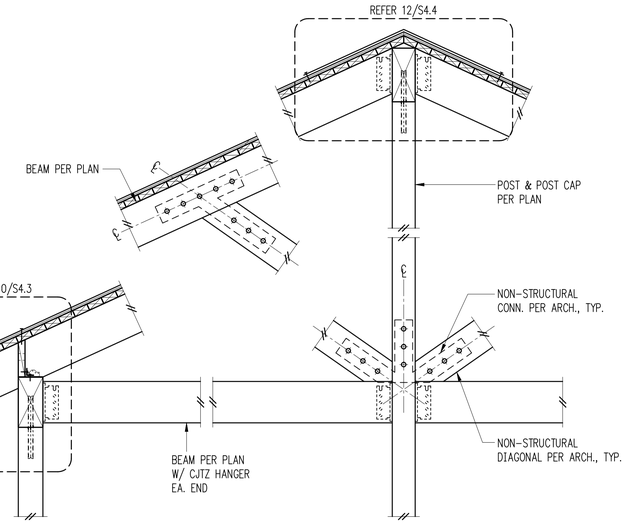


¼" = 1'-0" 2
Stair Landing Partial Plan 6



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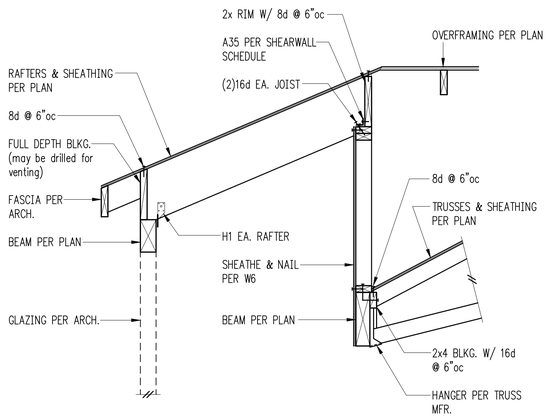

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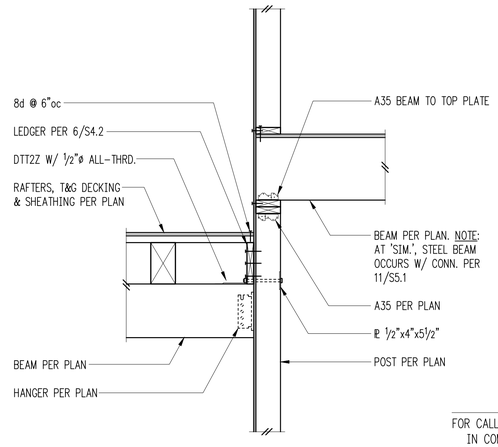

FOR CALLOUTS IN COMMON REFER 12/S4.2

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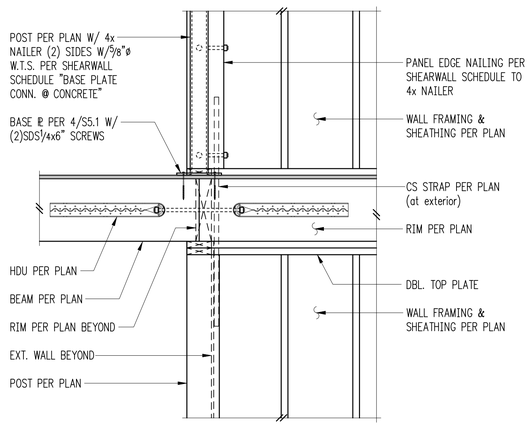

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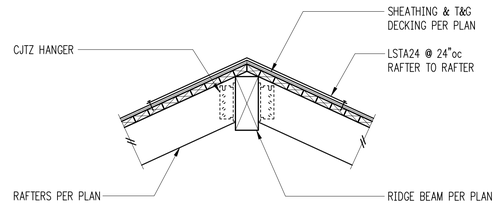

12

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Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE: 65% CD Set

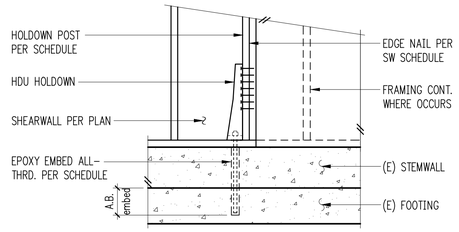
SHEET TITLE: Wood Framing Details

SCALE: ¾" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: 1 S4.4

1

2

3



Holdown Schedule

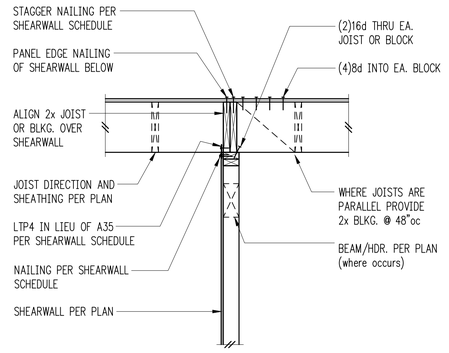
Plan Mark	Screws	Anchor Bolt	A.B. Embed	Holdown Post ①	
				if 2x4	if 2x6
HDU4-SDS2.5	(10)SDS 1/4"x2 1/2"	5/8"ø	6"	4x4	4x6

① MINIMUM SIZE OF POST AT END OF WALL UNLESS OTHERWISE NOTED ON FRAMING PLANS.

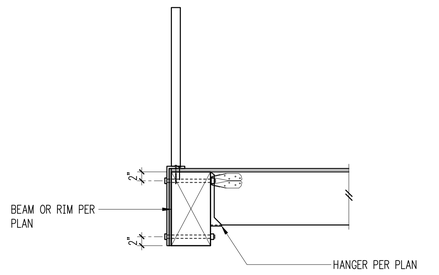
Typical HDU Holdown 3 4

5

6



Interior Shearwall Below Floor 3 7



FOR CALLOUTS IN COMMON REFER 3/S4.2

3 8

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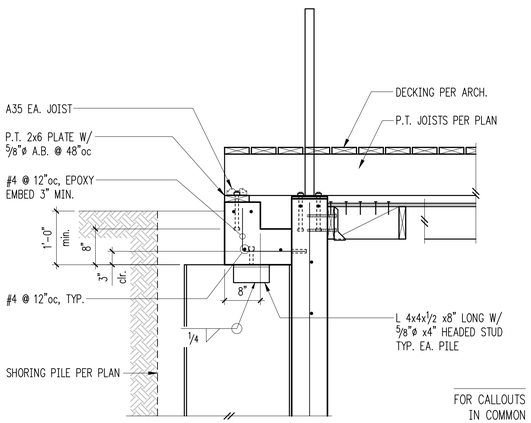

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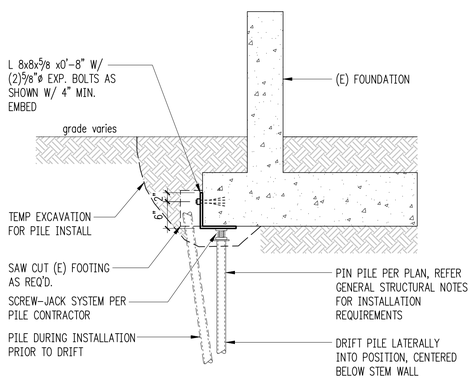
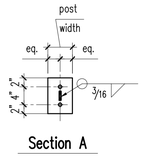
3 10



Post-Installed Pile - Screw Jack 3 11



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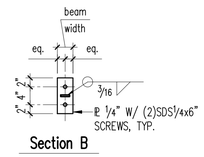

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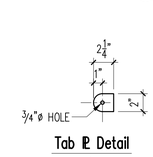

Tab PL Detail

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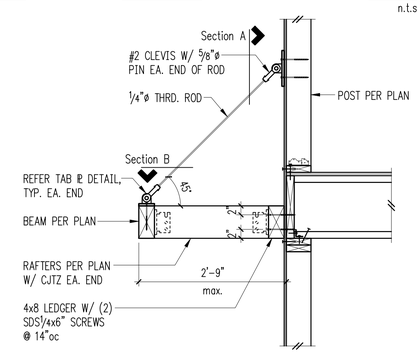

12

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DAN J. SAY — STATE OF WASHINGTON — 23000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

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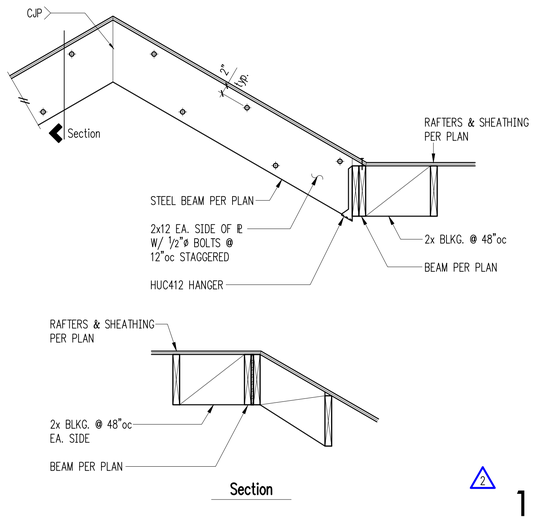
ISSUE:
65% CD Set

SHEET TITLE:
Wood Framing Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:
S4.5



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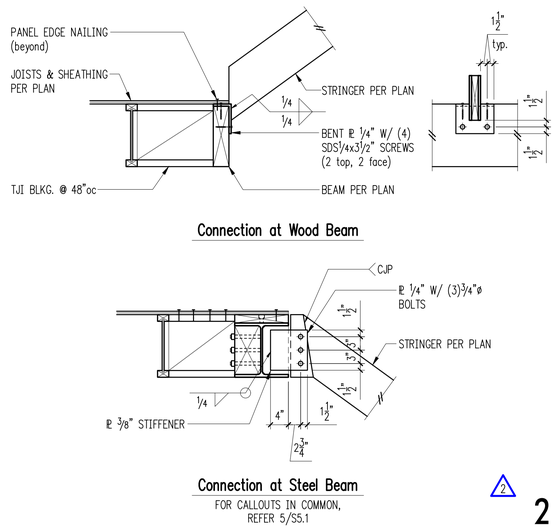

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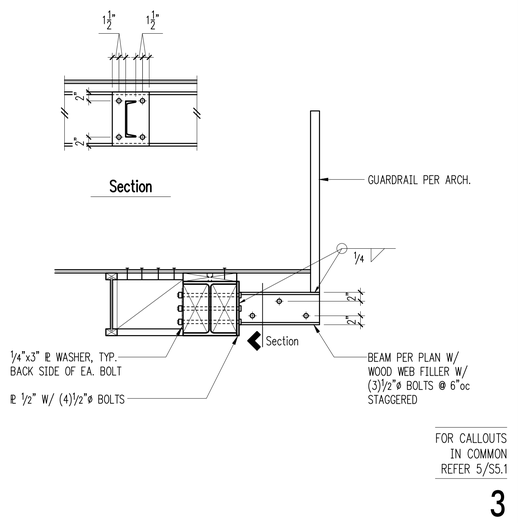

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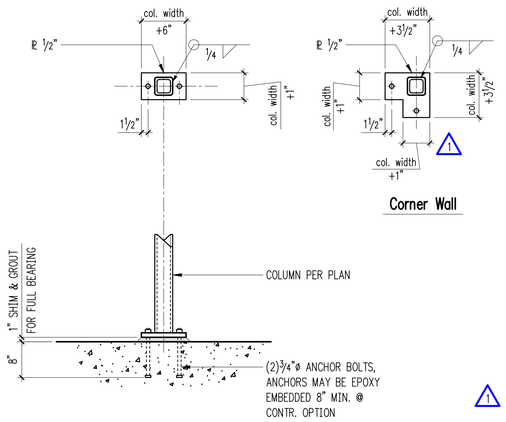


4

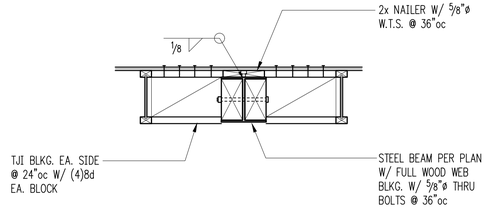
5

6 Beam/Plate Connection - Steel/Wood

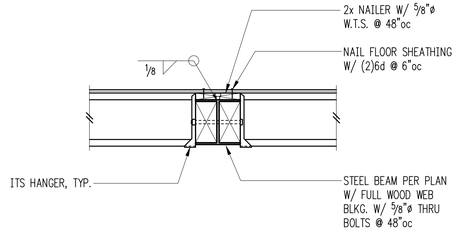
7

NOTE:
BEARING PLATE THICKNESS SHALL BE ¾" WHERE DEPTH OF SUPPORTED MEMBER EXCEEDS 24"

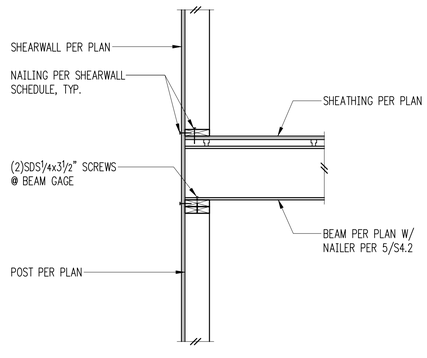
8 Typical Beam Bearing on HSS or Pipe Column



9 Steel Beam Parallel to Framing



10 Steel Beam Perpendicular to Framing



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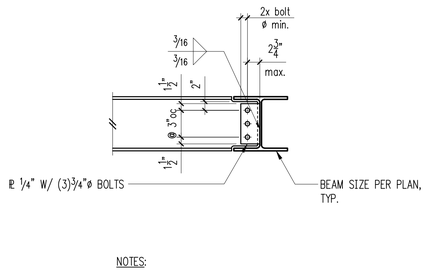

NOTES:
1. STANDARD OR SLOTTED HOLES MAY BE USED.
2. BOLT TYPE A325N.
3. ℄ MATERIAL – A36

12

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DAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
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ISSUE: 65% CD Set

SHEET TITLE: Steel Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: S5.1

General Structural Notes

THE FOLLOWING APPLY UNLESS SHOWN OTHERWISE ON THE DRAWINGS

CODE REQUIREMENTS

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION

REFERENCE DOCUMENTS

2. GEOTECH REPORT PER S1. 1

GENERAL REQUIREMENTS

3. ANY DISCREPANCIES FOUND AMONG THE DRAWINGS, THE SPECIFICATIONS, THESE GENERAL NOTES AND THE SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER AND ARCHITECT, WHO SHALL CORRECT SUCH DISCREPANCY IN WRITING. ANY WORK DONE BY THE GENERAL CONTRACTOR AFTER DISCOVERY OF SUCH DISCREPANCY SHALL BE DONE AT THE GENERAL CONTRACTOR'S RISK.

4. SHOULD ANY DISCREPANCIES BE FOUND IN THE PROJECT DOCUMENTS, THE CONTRACTOR WILL BE DEEMED TO HAVE INCLUDED IN THE PRICE THE MOST EXPENSIVE WAY OF COMPLETING THE WORK, UNLESS PRIOR TO SUBMISSION OF THE PRICE THE CONTRACTOR ASKS FOR A DECISION FROM THE ENGINEER AND ARCHITECT AS TO WHICH SHALL GOVERN.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTOR'S WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES TO THE OWNER, CONTRACTORS, OR OTHER ENTITIES OR PERSONS AT THE PROJECT SITE.

6. CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF EXISTING STRUCTURES IN THE FIELD AND SHALL NOTIFY THE ENGINEER OF ALL FIELD CHANGES PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBER.

7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER. ALL TYPICAL AND NOTES SHOWN ON DRAWINGS SHALL APPLY, UNLESS NOTED OTHERWISE. TYPICAL DETAILS MAY NOT NECESSARILY BE INDICATED ON THE PLANS BUT SHALL STILL APPLY AS SHOWN OR DESCRIBED IN THE DETAILS. WHERE TYPICAL DETAILS ARE NOTED ON THE PLANS, THE SPECIFIED TYPICAL DETAIL SHALL BE USED. WHERE NO TYPICAL DETAIL IS NOTED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHOOSE THE APPROPRIATE TYPICAL DETAIL FROM THOSE PROVIDED. THE CONTRACTOR SHALL SUBMIT ALL PROPOSED ALTERNATE TYPICAL DETAILS TO THOSE PROVIDED WITH RELATED CALCULATIONS TO THE ENGINEER FOR APPROVAL PRIOR TO SHOP DRAWING PRODUCTION AND FIELD USE.

9. THE FOLLOWING ITEMS SHALL BE SUBMITTED IN WRITING FOR APPROVAL TO THE ENGINEER, ARCHITECT AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK OR THE FABRICATION OR INSTALLATION OF ANY STRUCTURAL ITEM. THE CONTRACTOR SHALL RETAIN ALL RESPONSIBILITY FOR MEANS AND METHODS OF CONSTRUCTION.

    SHORING MONITORING PROGRAM: SEE MONITORING SECTION.
    SHORING SEQUENCING PROGRAM
    CONCRETE AND GROUT MIX DESIGN

10. SHOP DRAWINGS FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS.

    STRUCTURAL STEEL
    MISCELLANEOUS METALS
    GROUTS AND CONCRETES.

11. SHOP DRAWING REVIEW: DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. CONTRACTOR SHALL REVIEW DRAWINGS FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND OPERATIONS OF CONSTRUCTION, AND ALL SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY; REPRODUCIBLE WILL BE MARKED AND RETURNED WITHIN TWO WEEKS OF RECEIPT WITH A NOTATION INDICATING THAT THE SUBMITTAL HAS BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE SUBMITTED ITEMS SHALL NOT BE INSTALLED UNTIL THEY HAVE BEEN APPROVED BY THE DESIGN TEAM.

    SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS.

12. UTILITY LOCATION: THE UTILITIES INFORMATION SHOWN ON THE PLANS MAY NOT BE COMPLETE. THE SHORING CONTRACTOR SHALL DETERMINE THE HORIZONTAL AND VERTICAL LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO DRILLING PILE HOLES OR CUTTING OR DIGGING. THIS INCLUDES POTHOLING ALL UTILITIES PRIOR TO CONSTRUCTION TO CONFIRM DEPTHS AND LOCATIONS AND TO VERIFY THAT THERE ARE NO CONFLICTS WITH THE PILE ELEVATIONS. PILES, INCLUDING CONCRETE CASING SHALL MAINTAIN A MINIMUM OF 12" CLEARANCE TO ANY EXISTING UTILITIES TO REMAIN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF CONFLICTS. CONFLICTS SHALL BE RESOLVED IN WRITING PRIOR TO PROCEEDING WITH CONSTRUCTION.

QUALITY ASSURANCE

13. SPECIAL INSPECTION SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND SECTIONS 110 AND 1704 OF THE INTERNATIONAL BUILDING CODE BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE ARCHITECT, AND RETAINED BY THE BUILDING OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL INSPECTIONS. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING DEPARTMENT SHALL BE FURNISHED WITH COPIES OF ALL INSPECTION AND TEST RESULTS WITHIN TWO WEEKS OF COMPLETION OF EACH PHASE OF WORK. SPECIAL INSPECTION OF THE FOLLOWING TYPES OF CONSTRUCTION IS REQUIRED

STRUCTURAL STEEL FABRICATION AND ERECTION	PER TABLE 1705. 2
SOIL CONDITIONS, FILL PLACEMENT, AND DENSITY	PER TABLE 1705. 6
CAST-IN-PLACE DEEP FOUNDATION	PER TABLE 1705. 8

PERIODIC INSPECTION ALLOWS INSPECTION AT INTERVALS NECESSARY TO CONFIRM THAT WORK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE WITH REQUIREMENTS. CONTINUOUS SPECIAL INSPECTION REQUIRES THAT THE INSPECTOR BE ONSITE AT ALL TIMES THAT WORK REQUIRING SPECIAL INSPECTION IS PERFORMED.

14. INSPECTORS SHALL BRING DEFICIENCIES TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE INSPECTOR SHALL BRING THE UNCORRECTED DEFICIENCY TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER IMMEDIATELY AND PRIOR TO COMPLETION OF THAT PHASE OF WORK.

15. SOILS INSPECTION: INSPECTION BY THE SOILS ENGINEER SHALL BE PERFORMED FOR PILE PLACEMENT. ALL PREPARED SOIL BEARING SURFACES SHALL BE INSPECTED BY THE SOILS ENGINEER PRIOR TO PLACEMENT OF PILES. SOIL COMPACTION SHALL BE SUPERVISED BY AN APPROVED TESTING LAB. THE GEOTECHNICAL ENGINEER SHALL ALSO ADVISE ON WATER CONTROL AND SLAB ON GRADE CONSTRUCTION.

SHORING MONITORING

16. A SYSTEMATIC PROGRAM OF MONITORING SHALL BE CONDUCTED DURING THE PROJECT EXECUTION TO DETERMINE THE EFFECT OF CONSTRUCTION ON ADJACENT FACILITIES AND STRUCTURES IN ORDER TO PROTECT THEM FROM DAMAGE. REFER TO REPORT OF GEOTECHNICAL INVESTIGATION FOR RECOMMENDATIONS. FIELD DATA AND MEASUREMENTS ARE TO BE SUBMITTED TO THE STRUCTURAL AND GEOTECHNICAL ENGINEER FOR REVIEW.

17. MONITORING SHALL BE PERFORMED BY A PROFESSIONAL LAND SURVEYOR (PLS) LICENSED IN THE STATE OF WASHINGTON.

18. UNLESS OTHERWISE REQUIRED BY THE GEOTECHNICAL ENGINEER, THE MONITORING PROGRAM SHALL INCLUDE A VIDEO OR PHOTOGRAPHIC SURVEY PRIOR TO THE BEGINNING OF THE SHORING INSTALLATION TO DOCUMENT THE CURRENT CONDITIONS OF THE SURROUNDING FEATURES. THE SIZE AND LOCATION OF ANY EXISTING CRACKS IN ADJACENT SLABS, PAVEMENTS OR BUILDINGS SHALL BE MEASURED AND DOCUMENTED. CONTROL POINTS SHALL BE ESTABLISHED AT A DISTANCE WELL AWAY FROM THE WALLS AND SLOPES, AND DEFLECTIONS FROM THE REFERENCE POINTS SHALL BE MEASURED THROUGHOUT CONSTRUCTION BY OPTICAL SURVEY. A MINIMUM OF 3 MONITORING POINTS SHALL BE ESTABLISHED ON NEARBY ADJACENT BUILDINGS. MINIMUM SURVEY FREQUENCY SHALL BE ONCE PER WEEK.

19. SOLDIER PILE MONITORING PROGRAM: FOLLOWING INSTALLATION OF THE SOLDIER PILES, MONITORING POINTS SHALL BE ESTABLISHED ON THE TOP OF THE PILES PRIOR TO PROCEEDING WITH THE EXCAVATION. ONE MONITORING POINT SHALL BE ESTABLISHED FOR EVERY FOUR PILES. THE MONITORING POINTS SHALL BE READ DAILY DURING EXCAVATION OPERATIONS AND TWICE WEEKLY ONCE THE EXCAVATION IS COMPLETED. THE INITIAL READINGS FOR THIS MONITORING SHALL BE TAKEN BEFORE STARTING ANY DEMOLITION OR EXCAVATION ON THE SITE. NOTIFY THE GEOTECHNICAL AND STRUCTURAL ENGINEERS, SHORING DESIGNER, AND THE BUILDING DEPARTMENT IF .5"OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS. THE ENGINEERS AND DESIGNERS SHALL DETERMINE THE CAUSE OF DISPLACEMENT AND DEVELOP REMEDIAL MEASURES IF WARRANTED. PLEASE NOTE THAT A MAXIMUM OF 1" HORIZONTAL DISPLACEMENT IS REQUIRED ANYWHERE ON SHORING WALL SURFACES THROUGHOUT THE SHORING WALL SERVICE LIFETIME. CONSTRUCTION SHALL BE SUSPENDED IMMEDIATELY AND REMEDIAL PROCEDURES APPLIED AS LONG AS A DISPLACEMENT READING EXCEEDS 1". IF THE TOTAL MEASURED LATERAL DEFLECTION OF THE PILES EXCEEDS 1", REMEDIAL MEASURES MAY BE REQUIRED.

20. EACH SET OF MONITORING DATA MUST BE PROVIDED TO THE GEOTECHNICAL ENGINEER FOR REVIEW. IT MAY BE NECESSARY TO INSTALL ADDITIONAL MONITORING POINTS IF WARRANTED BY THE DATA. RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION IF ADDITIONAL MONITORING POINTS BECOME NECESSARY.

21. SURVEY FREQUENCY MAY BE DECREASED AFTER THE SHORING SYSTEM HAS BEEN INSTALLED AND EXCAVATION IS COMPLETE IF THE DATA INDICATES LITTLE OR NO ADDITIONAL MOVEMENT. CHANGE IN THE SURVEY FREQUENCY SHALL BE APPROVED IN WRITING BY THE GEOTECHNICAL ENGINEER AND THE BUILDING DEPARTMENT. SURVEYING MUST CONTINUE UNTIL THE PERMANENT STRUCTURE (INCLUDING FLOOR SLABS AS BRACES) IS COMPLETE TO FINAL AND STREET GRADES.

GEOTECHNICAL INFORMATION AND CRITERIA

22. INSTALLATION OF SHORING, SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION AND FILLING REQUIREMENTS SHALL CONFORM WITH THE RECOMMENDATIONS CONTAINED IN THE SOILS REPORT AND/OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE SUBSURFACE CHARACTERIZATIONS USED TO DESIGN THE SHORING ARE CONTAINED IN THE SOILS REPORT AS REFERENCED ABOVE.

23. EXCAVATIONS FOR FOUNDATIONS SHALL BE PER PLAN DOWN TO UNDISTURBED NATIVE MATERIAL PER THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS. OVER EXCAVATED AREAS SHALL BE BACKFILLED WITH LEAN CONCRETE OR PER GEOTECHNICAL RECOMMENDATIONS AT THE CONTRACTOR'S EXPENSE. EXCAVATION SLOPES SHALL BE SAFE AND SHALL NOT BE GREATER THAN THE LIMITS SPECIFIED BY LOCAL, STATE, AND NATIONAL SAFETY REGULATIONS. CONTRACTOR SHALL PROTECT CUT SLOPES AS NECESSARY IF CONSTRUCTION OCCURS DURING WET WEATHER, AND SHALL CONTROL AND MANAGE RUNOFF TO MINIMIZE EFFECTS ON CONSTRUCTION.

24. DESIGN SOIL CAPACITIES ARE DETERMINED BY THE GEOTECHNICAL ENGINEER. THE SOIL PRESSURES INDICATED ON THE SOIL PRESSURE DIAGRAM WERE USED FOR DESIGN, IN ADDITION TO THE DEAD AND LIVE LOADS. SEE REPORT OF GEOTECHNICAL INVESTIGATION FOR MORE COMPLETE INFORMATION, INCLUDING RECOMMENDATIONS FOR SHORING IN GENERAL, SHORING MONITORING, EXCAVATION, LAGGING, AND DRAINAGE.

25. SOIL DESIGN PARAMETERS PER SH3. 1.

26. SHORING DURATION: PERMANENT

CONCRETE

27. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC SECTION 1905, 1906, AND ACI 301. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS:

f'c (PSI)	Minimum Cement Per Cubic Yard	Max. Water Per 94 LB Cement	Use
-----	1-1/2 sacks	-----	pile lean concrete

STEEL

28. STEEL SPECIFICATIONS: DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL, AISC 360 AND SECTION 2205 OF THE BUILDING CODE.

29. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

TYPE OF MEMBER	ASTM SPECIFICATION	FY
WIDE FLANGE SHAPES	A992	50 KSI
OTHER SHAPES, PLATES, AND RODS	A36	36 KSI
HEADED SHEAR STUDS	A108	

30. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND AWS STANDARDS AND SHALL BE PERFORMED BY WABO CERTIFIED WELDERS USING E70XX ELECTRODES. ONLY PREQUALIFIED WELDS (AS DEFINED BY AWS) SHALL BE USED. ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT-LBS AT 20 DEGREES F AND 40 FT-LBS AT 70 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION.

31. PERMANENT STEEL SHORING SHALL BE GALVANIZED OR PAINTED BLACK FOR CORROSION RESISTANCE.

WOOD

32. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH WCLIB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

Use	Grade	Fb (psi)
4X TIMBER LAGGING	DOUGLAS-FIR NO. 1	1000
6X TIMBER LAGGING	DOUGLAS-FIR NO. 1	1350

33. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG BOLTS BEARING ON WOOD. INSTALLATION OF LAG BOLTS SHALL CONFORM TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (2012 EDITION) WITH A LEAD BORE HOLE OF 60 TO 70 PERCENT OF THE SHANK DIAMETER. LEAD HOLES ARE NOT REQUIRED FOR 3/8" AND SMALLER LAG SCREWS.

PILE AND LAGGING CONSTRUCTION

34. DEMOLITION: SHORING AND SOIL EXCAVATION SHALL BE DONE SIMULTANEOUSLY.

35. DIMENSIONS AND LOCATION OF EXISTING STRUCTURES SHALL BE VERIFIED PRIOR TO FABRICATION AND INSTALLATION OF ANY STRUCTURAL MEMBER. NOTIFY ENGINEER ABOUT ANY DISCREPANCIES PRIOR TO FABRICATION.

36. PILE HOLES SHALL BE DRILLED WITHOUT LOSS OF GROUND AND WITHOUT ENDANGERING PREVIOUSLY INSTALLED PILES AND ANCHORS. THIS MAY INVOLVE CASING THE HOLES OR OTHER METHODS OF PROTECTION FROM CAVING. REFER TO REPORT OF GEOTECHNICAL INVESTIGATION FOR RECOMMENDED HOLE DIGGING PROCEDURE.

37. STEEL PILE PLACEMENT TOLERANCES:

    1" INSIDE PERPENDICULAR TO SHORING WALL.
    1" OUTSIDE PERPENDICULAR TO SHORING WALL.
    3" LATERALLY.
    1" IN ANY DIRECTION

38. LAGGING: TIMBER LAGGING SHALL BE INSTALLED IN ALL AREAS. VOIDS BETWEEN LAGGING AND SOIL SHALL BE BACKFILLED WITH PEA GRAVEL OR LEAN MIX FILL. DRAINAGE BEHIND THE WALL MUST BE MAINTAINED. IT IS CONTRACTOR'S RESPONSIBILITY TO LIMIT THE AMOUNT OF EXPOSED SOIL WITHOUT LAGGING TO AVOID LOSS OF SOIL. MAXIMUM HEIGHT OF 4 FEET IS RECOMMENDED. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO AVOID GROUND LOSS DURING EXCAVATION.

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DAN J. SAY — STATE OF WASHINGTON — 21653 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

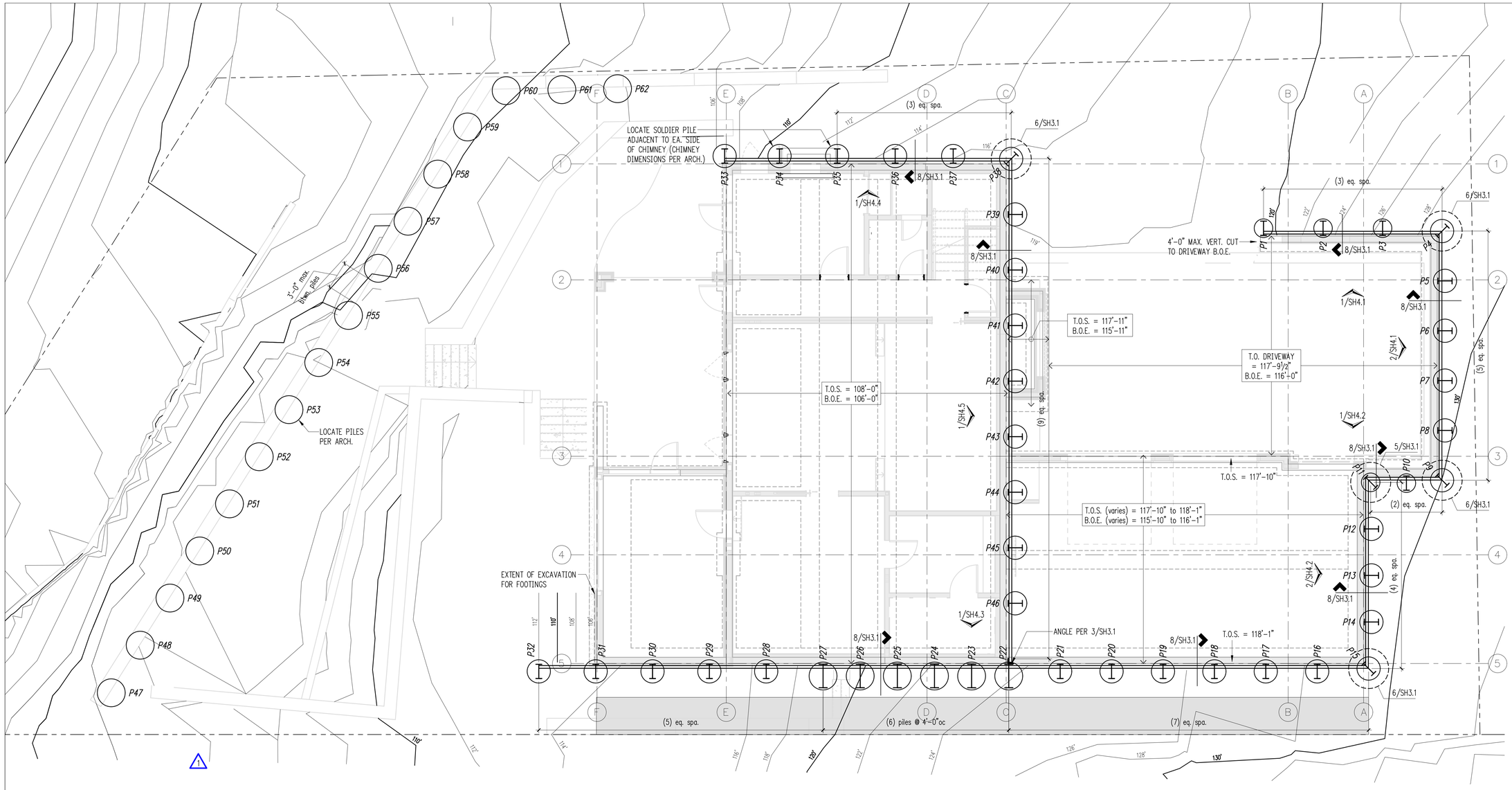
PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
General Shoring Notes

SCALE: -
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:
SH1.1



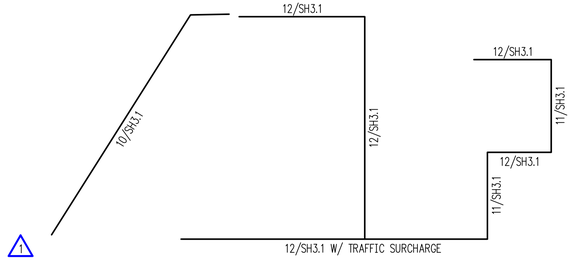
Plan Notes

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS.
2. TYPICAL TIMBER LAGGING SHALL CONSIST OF 4x12 HF #2 WITH A BASE VALUE OF FB=900 PSI UNLESS NOTED OTHERWISE ON PLAN.
3. OBSTRUCTIONS MAY BE ENCOUNTERED DURING EXCAVATION AND SHORING/PILE INSTALLATION. NOTIFY ENGINEER OF RECORD AND GEOTECHNICAL ENGINEER IF OBSTRUCTIONS PREVENT INSTALLATION OF PILES PER PLANS.
4. FOR EACH PILE UTILIZING LEAN CONCRETE, THE REQUIRED VOLUME OF GROUT SHALL BE CALCULATED PRIOR TO, AND MONITORED DURING INSTALLATION. GROUTING OPERATIONS SHALL BE STOPPED IF THE PUMPED GROUT VOLUME EXCEEDS THE CALCULATED GROUT VOLUME BY 10%.
5. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
6. MAXIMUM GRAVITY LOAD ON SOLDIER PILE = 35k (ALLOWABLE)

Legend

	STEM WALL & FOOTING PER S2.1 & S2.2
I	SHORING PILE PER SCHEDULE, THIS SHEET
T.O.S.	TOP OF SLAB
B.O.E.	BOTTOM OF EXCAVATION
	ADJACENT DRIVEWAY SURCHARGE APPLIED TO PILES P15–P31

Loading Diagram



Pile Schedule

MARK	AUGER DIA. (min.)	STEEL PILE SIZE	PERM./ TEMP.	MIN. EMBED D	MAX. SHORING HEIGHT
P1–P3	24"ø	W18x50	PERM.	22'–0"	11'–0"
P4–P9	30"ø	W24x84	PERM.	28'–0"	14'–0"
P10	30"ø	W18x65	PERM.	24'–0"	13'–0"
P11–P14	30"ø	W24x84	PERM.	26'–0"	13'–0"
P15–P21	30"ø	W24x84	PERM.	25'–0"	13'–0"
P22–P27	42"ø	W33x169	PERM.	36'–0"	18'–0"
P28–P32	30"ø	W18x86	PERM.	22'–0"	11'–0"
P33–P37	30"ø	W18x50	PERM.	17'–0"	10'–0"
P38–P46	30"ø	W18x86	PERM.	23'–0"	13'–0"
P47–P62 (stabilization piles)	36"ø	W30x90	PERM.	37'–0" min. embed from top of (e) grade	2'–0" max. stickup (assumes 1'–0" of geofoam)

Shoring Plan

Scale: 3/16" = 1'–0"

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DYAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
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DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
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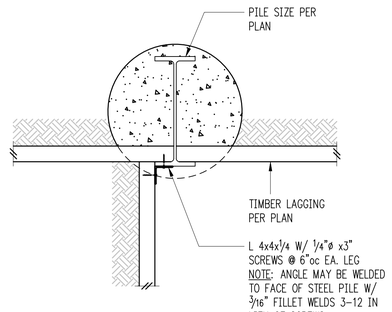
ISSUE: 65% CD Set

SHEET TITLE: Shoring Plan

SCALE: 3/16" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: SH2.1

1

2



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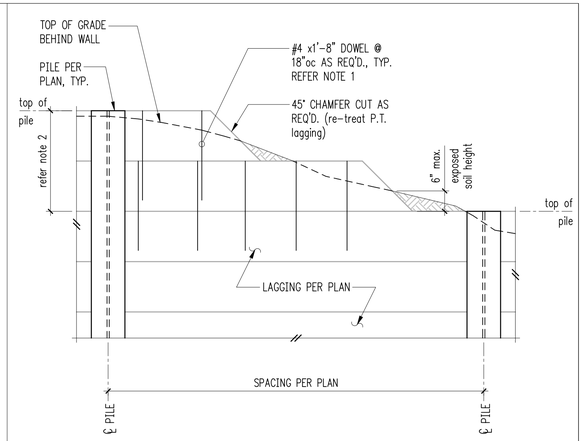
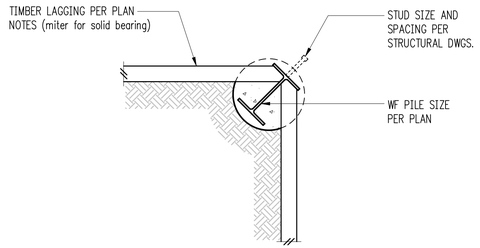
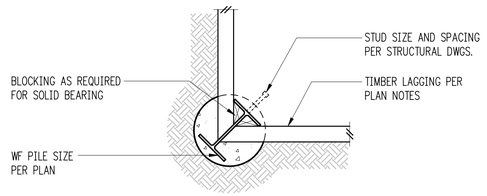


NOTE:
1. PRE-DRILL 7/16"ø DOWEL HOLE AT CENTER LINE OF LAGGING WIDTH. HAMMER DOWEL INTO HOLE, TOP FLUSH WITH LAGGING.
2. 2'-0" MAX. OF DOWEL LAGGING BETWEEN PILES.

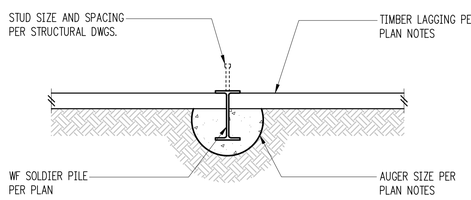
Lagging Transition at Wall Step 4



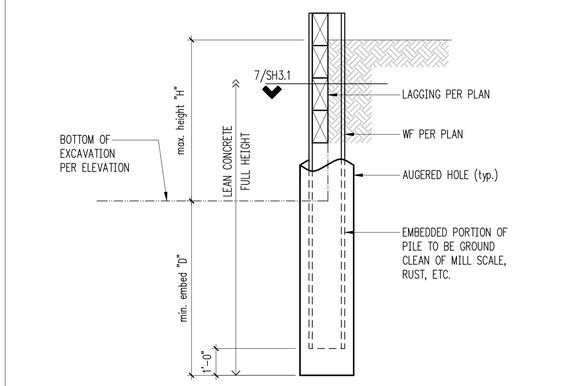
Auger Pile - Outside Corner 5



Auger Pile - Inside Corner 6

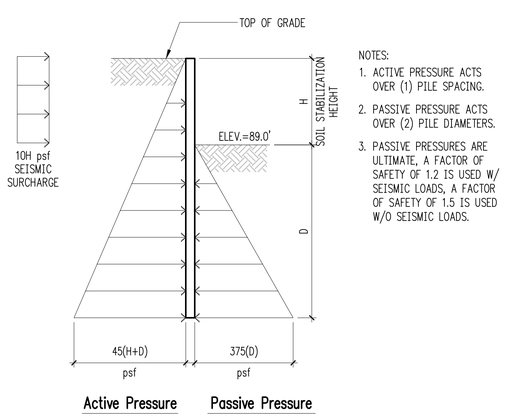


Typical Pile Plan - Small Auger 7



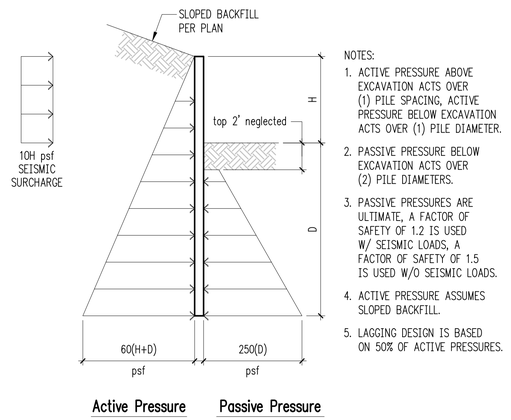
Cantilever Pile 8

9



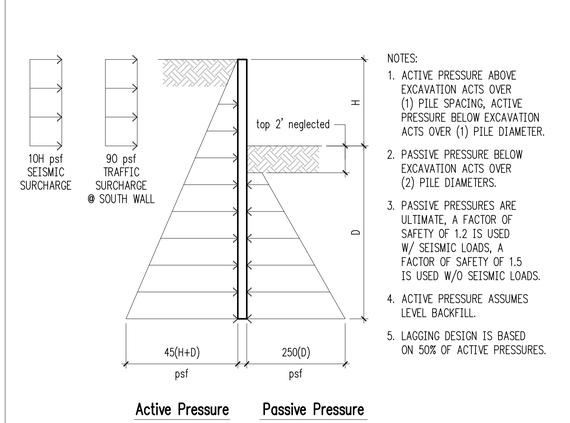
NOTES:
1. ACTIVE PRESSURE ACTS OVER (1) PILE SPACING.
2. PASSIVE PRESSURE ACTS OVER (2) PILE DIAMETERS.
3. PASSIVE PRESSURES ARE ULTIMATE, A FACTOR OF SAFETY OF 1.2 IS USED W/ SEISMIC LOADS, A FACTOR OF SAFETY OF 1.5 IS USED W/O SEISMIC LOADS.

West and North Stabilization Wall 10



NOTES:
1. ACTIVE PRESSURE ABOVE EXCAVATION ACTS OVER (1) PILE SPACING, ACTIVE PRESSURE BELOW EXCAVATION ACTS OVER (1) PILE DIAMETER.
2. PASSIVE PRESSURE BELOW EXCAVATION ACTS OVER (2) PILE DIAMETERS.
3. PASSIVE PRESSURES ARE ULTIMATE, A FACTOR OF SAFETY OF 1.2 IS USED W/ SEISMIC LOADS, A FACTOR OF SAFETY OF 1.5 IS USED W/O SEISMIC LOADS.
4. ACTIVE PRESSURE ASSUMES SLOPED BACKFILL.
5. LAGGING DESIGN IS BASED ON 50% OF ACTIVE PRESSURES.

Cantilever Pile at East Parking Wall With Slope Diagram 11



NOTES:
1. ACTIVE PRESSURE ABOVE EXCAVATION ACTS OVER (1) PILE SPACING, ACTIVE PRESSURE BELOW EXCAVATION ACTS OVER (1) PILE DIAMETER.
2. PASSIVE PRESSURE BELOW EXCAVATION ACTS OVER (2) PILE DIAMETERS.
3. PASSIVE PRESSURES ARE ULTIMATE, A FACTOR OF SAFETY OF 1.2 IS USED W/ SEISMIC LOADS, A FACTOR OF SAFETY OF 1.5 IS USED W/O SEISMIC LOADS.
4. ACTIVE PRESSURE ASSUMES LEVEL BACKFILL.
5. LAGGING DESIGN IS BASED ON 50% OF ACTIVE PRESSURES.

Typical Pile Loading Diagram 12

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DESIGN: HAA, BDM
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CHECKED: BDM
APPROVED: DJS

REVISIONS:

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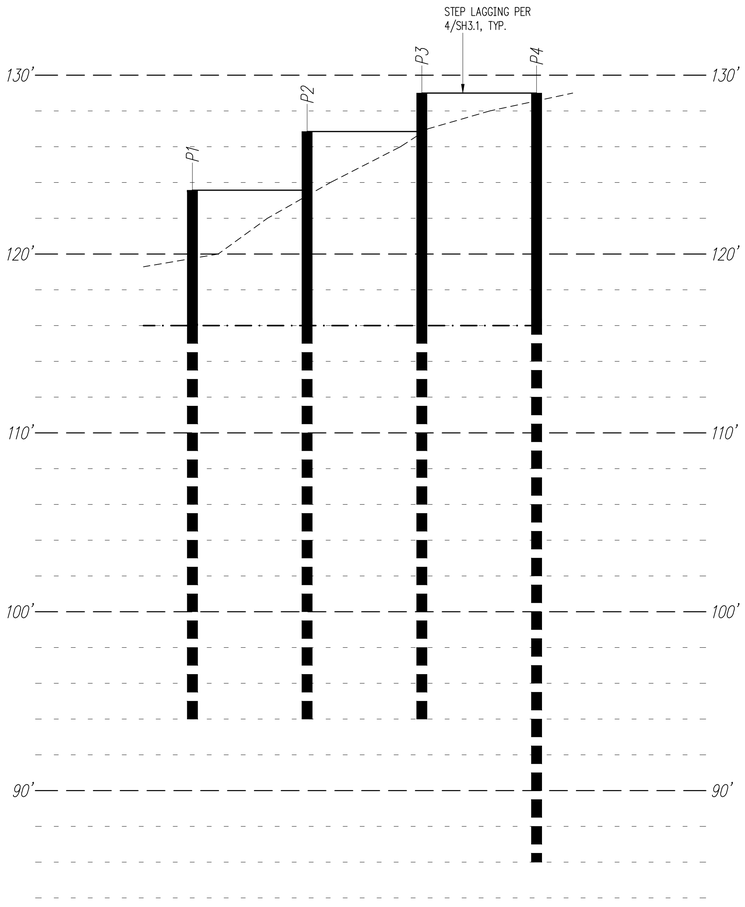
ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE: 65% CD Set

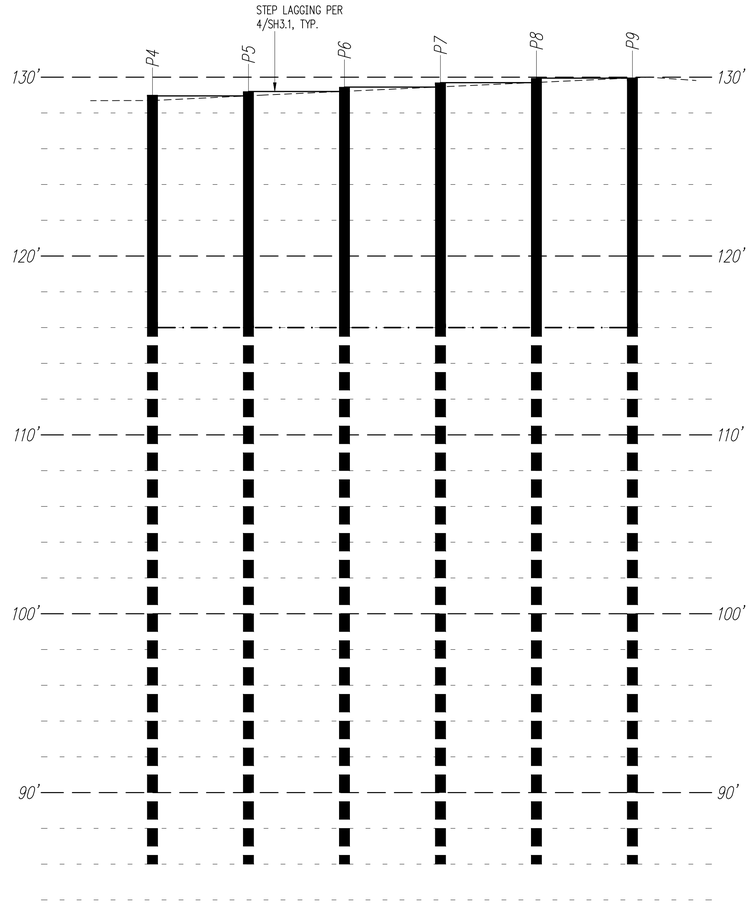
SHEET TITLE: Shoring Details

SCALE: 3/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO: SH3.1



North Shoring Elevation ①

LOOKING NORTH
Scale: 1/4" = 1'-0"



East Shoring Elevation ②

LOOKING EAST
Scale: 1/4" = 1'-0"

Legend

- APPROXIMATE TOP OF GRADE
- BOTTOM OF EXCAVATION
- Px — STEEL PILE PER PLAN/SCHEDULE
- 4x LAGGING

Legend

- APPROXIMATE TOP OF GRADE
- BOTTOM OF EXCAVATION
- Px — STEEL PILE PER PLAN/SCHEDULE
- 4x LAGGING

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DESIGN: HAA, BDM
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ISSUE:
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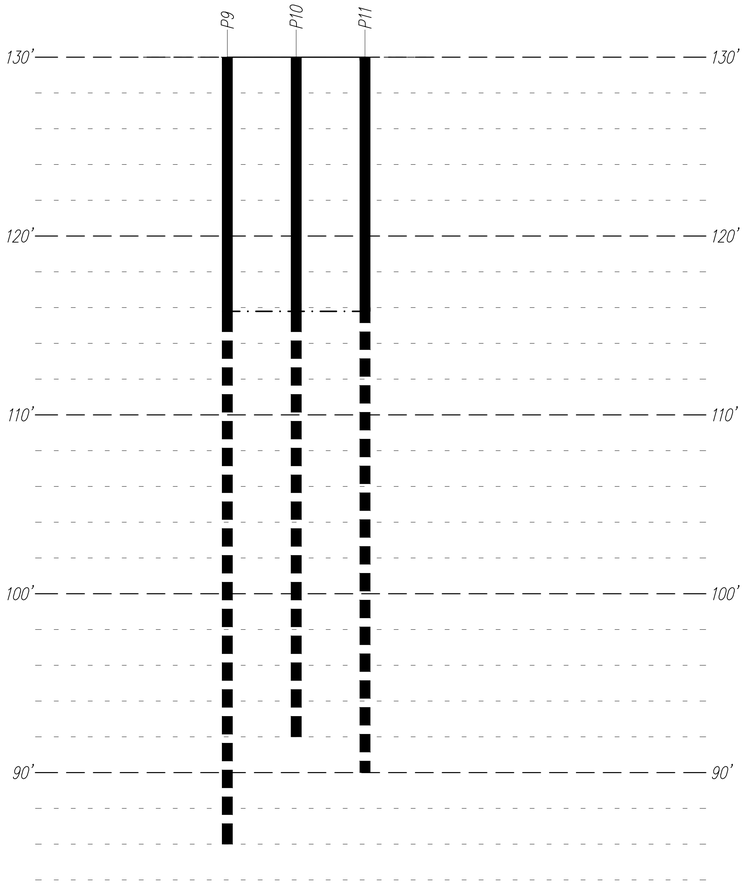
SHEET TITLE:
Shoring Elevations

SCALE: 1/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:

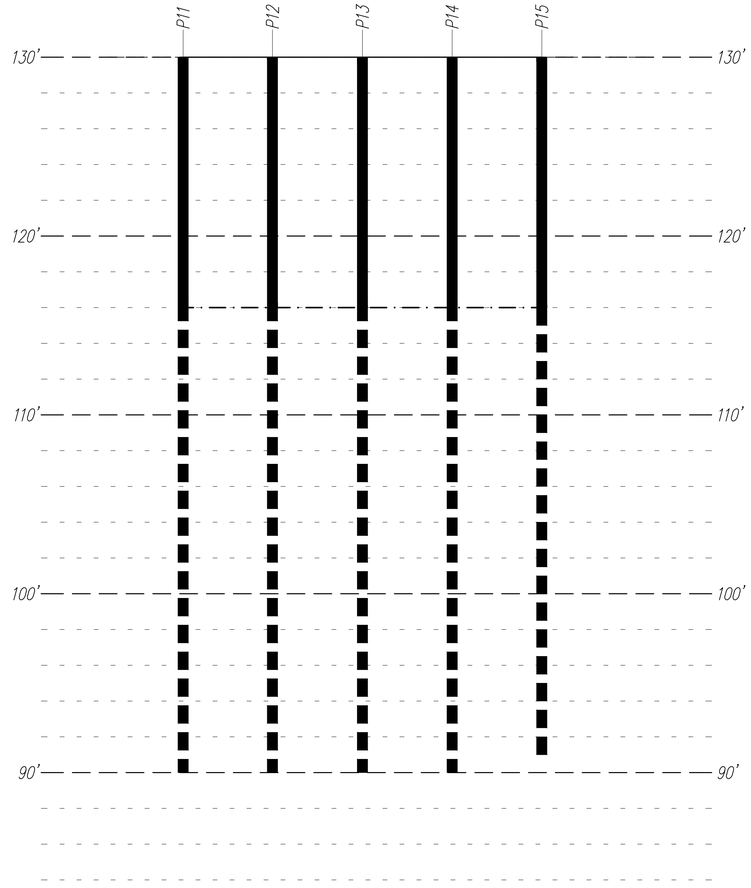
SH4.1



South Shoring Elevation

LOOKING SOUTH
Scale: 1/4" = 1'-0"

1



East Shoring Elevation

LOOKING EAST
Scale: 1/4" = 1'-0"

2

Legend

- - - - - -	APPROXIMATE TOP OF GRADE
— · —	BOTTOM OF EXCAVATION
——— Px	STEEL PILE PER PLAN/SCHEDULE
———	4x LAGGING

Legend

- - - - - -	APPROXIMATE TOP OF GRADE
— · —	BOTTOM OF EXCAVATION
——— Px	STEEL PILE PER PLAN/SCHEDULE
———	4x LAGGING

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DONN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

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Shoring Elevations

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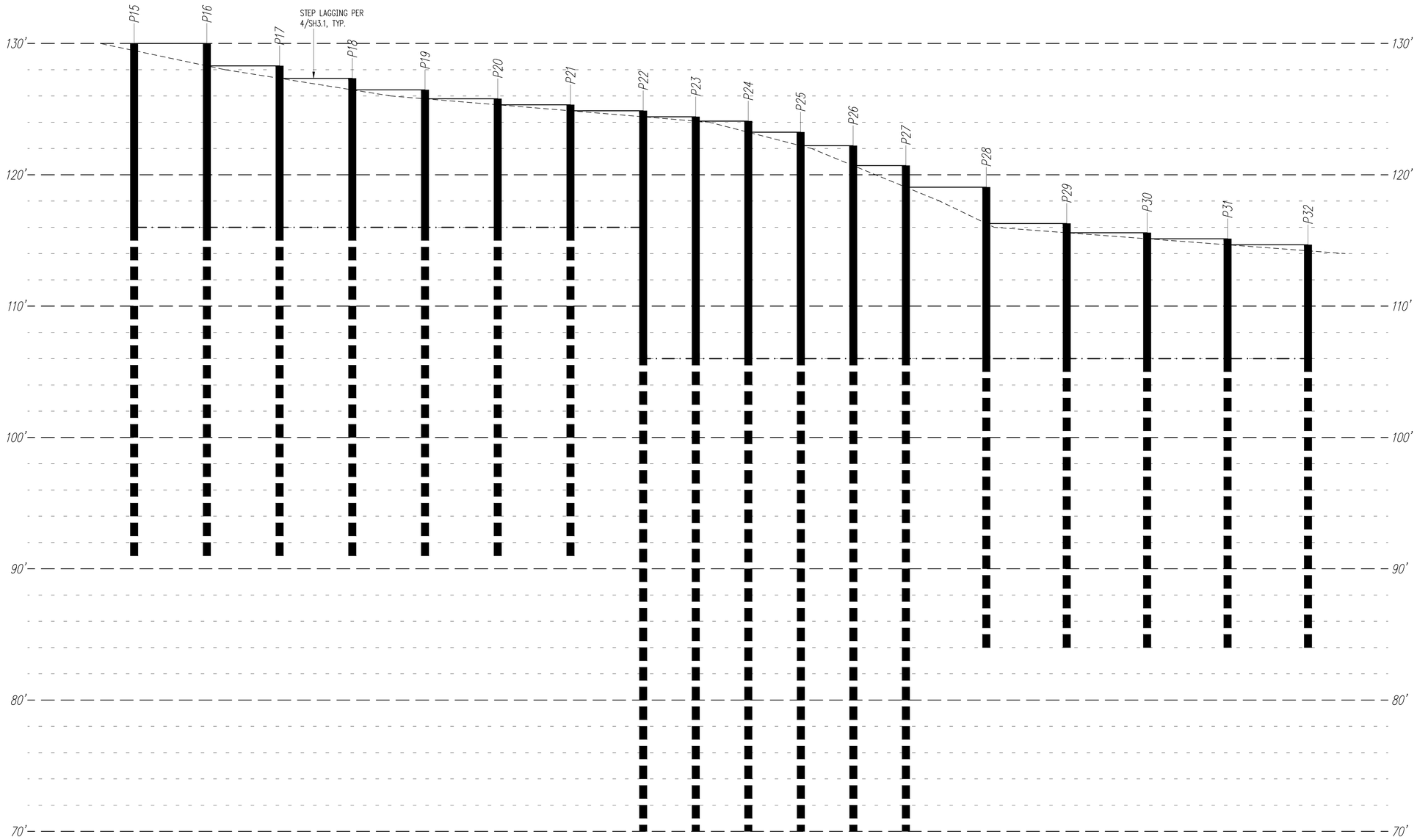
SHEET NO:

SH4.2



Legend

- APPROXIMATE TOP OF GRADE
- BOTTOM OF EXCAVATION
- Px — STEEL PILE PER PLAN/SCHEDULE
- 4x LAGGING

South Shoring Elevation 1

LOOKING SOUTH
Scale: 1/4" = 1'-0"

STRUCTURAL ENGINEERING

2124 Third Avenue - Suite 100 - Seattle, WA 98121
p: 206.443.6212 ssfengineers.com

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DAN J. SAY — STATE OF WASHINGTON — 53000 — REGISTERED PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
2	85% CD Set	Jan. 13, 2023
3	Permit Revisions	Jun. 26, 2023

DPD:

PROJECT TITLE:
Clarkson Residence
8163 West Mercer Way
Mercer Island, WA 98040

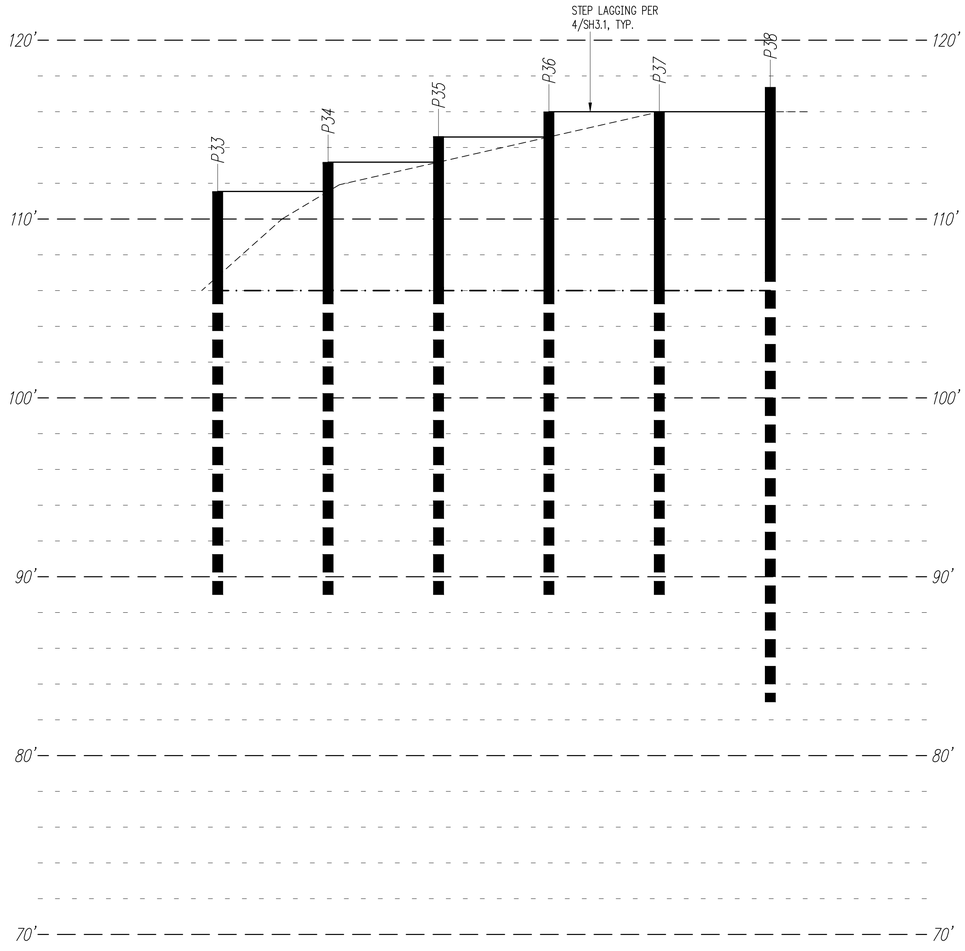
ARCHITECT:
Brandt Design Group
66 Bell Street, Unit 1
Seattle, WA 98121
PH 206.239.0850

ISSUE:
65% CD Set

SHEET TITLE:
Shoring Elevations

SCALE: 1/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:

SH4.3



Legend

- - - - - -	APPROXIMATE TOP OF GRADE
— · —	BOTTOM OF EXCAVATION
▬▬ Px	STEEL PILE PER PLAN/SCHEDULE
———	4x LAGGING

North Shoring Elevation ①

LOOKING NORTH
Scale: 1/4" = 1'-0"

STRUCTURAL ENGINEERING

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DONN J. SAY — STATE OF WASHINGTON — 53000 — PROFESSIONAL ENGINEER

DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
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DPD:

PROJECT TITLE:
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8163 West Mercer Way
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ARCHITECT:
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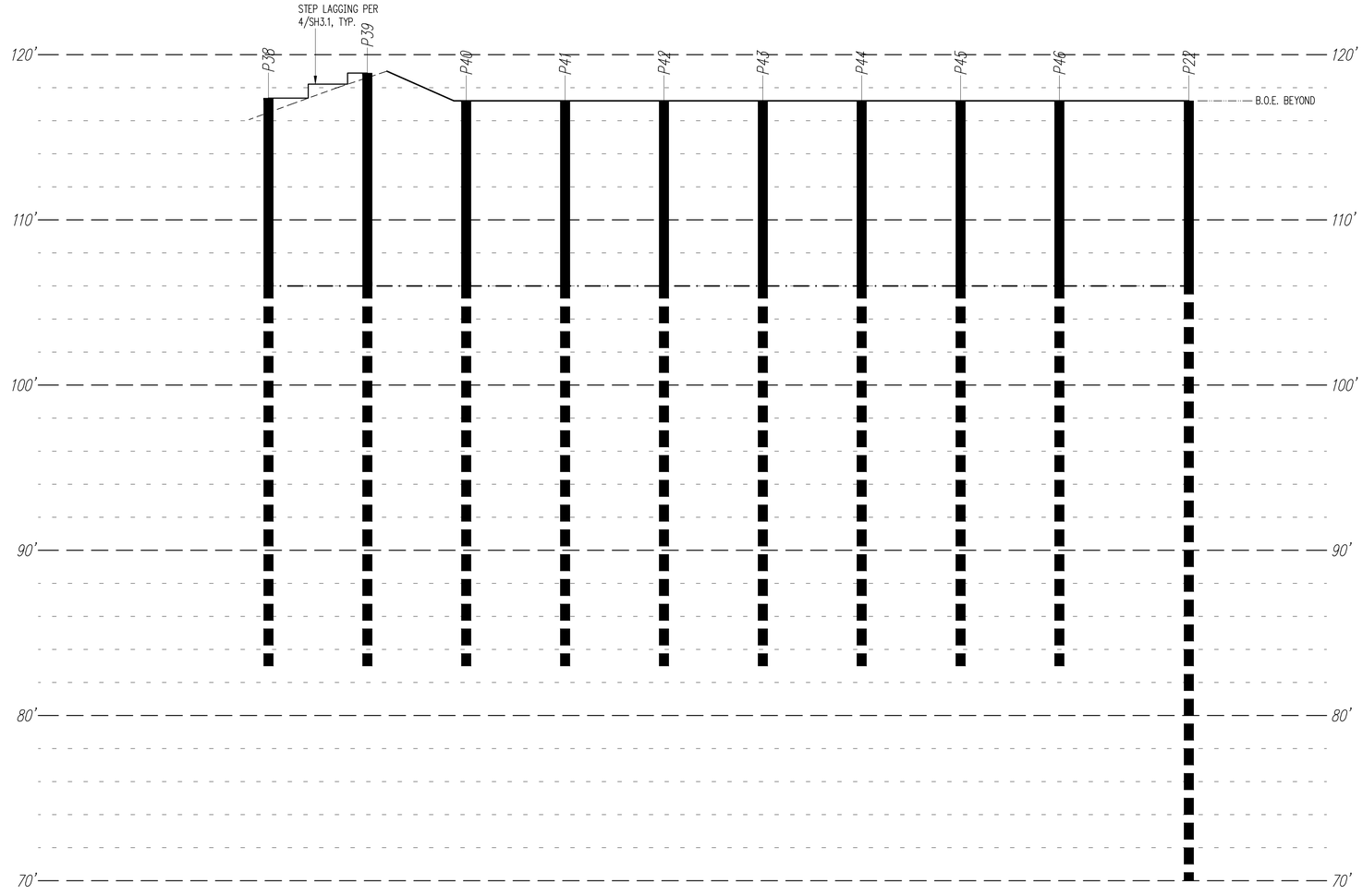
ISSUE:
65% CD Set

SHEET TITLE:
Shoring Elevations

SCALE: 1/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:

SH4.4



Legend

- APPROXIMATE TOP OF GRADE
- BOTTOM OF EXCAVATION
- *Px* STEEL PILE PER PLAN/SCHEDULE
- 4x LAGGING

East Shoring Elevation ①

LOOKING EAST
Scale: 1/4" = 1'-0"

STRUCTURAL ENGINEERING

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DESIGN: HAA, BDM
DRAWN: NHD
CHECKED: BDM
APPROVED: DJS

REVISIONS:

1	Revision 1	Aug. 15, 2022
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3	Permit Revisions	Jun. 26, 2023

DPD:

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ISSUE:
65% CD Set

SHEET TITLE:
Shoring Elevations

SCALE: 1/4" = 1'-0" U.N.O.
DATE: June 22, 2022
PROJECT NO: 01519-2021-11
SHEET NO:

SH4.5