Planning Permit Application

CITY OF BANDON PLANNING
P.O. BOX 67
555 HWY 101
BANDON, OR 97411
P:(541) 347-2437
F:(541)347-1415

Permit Number:

APPLICATION TYPE (select all that apply)		
☐ Annexation*	☐ Land Use Review*	☐ Subdivision*
☐ Certificate of Appropriateness (CoA)*	☐ Partition*	☐ Vacation*
☐ Comprehensive Plan or Zone Amendment*	■ Plan Review (PR)	☐ Variance*
☐ Conditional Use Permit (CUP)*	☐ Planned Unit Development (PUD)*	■ Zoning Compliance (ZC)
☐ Floodplain Development*	☐ Property Line Adjustment (PLA)*	☐ Other_____*
* Pre-application required	Total Fees: $	

I. PROJECT LOCATION		
Street Address: 1880 Beach Loop		
Map Number / Tax Lot(s): 28-15-36BC / 1400	Zone: CD-1	Floodplain: ☐Yes ■No

II. APPLICANT'S INFORMATION (applicant is the primary party responsible for development)	
Applicant's Name: Sheri McGrath	Phone: 541-982-9531
	E-Mail: cooscurry@gmail.com
Applicant's Mailing Address: P.O. Box 1548, Bandon, OR 97411	

III. PROPERTY OWNER'S INFORMATION	
Property Owner's Name: Hookman, LLC	Phone:
	E-mail:
Mailing Address: 1005 Wiltshire Ave, San Antonio, TX 78209	

IV. OTHER INFORMATION (APPLICANT'S REP, SURVEYOR, ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, ETC)	
Title: Contractor	Name: Jason Eichelberger
Email: jeinc@hotmail.com	Phone: 541-404-7710
Title:	Name:
Email:	Phone:
Title:	Name:
Email:	Phone:

V. PROJECT DESCRIPTION

Use: ■Residential ☐Commercial ☐Other_____

***Please attach a short narrative that describes your proposed project and indicates the proposed use.**

New single family dwelling

VI. SITE PLAN: Please see our "How to Create a Site Plan" and sample site plan document for requirements and tips on how to create your site plan. Plans must be drawn to scale and may be submitted electronically; **printed copies must be submitted on 11x17, ledger size paper (larger or smaller paper sizes will not be accepted).**

VII. PROPERTY OWNER SIGNATURE/AUTHORIZATION

- I have read the application and the attached documentation and I understand that my application may be delayed or deemed incomplete if I have provided insufficient information and documentation to allow for approval.
- I certify that the information provided in this application, including all submittals and attachments, is true and correct to the best of my knowledge.
- I understand and agree that all required inspections will be requested 2 business days in advance, and it is the applicant's responsibility to ensure required inspections have been requested, completed, and approved.
- I authorize the City of Bandon or its acting agent, to enter onto the subject property, as described in section "I. Project location".
- I authorize the following party(s) to act as applicant in regard to the attached application for the subject property described above.

X Applicant's Signature:	**Date:** 2-2-22
*Property owner's signature **required** if applicant is not the property owner*	
X Property Owner's Signature:	**Date:** 2-4-22

Development Disclosure

The City of Bandon is obligated to report all ground disturbances within the City of Bandon to the Coquille Indian Tribe. Property owners and applicants must adhere to all conditions and requirements set out by the Coquille Indian Tribe, State Historic Preservation Office (SHPO) or both if required. Please be aware that state statutes and federal law govern how archaeological sites are to be managed. ORS 97.745 prohibits the willful removal, mutilation, defacing, injury, or destruction of any cairn, burial, human remains, funerary objects, or objects of cultural patrimony of a Native Indian. ORS 358.920 prohibits excavation, injury, destruction, or alteration of an archaeological site or object, or removal of an archaeological object from public or private lands.

It is the property owner and applicant's responsibility to determine if additional permits from other agencies will be required, including but not limited to: Oregon State Building Codes, Oregon State Department of Environmental Quality, FEMA, Oregon State Fish and Wildlife and U.S. Fish and Wildlife. If additional permits are required, it is the responsibility of the property owner/applicant to obtain such permits and comply with their conditions of approval.

It is the property owner/applicant's responsibility to provide the City of Bandon all necessary legal documentation related to the property, including but not limited to: proof of ownership, receipts, deed restrictions, vacation records, easement records, etc.

I acknowledge, understand, and agree, that all relevant documentation will be provided to the City of Bandon, and that all required permits and consent will be obtained prior to the start of construction, with all conditions of approval adhered to.

X	2-2-22
***Property Owner's Signature** (Property owner's signature **required** if applicant is not the property owner)*	***Date***
X	2-2-22
Applicant's Signature	***Date***

Staff's Signature of Intake: _____ Date: _____

Staff's Signature of Completeness: _____ Date: _____

Staff's Signature of Approval: _____ Date: _____

Submittal Requirements:

1. Completed Pre-Application with summary notes from the Planning Department (if applicable)
2. Complete Planning Permit application (including fees and applicable property records)
3. Signed Development Disclosure
4. Completed Submittal Requirement sheet

Site Plan Requirements (please check that you have completed each of the following)

- ☒ Setbacks on all sides of the property (must be marked from the closest structure to the property line)
- ☒ Property line must be clearly marked on all sides - if property corners cannot be determined a survey will be required.
- ☒ Location of all buildings and proposed building or addition
- ☒ Location of all mechanical equipment and proposed equipment (HVAC, propane tanks and enclosures - these cannot be located in the setback area)
- ☒ Fences, patios, sidewalks, (if being built along with the construction of a building)
- ☒ Decks, steps, porches (these cannot be located in the setback)
- ☒ All off-street parking
- ☒ Location of the front entrance and all exterior doorways
- ☒ Location & material of the driveway
- ☒ Direction of roof drainage
- ☐ Drywell, if required (must be engineered)
- ☒ Location of electric meter base (on the front or no farther than 5 feet down the side)
- ☒ Proposed water and sewer line locations
- ☒ Water shut off valve must be located beside the water meter box; 6" sewer clean out must be at the property line
- ☒ Square footage of the lot, structures including garage (1st & 2nd floors noted separately), and percentage of impermeable surface. (Impermeable surfaces must be shown on the site plan)

Design Feature Requirements (Please check your selections)

Homes in the R-1 and R-2 zones require a minimum of 6 (at least 3 on the face of the home)
Homes in the CD zones require a minimum of 8 (at least 4 on the face of the home)

- ☐ Roof pitch at or greater than 3/12
- ☒ Covered porch - (minimum of 25 square feet)
- ☐ Tile or Architectural grade shingles (not composition shingle)
- ☒ Off set of the building face or roof (at least one foot, minimum of 2 feet in cd-1 & cd-2 zones)
- ☐ Eaves with a minimum projection of six (6) inches
- ☐ Horizontal lap siding, cedar shake or shingle on 100% of the exterior
- ☒ Recessed entry area (minimum depth of three feet)
- ☒ Garage (constructed with exterior finish materials matching the residence)
- ☒ Combination of cedar shake and shingle siding or lap siding with stone
- ☐ Bay windows
- ☐ Cupolas
- ☐ Hip roof
- ☒ Pillars or posts
- ☒ Mullioned windows
- ☐ Window shutters
- ☒ Clerestory windows
- ☐ Dormers
- ☐ Gables

Additional Required Plans

- ☒ Floor plan - Including garage (before and after drawings must be included for remodel/additions)
- ☒ Elevation of all structures - All sides must show direction, dimensions, height, design features and depth of eaves/gutters.
- ☒ Grade of property and/or grading plan
- ☒ Foundation plan for all construction - (for a manufactured home the slab & runner system)
- ☐ DEQ septic system permit & plan drawings - (if applicable)
- ☒ Geotechnical report - (if applicable)
- ☐ Drainage plan – (with engineered drawings if applicable)
- ☒ Engineered foundation - (if applicable)

YOUR APPLICATION WILL BE DEEMED INCOMPLETE IF YOUR SITE PLAN FAILS TO LIST ALL REQUIRED INFORMATION, INCLUDING DESIGN FEATURE REQUIREMENTS WHICH MUST ALSO BE SHOWN IN YOUR SUBMITTED ELEVATION PLANS.

Coos Curry Consulting
P.O. Box 1548 * Bandon, Oregon 97411
cooscurry@gmail.com
541-982-9531

CONSENT FOR REPRESENTATION

I, Michael Schoenbrun Hookman LLC of 1005 Wiltshire Ave. San Antonio. TX 78209 give permission to Coos Curry Consulting to represent me on all design, permit and consulting matters concerning the property located on Coos County Tax Assessor's Map 28-15-36BC TL 1400. The tax account for this property is 1052600. The situs address is 1880 Beach Loop Rd. Bandon. OR 97411.

Sheri McGrath is the direct contact for all permit application questions, plan review comments, concerns or questions, and any other information related to the above property.

Contact information for Sheri McGrath is:

Cell:	541-982-9531
E-mail:	cooscurry@gmail.com
Mailing address:	P.O. Box 1548, Bandon, OR 97411

This consent automatically expires six months from the date below, without requirement of notice.

DATED: 2/4, 2022

COOS CURRY CONSULTING GROUP

By: SHERI MCGRATH

CLIENT:

By: MICHAEL SCHOENBRUN

Geotechnical Engineering Report

Schoenbrun Residence

Tax Lot 1880, Map 28S-15W-36BC Coos County

Beach Loop Road

Bandon, Oregon

Project: 21050

October 27, 2021

Prepared for:

Michael and Lauren Schoenbrun

1005 Wiltshire Avenue

San Antonio, TX 78209

Prepared by:

K & A Engineering, Inc.

Coburg, Oregon

K & A Engineering, Inc.

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Established 1998

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(541) 684-9399 Voice
(541) 684-9358 FAX
kaengineers.com

October 27, 2021 **Project: 21050**

Michael and Lauren Schoenbrun
1005 Wiltshire Ave
San Antonio, TX 78209

Subject: Geotechnical Engineering Report
Geotechnical Site Investigation
Tax Lot 1880, Map 28S-15W-36BC, Coos County
Beach Loop Road
Bandon, Oregon

K & A Engineering, Inc. is pleased to present our Geotechnical Engineering Report for the subject development.

Our Services were completed in accordance with our Contract for Engineering Services, dated August 10, 2021 and meet the requirements of 2019 Oregon Structural Specialty Code, Section 1803, Geotechnical Investigations.

Our report:

- Presents a summary of the existing subsurface conditions at the subject project site,
- Identifies and characterizes geologic hazards, and
- Presents recommendations for the design and construction of foundation support for the proposed single-family residences.

Thank you for the opportunity to be involved with your project. Please call us if you have any questions.

Sincerely,

M Remboldt

Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.

RENEWS: 12/31/2022

Geotechnical Engineering Report

Schoenbrun Residence
Tax Lot 1880, Map 28S-15W-36BC Coos County
Beach Loop Road, Bandon, Oregon
K & A Engineering, Inc. Project No. 21050
October 27, 2021

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Executive Summary

This report is based on a geotechnical site investigation made for a former owner of the subject project site. Our understanding is that ownership of the original report was transferred with sale of the property.

We have determined that there are two geologic hazards that constrain development on the project site. These hazards include:

- Earthquake-induced liquefaction and
- Earthquake-Induced Lateral Spreading (slope movement).

Liquefaction Hazard:

Our modeling indicates that zones of saturated loose sands found near the surface of underlying mudstone bedrock will experience liquefaction during the design earthquake, resulting in total settlement ranging from 2 to 5-inches.

Lateral Spreading (Earthquake-induced Slope Movement):

The project site is situated along the top of a large concave-shaped slope ascending from the beach. This landform owes its shape to historical slope movement in the area. Most of this bowl-shaped area appears to be well vegetated and relatively stable with the exception that active slope movement continues to affect the upper 10 to 15-feet of the slope, which consists of sandy terrace deposits overlying massive, weathered mudstone.

Indications of recent slope movement include:

- Relatively fresh, poorly vegetated sloughing in the upper 10-feet of the south end of the bluff on the project site,
- Indications of sloughing that occurred an estimated 10 to 20-years ago in the top of the bluff along the west edge of tax lot 1860 (north of the project site), and
- Depressed ground surface near the bluff edge on the property south of the project site.

Recommended Hazard Mitigation:

We are recommending mitigation of the geologic hazards at the project site to provide the required foundation support and occupational safety. The recommended mitigation includes:

- Re-shaping over-steepened areas at the top of the west-facing slope that descends to the beach,
- Vegetating the re-shaped areas with grasses and native shrubs that result in a dense, deep root zone,
- Limiting construction to an area east of a specified "no-build" buffer zone, and
- Supporting all permanent structures on a deep foundation system that finds bearing in the underlying mudstone formation.

1 INTRODUCTION

This report documents our geotechnical investigation into the nature of slope stability for an area that includes the project site[1] and provides geotechnical design criteria for recommended foundation type, building restrictions, and general site development.

The scope of our services for the original investigation included:

- Fieldwork to characterize subsurface conditions,
- Analysis of field data,
- Evaluation and determination of the nature of slope stability and slope regression
- Development of geotechnical design and construction criteria, and
- A written Geotechnical Engineering Report.

The scope of our services for this report included:

- A visual inspection of the project site to verify existing current conditions,
- Reviewing and revising, if necessary, our analysis of field data to meet current applicable codes, and
- Issuing this Written Geotechnical Report that specifically addresses the project site.

Our services meet the requirements of the 2019 Oregon Structural Specialty Code, Section 1803 – Geotechnical Investigations, including ASCE 7-16.

2 INVESTIGATION AND FINDINGS

2.1 SITE LOCATION

The project site is located at the top edge of a west-facing bluff overlooking the beach and the Pacific Ocean. The site is accessed by Beach Loop Drive in southwest Bandon, Oregon, 1.1-mile south of Coquille River jetty and 1-mile west of highway 101 (US-101). See the attached Vicinity Map.

2.2 SURFACE CONDITIONS

The site consists of:

- A grassy, relatively flat bench extends approximately 150 to 175-feet west from the edge of pavement of Beach Loop Drive, terminating at the top of a
- West-facing slope (landslide debris/old slide zone) that descends approximately 80-feet to the beach.

The flat bench has grassy vegetation and there are no indications of significant soil erosion.

[1] We made the original geotechnical investigation in 2017 for the former owner of the project site (tax lot 1880) and the adjacent tax lot 1860. The former owner has sold the property and our understanding is that the sale included the proprietary nature of our original report.

There is an area of recent erosion and sloughing at the top of the west slope near the south property boundary. This area is poorly vegetated and exposes loose sands and underlying marine terrace (lightly cemented sands and silty sands). The slope descending westward from the scarp and bluff is heavily vegetated with shrubs and grasses. Large mudstone outcrops are visible at the toe of the slope extending from the beach surface.

Attached to this report is a Site Plan and Field-Developed-Cross-Section which graphically depicts the conditions described above.

2.3 Subsurface Soil Conditions

We investigated subsurface soil conditions by making three (3) probes[2] and one (1) continuous sample boring[3] using our track-mounted geotechnical drill. Subsurface conditions consist of approximately:

- **Unconsolidated SILT and SAND Mixtures:** Up to 17-feet of mixed, loose to moderately dense, unconsolidated, silty-SAND, SILT, and SAND, over
- **Marine Terrace Deposits:**
  - 4 to 10-feet of lightly cemented gravelly-SAND and SAND, over
  - 8 to 15-feet of lightly cemented sands and silty-sands, over
- **BEDROCK:** Dark gray, very stiff to hard, weathered sedimentary mudstone.

The depth to very stiff to hard, weathered mudstone varies between 34 and 37-feet below the existing ground surface at the probe and boring locations.

Graphic logs of the probes and borings are attached to this report. The approximate location of the probes and borings are shown on the attached Site Plan.

Groundwater, as observed in the probes and borings, ranges from approximately 22.5 to 26.5-feet below the existing ground surface at the probe and boring locations. These depths do not consider existing variations in ground surface elevation (which vary an estimated ±2-feet).

2.4 Local Geology

Surface geology at the project site is mapped[4] as "Whiskey Run terrace sediments" (Pleistocene), gravel and sand terraces deposited on ancient marine platforms. "Sixes River" (Mesozoic) sedimentary rock melange underlies the terrace deposits. This melange is highly variable, but generally consists of sedimentary and metamorphic rock.

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[2] A 22.9-cm^2 cone is pushed into the soil using a 140-lb. hammer falling 30-in. The energy required to advance the cone is recorded in the field as the number of blows per 6-inches of penetration. Soil friction on the side of the cone is measured using a torque wrench. Calculated cone tip pressure is used to estimate soil engineering

[3] 1.5-inch diameter x 4-foot continuous samples obtained using a G7 2-3/8" direct push dual tube system manufactured by AMS, Inc.

[4] Wiley, T.J., McClaughry, J.D., Ma, Lina, Mickelson, K.A., Niewendorp, C.A., Stimely, L.L., Herinckx, H.H., and Rivas, Jonathan, 2014, Geologic map of the southern Oregon coast between Port Orford and Bandon, Curry and Coos Counties, Oregon: Oregon Department of Geology and Mineral Industries, Open-File Report O-2014-01, 2014.

Our probes and borings confirm these two mapped units – lightly cemented gravel and sand terraces overlying sedimentary mudstone. The large outcrops of rock offshore further confirm the presence of rock below 35-feet.

3 GEOLOGIC HAZARDS

3.1 FAULTING

Table 1 summarizes Quaternary Class A active faults mapped within a 50-mile radius of the project site *active* faults[5,6].

Table 1 - Nearby Class A Quaternary Faults

Fault Name	ID	Length (km)	Average Strike	Dip	Slip Rate (mm/yr)	Slip Sense[7]	Location
Coquille Anticline	893	27	N30°W	NE/SW	0.2<SR<1.0	A,R	1.5-mi NE
Pioneer Anticline	892	14	N33°W	E/W	0.2<SR<1.0	A,N	5.9-mi NE
South Slough Thrust and Reverse Faults	890	16	N8°E	E/W	< 0.2	R	11-mi NE
South Slough Syncline	891	17	N7°W	E/W	0.2<SR<1.0	S	10-mi NE
East South Slough Faults	889	8	N70°W	NE	< 0.2	R, LL	16-mi NE
Cascadia Fold and Fault Belt	784	484	N30°W	E/W	1.0<SR<5.0	T	9-mi SE
Cascadia Megathrust	781	754	N4°W	E	> 5	T	45-mi W
Cape Blanco Anticline	894	8	N74°W	Unspec.	0.2<SR<1.0	A,T	19-mi S-SW
Battle Rock Fault Zone	896	48	N16°W	E	< 0.2	N	16-mi S-SW
Beaver Creek Fault Zone	895	18	N65°E	60-75°SE	0.2<SR<1.0	N	19-mi SE
Whaleshead Fault Zone	897	43	N12°W	Vertical	0.2<SR<1.0	RL,LL	45-mi S-SW

Based on criteria of ASCE 7-16, this is not a near-fault site. There is not a hazard of fault rupture at the project site.

[5] Active defined as having ruptured within the current geologic age (Quaternary –1.6 Myr).
[6] U.S. Geological Survey, Quaternary fault and fold database for the United States at https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf
[7] Types of Faults: T = thrust, LL = left lateral (strike-slip), RL = right lateral (strike slip), N = normal, R = reverse, A = anticline, H = homocline, S = syncline.

3.2 Local Seismicity

Table 2 summarizes historic recorded earthquakes having a magnitude of M3 or greater that have occurred within a 50-mile (80-km) radius of the project site.[8] Based on this inventory, the site is within an area having (relatively recent) moderate seismicity. Most of the earthquakes are associated with the faulting located south of the project site, except for one located offshore near the Pioneer Anticline (M3.3).

Table 2 - Historic Earthquakes within 50-mile Radius of Project Site

Date	Latitude	Longitude	Magnitude	Depth	Dist, km
11/30/2019	42.776	-124.477	4.5	16.7	37
08/03/1980	42.498	-124.56	4.5	15.0	69
02/26/2009	42.54133	-123.896	4.2	36.8	77
01/24/2014	42.61217	-123.956	3.8	4.3	67
11/30/2019	42.7775	-124.473	3.5	16.1	37
07/03/2010	42.47433	-124.177	3.5	34.3	73
12/05/2016	43.26983	-124.441	3.3	15.8	18
09/14/2005	43.02083	-125.035	3.1	10.0	50
02/26/2012	42.81583	-124.763	3.1	21.6	42

The greatest contributor to the *hazard* of strong ground motion at this site are Cascadian subduction zone events. Based on current deaggregation analysis, for a recurrence interval of 2,475-years and considering local site response conditions, the design earthquake has a peak ground acceleration of approximately 1.45-g with a modal magnitude of 9.08.

3.3 Liquefaction and Lateral Spreading

3.3.1 Liquefaction

We modeled liquefaction using several current methods currently in use by the geotechnical profession. These methods estimate the factor of safety against soil liquefaction – a phenomenon whereby earthquake acceleration increases water pore pressure over the threshold of effective stress in a soil mass. This condition leads to rapid loss of soil grain contact and drastically reduced soil shear strength.

Site subsurface conditions, summarized in section 2.2 of this report, appear to include a significant presence of marine terrace deposits. These are dense to very dense silty-sand materials that typically exhibit a light to moderate degree of cementation. Cut embankments in these materials can often stand vertically for significant heights due to the inherent cohesion offered by this cementation.

[8] USGS Earthquake Catalog, https://earthquake.usgs.gov/earthquakes/search/, accessed 10/22/21.

We conservatively modeled the marine terrace gravelly-sands and sands as having a very minimal amount of apparent cohesion (due to cementation) and reasonable values of internal friction angle (based on our evaluations of similar soils in direct shear testing).

With these limitations in mind, our analysis indicates that liquefaction is likely under the enormous peak ground acceleration for the site (required by ASCE 7-16) of 0.393-g.[9] Depending on methods used, post-triggering settlement at the ground surface of the site can be expected to range anywhere from 2 to 5-inches.

We recommend that there is a moderate hazard of earthquake-induced liquefaction subsidence at the project site.

3.3.2 Lateral Spreading

Lateral spreading is essentially the lateral movement of the ground in response to the loss of shear strength in the soil mass due to earthquake-induced liquefaction. At the project site, with the near proximity of the west bluff, lateral spreading would essentially be the slope movement (landslide) caused by earthquake ground motion.

We evaluated lateral spreading using pseudo-static analysis to evaluate slope stability of the bluff in response to earthquake ground shaking. This analysis is detailed in section 3.4 of this Report. The earthquake lateral acceleration coefficient used for this analysis was developed using methods documented in the calculations included in Appendix B to this report.

Our analysis indicates that there is a significant hazard of earthquake-induced lateral spreading (slope failure) in the upper half of the west facing slope at the project site.

Recommended mitigation includes:

- Reshaping the top of the bluff to remove the over-steepened cliff-like face,
- Restricting building to an area set back from the top of the bluff, and
- Building foundation systems consisting of reinforced concrete grade beams and pile caps supported by micropiles that find bearing in the underlying mudstone BEDROCK.

3.4 Slope Movement

3.4.1 Existing Condition

The project site is located approximately 70-feet above the beach, separated by a west-facing slope with an average gradient of approximately 33-percent. The slope can be characterized in two sections:

- **Depositional:** The lower half of the slope has an average gradient of approximately 30-percent and consists of soils that have been transported by gravity (colluvium) from erosion occurring in the upper half of the bluff, and

[9] This peak ground acceleration is based on a recurrence interval of 2,475-years.

- **Erosional:** The upper half of the bluff is steeper with surface gradients ranging from 25 to over 50-percent. This area includes areas of active sloughing and surface erosion (see Figure 1) at the top of the slope.

Currently, except for bedrock exposures at the toe of the slope (at the beach), virtually all the lower depositional area is densely vegetated and appears to be relatively stable.

Most of the erosional area (the upper half of the slope) is well vegetated and appears to be reasonably stable except for localized areas of erosion and sloughing at the top of the slope. These areas include:

- One area of the bluff along the south half of the project affecting the top 10 to 15-feet of the slope,
- A similar erosional/sloughing zone on tax lot 1880 to the south, and
- An over steepened area (an old erosional scarp) at the top of the slope of the property immediately south of tax lot 1880.

We estimate that the erosion and sloughing likely occurred at these areas sometime in the last 10 to 20-years. It is our understanding is that these areas of sloughing/erosion may have been caused by improper disposal of surface runoff from the area east of the site. While we do not know for certain if this was the case, the nature and location of these features is consistent with many similar slope failures we have observed on coastal properties caused by concentrated flow from roof drains and other drainage features. We also note that a storm drain was installed in the center of the project site, complete with cast iron grate and catch basin. It seems possible that this may have been installed after the slope failure occurred (caused by a pipe pouring water directly to the ground surface at the top of the slope) to prevent further erosion and sloughing.

Figure 1 shows areas of exposed bedrock at the toe of the slope. Exposed bedrock limits toe erosion and is effective in limiting slope regression. Our opinion is that the bedrock exposure at the toe of the concave landform will increase with time, thus limiting toe erosion and resulting eastward slope regression.

3.4.2 Slope Stability Evaluation[10]

- **Existing Condition - No Earthquake Shaking:** Our analysis indicates that the site is marginally stable, having a FOS[11] slightly larger than 1.2. If this were the only condition to consider, structures would have to be set back from the slope a minimum of about 15 to 20-feet to provide a factor of safety of 1.5 or more.
- **Existing Condition with Earthquake Shaking:** Of greater concern is slope stability under earthquake ground motion. Our evaluation indicates that the FOS goes well below 1.0 for load conditions that include the design earthquake ground acceleration, meaning that the site nearest the bluff will be unstable. We evaluated earthquake stability using a pseudo-static

[10] We evaluated slope stability with the assumption that the over-steepened areas of the bluff would be regraded to a smooth slope essentially the same as the vegetated areas below, and vegetated.
[11] FOS, or Factor of Safety, is the ratio of available forces resisting slope movement to the forces driving slope movement. For projects of this nature, current practice dictates a minimum FOS of 1.5.

analysis with a lateral acceleration coefficient determined based on a 475-year recurrence interval and an assumption of 15-cm of allowable lateral slip.[12] A summary of the calculations for horizontal seismic coefficient and our stability analysis are included in Appendix C to this report.

Due to the type of soils in the subsurface profile and depth to bedrock, slope movements under earthquake loading will typically consist of relatively shallow or thin zones of sliding – not "deep seated" landslides that extend far back into the east end of the project site. This condition allows for

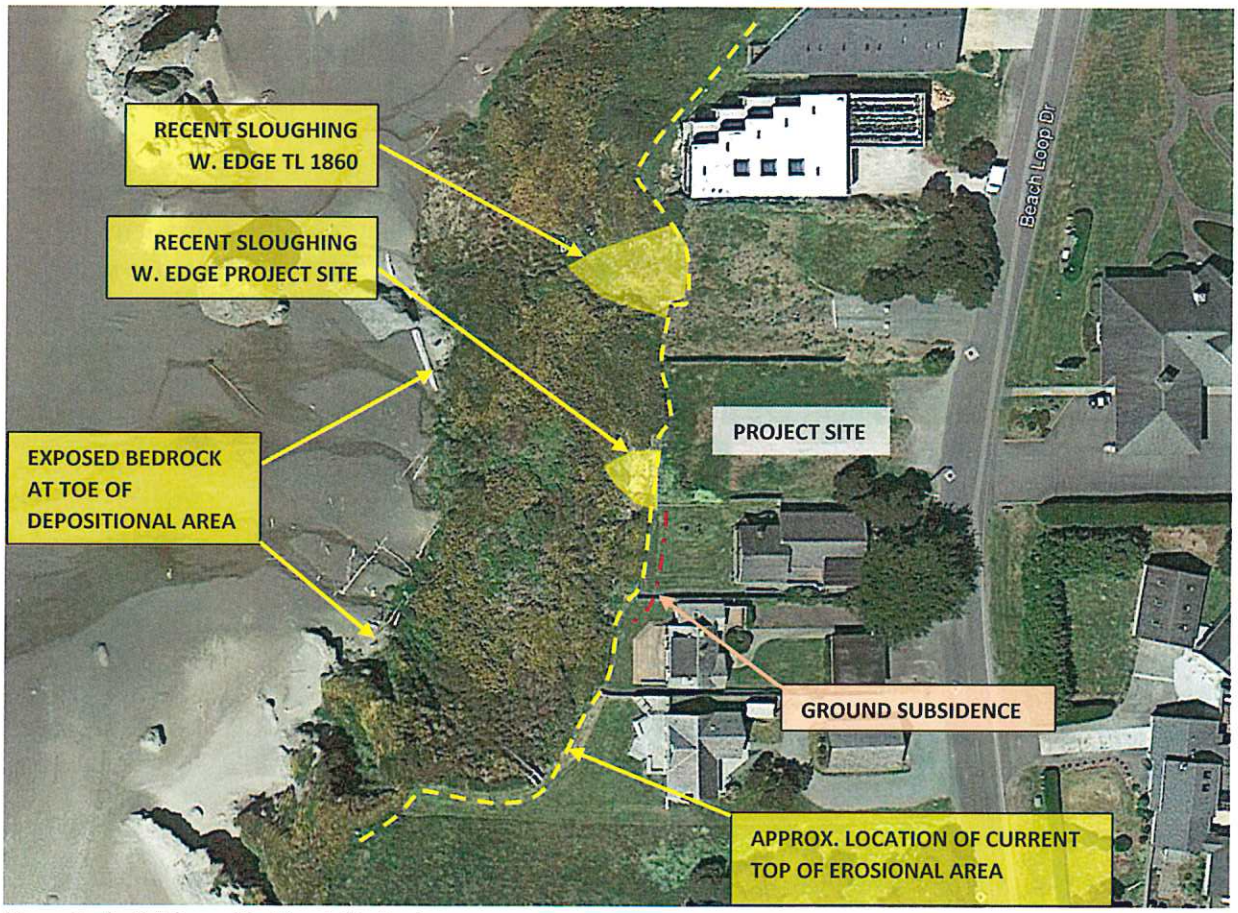


Figure 1 - Aerial View of Pertinent Site Features

In summary, our analysis indicates that there is a high probability of shallow slope failure with strong earthquake ground shaking in the west descending slope.

[12] California Geological Survey, "Guidelines for Evaluating and Mitigating Seismic Hazards in California," Special Publication 117A, Chapter 5 (2008).
Blake, T.F., "Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Landslide Hazards in California, Section 10.2, 10.3, and 11.2 (2002)

Appendix B includes graphic summaries of the assumptions for our analysis including ground surface and subsurface material geometry, groundwater, and material parameters.

3.4.3 Recommended Mitigation

To provide a reasonable factor of safety against slope movement, to mitigate liquefaction and lateral spreading hazards, and minimize risk to occupational safety during the design earthquake, we recommend:

- Pulling back and smoothing near-vertical scarps at the top of the west-facing slope that descents to the beach,
- Seeding and planting the pulled-back and smoothed areas at the top of the west-facing slope,
- Limiting construction east of a "no-build" buffer zone, and
- Supporting all structures on a deep foundation system that finds bearing in the underlying mudstone formation. This includes vertical support and battered elements to provide lateral resistance to earthquake movement.

These mitigation strategies are made for the purpose of minimizing threats to occupational safety but are not guaranteed to eliminate substantial differential vertical settlement or lateral movement in the event of strong earthquake ground motion. Recommendations for mitigation are discussed in more detail in Section 4 of this Report.

4 Recommendations for Design and Construction

4.1 Seismic Design Criteria

4.1.1 Site Class

Based on the observed subsurface soil conditions and criteria in ASCE 7-16, we recommend that a seismic site class is "D – Stiff Soil" is appropriate for this site.

The greatest contributor to total seismic hazard is a Cascadia Megathrust event with a magnitude between 9.08 at 10-mles (16 km) from the project site.

4.1.2 Design Spectrum

The seismic design criteria, in accordance with 2019 OSSC and ASCE 7-16, are summarized in Table 3.

Table 3 - Recommended Seismic Design Criteria

Parameter	Design Values	
	0.2-Second	1-Second
MCE_R Ground Motion	S_S = 2.042 g	S_1 = 0.973 g
Site Class	D	
Site Coefficient	F_a = 1.000	F_v = 1.700
Site Modified Spectral Response Acceleration	S_{MS} = 2.042 g	S_{M1} = 1.654 g
0.2-second Design Value	S_{DS} = 1.361 g	S_{D1} = 1.103 g
PGA_M (Site Modified Peak Ground Acceleration)	**1.117 g**	

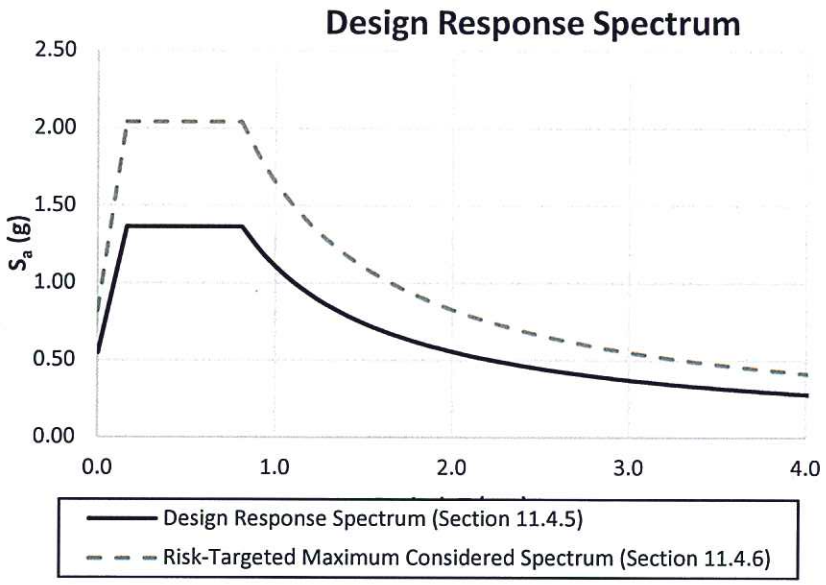


Figure 2- Design Response Spectrum for Site Class D

4.2 Foundation Setback

Permanent foundations shall be located east of the recommended "No Build Zone" shown on the Geotechnical Site Plan in Appendix A. The recommended minimum setback is 37-feet east of the top of the existing bluff.

The purpose of this setback is to keep the foundation out of the location of significantly large ground movements which could threaten occupational safety. East of the "no build zone," lesser ground subsidence and lateral movement may occur that should be tolerated by the specified foundation system.

4.3 Site Grading and Drainage

We recommend that the over steepened eroded/sloughed zone of the top of the west slope be graded to remove over steepened scarp areas at the top of the slope. The final grade should transition

smoothly from the vegetated slope below the scarp zones and then be seeded and mulched to promote grassy vegetative cover.

For long term stabilization of the regraded west slope, we recommend establishment of native shrubs. Temporary armoring with vegetative berms, wattling, jute netting may also be used to provide short term erosion prevention while vegetation is established.

Care shall be taken in the overall site development to avoid creating concentrated surface runoff flowing onto the west slope. All roof drains and other features shall route water into the city storm drain system.

4.4 FOUNDATIONS

4.4.1 General Foundation Recommendations

We assume that this site will be developed to support a conventionally framed single-family residence.

To mitigate hazards associated with slope movement and earthquake-induced liquefaction settlement, we are recommending that all permanent structures, including decks, be supported on a foundation system consisting of reinforced concrete grade beams or isolated reinforced concrete pads supported by deep foundation elements. The deep foundation elements should find support for all loads within underlying mudstone BEDRCOCK.

Micropile support shall include:

- Vertical elements to provide the required vertical load support, and
- Battered piles to provide support for lateral loads. Piles may be battered eastward for east-west lateral loads and either north or south for north-south loads.

4.4.2 Deep Foundation Elements

We recommend that micropiles are the most economical and efficient deep foundation elements for this site. Micropiles can easily be installed through the overlying terrace deposits and grouted into underlying load-bearing Mudstone formation. Micropiles offer excellent load capacity in compression and tension and can be battered to provide the necessary resistance to lateral loads.

Micropiles shall extend into the underlying native mudstone located approximately 34-feet or deeper below the existing ground surface. *All micropiles shall be cased from the grade beams / pile caps to a minimum embedment of 2-feet into BEDROCK.*

To achieve economy and reasonably high individual micropile load capacity, we recommend the following design criteria:

- **Bond Zone:**
  - Minimum diameter of the grout-Mudstone bond zone of 5-inches
  - Ultimate design bond stress of 2-ksi,

- **Micropile Reinforcement:** 32-mm min. diameter threaded hollow bar, 80-ksi min. yield strength,
- **Casing:** 4.5-inch x 0.25 wall (minimum) API tubular steel casing extending from the ground surface (grade beam or load pad) to 2-feet below the surface of Mudstone, minimum yield strength of 380-ksi;
- **Grout:** Neat cement grout, 4-ksi min. compressive strength,

Ultimate design bond stress shall be verified by load testing and bond lengths adjusted accordingly to accommodate structural service load requirements. The design of bond length shall incorporate a minimum factor of safety of 2.0 (ratio of ultimate capacity to service load requirement).

Micropiles meeting these criteria should have an allowable individual load capacity in the range of 20 to 40-kips, depending on the length of the bond zone in Mudstone.

4.4.3 Verification Testing

Prior to installation of production micropiles verification load testing shall be made of one sacrificial micropile installed according to the recommended design criteria. Schedule 40 PVC may be used for casing for the sacrificial test pile.

Verification testing shall comply with the requirements for verification testing in tension of chapter 7 of FHWA NHI-05-039 "Micropile Design and Construction," including:

- Ultimate load, in tension, to a minimum 200-percent of the maximum specified working load. The load test shall be made in increments of 10, 25, 50, 100, 150, and 200-percent of maximum specified working load.
- Creep Testing. A creep test shall be made a 133-percent of the maximum specified working load. Criteria for successful creep is less than 2-mm of creep over one log-cycle of time.

Prior to load testing K & A Engineering, Inc. shall be provided:

- **Design Load Schedule:** A schedule of micropile allowable minimum design load capacity requirements developed by the project structural engineer, and
- **Foundation Plan:** A foundation plan showing the locations, dimensions, of the grade beams, pile caps, and micropile locations, and
- **Proposed Micropile Design:** The contractor shall provide K & A Engineering, Inc. with proposed materials specifications for production and verification test piles including casing, reinforcement, and construction methods.

K & A Engineering, Inc. shall:

- Review and approve materials and construction methods submitted by Contractor prior to construction,
- Inspect installation of test piles,
- Inspect load testing and verify ultimate load at failure or that no failure occurred.
- Verify the validity of the preliminary allowable grout bond strength based on load test results, and make recommendations for embedment lengths of the production piles, accordingly, and
- Inspect and approve micropile construction.

5 LIMITATION AND USE OF GEOTECHNICAL RECOMMENDATIONS

This report has been prepared for the exclusive use of Michael and Lauren Schoenbrun for the subject project.

This geotechnical investigation, analysis, and recommendations meet the standards of care of competent geotechnical engineers providing similar services at the time these services were provided. We do not warrant or guarantee site surface or subsurface conditions. Exploration test holes indicate soil conditions only at specific locations (i.e. the test hole locations) to the depths penetrated. They do not necessarily reflect soil/rock materials or groundwater conditions that exist between or beyond exploration locations or limits.

The subject project site has been identified to present significant hazards with respect to earthquake strong ground motion, liquefaction, and slope stability. Care shall be taken to incorporate our recommendations for design and construction.

The scope of our services does not include construction safety precautions, techniques, sequences, or procedures, except as specifically recommended in this report. Our services should not be interpreted as an environmental assessment of site conditions.

Appendix A

Field Exploration

- Vicinity Map
- Geotechnical Site Plan
- Geologic Cross Section
- Logs

Geotechnical Engineering Report

Tax Lot 1880, Tax Map 28S-15W-36BC

Beach Loop Road

Bandon, Oregon

Project: 21050

October 27, 2021

Prepared for:

Michael and Lauren Schoenbrun

1005 Wiltshire Avenue

San Antonio, TX 78209

Prepared by:

K & A Engineering, Inc.

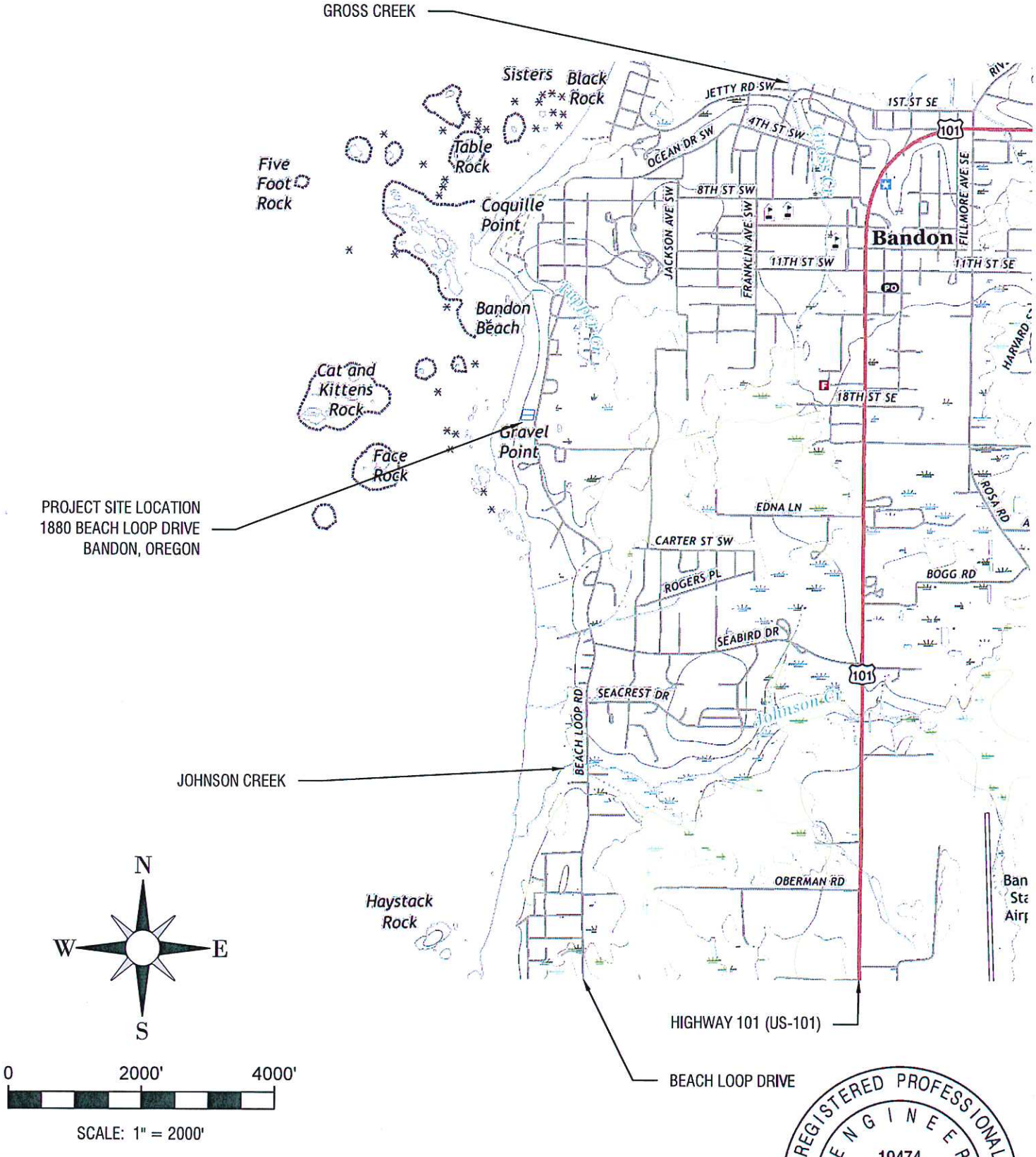
Coburg, Oregon

K & A Engineering, Inc.

541·684·9399 · Kaengineers.com

Established 1998

k·a engineering



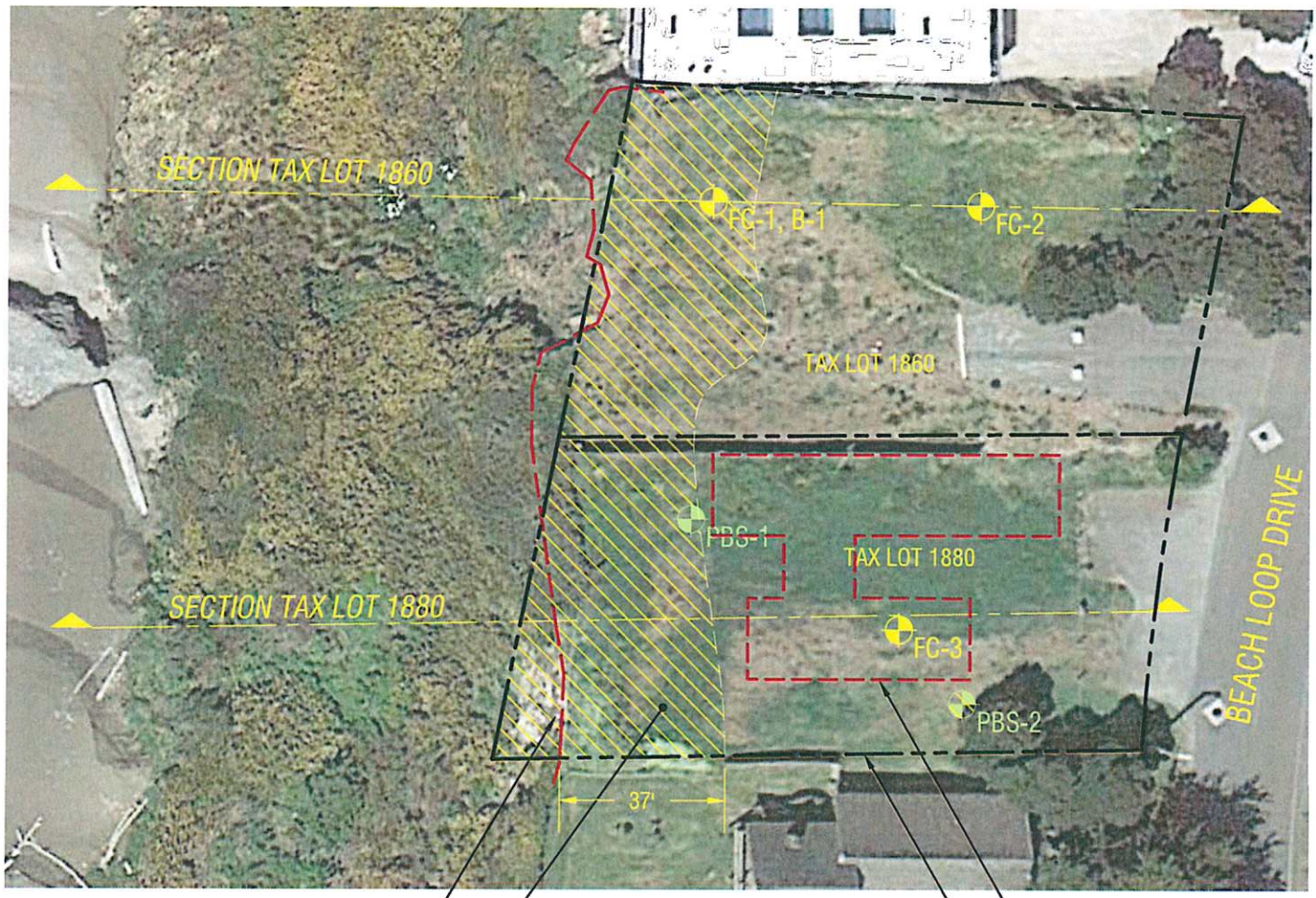
REGISTERED PROFESSIONAL ENGINEER
19474
OREGON
SEPTEMBER 16, 1997
MICHAEL DENNIS REMBOLDT

K & A Engineering,Inc
91051 S. Willamette St.
Coburg, OR 97408
541 684 9399 541 684 9358 fax

k·a engineering

VICINITY MAP
Geotechnical Site Investigation
Schoenbrun Residence
TL 1880 Map 28S-15W-36BC; Beach Lp. Dr., Bandon, OR
10/27/21 Project: 21050 Drawing 1 / 3

RENEWS: 12/31/2022



CURRENT TOP EDGE BLUFF
(APPROX. LOCATION)

"NO BUILD" ZONE (HATCHED AREA)
ZONE EXTENDS 37-FEET EAST OF TOP OF BLUFF
FIELD VERIFY

PROPOSED NEW RESIDENCE

PROPERTY BOUNDARY
(APPROX. LOCATION)

N
W E
S

0 40' 80'

SCALE: 1" = 40'

LEGEND

FC-1, B-1 PROBE/BORINGS BY K & A ENGINEERING, INC. OCTOBER 2017

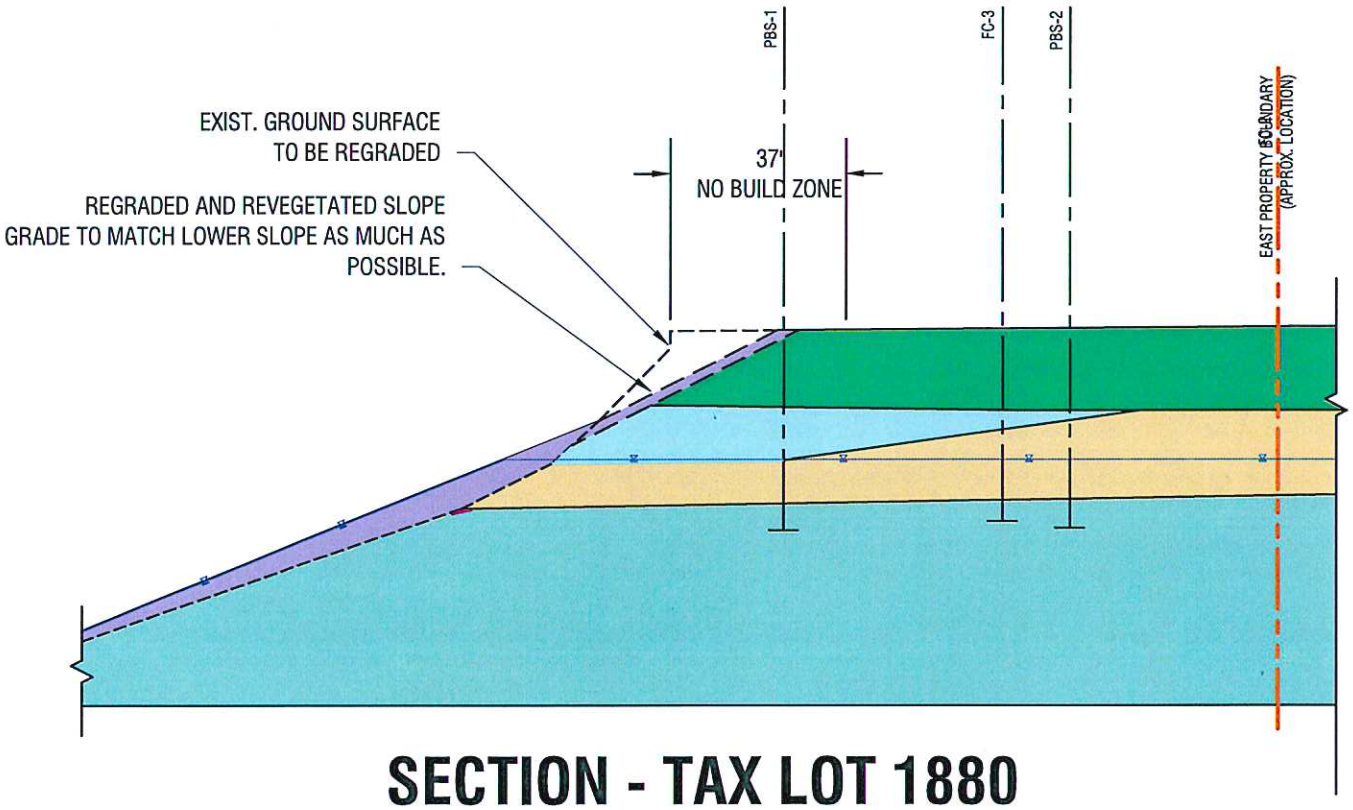
PBS-2 BORINGS BY PBS ENGINEERING 2007

REGISTERED PROFESSIONAL ENGINEER
19474
OREGON
SEPTEMBER 16, 1997
MICHAEL DENNIS REMBOLDT
RENEWS: 12/31/2022

K & A Engineering,Inc
91051 S. Willamette St.
Coburg, OR 97408
541 684 9399 541 684 9358 fax

k·a engineering

GEOTECHNICAL SITE PLAN
Geotechnical Site Investigation
Schoenbrun Residence
TL 1880 Map 28S-15W-36BC; Beach Lp. Dr., Bandon, OR
10/27/21 Project: 21050 Drawing 2 / 3



SECTION - TAX LOT 1880

LEGEND

- **UNCONSOLIDATED SILT AND SAND MIXTURES:** LOOSE TO MODERAETELY STIFF/DENSE
- **MARINE TERRACE:** GRAVELLY-SANDS, LIGHTLY CEMENTED
- **MARINE TERRACE:** SANDS AND SILTS, LIGHTLY CEMENTED
- **BEDROCK:** VERY STIFF TO HARD WEATHERED MUDSTONE
- **ROOT ZONE:** SANDS WITH VEGETATIVE COVER AND REINFORCED WITH ROOTS
- **ESTIMATED GROUNDWATER SURFACE**

0 40' 80'

SCALE: 1" = 40'

REGISTERED PROFESSIONAL ENGINEER
19474
OREGON
SEPTEMBER 16, 1997
MICHAEL DENNIS REMBOLDT

RENEWS: 12/31/2022

K & A Engineering,Inc
91051 S. Willamette St.
Coburg, OR 97408
541 684 9399 541 684 9358 fax

k·a engineering

GEOLOGIC CROSS SECTION
Geotechnical Site Investigation
Schoenbrun Residence
TL 1880 MAP 28S-15W-36BC; Beach Lp. Rd., Bandon, OR
10/27/21 Project: 21050 Drawing 3 / 3

K & A Engineering, Inc.
PO Box 8486
Coburg, OR 97408
Telephone: 541-852-6939

Job No. 21053

CLIENT: Schoenbrun
PROJECT: 21050
SITE ADDRESS: 1860 Beach Loop Drive, Bandon, Oregon

BORING NUMBER **B-1** Sheet 1 of 1
SURFACE ELEVATION
NORTH | EAST

Unconfined Compressive Strength, tons/ft.^{2}: 1 2 3 4 5
PL MC LL
N VALUE, blows/ft.: 10 20 30 40 50 60 70 80 90

DEPTH, ft	SAMPLE NO.	SAMPLER TYPE	PERCENT RECOVERY	GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	DEPTH m.
	1		72		Brown, dry, loose, organic-laden silty-SAND with concentrated roots, woody debris, and trace gravel (FILL).		
					Brown, dry, loose, organic-laden silty-SAND (FILL). Pockets of dark brown organics.		1.0
5.0	2		55		Gray, white & brown, damp, loose or moderately dense, coarse SAND (SP) or SAND with some silt (FILL). Wash sieve performed at 3-feet: 2% fines, 98% sands.		2.0
					Dark brown/black, moist, soft, high plasticity, organic CLAY or silty-CLAY with pockets of highly organic debris (native).		
10.0	3		81		Orange, tan & gray, damp, moderately dense, lightly cemented SAND or SAND with some silt (terrace deposits).		3.0
					Gray, moist, stiff, high plasticity, SILT (MH) grading to SILT with mottled orange sand.		4.0
15.0	4		81		Orange, tan & gray, damp, moderately dense, poorly-graded SAND with some silt (terrace deposits). Wash sieve performed at 17-feet: 10% fines, 90% sands.		5.0
	5		83				
20.0					Orange/brown, damp, well-graded, silty-gravelly-SAND (possible cementation). Gravels up to 1/2-inch in diameter and variably colored.		6.0
	6		84		Orange/brown, damp, well-graded silty-sandy-GRAVEL (possible cementation).		7.0
25.0 ACR					Orange/brown, wet to saturated dense, well-graded silty-gravelly-SAND. Consists of fine gravels or coarse sands. Saturated beyond 25-feet.		
	7		71		Tan, gray & brown, saturated, moderately dense, SAND with some silt.		8.0
					Brown and gray, saturated, dense, well-graded silty-gravelly-SAND or silty-sandy-GRAVEL.		9.0
30.0	8		98		Gray, saturated to wet, moderately dense or dense, lightly cemented, poorly-graded SAND with silt. Finer sands below 31-feet. Wet below 33-feet. Wash sieve performed at 29-feet: 7% fines, 93% sands.		10.0
	9		98				
35.0					Black and gray, moist, dense, silty-gravelly-SAND - possibly mixed with decomposed mudstone. Gravels are platy and white.		11.0
	10		45		Gray, moist, stiff to very stiff, moderate plasticity, decomposed mudstone - sandy-CLAY with some weathered rock.		12.0
40.0					Dark gray, moist, hard, moderate plasticity, weathered mudstone - sandy-CLAY with some weathered rock.		

End of Boring @ 40 feet

⊗ Calibrated Penetrometer Unconfined Compression

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED	CASING	CAVE-IN	WATER
10/11/17	18:05	ACR			24.6

BORING STARTED 10/11/17
BORING COMPLETED 10/11/17
DRILLER K & A
RIG AMS 9410 VTR
ENGINEER JDB
APPROVED

LOG A GNGN03 - LOG A GNGN03.GDT - 10/26/21 15:30 - Z:\2021\21050 SCHOENBRUN 1880 BEACH LOOP DR. BANDON\LOGS\B-1 10 22 21.GPJ

DYNAMIC PROBE LOG FC-1

K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-1
CREW: K & A Engineering, Inc.
PROJECT: New Single-family Residence
ADDRESS: 1880 Beach Loop Drive
LOCATION: Bandon, Oregon

PROJECT NUMBER:	21050
DATE STARTED:	10-11-2017
DATE COMPLETED:	10-12-2017
DEPTH COMPLETED (ft):	36.0
SURFACE ELEVATION:	N/A
STATIC WATER DEPTH ON COMPLETION (ft):	22.6
FIRST ENCOUNTERED WATER DEPTH (ft):	22.6
HAMMER WEIGHT:	63.5 kg
CONE AREA:	22.9 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	SOIL BEHAVIOUR TYPE (SBT) ZONE[1,3]	REMARKS
-	1	6	6	
- 1	2	7	6	
-	5	7	6	Loose Silty-SAND
- 2	6	6	6	
-	3	7	6	
- 3	3	7	6	
-	2	7	5	
- 4	3	7	5	
-	2	8	5	
- 5	1	10	4	
-	0	9	3	Soft SILT
- 6	0	9	3	
-	1	8	4	
- 7	1	9	4	
-	4	10	5	
- 8	4	11	5	Loose Silty-SAND
-	4	12	5	
- 9	5	13	5	
-	2	16	4	
- 10	2	19	3	Mod Stiff to Stiff SILT
-	1	19	3	
- 11	4	19	4	
-	6	15	5	
- 12	7	11	5	
-	7	11	5	Moderately Dense SAND with Silt
- 13	10	11	6	
-	9	11	6	
- 14	10	11	6	
-	7	12	5	
- 15	9	12	5	
-	7	12	5	
- 16	7	11	5	
-	5	13	5	
- 17	9	16	5	
-	16	16	6	
- 18	18	17	6	
-	22	16	6	
- 19	22	16	6	
-	25	12	6	Moderately Dense SAND with Gravels
- 20	18	8	6	
-	18	9	6	
- 21	36	10	6	
-	43	13	6	
- 22	34	16	6	
-	26	19	6	▼
- 23	27	23	6	
-	24	17	6	
- 24	24	11	6	
-	23	10	6	
- 25	22	8	6	
-	15	10	6	
- 26	12	11	6	
-	5	10	5	
- 27	4	10	5	
-	4	13	4	
- 28	10	16	5	
-	9	18	5	
- 29	4	21	3	Mod. Stiff to Stiff SILTS and SANDS Possibly Decomposed Mudstone
-	7	18	4	
- 30	9	15	5	
-	9	15	5	
- 31	8	16	5	
-	10	20	5	
- 32	12	24	5	
-	13	27	5	
- 33	13	29	5	
-	10	31	4	
- 34	11	33	4	
-	13	25	5	
- 35	26	17	6	
-	36	125	9	Weathered MUDSTONE
- 36	20	232	9	

Tip Pressure q_c kg/cm2 (1, 10, 100, 1000)
Friction Ratio, % (0%, 5%, 10%)
Equiv. SPT N_{60}[2] (Raw and Normalized) (1, 10, 100)

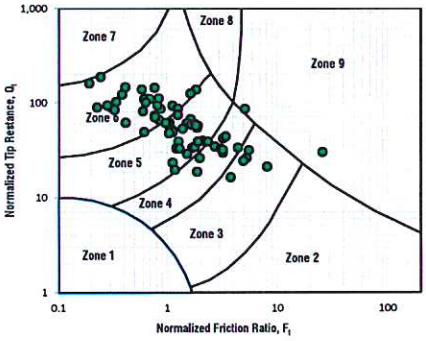
[1]P.K. Robertson, 2010. "Evaluation of flow liquefacton and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

[2]John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

[3]P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
2	Organic soils - clay
3	Clays - silty-clay to clay
4	Silt Mixtures - clayey-silt to silty-clay
5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)



DYNAMIC PROBE LOG FC-2

K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-2
CREW: K & A Engineering, Inc.
PROJECT: New Single-family Residence
ADDRESS: 1880 Beach Loop Drive
LOCATION: Bandon, Oregon

PROJECT NUMBER:	21050
DATE STARTED:	10-12-2017
DATE COMPLETED:	10-12-2017
DEPTH COMPLETED (ft):	36.0
SURFACE ELEVATION:	N/A
STATIC WATER DEPTH ON COMPLETION (ft):	25.3
FIRST ENCOUNTERED WATER DEPTH (ft):	25.3
HAMMER WEIGHT:	63.5 kg
CONE AREA:	22.9 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	SOIL BEHAVIOUR TYPE (SBT) ZONE[1, 3]	REMARKS
-	1	6	6	
- 1	1	6	5	
-	2	7	5	Loose Silty-SAND
- 2	4	7	6	
-	3	6	6	
- 3	2	6	5	
-	4	7	6	
- 4	3	7	5	
-	1	6	5	
- 5	1	5	5	
-	0	4	4	
- 6	0	3	5	
-	0	2	5	
- 7	0	3	5	
-	0	3	5	
- 8	0	4	5	
-	1	10	4	
- 9	3	17	4	
-	2	13	4	
- 10	1	10	4	Mod Stiff to Stiff SILT
-	2	10	4	
- 11	5	11	5	
-	3	18	4	
- 12	4	24	4	
-	2	21	3	
- 13	7	17	5	
-	9	13	5	
- 14	9	10	6	
-	10	10	6	Moderately Dense SAND with Silt
- 15	9	10	6	
-	8	13	5	
- 16	7	16	5	
-	8	13	5	
- 17	7	10	5	
-	10	10	6	
- 18	13	10	6	
-	16	10	6	
- 19	17	11	6	
-	18	8	6	Moderately Dense SAND
- 20	16	6	6	
-	15	6	6	
- 21	10	6	6	
-	7	7	5	Loose Silty SAND
- 22	8	7	6	
-	14	8	6	
- 23	20	10	6	Moderately Dense SAND
-	18	11	6	
- 24	19	12	6	
-	21	11	6	
- 25	19	10	6	
	14	10	6	
- 26	16	11	6	
-	15	10	6	
- 27	13	10	6	
-	11	12	5	
- 28	12	15	5	
-	9	14	5	
- 29	10	13	5	Mod. Stiff to Stiff SILTS and SANDS Possibly Decomposed Mudstone
-	6	14	4	
- 30	8	15	5	
-	8	14	5	
- 31	9	13	5	
-	7	14	5	
- 32	5	15	4	
-	5	13	4	
- 33	5	11	5	
-	3	12	4	
- 34	3	12	4	
-	1	18	3	
- 35	0	24	2	
-	10	102	2	Weathered MUDSTONE
- 36	12	180	9	

[1]P.K. Robertson, 2010. "Evaluation of flow liquefaction and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

[2]John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

[3]P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
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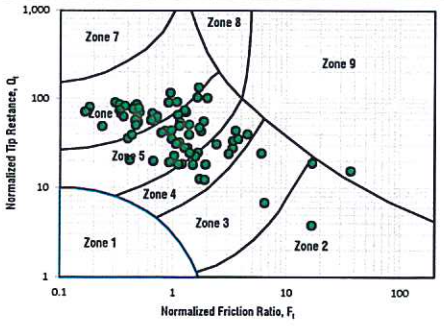
9	Fine grained (weak rock, cemented, relic structure)



DYNAMIC PROBE LOG FC-3

K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-3
CREW: K & A Engineering, Inc.
PROJECT: New Single-family Residence
ADDRESS: 1880 Beach Loop Drive
LOCATION: Bandon, Oregon

PROJECT NUMBER:	21050
DATE STARTED:	10-12-2017
DATE COMPLETED:	10-12-2017
DEPTH COMPLETED (ft):	40.0
SURFACE ELEVATION:	N/A
STATIC WATER DEPTH ON COMPLETION (ft):	27.0
FIRST ENCOUNTERED WATER DEPTH (ft):	27.0
HAMMER WEIGHT:	63.5 kg
CONE AREA:	22.9 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	SOIL BEHAVIOUR TYPE (SBT) ZONE[1, 3]	REMARKS
-	1	5	6	
-1	1	6	5	
-	2	7	5	Very Loose to Loose Silty-SAND
-2	2	8	5	
-	2	8	5	
-3	1	7	5	
-	1	4	5	
-4	1	1	6	
-	1	4	5	
-5	0	8	4	
-	0	11	3	Soft to Mod. Stiff SILT
-6	1	14	3	
-	0	17	3	
-7	6	21	5	
-	5	33	4	Very Dense/Stiff Sandy-SILT
-8	6	46	9	
-	8	34	5	
-9	5	23	4	
-	0	11	3	Mod Stiff to Stiff SILT
-10	1	13	3	
-	1	16	3	
-11	4	18	4	
-	9	19	5	
-12	9	19	5	
-	8	19	5	
-13	11	19	5	
-	10	22	5	
-14	9	24	5	Moderately Dense SAND with Silt
-	9	24	5	
-15	11	24	5	
-	11	21	5	
-16	11	17	5	
-	11	17	5	
-17	12	17	5	
-	13	16	6	
-18	18	16	6	Moderately Dense SAND
-	23	16	6	
-19	37	16	6	
-	34	17	6	
-20	31	18	6	
-	25	19	6	
-21	22	21	6	
-	16	26	5	
-22	15	32	5	
-	14	29	5	
-23	16	25	5	Moderately Dense SAND with Silt
-	14	30	5	
-24	15	34	5	
-	17	42	5	
-25	24	50	5	
-	27	36	5	
-26	17	22	5	
-	13	24	5	
-27	13	27	5	
-	10	29	4	
-28	8	30	4	
-	9	28	4	Stiff to Very Stiff SILT and CLAY Possible Decomposed Mudstone
-29	9	25	4	
-	8	25	4	
-30	8	25	4	
-	10	26	4	
-31	10	27	4	
-	9	28	4	
-32	6	29	3	
-	4	29	3	
-33	3	28	3	
-	3	25	3	
-34	10	23	4	
-	11	22	5	
-35	15	22	5	
-	16	25	5	
-36	22	29	5	
-	21	67	4	
-37	9	106	2	
-	10	110	2	Weathered MUDSTONE
-38	11	115	2	
-	12	124	2	
-39	12	132	2	
-	15	125	3	
-40	9	118	2	

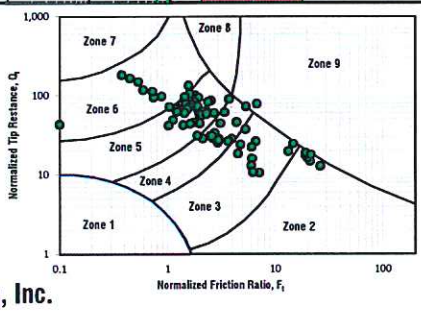
[1]P.K. Robertson, 2010. "Evaluation of flow liquefacton and liquefied strength using Cone Penetration Test." ASCE Journal of

[2]John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

[3]P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
2	Organic soils - clay
3	Clays - silty-clay to clay
4	Silt Mixtures - clayey-silt to silty-clay
5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)



Project: 21050
Client: Schoenbrun

K & A Engineering, Inc.

10/26/2021

Appendix B

Hazard Analysis Summary

- Slope Stability and Lateral Spreading
- Liquefaction Analysis

Geotechnical Engineering Report

Tax Lot 1880, Tax Map 28S-15W-36BC

Beach Loop Road

Bandon, Oregon

Project: 21050

October 27, 2021

Prepared for:

Michael and Lauren Schoenbrun

1005 Wiltshire Avenue

San Antonio, TX 78209

Prepared by:

K & A Engineering, Inc.

Coburg, Oregon

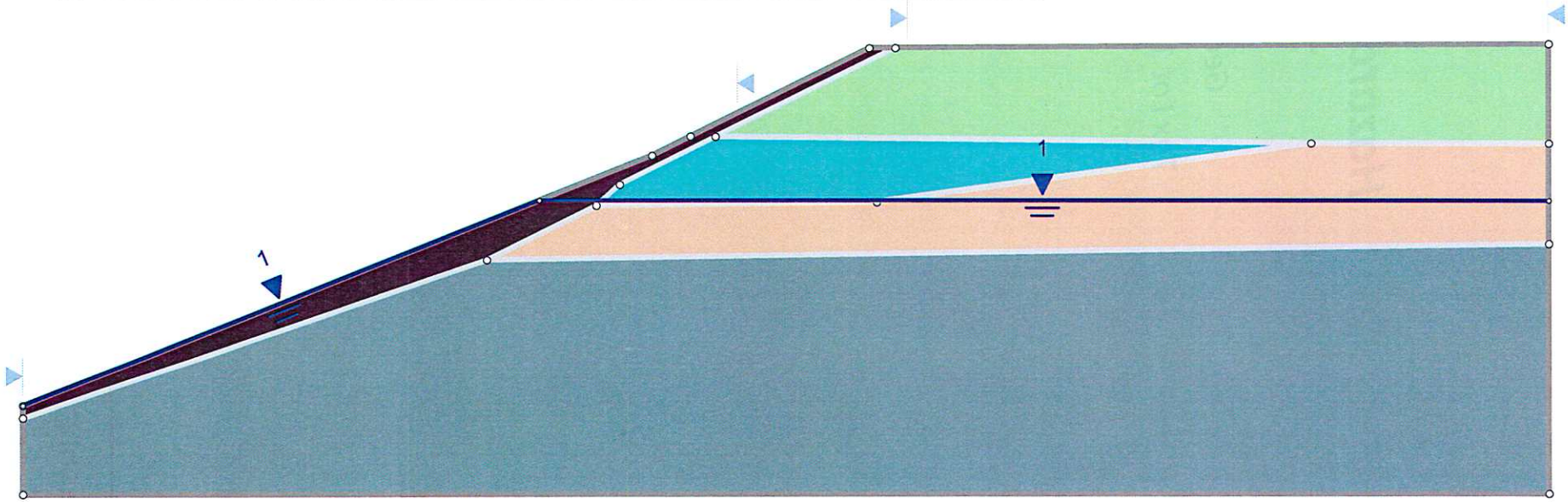
K & A Engineering, Inc.

541·684·9399 · Kaengineers.com

Established 1998

k·a engineering

Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Cohesion Type	Water Surface
Silt and Sand Mixtures		105	Mohr-Coulomb	0	28		Piezometric Line 1
Gravelly SAND, cemented		115	Mohr-Coulomb	50	36		Piezometric Line 1
Lt. Cemented SAND with silt		110	Mohr-Coulomb	100	36		Piezometric Line 1
Weathered MUDSTONE		120	Undrained	6000		Constant	Piezometric Line 1
Root Zone		110	Mohr-Coulomb	100	30		Piezometric Line 1

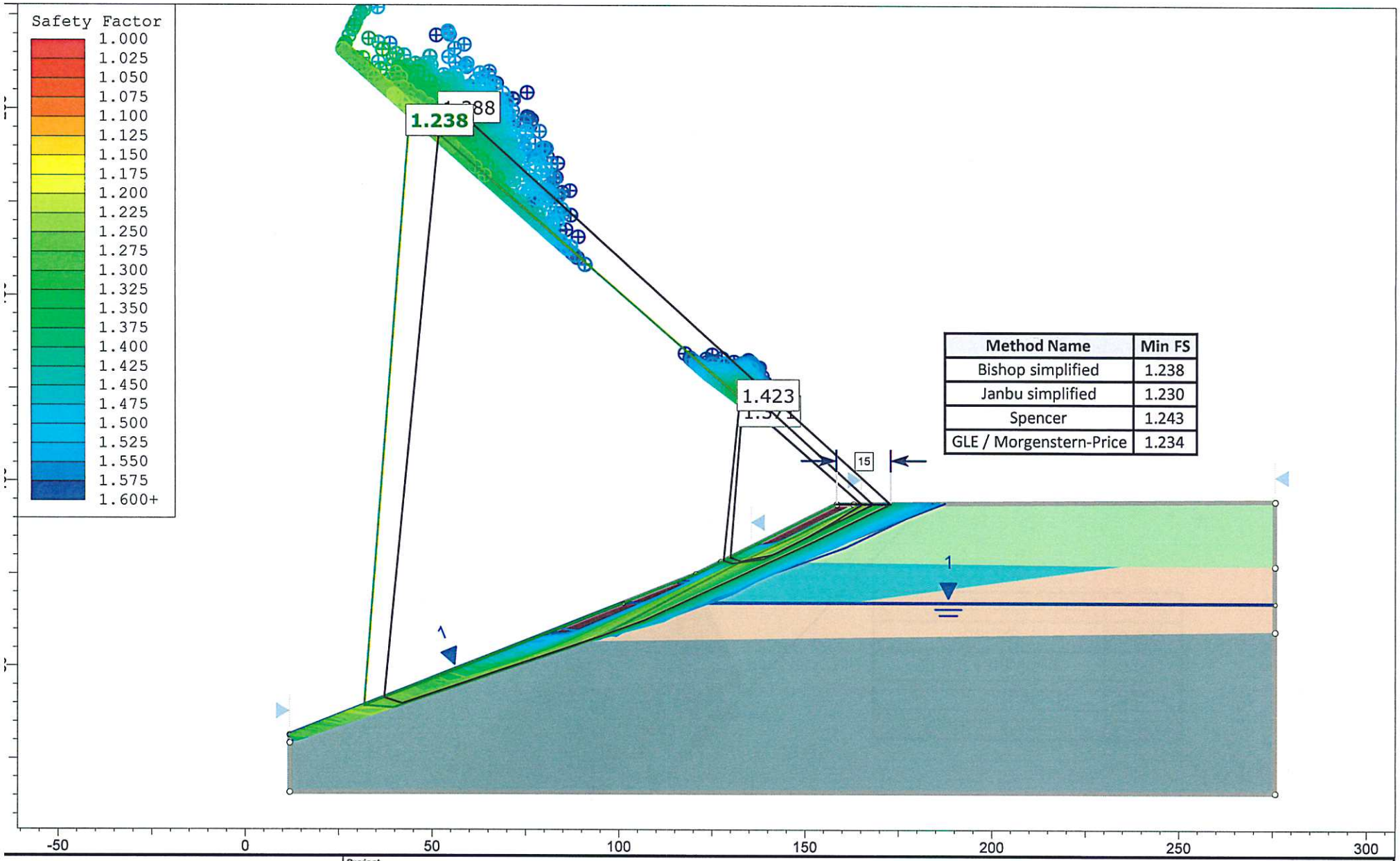


0 25 50 75 100 125 150 175 200 225 250 275

Geotechnical Engineering & Drilling Services

Project	Existing Condition and Material Assumptions		
Group		Scenario	Master Scenario
Drawn By		Company	Schoenbrun
Date	10/25/21	File Name	Tax Lot 1880 Stability Analysis 10 25 21.slmd

DE 9.019

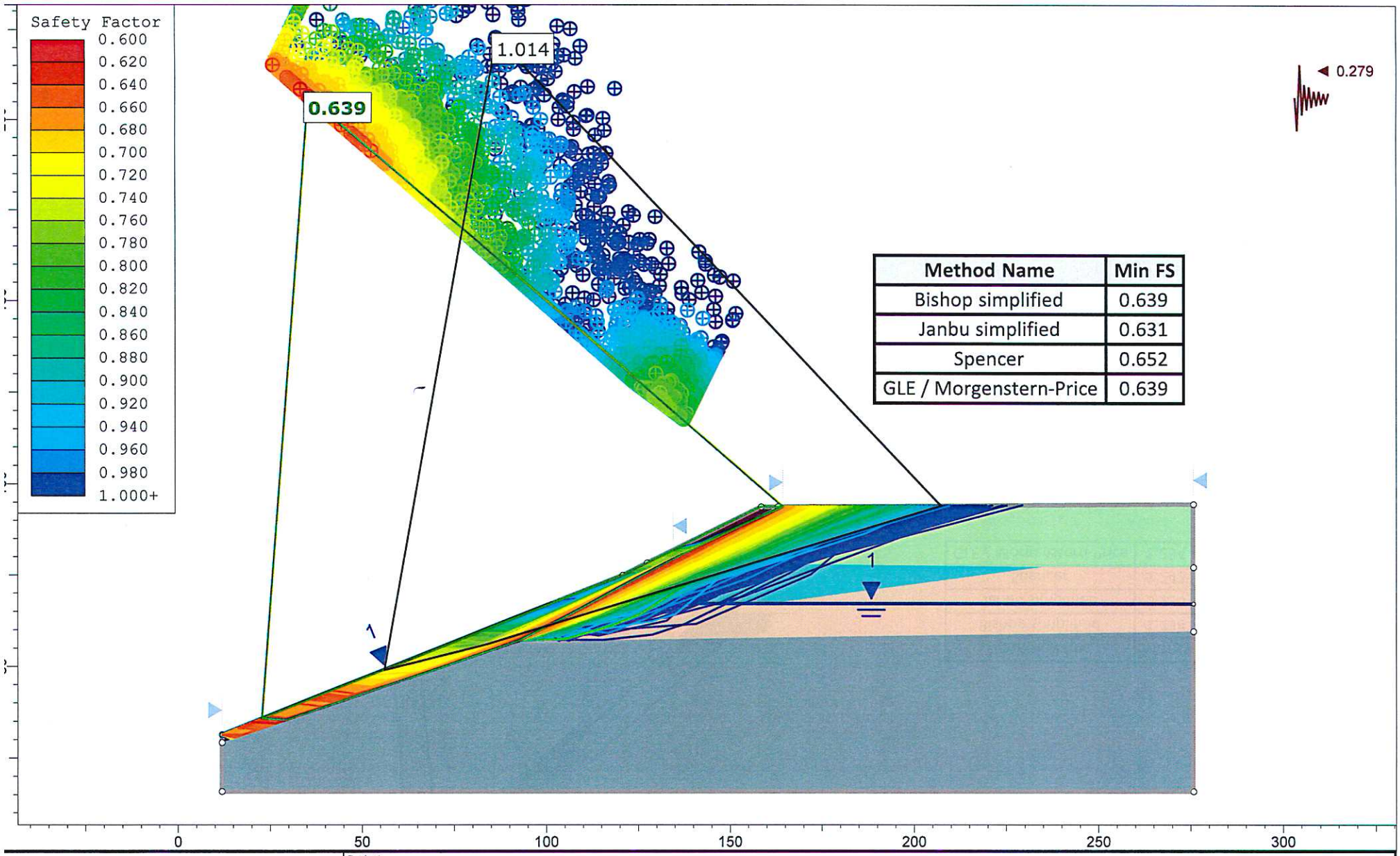


Method Name	Min FS
Bishop simplified	1.238
Janbu simplified	1.230
Spencer	1.243
GLE / Morgenstern-Price	1.234

Geotechnical Engineering & Drilling Services

Project	Patel Residence		
Group		Scenario	2H : 1V Regrading - No Earthquake
Drawn By		Company	Schoenbrun
Date	10/25/21	File Name	Tax Lot 1880 Stability Analysis 10 25 21.slmd

IDEINTERPRET 9.019

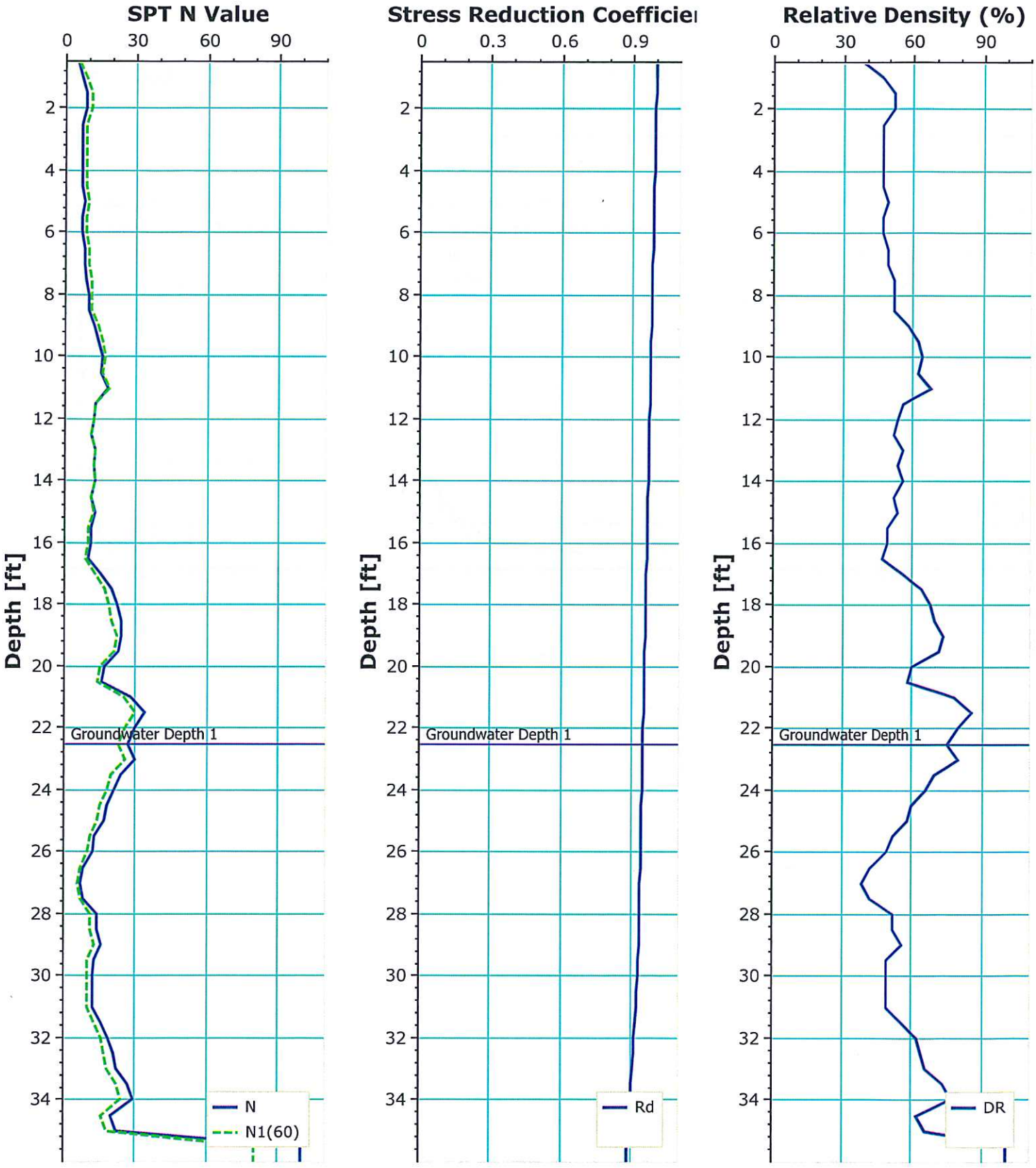


Method Name	Min FS
Bishop simplified	0.639
Janbu simplified	0.631
Spencer	0.652
GLE / Morgenstern-Price	0.639

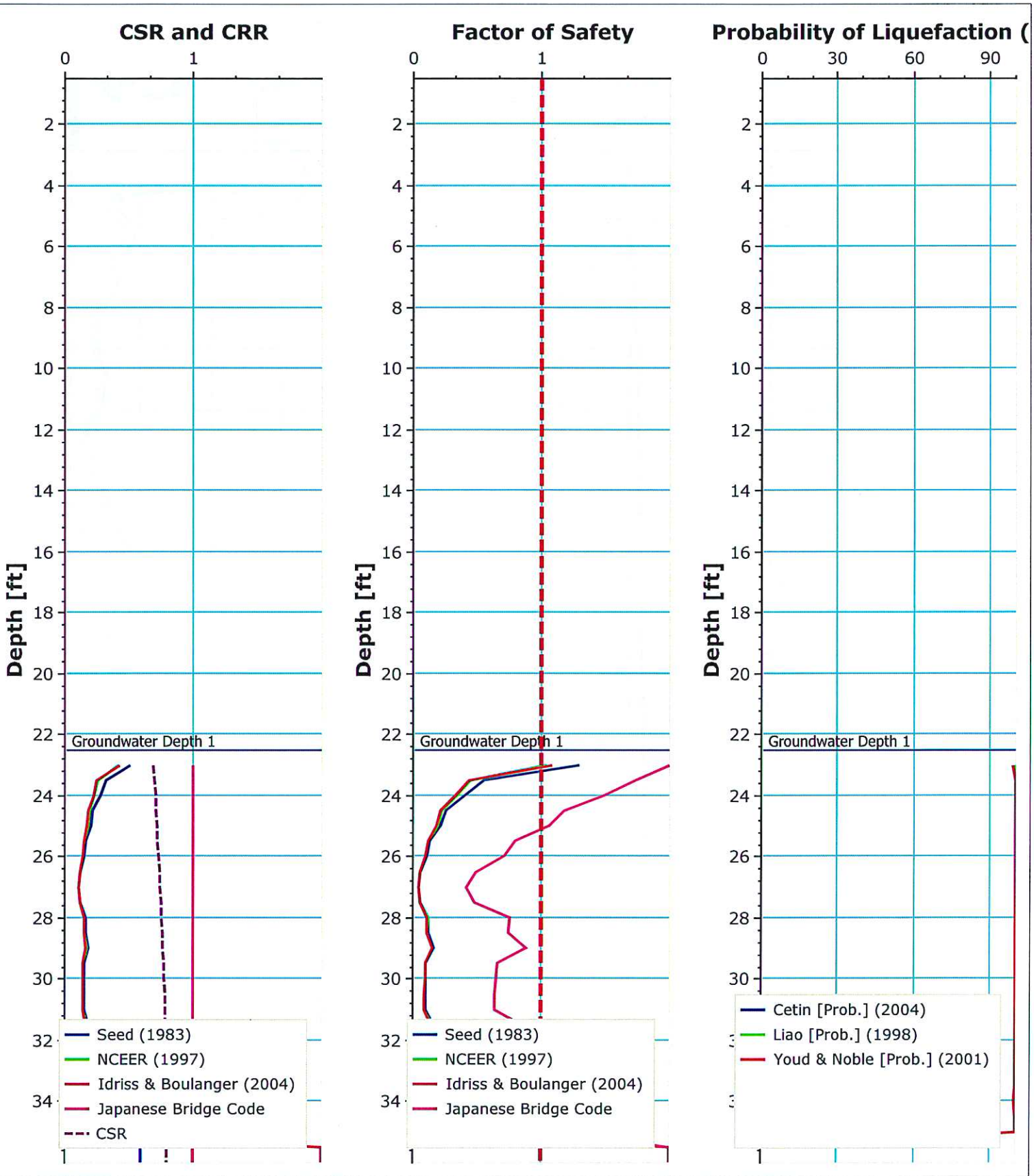
Geotechnical Engineering & Drilling Services

Project	Patel Residence		
Group		Scenario	2H : 1V Regrading - Earthquake Loading
Drawn By		Company	Schoenbrun
Date	10/25/21	File Name	Tax Lot 1880 Stability Analysis 10 25 21.slmd

IDEINTERPRET 9.019

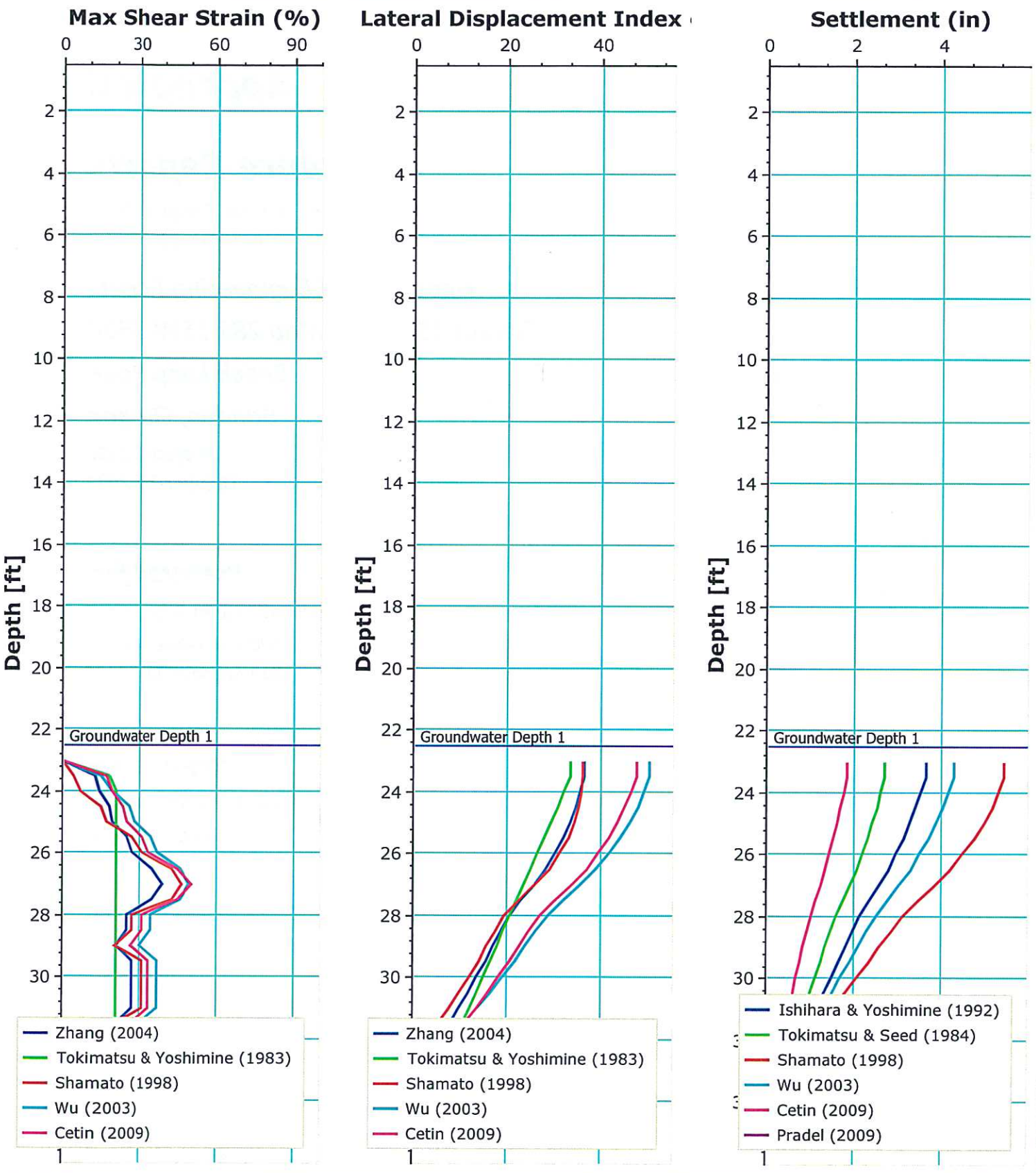


ka engineering	*Project*	Schoenbrun Residence
	Analysis Description	Liquefaction
	Drawn By	*Company*
SETTLE3 5.012	*Date* 10/26/2021, 3:21:08 PM	*File Name* Liquefaction Analysis Schoenbrun TL 1880 Beach Lp Rd Bandon 10 26 21 s3z



Project	Schoenbrun Residence
Analysis Description	Liquefaction
Drawn By	Company
Date	10/26/2021, 3:21:08 PM
File Name	Liquefaction Analysis Schoenbrun TL 1880 Beach Lp Rd Bandon 10 26 21 s3z

SETTLE3 5.012



SETTLE3 5.012	Project: Schoenbrun Residence	
	Analysis Description: Liquefaction	
	Drawn By	Company
	Date: 10/26/2021, 3:21:08 PM	File Name: Liquefaction Analysis Schoenbrun TL 1880 Beach Lp Rd Bandon 10 26 21 s3z

Appendix C

Reference Reports

- Seismic Design Criteria
- Earthquake Deaggregation

Geotechnical Engineering Report

Tax Lot 1880, Tax Map 28S-15W-36BC

Beach Loop Road

Bandon, Oregon

Project: 21050

October 27, 2021

Prepared for:

Michael and Lauren Schoenbrun

1005 Wiltshire Avenue

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Coburg, Oregon

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541·684·9399 · Kaengineers.com

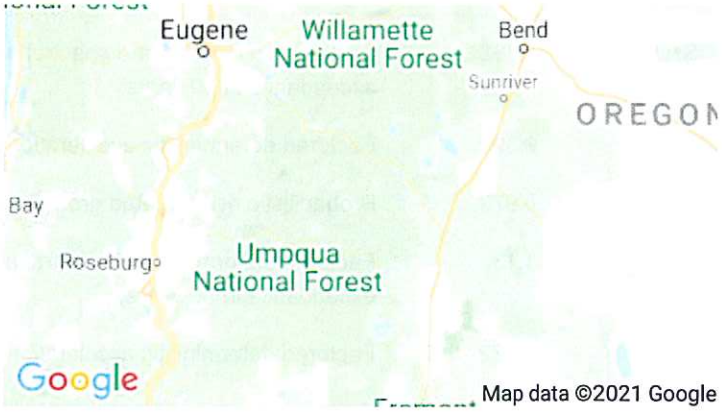
Established 1998

k·a engineering

Hazards by Location

Search Information

Coordinates:	43.107238799162495, -124.43375134823786
Elevation:	79 ft
Timestamp:	2021-10-22T00:03:54.114Z
Hazard Type:	Seismic
Reference Document:	ASCE7-16
Risk Category:	II
Site Class:	D



Basic Parameters

Name	Value	Description
S_S	2.042	MCE_R ground motion (period=0.2s)
S_1	0.973	MCE_R ground motion (period=1.0s)
S_{MS}	2.042	Site-modified spectral acceleration value
S_{M1}	* null	Site-modified spectral acceleration value
S_{DS}	1.361	Numeric seismic design value at 0.2s SA
S_{D1}	* null	Numeric seismic design value at 1.0s SA

* See Section 11.4.8

Additional Information

Name	Value	Description
SDC	* null	Seismic design category
F_a	1	Site amplification factor at 0.2s
F_v	* null	Site amplification factor at 1.0s
CR_S	0.857	Coefficient of risk (0.2s)
CR_1	0.862	Coefficient of risk (1.0s)
PGA	1.015	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	1.117	Site modified peak ground acceleration

T_L	16	Long-period transition period (s)
SsRT	2.042	Probabilistic risk-targeted ground motion (0.2s)
SsUH	2.382	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	3.396	Factored deterministic acceleration value (0.2s)
S1RT	0.973	Probabilistic risk-targeted ground motion (1.0s)
S1UH	1.13	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	1.272	Factored deterministic acceleration value (1.0s)
PGAd	1.415	Factored deterministic acceleration value (PGA)

* See Section 11.4.8

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

While the information presented on this website is believed to be correct, ATC and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in the report should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. ATC does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the report provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the report.

Project Number:	21053
Report Title:	Tax Lot 1860 Beach Loop Rd., Bandon, OR
Site Coordiantes:	43.107239° -124.433751°
Site Soil Classifcation:	D - Stiff Soil
Risk Category:	I/II/III
Design Document:	ASCE 7-16 (USGS 2014 Deaggregation)

Mapped Acceleration Parameters (Section 11.4.2)			
S_S =	2.042 g	S_1 =	0.973 g
Mapped Long-Period Transition Period (Figures 22-14 to 22-17)			
T_L =	16		
Site Coefficients (Tables 11.4-1 and 11.4-2)			
F_a =	1.000	F_v =	1.700
Design Spectral Acceleration Parameters (Section 11.4.4 and 11.4.5)			
S_{MS} =	2.042 g	S_{DS} =	1.361 g
S_{M1} =	1.654 g	S_{D1} =	1.103 g

Table 11.4-1

Values of Site Coefficient F_a

Site Class	Mapped Spectral Response Acceleration at Short Period					
	$S_s \le 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s = 1.25$	$S_s \ge 1.5$
A	0.8	0.8	0.8	0.8	0.8	0.8
B[1]	0.9	0.9	0.9	0.9	0.9	0.9
B[2]	1.0	1.0	1.0	1.0	1.0	1.0
C	1.3	1.3	1.2	1.2	1.2	1.2
D[3]	1.6	1.4	1.2	1.1	1.0	1.0
D[4]	1.6	1.4	1.2	1.2	1.2	1.2
E	2.4	1.7	1.3	See Section 11.4.8 of ASCE 7-16		
F	See Section 11.4.8 of ASCE 7-16					

Note: Use straight-line interpolation for intermediate values of S_s

Table 11.4-2

Values of Site Coefficient F_v[5]

Site Class	Mapped Spectral Response Acceleration at Short Period					
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 = 0.5$	$S_1 \ge 0.6$
A	0.8	0.8	0.8	0.8	0.8	0.8
B[1]	0.8	0.8	0.8	0.8	0.8	0.8
B[2]	1.0	1.0	1.0	1.0	1.0	1.0
C	1.5	1.5	1.5	1.5	1.5	1.4
D[3]	2.4	2.2	2.0	1.9	1.8	1.7
D[4]	2.4	2.2	2.0	1.9	1.8	1.7
E	4.2	See Section 11.4.8 of ASCE 7-16				
F	See Section 11.4.8 of ASCE 7-16					

Note: Use straight-line interpolation for intermediate values of S_1

Peak Ground Acceleration, 2% in 50 years (Section 11.8.3 & Figure 22-7)			
MCE_G =	1.015 g	F_{PGA} =	1.100
PGA_M =	1.117 g		

Table 11.8-1

Site Coefficient F_{pga}

Site Class	Mapped Maximum Considered Geometric Mean (MCE_G) Peak Ground Acceleration, PGA					
	PGA ≤ 0.1	PGA = 0.2	PGA = 0.3	PGA = 0.4	PGA = 0.5	PGA ≥ 0.6
A	0.8	0.8	0.8	0.8	0.8	0.8
B[1]	0.9	0.9	0.9	0.9	0.9	0.9
B[2]	1.0	1.0	1.0	1.0	1.0	1.0
C	1.3	1.2	1.2	1.2	1.2	1.2
D[3]	1.6	1.4	1.3	1.2	1.1	1.1
D[4]	1.6	1.4	1.3	1.2	1.1	1.1
E	2.4	1.9	1.6	1.4	1.2	1.1
F	See Section 11.4.7 of ASCE 7					

Note: Use straight-line interpolation for intermediate values of PGA

[1] Site Class B identified using site-specific shear wave velocity.

[2] Site conditions consistent with Site Class B, but site-specific shear wave velocity measurement not made. See ASTM 7-16 section 11.4.3.

[3] Site soil characteristics sufficiently known to be classified as Site Class D.

[4] Site Class D selected as the default (site conditions assumed). See ASTM 7-16 section 11.4.3.

[5] For structures on Site Class D sites and S_s greater than 0.2, exception for seismic response coefficient in section 11.4.8 must be satifisfied.

U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Dynamic: Conterminous U.S. 2014 ...

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

43.107239

Time Horizon

Return period in years

475

Longitude

Decimal degrees, negative values for western longitudes

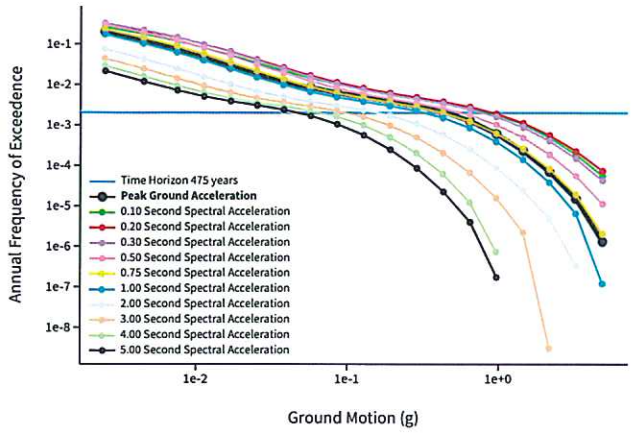
-124.433751

Site Class

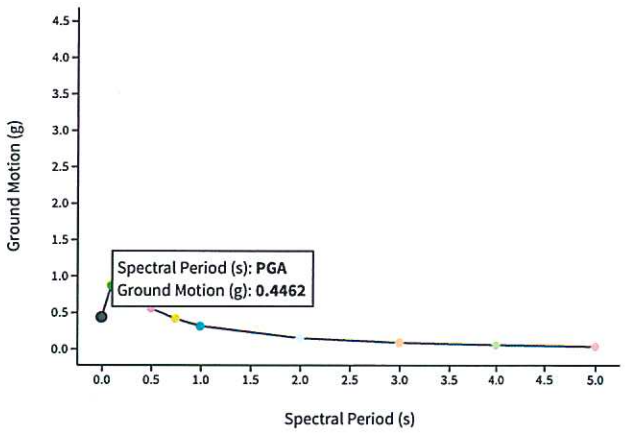
760 m/s (B/C boundary)

Hazard Curve

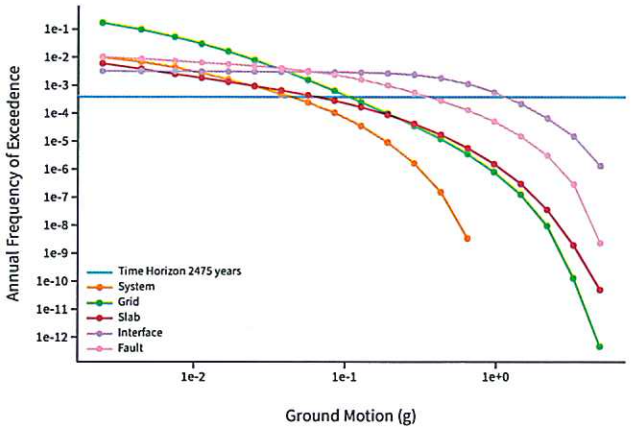
Hazard Curves



Uniform Hazard Response Spectrum



Component Curves for Peak Ground Acceleration

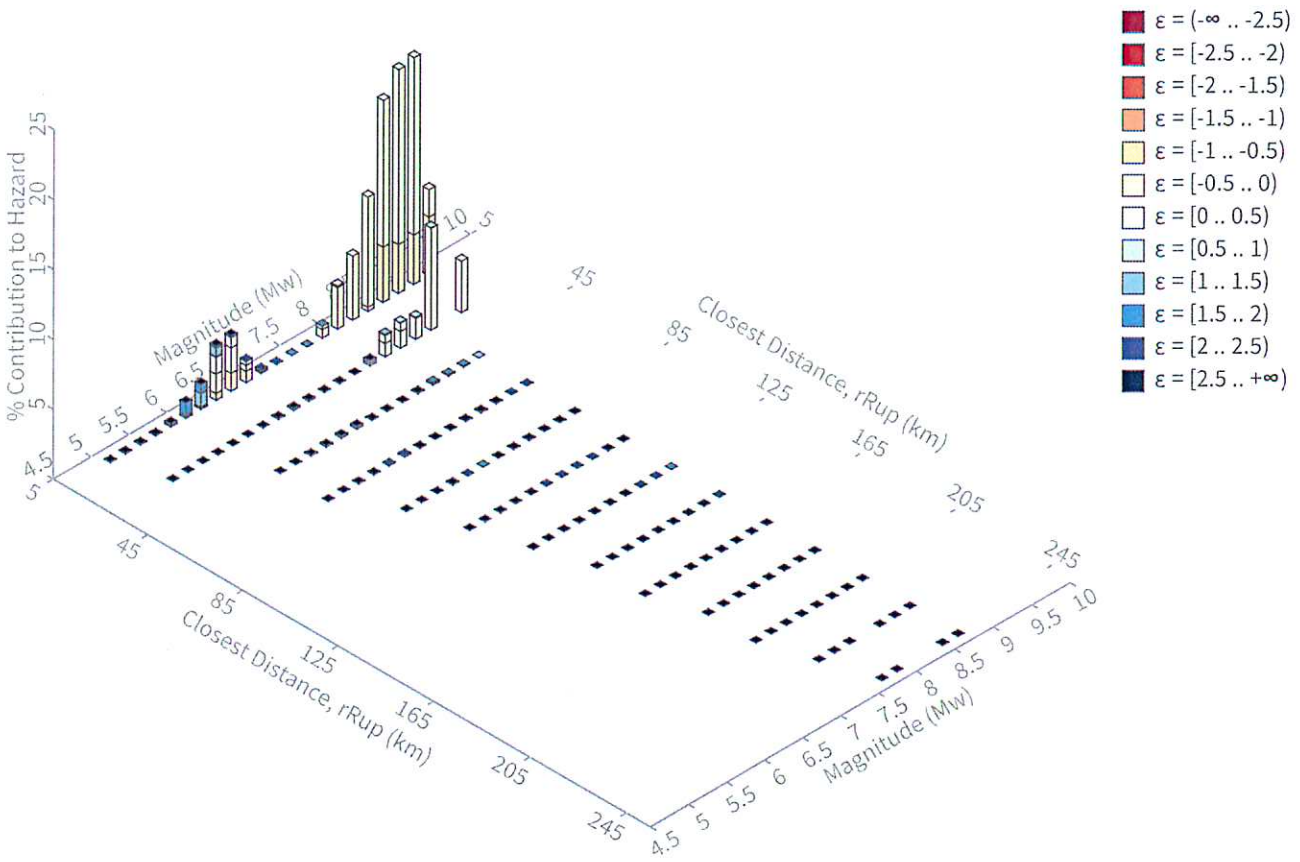


View Raw Data

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 475 yrs
Exceedance rate: 0.0021052632 yr^{-1}
PGA ground motion: 0.44622375 g

Recovered targets

Return period: 473.52034 yrs
Exceedance rate: 0.0021118417 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.53 %

Mean (over all sources)

m: 8.46
r: 16.26 km
ε_0: -0.22 σ

Mode (largest m-r bin)

m: 9.08
r: 16.3 km
ε_0: -0.43 σ
Contribution: 16.2 %

Mode (largest m-r-ε_0 bin)

m: 9.07
r: 16.53 km
ε_0: -0.39 σ
Contribution: 12.66 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
sub0_ch_mid.in	Interface							29.30
Cascadia Megathrust - whole CSZ Characteristic		15.49	8.88	-0.40	124.514°W	42.980°N	204.84	29.30
sub0_ch_bot.in	Interface							17.54
Cascadia Megathrust - whole CSZ Characteristic		17.63	9.07	-0.39	123.809°W	42.996°N	103.47	17.54
sub0_ch_top.in	Interface							10.49
Cascadia Megathrust - whole CSZ Characteristic		20.61	8.79	-0.22	124.638°W	42.975°N	228.64	10.49
sub3_ch_mid.in	Interface							3.76
Cascadia Megathrust - Goldfinger Case D Characteristic		15.37	8.28	-0.29	124.514°W	42.980°N	204.84	3.76
sub2_ch_mid.in	Interface							3.42
Cascadia Megathrust - Goldfinger Case C Characteristic		15.57	8.45	-0.31	124.514°W	42.980°N	204.84	3.42
Geologic Model Partial Rupture	Fault							3.32
Coquille anticline		2.80	6.65	-0.18	124.419°W	43.121°N	37.34	3.21
Geologic Model Full Rupture	Fault							3.27
Coquille anticline		1.73	6.73	-0.41	124.419°W	43.121°N	37.34	3.14
Geologic Model Small Mag	Fault							3.15
South Slough		12.32	6.29	1.48	124.336°W	43.195°N	39.11	3.15
sub1_GRb0_mid.in	Interface							2.62
Cascadia floater over southern zone - Goldfinger Case B		17.29	8.41	-0.25	124.514°W	42.980°N	204.84	2.62
sub1_GRb1_mid.in	Interface							2.25
Cascadia floater over southern zone - Goldfinger Case B		18.34	8.30	-0.20	124.514°W	42.980°N	204.84	2.25
sub3_ch_bot.in	Interface							2.21
Cascadia Megathrust - Goldfinger Case D Characteristic		17.71	8.56	-0.26	123.809°W	42.996°N	103.47	2.21
sub2_ch_bot.in	Interface							2.04
Cascadia Megathrust - Goldfinger Case C Characteristic		17.67	8.71	-0.29	123.809°W	42.996°N	103.47	2.04
sub1_ch_mid.in	Interface							1.55

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
Cascadia Megathrust - Goldfinger Case B Characteristic		15.46	8.59	-0.34	124.514°W	42.980°N	204.84	1.55
sub1_GRb0_bot.in	Interface							1.50
Cascadia floater over southern zone - Goldfinger Case B		19.44	8.41	-0.17	123.809°W	42.996°N	103.47	1.50
sub3_ch_top.in	Interface							1.28
Cascadia Megathrust - Goldfinger Case D Characteristic		20.54	8.19	-0.07	124.638°W	42.975°N	228.64	1.28
sub1_GRb1_bot.in	Interface							1.28
Cascadia floater over southern zone - Goldfinger Case B		20.48	8.30	-0.12	123.809°W	42.996°N	103.47	1.28
sub2_ch_top.in	Interface							1.19
Cascadia Megathrust - Goldfinger Case C Characteristic		20.55	8.36	-0.11	124.638°W	42.975°N	228.64	1.19

Horizontal Seismic Coefficient for Pseudo-Static Analysis

References

California Geological Survey, "Guidelines for Evaluating and Mitigating Seismic Hazards in California", Special Publication 117A, Chapter 5 (2008).

Blake, T.F., "Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Landslide Hazards in California", Section 10.2, 10.3, and 11.2 (2002).

Definitions

k_{eq} - *lateral seismic coefficient*
MHA_r - PGA for soft rock site condition (B-C contact), g
f_{eq} - equivalent seismicity factor
NRF - non-linear response factor
$D_{5\sim95}$ - duration of strong shaking (normalized Arias Intensity, sec
μ - allowable displacement threshold (cm).
M - earthquake magnitude (mode magnitude)
r - site source distance (mode distance), km

Input

M	r	MHA_r	μ
9.07	16.5	.446	15

Calculations

$D_{5\sim95}$:

$$D_{5\sim95} := \begin{cases} \exp\left(\ln\left(\dfrac{\left(\dfrac{\exp(5.205+.851\cdot(M-6))}{10^{1.5\cdot M+16.05}}\right)^{\frac{-1}{3}}}{15.7\cdot10^{6}}+.063\cdot(r-10)\right)+.8664\right) & \text{if } r\geq 10 \\ \exp\left(\ln\left(\dfrac{\left(\dfrac{\exp(5.204+.851\cdot(M-6))}{10^{1.5\cdot M+16.05}}\right)^{\frac{-1}{3}}}{15.7\cdot10^{6}}\right)+.8664\right) & \text{else} \end{cases}$$

$D_{5\sim95} = 86.809$

Horizontal Seismic Coefficient for Pseudo-Static Analysis

NRF: NOTE valid for $0.1 < MHA_r \leq 0.8$

$$NRF := \max\left(min\left(.6225 + .9196 \cdot \exp\left(\frac{-MHA_r}{.4449}\right), 1.357\right), .775\right)$$

$NRF = 0.96$

$$f_{eq} := \frac{NRF}{3.477} \cdot \left(1.87 - \log\left(\frac{\mu}{MHA_r \cdot NRF \cdot D_{5\text{-}95}}\right)\right)$$

$f_{eq} = 0.625$

Seismic Coefficient:

$k_{eq} := f_{eq} \cdot MHA_r = 0.279$

GENERAL NOTES

- THE FOLLOWING NOTES ARE GENERAL GUIDELINES AND MINIMUM STANDARDS FOR A CUSTOM DESIGNED AND BUILT RESIDENCE. METHODS, TECHNIQUES AND APPLICATIONS MAY VARY FROM STANDARD BUILDING PRACTICES. PLEASE CONTACT THE DESIGNER, ARCHITECT OR ENGINEER IF THE INTENT OF THE NOTES OR SPECIFICATIONS ARE NOT CLEARLY INTERPRETED.
- IN SUCH INSTANCE THAT A NOTE, SPECIFICATION OR DETAIL IS NOT CLEAR OR DOES NOT CONFORM WITH REGIONAL BUILDING STANDARDS, CODES OR ACCEPTABLE BUILDING PRACTICES, PLEASE CONTACT THE DESIGNER, ARCHITECT OR ENGINEER WITH CONCERNS OR VIOLATIONS.
- SPECIFICATIONS, NOTES AND DETAILS ON THE ATTACHED DRAWINGS; INCLUDING FLOOR PLAN, ELEVATIONS, SECTIONS AND DETAILS; TYPICALLY SUPERCEDE THE NOTES AND SPECIFICATIONS ON THIS PAGE. IF DISCREPANCIES EXIST FROM THESE NOTES TO THE DRAWINGS PLEASE CONTACT THE DESIGNER, ARCHITECT OR ENGINEER ASSOCIATED WITH SAID NOTE/SPECIFICATION/TRADE FOR CLARIFICATION AND CONFIRMATION.
- REPORT ALL ERRORS TO THE DESIGNER, ARCHITECT OR ENGINEER AND CONTRACTOR OR SUBCONTRACTORS INVOLVED IN TRADE AND CORRELATING WORK
- GENERAL CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING, MAINTAINING AND/OR CONFIRMING ALL REQUIRED PERMITS, COMPLIANCES AND APPROVALS.
- GENERAL LIABILITY, ERRORS AND OMISSIONS AND HAZARD INSURANCE PROVIDED BY GENERAL CONTRACTOR AND/OR OWNER. CONFIRM WITH OWNER.

OPTIONS AND ALTERNATES

- SUGGEST, PROVIDE, CONFIRM AND ATTAIN WRITTEN APPROVAL FROM APPLICABLE DESIGNER, ARCHITECT OR ENGINEER BEFORE PROCEEDING WITH OPTIONAL OR ALTERNATE FINISHES, MATERIALS, SIZING OR METHODS.
- REPS, SUPPLIERS, TRADES AND CONTRACTORS INVOLVED WITH OPTIONS AND ALTERNATES TO INFORM DESIGNER, ARCHITECT, ENGINEER AND GENERAL CONTRACTOR AND OTHER INVOLVED PARTIES OF CHANGES TO ENSURE PREPARATIONS AND PRECEDING AND FOLLOWING WORK WILL COORDINATE & INTEGRATE WITH OPTION OR ALTERNATE.

DRAWING REVIEW AND COMMUNICATION

- CONTRACTOR, SUBCONTRACTORS AND SUPPLIERS TO REVIEW ALL DRAWINGS IN ADVANCE OF MATERIAL ORDERS, CONSTRUCTION AND INSTALLATION. CONTACT DESIGNER, ARCHITECT OR ENGINEER WITH QUESTIONS, CONCERNS OR FOR CLARIFICATIONS AND APPROVALS.
- ALLOW SUFFICIENT TIME FOR DESIGNER, ARCHITECT OR ENGINEER TO RESEARCH AND REPLY TO INQUIRIES, QUESTIONS, CONCERNS AND APPROVALS.
- GENERAL CONTRACTOR TO CONFIRM ALL APPLICABLE PARTIES HAVE RECEIVED AND ARE WORKING FROM THE LATEST ISSUED AND CURRENT CONSTRUCTION DRAWINGS, DETAILS AND SPECIFICATIONS.
- ANYONE PROVIDING SERVICES OR MATERIALS SHALL REVIEW ALL APPLICABLE DRAWINGS AND SPECIFICATIONS FROM; SURVEYORS, CIVIL AND STRUCTURAL ENGINEERS, ARCHITECTS/DESIGNERS, INTERIOR DESIGNERS, LANDSCAPE ARCHITECTS AND MANUFACTURERS.

LEAD TIMES

- ALLOW FOR PROPER LEAD TIMES.
- CONTRACTOR, SUBCONTRACTORS AND SUPPLIERS TO REVIEW ALL MATERIALS AND SPECIFICATIONS IN ADVANCE TO ENSURE PROPER TIME IS GIVEN FOR ORDERING, LONG LEAD TIMES, BACKORDERS AND DELIVERY.

SITE ACCESS, USE AND SITE PROTECTION

- CONTACT GOVERNING BODY AND CONTRACTOR FOR SITE ACCESS AND POSSIBLE SITE HAZARDS OR PARKING RESTRICTIONS.
- CONFIRM PROPER ACCESS POINTS AND PROVIDE TEMPORARY DRIVEWAY AS REQUIRED.
- ENSURE VALUED EXISTING TREES AND ROOT AREAS ARE PROTECTED FROM BRANCH, TRUNK/ROOT DAMAGE AND SOIL COMPRESSION. FENCE OFF BRANCH AND ROOT AREA AND LIMIT HUMAN, VEHICLE AND MATERIAL ACCESS AS RECOMMENDED BY SURVEYOR, ARBORIST OR LANDSCAPE ARCHITECT.
- INSTALLERS, SUBCONTRACTOR AND CONTRACTOR TO PROTECT FINISH MATERIALS FROM DAMAGE.

QUALITY ASSURANCE

- CONTRACTOR TO COORDINATE AND HOLD PRE-CONSTRUCTION MEETINGS WITH SUBCONTRACTORS THROUGHOUT CONSTRUCTION. MEETINGS SHOULD CONSIDER COORDINATION ISSUES BETWEEN TRADES AND CLARIFY RESPECTIVE WORK SCOPE.
- FIELD VERIFY ALL DIMENSIONS. MATERIAL SIZES, INSTALLED DIMENSIONS AND CLEAR SPACES MAY VARY FROM PLANS OR SPECIFICATIONS.
- PROVIDE WEEKLY CONSTRUCTION MEETINGS UNLESS REQUESTED OTHERWISE.
- REVIEW ALL CHANGES TO PLAN OR AGREEMENTS WITH DESIGNER, ARCHITECT, ENGINEER AND OWNER PRIOR TO IMPLEMENTATION.
- MATERIALS TO BE INSTALLED IN A WORKMANLIKE MANNER TO THE MANUFACTURERS SPECIFICATIONS AND APPLICABLE REGIONAL TRADE ASSOCIATION RECOMMENDATIONS.
- DO NOT TRAP MOISTURE BETWEEN BUILDING MATERIALS DURING CONSTRUCTION. ALL MATERIALS MUST BE DRY, THAWED AND CLEAN BEFORE INSTALLING ADDITIONAL LAYERS OR MATERIALS.
- PROVIDE MOCK-UP SAMPLES OF ALL FINISH MATERIALS, APPLICATIONS, LAYOUTS, ORIENTATIONS, TEXTURES, THICKNESS/GAUGES, FINISHES, COLORS INCLUDING BUT NOT LIMITED TO: EXTERIOR SIDING, STUCCO, MASONRY, STONE, INTERIOR WALL AND CEILING FINISHES, FLOORING MATERIALS, TILE, WOOD, COUNTERTOPS, METAL AND FLASHINGS AND HARDSCAPING, DECKING, TERRACE AND PAVER MATERIALS.

EARTHWORK AND GRADES

- CONFIRM PROPERTY EXTENTS, SETBACKS, EASEMENTS AND CONSERVATION AREAS PRIOR TO COMMENCING ANY EARTH, TREE OR CONCRETE WORK.
- CONFIRM INSTALLATION OF REQUIRED BOUNDARIES, EROSION CONTROL SYSTEMS AND TREE PROTECTION PRIOR TO COMMENCING ANY WORK.
- FINISH GRADE TO BE VERIFIED WITH DESIGNER, ARCHITECT, ENGINEER AND OWNER BEFORE SETTING BENCHMARK, FOOTING OR BUILDING HEIGHTS.
- CONFIRM GRADE ADJUSTMENTS WITH DESIGNER, ARCHITECT OR ENGINEER.
- CONFIRM HEIGHT OF BACKFILL AND VISIBLE WATERPROOFING AND MATERIAL TRANSITIONS.
- DRIVEWAY AND PARKING TO BE PER SITEPLAN/LANDSCAPE PLAN APPLIED OVER A 4" MINIMUM COMPACTED CRUSHED ROCK AND/OR SAND BASE.
- PROVIDE POSITIVE DRAINAGE FROM IMPERVIOUS SURFACES, ROOFS, DOWNSPOUTS AND AROUND STRUCTURES TO PROPER ACTIVE OR PASSIVE DRAINAGE OR CATCHMENT AREAS.
- PROVIDE RELIABLE AND REGIONALLY APPROPRIATE ENGINEERED DRAINAGE FROM ALL CONTAINED SPACES SUCH AS TERRACES, PATIOS, WINDOW WELLS, GROTTOS AND SUNKEN AREAS.

CONCRETE

- VERIFY SOIL CONDITIONS, GROUND WATER LEVELS AND ELEVATIONS WITH GEOTECHNICAL AND STRUCTURAL ENGINEER BEFORE COMPLETING EXCAVATION, SETTING FOOTINGS AND POURING ANY CONCRETE.
- SEE FOUNDATION PLAN FOR EXTENT AND ELEVATIONS OF CONCRETE FOOTINGS AND FOUNDATION.
- CONFIRM SCOPE AND INCLUSION OF POURED CONCRETE RETAINING WALLS.
- POURED IN PLACE REINFORCED CONCRETE PER FOUNDATION AND ENGINEERING DRAWINGS.
- SEE STRUCTURAL PLANS FOR ALL SIZING, REINFORCING, CONNECTIONS AND ENGINEERING.
- ANCHOR BOLTS, CONNECTIONS AND TIES SHALL BE EMBEDDED DURING CONCRETE POUR AT A MINIMUM OF 4' O.C. OR AS NOTED ON PLAN. NOTE PLATE SIZE AND LOCATION FOR PROPER LOCATION AND SIZING. SIZE AS SPECIFIED IN STRUCTURAL DRAWINGS AND AT A MINIMUM OF 5/8".
- SPECIAL REINFORCEMENTS AND CONNECTIONS SHALL BE PROVIDED AND PLACED AS SHOWN IN DRAWINGS.
- PROVIDE A KEYWAY AND TIES AT POURED CONCRETE FOUNDATION WALLS.
- INSULATE FOOTINGS, WALLS, SLABS AND APRONS PER DRAWINGS.
- REFERENCE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL ENGINEERING, SIZES AND REINFORCEMENT.
- AIR-ENTRAINED CONCRETE SHALL BE USED FOR ALL CONCRETE EXPOSED TO WEATHER.
- CONCRETE PER ENGINEER'S SPECIFICATIONS AND AT A MINIMUM OF 5000 PSI FOR ALL FOOTINGS, CORE FILLING, PIERS, WALLS AND SLABS ON GRADE (EXCEPT GARAGE) AND EXTERIOR STEPS.
- SLAB THICKNESS AT A MIN. OF 4" OR AS SHOWN ON DRAWINGS OR GREATER PER MIN. STANDARDS.
- OVERLAYS AND THEIR STRUCTURAL REQUIREMENTS, PREP, UNDERLAYMENTS AND REINFORCING PER INDUSTRY AND MANUFACTURER REQUIREMENTS.
- USE A MINIMUM OF 4000 PSI CONCRETE AT GARAGE AND OVERLAYS.
- REINFORCING FOR ALL SLABS PER ENGINEERING OR AT A MINIMUM OF #4 BARS AT 2' O.C EACH WAY OR 12x12x2.9x2.9 W.W.F.
- CONFIRM SLAB FINISHING METHOD AND FINAL FINISH. REFERENCE PLANS, DETAILS AND SCHEDULES FOR COLOR, TROWELING, GRINDING, POLISHING AND SEALING REQUIREMENTS.
- ALL SLABS TO BE SEALED AND PROTECTED FROM FROST AND DAMAGE.
- VAPOR DIFFUSION RETARDER FOR SLAB SYSTEM TO INCLUDE PLY SHEETING UNDER 6" LAYER OF GRANULAR CAPILLARY BREAK AND DRAINAGE PAD (NO FINES). TAPE ALL JOINTS WITH HEAVY-DUTY VAPOR TAPE. PROTECT VAPOR DIFFUSION RETARDER FROM PUNCTURE.
- VAPOR DIFFUSION RETARDER TO CONTINUE UP POURED CONCRETE WALLS WHERE POSSIBLE AND TO BE TAPED TO UNDER SLAB VAPOR DIFFUSION RETARDER PRIOR TO PLACEMENT OF INSULATION AND CAPILLARY BREAK.
- 2" INCH POLYSTYRENE WITH TAPED JOINTS TO BE DIRECTLY BELOW SLAB AT ALL IN-FLOOR HYDRONIC SYSTEM LOCATIONS. (NOT AT LOCATIONS ABOVE GRADE WITH WOOD FRAMING BELOW.)
- COMPLY WITH MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES FOR INSTALLATION OF HYDRONIC HEATING SYSTEM.
- PROVIDE POSITIVE DRAINAGE, WATERPROOFING AND FROST PROOF TOPPINGS AND CONNECTIONS AT EXPOSED AREAS.

BRICK, STONE AND MASONRY

- ALL BRICK/STONE AREAS MUST BE SUPPORTED BY NONCOMBUSTIBLE AND DECAY/CORROSIVE AND COMPRESSIVE RESISTANT MATERIAL.
- CONTINUOUS CONCRETE OR MASONRY SUPPORT SHALL BE PROVIDED WHENEVER POSSIBLE.
- WHERE SUPPORT IS PROVIDED BY WOOD FRAMING, PROPERLY AND CONTINUOUSLY ANCHOR FACTORY FINISHED STEEL ANGLES TO WOOD FRAMING AS BRICK/STONE LEDGE TO SUPPORT BRICK/STONE.
- CONFIRM PROPER ACCLIMATION, MOISTURE CONTENT AND COMPRESSION OF JOINTS AND WOOD HAVE BEEN ACHIEVED AND ACCOUNTED FOR PRIOR TO ANCHORING STEEL.
- CONFIRM ALL ALLOWABLE, RECOMMENDED AND REQUIRED INSTALLATION METHODS, APPLICATIONS AND DETAILS WITH THE APPROPRIATE LEADING REGIONAL BRICK/STONE ASSOCIATION.
- PROVIDE PROPER SUPPORT, ANCHORS AND TIES. PROVIDE HORIZONTAL SUPPORTS AS REQUIRED FOR TALL WALLS AND VERTICAL CONTROL JOINTS FOR LONG HORIZONTAL BRICK/STONE WALL RUNS. CONFIRM SUPPORTS, ANCHORS, ATTACHMENT, TYPE, SPACING AND JOINT REINFORCING PER MANUFACTURER AND LEADING REGIONAL BRICK/STONE ASSOCIATION REQUIREMENTS. CONSIDER TALL WALLS, LONG RUNS, LARGE OPENINGS, SEISMIC/VIBRATION ACTIVITY, PRESSURE AND HIGH WIND.
- PROVIDE A 1" AIRSPACE BETWEEN BRICK/STONE WALL AND WOOD SHEATHING/FRAMING OR RIGID INSUL.
- INSTALL FLASHING ABOVE GRADE AT BASE OF WALL, AND AT MAJOR OPENINGS/INTERRUPTIONS OR WHERE AIRSPACE IS INTERRUPTED. FLASHING TO BE CONTINUOUS AND TO EXTEND TO OR BEYOND FACE OF BRICK/STONE AND VERTICALLY A MIN. OF 8". SPACE OPEN HEAD JOINT WEEPS, WEEP TUBES AND WICKS AT 16" O.C. PROVIDE AND APPLY HIGH QUALITY SEALANT AS REQUIRED.
- PROVIDE APPROPRIATE BUILDING PAPER/HOUSE WRAP AND COORDINATE/INTEGRATE FLASHING WITH WATER RESISTIVE BARRIER LAYERING AND INSTALLATION. TYPE OF PAPER/WRAP SHALL BE SELECTED PER LOCAL CODE, REGIONAL BRICK/STONE ASSOCIATION AND PER REQUIREMENTS OF THE BUILDING SHEATHING AND STRUCTURE MATERIAL MANUFACTURER. PERM RATING OF ALL MATERIALS SHOULD BE CONSIDERING IN SELECTION.
- MORTAR MATERIALS, CONSISTENCY AND COMPOSITION PER LEADING REGIONAL ASSOCIATION AND LOCAL CODE REQUIREMENTS. CONFIRM MORTAR COLORS WITH DESIGNER, ARCHITECT AND OWNER. MORTAR COLOR MAY VARY AT DIFFERENT LOCATIONS.
- CONFIRM MORTAR JOINT TYPE AND SIZE FOR BOTH VERTICAL AND HORIZONTAL JOINTS.
- CONFIRM BRICK/STONE SELECTION; INCLUDING SIZE AND FINISH, WITH OWNER, DESIGNER AND ARCHITECT.
- PROTECT UNFINISHED MASONRY FROM RAIN, SNOW AND FREEZING. DO NOT ALLOW MOISTURE TO GET BETWEEN THE BRICK/STONE AND THE STRUCTURE.

STRUCTURAL STEEL

- SEE FRAMING DRAWINGS, NOTES, STRUCTURAL PLANS, DETAILS AND EXISTING SHOP DRAWINGS FOR LOCATIONS OF BEAMS, COLUMNS AND FRAMING.
- REFERENCE FRAMING DRAWINGS, NOTES, STRUCTURAL PLANS AND DETAILS FOR ALL STRUCTURAL ENGINEERING, SIZES, BEARINGS, CONNECTIONS, TREATMENT AND REINFORCEMENT.
- STEEL FABRICATOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
- ALL STRUCTURAL STEEL, FASTENERS AND STEEL EXPOSED TO THE EXTERIOR OR HUMID CONDITIONS TO BE FACTORY COATED TO PROTECT FROM CORROSION.
- ALL STEEL OR FASTENERS EXPOSED TO THE EXTERIOR TO BE COMPRISED OF AND COATED WITH APPROVED FINISH FOR COASTAL APPLICATIONS.

WOOD FRAMING

- SEE FRAMING AND STRUCTURAL DRAWINGS AND NOTES FOR BEAM LOCATIONS, FRAMING AND GENERAL SIZING.
- COORDINATE INTERCONNECTION OF STEEL WITH ENGINEER, PLANS AND SHOP DRAWINGS.
- REFERENCE STRUCTURAL DRAWINGS AND NOTES FOR ALL STRUCTURAL ENGINEERING, SIZES, CONNECTIONS, REINFORCEMENT, ETC.
- TRUSS, GIRDER, BEAM AND COLUMN FABRICATOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
- ALL EXTERIOR WALL AND STRUCTURAL FRAMING MEMBERS TO BE ENGINEERED OR STRUCTURAL GRADE HEM-FIR WOOD.
- ALL INTERIOR FRAMING, FURRING AND BLOCKING TO BE ENGINEERED OR CLEAN LUMBER.
- EXTERIOR FRAMING, FURRING AND BLOCKING, AND MATERIALS USED IN EXTERIOR FINISH SYSTEMS, TO BE DECAY RESISTANT AND/OR TREATED LUMBER.
- ALL PLATES OR LUMBER ON FOUNDATION AND CONCRETE WALLS OR SLABS TO BE TREATED LUMBER.
- LUMBER IN DIRECT OR CONTINUOUS CONTACT WITH GRADE OR MOIST CONDITIONS TO BE RATED FOR INSTALLED CONDITION AND GROUND CONTACT.
- PROVIDE FIRE TREATED LUMBER, FIRE AND DRAFT STOPS WHERE REQUIRED.
- PROVIDE APPROPRIATE FASTENERS AND CONNECTIONS FOR THE TYPE AND SIZE OF MATERIALS. NAILS AT EXTERIOR, MOIST AREAS OR IN TREATED LUMBER, TO BE TRIPLE COATED OR HOT-DIPPED GALVANIZED PER CODE AND MATERIAL REQUIREMENTS.
- UNLESS OTHERWISE NOTED ON FRAMING OR STRUCTURAL PLANS; ALL HEADERS OVER OPENINGS GREATER THAN 4'-0" TO BE (2) 1 3/4" x 11 7/8" LVL. FOR SPANS LESS THAN 4'-0", USE (2) 2x10'S. INSULATE HEADERS WITH CONTINUOUS RIGID FOAM WHERE POSSIBLE OR LEAVE CAVITY EXPOSED FOR SPRAY FOAM INSULATION.
- DO NOT FRAME IN SUCH A WAY TO CREATE DEAD/UN-INSULATED SPACES. IF THESE AREAS OCCUR INSULATE THE CAVITY ON SITE WITH CONTINUOUS RIGID INSULATION.
- SEE DRAWINGS FOR EXTERIOR WALL THICKNESS. 2x6 AND LARGER EXTERIOR STUD WALLS SHALL BE CONSTRUCTED 16" O.C. WHERE LESS THAN 10' TALL OR PER DRAWINGS OR ENGINEERING REQ'S.
- WALLS TALLER THAN 10' SHALL BE ENGINEERED OR OVERSIZED LUMBER PER ENGINEERED STRUCTURAL AND FRAMING DRAWINGS.
- TYPICAL WALL SYSTEM TO BE STICK BUILT 2X CONSTRUCTION UTILIZING ENGINEERED LUMBER WHERE AVAILABLE. SEE STRUCTURAL FOR AREAS THAT REQUIRE DOUBLE STUDS OR ALTERNATE MATERIALS.
- TYPICAL WALL SHEATHING TO BE 1/2" CDX PLYWOOD INSTALLED PER REQUIRED NAILING PATTERN. SPACE ALL SHEATHING AS REQUIRED FOR EXPANSION AND CONTRACTION.

FLOOR AND ROOF SYSTEM

- TYPICAL FLOOR SYSTEMS TO BE OPEN WEB FLOOR TRUSSES OR AS SPECIFIED. DROP TOP CORD OF TRUSSES AS REQ'D TO ACCOUNT FOR DRAINAGE, FLOOR MATERIALS AND SUBSTRATES/GYPCRETE.
- TYPICAL ROOF SYSTEM TO BE WOOD I JOISTS OR OPEN WEB TRUSSES.
- USE LVL'S OR SPECIFIED/APPROVED STRUCTURAL MEMBERS WHERE OPENINGS ARE REQUIRED.
- ALL FLAT AND LOW PITCH ROOF SYSTEMS TO BE ENGINEERED FOR ROCK OVERLAY AT MINIMUM. ENGINEER FOR LOOSE FILL SOIL AT LOCATIONS SHOWN ON PLANS.
- TYPICAL WOOD HEADERS AND BEAMS ARE BUILT-UP LVL BEAMS AND AS SPECIFIED.
- ALL TRUSSES TO BE STRUCTURALLY DESIGNED BY TRUSS SUPPLIER AND STAMPED W/ THE REGISTRATION STAMP OF A REGISTERED STRUCTURAL ENGINEER. PROVIDE SHOP DRAWINGS TO THE DESIGNER, ARCHITECT OR ENGINEER FOR APPROVAL. CONFIRM LOADS AND REQUIRED DEFLECTIONS.
- ALL WOOD FLOOR, DECK OR BALCONY FRAMING AND STRUCTURE EXPOSED TO WEATHER OR EXTERIOR CONDITIONS TO BE TREATED LUMBER WITH APPROPRIATE FASTENERS AND ANCHORS APPROPRIATE FOR THE APPLICATION AND TYPE OF TREATED LUMBER.
- TYPICAL SUBFLOORS SHALL BE HIGH QUALITY WEEPING 3/4" T&G PLYWOOD GLUED AND RING SHANK NAILED OR SCREWED AT WOOD TRUSSES. HIGH QUALITY WEEPING 3/4" T&G OSB WITH SEALED EDGES MAY BE USED IF APPROVED BY FLOORING MANUFACTURER FOR USE AND SUFFICIENT FASTENING BELOW THE DESIGNATED FINISH FLOOR PER ROOM SCHEDULE AND/OR DESIGNER ARCHITECT.
- TYPICAL ROOF SHEATHING BELOW PITCHED ASPHALT SHINGLE ROOFS TO BE 1/2" OSB OR CDX PLYWOOD.
- MINIMUM OF 5/8" CDX PLYWOOD SHEATHING TO BE USED AT ALL METAL ROOF APPLICATIONS AND FLAT ROOF AREAS. CONFIRM SHEATHING ON PLANS AND PER ROOFING MATERIAL FASTENING REQ'S AND OVERLAY MTRL'S.
- SPACE ALL SHEATHING AS REQUIRED TO ALLOW FOR EXPANSION AND CONTRACTION.
- A CONTINUOUS 6" INSULATION AND AIR FILTRATION/VAPOR DIFFUSION RETARTDER SHALL BE PLACED BETWEEN FLOORS AT ALL RIM JOISTS.
- EPDM GASKET SILL SEALER SHALL BE PLACED UNDER ALL SILL/BOTTOM PLATES ON/IN CONTACT WITH CONCRETE AND CAULKED THOROUGHLY.
- ALL WALL/FLOOR PLATES SET ONTO SHEATHING OR OTHER FRAMING TO HAVE 2 CONTINUOUS LINES OF ADHESIVE/SEALANT.

INTERIOR WALL BOARD AND SOUND INSULATION

- SOUND INSULATE WALL, FLOOR AND CEILING CAVITIES AT ALL BATHROOMS, BEDROOMS, LAUNDRY ROOMS, AND BETWEEN FLOORS. CONFIRM PRODUCTS AND METHODS WITH OWNER AND DESIGNER, ARCHITECT.
- TYPICAL INTERIOR WALL MATERIAL TO BE GYPSUM BOARD. 1/2" TYPICAL ON 16" O.C. FRAMING AND 5/8" TYPICAL ON 24" O.C. FRAMING. PROVIDE MOISTURE AND MOLD RESISTANT GYPSUM BOARD WHERE APPLIED IN BELOW GRADE SPACES AND ALL BATHROOM, LAUNDRY, AND KITCHEN INSTALLATIONS.
- SEE PLANS, SECTIONS AND INTERIOR ELEVATIONS FOR WOOD, TILE AND ALTERNATE MATERIAL LOCATIONS. CONFIRM BACKER MATERIAL BEHIND WOOD FINISHES WITH CONTRACTOR.
- BEHIND WALL TILE FINISHES PROVIDE MINIMUM 1/2" MOISTURE AND MOLD RESISTANT CEMENT FIBERBOARD. WATERPROOF, INSTALL, SECURE, FASTEN, ADHERE, THINSET AND TREAT JOINTS PER MANUFACTURERS AND TILE MANUFACTURERS RECOMMENDATIONS.
- TYPICAL CEILING FINISH TO BE 5/8" GYPSUM BOARD. SEE RCP/DRAWINGS FOR ADDITIONAL INFORMATION AND LOCATIONS OF RESILIENT CHANNEL (TYP >100 SQ.FT. AREAS), WOOD OR ALT. CEILING MATERIALS.
- ALL GYPSUM FINISHES TO BE SMOOTH WITH NO TEXTURE ALLOWED. ALL PRIMARY AREAS, ROOMS AND HALLS TO BE CLASS 5 FINISH. ALL DRYWALL TO BE PRIMED AND PAINTED.
- FRAMING CREW, HVAC CONTRACTOR, DRYWALL HANGERS AND DRYWALL TAPERS/MUDDERS SHALL REVIEW TRIM DETAILS TO ENSURE MINIMAL COVERAGE TRIMS, SPECIALTY WOOD TRIMS, RECESSED/FLUSH GRILLES AND THEIR INSTALLATION LOCATIONS OR METHODS ARE ACCOUNTED FOR. SOME TRIM ITEMS MAY REQUIRE INSTALLATION PRIOR TO HANGING, TAPING OR MUDDING DRYWALL.
- CAULK JOINT FROM GYPSUM BOARD TO PAINTED TRIM AND WHERE DISSIMILAR MATERIALS OR INTERSECTING PLANES MEET.
- PROVIDE NAILERS AND BACKERS AS NEEDED FOR ALL SHELVES, RODS AND MILLWORK SHOWN IN PLAN TO ASSIST IN MOUNTING AND PREVENT ADJACENT SCREW POPS.

THERMAL AND MOISTURE PROTECTION

- TYPICAL THERMAL INSULATION TO BE CLOSED CELL SPRAY FOAM. MEET OR EXCEED ALL RELEVANT ENERGY CODE R-VALUES AND THICKNESS IN ALL WALLS, CEILINGS AND EXPOSED FLOORS. CONFIRM COMPATIBILITY OF ADJACENT MATERIALS.
- CONFIRM STRUCTURE AND ALL COMPONENTS AND INTERIOR FACES ARE FULLY DRY PRIOR TO APPLYING FOAM AND EXTERIOR OR INTERIOR HOUSE WRAP, BUILDING PAPER OR VAPOR DIFFUSION RETARDER. DO NOT TRAP MOISTURE INTO WALL, FLOOR OR CEILING CAVITY.
- CONFIRM SPRAY FOAM IS OF AN APPROVED TYPE AND MANUFACTURER PRIOR TO INSTALLING. ALLOW PROPER TIME FOR FOAM TO SUBSTANTIALLY OFF-GAS PRIOR TO SEALING CAVITIES.
- MAINTAIN REQUIRED SEPARATIONS, FIRE RATINGS, SMOKE SPREADS AND DRAFT STOPS AT DUCTWORK, FIXTURES, HEAT SOURCES AND OPEN FLOOR, CEILING, SOFFIT OR ATTIC CAVITIES.
- USE HIGH TEMP MINERAL WOOL INSULATION WHERE REQUIRED.
- PLACE EPDM PLATE GASKET ON TOP OF FOUNDATION WALL PRIOR TO ATTACHING SOLE PLATE. FILL ANY LARGER VOIDS THAT EPDM GASKET WILL NOT SECURELY AND FULLY PRESS INTO WITH FLEXIBLE SEALANT.
- UTILIZE EPDM GASKET AND/OR MULTIPLE LINES OF FLEXIBLE SEALANT AT VERTICAL CONNECTIONS TO FOUNDATION WALL AND OR OTHER MASONRY WALLS OR PROTRUSIONS.
- ADHERE AND SEAL ALL EXTERIOR FLOOR, WALL AND ROOF FRAMING MEMBERS TO EACH OTHER TO PREVENT AIR AND MOISTURE PENETRATION.
- CONFIRM EXTERIOR SIDING, BRICK/STONE OR FINISH MATERIAL LOCATIONS AS WELL AS THERMAL INSULATION TYPE AND LOCATION AND INTERIOR FINISH MATERIALS TO ENSURE PROPER HOUSE WRAP OR BUILDING PAPER IS BEING USED FOR EACH PORTION OF THE HOUSE. IF MULTIPLE SYSTEMS ARE UTILIZED VERTICALLY SEAL ADJACENT SYSTEMS TO EACH OTHER.
- SELECT HOUSE WRAP OR BUILDING PAPER APPROPRIATE TO THE APPLICATION AND APPROVED BY THE MANUFACTURERS OF THE WALL COMPONENTS AND FINISH MATERIALS FOR THE REGION BEING INSTALLED.
- TYPICAL WOOD FRAMING HOUSE WRAP TO BE AN APPROVED 3 LAYER CROSS LAMINATED POLYETHYLENE WRAP.
- TYPICAL BUILDING PAPER AT BRICK/STONE/MASONRY LOCATIONS TO BE OF A MATERIAL AND INSTALLATION APPROVED BY THE BRICK/STONE AND WALL COMPONENT MANUFACTURER AND THE LEADING REGIONAL BRICK/STONE TRADE ASSOCIATION.
- SEAL ALL VERTICAL SEAMS AND PENETRATIONS WITH COORDINATING SEALANT AND TAPE. APPLY ALL HOUSE WRAP AND BUILDING PAPER PER MANUFACTURERS RECOMMENDATIONS. DO NOT APPLY IN SUCH A WAY TO DRAIN WATER INTO OR TRAP MOISTURE WITHIN THE WALL CAVITY.
- INSTALL BELOW SLAB VAPOR DIFFUSION RETARDER IN LOCATION AND AS NOTED IN THE CONCRETE NOTES. INSTALL AND FULLY SEAL AND PREVENT FROM PUNCTURE PRIOR TO POURING OF SLAB. ALL BREAKS AND PENETRATIONS THROUGH SLAB TO BE SEALED WITH POLYURETHANE SEALANT.
- DAMPROOFING AT OUTSIDE FOUNDATION WALLS TO BE BLACK OR GREY AND UV RESISTANT. ENSURE THAT DAMPROOFING EXTENDS DOWN WALL AND INTO JOINT AND OVER TOP OF FOOTING TO PROVIDE PROPER SEALANT AND DRAINAGE.
- VISIBLE DAMPROOFING NOT TO EXTEND ABOVE GRADE. SEE ELEVATION DRAWINGS AND LANDSCAPE PLANS FOR GRADE LOCATION.
- INSTALL INTERIOR/WARM SIDE VAPOR DIFFUSION RETARDER AS REQUIRED BY CITY AND STATE CODE AND PER MANUFACTURERS RECOMMENDATIONS. ALL WALLS AND CEILINGS TO HAVE VAPOR DIFFUSION RETARDER APPLIED WITH JOINTS TAPED AND SEALED. TAKE WALL AND CEILING MATERIALS AND COMPOSITION, INCLUDING SPRAY FOAM INSULATION, INTO ACCOUNT.
- OVERLAP AND TAPE ALL WARM SIDE/INTERIOR VAPOR DIFFUSION RETARDER SEAMS. AT CEILING, OVERLAP SEAMS 8" DOWN OVER WALL MEMBER. ENSURE THAT VAPOR DIFFUSION RETARDER OVERLAPS ONTO SUBFLOOR.
- VAPOR DIFFUSION RETARDER STRIPS SHALL BE PLACED ABOVE ALL WALL PARTITIONS DURING FRAMING. STRIPS SHALL BE SEALED WITH TAPE TO CONTINUOUS CEILING VAPOR DIFFUSION RETARDER.
- USE COMPATIBLE FLEXIBLE SEALANT WHERE INTERIOR WALLS MEET EXTERIOR WALLS AND AT JUNCTION BETWEEN EXTERIOR WALL AND SUBFLOOR.
- USE AIR AND THERMAL RATED DEVICE BOXES AT EXTERIOR WALLS AND CEILINGS. SEAL FLANGE TO VAPOR DIFFUSION RETARDER USING SEALANT OR TAPE. WHERE APPLICABLE SEAL WIRING PENETRATION THROUGH DEVICE BOX.
- APPLY NON EXPANDING SPRAY FOAM SEALANT/INSULATION AT WINDOW AND DOOR ROUGH OPENINGS TO SEAL BETWEEN JAMB AND JACK/TRIMMER STUD.
- USE SPRAY FOAM SEALANT/INSULATION AND/OR FIRE CAULK AT ALL GAPS, HOLES, BYPASSES, DUCT, PLUMBING AND ELECTRICAL RUNS BETWEEN FLOORS. CONFIRM MATERIAL AND APPLICATION MEETS LOCAL AND STATE CODES.
- USE EPDM PLUMBING STACK SEALS TO MAINTAIN AN AIRTIGHT SEAL WHILE ALLOWING FOR CONTRACTION AND EXPANSION OF STACK WITHOUT NOISE.
- CAULK AROUND DOORS, WINDOWS, WHERE DISSIMILAR MATERIALS MEET AND AT INTERSECTING PLANES WITH HIGH QUALITY FLEXIBLE SEALANT. SEALANT COLOR, TEXTURE AND SHEEN TO COORDINATE WITH ADJACENT MATERIALS AND COLORS. CONFIRM WITH DESIGNER, ARCHITECT.
- ALL METALS OR FASTENERS EXPOSED TO THE EXTERIOR TO BE COMPRISED OF AND COATED WITH APPROVED FINISH FOR COASTAL APPLICATIONS.

WINDOWS AND DOORS

- ALL WINDOWS AND DOORS TO HAVE A THERMALLY BROKEN FRAME/SASH WITH INSULATED DUAL PANE GLAZING WITH LOW E COATING AND ARGON GAS.
- WINDOWS AND DOORS TO HAVE AN ANODIZED OR POWDER COATED ALUMINUM OR STEEL EXTERIOR FINISH. CONFIRM FINISHES WITH DESIGNER OR ARCHITECT. FINISHES MAY VARY FROM UNIT TO UNIT.
- WINDOWS AND DOORS TO HAVE A WOOD OR ANODIZED OR POWDER COATED ALUMINUM OR STEEL INTERIOR. CONFIRM WOOD SPECIES AND METAL AND WOOD FINISH WITH DESIGNER OR ARCHITECT.
- HINGES, HARDWARE, OPERATORS, WEATHER STRIPPING, SILLS AND SCREEN SURROUNDS TO MATCH EXTERIOR OR INTERIOR FINISHES DEPENDING ON THEIR PLACEMENT. CONFIRM TYPE AND FINISHES OF ALL WITH DESIGNER, ARCHITECT BEFORE ORDERING OR BORING.
- ALL HINGES OR HARDWARE EXPOSED TO THE EXTERIOR TO BE APPROVED FOR COASTAL APPLICATIONS.
- WINDOWS AND DOORS TO UTILIZE A MOUNTING FIN AND INTEGRATED FLASHING WHERE AVAILABLE. CAULK ALL CORNERS AND PROPERLY LAYER BUILDING PAPER, HOUSE WRAP, FLEXIBLE FLASHING TAPE AND FLASHING.
- BUILDER AND WINDOW SUPPLIER TO CONFIRM PROPER GLAZING AT ALL WINDOWS AND DOORS. PROVIDE TEMPERED AND SAFETY GLASS AT ALL REQUIRED LOCATION.
- BUILDER AND WINDOW SUPPLIER TO CONFIRM ALL EGRESS REQUIREMENTS ARE MET AND OPERATION RESTRICTING HARDWARE IS INSTALLED AT REQUIRED LOCATIONS.
- CONFIRM FULL OPERATION OF WINDOWS AND DOORS IS POSSIBLE WITH LOCATION IN WALL AND PROTRUSION OF ADJACENT WALLS, TRIM, MILLWORK, FIXTURES, CEILING, FLOORS, STAIRS OR SOFFITS.
- BUILDER TO CONFIRM ROUGH OPENINGS (RO'S) HEAD HEIGHT, SILL HEIGHT AND OVERALL OPENINGS. SOME INSTALLATIONS AND GROUPINGS MAY REQUIRE ADDITIONAL WIDTH FOR IMBEDDED, STRUCTURAL OR LATERAL SUPPORT.
- PROVIDE SKYLIGHTS TO ACHIEVE SHOWN DESIGN INTENT. CONFIRM SKYLIGHT SIZES, OPERATIONS AND FINISHES WITH DESIGNER, ARCHITECT.
- FULLY AND PROPERLY SEAL SKYLIGHTS TO ELIMINATE ANY LEAKAGE OR CONDENSATION. PROVIDE AIR MOVEMENT ON SKYLIGHTS AND NON ABSORBENT DRIP RAIL AT INTERIOR TO ISOLATE, COLLECT AND SAFELY DRAIN OR DRY ANY POSSIBLE CONDENSATION.
- CONFIRM INTERIOR DOOR MATERIAL/SPECIES, GRAIN TYPE, COMPOSITION, STYLE, FINISH, COLOR, JAMB/TRIM, HARDWARE AND OPERATION WITH OWNER, DESIGNER, ARCHITECT.
- CONFIRM SPECIALTY DOORS AND INTERIOR WINDOWS WITH OWNER, DESIGNER, ARCHITECT.
- SEE WINDOW AND DOOR SCHEDULE AND DRAWINGS FOR MANUFACTURERS, UNIT TYPES, OPERATORS AND ADDITIONAL INFORMATION.

MILLWORK AND CABINETRY

- PROVIDE STAIRWAYS, RAILS AND GATES AS SHOWN ON PLANS. PROVIDE ENGINEERING, SHOP DRAWINGS AND CUSTOM FABRICATION TO ACHIEVE SHOWN DESIGN INTENT. CONFIRM SIZING, DIMENSIONS, MATERIALS, FINISHES AND COLORS WITH OWNER, DESIGNER, ARCHITECT PRIOR TO APPROVING FABRICATION AND INSTALL.
- PROVIDE SUPPORTS, NAILERS AND BLOCKING FOR ALL ARCH. ELEMENTS, CABINETRY AND MILLWORK.
- REVIEW INTERIOR SOFFITS, FRIEZES AND FASCIAS AT WINDOWS, DOORS, ROLLER SHADES AND MOTORIZED SCREENS TO ENSURE THEY ARE ACCOUNTED FOR AND INCLUDED IN SCOPE.
- PROVIDE WOOD CEILING AND WALL MATERIAL WHERE NOTED. ACCLIMATE AND SEAL ALL SIDES OF WOOD PRIOR TO INSTALLING TO ENSURE BOARDS REMAIN FLAT AND DO NOT CUP.
- WHERE WOOD TRIM, DETAILS, CEILINGS, WALLS OR CABINETS INTERSECT AND RETURN ALONG ANOTHER PLANE RETURN WOOD MATERIAL WITH SAME/SIMILAR PIECE TO MATCH GRAIN, COLOR, REVEALS AND SEAMS.
- ALL CABINETRY, DOORS AND PANELS TO BE BOOKMATCHED AND ENDMATCHED WHERE POSSIBLE.
- PROVIDE CABINETRY AND COUNTERS AS SHOWN ON FLOOR PLANS, SECTIONS AND INTERIOR ELEVATIONS. CONFIRM ALL CABINETRY AND COUNTER INFO WITH OWNER, DESIGNER, ARCHITECT.
- PROVIDE FULL CABINETRY AND MILLWORK SHOP DRAWINGS, INCLUDING FINISH TYPE, COLOR AND SHEEN, BASED ON PLANS FOR REVIEW, DIRECTION AND APPROVAL OF DESIGNER, ARCHITECT.
- TYPICAL EXTERIOR WINDOW TRIM AT JAMBS AND HEAD TO BE DRYWALL RETURNS OR AS SHOWN ON DRAWINGS. SHIM AND SPACE FRAMING TO CREATE SIMILAR EXPOSURES AND REVEALS AT ALL JAMB AND HEAD LOCATIONS. CAULK INTERIOR CORNER JOINT OF DRYWALL TO JAMB/TRIM.
- TYPICAL EXTERIOR WINDOW SILL TO BE INSET, FLUSH WOOD TRIM WITH REVEAL TO ADJACENT DRYWALL BEAD PROVIDED BELOW. CONFIRM WITH DRAWINGS AND DESIGNER, ARCHITECT.
- CONFIRM EXTERIOR DOOR APPLICATION AND DRYWALL RETURN OR ADJUSTABLE TRIM METHOD.
- ALL INTERIOR DOOR TRIM PER DRAWINGS/SCHEDULE OR 1 5/8"W X 7/8" PAINT GRADE POPLAR WITH 1/16" EASED EDGE. CONFIRM STYLE, SIZE, WOOD SPECIES, FINISH AND COLOR DESIGNER, ARCHITECT.
- PROVIDE COORDINATION WITH FRAMERS AND DRYWALL CONTRACTOR FOR MINIMAL COVERAGE OF SOME TRIMS AND SPECIALTY APPLICATIONS.
- ALL INTERIOR BASEBOARD PER DRAWINGS/SCHEDULE OR 1/2" x 4" PAINT GRADE POPLAR WITH 1/16" EASED EDGE.CONFIRM WOOD SPECIES AND FINISH WITH FLOORING/WALL MATERIAL AND DESIGNER, ARCHITECT.

EQUIPMENT

- APPLIANCES TO BE LOCATED AS SHOWN ON PLANS. CONFIRM MANUFACTURER AND MODEL WITH OWNER AND DESIGNER, ARCHITECT. CONFIRM EXACT LOCATIONS UPON ROUGH-IN WITH DESIGNER, ARCHITECT, PLANS AND CABINET SHOP DRAWINGS. NOTIFY DESIGNER, ARCHITECT OF ANY FRAMING OR STRUCTURAL OBSTRUCTIONS THAT MAY ALTER LOCATION OR MODEL.
- CONFIRM VENTING, GAS, ELECTRIC, PLUMBING AND MOUNTING/FALL-OVER REQUIREMENTS ARE INSTALLED AND PROVIDED FOR ALL APPLIANCES. CONFIRM EXHAUST/HOOD SIZE AND VOLUME AT TIME OF PERMIT AND PRIOR TO FRAMING AND INSTALLING MECHANICAL EQUIPMENT, PROVIDE SUFFICIENT MAKE-UP AIR AS REQUIRED OR PROVIDE ALTERNATE SOLUTIONS. PROVIDE DISASTER PAN AND DRAIN UNDER ALL LAUNDRY MACHINES.
- INSTALLATION OF APPLIANCES BY SUPPLIER OR CERTIFIED INSTALLER.
- GAS OR CHARCOAL/WOOD GRILL(S) AND FIRE PITS TO BE LOCATED AS SHOWN ON PLANS. CONFIRM EXACT LOCATION AND MODEL WITH DESIGNER, ARCHITECT.
- PROVIDE PERMANENT NATURAL GAS LINES AND SAFETY SHUT-OFFS FOR ALL GRILLS OR FIREPITS NOTED AS GAS. PROVIDE ELECTRIC SERVICE AS REQUIRED.
- CONFIRM VENTING, CLEARANCES AND SETBACK REQUIREMENTS ARE MET AT TIME OF PERMITTING AND PRIOR TO FRAMING.
- PROVIDE PROPER CLEARANCES TO COMBUSTIBLE FRAMING, CABINETRY, DECKING AND WALL AND CEILING FINISHES. PROVIDE NON-COMBUSTIBLE FINISHES, SHIELDS AND SHROUDS AS NEEDED.
- FIREPLACE(S) TO BE LOCATED AS SHOWN ON PLANS. CONFIRM EXACT MODEL AND LOCATION, INCLUDING HEIGHT, WITH DESIGNER, ARCHITECT.
- CONFIRM VENTING, MAKE-UP AIR, GAS AND ELECTRIC IS PROVIDED AS REQUIRED.
- PROVIDE PROPER CLEARANCES TO COMBUSTIBLES INCLUDING FRAMING, HEARTH, FLOORING, MANTELS AND GENERAL FINISH MATERIALS.

PLUMBING, HEATING AND GAS

- CONFIRM AVAILABLE CONNECTIONS, SERVICES AND UTILITIES WITHIN AREA, IN STREET AND ON PROPERTY. WHERE EXISTING SERVICES EXIST, CONFIRM SIZING AND COMPLIANCE WITH CURRENT CODES AND PROJECT REQUIREMENTS.
- CONFIRM ALL SUPPLIES, CONNECTIONS AND EXCAVATION REQUIRED FOR PROPER AND COMPLETE SYSTEM FUNCTION TO BE PROVIDED BY GENERAL CONTRACTOR OR PLUMBING AND HVAC CONTRACTORS. CONFIRM AND PROVIDE LOW VOLTAGE WIRING AS REQUIRED FOR SYSTEM.
- CONCEAL METERS, SERVICES, VENTS, EXHAUSTS AND INTAKES ON EXPOSURES WITH LEAST VISIBILITY AND IN LOW VISIBILITY AREAS FROM COMMON GATHERING AREAS AND INTERIOR SIGHT LINES. PROVIDE HIGH QUALITY GRILLES AND SHROUDS IN MATCHING COLORS AND FINISHES TO ADJACENT FINISH MATERIALS. INSET GRILLES, VENTS AND SHROUDS WHERE POSSIBLE.
- SEE APPROVED EXHAUST, INTAKE AND VENTILATION LOCATIONS ON ELEVATIONS AND ROOF PLAN.
- CONFIRM WASTE, VENTS AND CONNECTION OF ROOFING DRAINS TO BE PER CODE.
- GENERAL CONTRACTOR TO CONFIRM ALL EQUIPMENT PROVIDED BY HVAC AND PLUMBING CONTRACTOR. VERIFY MANUFACTURERS AND MODELS WITH OWNER AND DESIGNER, ARCHITECT.
- GENERAL CONTRACTOR AND HVAC CONTRACTOR TO LOCATE AND SIZE ALL DUCTWORK AND LARGE PENETRATIONS PRIOR TO ORDERING FLOOR, CEILING AND WALL ASSEMBLY COMPONENTS. GENERAL CONTRACTOR TO PROVIDE REQUIRED PENETRATION SIZING INFORMATION TO ARCHITECT/DESIGNER, STRUCTURAL ENGINEER AND TRUSS SUPPLIER TO COORDINATE WOOD AND STEEL STRUCTURAL COMPONENTS ALLOW FOR CLEARANCES AND ARE PROPERLY SIZED AND PLACED.
- NO SOFFITING IS ALLOWED EXCEPT AS SHOWN ON DRAWINGS. ALL HVAC DUCTWORK TO FIT WITHIN FLOOR/CEILING ASSEMBLIES AT FINISHED OR OCCUPIED AREAS.
- PROVIDE SUFFICIENT ZONES TO ADEQUATELY BALANCE HOME AND MAINTAIN SIMILAR OR VARIED HEAT AND COOLING LEVELS AT ALL LOCATIONS PER OWNER'S REQUIREMENTS. CONSIDER FLOOR LEVEL, BUILDING ORIENTATION AND WINDOW/DOOR GLAZING AMOUNTS WHEN CALCULATING LOADS.
- CONFIRM ALL MAJOR EQUIPMENT AND THEIR LOCATIONS WITH THE OWNER, DESIGNER OR ARCHITECT.
- CONFIRM WASTE, DRAIN, VENT AND PLUMBING LINE MATERIALS AND CONNECTIONS WITH OWNER, DESIGNER, ARCHITECT. MAIN WASTE LINES AND/OR LINES ADJACENT TO PRIMARY SPACES OR THE MASTER BEDROOM TO BE CAST IRON.
- CONFIRM AND CONCEAL LOCATION OF SHUTOFFS, CLEANOUTS AND VALVES W/ DESIGNER, ARCHITECT AND LOCATE IN CONCEALED OR INCONSPICOUS LOCATIONS.
- CONFIRM ALL FIXTURES, TYPES, FINISHES AND INSTALL METHODS WITH OWNER, DESIGNER, ARCHITECT.
- FULLY ZONED AND DUCTED FORCED AIR HEATING AND COOLING SYSTEM PROVIDED FOR ALL AREAS WITH EXCLUSION OF GARAGE AND APPROVED STORAGE AREAS.
- PROVIDE EXHAUST AND VENTILATION AT ALL BATHROOMS, KITCHENS AND LAUNDRY ROOMS.
- PROVIDE IRRIGATION SYSTEM AND/OR IRRIGATION CONNECTIONS PER OWNER'S AND LANDSCAPE ARCHITECT'S REQUIREMENTS.
- PROVIDE A MINIMUM OF TWO HOSE BIBS AT APPROXIMATELY 16" ABOVE GRADE. SEE DRAWINGS FOR LOCATIONS, IF NOT LOCATED OR LOCATION IS NOT ALLOWABLE PER CODE, PROVIDE ONE NEAR THE GARAGE/DRIVEWAY AND ONE ON THE OPPOSITE SIDE OF THE BUILDING.
- CONTRACTOR TO INSPECT ALL FIXTURES PRIOR TO INSTALLATION AND REJECT DAMAGED GOODS. PROTECT FIXTURES AND FINISHES FROM EXCESSIVE USE AND DAMAGE UNTIL PROJECT COMPLETION.
- PROVIDE A BOOSTER OR RECIRCULATING SYSTEM TO ENSURE RAPID HOT WATER TO KITCHEN/PANTRY AND MASTER SUITE BATHROOM.
- FIXTURES TBD. COORDINATE AND CONFIRM SELECTIONS WITH OWNER AND DESIGNER, ARCHITECT.
- ALL COMPONENTS AND DEVICES EXPOSED TO THE EXTERIOR TO BE COMPRISED OF AND COATED WITH APPROVED FINISH FOR COASTAL APPLICATIONS.

ELECTRICAL

- CONFIRM AVAILABLE CONNECTIONS AND SERVICES WITHIN AREA AND PROPERTY. CONFIRM PROPERTY CURRENT AND ANTICIPATED USAGE NEEDS AND REQUIREMENTS WITH GENERAL CONTRACTOR, EQUIPMENT AND APPLIANCE PROVIDERS, OWNER AND DESIGNER, ARCHITECT.
- ELECTRICAL TO CONSIST OF A COMPLETE AND PROPER FUNCTIONING AND EFFICIENT SYSTEM. INCLUDING BURIED UNDERGROUND ELECTRIC, CABLE, SECURITY AND LOW VOLTAGE SERVICES. SERVICES TO BE CONCEALED FROM PRIMARY EXTERIOR AND INTERIOR VIEWS.
- SERVICES TO AND WITHIN HOME, GARAGE AND AUXILIARY STRUCTURES TO INCLUDE SERVICE, METERS, LOOPS, SHUT-OFFS/DISCONNECTS, PANELS, LIGHTING, FANS, OUTLETS, SWITCHES, AND INSTALLATION OF ALL APPLIANCES, FANS, LIGHTS, LIGHTING, OUTLETS, SWITCHES, AUTOMATED SYSTEMS, DOORBELL, SECURITY, MONITORING AND CAMERA SYSTEMS AND ACCESSORIES.
- PROVIDE ALL SERVICES, LOW VOLTAGE WIRING AND CONNECTIONS TO ALL EQUIP. AND APPLIANCES.
- SEE RCP DRAWINGS FOR GENERAL CEILING AND WALL LIGHTING AND BASIC SWITCH LAYOUT. CONFIRM AUTOMATION REQUIREMENTS AND CIRCUITS WITH OWNER, AV SUPPLIER AND DESIGNER, ARCHITECT.
- PROVIDE ALL REQUIRED OUTLETS, SWITCHES, AND DETECTORS PER CODE.
- ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES MUST BE UL LISTED AND COMPLY WITH GOVERNING CODES, AGENCIES AND ASSOCIATIONS.
- LIGHTING FIXTURES, INCLUDING RECESSED CANS, TBD. CONFIRM WITH OWNER, DESIGNER, ARCHITECT.
- ALL LIGHTING OTHER THAN GARAGE, STORAGE AND UTILITY SPACES TO BE ON DIMMERS.
- ALL CAN/RECESSED LIGHTS TO BE 4" LED FIXTURES UNLESS OTHERWISE NOTED. TRIM KIT FINISH AND COLOR TO MATCH ADJACENT FINISHES.
- ALL LIGHT FIXTURES TO BE DIMMABLE LED UNLESS OTHERWISE NOTED.
- VERIFY DEPTH OF CAN/RECESSED FIXTURES TO FIT IN DESIGNATED SPACES. CONFIRM LOCATIONS OF DUCTWORK AND FRAMING TO ALLOW FOR PROPER PLACEMENT AND SPACING. DISCUSS WITH DESIGNER, ARCHITECT ANY NEEDED ADJUSTMENTS.
- COORDINATE ALL AV, AUDIO AND VISUAL SYSTEMS WITH OWNER AND AV SUBCONTRACTOR.
- CALCULATE SYSTEM NEEDS TO ENSURE VOLTAGE DROP DO NOT EXCEED 3% FROM THE MAIN PANEL BOARD TO ANY OUTLET OR DEVICE UNDER MAXIMUM LOAD.
- WALL SWITCHES TO BE LOCATED AS PER RCP AND LOCATED 4'-0" ABOVE THE FINISHED FLOOR. WHERE MORE THAN ONE SWITCH OCCURS AT THE SAME LOCATION, THEY SHALL BE GANGED AT ONE PLATE TO A MAXIMUM OF 3 SWITCHES. OUTLETS AND SWITCHES SHALL NOT BE COMBINED.
- WHITE DECORA STYLE DEVICES, OUTLETS, SWITCHES AND DIMMERS TYPICAL. MATCHING FINISH SCREWLESS SMOOTH DEVICE PLATES TYPICAL. MATCH PLATE AND DEVICE COLOR TO WALL MATERIAL AND FINISH. CONFIRM DEVICES, PLATES, COLORS, FINISHES AND DIMMER STYLE WITH OWNER AND DESIGNER, ARCHITECT.
- PANELS, METERS, SHUT-OFFS AND ALL WIRING TO AND OF ITEMS/DEVICES TO BE TO CURRENT AND PROPER CODES AND STANDARDS.
- LOCATIONS AND MODELS OF DEVICES AND LIGHTING FIXTURES TO TAKE INTO ACCOUNT CABINETRY, APPLIANCE AND WINDOW AND DOOR CENTERS. VERIFY EXACT FINAL LOCATION WITH OWNER AND DESIGNER, ARCHITECT PRIOR TO ROUGH-IN MOUNTING AND INSTALLATION.
- ALL COMPONENTS AND DEVICES EXPOSED TO THE EXTERIOR TO BE COMPRISED OF AND COATED WITH APPROVED FINISH FOR COASTAL APPLICATIONS.

AV AND LOW VOLTAGE

- SEE ELECTRICAL NOTES ABOVE.
- PROVIDE REQUIRED AV AND LOW VOLTAGE WIRING FOR THERMOSTATS, SHADES, SCREENS, LOW VOLTAGE EXTERIOR AND INTERIOR LIGHTING, SECURITY SYSTEMS AND CAMERAS, SPEAKERS, TVS, WIFI, ROUTERS, EXTENDERS AND NETWORKING EQUIPMENT.
- CONFIRM CONFIGURATIONS, LOCATIONS AND EQUIPMENT WITH OWNER, ARCHITECT/DESIGNER. INTERIOR DESIGNER, LANDSCAPE ARCHITECT AND GENERAL CONTRACTOR.
- DESIGNATE EQUIPMENT LOCATIONS, TRANSFORMERS AND ACCESS POINTS.
- ALL COMPONENTS AND DEVICES EXPOSED TO THE EXTERIOR TO BE COMPRISED OF AND COATED WITH APPROVED FINISH FOR COASTAL APPLICATIONS.

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GENERAL NOTES

SHEET INDEX

DRAWINGS FOR REPRESENTATION ONLY. REFER TO PLANS & ELEVATIONS.

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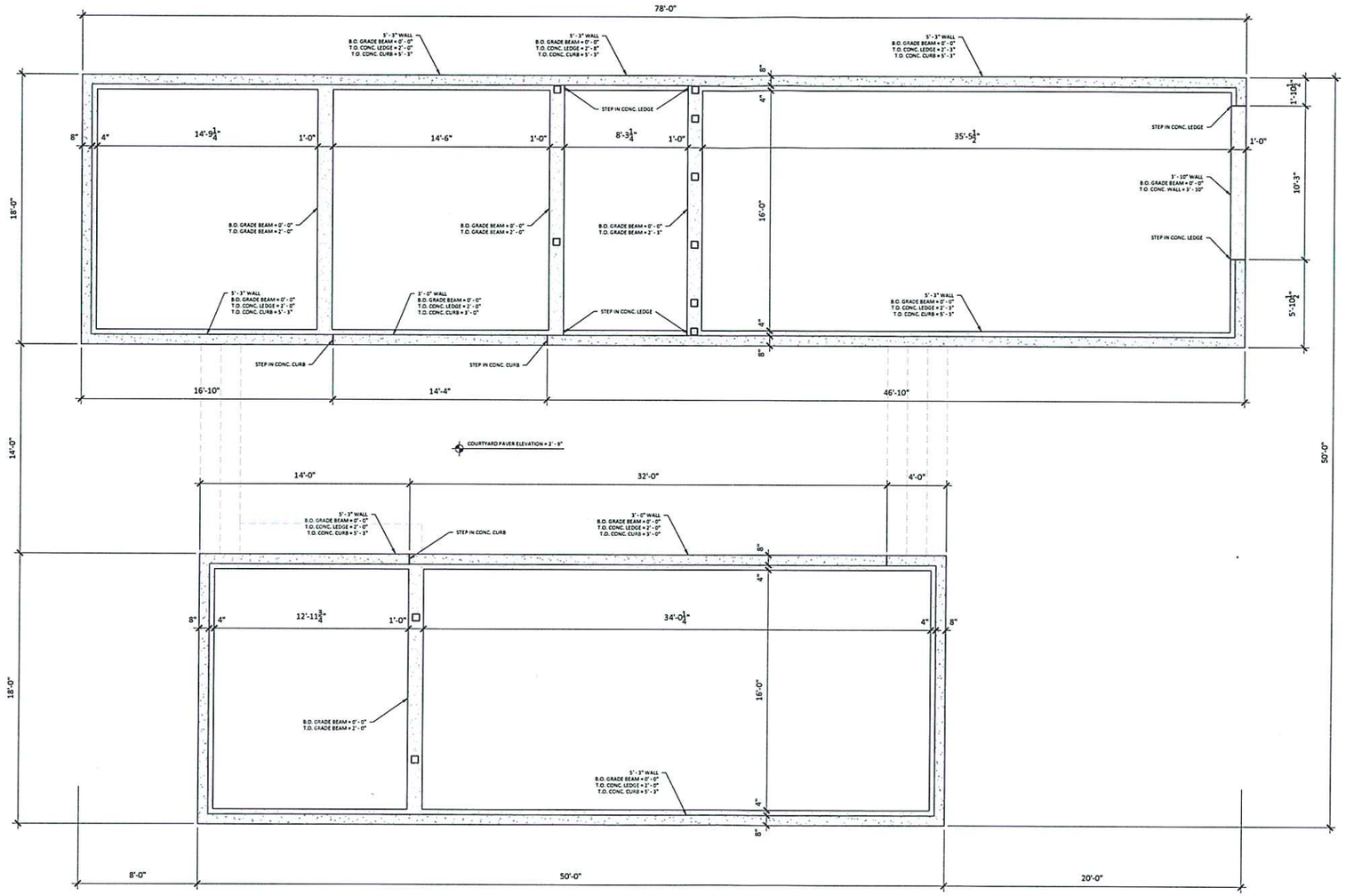
COVER SHEET

G1.0



1 FOUNDATION DIAGRAM

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

N

NOTE: DIMENSIONS ARE TO THE EXTERIOR OF SHEATHING/FOUNDATION

NOTE: ON FOOTING AND FOUNDATION PLAN ONLY:
ELEVATION 0' - 0" = B.O. GRADE BEAM (EQUAL TO: 96' - 9" ON ARCHITECTURAL DRAWINGS)
ELEVATION 3' - 3" = T.O. OF TYP. LOWER LEVEL FIN. FLOOR (EQUAL TO: 100' - 0" ON ARCHITECTURAL DRAWINGS)
(100' - 0" = 77' ON SURVEY)
CONFIRM BENCHMARK AND FINAL ELEVATION.

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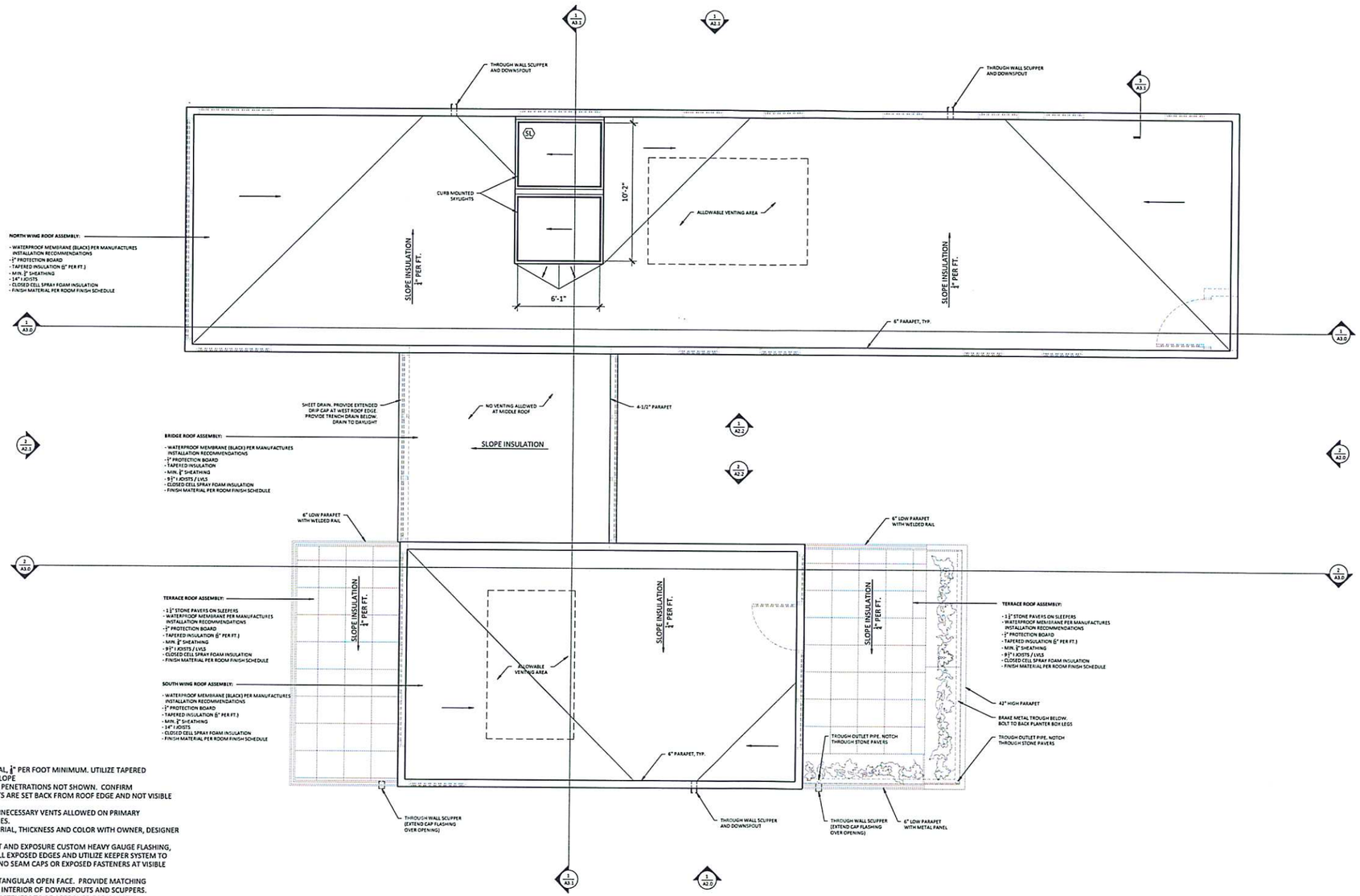
FOUNDATION DIAGRAM

A0.1



ROOF NOTES

- ¼" PER FOOT SLOPE TYPICAL. ¼" PER FOOT MINIMUM. UTILIZE TAPERED INSULATION TO CREATE SLOPE
- PLUMBING AND VENTING PENETRATIONS NOT SHOWN. CONFIRM PENETRATIONS AND VENTS ARE SET BACK FROM ROOF EDGE AND NOT VISIBLE FROM GRADE.
- NO PENETRATIONS OR UNNECESSARY VENTS ALLOWED ON PRIMARY ELEVATIONS OR SIGHT LINES.
- CONFIRM ROOFING MATERIAL, THICKNESS AND COLOR WITH OWNER, DESIGNER AND CONTRACTOR.
- UTILIZE MINIMUM HEIGHT AND EXPOSURE CUSTOM HEAVY GAUGE FLASHING, CAPS AND TRIMS. HEM ALL EXPOSED EDGES AND UTILIZE KEEPER SYSTEM TO MINIMIZE OIL CANNING. NO SEAM CAPS OR EXPOSED FASTENERS AT VISIBLE AREAS.
- DOWNSPOUTS TO BE RECTANGULAR OPEN FACE. PROVIDE MATCHING COLOR/FINISH ON VISIBLE INTERIOR OF DOWNSPOUTS AND SCUPPERS.
- ALL EXPOSED METALS & FASTENERS TO BE APPROVED FOR COASTAL APPLICATIONS.
- CAPTURE AND REMOVE ROOF WATER FROM BUILDING PROXIMITY. PROVIDE CATCH BASINS AND DRAINAGE FROM DOWNSPOUTS AND BELOW GRADE AREAS TO STORM SEWER

1 ROOF PLAN

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

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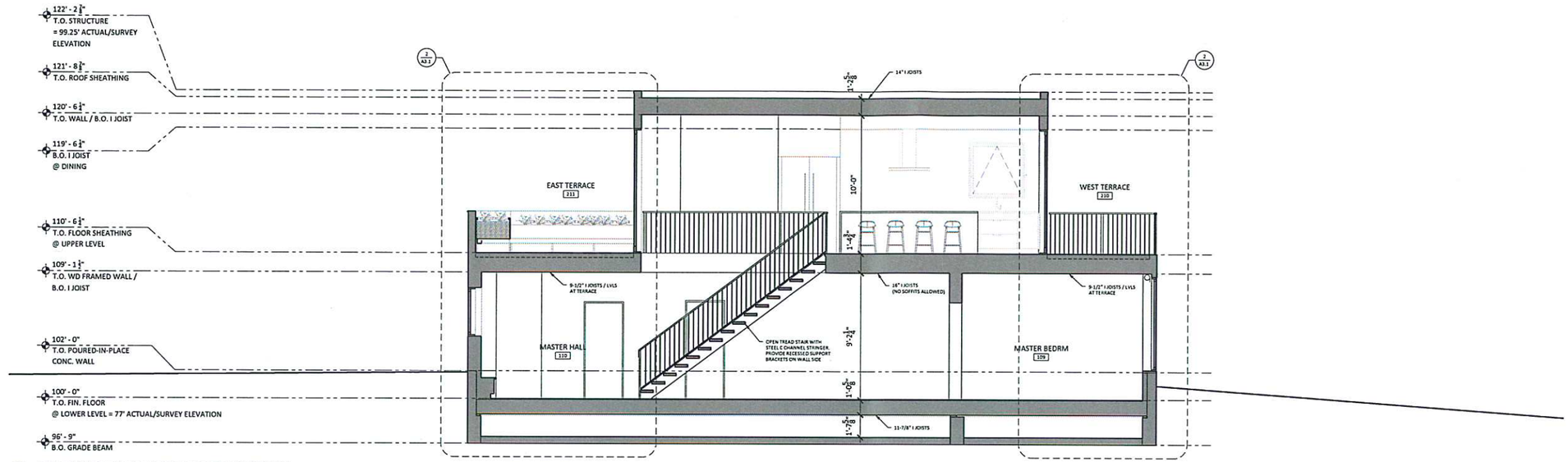
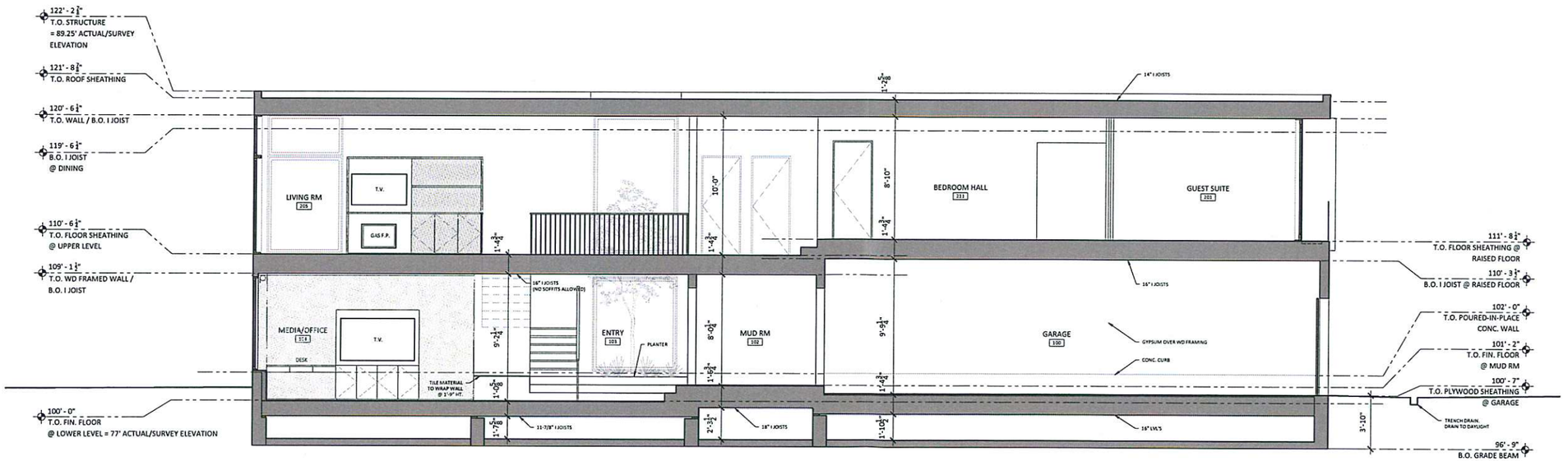
ROOF PLAN

A1.2



2 EAST-WEST SECTION AT SOUTH WING

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



1 EAST-WEST BUILDING SECTION AT NORTH WING

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

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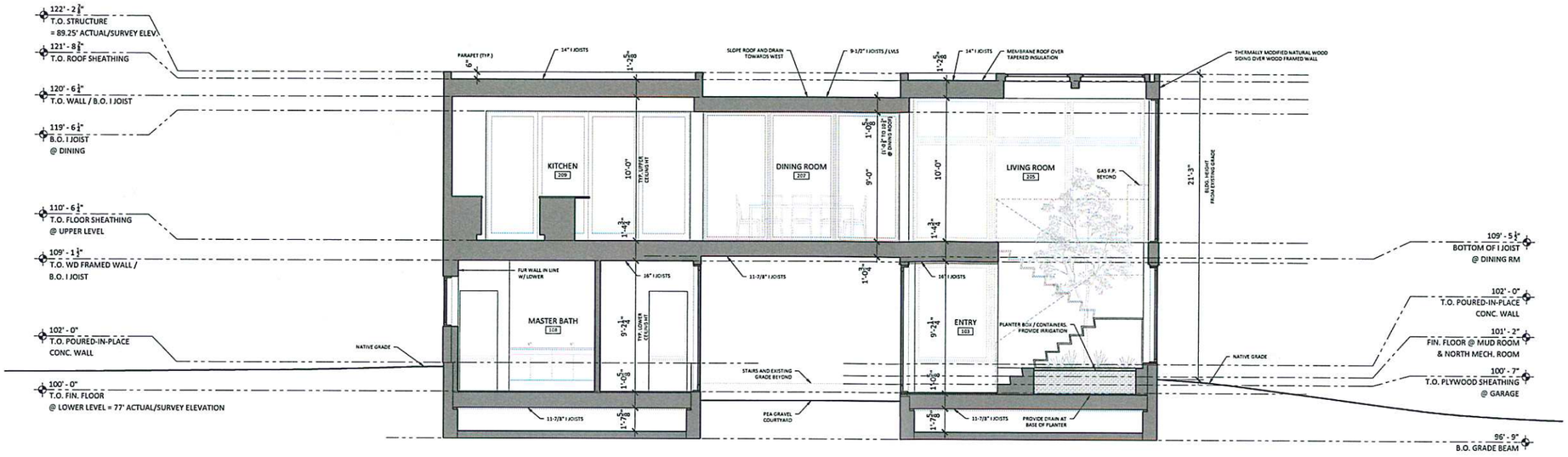
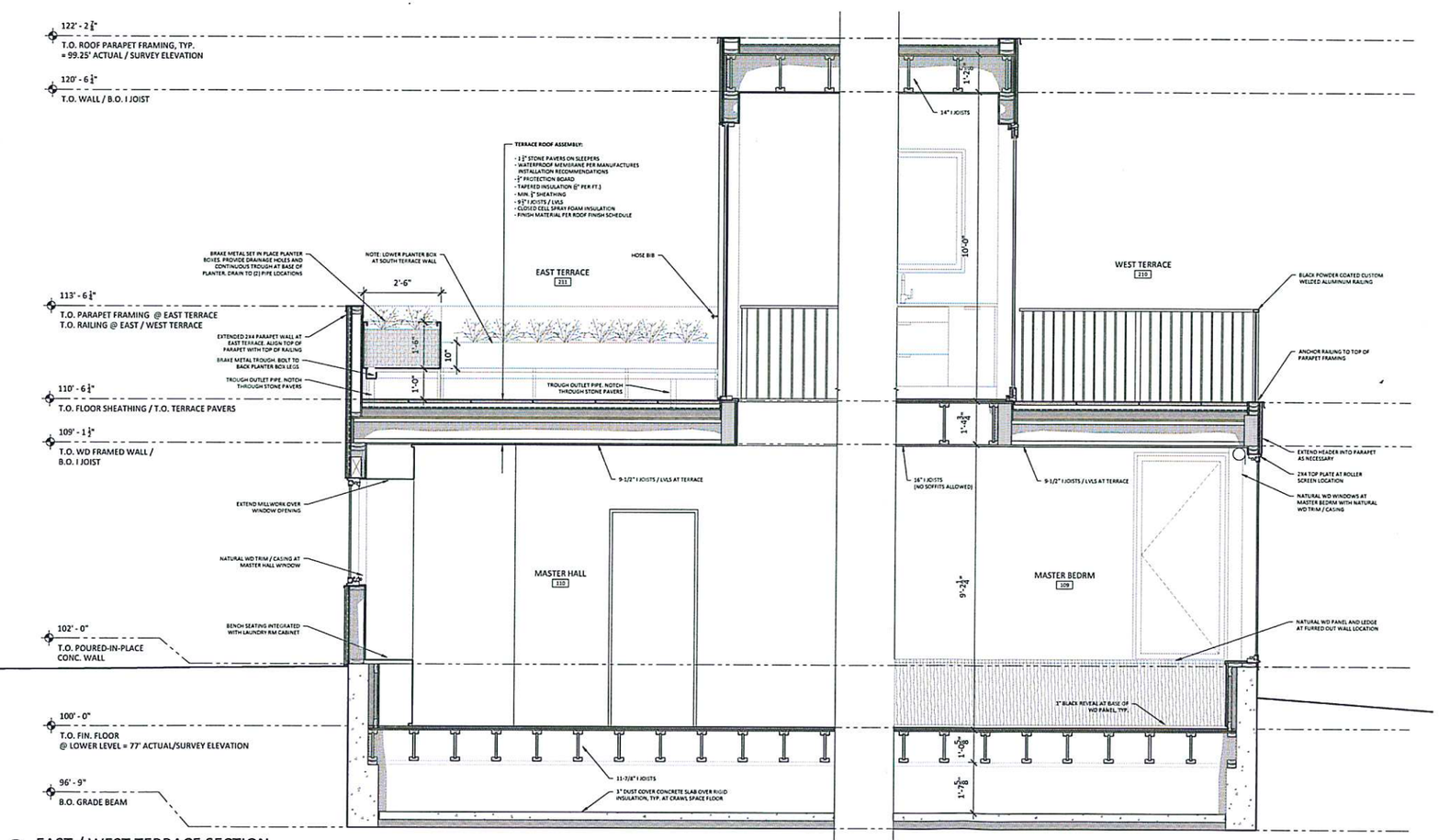
BUILDING SECTIONS

A3.0



1 NORTH-SOUTH BUILDING SECTION

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



2 EAST / WEST TERRACE SECTION

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

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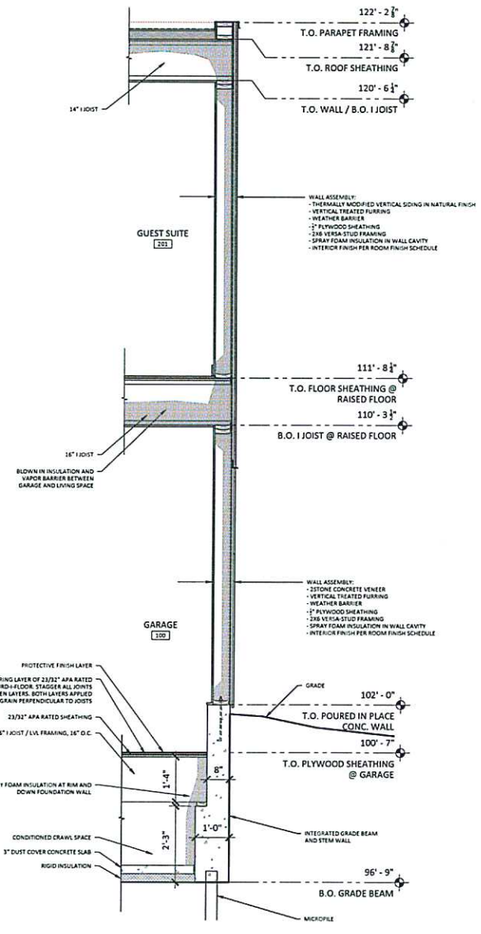
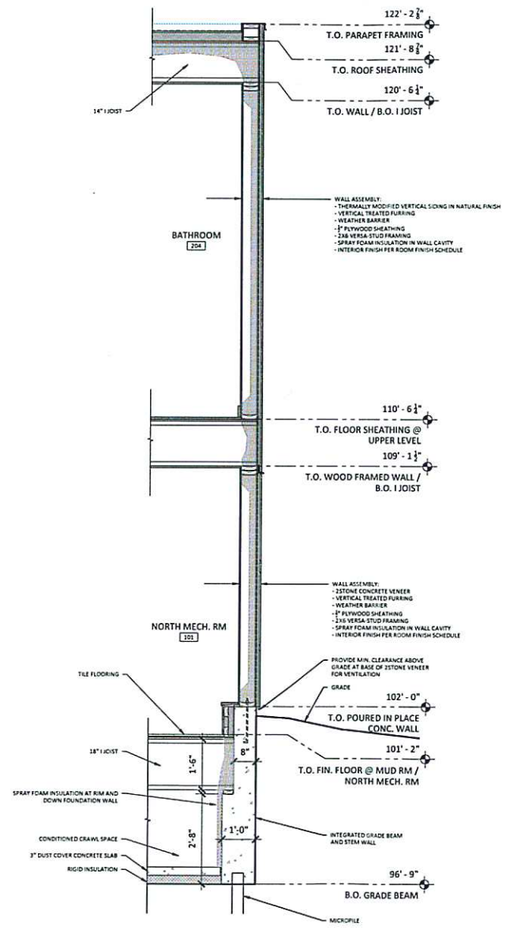
BUILDING SECTIONS

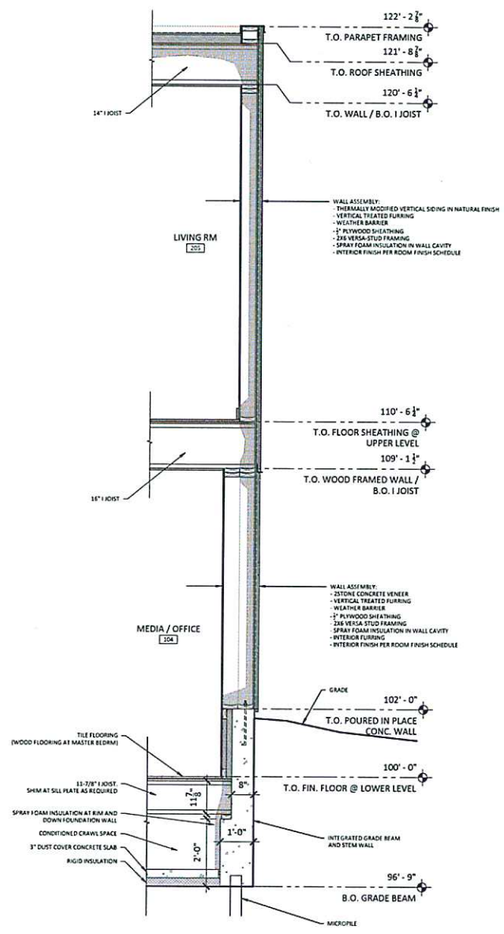
A3.1



1 WALL SECTION AT GARAGE
SCALE: 1/2" = 1'-0"



2 WALL SECTION AT MUD RM / NORTH MECH. RM
SCALE: 1/2" = 1'-0"



3 WALL SECTION AT MASTER WING AND MEDIA / OFFICE
SCALE: 1/2" = 1'-0"

STRANDDESIGN
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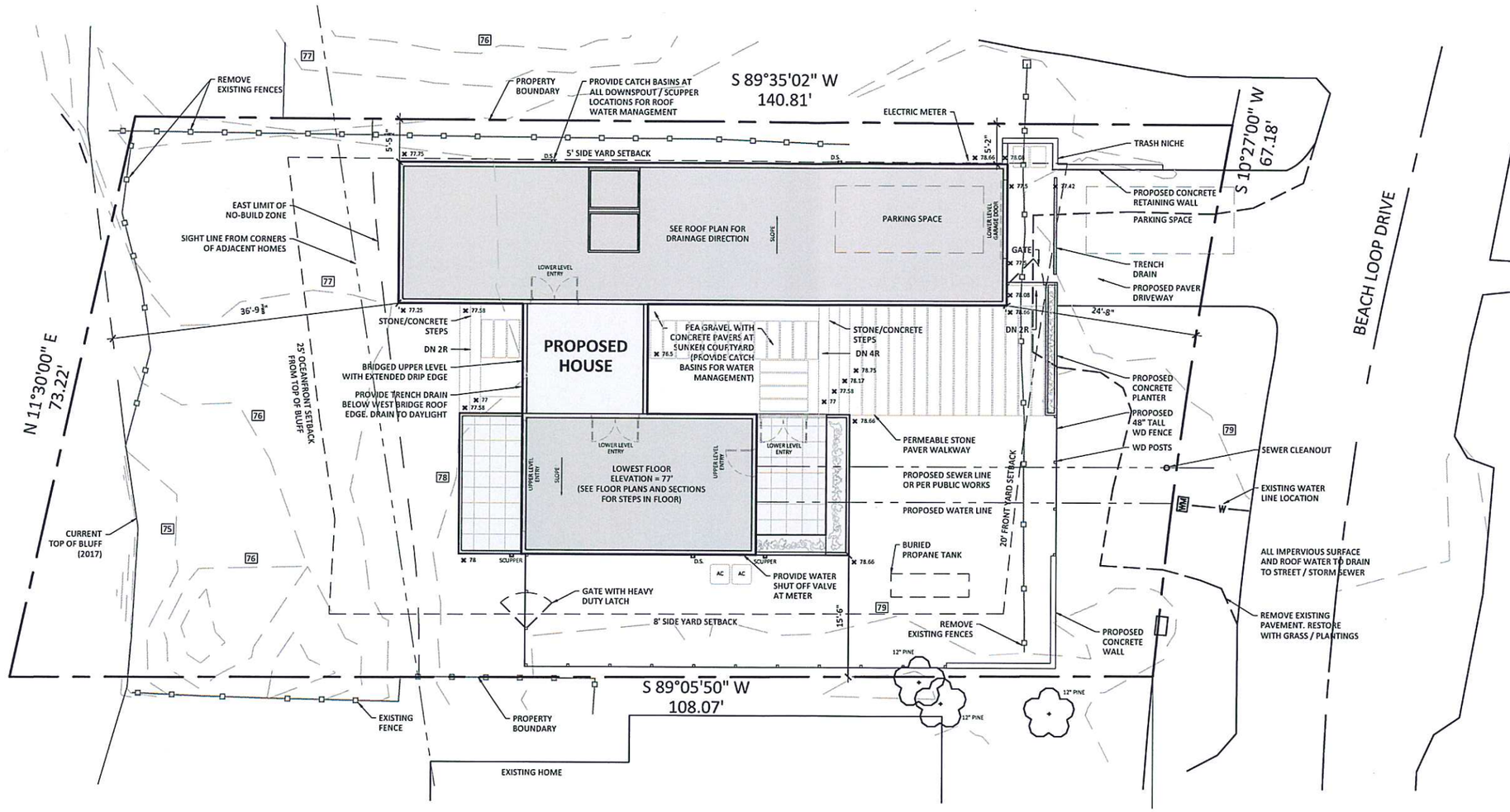
DAVID@STRANDDESIGN.COM
715.497.3268

SET	ISSUE DATE
PERMIT SET	2.4.2022

BANDON COAST
1880 BEACH LOOP DRIVE
BANDON, OREGON 97411

WALL SECTIONS

A3.2

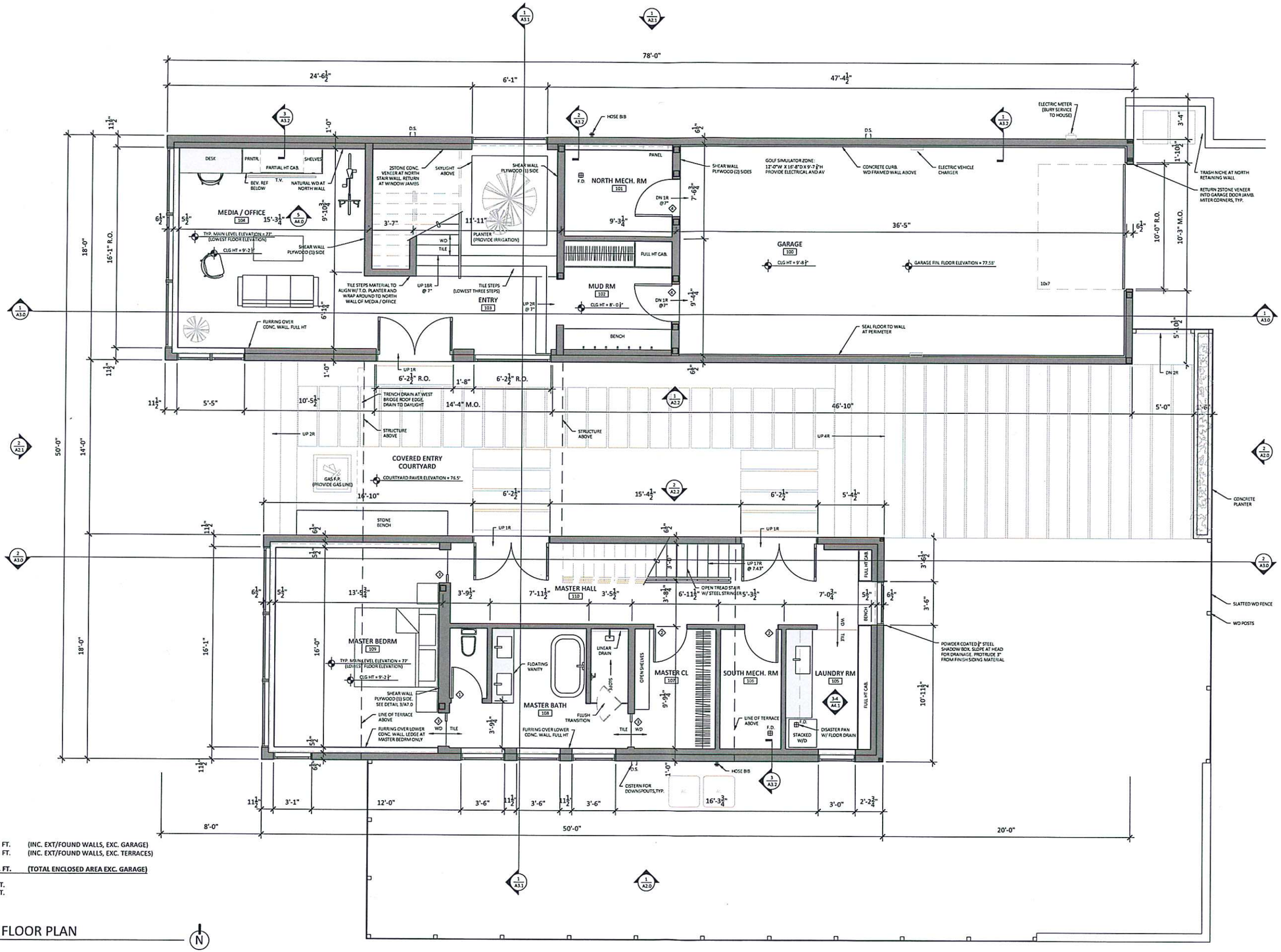


LOT COVERAGE:		
LOT AREA =	10,150 SQ. FT.	
1ST FLOOR BUILDING AREA =	2,304 SQ. FT.	
2ND FLOOR BUILDING AREA =	2,160 SQ. FT.	
HOUSE FOOTPRINT (INC. TERRACES) =	2,527 SQ. FT.	25% COVERAGE (2,527 SQ. FT. OF 10,150 SQ. FT.)
HARDCOVER (INC. DRIVE & PAVERS) =	1,169 SQ. FT.	12% COVERAGE (1,169 SQ. FT. OF 10,150 SQ. FT.)
TOTAL IMPERMEABLE SURFACE =	3,696 SQ. FT.	36% COVERAGE (3,696 SQ. FT. OF 10,150 SQ. FT.)

1 SITE PLAN
SCALE: 1/16" = 1'-0"

1880 BEACH LOOP DR. 11x17 SCALABLE
BANDON, OREGON 97411 SITE PLAN 2/4/22

STRANDDESIGN



AREA CALCULATIONS

MAIN LEVEL:	1,644 SQ. FT.	(INC. EXT/FOUND WALLS, EXC. GARAGE)
UPPER LEVEL:	2,160 SQ. FT.	(INC. EXT/FOUND WALLS, EXC. TERRACES)
TOTAL:	**3,804 SQ. FT.**	**(TOTAL ENCLOSED AREA EXC. GARAGE)**
GARAGE:	660 SQ. FT.	
TERRACES:	360 SQ. FT.	

1 LOWER LEVEL FLOOR PLAN

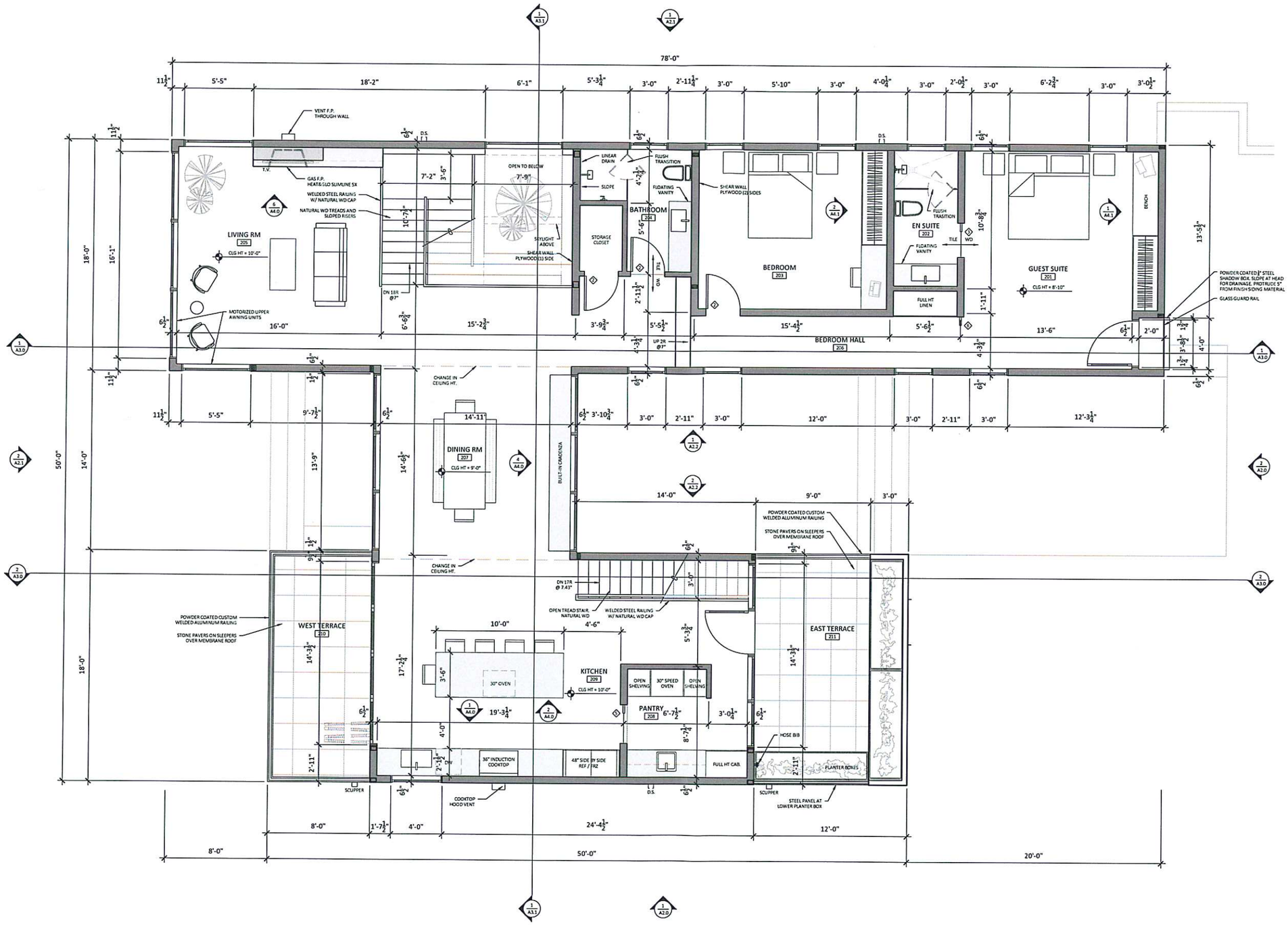
SCALE: 1/8" = 1'-0"

N

NOTE: WALLS SHOWN INCLUDE INTERIOR DRYWALL AND EXTERIOR SHEATHING. EXTERIOR FINISH MATERIALS/THICKNESSES ARE NOT SHOWN

1880 BEACH LOOP DR. 11x17 SCALABLE
BANDON, OREGON 97411 LOWER LEVEL FLOOR PLAN 2/4/22

STRAND DESIGN

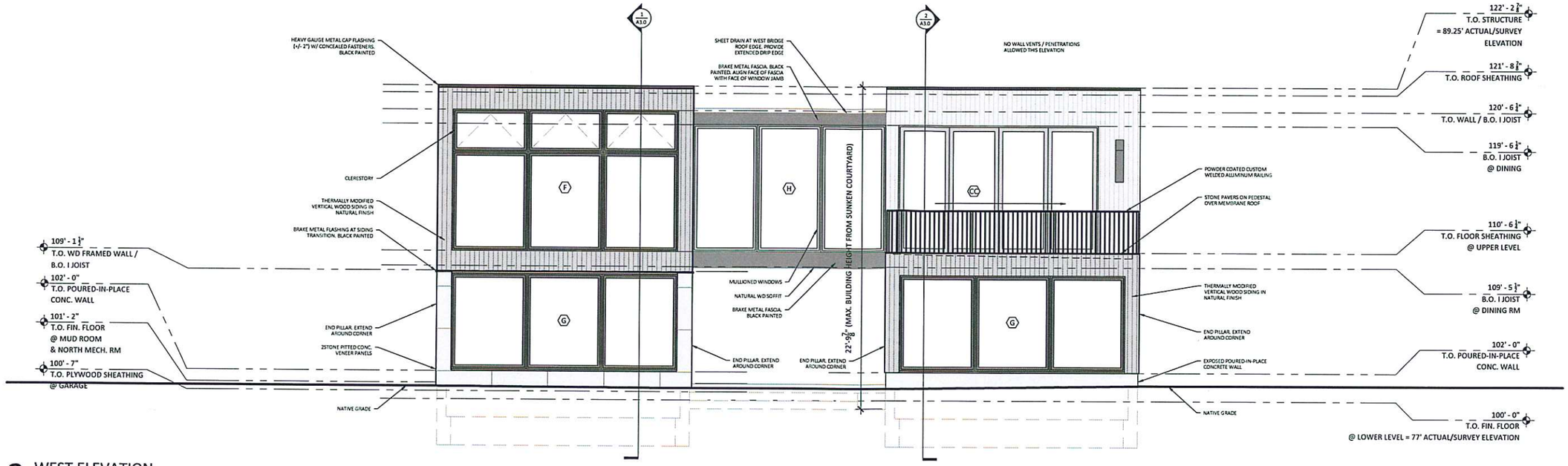


1 UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"

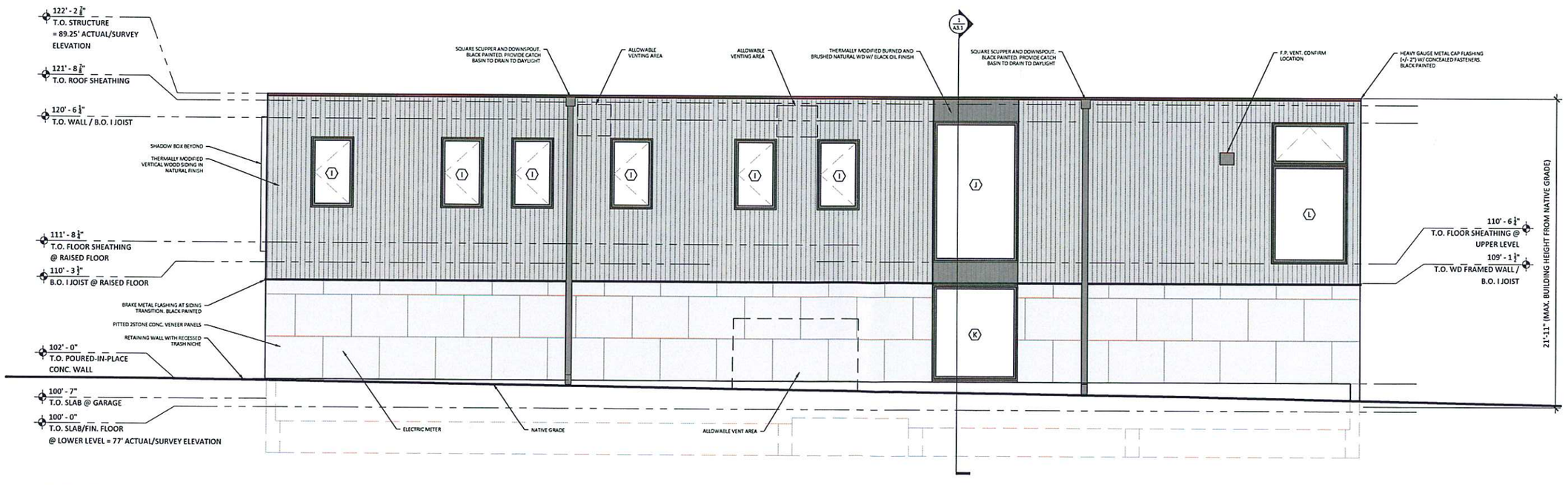
NOTE: WALLS SHOWN INCLUDE INTERIOR DRYWALL AND EXTERIOR SHEATHING.
EXTERIOR FINISH MATERIALS/THICKNESSES ARE NOT SHOWN

1880 BEACH LOOP DR. 11x17 SCALABLE
BANDON, OREGON 97411 UPPER LEVEL FLOOR PLAN 2/4/22

STRANDDESIGN



2 WEST ELEVATION
SCALE: 1/8" = 1'-0"

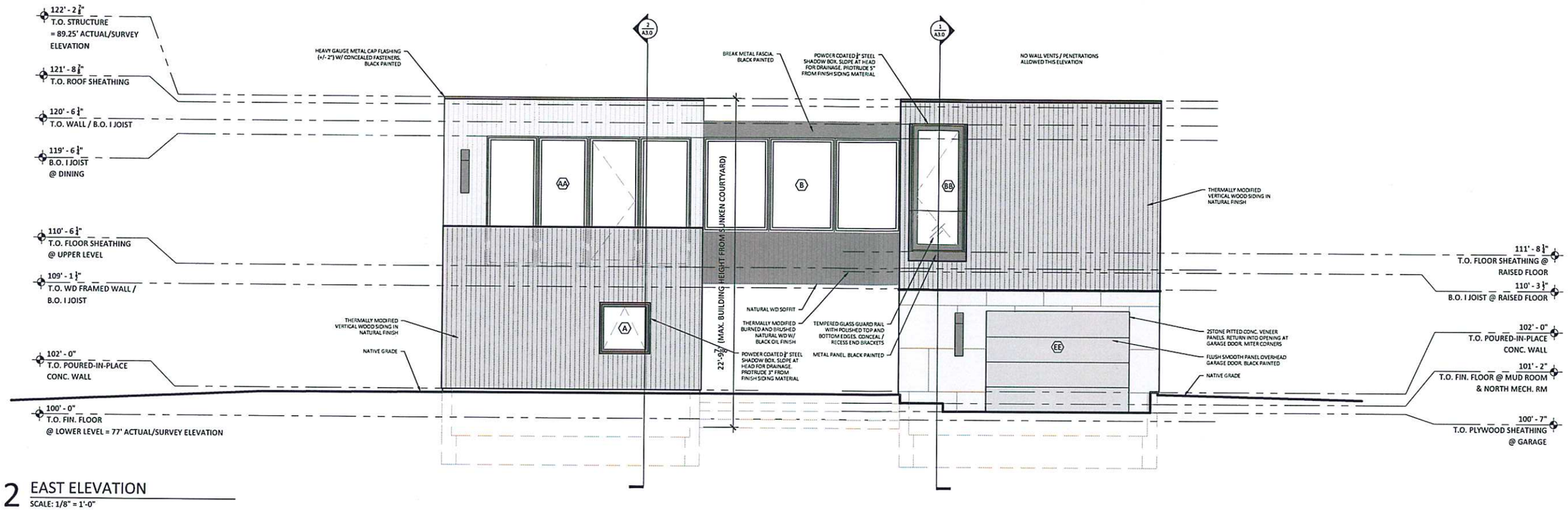


1 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

1880 BEACH LOOP DR.
BANDON, OREGON 97411

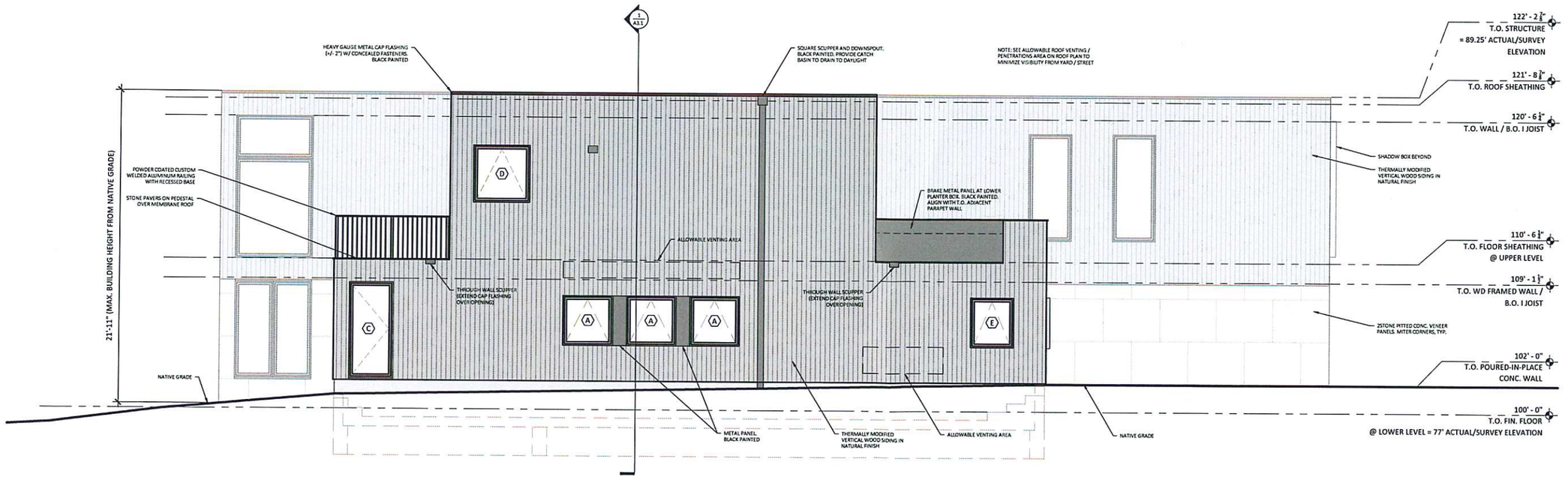
11x17 SCALABLE
NORTH & WEST ELEVATIONS 2/4/22

STRANDDESIGN



2 EAST ELEVATION

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



1 SOUTH ELEVATION

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

1880 BEACH LOOP DR. 11x17 SCALABLE
BANDON, OREGON 97411 SOUTH & EAST ELEVATIONS 2/4/22

STRAND DESIGN