Staff Report for Administrative Approval
Hillside Review – Notice of Conditional Approval

Weber County Planning Division

Synopsis

Application Information

Application Request: Consideration and action on a request to approve a Hillside Review for the Blake Kingsbury residence located on Lot 70R in the Summit Eden Phase 1C.
Applicant: Blake Kingsbury
Authorized Representative: Pamela Russell
File Number: HSR 2018-05

Property Information

Approximate Address: 8492 East Spring Park Road
Project Area: 0.0637 acres
Zoning: DRR-1
Existing Land Use: Vacant
Proposed Land Use: Single Family Residence
Parcel ID: 23-130-0037
Township, Range, Section: 7N 2E Sec 8

Adjacent Land Use

North: Resort
South: Resort
East: Resort
West: Resort

Staff Information

Report Presenter: Ronda Kippen
rkippen@co.weber.ut.us
801-399-8768
Report Reviewer: RG

Applicable Ordinances

- Weber County Land Use Code Title 108 (Standards) Chapter 14 (Hillside Development Review)
- Weber County Land Use Code Title 108 (Standards) Chapter 22 (Natural Hazards Areas)

Background

The subject lot is described as *All of Lot 70R, Summit Eden Phase 1C*. The subdivision was approved by the Weber County Commission on January 21, 2014 and was recorded with the Weber County Recorder's office on January 27, 2014 as entry# 2672945. The subject property has been identified as having an average slope in excess of 25%; therefore, the lot has been identified with an "R" which mandates a Hillside Review per the Uniform Land Use Code of Weber County (LUC) Title 108 Chapter 14, prior to the issuance of a land use and building permit.

GeoStrata has performed the required geologic and geotechnical investigation, as required in LUC Title 108 Chapter 22, to determine if there is a geologic hazard located on the site and to assess the subsurface soils in order to better design the home for slope stability and safety purposes. Information related to the construction of the dwelling including a site plan, and the geologic/geotechnical report, have been distributed to the Hillside Review Board for comment. The plans have been reviewed and approved and/or conditionally approved by all applicable review agencies.

Planning Division Review

The Planning Division Staff has determined that the requirements and standards provided by the Hillside Review Chapter have been met for the excavation and construction of the dwelling. The following submittals were required:

1. Proposed Building Plans including a site plan(see Exhibit A)
2. Geotechnical and Geologic Investigation Report (see Exhibit B)
3. Utah Pollution Discharge Elimination system (UPDES) Permit with Storm Water Pollution Prevention Plan (See Building Permit Application Packet for Approved UPDES and SWPPP)

Weber County Hillside Review Board comments

The Weber County Hillside Review Board, on this particular application, made comments related to the following:

Weber County Engineering Division: The Engineering Division granted approval on August 21, 2018. The approval is subject to the following conditions:

1. Follow all the recommendations of the geologic and geotechnical reports including to have a geotechnical engineer evaluate the suitability of the soils after the excavation has been dug.

Weber Fire District: The Fire district has granted approval on August 16, 2018 subject to the following conditions:

Water Supply:

S1. Fire Flow: Fire flow for the residential subdivision shall be 1000 GPM.

Fire Detection and Suppression Systems:

S2. Fire Suppression Systems: This home will require a fire suppression system.

S3. SEPERATE SUBMITAL NOTICE: Fire suppression systems and fire alarm systems require a separate submittal. A permit shall be applied for before any installation of either fire suppression system or fire alarm system. The permit shall be on the job site and be available for review by any inspector. The APPROVED STAMPED set of plans shall also be on the job site and available for review by any inspector. If there is no permit and/or approved stamped plans on the job site, there will be a Stop Work Order issued until both are on the job site. Submit plans at Weber Fire District, 2023 W. 1300 N. Farr West. (See IFC section 901.2 and 907.1.1).

S4. Exterior Notification Device: There shall be a weather proof horn/strobe device located on the street side of the building as approved by the Fire Prevention Division (coordinate with fire inspector regarding location). Such sprinkler waterflow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. (See IFC 903.4.2)

Fire Department Access:

S5. Provide a temporary address marker at the building site during construction. The address numbers, whether on the building or the sign, shall be legible font. (See IFC 505.1) (See IFC 505.1).

S6. Fire access roads for this project shall be completed and approved prior to any combustible construction. Temporary roads shall meet the same requirements for height, width, and imposed loads as permanent roads (See IFC section 503.2.3; 3310; and D102.1).

Building Comments:

S7. There shall be an address on the building or on a sign visible from the street. If the address is on a sign-monument the sign-monument shall meets the requirements of the appropriate city/county planning department. The address numbers, whether on the building or the sign, shall be Arabic font with a minimum of 4” (four inches) in height with a .5” (half inch) stroke and be in contrasting colors from the background. All suites shall have number/letter designation on the doors meeting the same size requirements and contrasting color. (See IFC 505.1)

General Comments:

G1. Fire Access roads to any property shall have a minimum clear width of 20 feet (face of curb to face of curb) and a vertical clearance of 13 foot 6 inches and shall be capable of supporting a 75,000-pound load. Roads that are less than 26 feet in width shall be posted with “NO PARKING FIRE LANE” on both sides of the roadway. Roads more than 26 but less than 32 feet in width shall be posted on one side of the roadway. (Roadways and signage shall comply with appendix D of the 2015 International Fire Code as adopted by Weber Fire District).

G2. Roads shall have a maximum grade of 10% unless specifically approved. Approval requires both the Fire Marshal’s approval and Weber County Engineering approval (See IFC section 503.2.7; D103.2; and Weber County ordinances).

G3. Radius on all corners shall be a minimum of 28'-0". Roads and driveways shall also comply with City/County standards as applicable. In cases of differing requirements, contact the Fire Marshal for clarification.

G4. Roads and bridges shall be designed, constructed, and maintained to support an imposed load of 75,000 lbs. (See IFC section D102.1)

G5. All roads shall be designed, constructed, surfaced, and maintained to provide an all-weather driving surface. All weather surface may include road-base material however, the roadway must be maintained open and accessible year-round (See IFC section 503.2.3 and D102.1).

Weber County Building Inspection Department: The Building Inspection Office granted approval on August 21, 2018 based on the condition that the Geotechnical Engineer must approve the placement of footings.

Weber-Morgan Health Department: The Health Department has verified that that they will not impose any requirements or conditions for this application due to the proposed residence connecting to the Powder Mountain Water and Sewer District for culinary and wastewater services.

Weber County Planning Division: The Planning Division has granted approval subject to the applicant complying with all Board requirements and conditions. This approval is also subject to the applicant strictly adhering to the recommendations outlined in the geologic and geotechnical investigation report dated July 11, 2018 provided by GeoStrata (Geologic Job No. 594-005 and Geotechnical Job No. 594-004) including the following recommendations:

1. The recommendations contained in the geotechnical report should be incorporated into the grading and drainage design for the lot. Saturated soil conditions should be considered in maintaining the slope stability.
2. All recommendations to reduce the risks of slope stability hazards contained in the site specific geotechnical report should be followed and incorporated in the design of the site.
3. Because the landslide risk is rated low to moderate on the property, a GeoStrata geologist or geotechnical engineer must observe the foundation excavations to confirm the absence of landslide deposits.
4. A GeoStrata representative shall observe all foundation soils in footing excavations prior to placing reinforcing steel or concrete.
5. Due to the possibility of moisture reaching the foundation elements during spring runoff, it is recommended that a foundation drain be constructed around the proposed residence.

Planning Division Recommendations

Based on site inspections and review agency comments, the Planning Division Staff has determined that it is necessary to impose additional requirements and conditions as part of approving HSR 2018-05. The recommendation for approval is subject to adherence to all review agencies conditions and based on the following conditions:

1. As a condition it is understood, by the applicant, the geo-technical engineer and engineering geologist that if any geologic hazards are revealed during the excavation and construction phase of the dwelling, work on Lot 70R in the Summit Eden Phase 1C will cease pending the development of appropriate mitigation measures and subsequent approval by the County.
2. Any landscaping must be approved by Weber County after receiving a recommendation from GeoStrata prior to the planting or installation on the site due to a landscaping plan not being provided as part of this application.

The recommendation is based on the following findings:

1. The application was submitted and with the required conditions, has been deemed complete.
2. The requirements and standards found in the Hillside Development Review Procedures and Standards Chapter have been met or will be met during the excavation and construction phase of the dwelling.
3. The Hillside Review Board members reviewed the application individually and have provided their comments.
4. The applicant has met or will meet, as part of the building permit process and/or during the excavation and construction phase of the dwelling, the requirements and conditions set forth by the Hillside Review Board.
5. The Planning Division Staff has determined that the proposed improvements have been sited within the required setbacks for the DRR-1 zone with the exception of the driveway and retaining wall(s).

Administrative Approval

Administrative approval of Lot 70R in the Summit Eden Phase 1C Hillside Review (HRS 2018-05) is hereby granted based upon its compliance with the Weber County Land Use Code. This approval is subject to the requirements of applicable review agencies and is based on the recommendations, conditions and findings listed in this staff report.

Date of Administrative Approval: 8/24/18

Rick Grover
Weber County Planning Director

Exhibits

A. Proposed Building Plans including site plan, grading plan and landscape plan
B. Geotechnical and Geologic Investigation Report

Map 1

Exhibit A: Building Plans

KINGSBURY AND CHESSON
Powder Mountain, Lot # 70

8492 E. Spring Park,
Weber County, Utah

Build by:
Scandinavian LLC

DRAWING INDEX:
1.0 COVER SHEET
1.1 SITE PLAN
2.1 MAIN LEVEL FLOOR PLAN
  LOWER LEVEL FLOOR PLAN
2.2 UPPER LEVEL FLOOR PLAN
  ROOF LEVEL FLOOR PLAN
2.5 AREA CALCULATION PLANS
3.1 BUILDING ELEVATIONS
4.1 BUILDING SECTION
S0 STRUCTURAL NOTES
S1 FOOTING AND FOUNDATION PLAN
  LOWER LEVEL FLOOR FRAMING PLAN
S2 MAIN LEVEL FLOOR FRAMING PLAN
S3 UPPER LEVEL FLOOR FRAMING PLAN
  ROOF FRAMING PLAN
S300 FOUNDATION DETAILS
S301–S303 DETAILS
E1 ELECTRICAL PLAN
E2 ELECTRICAL PLAN
S304 SCANDINAVIAN WALL SECTION (TYP.)

DEFERRED SUBMITTAL ITEMS

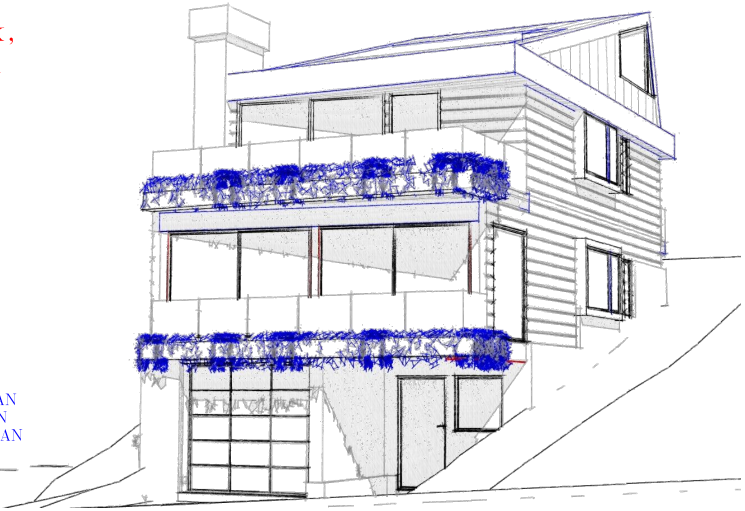
BUILDING CODES USED FOR DESIGN:
IRC 2015 AS AMENDED BY THE STATE OF UTAH.

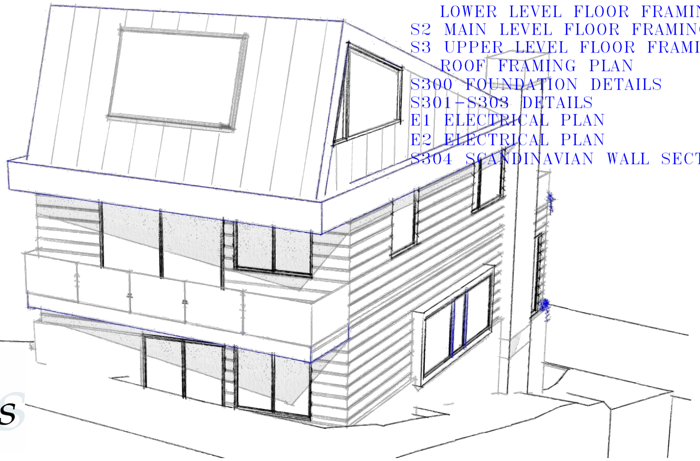
-FIRE SPRINKLER SYSTEM

-RADIANT HEATING SYSTEM

-FIREPLACE PRODUCT INFORMATION

-AIR LEAKAGE TEST AS PERFORMANCE METHOD (BLOWER DOOR TEST) CODE N1102.4.1.2





Building
dreams into
legacies

SCANDINAVIA N
LLC

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

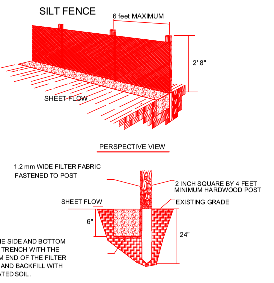
A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale
Title/No.
COVER SHEET
BUILDER/ DEALER'S APPROVAL :
Signature and Date

1.0

Exhibit A: Building Plans

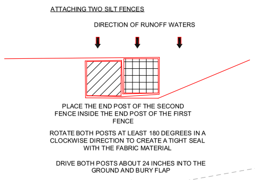


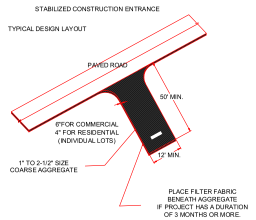
INSTALLATION:

1. Where possible, layout the silt fence 5 to 10 feet beyond the toe of slope.
2. Align the fence along the contour as close as possible.
3. When excavating the trench, use machinery that will produce no more than the desired dimension.
4. Place posts 6 foot on center along contour (or use preassembled unit) and drive 2 feet (min.) into ground. Excavate an anchor trench (8 inches wide and 8 inches deep) immediately up-gradient of posts.
5. Cut fabric to required width, unroll along length of barrier and drape over barrier. Secure fabric to, stakes with staples, or similar, with trailing edge extending into anchor trench.
6. Backfill trench over filter fabric to anchor.

MAINTENANCE :

1. Inspect immediately after any rainfall and at least daily during prolonged rainfall.
2. Look for runoff bypassing ends of barriers or undercutting fence (repair immediately).
3. Repair or replace damaged areas of the fence and remove accumulated sediment.
4. Re-anchor fence as necessary to prevent shortcutting.
5. Remove accumulated sediment when it reaches ½ the height of the fence.



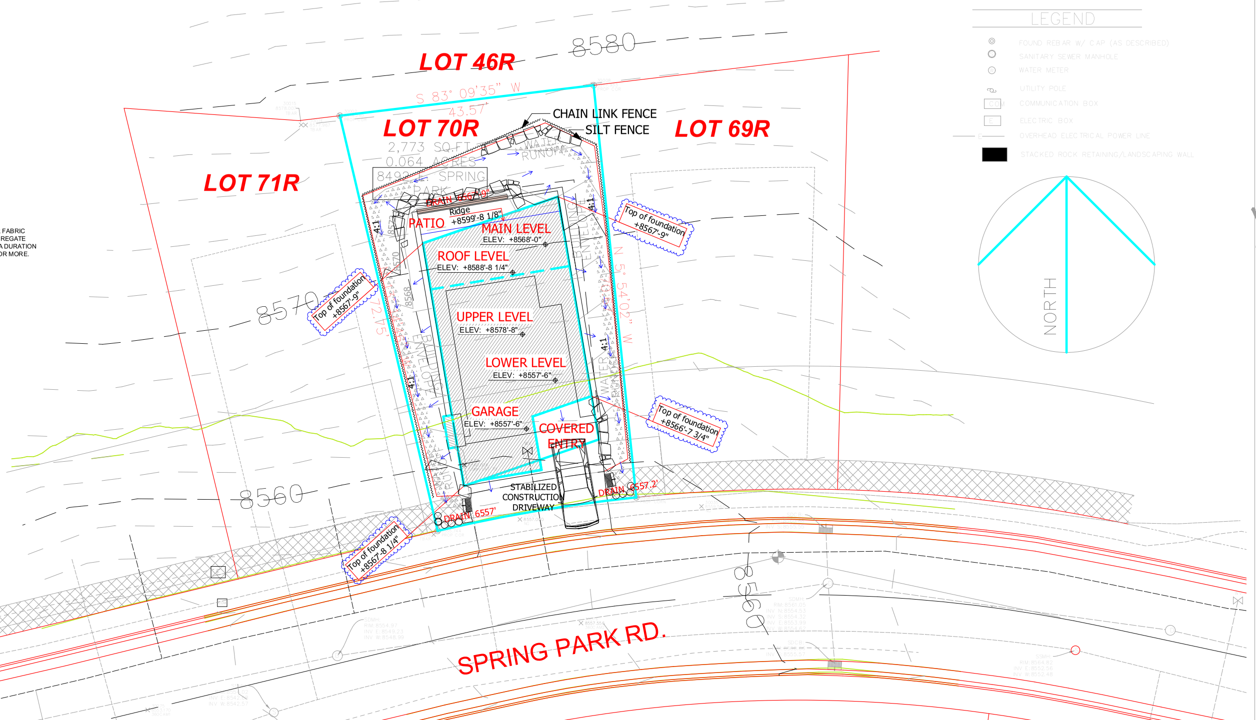


INSTALLATION:

1. Install at any point of ingress or egress at a construction site where adjacent traveled way is paved.
2. Clear and grub area and grade to provide slope shown for driveway, or access/intersection. If adjacent to waterway, use a maximum slope of 2%.
3. Compact subgrade and place filter fabric if required.
4. Place coarse aggregate, 1 to 2 ½ inches size, to a minimum depth of 6 inches for commercial projects, and 4 inches for residential projects.

MAINTENANCE:

1. Inspect daily for loss of gravel or sediment buildup.
2. Inspect adjacent roadway for sediment deposit and clean by sweeping or shoveling.
3. Repair entrance and replace gravel as required to maintain control in good working condition.
4. Expand stabilized area as required to accommodate traffic, and off site street parking and prevent erosion at driveway.

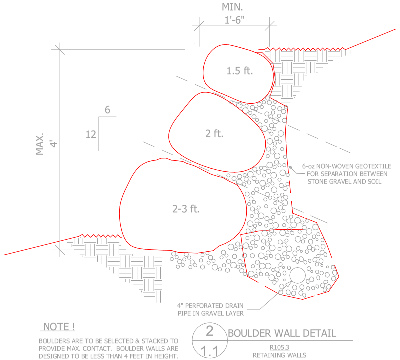


LOT 80

INSPECTION	DESCRIPTION/REQUIREMENTS	CONTACT
DRIVEWAY/ SITE STACKING	REQUIRED PRIOR TO ISSUANCE OF A BUILDING PERMIT. LOCATE/STAKE THE DRIVEWAY AT THE STREET AND AT THE ROAD RIGHT OF WAY/PROPERTY LINE AND LOCATE/STAKE ALL PROPERTY CORNERS WITH A 4 FOOT STEEL FENCE POST.	ENGINEERING
ROUGH GRADING	REQUIRED PRIOR TO SCHEDULING A FOOTING INSPECTION. SITE EROSION CONTROL MEASURES MUST BE INSTALLED AND DRIVEWAY MUST BE ROUGHLY GRADED ACCORDING TO PLAN.	ENGINEERING
FOOTING	SCHEDULE AFTER STEEL IS PLACE AND BEFORE THE CONCRETE IS POURED.	BUILDING
FOUNDATION	SCHEDULE AFTER STEEL IS IN PLACE IN THE FORMS AND BEFORE CONCRETE IN PLACED.	BUILDING
UNDER SLAB PLUMBING & HEATING	BEFORE CONCRETE IS POURED OR PLUMBING HAS BEEN BACKFILLED.	BUILDING
CERTIFICATE OF ELEVATION AND/OR SURVEY	PREFORMED BY A LICENCED SURVEYOR. REQUIRED PRIOR TO SCHEDULING A FLOOR FRAMING INSPECTION. SEE REQUIREMENTS BELOW.	BUILDING
FLOOR FRAMING INSPECTION	REQUIRED PRIOR TO PLACING FLOOR SHEETING AND INCLUDES FOOTING DRAIN INSPECTION.	BUILDING
SHEAR WALL	AFTER THE BUILING IS UP TO 'THE SQUARE' AND ALL SHEAR WALLS HAVE BEEN NAILED AND ALL THE TIE DOWNS AND SHEAR WALL CONNECTIONS HAVE BEEN INSTALLED.	BUILDING
FIRE SPRINKLERS	REQUIRED PRIOR TO FOUR-WAY INSPECTION, WHEN REQUIRED BY THE LOCAL FIRE DISTRICT.	BUILDING
FOUR-WAY	THIS INSPECTION IS PERFORMED AFTER ALL ROUGH ELECTRICAL, BLUMBING, AND MECHANICAL HAS BEEN INSTALLED. ALL FRAMING IS COMPLETE, SHEAR WALLS PREVIOUSLY INSPECTED, AND TRUSS SPECIFICATIONS ARE ON THE JOB FOR THE INSPECTOR TO READ. BLUMBING SHALL HAVE EITHER AN AIR OR WATER PRESSURE TEST ON THEM WHEN THE INSPECTOR ARRIVES.	BUILDING
WEATHER BARRIER/STUCC O LATH	WEATHER BARRIER SHALL BE INSPECTED PRIOR TO APPLYING VENEER. APPROVED STUCCO I.C.C. RESEARCH REPORTS ON SITE.	BUILDING

INSPECTION	DESCRIPTION/REQUIREMENTS	CONTACT
GAS METER SET	REQUIRED BEFORE GAS METER CLEARANCE IS GIVEN TO QUESTAR.	BUILDING
MASONRY WALL/BOND BEAM INSULATION	STEEL IN MASONRY AND BEFORE CONCRETE/GROUT IS POURED. PRE SHEETROCK INSULATION CERTIFICATE REQUIRED.	BUILDING BUILDING
DRYWALL NAILING	THIS IS DONE BEFORE DRYWALL IS TAPED.	BUILDING
POWER TO PANEL	AFTER DRYWALL INSPECTION HAS PASSED AND PERMANENT ROOF INSTALLED.	BUILDING
DRIVEWAY PRE-SURFACING	SITE EROSION CONTROL MEASURES MUST BE INSTALLED AND DRIVEWAY GRADED TO IT'S FINAL CONFIGURATION.	ENGINEERING
FINAL DRIVEWAY AND SITE INSPECTION	REQUIRED PRIOR TO CERTIFICATE OF OCCUPANCY AND/OR BOND RELEASE. DRIVEWAY MUST BE SURFACED AND SITE MUST BE REVEGETATED (INSPECTIONS MAY BE SCHEDULE SEPARATELY).	ENGINEERING
FLOOD PLAIN ELEVATION CERTIFICATE	FEMA ELEVATION CERTIFICATE (IF APPLICABLE) REQUIRED PRIOR TO CERTIFICATE OF OCCUPANCY. FORM MUST BE FILED WITH FEMA AND A COPY PROVIDED TO THE ENGINEERING DEPARTMENT.	ENGINEERING
FINAL	ALL WORK IS DONE AND BUILDING COMPLETE. FINAL CLEARANCES FROM THE WASTE WATER DISTRICT FOR SEWER, COUNTY HEALTH DEPARTMENT FOR SEPTIC, AND FIRE DISTRICT FOR SPRINKLER SYSTEMS MUST BE ON THE PROJECT FOR THIS INSPECTION. REQUIRED FOR CERTIFICATE OF OCCUPANCY.	BUILDING
CERTIFICATE OF OCCUPANCY	REQUIRED PRIOR TO ANYONE OCCUPYING THE STRUCTURE. A CERTIFICATE OF OCCUPANCY WILL BE ISSUED ONCE THE FINAL CLEARANCES HAVE BEEN OBTAINED BY THE BUILDER AND BROUGHT TO THE BUILING DEPARTMENT'S OFFICE IN COALVILLE. 1) SNYDERVILLE BASIN RESIDENTIAL: FINAL FROM BUILDING DEPARTMENT, FINAL FROM ENGINEERING DEPARTMENT, FINAL LETTER FROM SNYDERVILLE BASIN WATER RECLAMATION DISTRICT, FINAL WATER CONCURRENCY LETTER FROM APPROPRIATE WATER COMPANY, FINAL FROM PARK CITY FIRE DISTRICT (IN REQUIRED SUBDIVISIONS). 2) EASTERN SUMMIT COUNTY: FINAL FROM BUILDINGDEPARTMENT, FINAL FROM ENGINEERING DEPARTMENT, FINAL FROM FIRE DISTRICT AND FINAL FROM HEALTH DEPARTMENT.	BUILDING

R105.31
>4" RETAINING WALLS, SWIMMING POOLS, SOLAR AND GEO-THERMAL HEATING SYSTEMS, AND PHOTO-VOLTAIC AND WIND GENERATED ELECTRICAL SYSTEMS REQUIRE SEPARATE PERMITS. SEPARATE PLANS, SPECIFICATIONS, AND APPLICATIONS ARE TO BE SUBMITTED AND REVIEWED PRIOR TO ISSUANCE OF THESE PERMITS.



2 BOULDER WALL DETAIL
1.1

R105.1
RETAINING WALLS
(>4' OR SUPPORTING A SURCHARGE)
REQUIRE SEPARATE PERMITS.

NOTE !
BOULDERS ARE TO BE SELECTED & STACKED TO PROVIDE MAX. CONTACT. BOULDER WALLS ARE DESIGNED TO BE LESS THAN 4 FEET IN HEIGHT. IF THEY EXCEED 4 FEET, THEY WILL BE ENGINEERED. 12" - 18" MIN. ROUND BOULDER SIZE.

PROFESSIONAL ENGINEER
08/07/2018
10367643
ALEX HAWKINS
STATE OF UTAH

Scandinavian
BUILDING SYSTEM

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

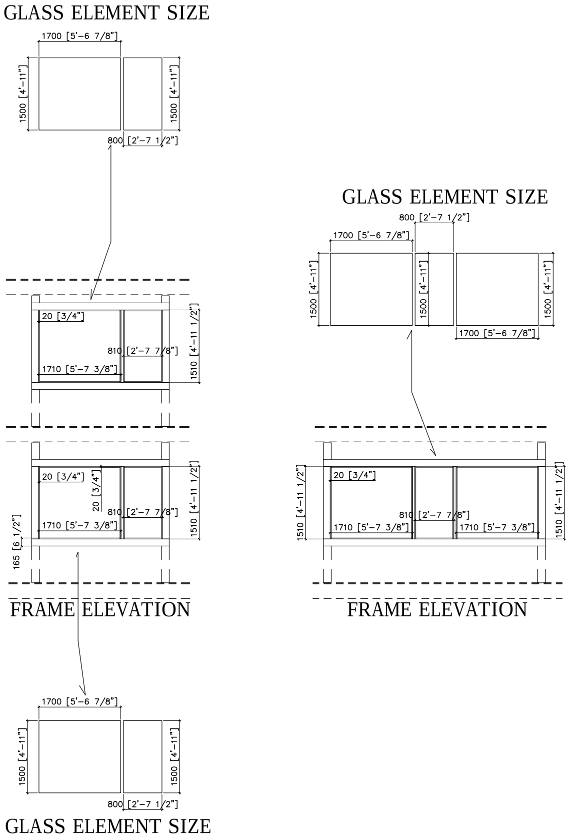
A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1" = 10' -0"
Title/No. SITE PLAN
BUILDER/ DEALER'S APPROVAL :
Signature and Date

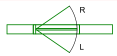
1.1

Exhibit A: Building Plans



1 ELEMENT FRAME ELEVATIONS
2.0 SCALE: 1/4" = 1'-0"

OPENING LEGEND FOR: SCANDINAVIAN WINDOWS & DOOR ONLY



TRANSLATE CODE:
L - LEFT HANDED
R - RIGHT HANDED
B - BOTTOM HINGED WINDOW
T - TOP HINGED WINDOW
FIXED - CUSTOM WINDOW (FIXED)
EGRESS - MIN. OPENING SIZE 20"x24" AND MIN. AREA 5,7 SQFT

SCANDINAVIAN WINDOW SCHEDULE

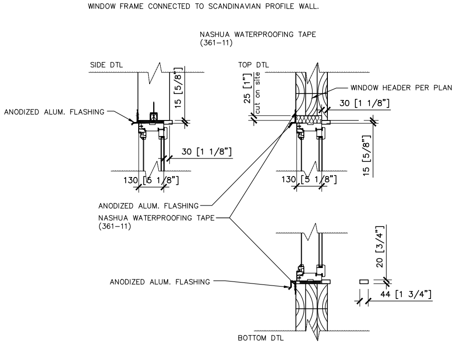
ID	TYPE	Size (cm)	Size (inches)	Opening type	Wall type	Wall thickness	Flashing	Screen	Notes	Quantity
W1	MSE131A	180 x 150	70,9 x 59,1	L+R	164			90x150	tempered	2
W2	MSE131A	60 x 150	23,6 x 59,1	(1)L, (2)R	164			60x150		3
W3	MSE131A	110 x 120	43,3 x 47,2	L	195			110x120	tempered	1
TOTAL										6

SCANDINAVIAN WINDOW SCHEDULE

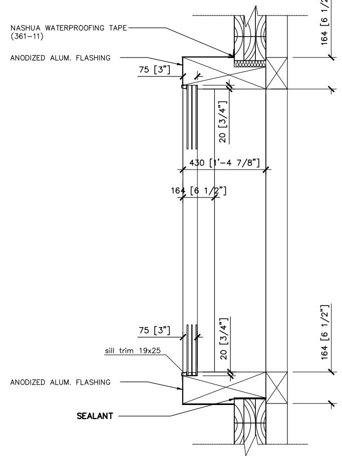
ID	TYPE	Size (cm)	Size (inches)	Opening type	Wall type	Wall thickness	Flashing	Screen	Notes	Quantity
FW1	EK131A	170 x 240	66,9 x 94,5	FIXED	164				laminated	1
FW2	EK131A	190 x 240	74,8 x 94,5	FIXED	164				laminated	1
FW3	EK131A	160 x 150	63,0 x 59,1	FIXED	164					1
FW4	EK131A	140 x 150	55,1 x 59,1	FIXED	164				tempered	1
FW5	EK131A	120 x 230	47,2 x 90,6	FIXED	164				tempered	1
FW6	EK131A	310 x 120	122,0 x 47,2	FIXED	164				tempered	1
FW7	EK131A	260 x 200	102,4 x 78,7	FIXED	164				2590x(1190/2000)	1
FW8	EK131A	63 x 200	24,8 x 78,7	FIXED	164				625x(2005/0)	1
FW9	EK131A	310 x 210	122,0 x 82,7	FIXED	164					1
FW10	EK131A	63 x 200	24,8 x 78,7	FIXED	164				625x(0/2005)	1
FW11	EK131A	260 x 200	102,4 x 78,7	FIXED	164				2590x(2000/1190)	1
TOTAL										11

SCANDINAVIAN DOOR SCHEDULE

ID	TYPE	Size (cm)	Size (inches)	Opening type	Wall type	Wall thickness	Flashing	Screen	Notes	Quantity
SD1	SD	330 x 230	129,9 x 90,6	(1)L, (1)R	195				tempered (size? - TF-FRAME)	2
SD2	SD	200 x 240	78,7 x 94,5	R	195				tempered	1
SD3	SD	360 x 230	141,7 x 90,6	R	195				tempered	1
SD4	SD	300 x 230	118,1 x 90,6	R	195				tempered	1
D1	IO	90 x 200	35,4 x 78,7	R	195				tempered, (opening inside)	1
TOTAL										6



2 TYP. WINDOW DTL#1
2.0 SCALE: 1" = 1'-0"



3 TYP. GLASS ELEMENT DTL
2.0 SCALE: 1" = 1'-0"

SCANDINAVIA N
LLC

ARCHITECTURAL OFFICE
Company Name
Scandinavian LLC
Address
6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale
Title/No.
WINDOW & DOOR SCHEDULE
BUILDER/ DEALER'S APPROVAL :
Signature and Date

2.0

Exhibit A: Building Plans

NOTE:
ROOM AREAS SHOWN BELOW
ROOM NAMES ARE APPROXIMATE
ALL FRAMING STUDS ARE 16"

WALL LEGEND:

WALL 1: 6 1/2"
- RECTANGULAR LAMINATED PROFILE WALL 6 1/2" [164x260]

WALL 2: 8 5/8"
- RECTANGULAR LAMINATED PROFILE WALL 6 1/2"
-2"x2"FURRING WALL @16"O.C.
* SLIDING CONNECTORS, (INSULATION)
-GYP. BOARD 1/2"
(bath) -DAMP-PROOF COURSE
-TILE

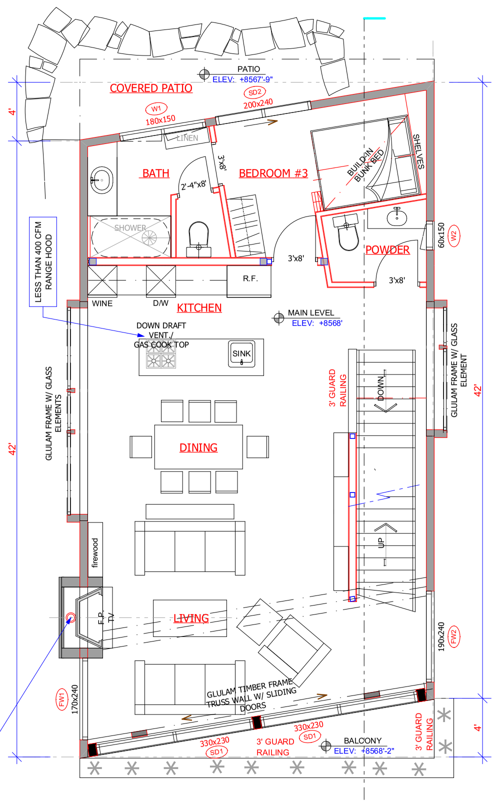
WALL 3: 7 5/8"
-3 1/2" CONCRETE VENEER or
3/4" CEDAR SHIPLAP CLADDING
or WEATHERED STEEL PANELS
-TYVEK
-PLYWOOD 7/16"
- 2"x6" STUD FRAMING @16"O.C.
*R-19 BATT INSULATION
-MOISTURE BARRIER
-GYP. BOARD 1/2"

WALL 4: 1'-2 1/2"
-10" CONCRETE WALL
-3/4" FURRING
- 2"x4" FURRING WALL @16"O.C.
*BATT INSULATION
-MOISTURE BARRIER
-1/2" GYP. BOARD

WALL 5: 4 5/8"
-GYP. BOARD 1/2"
- 2"x4" STUD FRAMING @16"O.C.
-GYP. BOARD 1/2"
(bath) -DAMP-PROOF COURSE
-TILE

WALL 6: 6 3/4"
-GYP. BOARD 1/2"
- 2"x6" STUD FRAMING @16"O.C.
-GYP. BOARD 1/2"

FACTORY-BUILD CHIMNEY;
IF THE CHIMNEY WILL HAVE AN OFFSET
CHIMNEY MUST BE AT AN ANGLE
NOT MORE THAN 30 DEGREES
FROM THE VERTICAL AND
THE ASSEMBLY WILL NOT
CONTAIN MORE THAN 4 ELBOWS.



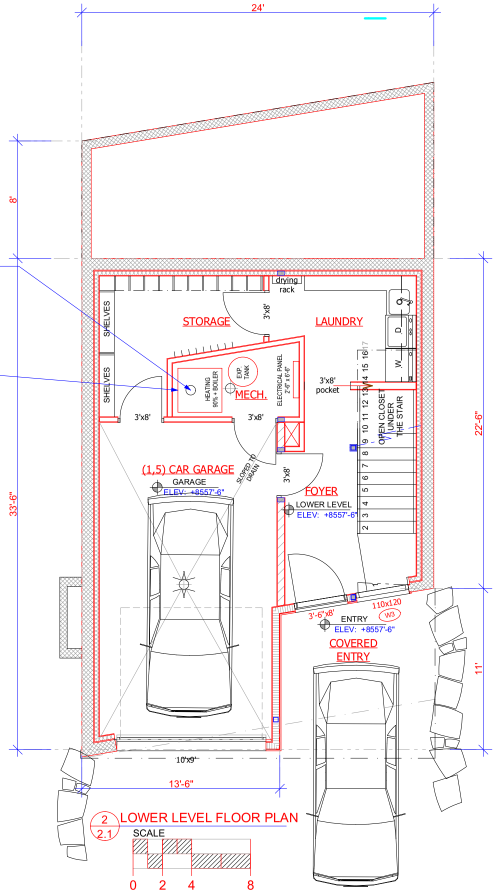
1 / 2.1 MAIN LEVEL FLOOR PLAN
SCALE
0 2 4 8

AREA CALCULATION

MAIN LEVEL FLOOR PLAN	1 019 sqft
LOWER LEVEL FLOOR PLAN	246 sqft
MECHANICAL & STORAGE AREA	151 sqft
TOTAL	397 sqft
1,5 CAR GARAGES	302 sqft
UPPER LEVEL FLOOR PLAN	766 sqft
ROOF LEVEL ATRIUM	281 sqft
TOTAL HEATED AREA	2 463 sqft
UNHEATED AREAS	302 sqft
TOTAL GRAND AREA	2 765 sqft

WHERE OPEN COMBUSTION AIR DUCTS PROVIDE COMBUSTION AIR TO OPEN COMBUSTION FUEL BURNING APPLIANCES THE DUCT AND APPLIANCE SHALL BE LOCATED OUTSIDE OF THE BUILDING THERMAL ENVELOPE OR ENCLOSED AND ISOLATED FROM THE THERMAL ENVELOPE. SUCH ROOMS SHALL BE SEALED AND INSULATED. THE DOOR INTO THE ROOM SHALL BE FULLY GASKETED.

DUCT LENGTH / MECH. NOTES M1506.2



2 / 2.1 LOWER LEVEL FLOOR PLAN
SCALE
0 2 4 8

SCANDINAVIAN LLC

ARCHITECTURAL OFFICE
Company Name
Scandinavian LLC
Address
6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

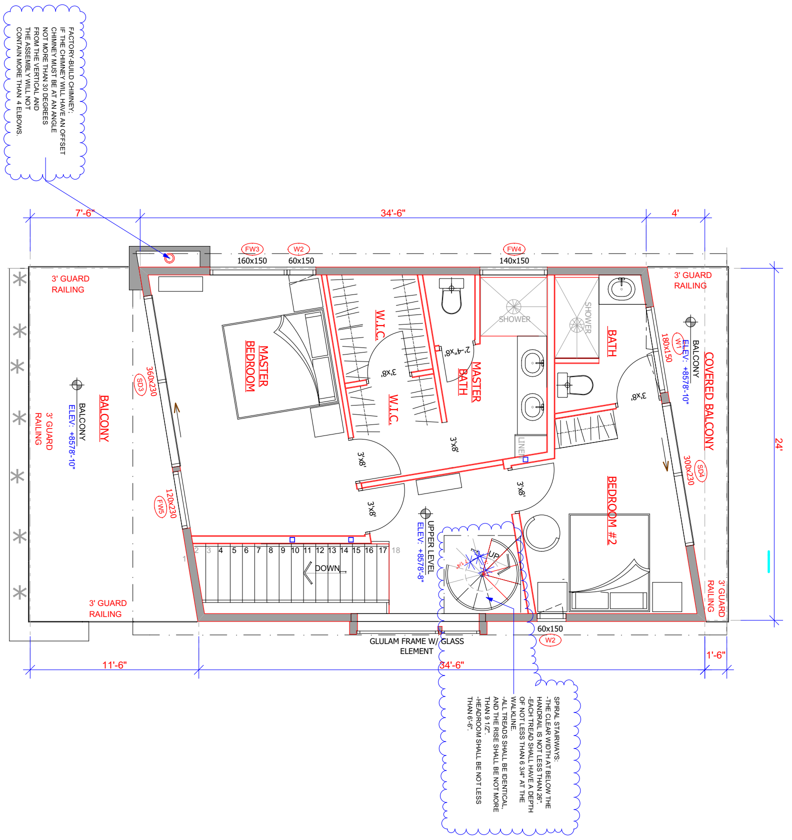
A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1/4" = 1' -0"
Title/No.
MAIN & LOWER
LEVEL FLOORS
BUILDER/ DEALER'S APPROVAL :
Signature and Date

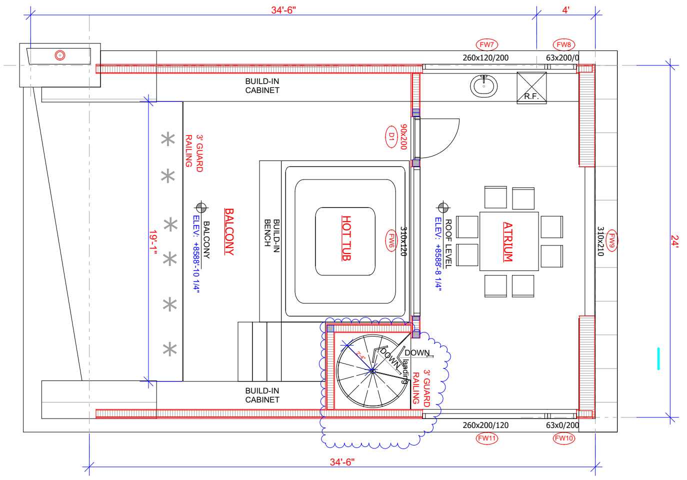
2.1

Exhibit A: Building Plans



1 UPPER LEVEL FLOOR PLAN 2.2

SCALE 0 2 4 8



2 ROOF LEVEL FLOOR PLAN 2.2

SCALE 0 2 4 8

2.2

UPPER & ROOF LEVEL FLOORS

Title/No.
Scale 1/4" = 1'-0"
Drawing Date 06-21-2018
BUILDER/ DEALER'S APPROVAL :
Signature and Date

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

A New Residence:

BLAKE KINGSBURY AND MERRIT CHESSON

Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

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SCANDINAVIAN LLC

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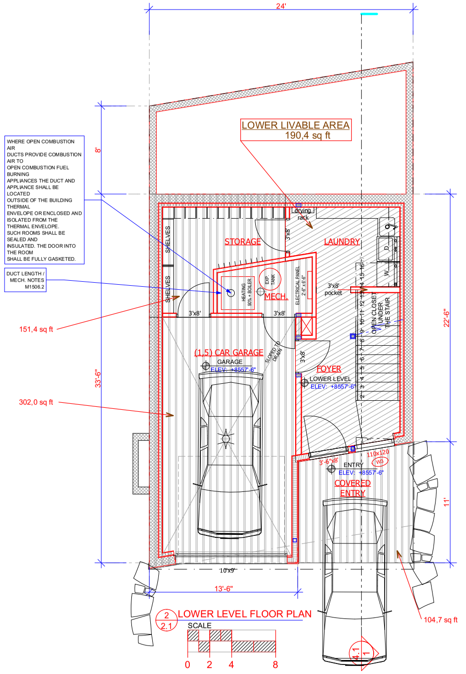

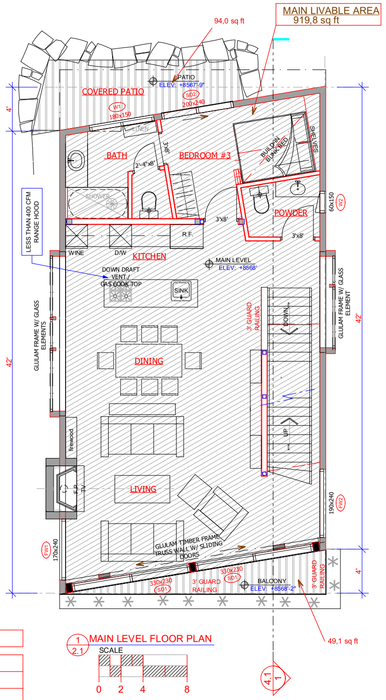

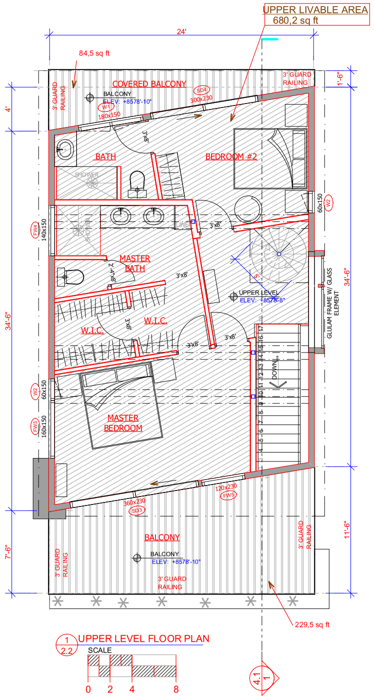

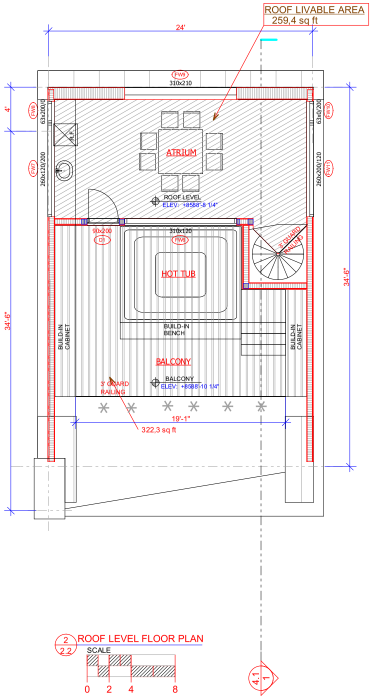

NET LIVABLE AREA CALCULATION	
LOWER LEVEL LIVABLE AREA	190 sqft
MAIN LEVEL LIVABLE AREA	920 sqft
UPPER LEVEL LIVABLE AREA	680 sqft
ROOF LEVEL LIVABLE AREA	259 sqft
NET TOTAL LIVABLE AREA	2 049 sqft

GROSS TOTAL AREA CALCULATION	
LOWER LEVEL COVERED ENTRY	105 sqft
MAIN LEVEL BALCONY AND PATIO	143 sqft
UPPER LEVEL BALCONIES	314 sqft
ROOF LEVEL BALCONY	322 sqft
ENCLOSED GARAGE	302 sqft
ENCLOSED LOWER LEVEL FLOOR PLAN	246 sqft
ENCLOSED MAIN LEVEL FLOOR PLAN	1 019sqft
ENCLOSED UPPER LEVEL FLOOR PLAN	766 sqft
ENCLOSED ROOF LEVEL FLOOR PLAN	281 sqft
ENCLOSED MECHANICAL / STORAGE	151 sqft
ENCLOSED TOTAL HEATED AREA	2 463 sqft
GROSS TOTAL AREA	3 649 sqft

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name: Scandinavian LLC
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A New Residence:
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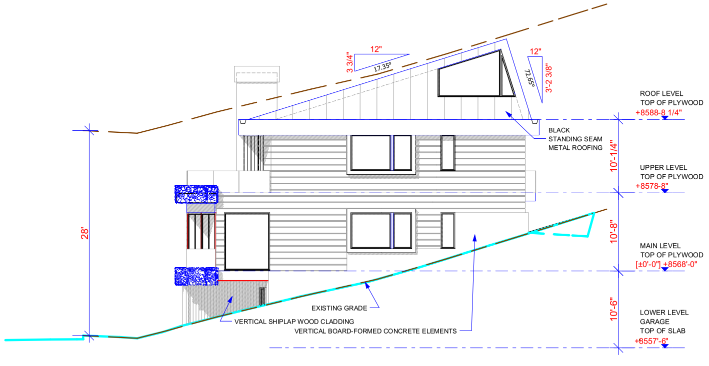
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

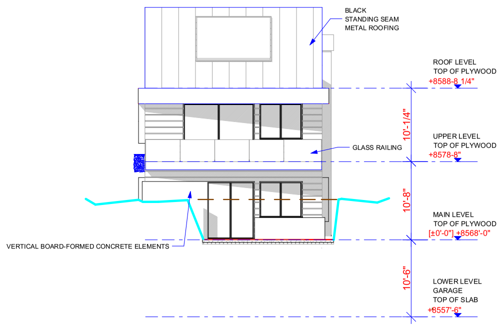
Drawing Date: 06-21-2018
Scale: 3/16" = 1' -0"
Title/No.: AREA CALCULATION
BUILDER/ DEALER'S APPROVAL :
Signature and Date

2.5

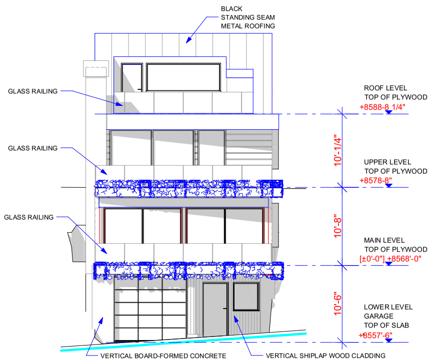
Exhibit A: Building Plans



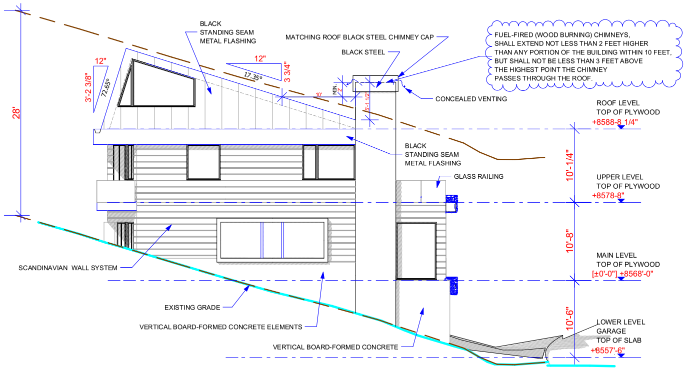
4
3.1
EAST BUILDING ELEVATION
SCALE
0 2 4 8



3
3.1
NORTH BUILDING ELEVATION
SCALE
0 2 4 8



1
3.1
SOUTH BUILDING ELEVATION
SCALE
0 2 4 8



2
3.1
WEST BUILDING ELEVATION
SCALE
0 2 4 8

BUILDING SYSTEM
Scandinavian
Park City, Utah

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name
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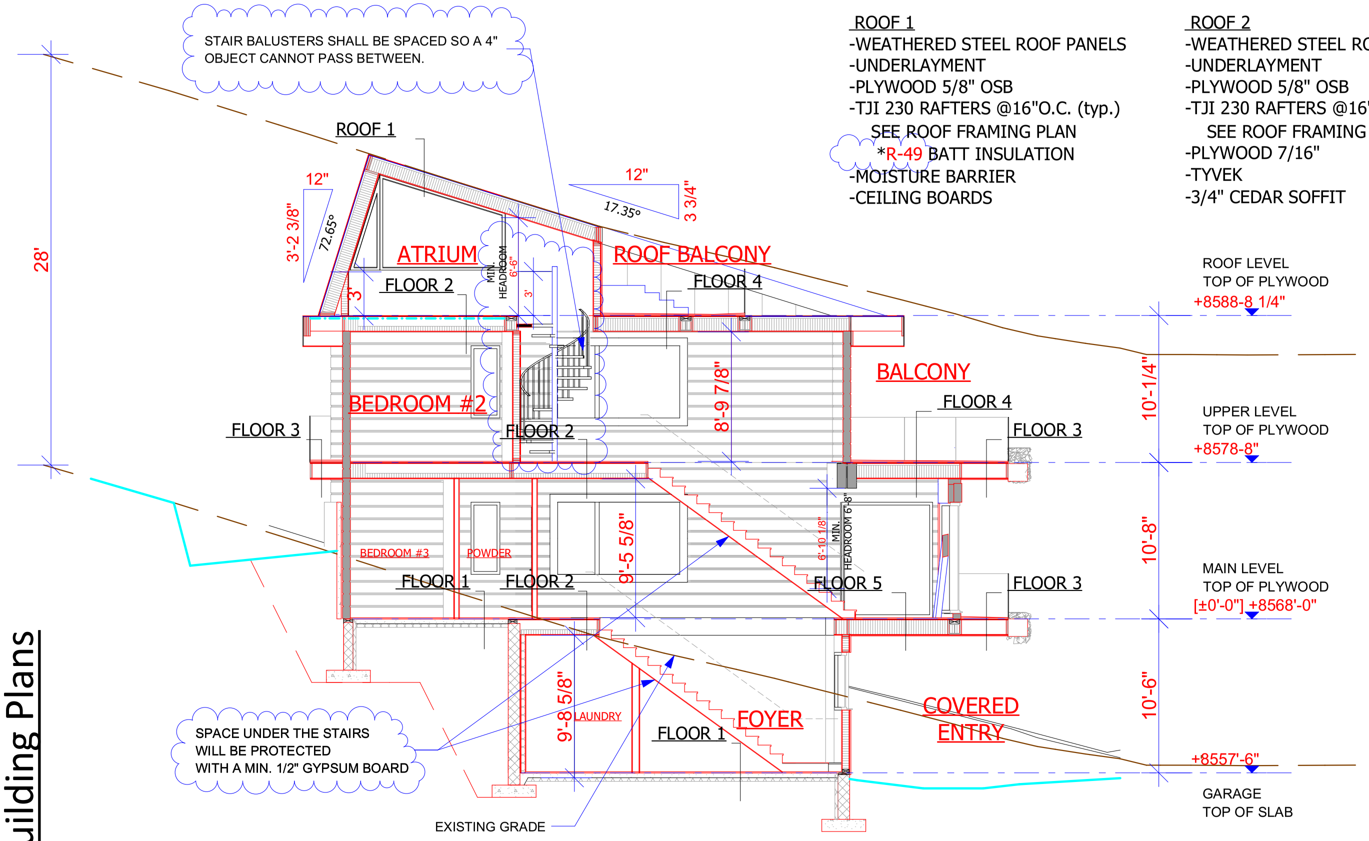
BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1/8" = 1' -0"
Title/No.
BUILDING
ELEVATIONS
BUILDER/ DEALER'S APPROVAL :
Signature and Date

3.1

Exhibit A: Building Plans



1
4.1
BUILDING SECTION
SCALE
0 2 4 8

ROOF 1
- -WEATHERED STEEL ROOF PANELS
- -UNDERLAYMENT
- -PLYWOOD 5/8" OSB
- -TJI 230 RAFTERS @16"O.C. (typ.)
  SEE ROOF FRAMING PLAN
- *R-49 BATT INSULATION
- -MOISTURE BARRIER
- -CEILING BOARDS

ROOF 2
- -WEATHERED STEEL ROOF PANELS
- -UNDERLAYMENT
- -PLYWOOD 5/8" OSB
- -TJI 230 RAFTERS @16"O.C. (typ.)
  SEE ROOF FRAMING PLAN
- -PLYWOOD 7/16"
- -TYVEK
- -3/4" CEDAR SOFFIT

FLOOR 1
- -FLOORING
- -4" REINFORCED CONC. SLAB
  (WELDED WIRE FABRIC)
- -6-MIL POLYETHENE VAPOR BARRIER
- -RIGID INSULATION 2" MINIMUM
- -COMPACTED GRANUAL BASE COURSE

FLOOR 2
- -FLOORING
- -3/4" OSB PLYWOOD SUBFLOOR
- -TJI 230 JOISTS @16"O.C. (typ.)
  * SOUND INSULATION
- -CEILING BOARDS

FLOOR 3
- -1/4" TILE FLOORING
- -1/4" WONDER BOARD & WATERPROOFING MEMBRANE
- -3/4" OSB PLYWOOD SUBFLOOR
- -TJI 230 JOISTS @16"O.C. (typ.)
- -PLYWOOD 7/16"
- -TYVEK
- -3/4" CEDAR SOFFIT

FLOOR 4
- -1/4" TILE FLOORING
- -1/4" WONDER BOARD & WATERPROOFING MEMBRANE
- -3/4" OSB PLYWOOD SUBFLOOR
- -TJI 230 JOISTS @16"O.C. (typ.)
  SEE ROOF FRAMING PLAN
- *R-49 BATT INSULATION
- -MOISTURE BARRIER
- -CEILING BOARDS

FLOOR 5
- -FLOORING
- -3/4" OSB PLYWOOD SUBFLOOR
- -TJI 230 JOISTS @16"O.C. (typ.)
  SEE ROOF FRAMING PLAN
- *R-49 BATT INSULATION
- -PLYWOOD 7/16"
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- -3/4" CEDAR SOFFIT

SCANDINAVIAN
LLC

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Park City, Utah 84098
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Fax

Drawing Date: 06-21-2018
Scale: 1/4" = 1' -0"
Title/No.: BUILDING SECTION
BUILDER/ DEALER'S APPROVAL :
Signature and Date

4.1

Exhibit A: Building Plans

STRUCTURAL GENERAL NOTES

(SOIL REPORT PREPARED BY GEOSTRATA ON 7/11/2018, GEOSTRATA JOB # 594-004))

DESIGN CRITERIA:

1. BUILDING CODES USED FOR DESIGN:
   A. IBC/IRC 2015 AS AMENDED BY THE STATE OF UTAH.
2. DESIGN LOADS:
   A. DESIGN LIVE LOADS:

FLOORS	40 PSF
ROOF SNOW LOAD	188 PSF (DRIFTING PER ASCE 7-10)

B. WIND LOADS:

BASIC WIND SPEED	115
IMPORTANCE FACTOR	1.0
EXPOSURE COEFFICIENT	C

C. SEISMIC CRITERIA MAIN STRUCTURE: (IBC 2015 /ASCE 7 -10)

RISK CATECORY	II (Table 1604.5)
SEISMIC DESIGN CATEGORY	D (Table 1613.3.5 1,2)
SITE CLASS	D (Geotech Report)
IMPORTANCE FACTOR, I_E	1.00 (Table 1.5-2)

DESIGN STRENGTHS:

A. CONCRETE:

CLASS	STRENGTH AT 28 DAYS (PSI)	TYPE	LOCATION
A	4000	STD. WT.	INTERIOR SLABS
B	4000	STD. WT.	AIR-ENTRAINED SLABS & WALLS
C	3000	STD. WT.	FOOTINGS

B.	REINFORCEMENT	FY = 60,000 PSI
C.	STRUCTURAL STEEL	FY = 50,000 PSI
D.	STRUCTURAL TUBES	FY = 46,000 PSI
E.	STRUCTURAL PIPES	FY = 35,000 PSI

GENERAL

A. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES, TYPICAL DETAILS AND SPECIFICATIONS.

B. CONTRACTOR SHALL COMPARE ALL DIMENSIONS AND CONDITIONS ON DRAWINGS AND AT SITE. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND/OR STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE DESIGNER WITHOUT ADDITIONAL COST TO THE OWNER.

C. ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS NOTED OR SHOWN OTHERWISE.

D. SHORING AND BRACING REQUIREMENTS:
   A. FLOOR AND ROOF STRUCTURES -- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE METHOD AND SEQUENCE OF ALL STRUCTURAL ERECTION. HE SHALL PROVIDE TEMPORARY SHORING AND BRACING AS HIS METHOD OF ERECTION REQUIRES TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT. SHORING AND BRACING SHALL REMAIN IN PLACE AS THE CHOSEN METHOD REQUIRES UNTIL ALL PERMANENT MEMBERS ARE IN PLACE AND ALL FINAL CONNECTIONS ARE COMPLETED, INCLUDING ALL ROOF AND FLOOR ATTACHMENTS. THE BUILDING SHALL NOT BE CONSIDERED STABLE UNTIL ALL CONNECTIONS ARE COMPLETE.
   B. WALLS ABOVE GRADE SHALL BE BRACED UNTIL THE STRUCTURAL SYSTEM IS COMPLETE. WALLS ARE NOT SELF SUPPORTING.

E. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE WITH ALL TRADES ANY AND ALL ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM. OPENINGS OR PENETRATIONS THROUGH, OR ATTACHMENTS TO THE STRUCTURAL SYSTEM THAT ARE NOT INDICATED ON THESE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE COORDINATED WITH THE ARCHITECT/ENGINEER. THE ORDER OF CONSTRUCTION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. IT IS THE CONTRACTOR'S OBLIGATION TO PROVIDE ITEMS NECESSARY FOR HIS CHOSEN PROCEDURE.

F. OBSERVATION VISITS TO THE SITE BY THE ENGINEER OR THIER REPRESENTATIVES SHALL NOT BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.

G. ALL CONSTRUCTION AND INSPECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE IBC. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS AND SHALL NOT PROCEED WITH THE WORK INVOLVED UNTIL THE INSPECTIONS HAVE BEEN DONE.

H. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE IBC.

J. THE CONTRACTOR MUST SUBMIT A WRITTEN REQUEST FOR, AND OBTAIN THE ARCHITECT'S AND/OR THE STRUCTURAL ENGINEER'S WRITTEN PRIOR APPROVAL FOR ALL CHANGES, MODIFICATIONS, OMMISIONS AND/OR SUBSTITUTIONS.

K. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS AND ARCHITECTURAL DRAWINGS WITH SITE CONDITIONS.

L. SEE THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, ELEVATIONS, SLOPES, STAIRS, CURBS, DRAINS, RECESSES, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, CHAMFERS, KERFS, ETC.

M. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.

N. CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS TO MATCH DETAILS SHOWN ON DRAWINGS.u IF ANY CONFLICTING CONDITIONS ARISE DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY DESIGNER BEFORE PROCEEDING WITH FABRICATION OR CONSTRUCTION.

P. THERMAL OR MOISTURE PROTECTION, FURNISHINGS, DOORS, WINDOWS, EQUIPMENT, MECHANICAL, ELECTRICAL, FINISHES, SIDING, PANELING, VENEERS ARE NOT PART OF THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER.

FOUNDATION NOTES

1. ALLOWABLE SOIL PRESSURE USED IN DESIGN = 1500 PSF. (ASSUMED) AND TO BE FIELD VERIFIED AS REQUIRED PER THE CITY BY A LICENSED GEOTECHNICAL ENGINEER BEFORE PLACING CONCRETE.
2. ALL FOOTINGS SHALL BEAR 18" MINIMUM INTO ORIGINAL UNDISTURBED EARTH OR ON ENGINEERED FILL COMPACTED TO 95% OF MAXIMUM RELATIVE DENSITY BASED ON ASTM D-1557-70. SUCH FILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES IN DEPTH AFTER COMPACTION.
3. NO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.
4. EXTERIOR WALL FOOTINGS SHALL BEAR AT A MINIMUM DEPTH OF 3'-6" BELOW FINISHED EXTERIOR GRADE.
5. DO NOT PLACE BACKFILL AGAINST FOUNDATION WALLS UNTIL BRACING FLOOR IS IN PLACE OR ADEQUATE SHORING IS INSTALLED.
6. ALL FOUNDATION WALLS ARE 8" THICK UNLESS NOTED OTHERWISE ON PLAN. REFER TO CONCRETE NOTES AND PLANS FOR WALL REINFORCEMENT, TYPE, AND SIZE OF ANCHORS REQUIRED.

CONCRETE

1. NO PIPES, DUCTS, SLEEVES, ETC. SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY STRUCTURAL ENGINEER. NO ALUMINUM PRODUCTS SHALL BE EMBEDDED IN CONCRETE. PENETRATIONS THRU WALLS WHEN APPROVED SHALL BE BUILT INTO THE WALL PRIOR TO PLACEMENT OF CONCRETE. PENETRATIONS WILL NOT BE ALLOWED IN FOOTINGS OR GRADE BEAMS DESIGNED AND DETAILED AS SEISMIC TIE ELEMENTS. PIPING, ETC. SHOULD BE ROUTED AROUND THESE ELEMENTS AND FOOTINGS STEPPED TO AVOID PIPING. PLUMBING AND ELECTRICAL SLEEVES NOT EXCEEDING 8" IN DIAMETER MAY BE PLACED IN FOUNDATION WALL PROVIDED NO REINFORCING IS CUT AND SLEEVES ARE NOT PLACED CLOSER THAN 36" O.C..
2. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, ETC. TO BE CAST IN TO CONCRETE, AND FOR EXTENT AND LOCATION OF DEPRESSIONS, CURBS, RAMPS, ETC..
3. UNLESS OTHERWISE NOTED, MAKE ALL CONCRETE SLABS ON EARTH AT LEAST 4" THICK.
4. AROUND OPENINGS LARGER THAN 12" IN ANY DIRECTION IN CONCRETE WALLS, ADD (2) #4 BARS ALL SIDES IN ADDITION TO REGULAR WALL REINFORCING AND EXTEND 24" EACH WAY BEYOND OPENING. WHERE 24" IS NOT AVAILABLE, EXTEND BARS AS FAR AS POSSIBLE AND TERMINATE WITH A STANDARD HOOK.
5. CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE MADE AND LOCATED SO AS TO NOT IMPAIR THE STRENGTH OF THE STRUCTURE AND AS APPROVED BY THE STRUCTURAL ENGINEER. ALL STEEL REINFORCING SHALL BE CONTINUOUS THROUGH COLD JOINTS UNLESS NOTED OTHERWISE.
6. ALL VERTICAL CONCRETE FACES (INCLUDING FOOTINGS) SHALL BE FORMED. FORM MATERIALS SHALL BE STRAIGHT AND TRUE.

REINFORCING STEEL

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM STANDARD A-615 GRADE 60 AND ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM STANDARD A-185 AND SHALL BE SUPPLIED IN FLAT SHEETS. ADEQUATELY TIE AND SUPPORT ALL REINFORCING STEEL AS SPECIFIED BY ACI 315, TO MAINTAIN EXACT REQUIRED POSITION. ALL FIELD BENT DOWELS SHALL BE BENT ONLY ONCE.
2. REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVERAGE:
   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.......3"
   EXPOSED TO EARTH OR WEATHER:
   #6 & LARGER .... 2", #5 & SMALLER ....1-1/2"
   NOT EXPOSED TO WEATHER OR EARTH:
   SLABS, WALLS, JOISTS, #11 & SMALLER..................3/4"
   BEAMS, COLUMNS: MAIN REINFORCING OR TIES.......1-1/2"
   SLAB ON GRADE
   PLACE REINFORCING AT CENTER OF SLAB UNLESS INDICATED OTHERWISE.
3. EXCEPT WHERE NOTED, CONTINUOUS REINFORCEMENT SHALL BE SPLICED AT POINTS OF MINIMUM STRESS BY LAPPING 36 BAR DIAMETERS IN CONCRETE AND 48 BAR DIAMETERS IN MASONRY.
4. ALL VERTICAL REINFORCING SHALL BE DOWELED TO FOOTINGS OR STRUCTURE BELOW WITH DOWELS TO MATCH. SPLICE LENGTHS SHALL COMPLY WITH NOTE F.3. DOWELS INTO FOOTINGS SHALL TERMINATE WITH A STANDARD HOOK, AND SHALL EXTEND TO WITHIN 4" OF THE BOTTOM OF THE FOOTING, BUT NOT MORE THAN 20" INTO FOOTING.
5. DO NOT WELD REINFORCING EXCEPT AS NOTED ON PLANS. WHERE REINFORCING IS WELDED, USE ASTM A-706 REINFORCING OR FOLLOW UBC STANDARD 26-8.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING:
   A. STRUCTURAL STEEL FOR BUILDINGS", WITH "COMMENTARY". AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF
   B. AISC "CODE OF STANDARD PRACTICE" EXCLUDING THE FOLLOWING SECTIONS: 1.5.1, 3.3 (FIRST SENTENCE), 4.2, 4.2.1, 4.2.2, 7.5.4, 7.11.5.
   C. AISI "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".
2. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING:
   SHAPES/PLATES - ASTM A-36 (U.N.O.)
   TUBES - ASTM A-500, GRADE B (FY = 46 KSI)
   PIPE COLUMNS - ASTM A-53, GRADE B TYPE E OR S
   DEFORMED BAR ANCHORS (DBA) - ASTM A-496
   HEADED STUD ANCHORS (HSA) - ASTM A-108
   ANCHOR BOLTS (A.B.) - ASTM A-307,
   WITH ASTM A-563 HEAVY HEX NUT AND HARDENED WASHERS, GRADE A.
3. ALL OPEN WEB STEEL JOISTS AND GIRDERS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS AND CODE OF STANDARD PRACTICE" OF THE STEEL JOIST INSTITUTE.
4. CONNECTIONS SHALL COMPLY WITH THE STRUCTURAL DRAWINGS UNLESS WRITTEN APPROVAL TO CHANGE IS GIVEN BY THE STRUCTURAL ENGINEER.
5. ALL SHOP FABRICATIONS SHALL BE PERFORMED BY AN APPROVED FABRICATOR ACCORDING TO THE IBC.
6. WELDING
   A. ALL WELDING AND CUTTING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.
   B. USE E-70XX ELECTRODES UNLESS NOTED OTHERWISE. E60-XX MAY BE USED FOR WELDING STEEL DECKS.
   C. ALL INTERSECTING STEEL SHAPES WHICH ARE NOT CONNECTED WITH BOLTS SHALL BE WELDED TOGETHER WITH A FILLET WELD ALL AROUND UNLESS OTED OTHERWISE. WHERE WELD SIZES ARE NOT SHOWN USE THE FOLLOWING: 1) WHERE ALL CONNECTED PARTS ARE THICKER THAN 1/4", WELD SIZE IS 1/16" LESS THAN THE THICKNESS OF THE THINNEST PART. 2) WHERE ANY OF THE CONNECTED PARTS IS LESS THAN 1/4" THICK, WELD SIZE IS SAME AS THICKNESS OF THE THINNEST PART.
   D. WELDING OF HSA'S AND DBA'S SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS.
   E. WHEREVER POSSIBLE, WELDS SHALL BE SHOP WELDS. SPECIAL CONSIDERATIONS, SUCH AS ITEMS WHICH MAY NEED ADJUSTMENT AT THE SITE, REQUIRE THAT SOME WELDS BE FIELD WELDS. WHERE QUESTIONS OR DISCREPANCIES OCCUR THE CONTRACTOR SHALL COORDINATE THE WORK BETWEEN THE SHOP FABRICATOR AND THE STEEL ERECTOR.
7. BOLTING
   A. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL TO STEEL CONNECTIONS SHALL USE HIGH STRENGTH BOLTS CONFORMING TO ASTM A-325.
   B. UNLESS NOTED OTHERWISE ALL BOLTING IS CLASSIFIED AS NON-SLIP CRITICAL BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE. TIGHTEN BOLTS TO A SNUG TIGHT CONDITION, WITH ALL PLIES OF THE JOINT IN FIRM CONTACT.
   C. AT OVERSIZE AND SLOTTED HOLES, WASHERS SHALL CONFORM TO ASTM F-436 AND COMPLETELY COVER THE HOLE.
   D. WHERE A STEEL BEAM TO BEAM CONNECTION IS NOT SHOWN, PROVIDE AN AISC STANDARD FRAMED CONNECTION SIZED FOR 1/2 OF THE TOTAL LOAD CAPACITY OF THE BEAM FOR THE SPAN AND STEEL SPECIFIED.

FLANGE WIDTH U	STIFFENER THICKNESS	WELD SIZE
< 8 1/4"	1/4"	3/16"
8 1/4" < BF < 12 1/2"	3/8"	1/4"
12 1/2" < BF < 18"	1/2"	5/16"

8. FABRICATORS AND SUPPLIERS SHALL COORDINATE PAINT/FINISHES WITH REQUIREMENTS FOR DIRECT APPLIED INSULATION, FIREPROOFING, ETC. AS NOTED IN THE PROJECT SPECIFICATIONS.

MISCELLANEOUS:

A. EXPANSION BOLTS, CHEMICAL ANCHORS, DEFORMED BAR ANCHORS AND HEADED STUDS: ALL EXPANSION BOLTS SHALL BE HILTI KWIK BOLTS AS NOTED ON THE DRAWINGS, OR APPROVED WITH EQUIVALANT ICBO ALLOWABLE TENSION AND SHEAR VALUES. MINIMUM EMBEDMENT UNLESS OTHERWISE NOTED SHALL BE: 4" FOR 1/2" DIAMETER, 5" FOR 5/8" AND 3/4" DIAMETER.

B. HEADED SHEAR STUDS SHALL BE NELSON HEADED ANCHORS WITH FLUXED ENDS OR APPROVED. DEFORMED BAR ANCHORS (DBA) SHALL BE NELSEN, TYPE D2L, OR APPROVED. STUDS AND DBA SHALL BE AUTOMATICALLY END-WELDED WITH THE MANUFACTURER'S STANDARD EQUIPMENT IN ACCORDANCE WITH THEIR RECOMMENDATIONS.

C. EMBEDDED PLATES AND ANCHOR BOLTS: PERMANENTLY EXPOSED PLATES AND ANGLES SHALL BE HOT-DIPPED, GALVANIZED AFTER FABRICATION, UNLESS OTHERWISE NOTED. NO LOADS OR WELDS SHALL BE PLACED ON EMBEDDED PLATES OR ANGLES FOR A MINIMUM OF 7 DAYS AFTER CASTING.

D. ALL ANCHOR BOLTS FOR MECHANICAL AND ELECTRICAL EQUIPMENT ARE FURNISHED AND LOCATED BY THE RESPECTIVE CONTRACTORS AND SET BY GENERAL CONTRACTOR EXCEPT WHERE THE OTHER CONTRACTORS FURNISH THEIR OWN CONCRETE PADS.

E. EPOXY ADHISIVE: EPOXY ADHESIVE SHALL CONFORM TO ASTM C881 AND SHALL BE A TWO-COMPONENT, LIQUID EPOXY WITH NON-SAG CONSISTENCY AND A LONG POT LIFE, AND SHALL BE SUITABLE FOR USE ON DRY OR DAMP SURFACES. MINIMUM SLANT SHEAR STREGTH SHALL BE 5,000 PSI, AND MINIMUM TENSILLE STRENGTH SHALL BE 4,000 PSI. HOLES SIZES AND INSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH APPROVED IBC REQUIREMENTS.

F. CORE DRILLING: ALL CORE DRILLING SHALL BE DONE BY THE MECHANICAL AND ELECTRICAL CONTRACTORS FOR THEIR OWN WORK UNDER THE SUPERVISION OF THE GENERAL CONTRACTOR. THERE SHALL NOT BE ANY CORE DRILLING THROUGH BEAMS OR COLUMNS. MAXIMUM CORE HOLE THROUGH SLABS SHALL BE PIPE DIAMETER PLUS 1".

SUBMITTALS:

A. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION FOR "SCANDINAVIAN" LOG FRAMING.

B. IF THE SHOP DRAWINGS DIFFER FROM, OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF JURISDICTION. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE ENGINEER.

C. DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS, INCLUDING: ROOF JOIST AND FLOOR JOISTS, STAIRS, WINDOW WALL, AND ALL OTHER GLAZING SYSTEMS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF JURISDICTION, AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION, CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE CURRENT IBC.

D. THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. ANY CONNECTIONS TO STRUCTURE NOT CONFORMING TO STEEL METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA), OR SPECIFICALLY DETAILED ON THE MECHANICAL ENGINEER'S DRAWINGS, SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF JURISDICTION, AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION.

E. FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM, OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF JURISDICTION AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

WOOD FRAMING NOTES

1. FRAMING LUMBER: DOUGLAS FIR LARCH OR HEM FIR (SURFACED DRY NOT TO EXCEED 19% MAXIMUM MOISTURE CONTENT, CONFORMING TO THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION IN THE FOLLOWING GRADES (UNLESS NOTED OTHERWISE ON PLANS):

DIMENSIONED LUMBER - BEAMS, JOISTS:	#2 OR BETTER
(FB = 875 PSI, FV = 95 PSI, E = 1600 KSI)	
ROUGH SAWN - BEAMS, STRINGERS:	#1 OR BETTER
(FB = 1350 PSI, FV = 85 PSI, E = 1600KSI)	
POSTS, TIMBERS:	#1 OR BETTER
(FB = 1200 PSI, FV = 85 PSI, E = 1600 KSI)	
STUDS:	STUD(HEM-FIR OR D.F)
(FB = 675PSI, FC = 725 PSI, E = 1200 KSI)	

2. ALL GLUE LAMINATED TIMBER MEMBERS SHALL BE GRADE 24F-V4 FOR SINGLE SPANS, 24F-V8 WHERE SPECIFIED, DF/DF, CONFORMING TO THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (FB = 2400 PSI, FV = 165 PSI, E = 1800 KSI). ALL SCANDINAVIAN WALL PROFILE SUPPLIED BY LOG HOME MANUFACTURER CONFORM TO L30 (LAMINATED, FB = 1740 PSI, FV = 165 PSI, E = 1015965 PSI) OR T30 (SAWN, FB = 1600 PSI, FV = 139 PSI, E = 1015965 PSI)
3. PROVIDE SOLID BLOCKING AT LEAST 1-1/2" THICK AT ENDS AND AT EACH SUPPORT OF JOIST. PROVIDE APPROVED BRIDGING AT A MAXIMUM 8'-0"O.C. BETWEEN SUPPORTS OR AS REQUIRED BY THE JOIST MANUFACTURER.
4. NAILING SHALL CONFORM TO STANDARD NAILING SCHEDULE 2304.9.1 OF THE IBC, UNLESS NOTED OTHERWISE ON PLANS OR SCHEDULES. ALL NAILS SHALL BE COMMON NAILS.
5. BUILT-UP BEAMS OF 2X MEMBERS SHALL BE SPIKED TOGETHER WITH 16D.SPIKES AT 12" O.C. STAGGERED. USE 2-20D COMMON NAILS AT ALLSUPPORTS.
6. ALL WOOD BEAMS AND HEADERS SHALL BEAR ON MINIMUM OF TWO CRIPPLE STUDS AT EACH END UNLESS SHOWN OTHERWISE.
7. ALL WOOD POSTS, BUILT-UP COLUMNS SHALL BE CONTINUOUS TO FOUNDATION OR FLOOR JOISTS. SOLID BLOCK ALL POSTS OR COLUMNS AT FLOOR LINES.
8. BUILT-UP COLUMNS SPIKED TOGETHER WITH 16D SPIKES AT 12" O.C.
9. USE SIMPSON STRONG TIE HANGERS FOR ALL FLUSH CONNECTIONS. HANGER TO BE SPECIFIED BY THE TRUSS / JOIST SUPPLIER UNLESS NOTED OTHERWISE ON PLAN.
10. ALL METAL HANGERS AND CONNECTORS SHALL BE " SIMPSON " OR EQUAL.
11. PROVIDE METAL STRAPS ACROSS RIDGE BEAM FOR ROOF JOISTS.
12. SILL PLATES SHALL BE FOUNDATION GRADE REDWOOD OR PRESSURE TREATED DOUGLAS FIR LARCH (FC = 625 PSI), WHEN IN CONTACT WITH CONCRETE.
13. SECURE SILL PLATE TO FOUNDATION WITH 5/8"O X 12" A.B. @ 48" O.C. UNLESS NOTED OTHERWISE ON PLANS.
14. DOUBLE TOP AND BOTTOM PLATES TO BE LAPPED 4'-0" AT SPLICE AND CONNECT WITH 16D COMMON NAILS @ 3" O.C., STAGGERED.
15. NOTCHING OR DRILLING THROUGH ANY LUMBER MEMBER WILL NOT BE ALLOWED WITHOUT SPECIFIC APPROVAL OF STRUCTURAL ENGINEER.
16. MAXIMUM HEIGHT OF NON-BEARING STUDS SHALL BE 14 FEET FOR 2X4 AND 20 FEET FOR 2X6.
17. STUD BEARING WALLS/EXTERIOR STUD WALLS/SHEAR WALLS:
    (A) ALL EXTERIOR WALLS SHALL BE 2X6 STUDS AT 16" 0.C. U.N.O. ALL INTERIOR WALLS SHALL BE 2x4 OR 2x6 STUDS AT 16" O/C REFER TO PLAN FOR SIZE U.N.O.
    (B) SHEATH ALL EXTERIOR WALLS WITH 7/16" A.P.A. RATED STRUCTURAL EXTERIOR SHEATHING.
    (C) NAIL SHEATHING WITH 8D AT 6" ALL EDGES WITH ALL EDGES BLOCKED AND 8D AT 12" AL ELSE. REFER TO PLAN FOR ADDITIONAL REQUIREMENTS.
    (D) ALL WALL SHEATHING SHALL BE CONTINUOUS FROM SILL PLATE TO DOUBLE TOP PLATE. WHERE NECESSARY, MINIMUM DEPTH OF JOINT IN SHEATHING SHALL BE 2'-0" BELOW TOP OR ABOVE BOTTOM PLATE. BLOCK ALL PANEL EDGES.
18. ROOF SHEATHING:
    (A) 5/8" A.P.A. RATED STRUCTURAL II, EXTERIOR, PANEL INDEX #40/20
    (B) NAIL WITH: 8D @ 6" O.C. -SUPPORTED PANEL EDGES, 8D @ 12"O.C. - ALL ELSE
    (C) PLACE LONG DIRECTION OF PANELS PERPENDICULAR TO JOISTS IN A STAGGERED PATTERN.
19. FLOOR SHEATHING:
    (A) 3/4" A.P.A. RATED STURD-I-FLOOR, EXPOSURE I, PANEL INDEX #40/20, TONGUE & GROOVE
    (B) GLUE & NAIL WITH: 10D @ 6" O.C. -SUPPORTED PANEL EDGES,10D @ 10"O.C. - ALL ELSE
    (C) PLACE LONG DIRECTION OF PANELS PERPENDICULAR TO JOISTS IN A STAGGERED PATTERN.

    SECONDARY FRAMING
    (E) ALL PRIMARY ROOF FRAMING SHALL BE ENTIRELY AND CONTINUOUSLY SHEATHED BEFORE ADDING SECONDARY FRAMING.
    (F) ALL NAILERS FOR SECONDARY FRAMING SHALL BE 2X12'S LAID FLAT AND NAILED WITH TWO ROWS OF 10D NAILS AT 4" O.C.
20. ROOF TRUSSES:
    (A) DESIGN TRUSSES FOR FOLLOIWNG CRITERIA:
    DEAD LOAD = 20 PSF
    LIVE LOAD = 188 PSF
    LIVE LOAD DEFLECTION= L/400 MAXIMUM
    (B) HANDLING, INSTALLING AND TEMPORARY BRACING OF TRUSSES SHALL BE IN ACCORDANCE WITH THE HIB-91 SUMMARY SHEET BY THE TRUSS PLATE INSTITUTE.
    (C) NO STRESS INCREASE ALLOWED FOR TRUSS DESIGN.
    (D) TRUSS MANUFACTURER SHALL PROVIDE HANGERS FOR ALL TRUSS TO TRUSS CONNECTIONS.
    (E) TRUSS MANUFACTURER SHALL SUBMIT TRUSS DESIGN, STAMPED BY A LICENSED ENGINEER, TO ARCHITECT FOR REVIEW. SUBMITTAL SHALL INCLUDE SCHEMATIC DIAGRAMS SHOWING: SIZES, SLOPES, LOADS, SPANS, AND BEARING CONDITIONS.

Notes:

- Chimneys shall extend at least 2 feet higher than any portion of the building within 10 feet horizontally of the chimney, but shall not be less than 3 feet above the point where the chimney passes through the roof.
- Minimum 18" clearance above earth for wood joists and 12" clearance for wood girders in a crawl space unless redwood or treated wood is used.
- Enclosed attics and spaces between rafters shall have cross ventilation for each separate space by ventilating openings, which are protected against the entrance of rain or snow. The total net free area shall be less than 1 to 150 of the open space ventilated. The total ventilating area ratio may be reduced to not less than 1 to 300 if either 1) openings are provided in the upper and lower portions of the ventilated space, or 2) a 1 perm vapor barrier is installed on the warm side of the ceiling.
- Minimum 4 mil. Polyethylene vapor retarded on exterior walls and roof ceilings.
- Provide ½ inch airspace at top, sides ad ends of girders entering exterior concrete or masonry walls unless woods resistant to decay are used.
- Nor wood shall be nearer than 6 inches to earth unless separated by concrete at least 3 inches in thickness with an impervious membrane installed between the earth and the concrete. This includes decks and siding.
- For masonry fireplaces, combustible material shall not be placed within 2 inches of fireplace smoke chamber or chimney walls. Combustible material shall not be placed within inches of the fireplace opening. Combustible material within 12 inches of the fireplace opening shall not project more than 1/8 inch from each inch distance from the opening to the fireplace.
- Basements with habitable space and each sleeping room one very level shall have egress/rescue windows that area at net 5.7 square feet of open-able area, with a net clear open-able height of at least 24 inches and a net clear open-able width of at least 20 inches. Grade floor openings mat be reduced to a net clear opening of 5 square feet.
- Frameless glass doors glazing in doors, glazing within 24 inch arch of doors, glazing less than 60 inches above a walking surface that is within 5 feet of stairs and glazing within 5 feet of spas or pools, certain fixed glass panels and similar glazed openings subject to human impact shall be safety glazing, tempered or laminated glass, properly identified.
- Special Inspections:
- Provide minimum clearance of 21 inches in front of water closets. Provide 30 inches of full width clearance for water closets.
- Provide a shut-off valve for all plumbing fixture supplies.
- Provide a comfort heating system capable of maintaining 68 degrees F at a point 36 inches above the floor in all rooms.
- Combustion air for all fuel-burning appliances at a minimum rate of 1 square inch per 3,000 BTU/hour input rating.
- Clearance around equipment, minimum 3 inches sides and rear and 6 inches at front, unless equipment listing provides otherwise.
- Location of gas logs and all gas appliances with a shut-off valve within 6 feet of the appliance.
- The maximum length of clothes dryer duct with 2 - 90 degree elbows in 5 feet.
- Insulate heating trunk and branch supply ducts in unfinished areas, crawl spaces, attics and unheated garages per the Recheck.
- All receptacles serving kitchen countertops, in garages, bathrooms, unfinished basements and outside (exterior) locations shall be GFCI protected.
- Clearance for lights in closets must comply with IRC E3903.11
- All circuit breakers serving 110 amp outlets in bedrooms shall be AFCI.
- ~~Weep hole size and spacing on veneer detail 33 inches.~~

STAIRS:

THE STAIRS MUST PROVIDE A REQUIRED MINIMUM WIDTH OF 36" ABOVE THE PERMITTED HAND RAIL AND BELOW THE REQUIRED HEADROOM HEIGHT AND NOT LESS THAN 31.5" CLEAR MINIMUM WIDTH AT AND BELOW THE HANDRAIL HEIGHT, INCLUDING TREADS AND LANDINGS. 311.5.1

THE MAXIMUM RISE OF A STEP IS 8" AND THE MINIMUM RUN IS 9". R311.5.3 STATE AMENDMENT

THE MINIMUM WIDTH OF THE RUN NARROWER END IS 6" AND THE RUN MUST BE 10" AT A POINT 12"
OUT FROM THE NARROWER POINT. R311.5.3.2

THE MINIMUM HEADROOM VERTICALLY FROM NOSING LINE IS 6'-8". R311.5.2

A CONTINUOUS HANDRAIL IS REQUIRED ALONG A STAIRWAY. IT IS REQUIRED TO BE 34"...38" ABOVE THE NOSING OF THE STEPS. ENDS SHALL RETURN OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS. R311.5.6

THE HANDGRIP PORTION OF HANDRAILS SHALL BE NOT LESS THAN 1 1/4" NOR MORE THAN 2 5/8"
IN CROSS-SECTIONAL DIMENSION. R311.5.6

HANDRAILS PROJECTING FROM A WALL SHALL HAVE A MINIMUM SPACE OF 1 1/2" BETWEEN THE WALL
AND THE NEAREST PORTION OF THE HANDRAIL. R315

THE MAXIMUM SIZE OF OPENINGS IN THE HANDRAIL / GUARDRAIL ON THE OPEN SIDE OF A STAIRWAY
IS 4 3/8". R312.2, EX 2

A 36" HIGH GUARDRAIL IS REQUIRED WHERE STEP IS GREATER THAN 30" TO FLOOR OR GRADE BELOW.
THE SPACING BETWEEN MEMBERS SHALL BE A MAXIMUM OF 40". R312.1

LANDINGS SHALL HAVE A MINIMUM DIMENSION MEASURED IN THE DIRECTION OF TRAVEL OF 36". R311.4.3

ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS AND SOFFITS PROTECTED ON ENCLOSED SIDE WITH 1/2" GYPSUM BOARD. R311.2.2

ROOFING:

ICE AND WATER SHIELD EXTENDING FROM THE EAVES TO A POINT AT LEAST 24" INSIDE THE EXTERIOR
WALL LINE. R905.8.3

COMPOSITION SHINGLES SHALL NOT BE INSTALLED ON ROOFS HAVEING A SLOPE LESS THAN 4 TO 12
UNLESS DOUBLE UNDERLAYMENT IS INSTALLED IN ACCORDANCE WITH IRC SECTION R905.2.2

SECTION 506. CLASS 3 IGNITION-RESISTANT CONSTRUCTION:

506.1 GENERAL.
CLASS 3 IGNITION-RESISTANT CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTIONS 506.2 THROUGH 506.4.

506.2 ROOF COVERING.
ROOFS SHALL HAVE AT LEAST A CLASS A ROOF COVERING, CLASS C ROOF ASSEMBLY OR APPROVED NONCOMBUSTIBLE ROOF COVERING. FOR ROOF COVERINGS WHERE THE PROFILE ALLOWS A SPACE BETWEEN THE ROOF COVERING AND ROOF DECKING, THE SPACE AT THE EAVE ENDS SHALL BE FIRESTOPPED TO PRECLUDE ENTRY OF FLAMES OR EMBERS.

506.3 UNENCLOSED UNDERFLOOR PROTECTION.
BUILDINGS OR STRUCTURES SHALL HAVE ALL UNDERFLOOR AREAS ENCLOSED TO THE GROUND WITH EXTERIOR WALLS.

EXCEPTION: COMPLETE ENCLOSURE MAY BE OMITTED WHERE THE UNDERSIDE OF ALL EXPOSED FLOORS AND ALL EXPOSED STRUCTURAL COLUMNS, BEAMS AND SUPPORTING WALLS ARE PROTECTED AS REQUIRED EXTERIOR 1-HOUR FIRE - RESISTANCE-RATED CONSTRUCTION OR HEAVY TIMBER CONSTRUCTION.

506.4 VENTS.
ATTIC VENTILATION OPENINGS, SOFFIT VENTS, FOUNDATION OR UNDERFLOOR VENTS OR OTHER VENTILATION OPENINGS IN VERTICAL EXTERIOR WALLS AND VENTS THROUGH ROOFS SHALL NOT EXCEED 144 SQUARE INCHES (0.0929 M2) EACH. SUCH VENTS SHALL BE COVERED WITH NONCOMBUSTIBLE CORROSION-RESISTANT MESH WITH OPENINGS NOT TO EXCEED 1/4" (6.4 MM).

R 703.7.3
STEEL LINTELS SHALL BE SHOP COATED WITH A RUST- INHIBITIVE PAINT, EXCEPT FOR LINTELS MADE OF CORROSION-RESISTANT STEEL.

R 317.1.5
STRUCTURAL LAMINATED TIMBERS THAT ARE NOT COVERED BY A ROOF SHALL BE TREATED WITH PRESERVATIVE.

R 602.11.1
A3" SQUARE WASHER IS REQUIRED FOR WALL ANCHORAGE, THIS WILL REQUIRE A ROUND CUT WASHER BETWEEN SQUARE WASHER AND NUT.

ADDITIONAL NOTES

N1102.4.1.1 (R402.4.1.1) Installation.
The components of the *building thermal envelope* as listed in Table N1102.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table N1102.4.1.1, as applicable to the method of construction. Where required by the *building official*, an *approved* third party shall inspect all components and verify compliance.

TABLE N1102.4.1.1 (402.4.1.1) AIR BARRIER AND INSULATION INSTALLATION

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.	
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.
Floors (including above garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing; and extends from the bottom to the top of all perimeter floor framing members.
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawl space walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC 400.

SECTION M1505 OVERHEAD EXHAUST HOODS

M1505.1 General.
Domestic open-top broiler units shall have a metal exhaust hood, having a minimum thickness of 0.0157-inch (0.3950 mm) (No. 28 gage) with $^1/_4$ inch (6.4 mm) clearance between the hood and the underside of combustible material or cabinets. A clearance of not less than 24 inches (610 mm) shall be maintained between the cooking surface and the combustible material or cabinet. The hood shall be not less than the width of the broiler unit, extend over the entire unit, discharge to the outdoors and be equipped with a backdraft damper or other means to control infiltration/exfiltration when not in operation. Broiler units incorporating an integral exhaust system, and *listed* and *labeled* for use without an exhaust hood, need not have an exhaust hood.

SECTION M1506 EXHAUST DUCTS AND EXHAUST OPENINGS

M1506.1 Duct construction.
Where exhaust duct construction is not specified in this chapter, construction shall comply with Chapter 16.

M1506.2 Duct length.
The length of exhaust and supply ducts used with ventilating equipment shall not exceed the lengths determined in accordance with Table M1506.2.

Exception: Duct length shall not be limited where the duct system complies with the manufacturer's design criteria or where the flow rate of the installed ventilating equipment is verified by the installer or approved third party using a flow hood, flow grid or other airflow measuring device.

TABLE M1506.2 DUCT LENTH

DUCT TYPE	FLEX DUCT								SMOOTH-WALL DUCT							
Fan airflow rating (CFM @ 0.25 inch wc[a])	50	80	100	125	150	200	250	300	50	80	100	125	150	200	250	300
Diameter[b] (inches)	Maximum length[c, d, e] (feet)															
3	X	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X
4	56	4	X	X	X	X	X	X	114	31	10	X	X	X	X	X
5	NL	81	42	16	2	X	X	X	NL	152	91	51	28	4	X	X
6	NL	NL	158	91	55	18	1	X	NL	NL	NL	168	112	53	25	9
7	NL	NL	NL	NL	161	78	40	19	NL	NL	NL	NL	NL	148	88	54
8 and above	NL	NL	NL	NL	NL	189	111	69	NL	NL	NL	NL	NL	NL	198	133

For SI: 1 foot = 304.8 mm.

a. Fan airflow rating shall be in acordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

b. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.

c. This table assumes that elbows are not used. Fifteen feet of allowable duct length shall be deducted for each elbow installed in the duct run.

d. NL = no limit on duct length of this size.

e. X = not allowed. Any length of duct of this size with assumed turns and fittings will exceed the rated pressure drop.

M1506.3 Exhaust openings.
Air exhaust openings shall terminate not less than 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable

GENERAL:

ALL SHOWER DOORS SHALL SWING OUTWARD. IRC P2708.1

GLAZING USED IN DOORS AND PANELS OF SHOWERS AND BATHTUB ENCLOSURES
AND WALLS ENCASING THESE COMPARTMENTS SHALL BE TEMPERED.

VENTILATION:

WINDOWS IN BATHROOMS, WATER CLOSET COMPARTMENTS, AND SIMILAR AREAS SHALL BE A MINIMUM OF 1 1/2 SQUARE FEET, UNLESS A MECHANICAL VENTILATION SYSTEM OF 50 CFM IS PROVIDED (20 CFM FOR CONTINUOUS). BATHROOMS INTO SEPARATE AREAS WITH WATER USING FIXTURES REQUIRE INDIVIDUAL VENTILATION IN EACH OF THOSE AREAS.
VENTILATION AIR SHALL BE EXHAUSTED DIRECTLY TO THE OUTSIDE. R303.3

PLUMBING:

WATER CLOSET TANK WITH A FLOW RATE OF NOT MORE THAN 1.6 GALLONS PER FLUSH. P2903.2

SHOWERHEADS WITH A FLOW RATE OF NOT MORE THAN 2.5 GPM. P2903.2

SHOWERS SHALL FINISHED TO HEIGHT OF NOT LESS THAN 72" ABOVE THE FLOOR.
MATERIAL SHALL BE OF A NONABSORBENT TYPE.

ALL PLUMBING VENTS THROUGH THE ROOF TO BE A MINIMUM 3" PIPE. P3103.2

IN SEISMIC DESIGN CATEGORIES C1, D1 AND D2 WATER HEATERS SHALL BE
ANCHORED OR STRAPPED IN THE UPPER THIRD OF THE APPLIANCE TO RESIST A
HORIZONTAL FORCE EQUAL TO ONE THIRD OF THE OPERATING WEIGHT. P2801.2

GARAGE:

THE GARAGE MUST BE SEPARATED FROM THE DWELLING INCLUDING ATTIC WITH 1/2" GYPSUM BOARD
ON THE GARAGE SIDE. IF LIVING SPACE IS ABOVE IT MUST BE 5/8" TYPE X ON THE CEILING. R309.2
MAXIMUM SPACING OF FRAMING MEMBER ON CEILING IS 16" O.C. FOR 1/2" OR 5/8" EITHER DIRECTION.

THE DOOR BETWEEN THE GARAGE AND THE DWELLING IS REQUIRED TO BE A 1 3/8" THICK SOLID CORE DOOR, HONEYCOMB CORE STEEL DOOR OR 20 MINUTE FIRE-RATED. R309.2

GARAGE ATTIC ACCESS DOOR SHALL BE 20 MINUTE LABELED OR OF EQUIVALENT CONSTRUCTIONS. R309

AUTOMATIC GARAGE DOOR OPENERS, IF PROVIDED, SHALL BE TESTED IN ACCORDANCE WITH UL325. R309.6

MINIMUM WIDTH OF DRIVEWAY SHALL BE 20 FEET.

MECHANICAL:

THE MAXIMUM LENGTH OF A DRYER EXHAUST VENT IS 25 FEET.
A REDUCTION IN THE MAXIMUM LENGHT OF 2.5 FEET FOR EACH 45-DEGREE BEND AND 5 FEET FOR EACH 90-DEGREE BEND SHALL APPLY.
OR DRYER LISTING. M1502.6

FUEL-FIRED WATER HEATERS SHALL NOT BE INSTALLED IN A ROOM USED AS A STORAGE ROOM / CLOSET. M2005.2

THE LISTING FOR THE FIREPLACE SHOWN ON THE PLANS SHALL BE PROVIDED AT MECHANICAL INSPECTION. IF THIS IS A WOOD BURNING FIREPLACES SUBMIT LISTING SHOWING EPA COMPLIANCE. M1401.1

MECHANICAL EQUIPMENT, INCLUDING WATER HEATERS, IN THE GARAGE NEEDS TO BE ELEVATED 18" OFF FINISHED FLOOR. ROOMS OR SPACES THAT ARE NOT PART OF THE LIVING SPACE OF A DWELLING UNIT AND THAT COMMUNICATE WITH A PRIVATE GARAGE THROUGH OPENINGS SHALL BE CONSIDERED TO BE PART OF THE GARAGE. M1307.3

HYDRO-MASSAGE BATHTUB ELECTRICAL EQUIPMENT SHALL BE ACCESSIBLE WITHOUT DAMAGING THE BUILDING STRUCTURE OR BUILDING FINISH. SHOW LOCATION WHERE IS JETTED TUB MOTOR ACCESS PLACED. E4209.3

FRAMING:

TRUSS BLOCKING SHALL BE SOLID TO SHEATHING WITH NAILING THROUGH SHEATHING IN TO
TRUSS BLOCKING TO CARRY THE SHEAR TO THE ROOF. R502.7

THE MINIMUM OF 2" THICK REDWOOD PLANKS FOR DECK IF JOIST SPACING IN 16" ON CENTER
OR GREATER. NOMINAL 1" PLANKING SHALL NOT BE USED WHERE DECK JOISTS ARE SPACED
GREATER THAN 12 " ON CENTER. R501.2

AT ALL VALLEYS AND HIPS SHOW VALLEY OR HIP RAFTERS AS BEING NOT LESS THAN 2" THICK
AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. R802.3

FIRE-BLOCK SYUD SPACES AT SOFFITS, FLOOR AND CEILING JOIST LINES AT 10 FEET VERTICALLY
AND HORIZONTALLY ; AND AT OPENINGS BETWEEN ATTIC SPACES AND CHIMNEY SPACES FOR
FACTORY-BUILD CHIMNEYS AND ANY OTHER LOCATION WHICH AFFORD PASSAGE FOR FRAMES. R602.8

08/07/2018
10367643
ALEX HAWKINS

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

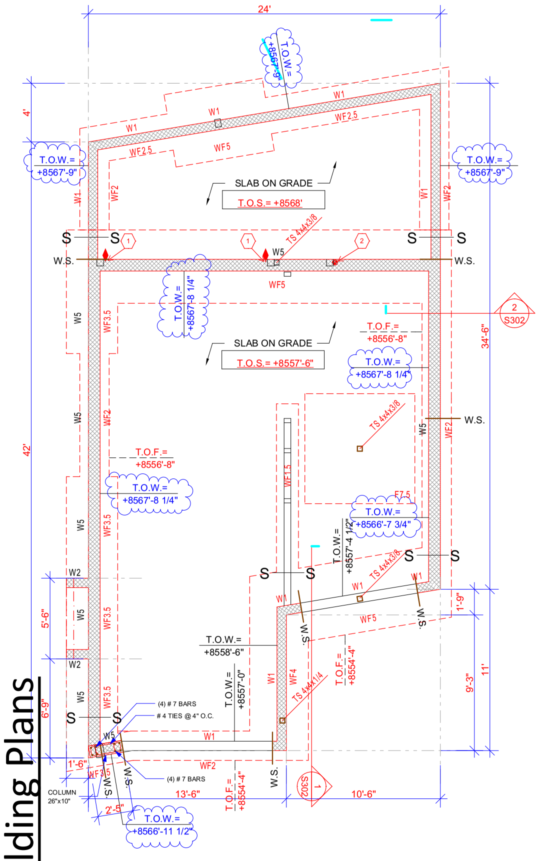
A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale
Title/No.
STRUCTURAL
GENERAL NOTES
BUILDER/DEALER'S APPROVAL :
Signature and Date

S0

Exhibit A: Building Plans



1 S1 FOOTING AND FOUNDATION PLAN

FOUNDATION KEYED NOTES

1. (2) HDU14 ATTACHED TO SAME ROD AND SAME POST. OFFSET ON POST BY 30", EMBED 1" THREADED ROD 60" INTO FOUNDATION WALL. PROVIDE 3"x3" PLATE WASHER WITH NUTS AT EMBEDDED END OF ROD. 6x6 POST MIN.
2. HDU11, EMBED 1" ANCHOR ROD 42" INTO FOUNDATION WALL. PROVIDE 3"x3" PLATE WASHER WITH NUTS AT EMBEDDED END OF ROD.
3. ATTACH BEAM TO CONCRETE WALL WITH (2) 3/4" SIMPSON TITEN HD ANCHORS @ 12" O.C. (7" LONG)

R403.1.6. FOUNDATION BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE.

REFER TO S2 FOR HOLDOWNS

FOOTING SCHEDULE

MARK	SIZE WIDTHxTHICK.xLENGHT	REINFORCING LONG.	TRANS.	REMARKS
WF1.5	1'-6"x10"xCONT.	2- #4	-	
WF2	2'-0"x10"xCONT.	2- #4	-	
WF2.5	2'-6"x10"xCONT.	3- #4	-	
WF3	3'-0"x10"xCONT.	4- #4		
WF3.5	3'-6"x10"xCONT.	4- #4	#4 @ 12"	
WF4	4'-0"x10"xCONT.	5- #4	#4 @ 10"	
WF4.5	4'-6"x12"xCONT.	5- #5	#5 @ 12"	
WF5	5'-0"x12"xCONT.	6- #5	#5 @ 12"	
WF6	6'-0"x12"xCONT.	7- #5	#5 @ 12"	
F3	3'-0"x10"x3'-0"	4- #4	4- #4	
F3.5	3'-6"x10"x3'-6"	4- #4	4- #4	
F4	4'-0"x12"x4'-0"	5- #5	5- #5	
F4.5	4'-6"x12"x4'-6"	5- #5	5- #5	
F5	5'-0"x12"x5'-0"	6- #5	6- #5	
F5.5	5'-6"x12"x5'-6"	6- #5	6- #5	
F6	6'-0"x12"x6'-0"	7- #5	7- #5	
F6.5	6'-6"x12"x6'-6"	8- #5	8- #5	
F7.5	7'-6"x14"x7'-6"	10- #5	10- #5	
F8	8'-0"x14"x8'-0"	11- #5	11- #5	
F4x5	4'-0"x12"x5-0"	5- #4	6- #5	
F5x7	5'-0"x12"x7'-0"	6- #5	8- #5	
FM	MAT FOOTING	#4 OR #5 @ 12" ON CENTER	#4 OR #5 @ 12" ON CENTER	MATCH ADJCENT FOOTING THICKNESS AND BAR SIZE. REFER TO PLAN FOR SIZE

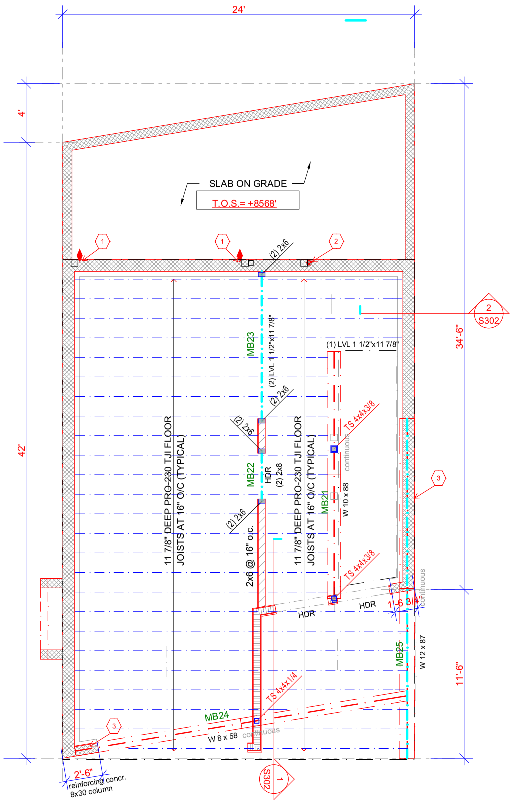
FOUNDATION WALL SCHEDULE

WALL TYPE	THICKNESS	A BARS	B DOWELS	C BARS	D BARS	E BARS	CORNER BARS
W1	8"	#4 @ 18"	#4 @ 18"		#4 @ 18"		#4@24"
W2	8"	#4 @ 12"	#4 @ 12"		#4 @ 18"		#4 @12"
W3	8"	#5 @ 12"	#5 @ 12"		#4 @ 18"		#5 @10"
W4	10"	#5 @ 12"	#6 @ 12"	#4 @ 12"	#4 @ 18"	#4 @ 12"	#6 @12"
W5	10"	#5 @ 12"	#5 @ 12"		#5 @ 18"		#5 @18"
W6	10"	#5 @ 9"	#5 @ 9"		#5 @ 18"		#5 @12"

NOTE: ANCHOR BOLTS DO NOT ALWAYS OCCUR. RE: DETAILS

FOUNDATION PLAN NOTES

1. ALLOWABLE SOIL PRESSURE USED IN DESIGN = 1500 PSF. (ASSUMED) AND TO BE FIELD VERIFIED AS REQUIRED PER THE CITY BY A LICENSED GEOTECHNICAL ENGINEER BEFORE PLACING CONCRETE.
2. REFER TO ARCHITECTURAL FOR TOP OF SLAB ELEVATION DENOTED T.O.S.
3. VERIFY WITH ARCHITECTURAL PLANS ALL STEPS IN SLAB.
4. SLAB ON GRADE SHALL BE 4" CONCRETE OVER 4" FREE DRAINING GRAVEL. REINFORCE SLAB W/ 6x6xW1.4 WWF OR #4 AT 24" O/C EACH WAY U.N.O.
5. FOOTING ELEVATIONS SHOWN ARE APPROXIMATE AND MAY VARY DUE TO ACTUAL SITE ELEVATIONS AND CONDITIONS.
6. FOOTING TYPES NOTED THUS "F-X" AND "WF-X" REFER TO SCHEDULE FOR SIZE AND REINFORCEMENT. REFER TO PLAN AND SECTIONS FOR TOP OF FOOTING ELEVATION.
7. CENTER FOOTINGS ON WALLS AND COLUMNS UNLESS DIMENSIONED OTHERWISE ON PLANS.
8. "T.O.W." DENOTES TOP OF WALL ELEVATION.
9. "T.O.F." DENOTES TOP OF FOOTING ELEVATION.
10. "W.S." DENOTES FOUNDATION WALL STEPS.
11. "W1" DENOTES FOUNDATION WALL TYPE.
12. ALL FOUNDATIONS ARE TYPE "W1" WALLS UNLESS NOTED OTHERWISE.
13. "S S" DENOTES FOOTING STEP. REFER TO DETAIL G/S300.
14. REFER TO GENERAL NOTES ON SHEET S0 FOR ADDITIONAL INFORMATION.
15. CONTOURS AND EXTERIOR GRADE ELEVATIONS ON SITE PLAN ARE APPROXIMATE ALL FINAL GRADES SHALL BE FIELD VERIFIED.
16. AROUND OPENINGS LARGER THAN 12" IN ANY DIRECTION IN CONCRETE WALLS, ADD (2) #4 BARS ALL SIDES IN ADDITION TO REGULAR WALL REINFORCING AND EXTEND 24" EACH WAY BEYOND OPENING. WHERE 24" IS NOT AVAILABLE, EXTEND BARS AS FAR AS POSSIBLE AND TERMINATE WITH A STANDARD HOOK.



2 S1 LOWER LEVEL FRAMING PLAN

SHEAR WALL SCHEDULE

TYPE	MATERIAL	EDGE NAILING	SILL PLATE ANCHORS	REMARKS	
1 =SW1	7/16" APA	8d @ 6"O/C	16d COMMON @6" O.C. OR 5/8" AT 32"	A,B,C,D	=260 plf
2 =SW2	7/16" APA	8d @ 4"O/C	16d COMMON @4" O.C. OR 5/8" AT 32"	A,B,C,D	=350 plf
4 =SW4	7/16" APA	8d @ 3"O/C	16d COMMON @3" O.C. OR 5/8" AT 32"	A,B,C,D,E	=490 plf
5 =SW5	7/16" APA	8d @ 2"O/C	16d COMMON @3" O.C. OR 5/8" AT 24"	A,B,C,D,E	=600 plf
7 =SW7	7/16" APA Both sides	8d @ 3"O/C	SDS25500 @ 3" O.C. OR 5/8" AT 16"	A,B,C,D,E	
10 =SW10	15/32" APA STRUCTURAL 1	10d @ 2"O/C	(2)SDS25500 @ 3" O.C. OR 5/8" AT 8"	A,B,C,D,E	

Note! MIN. 3"x3"x0,229" PLATE WASHERS ON ANCHOR BOLTS

NOTES

1. LVL DENOTES 1.9E MICROLLAM BY TRUS JOIST MACMILLAN OR EQUIVALENT.
2. DECK LEDGER BOARDS MUST BE TRATED WHEN USING TJI, BCI or LPI RIM BOARDS.

A: ALL SHEATHING SHALL BE CDX STRUCTURAL 1 OR 11 A.P.A. RATED SHEATHING WITH ALL EDGES BLOCKED

B: ALL NAILS SHALL BE 'COMMON' TYPE UNLESS OTHERWISE NOTED. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM PANEL EDGES. DO NOT PENETRATE SHEATHING WITH NAIL HEADS. NAIL INTERMEDIATE SUPPORTS WITH 8d AT 12" O.C.

C: ALL HARDWARE SHALL BE 'SIMPSON STRONG TIE' OR APPROVED EQUAL.

D: ALL SILL PLATES SHALL BE 2x PRESSURE TREATED D.F. UNLESS OTHERWISE NOTED WITH A MINIMUM OF 2 A.B. PER PLATE. ONE A.B. WITHIN 12" FROM EA. END.

E: USE MINIMUM 3x STUDS AT ALL ADJOINING (ABUTTING) EDGES. EDGE NAILING SHALL BE STAGGERED. (2) 2x NAILED TOGETHER WIRTH 16d CAMMON NAILS @ 4" O.C. MAY BE SUBSTITUDED FOR 3x.

F: USE SIMPSON SB 5/8" x 24" EMBED 18" MIN. INTO STEM WALL
-> FOR STEM WALL INSTALATION.

G: 3" MINIMUM POST

H: 5 1/2" MINIMUM POST

J: USE SIMPSON SB 1" x 30" EMBED 14" MIN. INTO STEM WALL
-> FOR STEM WALL INSTALATION.

K: USE SIMPSON SB 7/8" x 24" EMBED 18" MIN. INTO STEM WALL

FLOOR BEAM SCHEDULE

MARK	STEEL, GLULAM, LVL OR SAWN BEAMS
MB21	STEEL W10 x 88
MB22	(2) 2 x 8
MB23	LVL (2) 1 1/2" x 11 7/8"
MB24	STEEL W8 x 58
MB25	STEEL W12 x 87

(*) TIE MULTIBLE PLY MEMBERS TOGETHER (DTL 2/S2)

STUD HEIGHT CHART

STUD	GRADE	SPACING	MAX HT.	LOCATION	NOTES
2x6	STUD	16" O.C.	10'-0"	EXTERIOR	
2x6	STUD	12" O.C.	14'-0"	EXTERIOR	
2x6	DFLN #2	12" O.C.	16'-0"	EXTERIOR	

FRAMING PLAN NOTES

1. ALL BEAMS TO BEAR ON MINIMUM OF (2) CRIPPLE STUDS U.N.O. ON PLAN. TYPICAL 2"X10" HEADERS MAY BEAR ON ONE CRIPPLE STUD.
2. TYPICAL HEADER SIZE IN 2x FRAMED BEARING WALLS, DENOTED AS HDR, SHALL BE MINIMUM (3) 2"X10" OR 3-1 1/2"x7 1/2" LVL, UNLESS SHOWN OTHERWISE ON PLANS.
3. SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: △ ON PLAN. SEE SCHEDULE INTERIOR SHEAR WALLS ARE DENOTED THUS: ▥ ON PLAN.
4. ALL EXTERIOR WALLS SHALL BE TYPE △ SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.
5. REFER TO DETAILS, GENERAL STRUCTURAL NOTES AND SHEAR WALL SCHEDULE FOR TYPICAL SHEAR WALL/BEARING WALL CONSTRUCTION.
6. REFER TO GENERAL STRUCTURAL NOTES SHEET S0 FOR ADDITIONAL INFORMATION.
7. WHERE ROCK VENEER OCCURS REFER TO DETAIL R/S300.
8. TRUSSES LABELED TO MATCH THE TRUSS MANUFACTURE'S ENGINEERING.
9. SCANDINAVIAN PROFILE SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: ◇ ON PLAN. SEE SCHEDULE INTERIOR SCANDINAVIAN PROFILE SHEAR WALLS ARE DENOTED THUS: ▨ ON PLAN.
10. ALL EXTERIOR SCANDINAVIAN PROFILE WALLS SHALL BE TYPE ◇1 SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.

HOLDOWNS

TYPE	NOTES		ANCHOR SIZE	ANCHOR EMBEDMENT INTO FDN. WALL
♦	= (2) SIMPSON HDU14-SDS2.5	H.	1"	60"
●	= SIMPSON HDU11 - SDS2.5	H. J.	1"	42"
▼	= SIMPSON HDU5 - SDS2.5	F. G.	5/8"	9"
T	= SIMPSON HDU8 - SDS2.5	H. K.	7/8"	10 1/2"
+	= SIMPSON STHD14			

08/07/2018
10367643
ALEX HAWKINS

BUILDING SYSTEM
Scandinavian
Park City, Utah

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name
Scandinavian LLC
Address
6410 N. Business
Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1/4" = 1' -0"
Title/No.
FOUNDATION & FOOTING PLAN
LOWER LEVEL FRAMING PLAN
BUILDER/ DEALER'S APPROVAL :
Signature and Date

S1

Exhibit A: Building Plans

SHEAR (SCANDINAVIAN WALL SYSTEM) WALL SCHEDULE

TYPE	STEEL PIPES NOTE! EACH LOG COURSES	ANCHOR BOLTS	REMARKS	BOTTOM COURSE SCREWS	
1	LOCATION OF THE WALL DRAWINGS	5/8" AT 24"	C,D	(2) 13" x 1/2" SCREWS AT 24"	=340 plf
2	LOCATION OF THE WALL DRAWINGS	5/8" AT 16"	C,D	(2) 13" x 1/2" SCREWS AT 12"	=680 plf
3	LOCATION OF THE WALL DRAWINGS	5/8" AT 8"	C,D,E	(2) 13" x 1/2" SCREWS AT 8"	=1020 plf

Note! MIN. 3"x3"x0,229" PLATE WASHERS ON ANCHOR BOLTS

1 1/8" STEEL DOWELS — 1 1/8" STEEL DOWEL LOCATION, TYPICAL AS SHOWN ON PLANS. SEE DETAIL S304 FOR INSTALLATION OF DOWELS.

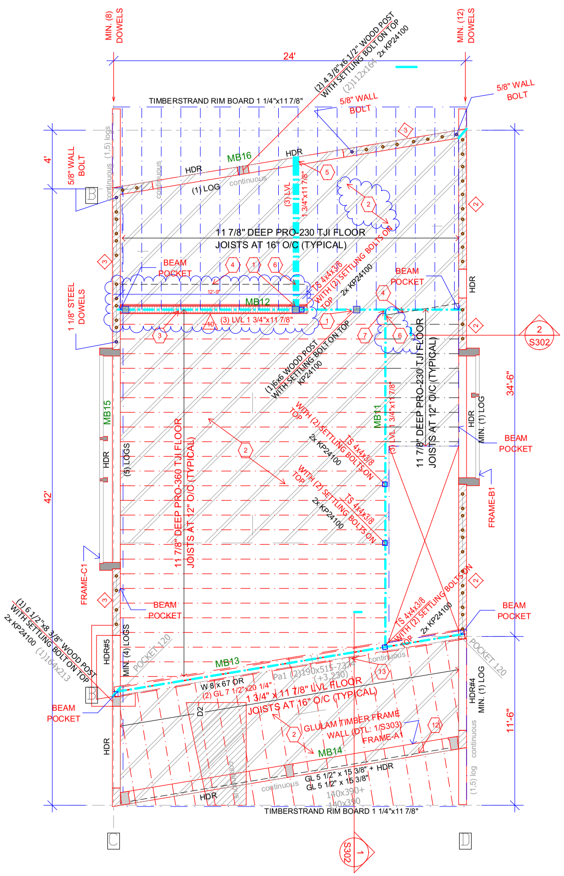
5/8" WALL BOLT — 5/8" WALL CORNER BOLT LOCATION, TYPICAL AS SHOWN ON PLANS. SEE DETAIL S304 FOR INSTALLATION OF STEEL BOLTS.

KEYED NOTES:

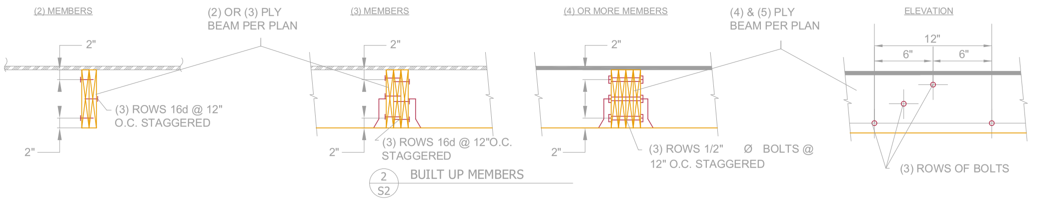
1. STRAP BEAM TO POST W/66" CMST12. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d NAILS.
2. BLOCKED DIAPHRAGM W/ 10d NAILS @ 2" O.C. AT ALL PANELS EDGES.
3. NAIL FLOOR SHEATHING TO BEAM W/ 10d @ 2" O.C. ATTACH BEAM TO SHEAR WALL BELOW WITH A35 @ 12" O.C.
4. FULL HEIGHT SOLID BLOCKING BELOW SHEAR WALL.
5. STRAP BEAM TO POST W/40" CMSTC16. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d SINKER NAILS.
6. (3) 2x POST ABOVE, STRAP BEAM TO POST W/66" CMST12. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d NAILS.
7. HHGU5.50-SDS HANGER.
8. MSTC52 HOLD DOWN, WRAP AROUND BEAM.
9. HDU 11 - WELD ROD TO STEEL BEAM, PROVIDE 3/8" WEB STIFFENERS.
10. ATTACH POST AT END OF SHEAR WALL DIRECTLY TO LOG WALL WITH SDS25600 @ 4" O.C.
11. UPSIDE DOWN HGU7.00-SDS W/ ADDITIONAL 30" CS14 ACROSS THE TOP OF BOTH BEAMS TO PREVENT ROLLING.
12. FULL HEIGHT SOLID BLOCKING. NAIL FLOOR SHEATHING W/ 10d @2" O.C. ATTACH BLOCKING TO SHEAR WALL BELOW WITH A35 @ 12" O.C.
13. 2x12 LEDGER W/ (3) SDWS22400DB SCREWS @ 12" O.C. - USE MIU2.37/11.88 HANGERS.

SNOW DRIFT LOADING DIAGRAM

D1 MAX. = 94 PSF + BASE, L = 6' (roof balcony)
D2 MAX. = 125 PSF + BASE, L = 19'-6" (balcony)
Dx
BASE UNIFORM ROOF SNOW LOAD, SEE G.S.N.



1 MAIN LEVEL FRAMING PLAN S2



2 BUILT UP MEMBERS S2

SHEAR WALL SCHEDULE

TYPE	MATERIAL	EDGE NAILING	SILL PLATE ANCHORS	REMARKS	
1 =SW1	7/16" APA	8d @ 6"O/C	16d COMMON @6" O.C. OR 5/8" AT 32"	A,B,C,D	=260 plf
2 =SW2	7/16" APA	8d @ 4"O/C	16d COMMON @4" O.C. OR 5/8" AT 32"	A,B,C,D	=350 plf
4 =SW4	7/16" APA	8d @ 3"O/C	16d COMMON @3" O.C. OR 5/8" AT 32"	A,B,C,D,E	=490 plf
5 =SW5	7/16" APA	8d @ 2"O/C	16d COMMON @3" O.C. OR 5/8" AT 24"	A,B,C,D,E	=600 plf
7 =SW7	7/16" APA Both sides	8d @ 3"O/C	SDS25500 @ 3" O.C. OR 5/8" AT 16"	A,B,C,D,E	
10 =SW10	15/32" APA STRUCTURAL 1	10d @ 2"O/C	(2)SDS25500 @ 3" O.C. OR 5/8" AT 8"	A,B,C,D,E	

Note! MIN. 3"x3"x0,229" PLATE WASHERS ON ANCHOR BOLTS

NOTES

1. LVL DENOTES 1.9E MICROLLAM BY TRUS JOIST MACMILLAN OR EQUIVALENT.

2. DECK LEDGER BOARDS MUST BE TRATED WHEN USING TJI, BCI or LPI RIM BOARDS.

A: ALL SHEATHING SHALL BE CDX STRUCTURAL 1 OR 11 A.P.A. RATED SHEATHING WITH ALL EDGES BLOCKED

B: ALL NAILS SHALL BE 'COMMON' TYPE UNLESS OTHERWISE NOTED. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM PANEL EDGES. DO NOT PENETRATE SHEATHING WITH NAIL HEADS. NAIL INTERMEDIATE SUPPORTS WITH 8d AT 12" O.C.

C: ALL HARDWARE SHALL BE 'SIMPSON STRONG TIE' OR APPROVED EQUAL.

D: ALL SILL PLATES SHALL BE 2x PRESSURE TREATED D.F. UNLESS OTHERWISE NOTED WITH A MINIMUM OF 2 A.B. PER PLATE. ONE A.B. WITHIN 12" FROM EA. END.

E: USE MINIMUM 3x STUDS AT ALL ADJOINING (ABUTTING) EDGES. EDGE NAILING SHALL BE STAGGERED. (2) 2x NAILED TOGETHER WIRTH 16d CAMMON NAILS @ 4" O.C. MAY BE SUBSTITUED FOR 3x.

F: USE SIMPSON SB 5/8" x 24" EMBED 18" MIN. INTO STEM WALL -> FOR STEM WALL INSTALATION.

G: 3" MINIMUM POST

H: 5 1/2" MINIMUM POST

J: USE SIMPSON SB 1" x 30" EMBED 14" MIN. INTO STEM WALL -> FOR STEM WALL INSTALATION.

K: USE SIMPSON SB 7/8" x 24" EMBED 18" MIN. INTO STEM WALL

FLOOR BEAM SCHEDULE

MARK	GLULAM (FIN), LVL OR SAWN BEAMS
MB11	LVL (3) 1 3/4" x 11 7/8"
MB12	LVL (3) 1 3/4" x 11 7/8"
MB13	STEEL W8 x 67 OR (2) GL 7 1/2"x20 1/4"
MB14	GL (FIN) (1) 5 1/2"x15 3/8"+ GL (FIN) (1) 5 1/2"x15 3/8"
MB15	GLULAM LOGS (5) 6 1/2"x10 1/4"
MB16	GLULAM LOG (1) 6 1/2"x10 1/4"

(*) TIE MULTIBLE PLY MEMBERS TOGETHER (DTL 2/S2)

STUD HEIGHT CHART

STUD	GRADE	SPACING	MAX HT.	LOCATION	NOTES
2x6	STUD	16" O.C.	10'-0"	EXTERIOR	
2x6	STUD	12" O.C.	14'-0"	EXTERIOR	
2x6	DFLN #2	12" O.C.	16'-0"	EXTERIOR	

FRAMING PLAN NOTES

1. ALL BEAMS TO BEAR ON MINIMUM OF (2) CRIPPLE STUDS U.N.O. ON PLAN. TYPICAL 2"X10" HEADERS MAY BEAR ON ONE CRIPPLE STUD.
2. TYPICAL HEADER SIZE IN 2x FRAMED BEARING WALLS, DENOTED AS HDR, SHALL BE MINIMUM (3) 2"X10" OR 3-1 1/2"x7 1/2" LVL, UNLESS SHOWN OTHERWISE ON PLANS.
3. SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: △x ON PLAN. SEE SCHEDULE INTERIOR SHEAR WALLS ARE DENOTED THUS: ▥ ON PLAN.
4. ALL EXTERIOR WALLS SHALL BE TYPE △1 SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.
5. REFER TO DETAILS, GENERAL STRUCTURAL NOTES AND SHEAR WALL SCHEDULE FOR TYPICAL SHEAR WALL/BEARING WALL CONSTRUCTION.
6. REFER TO GENERAL STRUCTURAL NOTES SHEET S0 FOR ADDITIONAL INFORMATION.
7. WHERE ROCK VENEER OCCURS REFER TO DETAIL R/S300.
8. TRUSSES LABELED TO MATCH THE TRUSS MANUFACTURE'S ENGINEERING.
9. SCANDINAVIAN PROFILE SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: ◇x ON PLAN. SEE SCHEDULE INTERIOR SCANDINAVIAN PROFILE SHEAR WALLS ARE DENOTED THUS: ▨ ON PLAN.
10. ALL EXTERIOR SCANDINAVIAN PROFILE WALLS SHALL BE TYPE ◇1 SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.

HOLDOWNS

TYPE	NOTES		ANCHOR SIZE	ANCHOR EMBEDMENT INTO FDN. WALL
◆	= (2) SIMPSON HDU14-SDS2.5	H.	1"	60"
●	= SIMPSON HDU11 - SDS2.5	H. J.	1"	42"
▼	= SIMPSON HDU5 - SDS2.5	F. G.	5/8"	9"
T	= SIMPSON HDU8 - SDS2.5	H. K.	7/8"	10 1/2"
+	= SIMPSON STHD14			

PROFESSIONAL ENGINEER
08/07/2018
10367643
ALEX HAWKINS
STATE OF UTAH

Scandinavian
BUILDING SYSTEM

SCANDINAVIAN LLC

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

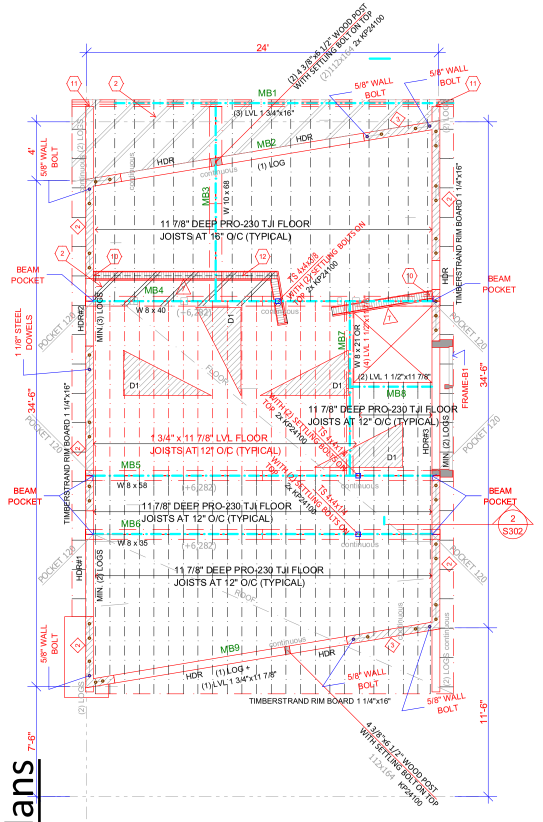
A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

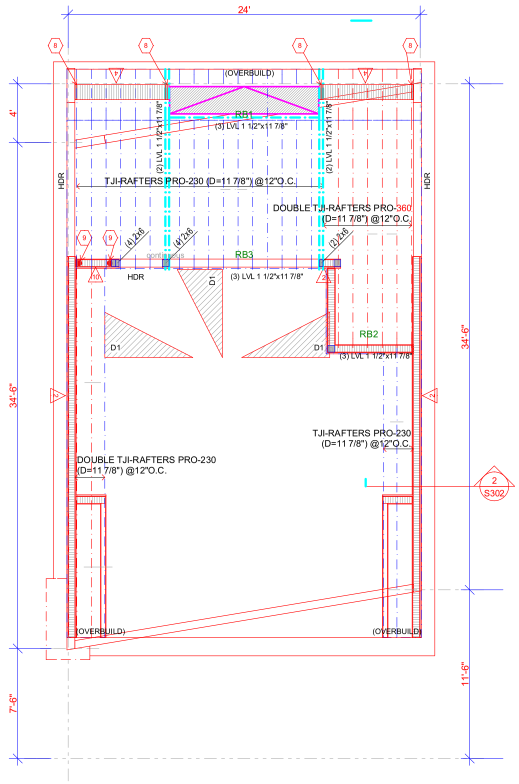
Drawing Date 06-21-2018
Scale 1/4" = 1' -0"
Title/No.
MAIN LEVEL FRAMING PLAN
BUILDER/ DEALER'S APPROVAL :
Signature and Date

S2

Exhibit A: Building Plans



1 S3 UPPER LEVEL FRAMING PLAN



2 S3 ROOF FRAMING PLAN

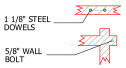
FLOOR BEAM SCHEDULE	
MARK	GLULAM (FIN), LVL OR SAWN BEAMS
MB1	LVL (3) 1 3/4" x 16"
MB2	GLULAM LOG (1) 6 1/2"x10 1/4"
MB3	STEEL W10 x 68
MB4	STEEL W8 x 40
MB5	STEEL W8 x 58
MB6	STEEL W8 x 35
MB7	STEEL W8 x 21 OR (4) LVL 1 1/2"x11 7/8"
MB8	LVL (2) 1 1/2" x 11 7/8"
MB9	LVL (1) 1 3/4" x 11 7/8" + GLULAM LOG (1) 6 1/2"x10 1/4"

(*) TIE MULTIBLE PLY MEMBERS TOGETHER (DTL 2/S2)

KEYED NOTES:

1. STRAP BEAM TO POST W/66" CMST12. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d NAILS.
2. BLOCKED DIAPHRAGM W/ 10d NAILS @ 2" O.C. AT ALL PANELS EDGES.
3. NAIL FLOOR SHEATHING TO BEAM W/ 10d @ 2" O.C. ATTACH BEAM TO SHEAR WALL BELOW WITH A35 @ 12" O.C.
4. FULL HEIGHT SOLID BLOCKING BELOW SHEAR WALL.
5. STRAP BEAM TO POST W/40" CMSTC16. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d SINKER NAILS.
6. (3) 2x POST ABOVE, STRAP BEAM TO POST W/66" CMST12. WRAP AROUND BEAM. FILL ALL HOLES W/ 16d NAILS.
7. HHGU5.50-SDS HANGER.
8. MSTC52 HOLD DOWN, WRAP AROUND BEAM.
9. HDU 11 - WELD ROD TO STEEL BEAM, PROVIDE 3/8" WEB STIFFENERS.
10. ATTACH POST AT END OF SHEAR WALL DIRECTLY TO LOG WALL WITH SDS25600 @ 4" O.C.
11. UPSIDE DOWN HGU7.00-SDS W/ ADDITIONAL 30" CS14 ACROSS THE TOP OF BOTH BEAMS TO PREVENT ROLLING.
12. FULL HEIGHT SOLID BLOCKING. NAIL FLOOR SHEATHING W/ 10d @2" O.C. ATTACH BLOCKING TO SHEAR WALL BELOW WITH A35 @ 12" O.C.
13. 2x12 LEDGER W/ (3) SDWS22400DB SCREWS @ 12" O.C. - USE MIU2.37/11.88 HANGERS.

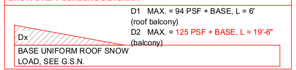
SHEAR (SCANDINAVIAN WALL SYSTEM) WALL SCHEDULE					
TYPE	STEEL PIPES NOTE! EACH LOG COURSES	ANCHOR BOLTS	REMARKS	BOTTOM COURSE SCREWS	
1	LOCATION OF THE WALL DRAWINGS	5/8" AT 24"	C,D	(2) 13" x 1/2" SCREWS AT 24"	=340 plf
2	LOCATION OF THE WALL DRAWINGS	5/8" AT 16"	C,D	(2) 13" x 1/2" SCREWS AT 12"	=680 plf
3	LOCATION OF THE WALL DRAWINGS	5/8" AT 8"	C,D,E	(2) 13" x 1/2" SCREWS AT 8"	=1020 plf
Note! MIN. 3"x3"x0,229" PLATE WASHERS ON ANCHOR BOLTS					



1 1/8" STEEL DOWEL LOCATION, TYPICAL AS SHOWN ON PLANS. SEE DETAIL S304 FOR INSTALLATION OF DOWELS.

5/8" WALL CORNER BOLT LOCATION, TYPICAL AS SHOWN ON PLANS. SEE DETAIL S304 FOR INSTALLATION OF STEEL BOLTS.

SNOW DRIFT LOADING DIAGRAM



D1 MAX. = 94 PSF + BASE, L = 6'
(roof balcony)
D2 MAX. = 125 PSF + BASE, L = 19'-6"
(balcony)

BASE UNIFORM ROOF SNOW LOAD, SEE G.S.N.

ROOFING:
ICE BARRIER AT LEAST 24" INSIDE
THE INSIDE THE EXTERIOR WALL LINE
OF THE BUILDING. R905.2.7.1

SHEAR WALL SCHEDULE					
TYPE	MATERIAL	EDGE NAILING	SILL PLATE ANCHORS	REMARKS	
1 =SW1	7/16" APA	8d @ 6"O/C	16d COMMON @6" O.C. OR 5/8" AT 32"	A,B,C,D	=260 plf
2 =SW2	7/16" APA	8d @ 4"O/C	16d COMMON @4" O.C. OR 5/8" AT 32"	A,B,C,D	=350 plf
4 =SW4	7/16" APA	8d @ 3"O/C	16d COMMON @3" O.C. OR 5/8" AT 32"	A,B,C,D,E	=490 plf
5 =SW5	7/16" APA	8d @ 2"O/C	16d COMMON @3" O.C. OR 5/8" AT 24"	A,B,C,D,E	=600 plf
7 =SW7	7/16" APA Both sides	8d @ 3"O/C	SDS25500 @ 3" O.C. OR 5/8" AT 16"	A,B,C,D,E	
10 =SW10	15/32" APA STRUCTURAL 1	10d @ 2"O/C	(2)SDS25500 @ 3" O.C. OR 5/8" AT 8"	A,B,C,D,E	
Note! MIN. 3"x3"x0,229" PLATE WASHERS ON ANCHOR BOLTS					

NOTES

1. LVL DENOTES 1.9E MICROLLAM BY TRUS JOIST MACMILLAN OR EQUIVALENT.

2. DECK LEDGER BOARDS MUST BE TRATED WHEN USING TJI, BCI or LPI RIM BOARDS.

A: ALL SHEATHING SHALL BE CDX STRUCTURAL 1 OR 11 A.P.A. RATED SHEATHING WITH ALL EDGES BLOCKED

B: ALL NAILS SHALL BE 'COMMON' TYPE UNLESS OTHERWISE NOTED. NAILS SHALL BE LOCATED AT LEAST 3/8" FROM PANEL EDGES. DO NOT PENETRATE SHEATHING WITH NAIL HEADS. NAIL INTERMEDIATE SUPPORTS WITH 8d AT 12" O.C.

C: ALL HARDWARE SHALL BE 'SIMPSON STRONG TIE' OR APPROVED EQUAL.

D: ALL SILL PLATES SHALL BE 2x PRESSURE TREATED D.F. UNLESS OTHERWISE NOTED WITH A MINIMUM OF 2 A.B. PER PLATE. ONE A.B. WITHIN 12" FROM EA. END.

E: USE MINIMUM 3x STUDS AT ALL ADJOINING (ABUTTING) EDGES. EDGE NAILING SHALL BE STAGGERED. (2) 2x NAILED TOGETHER WIRTH 16d CAMMON NAILS @ 4" O.C. MAY BE SUBSTITUED FOR 3x.

F: USE SIMPSON SB 5/8" x 24" EMBED 18" MIN. INTO STEM WALL
-> FOR STEM WALL INSTALATION.

G: 3" MINIMUM POST

H: 5 1/2" MINIMUM POST

J: USE SIMPSON SB 1" x 30" EMBED 14" MIN. INTO STEM WALL
-> FOR STEM WALL INSTALATION.

K: USE SIMPSON SB 7/8" x 24" EMBED 18" MIN. INTO STEM WALL

ROOF BEAM SCHEDULE	
MARK	GLULAM (FIN), LVL OR SAWN BEAMS
RB1	LVL (3) 1 1/2" x 11 7/8"
RB2	LVL (3) 1 1/2" x 11 7/8"
RB3	LVL (3) 1 1/2" x 11 7/8"

(*) TIE MULTIBLE PLY MEMBERS TOGETHER (DTL 2/S2)

STUD HEIGHT CHART					
STUD	GRADE	SPACING	MAX HT.	LOCATION	NOTES
2x6	STUD	16" O.C.	10'-0"	EXTERIOR	
2x6	STUD	12" O.C.	14'-0"	EXTERIOR	
2x6	DFLN #2	12" O.C.	16'-0"	EXTERIOR	

FRAMING PLAN NOTES

1. ALL BEAMS TO BEAR ON MINIMUM OF (2) CRIPPLE STUDS U.N.O. ON PLAN. TYPICAL 2"X10" HEADERS MAY BEAR ON ONE CRIPPLE STUD.
2. TYPICAL HEADER SIZE IN 2x FRAMED BEARING WALLS, DENOTED AS HDR, SHALL BE MINIMUM (3) 2"X10" OR 3-1 1/2"x7 1/2" LVL, UNLESS SHOWN OTHERWISE ON PLANS.
3. SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: △x ON PLAN. SEE SCHEDULE INTERIOR SHEAR WALLS ARE DENOTED THUS: ▥ ON PLAN.
4. ALL EXTERIOR WALLS SHALL BE TYPE △1 SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.
5. REFER TO DETAILS, GENERAL STRUCTURAL NOTES AND SHEAR WALL SCHEDULE FOR TYPICAL SHEAR WALL/BEARING WALL CONSTRUCTION.
6. REFER TO GENERAL STRUCTURAL NOTES SHEET S0 FOR ADDITIONAL INFORMATION.
7. WHERE ROCK VENEER OCCURS REFER TO DETAIL R/S300.
8. TRUSSES LABELED TO MATCH THE TRUSS MANUFACTURE'S ENGINEERING.
9. SCANDINAVIAN PROFILE SHEAR WALL TYPES AND LOCATION ARE DENOTED THUS: ◇x ON PLAN. SEE SCHEDULE INTERIOR SCANDINAVIAN PROFILE SHEAR WALLS ARE DENOTED THUS: ▨ ON PLAN.
10. ALL EXTERIOR SCANDINAVIAN PROFILE WALLS SHALL BE TYPE ◇1 SHEAR WALL CONSTRUCTION UNLESS NOTED OTHERWISE.

HOLDOWNS				
TYPE	NOTES		ANCHOR SIZE	ANCHOR EMBEDMENT INTO FDN. WALL
◆	= (2) SIMPSON HDU14-SDS2.5	H.	1"	60"
●	= SIMPSON HDU11 - SDS2.5	H. J.	1"	42"
▼	= SIMPSON HDU5 - SDS2.5	F. G.	5/8"	9"
T	= SIMPSON HDU8 - SDS2.5	H. K.	7/8"	10 1/2"
+	= SIMPSON STHD14			

08/07/2018
10367643
ALEX HAWKINS

SCANDINAVIAN LLC

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Park City, Utah 84098
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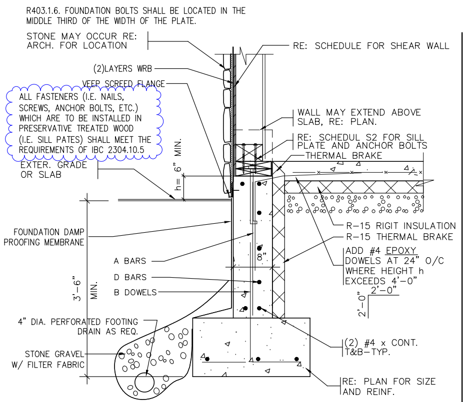
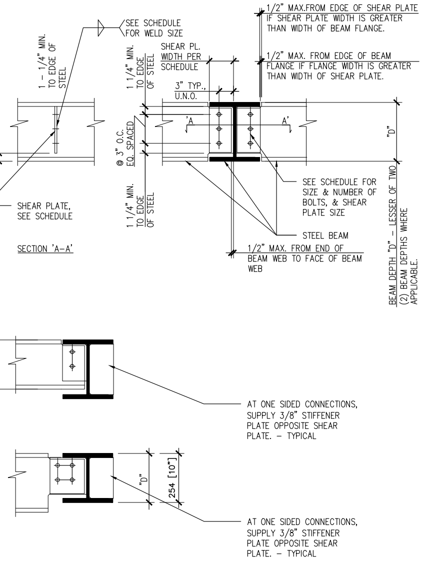
Drawing Date 06-21-2018
Scale 1/4" = 1' -0"
Title/No.
UPPER LEVEL FRAMING PLAN
ROOF FRAMING PLAN
BUILDER/ DEALER'S APPROVAL :
Signature and Date

S3

Exhibit A: Building Plans



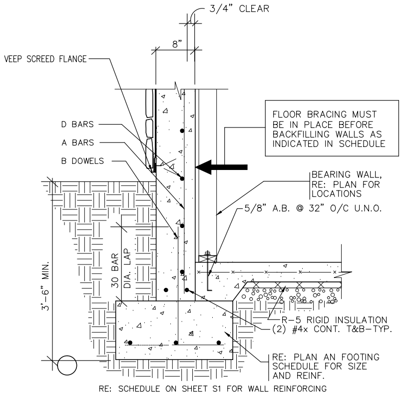
A S300 FOUNDATION WALL DETAIL
NO SCALE



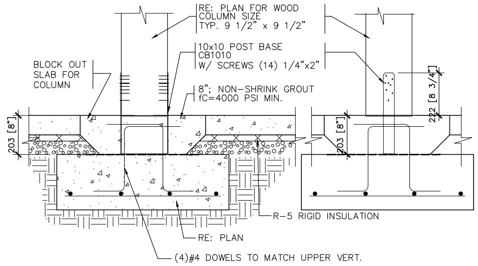
TYPICAL SINGLE-PLATE BOLTED CONNECTIONS

BEAM SIZE	SHEAR PLATE DIMENSIONS THICKNESS	HEIGHT	WIDTH	BOLT REQUIREMENTS QUANTITY	DIAMETER	GRADE	FILLET WELD SIZE
W6 x	1/4"	4"	7 1/2"	2 ↔	3/4" DIA.	A325	3/16"
W8 x	1/4"	5 1/2"	5"	2 ↕	3/4" DIA.	A325	3/16"
W10 x	1/4"	5 1/2"	5"	2	3/4" DIA.	A325	3/16"
W12 x	1/4"	8 1/2"	5"	3	3/4" DIA.	A325	3/16"
W14 x	5/16"	8 1/2"	5"	3	3/4" DIA.	A325	1/4"
W16 x	5/16"	11 1/2"	5"	4	3/4" DIA.	A325	1/4"
W18 x	3/8"	14 1/2"	5"	5	3/4" DIA.	A490	5/16"
W21 x	3/8"	17 1/2"	5"	6	3/4" DIA.	A490	5/16"
W24 x	7/16"	17 1/2"	5"	6	3/4" DIA.	A490	3/8"
W27 x	7/16"	20 1/2"	5"	7	3/4" DIA.	A490	3/8"
W30 x	1/2"	23 1/2"	5"	8	3/4" DIA.	A490	3/8"

H S300 TYP. BEAM TO BEAM. DETAIL
NO SCALE



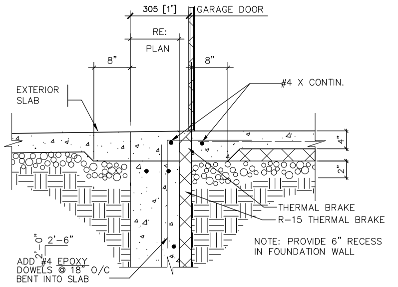
B S300 FOUNDATION WALL DETAIL
NO SCALE



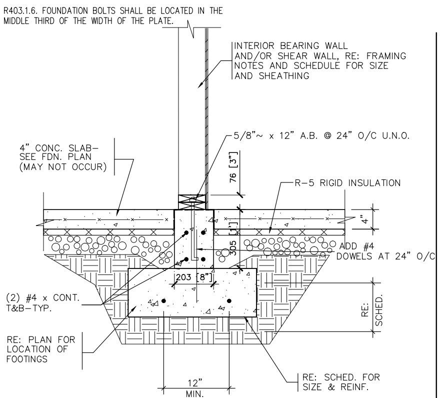
COLUMN BASE PLATE SCHEDULE

COLUMN SIZE	BASE PLATE WIDTH X LENGTH	TYPE	LOCATION
9 1/2 x 9 1/2	9 1/2" x 9 1/2"	CB1010	ON FOOTING
5 1/2 x 5 1/2	5 1/2" x 5 1/2"	CB66	ON FOOTING
5 1/2 x 8 3/8	5 1/2" x 7 1/2"	CB68	ON FOOTING
6 1/2 x 6 1/2	6" x 6 3/4"	CB7 -6	ON FOOTING
8 x 8	7 1/2" x 7 1/2"	CB88	ON FOOTING

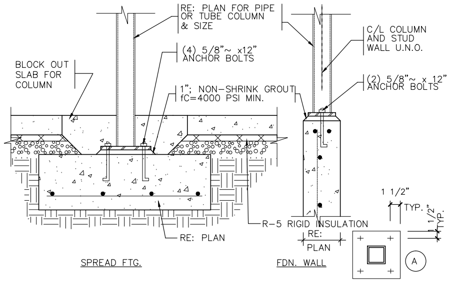
E S300 WOOD COLUMN DETAIL
NO SCALE



L S300 TYP. THRESHOLD DETAIL
NO SCALE



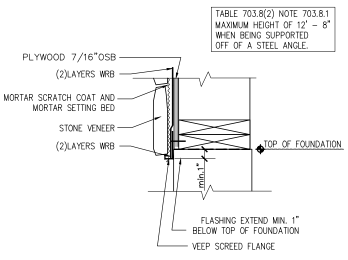
C S300 TYPICAL INTERIOR FOOTING DTL
NO SCALE



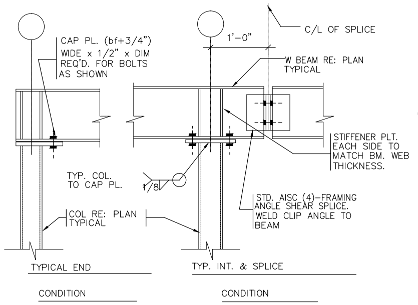
COLUMN AND BASE PLATE SCHEDULE

COLUMN SIZE	BASE PLATE WIDTH X THICKNESS X LENGTH	TYPE	LOCATION
TS 3 x 3 x 5/16	9" x 3/4" x 9"	Ⓐ	ON FOOTING
TS 4 x 4 x 3/8	10" x 3/4" x 10"	Ⓐ	ON FOOTING
TS 5 x 5 x 3/8	12" x 1" x 12"	Ⓐ	ON FOOTING
TS 6 x 6 x 3/8	14" x 1" x 14"	Ⓐ	ON FOOTING

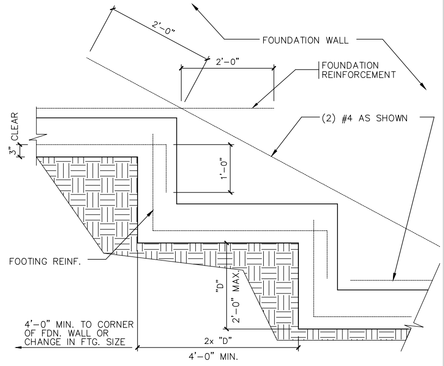
F S300 STEEL COLUMN DETAIL
NO SCALE



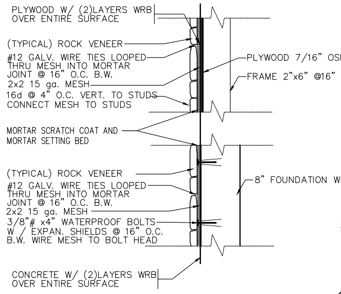
V S300 VEEP SCREED DETAIL
NO SCALE



N S300 TYP. BEAM TO COL. DETAIL
NO SCALE



G S300 TYP. FOOTING STEP DETAIL
NO SCALE



R S300 STONE VENEER DETAIL
NO SCALE

08/07/2018
10367643
ALEX HAWKINS

Scandinavian BUILDING SYSTEM

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business Park Loop Rd. Unit E
Phone 435-513-0355
Fax
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A New Residence:
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Summit Powder Mountain, Lot # 70
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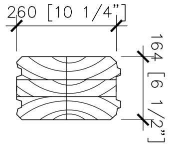
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1" = 1' -0"
Title/No.
DETAILS
BUILDER/DEALER'S APPROVAL :
Signature and Date
S300

SCANDINAVIAN LLC

Exhibit A: Building Plans



SCANDINAVIAN PROFILE (MLL 164)

MAXIMUM LENGT 39 ft
MINIMUM LENGT 1 ft
APPROXIMATE WEIGHT 14 lb / ft
LOG WALL INSTALLATION PER MANUFACTURES GUIDLINES AND INSTRUCTIONS

THE CHARACTERISTIC VALUES FOR SCANDINAVIAN SAWN TIMBER (T24), [PSI]

MATERIAL	Fb	Ft	Fv	FcT	Fcll	MOE
SCOTCH SPRUCE	1390	914	139	348	914	943000

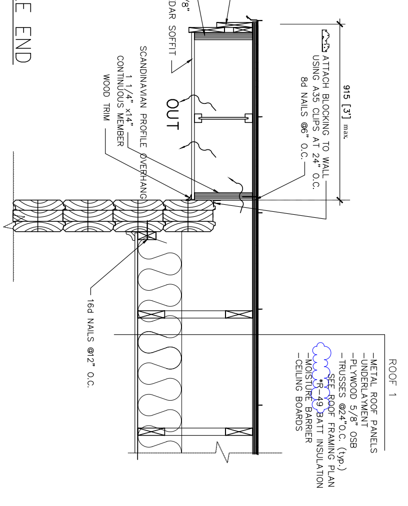
THE CHARACTERISTIC VALUES FOR SCANDINAVIAN GLUE LAM BEAMS (L30), [PSI]

MATERIAL	Fb	Ft	Fv	FcT	Fcll	MOE
SCOTCH SPRUCE	1741	1190	167	348	1190	1015965

DENSITY: 31,2 lb/ft3 (MOISTURE CONTENT 12 %)

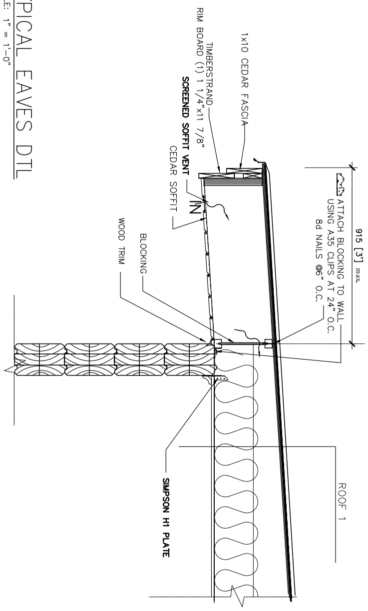
1 S301 SCANDINAVIAN WALL PROFILE

SCALE: -



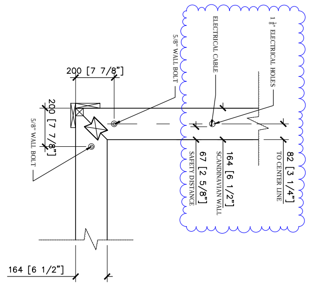
5 S301 TYPICAL GABLE END

SCALE: 1" = 1'-0"



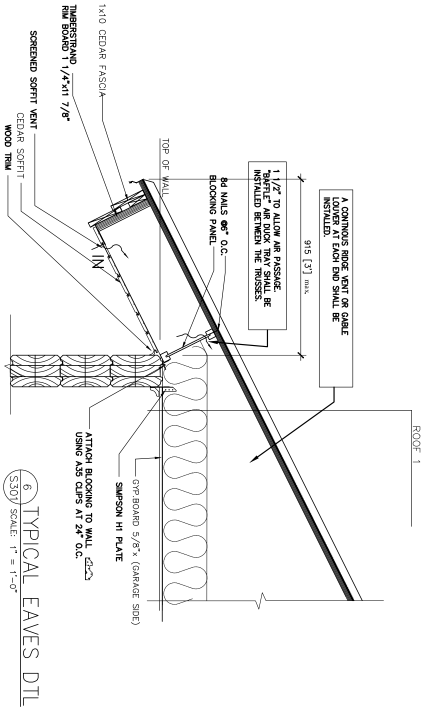
7 S301 TYPICAL EAVES DTL

SCALE: 1" = 1'-0"



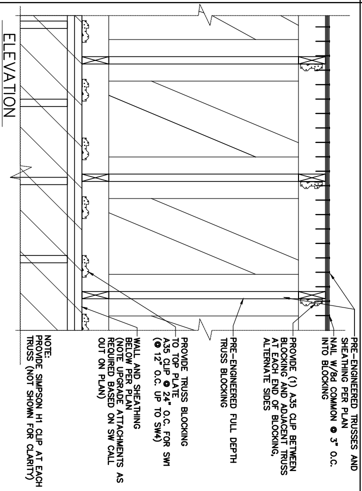
3 S301 TYPICAL CORNER DETAIL

SCALE: 1" = 1'-0"



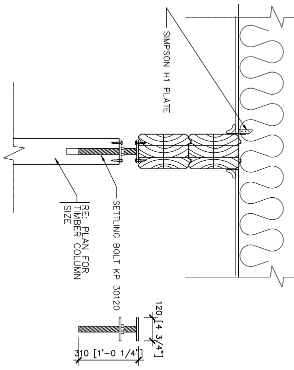
6 S301 TYPICAL EAVES DTL

SCALE: 1" = 1'-0"



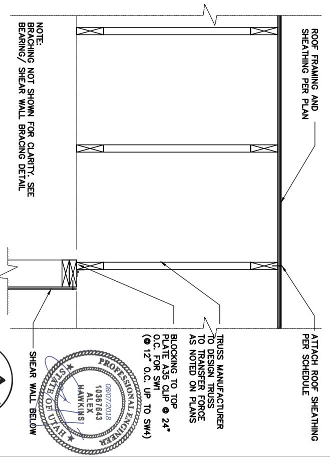
8 S301 FULL DEPTH TRUSS BLOCKING DETAIL

SCALE: 1" = 1'-0"



4 S301 TYPICAL COLUMN / BEAM DETAIL

SCALE: 1" = 1'-0"



9 S301 TRUSS AT SHEARWALL

SCALE: 1" = 1'-0"

ALEX HAWKINS
08/07/2018

Scandinavian

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Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

ARCHITECTURAL OFFICE

BUILDER

BUILDER/DEALER'S APPROVAL
Signature and Date

Drawing Date 06-21-2018
Scale 1" = 1'-0"

DETAILS

S301

SCANDINAVIAN LLC

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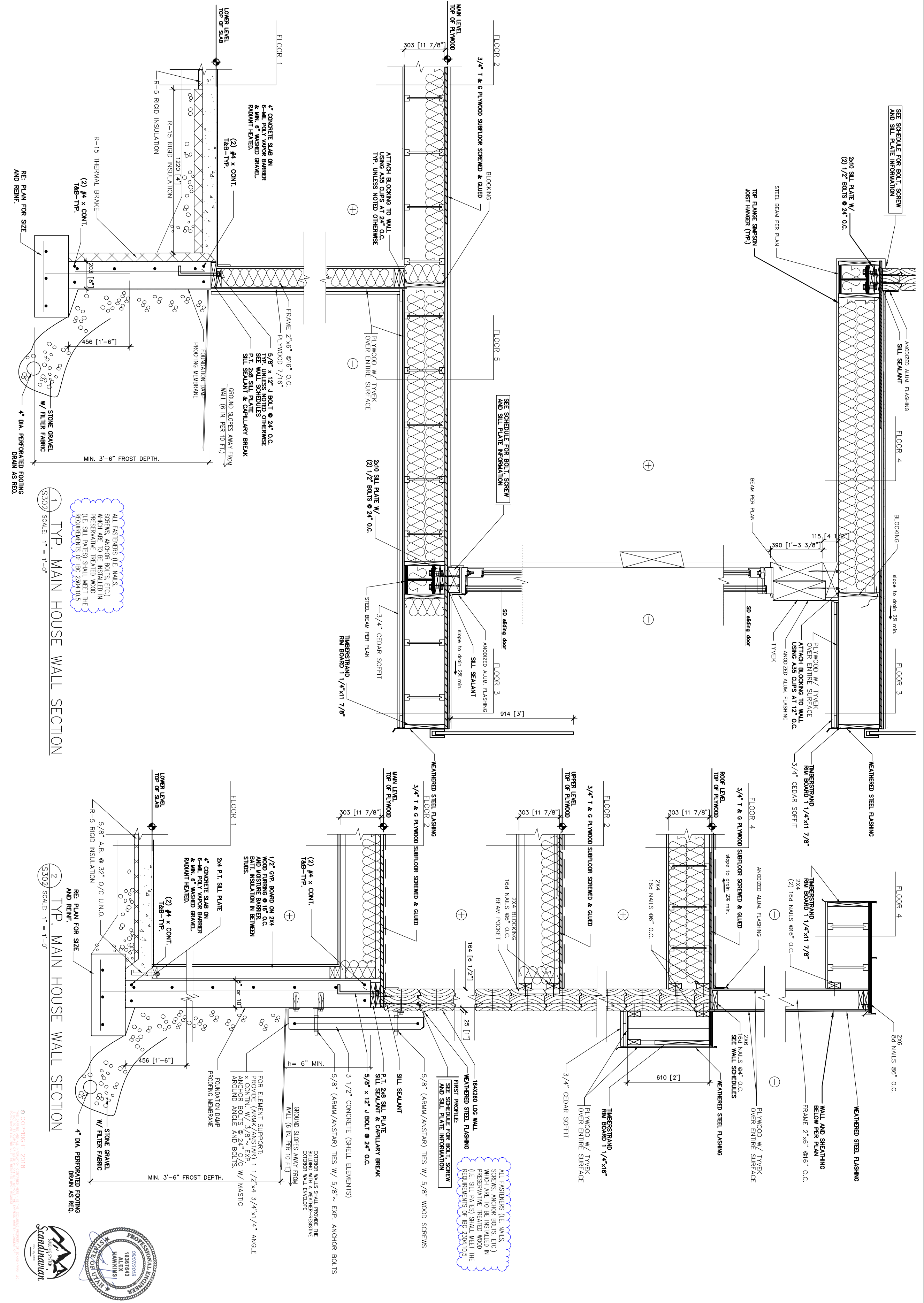

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Summit Powder Mountain, Lot # 70

8492 E. Spring Park, Weber County, Utah

SCANDINAVIAN LLC

ARCHITECTURAL OFFICE

BUILDER

Drawing Date 06-21-2018

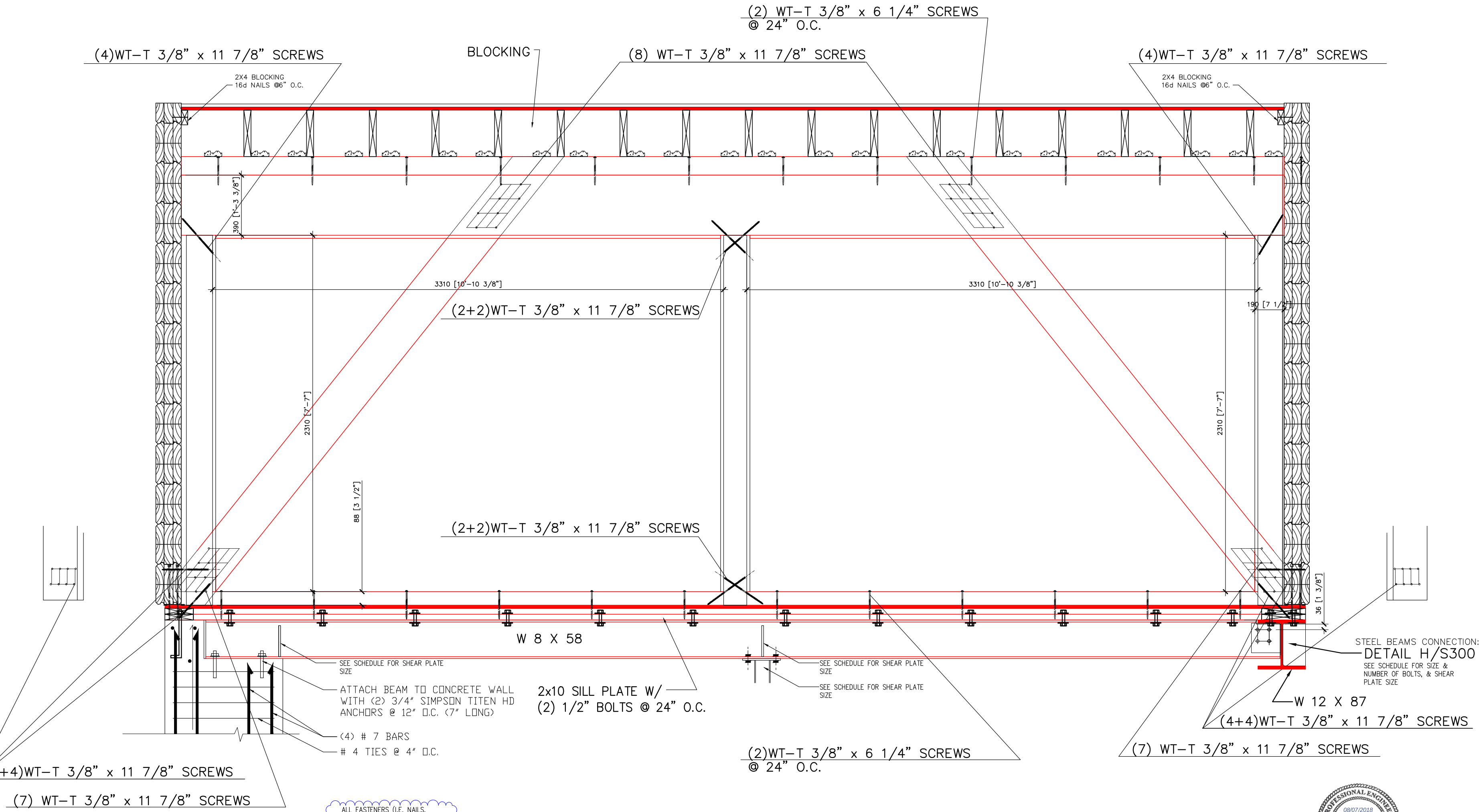
Scale 1"=1'-0"

DETAILS

S302

Exhibit A: Building Plans

WT–T 3/8" x 11 7/8" SCREWS = WT–T–8,2x300
WT–T 3/8" x 6 1/4" SCREW = WT–T–8,2x160



ALL FASTENERS (I.E. NAILS, SCREWS, ANCHOR BOLTS, ETC.) WHICH ARE TO BE INSTALLED IN PRESERVATIVE TREATED WOOD (I.E. SILL PATES) SHALL MEET THE REQUIREMENTS OF IBC 2304.10.5

TIMBER FRAME WALL (TYPICAL)

1
S303
SCALE: 1" = 1'–0"

08/07/2018
10367643
ALEX HAWKINS

SCANDINAVIAN
LLC

ARCHITECTURAL OFFICE
Company Name
Scandinavian LLC
Address
6410 N. Business
Park Loop Rd. Unit E
Phone 435–513–0355
Fax
Project No.
Cad File
Drawn
Checked

A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

Drawing Date 06-21-2018
Scale 1" = 1' -0"
Title/No.
DETAILS
BUILDER/ DEALER'S APPROVAL :
Signature and Date

S303

Exhibit A: Building Plans

NOTE:

ROOM AREAS SHOWN BELOW
ROOM NAMES ARE APPROXIMATE
ALL FRAMING STUDS ARE 16"

WALL LEGEND:

WALL 1: (6 1/2")
- RECTANGULAR LAMINATED PROFILE WALL 6 1/2" [164x260]

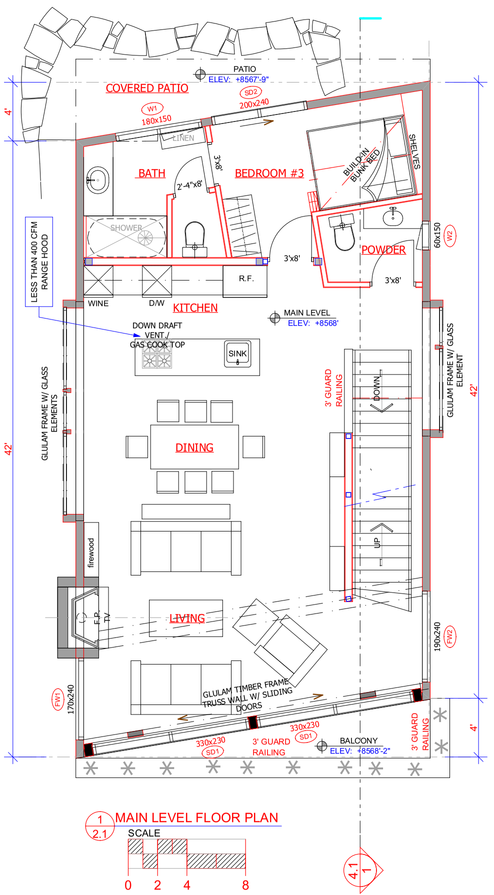
WALL 2: (8 5/8")
- RECTANGULAR LAMINATED PROFILE WALL 6 1/2"
-2"x2"FURRING WALL @16"O.C.
* SLIDING CONNECTORS, (INSULATION)
-GYP. BOARD 1/2"
(bath) -DAMP-PROOF COURSE
-TILE

WALL 3: (7 5/8")
-3 1/2" CONCRETE VENEER or 3/4" CEDAR SHIPLAP CLADDING or WEATHERED STEEL PANELS
-TYVEK
-PLYWOOD 7/16"
- 2"x6" STUD FRAMING @16"O.C.
*R-19 BATT INSULATION
-MOISTURE BARRIER
-GYP. BOARD 1/2"

WALL 4: (1'-2 1/2")
-10" CONCRETE WALL
-3/4" FURRING
- 2"x4" FURRING WALL @16"O.C.
*BATT INSULATION
-MOISTURE BARRIER
-1/2" GYP. BOARD

WALL 5: (4 5/8")
-GYP. BOARD 1/2"
- 2"x4" STUD FRAMING @16"O.C.
-GYP. BOARD 1/2"
(bath) -DAMP-PROOF COURSE
-TILE

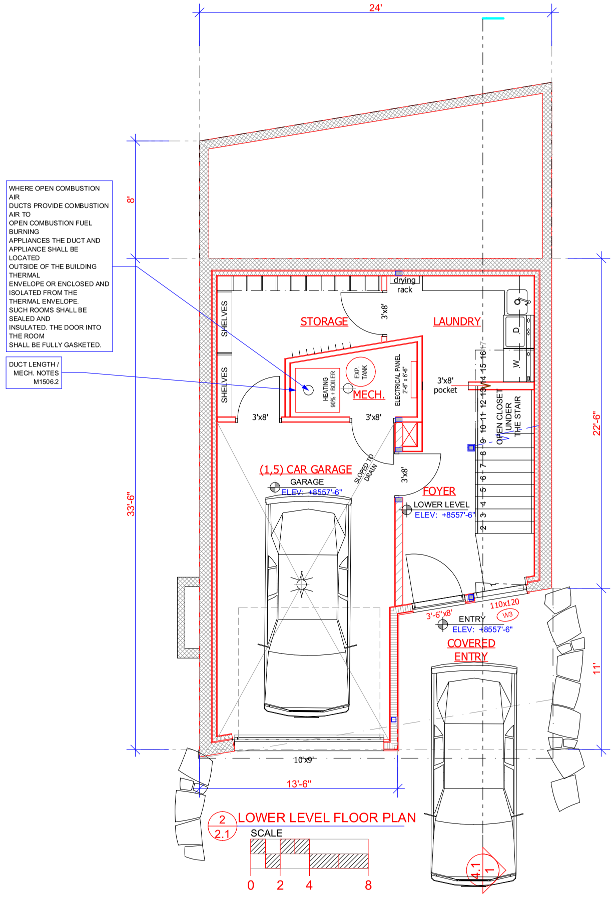
WALL 6: (6 3/4")
-GYP. BOARD 1/2"
- 2"x6" STUD FRAMING @16"O.C.
-GYP. BOARD 1/2"



1 / 2.1 MAIN LEVEL FLOOR PLAN

SCALE 0 2 4 8

AREA CALCULATION	
MAIN LEVEL FLOOR PLAN	1 019 sqft
LOWER LEVEL FLOOR PLAN	246 sqft
MECHANICAL & STORAGE AREA	151 sqft
TOTAL	397 sqft
1,5 CAR GARAGES	302 sqft
UPPER LEVEL FLOOR PLAN	766 sqft
ROOF LEVEL ATRIUM	281 sqft
TOTAL HEATED AREA	2 463 sqft
UNHEATED AREAS	302 sqft
TOTAL GRAND AREA	2 765 sqft



2 / 2.1 LOWER LEVEL FLOOR PLAN

SCALE 0 2 4 8

ARCHITECTURAL OFFICE
Company Name Scandinavian LLC
Address 6410 N. Business Park Loop Rd. Unit E
Phone 435-513-0355
Fax
Project No.
Cad File
Drawn
Checked

A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Utah

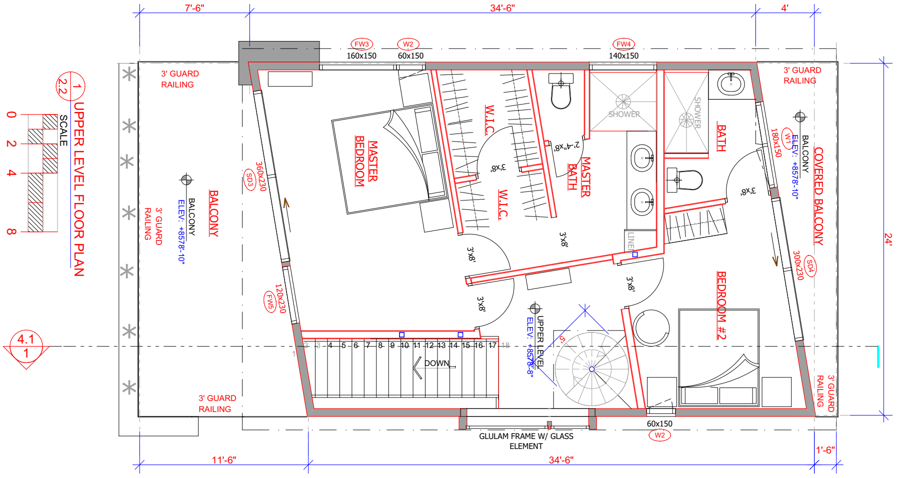
BUILDER
Company Name
Address
Park City, Utah 84098
Phone
Fax

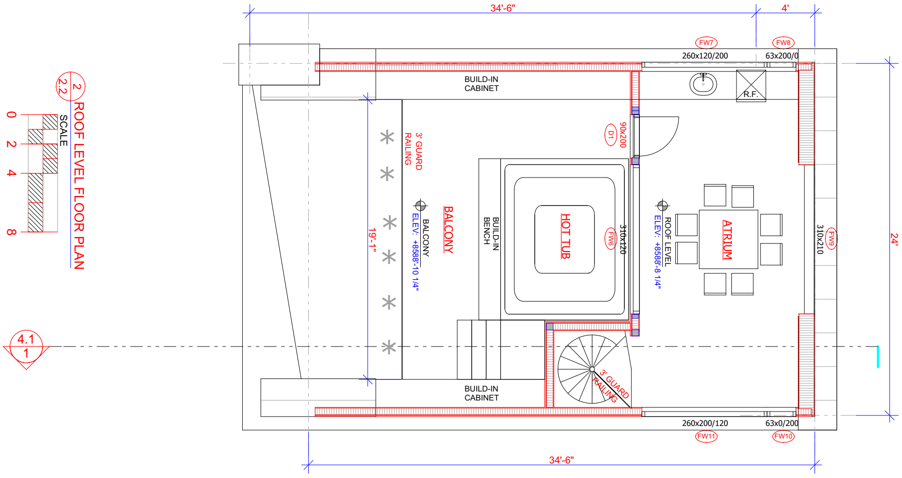
Drawing Date 06-21-2018
Scale 1/4" = 1' -0"
Title/No.
MAIN & LOWER LEVEL FLOORS
BUILDER/ DEALER'S APPROVAL :
Signature and Date

E 1

SCANDINAVIAN LLC

Exhibit A: Building Plans





E 2

Signature and Date

BUILDER/ DEALER'S APPROVAL :

Title/No.
UPPER & ROOF
LEVEL FLOORS

Scale
1/4" = 1'-0"

Drawing Date
06-21-2018

Fax

Phone

Park City, Utah 84098

Address

Company Name

BUILDER

A New Residence:

BLAKE KINGSBURY AND MERRIT CHESSON

Summit Powder Mountain, Lot # 70

8492 E. Spring Park, Utah

Checked

Drawn

Cad File

Project No.

Fax

Phone
435-513-0355

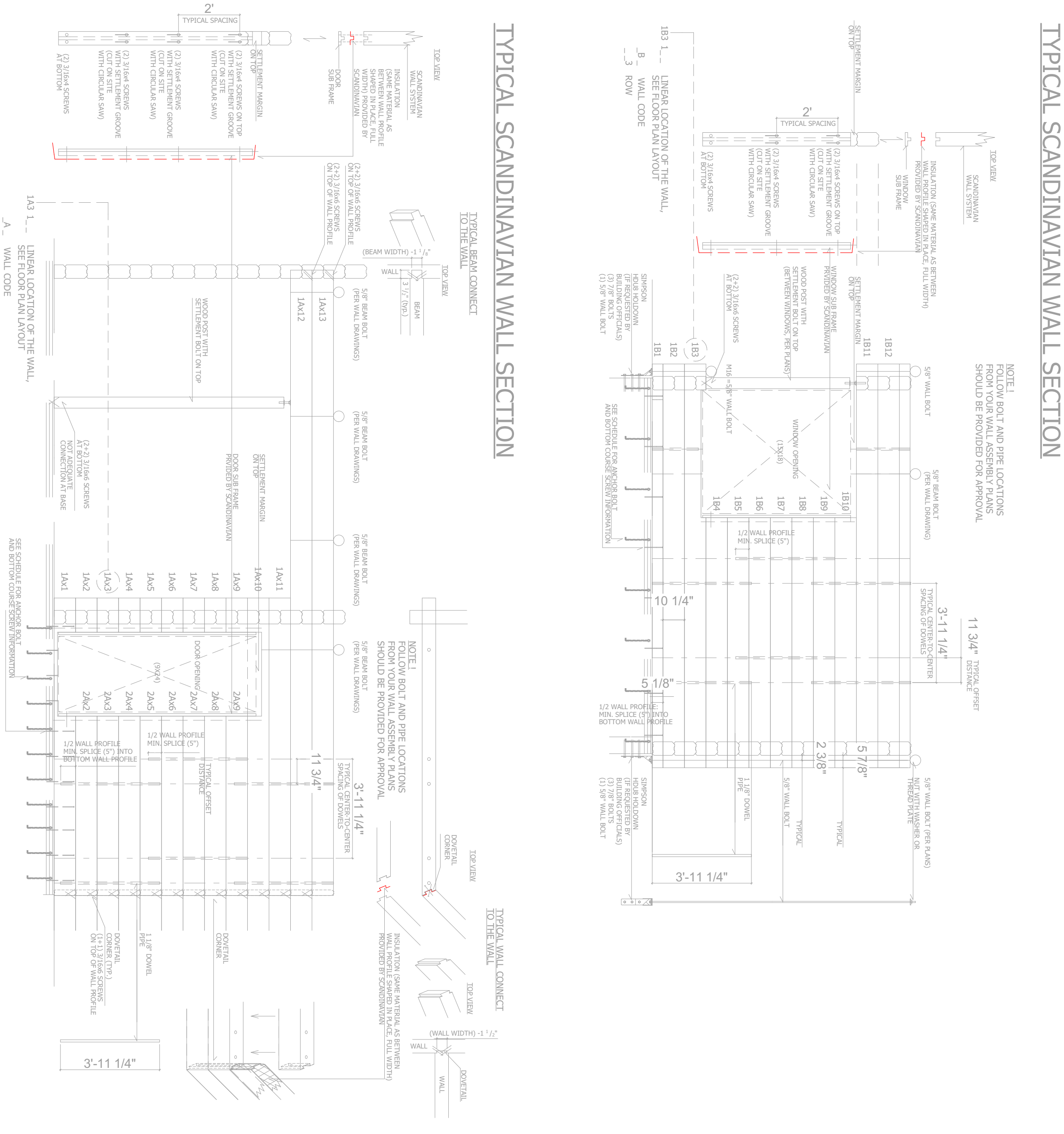
Address
6410 N. Business Park Loop Rd. Unit E

Company Name
Scandinavian LLC

ARCHITECTURAL OFFICE

SCANDINAVIAN
LLC

Exhibit A: Building Plans



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ARCHITECTURAL OFFICE
Company Name
Address
Phone
Fax
Project No.
Cad File
Drawn
Checked

BUILDER
Company Name
Address
Phone
Fax

A New Residence:
BLAKE KINGSBURY AND MERRIT CHESSON
Summit Powder Mountain, Lot # 70
8492 E. Spring Park, Weber County, Utah

Drawing Date 06-21-2018
Scale 1/2" = 1'-0"
Title: SCANDINAVIAN WALL SECTION
BUILDER/DEALER'S APPROVAL
Signature and Date

S304

10387643
ALEX HAWKINS
08/07/2018

SCANDINAVIAN LLC

14425 South Center Point Way Bluffdale, Utah 84065
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Geotechnical Investigation
Lot 70R – Summit Eden Phase 1C Development
8492 East Spring Park
Weber County, Utah

GeoStrata Job No. 594-004

July 11, 2018

Prepared for:

Jake Vainio
435-513-0990
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Scandinavian Homes
6410 North Business Loop Road Unit E
Park City, Utah

Learn More

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Prepared for:

Jake Vainio
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Park City, Utah

Geotechnical Investigation
Lot 70R – Summit Eden Phase 1C Development
8492 East Spring Park
Weber County, Utah

GeoStrata Job No. 594-004

Prepared by:

7-11-18
8846946
J. SCOTT SEAL

J. Scott Seal, P.E.
Associate Engineer

Daniel J. Brown, P.E.
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July 11, 2018

TABLE OF CONTENTS

APPENDICES

1.0 EXECUTIVE SUMMARY

This report presents the results of a geotechnical investigation conducted for the proposed residential structure to be constructed on Lot 70R of the Summit Eden Phase 1C development located in Weber County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slab-on-grades, and exterior concrete flatwork.

Based on the results of our geotechnical laboratory testing, it is our opinion that the site is suitable for the proposed development provided that the recommendations contained in this report are incorporated into the design and construction of the project.

Subsurface soils were investigated through the advancement of a single exploratory trench excavated to a depth ranging from of 5½ to 9 feet below the existing site grade. Two soil profiles exposed in our trench were logged as test pits, TP-1 and TP-2. The soils encountered within our test pits at the site generally consisted of 6-inches of sandy topsoil overlying sediments that have been mapped as consisting of the Tertiary Wasatch Formation. Where observed, these sediments consisted of dense, moist, red-brown Silty GRAVEL (GM) with sand, Poorly Graded GRAVEL (GP-GM) with silt, sand, cobbles and boulders, and Poorly Graded SAND (SP-SM) with silt. Gravels, cobbles and boulders were typically subrounded to rounded, and had a maximum observed diameter of approximately 7 inches. Considering the rounded nature of the cobbles, it is considered possible that these sediments actually represent a unit of alluvial deposits. Groundwater was not encountered in any of the test pits completed for this investigation, and is not expected to impact the development, although strategic site grading should be implemented in order to account for potential perched groundwater units during spring months.

The foundation for the proposed structure may consist of conventional strip footings founded entirely on undisturbed native soils or entirely on bedrock (if exposed). If footing excavations expose a combination of soil and bedrock, the bedrock should be over-excavated at least 18 inches to allow placement of 18 inches of structural fill to limit the potential for differential settlement. We recommend that a GeoStrata representative observe all foundation soils in footing excavations prior to placing reinforcing steel or concrete. Conventional continuous/spread footings may be proportioned using a maximum net allowable bearing pressure of **1,700 pounds per square foot (psf)** for dead plus live load conditions.

Due to the possibility of moisture reaching the foundation elements during spring runoff, it is recommended that a foundation drain be constructed around the proposed residence.

NOTE: The scope of services provided within this report are limited to the assessment of the subsurface conditions at the subject site. The executive summary is provided solely for purposes of overview and is not intended to replace the report of which it is part and should not be used separately from the report.

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a geotechnical investigation conducted for the proposed residential structure to be constructed on Lot 70R of the Summit Eden Phase 1C located at approximately 8492 East Spring Park in Weber County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slab-on-grades, and exterior concrete flatwork.

The scope of work completed for this study included a site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal, dated September 9, 2016 and your signed authorization.

The recommendations contained in this report are subject to the limitations presented in the "Limitations" section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

The subject lot is located at approximately 8492 East Spring Park, approximately 600 feet east of the intersection of Copper Crest Drive and Summit Pass Drive in unincorporated Weber County, Utah (see Plate A-1, *Site Vicinity Map*). Our understanding of the proposed development is based on information provided by the client. We understand that the development will consist of the construction of a single family residential structure with associated driveway and landscaping on the lot, which has a total area of approximately 0.064 acres. Construction plans were not available for review at the time report was prepared; however, we anticipate that the proposed structure will consist of one to two story wood-framed building with a basement founded on conventional strip footings.

It should also be noted that GeoStrata is concurrently completing a geologic hazards assessment for the subject lot. The results of that study will be summarized in a separate report.

3.0 METHODS OF STUDY

3.1 LITERATURE REVIEW

In preparation of this report, we have reviewed geologic hazards maps created by the Utah Geologic Survey (UGS) for Weber County. These maps include surficial geologic maps completed by Coogan and others (2001) for the Ogden 30’ by 60’ Quadrangle. Based on our review of these maps, the subject site is underlain by bedrock composed of the Tertiary-aged Wasatch Formation, although numerous young landslides are mapped in areas adjacent to the subject lot. As such, a slope stability analysis is included as part of this investigation.

3.2 FIELD INVESTIGATION

As a part of this investigation, subsurface soil conditions were explored by excavating a trench across the full width of the property. This trench extended to depths ranging from 5½ feet to 9 feet in depth. Two locations along the profile of the trench were logged as test pits for the purposes of this geotechnical investigation, although a full log of the trench was completed as part of our geologic hazards assessment. The approximate locations of the explorations are shown on the *Exploration Location Map*, Plate A-2 in Appendix A. Subsurface soil conditions as encountered in the explorations were logged at the time of our investigation by qualified personnel and are presented on the enclosed Test Pit Logs, Plates B-1 and B-2 in Appendix B. A *Key to Soil Symbols and Terminology* is presented on Plate B-3.

The trench was excavated with a trackhoe. Bulk soil samples were obtained in the test pit explorations which were transported to our laboratory for testing to evaluate engineering properties of the various earth materials observed. Due to the granular nature of the exposed soils, it was not feasible to obtain relatively ‘undisturbed” soil samples. The soils were classified according to the *Unified Soil Classification System* (USCS) by the Geotechnical Engineer. Classifications for the individual soil units are shown on the attached Test Pit Logs.

3.3 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Grain Size Distribution Analysis (ASTM D422)
- Atterberg Limits Test (ASTM D4318)
- Direct Shear Test (ASTM D3080)

The results of laboratory tests are presented on the test pit logs in Appendix B (Plates B-1 and B-2), the Lab Summary Report (Plate C-1), on the test result plates presented in Appendix C (Plates C-2 to C-4) and the slope stability analysis in Appendix D (Plates D-1 and D-2).

3.4 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics and classification. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

Excavation stability was evaluated based on the field conditions encountered, laboratory test results, and soil type. Occupational Safety and Health (OSHA) minimum requirements are typically prescribed unless conditions warrant further flattening of excavation walls.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

The site is in a relatively natural state and is currently heavily vegetated with brush and grasses. The lot slopes upward moderately to the north at an approximate 4H:1V slope. The property sits at an elevation ranging from 8,560 to 8,600 feet above sea level with a total topographic relief of approximately 40 feet. No structures or other improvements were observed on the subject property at the time of our investigation.

4.2 SUBSURFACE CONDITIONS

As previously discussed, the subsurface soil conditions were explored at the site by excavating a trench across the subject lot. The test trench extended to depths ranging from 5½ to 9 feet below existing site grade. The soils encountered in the test pit explorations were visually classified and logged during our field investigation and are included on the test pit logs in Appendix B (Plates B-1 and B-2). The subsurface conditions encountered during our investigation are discussed below.

4.2.1 Soils

Based on our observations, the subject site is overlain by approximately 6-inches of sandy topsoil. Underlying the topsoil, we encountered units that are mapped consisting of highly- to completely-weathered exposures of the Tertiary-aged Wasatch Formation, however occasional cobbles and boulders with a sub-rounded to rounded nature were observed throughout this unit. This suggests that the material encountered may consist of an alluvial deposit. This unit persisted for the full depth of our investigation.

Topsoil: Generally consists of dark brown Silty SAND (SM) with gravel, cobbles, and boulders. This unit has an organic appearance and texture with roots throughout. Topsoil was encountered along the full profile exposed during our trenching activities and is anticipated to overlie the majority of the site.

Tertiary-aged Wasatch Formation: Where observed, this unit consisted of granular material, and could represent either highly- to completely-weathered bedrock unit or an alluvial unit. From an engineering perspective, this unit consists of a dense, moist, red-brown to brown Silty GRAVEL

(GM) with sand, Poorly Graded GRAVEL (GP-GM), with silt, cobble, and boulders, and Poorly Graded SAND (SP-SM) with silt and gravel. In general, the gravel, cobbles and boulders were subrounded to rounded, and had a maximum observed diameter of approximately 7-inches. The Wasatch Formation in this area is mapped by Coogan and others (2001) as consisting of "brown-red siltstone, sandstone, mudstone, and conglomerate with minor grey limestone and marlstone". These deposits persisted to the full depth of our investigation.

The stratification lines shown on the enclosed test pit logs represent the approximate boundary between soil types (Plates B-1 and B-2). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils, care should be taken in interpolating subsurface conditions between and beyond the exploration locations.

4.2.2 Groundwater

Groundwater was not encountered in any of the test pits excavated as part of our investigation, and is anticipated to be relatively deep: however, due to the alpine location of the subject lot, localized near perched groundwater may occur during the spring months. Fluctuations in the groundwater level should be expected over time.

5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

The site is located at an elevation ranging from approximately 8,560 to 8,600 feet above mean sea level within the James-Sharp Mountain area located at the southern part of the Bear River Range, Utah, which itself is located in the Middle Rocky Mountain province. James Peak is a structural high between the Cache Valley graben to the north and the Ogden Valley graben to the south. Sharp Mountain, on the other hand, is within the main part of the Bear River Range. The Bear River Range is formed from Paleozoic rocks that are broadly and gently folded. A major syncline and major anticline, trending north-northeast to northeast, were identified in the 30-minute Logan Quadrangle. Ogden Valley and the surrounding areas are underlain by rocks that range in age from Precambrian to Quaternary. The Precambrian rocks are mainly metasedimentary. Carbonate rocks predominate in the Paleozoic sequence, whereas deposits of Cenozoic age are predominately alluvial in origin. At its highest stage of about 5,090 feet (Blau, 1975) Pleistocene Lake Bonneville extended into Ogden Valley through Ogden Canyon. Unconsolidated lacustrine sediments undoubtedly were deposited in the valley.

Additional information concerning the geologic nature and condition of the subject property may be found in our Geologic Hazards Assessment concurrently being completed by GeoStrata.

6.0 ENGINEERING CONCLUSIONS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the geotechnical soils testing results, it is our opinion that the soils at the subject site are suitable for the proposed construction provided that the recommendations contained in this report are complied with. The recommendations presented in this report are based on our understanding of the proposed project, the subsurface conditions observed during field exploration, the results of laboratory testing, and our engineering analyses. If subsurface conditions other than those described herein are encountered in conjunction with construction, and/or if design and layout changes are initiated, we must be informed so that the recommendations herein can be reviewed and revised as changes or conditions may require.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, and concrete slab-on-grade. Site grading is also recommended to provide proper drainage and moisture control on the subject property and to aid in preventing differential settlement of foundations as a result of variations in subgrade moisture conditions.

6.2.1 General Site Preparation and Grading

In areas beneath footings and concrete flat work, topsoil should be stripped and stockpiled for use in landscape areas or disposal. Debris, undocumented fill, vegetation, roots (including tree roots), loose, soft or other deleterious materials should also be removed and replaced with structural fill. If over-excavation is required, the excavation should extend a minimum of one foot laterally for every foot of depth of over-excavation. Excavations should extend laterally at least two feet beyond flatwork, pavements, and slabs-on-grade. If materials are encountered that are not represented in the test pit logs or may present a concern, GeoStrata should be notified so observations and further recommendations as required can be made. The exposed native soils should then be proof-rolled with heavy rubber-tired equipment. If soft soils are observed, they should be stabilized in accordance with our recommendations in the Soft Soil Stabilization Section (Section 6.2.3); if loose soils are observed, they should be compacted as recommended in Section 6.2.4.

6.2.2 Excavation Stability

Based on Occupational Safety and Health Administration (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied, however, the presence of fill soils, loose soils, or wet soils may require that the walls be flattened to maintain safe working conditions. When the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Based on our soil observations, laboratory testing, and OSHA guidelines, native soils at the site classify as Type C soils. Deeper excavations, if required, should be constructed with side slopes no steeper than one and one and one half horizontal to one vertical (1.5H:1V). If wet conditions are encountered, side slopes should be further flattened to maintain slope stability. Alternatively, shoring or trench boxes may be used to improve safe work conditions in trenches. The contractor is ultimately responsible for trench and site safety. Pertinent OSHA requirements should be met to provide a safe work environment. If site specific conditions arise that require engineering analysis in accordance with OSHA regulations, GeoStrata can respond and provide recommendations as needed.

We recommend that a GeoStrata representative be on-site during all excavations to assess the exposed foundation soils. We also recommend that the Geotechnical Engineer be allowed to review the grading plans when they are prepared in order to evaluate their compatibility with these recommendations.

6.2.3 Soft Soil Stabilization

Although not anticipated, soft or pumping soils may be exposed in excavations at the site. Once exposed, all subgrade surfaces beneath proposed structure, pavements, and flat work concrete should be proof rolled with heavy wheeled-construction equipment. If soft or pumping soils are encountered, these soils should be stabilized prior to construction of footings. Stabilization of the subgrade soils can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 2-inch diameter, but less than 6 inches. A locally available pit-run gravel may be suitable but should contain a high percentage of particles larger than 2 inches and have less than 7 percent fines (material passing the No. 200 sieve). A pit-run gravel may not be as effective as a coarse, angular material in stabilizing the soft soils and may require more material and greater effort. The stabilization material should be worked (pushed) into the soft subgrade soils until a firm relatively unyielding surface is established. Once a firm, relatively unyielding surface is achieved, the area may be brought to final design grade using structural fill.

In large areas of soft subgrade soils, stabilization of the subgrade may not be practical using the method outlined above. In these areas it may be more economical to place a woven geotextile fabric against the soft soils covered by 18 inches of coarse, sub-rounded to rounded material over the woven geotextile. An inexpensive non-woven geotextile "filter" fabric should also be placed over the top of the coarse, sub-rounded to rounded fill prior to placing structural fill or pavement section soils to reduce infiltration of fines from above. The woven geotextile should be Amoco 2004 or prior approved equivalent. The filter fabric should consist of an Amoco 4506, Amoco 4508, or equivalent as approved by the Geotechnical Engineer.

6.2.4 Structural Fill and Compaction

All fill placed for the support of the structure or flatwork concrete should consist of structural fill. Structural fill may consist of native, granular soils provided it is first screened to remove debris, vegetation, and material exceeding 4-inches in nominal diameter. Alternatively, structural fill may consist of an imported granular soil with maximum fines content (minus No.200 mesh sieve) of 30 percent. All structural fill should be free of vegetation and debris and contain no materials larger than 3-inches in nominal size. All structural fill soils should be approved by the Geotechnical Engineer prior to placement. Clay and silt particles in imported structural fill should have a liquid limit less than 35 and a plasticity index less than 15 based on the Atterberg Limit's test (ASTM D-4318). The contractor should have confidence that the anticipated method of compaction will be suitable for the type of structural fill used. The contractor should anticipate testing all soils used as structural fill frequently to assess the maximum dry density, fines content, and moisture content, etc.

All structural fill should be placed in maximum 6-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 8-inch loose lifts if compacted by light-duty rollers, and maximum 12-inch loose lifts if compacted by heavy duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by the geotechnical engineer. Structural fill with an overall thickness of 6 feet or less should be compacted to at least 95% of the maximum dry density (MDD), as determined by ASTM D-1557 (modified proctor). The moisture content should be within 3% of the optimum moisture content (OMC) at the time of placement and compaction. Also, prior to placing any fill, the excavations should be observed by the geotechnical engineer to observe that any unsuitable materials or loose soils have been removed. In addition, proper grading should precede placement of fill, as described in the *General Site Preparation and Grading* subsection of this report (Section 6.2.1).

Fill soils placed for subgrade below exterior flat work should be within 3% of the OMC when placed and compacted to at least 95% of the MDD as determined by ASTM D-1557. All utility trenches backfilled below the proposed structure, pavements, and flatwork concrete, should be backfilled with structural fill that is within 3% of the OMC when placed and compacted to at least 95% of the MDD as determined by ASTM D-1557. All other trenches, in landscape areas, should be backfilled and compacted to at least 90% of the MDD (ASTM D-1557).

The gradation, placement, moisture, and compaction recommendations contained in this section meet our minimum requirements but may not meet the requirements of other governing agencies such as city, county, or state entities. If their requirements exceed our recommendations, their specifications should override those presented in this report.

6.3 FOUNDATIONS

Due to the type of investigation performed, soil strength and stiffness parameters were estimated using conservative values to estimate the bearing capacity and settlement. The foundation for the proposed structure may consist of conventional strip footings founded entirely on undisturbed native soils or entirely on bedrock. If footing excavations expose a combination of soil and bedrock, the bedrock should be over-excavated at least 18 inches to allow placement of 18 inches of structural fill to limit the potential for differential settlement. Strip footings should be a minimum of 20-inches wide and exterior shallow footings should be embedded at least 36-inches below final grade for frost protection and confinement. Interior footings not subject to frost should be embedded at least 18 inches below final grade to provide confinement. To provide adequate support and confinement, we recommend that footings be place at least 15 feet, measured horizontally, from the face of existing or fill slopes at the site.

Conventional strip footings founded entirely on native soils or on properly compacted structural fill may be proportioned for a maximum net allowable bearing capacity of **1,700 psf**. The net allowable bearing capacity may be increased (typically by one-third) for temporary loading conditions such as transient wind and seismic loads. All footing excavations should be observed by the Geotechnical Engineer prior to footing placement.

Settlements of properly designed and constructed conventional footings, founded as described above, are anticipated to be less than 1 inch. Differential settlements should be on the order of half the total settlement over 30 feet.

6.4 SLOPE STABILITY

The global stability of Lot 70R was modeled using the SLIDE computer application and the Janbu's Corrected Method of analysis. Calculations for stability were developed by searching for the minimum factor of safety for a circular-type and user-defined slope parallel failure surfaces. Homogenous earth materials and arcuate failure surfaces were assumed. The profile for the lot was obtained from ARC GIS data. A surcharge of approximately 1,700 psf was applied to our model within the anticipated vicinity of the residence. Slope stability was performed for the static and pseudo-static conditions. The pseudo-static assessment used one half of the peak ground acceleration of 0.35g as presented in Section 6.1 of our Geologic Hazards Assessment Report. Groundwater is presumed to be relatively deep and was not incorporated into the model.

Our slope stability model consists of two soil layers parallel to the surface profile. The first layer is a 1-foot thick unit of topsoil mantling the property, which is underlain by a unit of highly- to completely-weathered bedrock/alluvial deposits. The following strength parameters were applied to our model;

Soil Strength Parameters

Soil Type	Friction Angle (phi) (degrees)	Cohesion (psf)
Topsoil*	30	100
Bedrock/Alluvium**	26	260

* assumed value
** laboratory obtained value

The strength parameters for the bedrock/alluvial deposits was increased to consist of a friction angle of 34 degrees and a cohesion of 50 psf to account for the fact that the material consisted of approximately 63% gravel, which was screened from our sample prior to testing. As such, it is considered likely that the results of our direct shear testing significantly underestimate the actual strength of the soils present at the site. Groundwater was not encountered during our field investigations and is anticipated to be located at a relatively great depth. As such, groundwater was not incorporated into our slope stability modeling. Slopes with factors of safety of 1.5 and

1.0 for static and pseudo-static conditions, respectively, are considered stable. The analyses performed for this report indicated that the site has a static factor of safety of 2.5 and a pseudo static factor of safety of 1.56.

6.5 FOUNDATION DRAINAGE

Due to the possibility of moisture reaching the foundation elements during spring runoff, it is recommended that a foundation drain be constructed around any subgrade walls. The foundation drain should consist of a 4-inch perforated pipe placed at or below the footing elevation. The pipe should be covered with at least 12 inches of free draining gravel (containing less than 5 percent passing the No 4 sieve) and be graded to a free gravity out fall or to a pumped sump. A separator fabric, such as Mirafi 140N, should separate the free draining gravel and native soil (i.e. the separator fabric should be placed between the gravel and the native soils at the bottom of the gravel, the side of the gravel where the gravel does not lie against the concrete footing or foundation and at the top of the gravel). We recommend that the gravel extend up the foundation wall to within 3 feet of the final ground surface. As an alternative, the gravel extending up the foundation wall may be replaced with a prefabricated drain panel, such as Ecodrain-E.

6.6 CONCRETE SLAB-ON-GRADE CONSTRUCTION

Concrete slabs-on-grade should be constructed over at least 4 inches of compacted gravel overlying undisturbed native soil or a zone of structural fill that is at least 12 inches thick. Disturbed native soils should be compacted to at least 95% of the MDD as determined by ASTM D-1557 (modified proctor) prior to placement of gravel. The gravel should consist of road base or clean drain rock with a ¾-inch maximum particle size and no more than 12 percent fines passing the No. 200 mesh sieve. The gravel layer should be compacted to at least 95 percent of the MDD of modified proctor or until tight and relatively unyielding if the material is non-proctorable. The maximum load on the floor slab should not exceed 300 psf; greater loads would require additional subgrade preparation and additional structural fill. All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with welded wire, re-bar, or fiber mesh.

6.7 EARTH PRESSURES AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footing and the supporting soils. In determining the frictional resistance against concrete, a coefficient of friction of 0.44 for native granular soils should be used.

Ultimate lateral earth pressures from natural soils and *granular* backfill acting against retaining walls and buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in the following table:

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active*	0.25	31
At-rest**	0.44	53
Passive*	8.95	1074
Seismic Active***	0.31	37
Seismic Passive***	-2.45	-294

* Based on Coulomb's equation

** Based on Jaky

*** Based on Mononobe-Okabe Equation

These coefficients and densities assume level, granular backfill with no buildup of hydrostatic pressures. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. If sloping backfill is present, we recommend the geotechnical engineer be consulted to provide more accurate lateral pressure parameters once the design geometry is established.

Walls and structures allowed to rotate slightly should use the active condition. If the element is constrained against rotation, the at-rest condition should be used. These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

For seismic analyses, the *active* and *passive* earth pressure coefficient provided in the table is based on the Mononobe-Okabe pseudo-static approach and only accounts for the dynamic horizontal thrust produced by ground motion. Hence, the resulting dynamic thrust pressure *should be added* to the static pressure to determine the total pressure on the wall. The pressure distribution of the dynamic horizontal thrust may be closely approximated as an inverted triangle with stress decreasing with depth and the resultant acting at a distance approximately 0.6 times the loaded height of the structure, measured upward from the bottom of the structure.

The coefficients shown assume a vertical wall face. Hydrostatic and surcharge loadings, if any, should be added. Over-compaction behind walls should be avoided. Resisting passive earth pressure from soils subject to frost or heave, or otherwise above prescribed minimum depths of embedment, should usually be neglected in design.

6.8 MOISTURE PROTECTION AND SURFACE DRAINAGE

Precautions should be taken during and after construction to minimize the potential for saturation of foundation soils. Over wetting the soils prior to or during construction may result in increased softening and pumping, causing equipment mobility problems and difficulty in achieving compaction.

Infiltrate of moisture in the vicinity of structures should be minimized. We recommend that roof runoff devices be installed to direct all runoff a minimum of 10 feet away from structures. The grade within 10 feet of the structures should be sloped a minimum of 5% away from the structure in accordance with the IBC, 2015.

7.0 CLOSURE

7.1 LIMITATIONS

The recommendations contained in this report are based on our limited field exploration, laboratory testing, and understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist between the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, we should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, GeoStrata should be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No warranty, expressed or implied, is made.

It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

7.2 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and observations will be made during construction. GeoStrata staff should be on site to verify compliance with these recommendations. These tests and observations should include, but not necessarily be limited to, the following.

- Observations and testing during site preparation, earthwork and structural fill placement.
- Observation of foundation soils to assess their suitability for footing placement.
- Observation of soft/loose soils over-excavation.
- Observation of temporary excavations and shoring.
- Consultation as may be required during construction.
- Quality control and observation of concrete placement.

We also recommend that project plans and specifications be reviewed by us to verify compatibility with our conclusions and recommendations. Additional information concerning the scope and cost of these services can be obtained from our office.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact us at your convenience at (801) 501-0583.

8.0 REFERENCES CITED

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Exhibit B-Geotechnical Report

200 0 200 400 600 800 ft

1:5,000

Legend

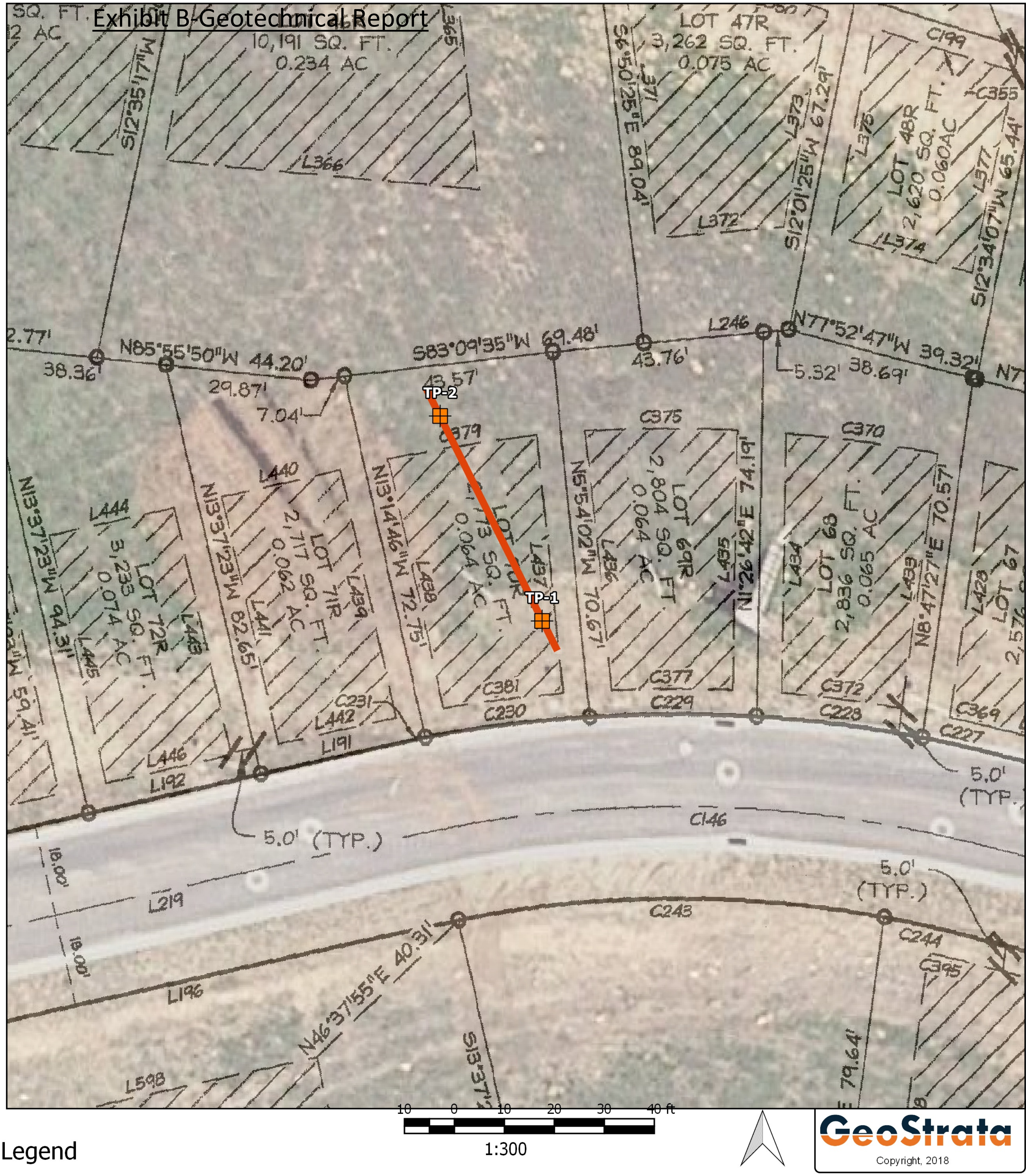
🟥 Apprixmate Site Boundary

GeoStrata

Scandinavian Homes
Powder Mountain Lot 70
Eden, Utah
Project Number: 594-004

Exploration Location Map

Plate A-1



Legend

⊞ Approximate Test Pit Location

▬ Approximate Trench Location

GeoStrata

Scandinavian Homes
Powder Mountain Lot 70
Eden, Utah
Project Number: 594-004

Exploration Location Map

Plate A-2

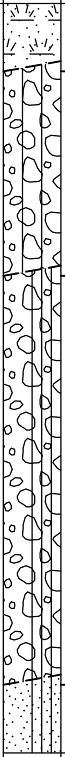
DATE		
STARTED:	7/2/18	
COMPLETED:	7/2/18	
BACKFILLED:	7/2/18	

Summit Eden Phase 1C-Lot 70R
8492 East Spring Park
Weber County, Utah
Project Number 594-004

GeoStrata Rep: A. Peay
Rig Type: Trackhoe

TEST PIT NO:
TP-1
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION



DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Silty SAND with gravel - brown, moist, organics and roots up to 1 inch in diameter extending to 3 feet below the existing site grade					
					GM	Silty GRAVEL with sand - dense to very dense, reddish-brown, moist, organics and large roots throughout with pinhole or root cast structures, gravels are sub-rounded to rounded up to 5 inches in diameter					
1		▯			GP-GM	Poorly Graded GRAVEL with silt, cobbles and boulders - dense to very dense, reddish-brown, moist, organics throughout, sub-rounded to rounded cobbles and boulders up to 1½ feet in diameter		2.6	11.3	NP	NP
	5				SP-SM	Poorly Graded SAND with silt - dense, reddish brown, moist, occasional gravels less then ¼ inch in diameter					
2						Bottom of Test Pit @ 5.5 Feet					
3											

Moisture Content and Atterberg Limits
Plastic Limit Moisture Content Liquid Limit
10 20 30 40 50 60 70 80 90

LOG OF TEST PITS (B) TRENCH LOGS.GPJ GEOSTRATA.GDT 7/11/18

GeoStrata

SAMPLE TYPE
▯ - GRAB SAMPLE
☒ - 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
▼ - MEASURED
▽ - ESTIMATED

NOTES:
South end of trench

Plate
B-1

Exhibit B-Geotechnical Report

DATE		
STARTED:	7/2/18	
COMPLETED:	7/2/18	
BACKFILLED:	7/2/18	

Summit Eden Phase 1C-Lot 70R
8492 East Spring Park
Weber County, Utah
Project Number 594-004

GeoStrata Rep: A. Peay
Rig Type: Trackhoe

TEST PIT NO:
TP-2
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Silty SAND with gravel - brown, moist, organics and roots up to 1 inch in diameter extending to 3 feet below the existing site grade					
					GM	Silty GRAVEL with sand - dense to very dense, reddish-brown, moist, organics and large roots throughout with pinhole or root cast structures, occasional sub-rounded to rounded cobbles up to 6 inches in diameter					
1	5				GP-GM	Poorly Graded GRAVEL with silt and cobbles - dense to very dense, reddish-brown, moist, organics throughout, sub-rounded to rounded cobbles up to 7 inches in diameter					
2		◫							13.9	NP	NP
					SP-SM	Poorly Graded SAND with silt - dense, reddish brown, moist, occasional gravels less then ¼ inch in diameter					
		◫					113.0	7.0			
3						Bottom of Test Pit @ 9.5 Feet					

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content ● — Liquid Limit
10 20 30 40 50 60 70 80 90

LOG OF TEST PITS (B) TRENCH LOGS.GPJ GEOSTRATA.GDT 7/11/18

GeoStrata

SAMPLE TYPE
◫ - GRAB SAMPLE
☒ - 3" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
▼ - MEASURED
▽ - ESTIMATED

NOTES:
North end of trench

Plate
B-2

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			USCS SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	GRAVELS (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
			SC	CLAYEY SANDS SAND-GRAVEL-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid limit less than 50)		ML	INORGANIC SILTS & VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid limit greater than 50)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
DRY	ABSENCE OF MOISTURE, DUSTY, DRY TO THE TOUCH
MOIST	DAMP BUT NO VISIBLE WATER
WET	VISIBLE FREE WATER, USUALLY SOIL BELOW WATER TABLE

STRATIFICATION

DESCRIPTION	THICKNESS	DESCRIPTION	THICKNESS
SEAM	1/16 - 1/2"	OCCASIONAL	ONE OR LESS PER FOOT OF THICKNESS
LAYER	1/2 - 12"	FREQUENT	MORE THAN ONE PER FOOT OF THICKNESS

LOG KEY SYMBOLS

BORING SAMPLE LOCATION

TEST-PIT SAMPLE LOCATION

▼ WATER LEVEL (level after completion)

▽ WATER LEVEL (level where first encountered)

CEMENTATION

DESCRIPTION	DESCRIPTION
WEAKELY	CRUMBLES OR BREAKS WITH HANDLING OR SLIGHT FINGER PRESSURE
MODERATELY	CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE
STRONGLY	WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE

OTHER TESTS KEY

C	CONSOLIDATION	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	DS	DIRECT SHEAR
UC	UNCONFINED COMPRESSION	T	TRIAXIAL
S	SOLUBILITY	R	RESISTIVITY
O	ORGANIC CONTENT	RV	R-VALUE
CBR	CALIFORNIA BEARING RATIO	SU	SOLUBLE SULFATES
COMP	MOISTURE/DENSITY RELATIONSHIP	PM	PERMEABILITY
CI	CALIFORNIA IMPACT	-200	% FINER THAN #200
COL	COLLAPSE POTENTIAL	Gs	SPECIFIC GRAVITY
SS	SHRINK SWELL	SL	SWELL LOAD

MODIFIERS

DESCRIPTION	%
TRACE	<5
SOME	5 - 12
WITH	>12

GENERAL NOTES

1. Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual.
2. No warranty is provided as to the continuity of soil conditions between individual sample locations.
3. Logs represent general soil conditions observed at the point of exploration on the date indicated.
4. In general, Unified Soil Classification designations presented on the logs were evaluated by visual methods only. Therefore, actual designations (based on laboratory tests) may vary.

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT (blows/ft)	MODIFIED CA. SAMPLER (blows/ft)	CALIFORNIA SAMPLER (blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
VERY LOOSE	<4	<4	<5	0 - 15	EASILY PENETRATED WITH 1/2-INCH REINFORCING ROD PUSHED BY HAND
LOOSE	4 - 10	5 - 12	5 - 15	15 - 35	DIFFICULT TO PENETRATE WITH 1/2-INCH REINFORCING ROD PUSHED BY HAND
MEDIUM DENSE	10 - 30	12 - 35	15 - 40	35 - 65	EASILY PENETRATED A FOOT WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER
DENSE	30 - 50	35 - 60	40 - 70	65 - 85	DIFFICULT TO PENETRATED A FOOT WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER
VERY DENSE	>50	>60	>70	85 - 100	PENETRATED ONLY A FEW INCHES WITH 1/2-INCH REINFORCING ROD DRIVEN WITH 5-LB HAMMER

CONSISTENCY - FINE-GRAINED SOIL

		TORVANE	POCKET PENETROMETER	FIELD TEST
CONSISTENCY	SPT (blows/ft)	UNTRAINED SHEAR STRENGTH (tsf)	UNCONFINED COMPRESSIVE STRENGTH (tsf)	
VERY SOFT	<2	<0.125	<0.25	EASILY PENETRATED SEVERAL INCHES BY THUMB. EXUDES BETWEEN THUMB AND FINGERS WHEN SQUEEZED BY HAND.
SOFT	2 - 4	0.125 - 0.25	0.25 - 0.5	EASILY PENETRATED ONE INCH BY THUMB. MOLDED BY LIGHT FINGER PRESSURE.
MEDIUM STIFF	4 - 8	0.25 - 0.5	0.5 - 1.0	PENETRATED OVER 1/2 INCH BY THUMB WITH MODERATE EFFORT. MOLDED BY STRONG FINGER PRESSURE.
STIFF	8 - 15	0.5 - 1.0	1.0 - 2.0	INDENTED ABOUT 1/2 INCH BY THUMB BUT PENETRATED ONLY WITH GREAT EFFORT.
VERY STIFF	15 - 30	1.0 - 2.0	2.0 - 4.0	READILY INDENTED BY THUMBNAIL.
HARD	>30	>2.0	>4.0	INDENTED WITH DIFFICULTY BY THUMBNAIL.

GeoStrata

Soil Symbols Description Key

Lot 70 – Summit Eden Phase 1C
8492 East Spring Park
Weber County, Utah
Project Number: 594-004

Plate

B-3

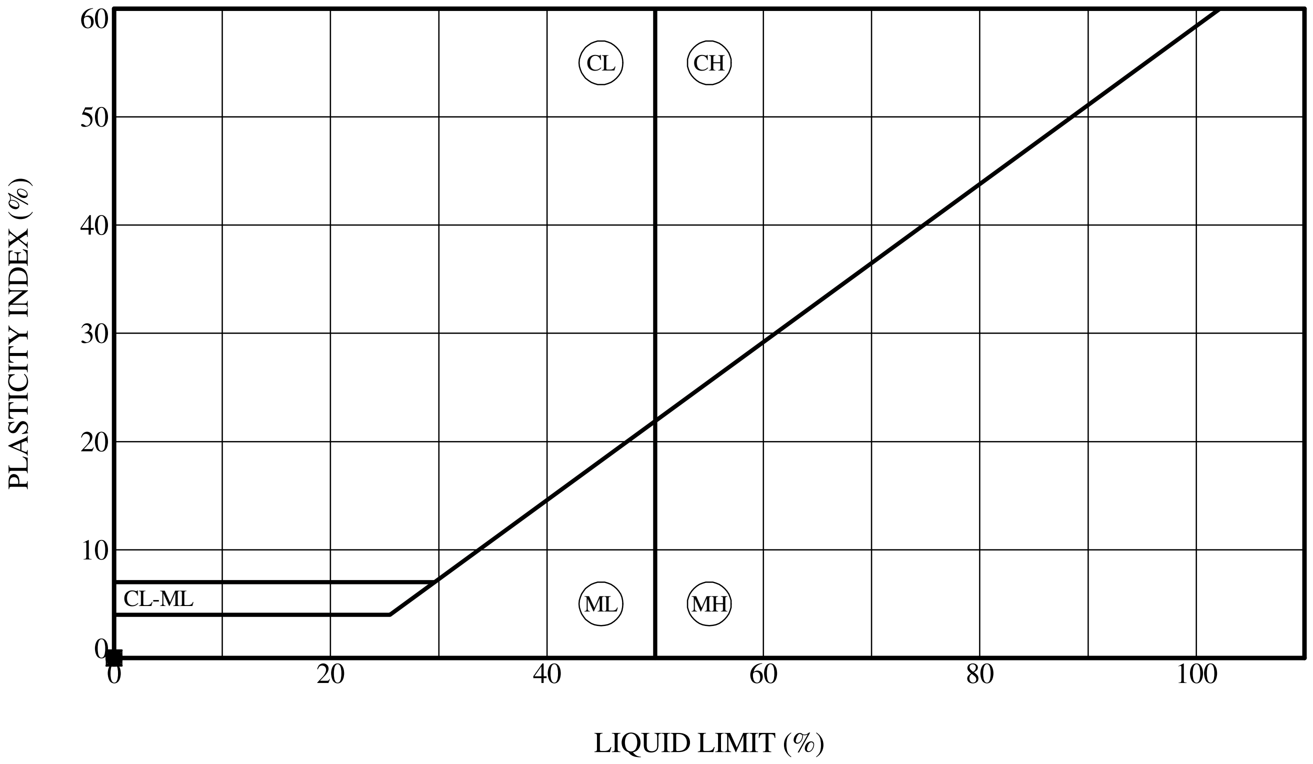
Test Pit No.	Sample Depth (feet)	USCS Soil Classification	Natural Moisture Content (%)	Natural Dry Density (pcf)	Gradation			Atterberg		Direct Shear	
					Gravel (%)	Sand (%)	Fines (%)	LL	PI	Apparent Cohesion (psf)	Internal Friction (°)
TP-1	4.5	GP-GM	2.6		80.3	8.4	11.3	NP	NP		
TP-2	6	GP-GM						NP	NP		
TP-2	9	GP-GM	7	113	62.7	23.4	13.9	NP	NP	260	26

GeoStrata

Lab Summary Report

Scandinavian Homes
Summit Eden Phase 1C – Lot 70R
8492 East Springs Park
Weber County, Utah
Project Number: 594-004

Plate
C - 1



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**TP-1**	**4.5**	**NP**	**NP**	**NP**	**11.3**	**Poorly Graded GRAVEL with silt**
☒	**TP-2**	**6.0**	**NP**	**NP**	**NP**	**13.9**	**Poorly Graded GRAVEL with silt**

GeoStrata

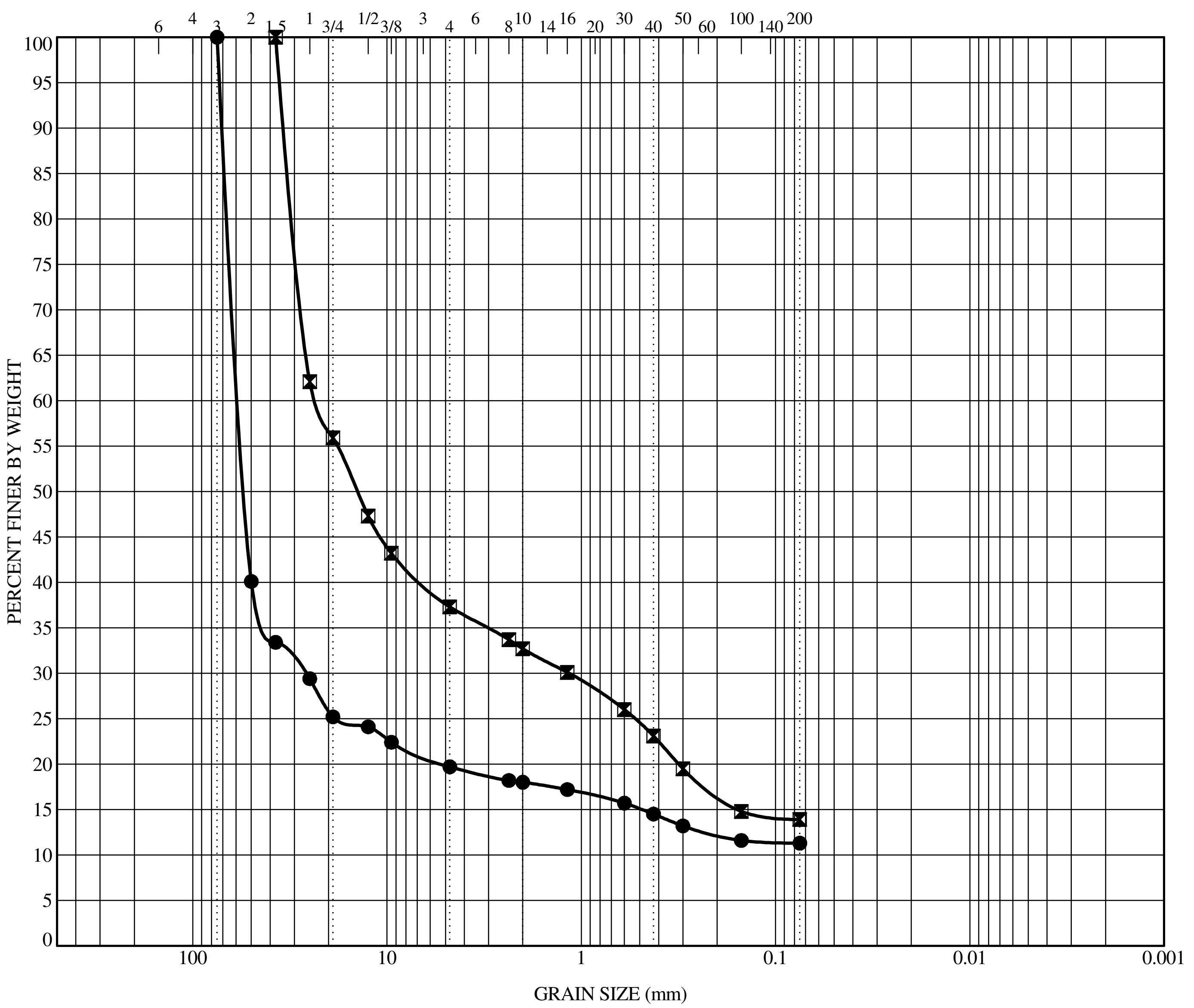
ATTERBERG LIMITS' RESULTS - ASTM D 4318

Summit Eden Phase 1C-Lot 70R
8492 East Spring Park
Weber County, Utah
Project Number: 594-004

Plate

C - 2

C_ATTERBERG TRENCH LOGS.GPJ GEOSTRATA.GDT 7/11/18



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**TP-1**	**4.5**	**Poorly Graded GRAVEL with silt**	**NP**	**NP**	**NP**	**3316.18**	**15377.03**
☒	**TP-2**	**6.0**	**Poorly Graded GRAVEL with silt**	**NP**	**NP**	**NP**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-1**	**4.5**	**75**	**57.21**	**26.568**		**80.3**	**8.4**	**11.3**	
☒	**TP-2**	**6.0**	**37.5**	**22.781**	**1.161**		**62.7**	**23.4**	**13.9**	

GeoStrata

GRAIN SIZE DISTRIBUTION - ASTM D422

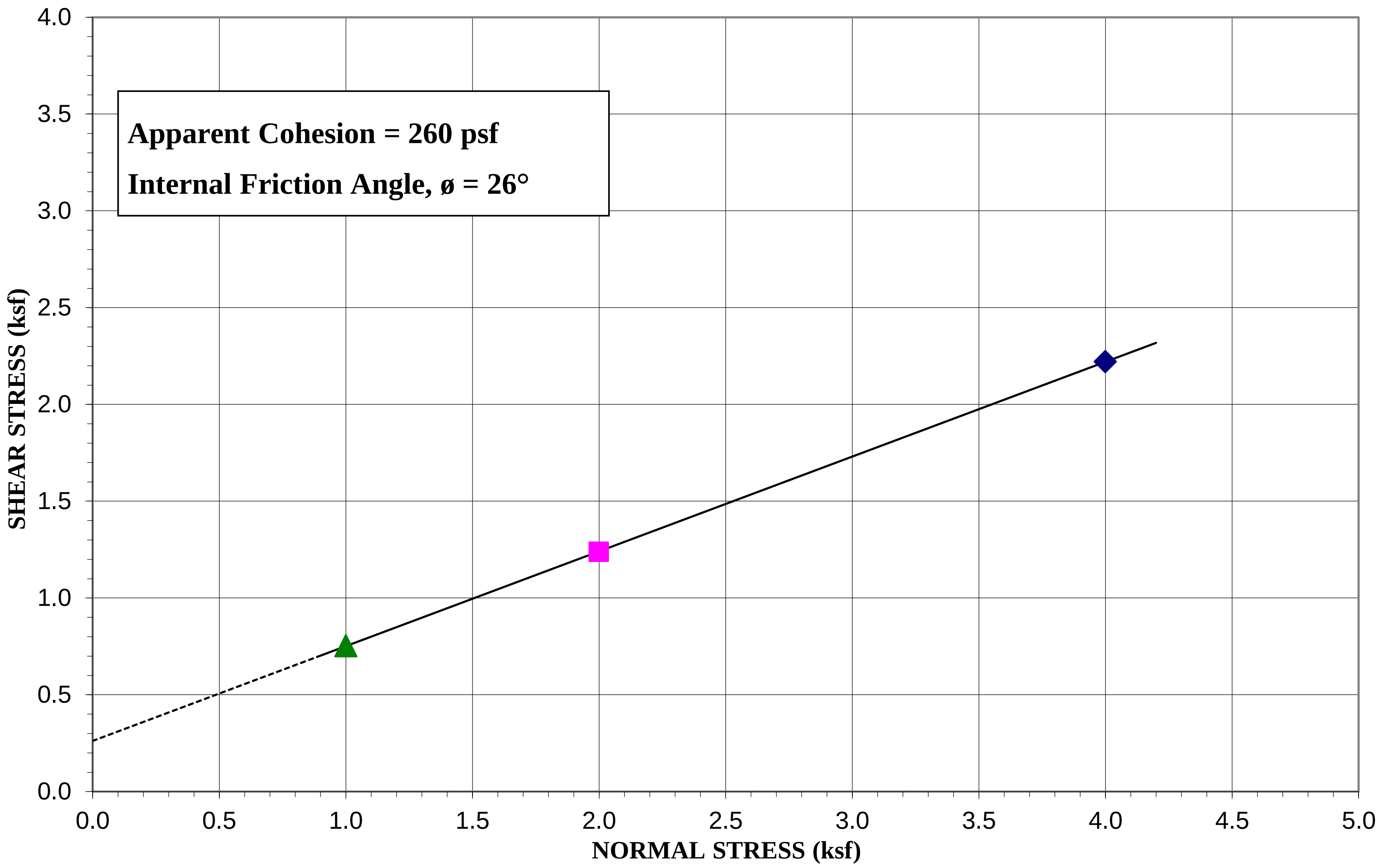
Summit Eden Phase 1C-Lot 70R
8492 East Spring Park
Weber County, Utah
Project Number: 594-004

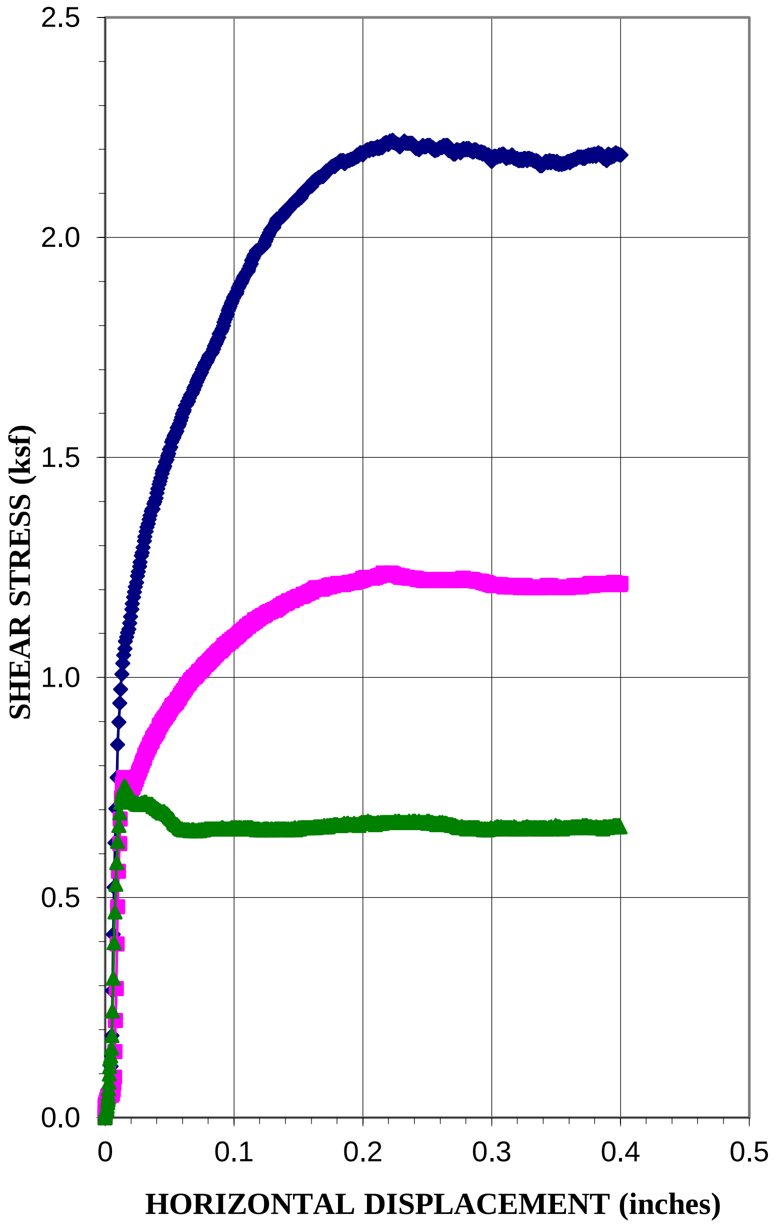
Plate

C - 3

C_GSD TRENCH LOGS.GPJ GEOSTRATA.GDT 7/11/18

DIRECT SHEAR TEST





Sample Location:	TP-2 @ 9 ft
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	0.984	0.982	0.989
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	115.7	115.2	113.4
Dry Density After, pcf	117.6	117.2	115.4
Moisture % Before	5.9	7.5	7.9
Moisture % After	13.9	14.4	14.7
Saturation, % Before	36.3	45.9	45.6
Saturation, % After	90.5	92.7	90.0
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.22	1.24	0.75
Strain Rate	IN/MIN		

Sample Properties	
Cohesion, psf	260
Friction Angle, ϕ	26
Liquid Limit, %	NP
Plasticity Index, %	NP
Percent Gravel	62.7
Percent Sand	23.4
Percent Passing No. 200 sieve	13.9
Classification	GP-GM

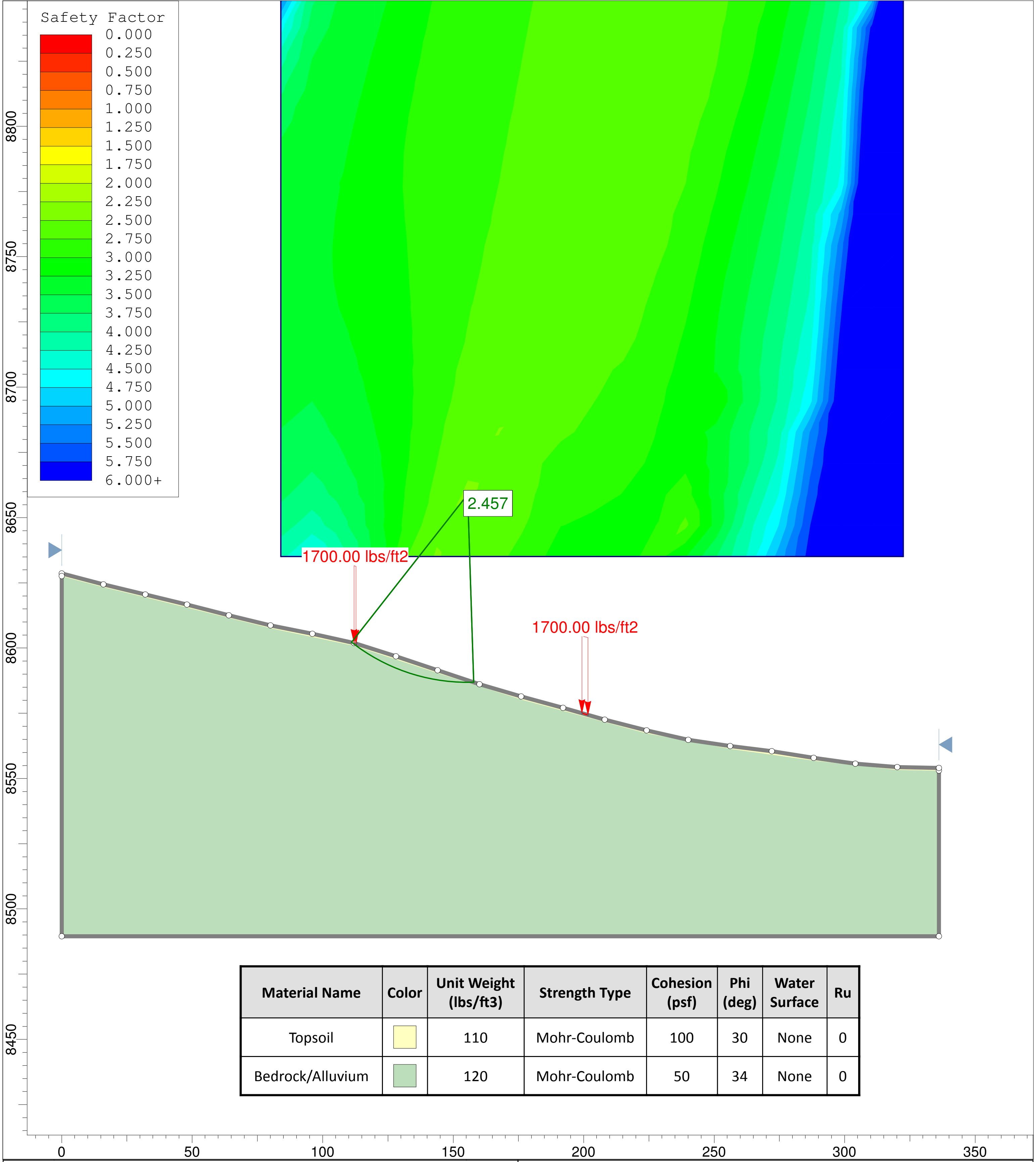
PROJECT: Summit Eden Phase 1C- Lot 70R

PROJECT NO.: 594-004

GeoStrata

Plate C-4

Exhibit B-Geotechnical Report



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Topsoil	🟨	110	Mohr-Coulomb	100	30	None	0
Bedrock/Alluvium	🟩	120	Mohr-Coulomb	50	34	None	0

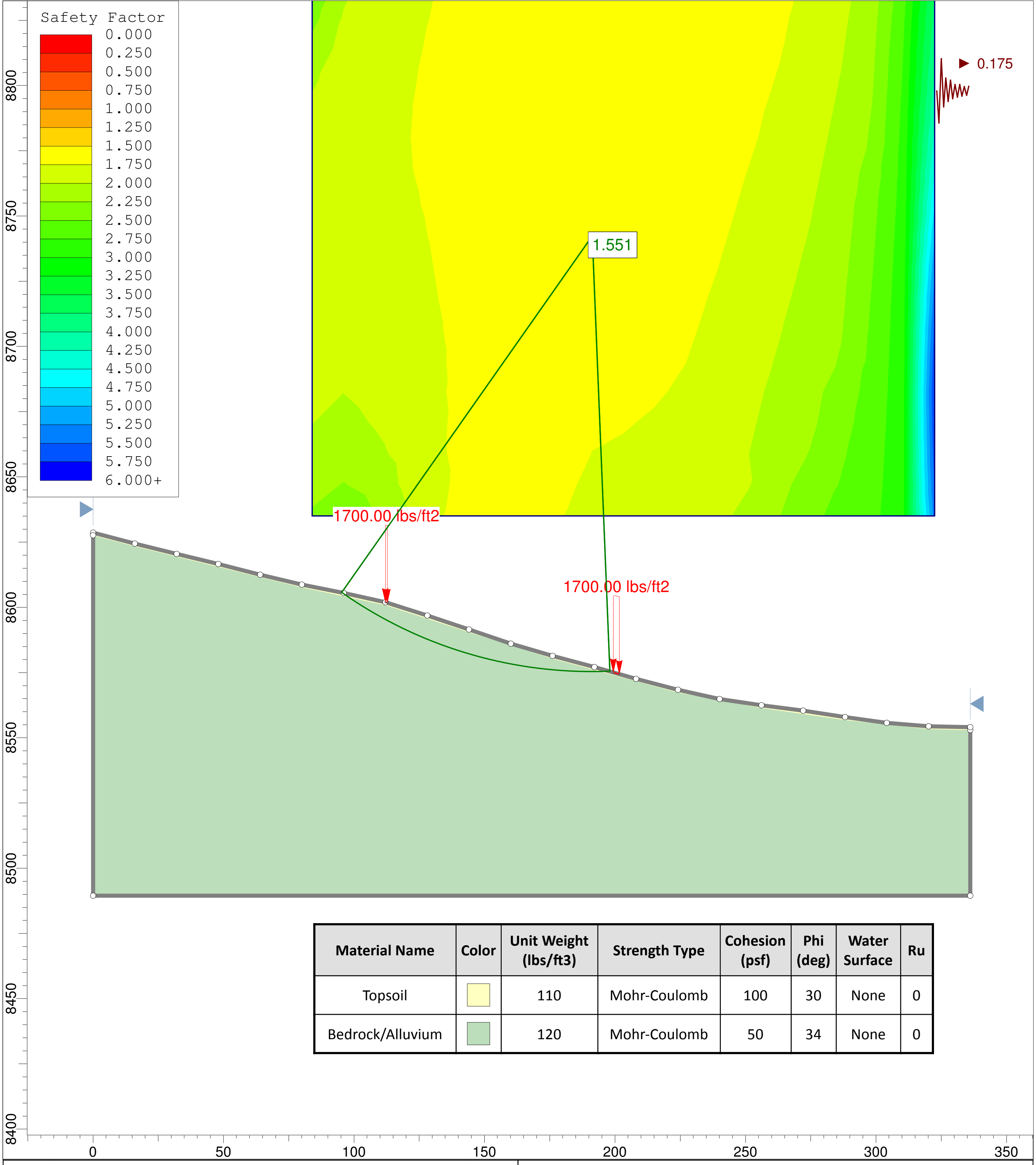
GeoStrata

Lot 70R - Static Slope Stability

Lot 70R - Summit Eden Phase 1C
8492 East Spring Park
Weber County, Utah
GeoStrata Project No. 594-004

Plate
D-1

Exhibit B-Geotechnical Report



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Topsoil	🟨	110	Mohr-Coulomb	100	30	None	0
Bedrock/Alluvium	🟩	120	Mohr-Coulomb	50	34	None	0

GeoStrata

Lot 70R - PStatic Slope Stability

Lot 70R - Summit Eden Phase 1C
8492 East Spring Park
Weber County, Utah
GeoStrata Project no. 594-004

Plate D-2

GeoStrata

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Phone (801) 501-0583 | Fax (801) 501-0584

Geologic Hazards Screening Assessment
Lot 70R Summit Eden Phase 1C
8492 East Spring Park Road
Eden, Utah
Parcel # 23-130-0037

GeoStrata Job No. 594-005

July 17, 2018

Prepared for:

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Learn More

Exhibit B-Geologic Report

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Geologic Hazards Screening Assessment
Lot 70R Summit Eden Phase 1C
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Parcel # 23-130-0037

GeoStrata Job No. 594-005

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July 17, 2018

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1.0 EXECUTIVE SUMMARY

The purpose of this investigation and report is to assess the approximately 0.06 acre single family residential lot, Lot 70R Summit Eden Phase 1C, located at 8492 East Spring Park Road in Eden, Utah for the presence of geologic hazards that may impact the planned development of the site. The work performed for this report was performed in accordance with our proposal, dated June 22, 2018.

The subject site is located in Eden, Utah above Ogden Valley and in the Powder Mountain Ski Resort at an elevation of approximately 8,580 feet above sea level. We understand that the project site is currently an undeveloped lot approximately 0.06 acre in size and located on a native hillside. Proposed development, as currently planned, will consist of a single family residential structure as well as associated driveway, utilities and landscape areas. The subject site and the area surrounding the subject site remains in a relatively native condition apart from grading for the roadways. Some parcels along Spring Park Road are currently under development.

The earthquake ground shaking hazard that would potentially impact the subject site was assessed as part of our study. Given our office investigations, it is the opinion of GeoStrata that the earthquake ground shaking hazard within the subject site is considered low. It is the opinion of GeoStrata that earthquake ground shaking hazard should not preclude development at the subject site.

The surface fault rupture hazard that would potentially impact the subject site was assessed as part of our study. No active faults are located near the subject site. Given our field and office investigations, the surface fault rupture hazard within the subject site is considered low and it is considered unlikely that surface fault rupture will impact the proposed development. It is the opinion of GeoStrata that surface fault rupture hazard should not preclude development at the subject lot.

The tectonic deformation hazard that would potentially impact the site was assessed as part of our study. No active faults are reported or mapped within or adjacent to the subject site. It is the opinion of GeoStrata that the tectonic deformation hazard within the subject site is considered low and it is considered unlikely that tectonic deformation will impact the proposed development. It is the opinion of GeoStrata that the tectonic deformation hazard should not preclude development at the subject site.

The liquefaction hazard that would potentially impact the site was assessed as part of our study. The site is located in an area currently designated as having a “Very Low” liquefaction potential. The near-surface soils are not considered to be susceptible to liquefaction. It is the opinion of GeoStrata that liquefaction hazard should not preclude development at the subject site.

The rockfall hazards within the subject site were assessed as part of our study. No rockfall or talus deposits are located within or immediately adjacent to the subject lot. Our field investigation revealed no indications that the subject lot has been subjected to previous rockfall. Therefore, the rockfall hazard within the subject site is considered low and it is considered unlikely that rockfall will impact the proposed development. It is the opinion of GeoStrata that rockfall hazard should not preclude development at the subject site.

The landslide, slump and creep hazards that would potentially impact the site were assessed as part of this study. A landslide deposit (Qms) is mapped immediately south of the subject site. A deposit described as landslide undifferentiated from talus and/or colluvial is mapped south and in the vicinity of the subject site as shown on the Landslide Hazard Maps of Utah (Elliot and Harty, 2010). No landslide deposit is mapped within or immediately adjacent to the subject site on the Geologic Map of the Browns Hole and Huntsville Quadrangles. A trench trending north-northwest to south-southeast through the middle of the subject site and at a depth of approximately 5 to 9 feet below existing site grade was excavated as part of the geotechnical study compiled for the subject site. Geologic observations of the near surface geology in the trench exposure were made during our site visit. It is the opinion of GeoStrata that the soils observed in the trench were observed to comprise of colluvium deposits. No shears or deformation features related to a landslide deposit were observed in the trench. Based on our stereographic aerial photograph interpretation, our review of the hillshades derived from 2016 0.5 meter LiDAR and our field observations, no landslide features such as hummocky topography, slumps or scarps were identified within the subject site or observed in the trench excavation. The subject site was observed to be moderately to steeply sloping and to contain outcroppings of well-rounded quartzite cobbles and boulders that were partially buried. Based on the landslide mapped south of the subject site and the moderate to steep grade within the subject site, it is the opinion of GeoStrata that the landslide hazard within the subject site is considered low to moderate. GeoStrata recommends that a slope stability analysis be performed by a professional engineer as part of a comprehensive site specific geotechnical investigation to assess the potential for slope failure. Slope stability modeling should take landslide deposits and potential landslide deposits into consideration and evaluate all portions of the subject site being considered for development to provide recommendations for construction that will aid in reducing the risk for mass movement within the subject site.

It is the opinion of GeoStrata that landslide hazards should not preclude development at the subject site as long as a slope stability analysis is conducted as a part of a comprehensive site specific geotechnical investigation for the site that indicates that the planned development will not be affected by potential slope failure. All recommendations to reduce the risks of slope stability hazards contained in the site specific geotechnical report should be followed and incorporated in the design of the site. The recommendations contained in the geotechnical report should be incorporated into the grading and drainage design for the lot. Saturated soil conditions should be considered in the slope stability analysis conducted as a part of a comprehensive site specific geotechnical investigation for the site.

Slope stability of the subject site was not assessed as part of this geological hazard assessment. The subject site was observed to be moderately to steeply sloping to the south toward a nearby drainage. The possibility that development of the site could negatively affect slope stability within the subject site is increased if development is planned for areas of the site with slopes steeper than approximately 3 horizontal: 1 vertical. It should be noted that grading or development adjacent to the subject site could potentially impact the stability of the area within the subject site and assessment of that hazard is out of the scope of this assessment.

The snow avalanche hazard that would potentially impact the site was assessed as part of this study. No evidence of prior snow avalanche was observed within the subject site. It is the opinion of GeoStrata that the snow avalanche hazard within the subject site is considered low and it is considered unlikely that this hazard will impact the proposed development. It is the opinion of GeoStrata that snow avalanche hazard should not preclude development at the subject site.

The alluvial-fan flooding hazard that would potentially impact the site was assessed as part of this study. No Holocene age alluvial fan deposit is mapped within or adjacent to the subject site. Given our field and office investigations, the alluvial fan flooding hazards within subject site is considered low and it is considered unlikely that debris flows will impact the proposed development. It is the opinion of GeoStrata that alluvial fan flooding hazard should not preclude development at the subject lot.

The shallow groundwater hazard that would potentially impact the site is out of the scope of this study. Seasonal fluctuations in precipitation, rapid snowmelt, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions; groundwater conditions can be expected to rise several feet seasonally depending on the time of year. A trench was excavated within the subject site and to a depth of approximately 9 feet below existing grade. No water was observed at the time of our site visit. Groundwater potential will be evaluated and discussed further in the geotechnical study compiled for the subject site.

The stream flooding hazard that would potentially impact the site was assessed as part of this study. A drainage is located in the downslope and southwest of the subject site. Given our field and office investigations, the stream flooding hazard within the subject lot is considered low and it is considered unlikely that stream flooding will impact the proposed development. It is the opinion of GeoStrata that stream flooding hazard should not preclude development at the subject site. Proper site grading and drainage plans should be developed for the subject site as a part of the civil engineering design for the site to mitigate the potential for stream flooding to impact and damage planned structures or other planned associated infrastructure.

The canal flooding hazard that would potentially impact the site was assessed as part of this study. No canals were observed or are mapped within or adjacent to the subject site. Given our field and office investigations, the canal flooding hazard within the subject lot is considered low and it is considered unlikely that canal flooding will impact the proposed development. It is the opinion of GeoStrata that canal flooding hazard should not preclude development at the subject lot.

The dam failure hazard that would potentially impact the site was assessed as part of this study. No dams or reservoirs are located up-gradient of the subject site. Given our field and office investigations, the dam failure hazard within the subject lot is considered low and it is considered unlikely that dam failure will impact the proposed development. It is the opinion of GeoStrata that dam failure hazard should not preclude development at the subject lot.

The problem soils hazard is out of the scope of this study. Based on our review of published geologic maps and our field observations, the subject site is underlain by granular soils. No laboratory testing was performed on these soils as part of this study and therefore this hazard was not assessed as part of this study. A geotechnical study will be completed for the subject site in order to understand soil properties for use in the design of footing, foundation elements and grading.

The radon gas hazard is out of the scope of this study. No published data that covers the area of the subject sites currently exists. Indoor testing following construction is recommended for determining radon gas levels and mitigation methods needed.

The karst and sink holes hazards is out of the scope of this study. The karst and sink holes hazards within the subject site are considered low and it is unlikely that karst and sink holes hazards will impact the proposed development.

NOTICE: The scope of services provided within this report are limited to the assessment of the subsurface conditions for the proposed development. This executive summary is not intended to replace the report of which it is part and should not be used separately from the report. The executive summary is provided solely for purposes of overview. The executive summary omits a number of details, any one of which could be crucial to the proper application of this report.

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

The purpose of this investigation and report is to assess the approximately 0.06 acre single family residential lot, Lot 70R Summit Eden Phase 1C, located at 8492 East Spring Park Road in Eden, Utah for the presence of geologic hazards that may impact the planned development of the site. The geologic hazards considered for this site are presented in Table 2 of this report. The work performed for this report was performed in accordance with our proposal, dated June 22, 2018. Our scope of services included the following:

- Review of available references and maps of the area.
- Stereographic aerial photograph interpretation of aerial photographs covering the site area.
- Review of 2016 0.5 meter LiDAR obtained from the State of Utah AGRC.
- Geologic reconnaissance and field mapping of the site by an engineering geologist to observe and document pertinent surface features indicative of geologic hazards.
- Evaluation of our observations combined with existing information and preparation of this written report with conclusions and recommendations regarding possible surface rupture hazards or any other geologic hazards observed to affect the site.

The recommendations contained in this report are subject to the limitations presented in the Limitations section of this report.

2.2 PROJECT DESCRIPTION

The subject site is located in Eden, Utah above Ogden Valley and in the Powder Mountain Ski Resort at an elevation of approximately 8,580 feet above sea level. We understand that the project site is currently an undeveloped lot approximately 0.06 acre in size and located on a native hillside. Proposed development, as currently planned, will consist of a single family residential structure as well as associated driveway, utilities and landscape areas. The hillside in the area of the subject lot slopes moderately to steeply to the south toward a nearby drainage. It is our understanding that the general area of the subject lot was first developed within the last few years. The subject site and the area surrounding the subject site remains in a relatively native condition apart from grading for the roadways. Some parcels along Spring Park Road are currently under development. The subject site is shown on the Site Vicinity Map and Topographic Map included in the Appendix of this report (Plate 1; Plate 2).

3.0 METHODS OF STUDY

3.1 OFFICE INVESTIGATION

To prepare for the investigation, GeoStrata reviewed pertinent literature and maps listed in the references section of this report, which provided background information on the local geologic history of the area and the locations of suspected or known geologic hazards (Elliot and Harty, 2010; Black and others, 2016; Coogan and King, 2016; Crittenden, 1972; Sorensen and Crittenden, 1979). A stereographic aerial photograph interpretation was performed for the subject site using two sets of stereo aerial photographs obtained from the UGS as shown in Table 1.

Source	Photo Number	Date	Scale
ASCS	AAI_4K-35	September 14, 1952	1:20,000
ASCS	AAI_4K-36	September 14, 1952	1:20,000

Table 1: Aerial Stereosets.

GeoStrata also conducted a review of hillshades derived from 2016 0.5 meter LiDAR obtained from the State of Utah AGRC to assess the subject site for visible alluvial fan deposits, scarps associated with landslide geomorphology and lineations related to stream flooding hazards or surface fault rupture related geomorphology. The LiDAR elevation data was used to create hillshade imagery that could be reviewed for assessment of geomorphic features related to geologic hazards (Plate 3 Hillshade Map).

3.2 FIELD INVESTIGATION

An engineering geologist investigated the geologic conditions within the general site area. A field geologic reconnaissance was conducted to observe existing geologic conditions and to assess existing geomorphology for surficial evidence of geologic hazards. During our fieldwork we conducted site observations to assess geologic hazards that might impact the lot. We used our field observations to confirm the observations made during our office research and to observe any evidence of geologic hazards that were not evident in our office research, but which could be observed in the field.

4.0 GEOLOGIC CONDITIONS

4.1 GEOLOGIC SETTING

The site is located in the mountains of the Powder Mountain Ski Resort located in Eden, Utah and in the eastern region of Ogden Valley at approximately 8,580 feet above sea level. The Ogden Valley is a northwest trending deep, lacustrine sediment-filled structural basin of Cenozoic age bounded on the northeast and southwest by two normal faults that dip towards the center of the valley. The Ogden Valley is a fault graben flanked by two uplifted blocks, the Wasatch Range on the west and unnamed flat-topped mountains to the east (King and others 2008). The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah (Stokes, 1986). The Willard Thrust, one of the largest faults in the Sevier mountain belt, bounds the western side of Ogden Valley which uplifted and exposed Proterozoic age sedimentary bedrock.

The near-surface geology of the Ogden Valley is dominated by lake sediments with a maximum thickness of 70 feet which were deposited within the last 30,000 years during the high stand of the Lake Bonneville Cycle when water inundated Ogden Canyon and formed a small lake in Ogden Valley up to an approximate altitude of 4,900 feet (Scott and others, 1983; Hintze, 1993; Leggette and Taylor, 1937; King and others, 2008). As the lake receded, streams began to incise large deltas that had formed at the mouths of major canyons along the Wasatch Range and the unnamed flat-topped mountains bounding the eastern margins of Ogden Valley. The eroded material was then deposited in shallow lakes and marshes in the basin and at the base of nearby canyons and in a series of recessional deltas and alluvial fans that extended into the Ogden Valley and nearby canyons. Sediments toward the center of the valley are predominately deep-water deposits of clay, silt and fine sand whereas sediments closer to the mountain fronts are shallow-water deposits of coarse sand and gravel. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Proterozoic age sedimentary bedrock is dominant in the northern portion of Ogden Valley where Tertiary age volcanics are prevalent in the southern portion of Ogden Valley and along knolls or foothills in the central portion of the valley.

4.2 SITE GEOLOGY

The surficial deposits within the subject site are shown on Plate 4 Site Vicinity Geologic Map and Plate 5 Site Vicinity 30x60 Geologic Map. On Plate 4, the geology within the subject site is mapped as Eocene, Paleocene and Upper Cretaceous(?) Wasatch and Evanston(?) Formations, Undivided (Twe) bedrock and is described as unconsolidated pale-reddish-brown Precambrian quartzite pebble, cobble and boulder conglomerate with a matrix of sand and silt (Sorensen and Crittenden, 1979 and Crittenden, 1972). Plate 5 also indicates that the subject site is underlain Eocene and upper Paleocene Wasatch Formation (Coogan and King, 2016). Coogan and King (2016) indicate a Holocene and upper and middle(?) Pleistocene age landslide deposit (Qms) located immediately south of the subject site.

5.0 GENERALIZED SITE CONDITIONS

5.1 SURFACE CONDITIONS

As stated previously, the project site is located in the eastern mountains above Ogden Valley and within the Powder Mountain Ski Resort. The subject site is located on a moderately to steeply sloping hillside. The hillside slopes at approximately 13° south toward a nearby drainage. A trench was excavated as part of the geotechnical study compiled on the subject site and observed during our site visit. The surficial deposits exposed within the trench were observed to consist of subrounded to rounded gravel, cobbles and boulders in a matrix of silt and sand. Numerous well-rounded quartzite cobbles and boulders up to 2 feet in diameter were observed in the trench and partially buried near the surface. The majority of the cobbles and boulders were observed to be partially buried. The site remains in a relatively natural state and is vegetated with low lying brush, wildflowers, weeds and grasses. No structures were observed on the subject property. Some parcels in the surrounding area of the subject site are under development. The properties bordering the subject site are currently undeveloped.

6.0 GEOLOGIC HAZARDS

Geologic hazards can be defined as naturally occurring geologic conditions or processes that could present a danger to human life and property. These hazards must be considered before development of the site. There are several hazards that if present at the site should be considered in the design of habitable structures and other critical infrastructure. The hazards considered for this site are presented on Table 2 and discussed in the following sections of this report.

Hazard	**Hazard Rating***					**Further Study Recommended**
	Not Applicable	**Not Assessed**	**Low**	**Moderate**	**High**	
Ground Shaking			X			
Surface Fault Rupture			X			
Tectonic Deformation			X			
Liquefaction			X			
Rock Fall and Topple			X			
Landslide			X	X		E
Slump			X	X		E
Creep			X	X		E
Avalanche			X			
Debris Flow			X			
Hyperconcentrated Flow			X			
Stream Flow			X			
Shallow Groundwater		X				E
Stream Flooding			X			
Canal Flooding	X					
Dam Failure			X			
Problem Soils		X				E
Radon		X				
Karst and Sink Hole		X				

Table 2: Summary of Geologic Hazards.

Table 2 shows the summary of the geologic hazards assessed and not assessed at the study area. The hazard rating as shown on Table 2 is intended to assess the probability that the hazard could have an impact on the site and not the severity of the hazard. A hazard rating of "Not Assessed" are hazards this report does not consider and no inference is made as to the presence or absence of the hazard at the site. A hazard rating of "Low" indicates that no evidence was found to indicate that the hazard is present and has a low probability of impacting the site, hazard not known or suspect to be present. A hazard rating of "Moderate" indicates that the hazard has a moderate probability of impacting the site, but the evidence is equivocal, based only on theoretical studies, or was not observed and further study is necessary as noted. A hazard rating of "High" indicates that that evidence is strong and suggests that there is a high probability of impacting the site and mitigation measures should be taken. If a hazard is assessed to potentially impact the site then further studies may be recommended. The following are the recommended studies and the letter designation associated with those studies: "E" – geotechnical/engineering, "H" – hydrologic, "A" – avalanche, "G" – additional detailed geologic hazard study out of the scope of this study.

6.1 EARTHQUAKE GROUND SHAKING HAZARD

During the event of an earthquake, seismic waves radiate outward from the initial point of rupture and dissipate with distance. The ground shakes as the seismic waves displace the ground both vertically and horizontally. Ground shaking can cause significant damage to and potentially collapse structures and can also trigger landslides, avalanches and liquefaction. The type of soil a seismic wave travels through can amplify or dampen the effects of ground shaking.

Seismic hazard maps depicting probabilistic ground motions and spectral response have been developed for the United States by the U.S. Geological Survey as part of NEHRP/NSHMP (Frankel et al, 1996). These maps have been incorporated into both *NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures* (FEMA, 1997) and the *International Building Code* (IBC) (International Code Council, 2015). Spectral responses for the Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a two percent probability of exceedance in 50 years (2PE50) for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field and office investigations, it is our opinion that this location is best described as a Site Class C which represents a "Very Dense Soil and Soft Rock" profile. The spectral accelerations are shown in the table below. The spectral accelerations are calculated based on the site's approximate latitude and longitude of 41.362942° and

-111.746329° respectively and the United States Geological Survey U.S. Seismic Design Maps web-based application. Based on the IBC, the site coefficients are F_a=1.08 and F_v= 1.54. From this procedure the peak ground acceleration (PGA) is estimated to be 0.35g.

Site Location: **Latitude = 41.362942 N** **Longitude = -111.746329 W**	**Site Class C Site Coefficients:** **F_a = 1.08** **F_v = 1.54**
Spectral Period (sec)	**Response Spectrum Spectral Acceleration (g)**
0.2	S_{MS}=(F_a*S_S=1.08*0.812) = 0.87
1.0	S_{M1}=(F_v*S_1=1.54*0.269) = 0.41
[a] IBC 1613.3.4 recommends scaling the MCE_R values by 2/3 to obtain the design spectral response acceleration values; values reported in the table above have not been reduced.	

Table 3: MCE_R Seismic Response Spectrum Spectral Acceleration Values for IBC Site Class C[a].

Based on the above information, it is the opinion of GeoStrata that the earthquake ground shaking hazard within the subject site is considered low. It is the opinion of GeoStrata that earthquake ground shaking hazard should not preclude development at the subject site.

6.2 SURFACE FAULT RUPTURE HAZARD

Movement along faults within the crustal rocks beneath the ground surface generates earthquakes. During large magnitude earthquakes (Richter magnitude 6.5 or greater) along the normal faults in the intermountain region, fault ruptures can propagate to the ground surface resulting in a surface fault rupture (Smith and Arabasz, 1991). The fault scarp formed during a surface fault rupture event along a normal fault is generally nearly vertical. A surface rupture fault may be comprised of a larger single surface rupture or several smaller surface ruptures across a fault zone. For all structures designed for human occupancy, a surface rupturing fault is considered active if it has experienced movement in approximately the past 10,000 years (Christenson and others, 2003).

Based on review of published geologic maps, our stereographic aerial photograph interpretation, our review of the hillshades derived from 2016 0.5 meter LiDAR and our field observations, no active faults are located near the subject site (Plate 6 UGS Quaternary Fault Map). The nearest fault is the Ogden Valley Northeastern Margin Fault which is between 0.75 and 2.6 million years old with an undetermined reoccurrence interval and a slip rate of less than 0.2 mm/yr (Black and others, 2003). This fault is trending northwest approximately 3 miles southwest of the subject site. Given our field and office investigations, the surface fault rupture hazard within the subject site is considered low and it is considered unlikely that surface fault rupture will impact the proposed development. It is the opinion of GeoStrata that surface fault rupture hazard should not preclude development at the subject lot.

6.3 TECTONIC DEFORMATION

Subsidence is a hazard associated with warping, lowering and tilting of a valley floor accompanying surface ruptures on normal faults (Robinson, 1993). Inundation along the shores of lakes and reservoirs and the rise of groundwater levels are the main hazards associated with subsidence. Structures that require gentle gradients or horizontal floors such as waste water treatment plants and sewer lines may be adversely affected by tectonic subsidence. Because subsidence may occur over very large areas, it is not generally practical to avoid the use of potentially affected land except in narrow areas of hazard due to lakeshore inundation (Keaton, 1987; Robison, 1993). According to Gary Christenson (UGS, personal communication 2001), tectonic subsidence is not typically assessed for subdivision development unless the development is located within an area of potential lake flooding.

Based on published geological maps, no active faults are reported or mapped within or adjacent to the subject site. It is the opinion of GeoStrata that the tectonic deformation hazard within the subject site is considered low and it is considered unlikely that tectonic deformation will impact the proposed development. It is the opinion of GeoStrata that the tectonic deformation hazard should not preclude development at the subject site.

6.4 LIQUEFACTION

Certain areas within the intermountain region possess a potential for liquefaction during seismic events. Liquefaction is a phenomenon whereby loose, saturated, granular soil deposits lose a significant portion of their shear strength due to excess pore water pressure buildup resulting from dynamic loading, such as that caused by an earthquake. Among other effects, liquefaction can result in densification of such deposits causing settlements of overlying layers after an earthquake as excess pore water pressures are dissipated. The primary factors affecting liquefaction potential of a soil deposit are: (1) level and duration of seismic ground motions; (2) soil type and consistency; and (3) depth to groundwater.

Based on our review of the *Liquefaction Special Study Areas, Wasatch Front and Nearby Areas, Utah* compiled by Christenson and others, 2008, the site is located in an area currently designated as having a “Very Low” liquefaction potential. “Very Low” liquefaction potential indicates that there is less than a 5 percent probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. The surface soils we observed during our field investigation are not considered to be susceptible to liquefaction. A liquefaction analysis was beyond the scope of this geologic hazards assessment; however, if the owner wishes to have greater understanding of the liquefaction potential of the soils at greater depths, a liquefaction analysis should be completed at the site. It is the opinion of GeoStrata that liquefaction hazard should not preclude development at the subject site.

6.5 ROCKFALL AND TOPPLE

Rockfalls are the fastest moving mass movement that predominantly occurs in mountains where a rock source exists along steep slopes and cliffs greater than 35 degrees. Rockfalls are a result of a loss of support from beneath the rock mass that can be caused by freeze/thaw action, rainfall, weathering and erosion, and/or strong ground shaking resulting from seismic activity. Rockfalls result in the collection of rock fall material, referred to as talus, at the base of the slope. The presence of talus indicates that a rockfall hazard has occurred and may still be present at the site.

Based on review of published geologic maps, our stereographic aerial photograph interpretation and our field observations, no rockfall or talus deposits are located within or immediately adjacent to the subject lot. Boulders observed within the subject site were well rounded, partially buried and are in our opinion not indicative of recent rockfall events. Furthermore, no rockfall sources such as talus deposits or bedrock outcroppings were observed upslope from the subject site. Our field investigation revealed no indications that the subject lot has been subjected to previous rockfall. Therefore, the rockfall hazard within the subject site is considered low and it is considered unlikely that rockfall will impact the proposed development. It is the opinion of GeoStrata that rock fall hazard should not preclude development at the subject site.

6.6 LANDSLIDE, SLUMP, CREEP

There are several types of landslides that should be considered when evaluating geologic hazards at a site with moderately to steeply sloping terrain. These include shallow debris slides, deep-seated earth or rock slumps and earth flows. Landslides, slumps, creep and other mass movements can develop on moderate to steep slopes where the slope has been altered or disturbed. Movement can occur at the top of a slope that has been loaded by fill placement, at the base of a slope that has been undercut, or where local groundwater rises resulting in increased pore pressures within the slope. Slopes that exhibit prior failures and large landslide deposits are particularly susceptible to instability and reactivation.

Based on review of the Interim Geologic Map of the Ogden 30x60 Quadrangle, a landslide deposit (Qms) is mapped immediately south of the subject site (Plate 5 Site Vicinity 30x60 Geologic Map). A deposit described as landslide undifferentiated from talus and/or colluvial is mapped south and in the vicinity of the subject site as shown on Plate 7 Landslide Hazard Map. No landslide deposit is mapped within or immediately adjacent to the subject site on the Geologic Map of the Browns Hole and Huntsville Quadrangles as indicated on and Plate 4 Site Vicinity Geologic Map. A trench trending north-northwest to south-southeast through the middle of the subject site and at a depth of approximately 5 to 9 feet below existing site grade was excavated as part of the geotechnical study compiled for the subject site. Geologic observations of the near surface geology in the trench exposure were made during our site visit. It is the opinion of GeoStrata that the soils observed in the trench were observed to comprise of colluvium deposits. No shears or deformation features related to a landslide deposit were observed in the trench. Based on our stereographic aerial photograph interpretation, our review of the hillshades derived from 2016 0.5 meter LiDAR and our field observations, no landslide features such as hummocky topography, slumps or scarps were identified within the subject site or observed in the trench excavation. The subject site was observed to be moderately to steeply sloping and to contain outcroppings of well-rounded quartzite cobbles and boulders that were partially buried. Based on the landslide mapped south of the subject site and the moderate to steep grade within the subject site, it is the opinion of GeoStrata that the landslide hazard within the subject site is considered low to moderate. GeoStrata recommends that a slope stability analysis be performed by a professional engineer as part of a comprehensive site specific geotechnical investigation to assess the potential for slope failure. Slope stability modeling should take landslide deposits and potential landslide deposits into consideration and evaluate all portions of the subject site being considered for development to provide recommendations for construction that will aid in reducing the risk for mass movement within the subject site.

Due to the presence of a mapped landslide deposit near the subject site and the steep grade observed within the subject site, GeoStrata recommends that a geotechnical report that evaluates the slope stability within the subject site is conducted prior to any development. It is the opinion of GeoStrata that landslide hazards should not preclude development at the subject site as long as a slope stability analysis is conducted as a part of a comprehensive site specific geotechnical investigation for the site that indicates that the planned development will not be affected by potential slope failure. All recommendations to reduce the risks of slope stability hazards contained in the site specific geotechnical report should be followed and incorporated in the design of the site. The recommendations contained in the geotechnical report should be incorporated into the grading and drainage design for the lot. Saturated soil conditions should be considered in the slope stability analysis conducted as a part of a comprehensive site specific geotechnical investigation for the site.

Slope stability of the subject site was not assessed as part of this geological hazard assessment. The subject site was observed to be moderately to steeply sloping to the south toward a nearby drainage (Plate 2 Topographic Map). The possibility that development of the site could negatively affect slope stability within the subject site is increased if development is planned for areas of the site with slopes steeper than approximately 3 horizontal: 1 vertical. It should be noted that grading or development adjacent to the subject site could potentially impact the stability of the area within the subject site and assessment of that hazard is out of the scope of this assessment.

6.7 AVALANCHE

An avalanche is a rapid flow of snow down a hill or mountainside. A snow avalanche can be a hazard in high alpine settings with slopes generally between 35 degrees and 45 degrees that accumulate appreciable amounts of snow. There are three types of avalanches: slough, dry slab and wet slab. Sloughs typically occur right after a heavy snowfall event. This type of slide occurs from a single point and accumulates snow as it moves downslope. Dry slabs are the most common type of avalanche and are the result of a fracture that occurs along a weak layer within the snowpack. Dry slabs can travel upwards of 80 mph removing trees and structures in its path. Wet slabs are triggered when percolating water dissolves bonds and decreases the strength of the weak snow layer. This type of slab can travel up to 20 mph. Several factors that influence a snow avalanche include weather, temperature, slope steepness, slope orientation, wind direction and wind loading, terrain, vegetation, and snowpack conditions. Snow avalanche hazard could affect access and snow removal on roads as well as the safety of habitable structures and critical facilities.

Based on review of our stereographic aerial photograph interpretation, our field observations, the slope within and above the subject site is less than 35 degrees as well as avalanche control work conducted by the Powder Mountain Ski Resort, it is the opinion of GeoStrata that the avalanche hazard within the subject site and it is considered unlikely that a snow avalanche will impact the proposed developed. It is the opinion of GeoStrata that snow avalanche hazards should not preclude development within the subject lot.

6.8 ALLUVIAL FAN FLOODING

Alluvial fan flooding is a potential hazard that may exist in areas containing Holocene alluvial fan deposits. This type of flooding typically occurs as a stream flows, hyperconcentrated flows and debris flows consisting of a mixture of water, soil, organic material, and rock debris with variations in sediment-water concentrations transported by fast-moving water flows. Stream flows contains approximately less than 20% sediment by volume and involves sediment transport by entrained and suspended sediment load (Bowman and Lund, 2016). Unconfined stream flows are referred to as sheetfloods which are spread over and occur in the distal areas of the alluvial fan. Hyperconcentrated flows are alluvial fan flows with 20 to 60% sediment by volume whereas debris flows contain greater than 60% sediment by volume.

Alluvial fan flooding can be a hazard on or below alluvial fans or in stream channels above alluvial fans. Precipitation (rainfall and snowmelt) is generally viewed as an alluvial fan flood “trigger”, but this represents only one of the many factors that contribute to alluvial fan flooding hazard. Vegetation, root depth, soil gradation, antecedent moisture conditions and long term climatic cycles all contribute to the generation of debris and initiation of alluvial fan flooding. Events of relatively short duration, such as a fire, can significantly alter a basin’s absorption of storm water and snowmelt runoff and natural resistance to sediment mobilization for an extended period of time. These factors are difficult to quantify or predict and vary not only between different watersheds, but also within each sub-area of a drainage basin. In general, there are two methods by which alluvial fan flooding can be mobilized: 1) when shallow landslides from channel side-slopes are conveyed in existing channels when mixed with water and 2) channel scour where debris is initially mobilized by moving water in a channel and then the mobilized debris continues to assemble and transport downstream sediments.

Based on review of published geologic maps, review of stereographic aerial photographs and hillshades derived from 2016 0.5 meter LiDAR, no Holocene age alluvial fan deposit is mapped within or adjacent to the subject site (Plate 4 Site Vicinity Geologic Map; Plate 5 Site Vicinity 30’ X 60’ Geologic Map). Given our field and office investigations, the alluvial fan flooding hazards within subject site is considered low and it is considered unlikely that debris flows will impact the proposed development. It is the opinion of GeoStrata that alluvial fan flooding hazard should not preclude development at the subject lot.

6.9 SHALLOW GROUNDWATER

Shallow groundwater flooding is a hazard that can cause the flooding of excavated areas where the depth of excavation exceeds the depth of the local water table. Shallow groundwater flooding should be considered when designing habitable structures that require excavation that may exceed the depth to the shallow groundwater.

Shallow groundwater assessment is out of the scope of this study. Seasonal fluctuations in precipitation, rapid snowmelt, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions; groundwater conditions can be expected to rise several feet seasonally depending on the time of year. A trench was excavated within the subject site and to a depth of approximately 9 feet below existing grade. No water was observed at the time of our site visit. Groundwater potential will be evaluated and discussed further in the geotechnical study compiled for the subject site.

6.10 STREAM FLOODING HAZARD

Stream flooding can be caused by precipitation, snowmelt or a combination of both. Throughout most of Utah floods are most common in spring during the snowmelt. High flows in drainages can last for a few hours to several weeks. Factors that affect the potential for flooding at a site include surface water drainage patterns and hydrology, site grading and drainage design, and seasonal runoff.

Based on review of our stereographic aerial photograph interpretation, our review of the hillshades derived from 2016 0.5 meter LiDAR and our field observations, a drainage is located in the downslope and southwest of the subject site (Plate 8 Hydrology Map). Given our field and office investigations, the stream flooding hazard within the subject lot is considered low and it is considered unlikely that stream flooding will impact the proposed development. It is the opinion of GeoStrata that stream flooding hazard should not preclude development at the subject site. Proper site grading and drainage plans should be developed for the subject site as a part of the civil engineering design for the site to mitigate the potential for stream flooding to impact and damage planned structures or other planned associated infrastructure.

6.11 CANAL FLOODING

High runoff in a short period of time can lead to canal water breaching their banks and flooding the surrounding area. Failure of the canal embankments or a blockage in the canal could also lead to flooding surrounding the canal.

Based on review of published topographic maps, our stereographic aerial photograph interpretation, our review of the hillshades derived from 2016 0.5 meter LiDAR and our field observations, no canals were observed or are mapped within or adjacent to the subject site. Given our field and office investigations, the canal flooding hazard within the subject lot is considered low and it is considered unlikely that canal flooding will impact the proposed development. It is the opinion of GeoStrata that canal flooding hazard should not preclude development at the subject lot.

6.12 DAM FAILURE

Dams are structures that store water and diverge and impound water upstream. Most dams have a spillway where water flow from the reservoir is controlled and hydroelectric power is produced. Failure in dams can occur from a collapse or a breach in the structure most commonly due to extended periods of high runoff.

Based on our review of the Mantua, James Peak, Sharp Mountain and Huntsville topographic quadrangles and our field investigation, no dams or reservoirs are located up-gradient of the subject site (Plate 1 Site Vicinity Map; Plate 2 Topographic Map). Given our field and office investigations, the dam failure hazard within the subject lot is considered low and it is considered unlikely that dam failure will impact the proposed development. It is the opinion of GeoStrata that dam failure hazard should not preclude development at the subject lot.

6.13 PROBLEM SOILS

Problem soils include collapsible soils and expansive soils. Collapsible soils are low density and typically dry soils that decrease in volume when exposed to water. This type of problem soil typically occurs in alluvial fan flooding deposits, dry loess or eolian deposits or unconsolidated colluvium deposits (Owens and Rollins, 1990). Expansive soils are soils that undergo an increase in volume upon wetting and typically include fine grained soils such as clay.

The problem soils hazard is out of the scope of this study. Based on our review of published geologic maps and our field observations, the subject site is underlain by granular soils. No laboratory testing was performed on these soils as part of this study and therefore this hazard was not assessed as part of this study. A geotechnical study will be completed for the subject site in order to understand soil properties for use in the design of footing, foundation elements and grading.

6.14 RADON

Radon is a naturally occurring odorless, tasteless and colorless gas that is released during the breakdown of uranium in well drained permeable soils and uranium rich rocks which include granite, metamorphic rocks, black shales, and some volcanic rocks (Sprinkel and Solomon, 1990). Radon gas moves freely in the air and can also dissolve in water which can potentially migrate through cracks and open spaces in rock, soils, and foundations as well as utility pipes.

The radon gas hazard is out of the scope of this study. No published data that covers the area of the subject sites currently exists. Indoor testing following construction is recommended for determining radon gas levels and mitigation methods needed.

6.15 KARST AND SINK HOLES

A karst is a type of underground drainage terrain that is the result of dissolution of soluble bedrock such as limestone, carbonate rock, salt beds or other types of rocks that are easily dissolved by groundwater circulating through them. The most common type of hazard that forms within a karst terrain is subsidence or collapse of soils, these are referred to as sink holes. Sink holes can be a few feet to hundreds of acres wide and 1 to 100 feet deep and can form slowly or collapse suddenly.

Based on our review of published geologic maps, the karst and sink holes hazards within the subject site are considered low and it is unlikely that karst and sink holes hazards will impact the proposed development. It is the opinion of GeoStrata that karst and sink hole hazards should not preclude development at the subject lot.

7.0 GEOLOGIC HAZARDS SUMMARY AND CONCLUSIONS

It is the opinion of GeoStrata that the geologic hazards that we assessed in this study that could impact the subject site or that have not been assessed as a part of this study, but which could impact the subject site include: landslide, shallow groundwater, problem soils and radon gas. Below is a summary of each geologic hazard and GeoStrata's recommendation for mitigation:

- Landslide, slump and creep hazard within the subject site was assessed as part of this study. It is the opinion of GeoStrata that the landslide hazard within the subject site is considered low to moderate. GeoStrata recommends that a slope stability analysis is performed by a professional engineer as part of a comprehensive site specific geotechnical investigation to assess the potential for slope failure. Slope stability modeling should take landslide deposits and potential landslide deposits into consideration and evaluate all portions of the subject site being considered for development to provide recommendations for construction that will aid in reducing the risk for mass movement within the subject site.

  It is the opinion of GeoStrata that landslide hazards should not preclude development at the subject site as long as a slope stability analysis is conducted as a part of a comprehensive site specific geotechnical investigation for the site and that indicates that the planned development will not be affected by potential slope failure and that all recommendations to reduce the risks of slope stability hazards contained in the site specific geotechnical report are followed. Saturated soil conditions should be considered in the slope stability analysis conducted as a part of a comprehensive site specific geotechnical investigation for the site.

  Slope stability of the subject site was not assessed as part of this geological hazard assessment. The subject site was observed to be moderately to steeply sloping to the south toward a nearby drainage (Plate 2 Topographic Map). The possibility that development of the site could negatively affect slope stability within the subject site is increased if development is planned for areas of the site with slopes steeper than approximately 3 horizontal: 1 vertical. It should be noted that grading or development adjacent to the subject site could potentially impact the stability of the area within the subject site and is out of the scope of this assessment. Due to the presence of mapped landslide deposits near the subject site and the steep grade observed within the subject site, GeoStrata recommends that a geotechnical report that evaluates the slope stability within the subject site is conducted prior to any development and the recommendations contained in the geotechnical report be followed as a part of the grading and drainage design for the lot.

- Shallow groundwater hazard within the subject site was not assessed as part of this study. Seasonal fluctuations in precipitation, rapid snowmelt, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions; groundwater conditions can be expected to rise several feet seasonally depending on the time of year. A trench was excavated within the subject site and to a depth of approximately 9 feet below existing grade. No water was observed at the time of our site visit. Groundwater potential will be evaluated and discussed further in the geotechnical study compiled for the subject site.

- Problem soils hazard within the subject site was not assessed as part of this study. The subject site is underlain by gravel, cobbles and boulders in a matrix of silt and sand. No laboratory testing was performed on these soils as part of this study and therefore this hazard was not assessed as part of this study. A geotechnical study will be completed for the subject site in order to understand soil properties for use in the design of footing, foundation elements and grading.

- The radon gas hazard is out of the scope of this study. No published data that covers the area of the subject sites currently exists. Indoor testing following construction is recommended for determining radon gas levels and mitigation methods needed.

It is the opinion of GeoStrata that these hazards should not preclude the development of the subject site, assuming that these recommendations given above will be followed.

8.0 CLOSURE

8.1 LIMITATIONS

The conclusions and recommendations contained in this report, which include professional opinions and judgments, are based on the information available to us at the time of our evaluation, the results of our field observations and our understanding of the proposed site development. If any conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed development changes from that described in this report, our firm should also be notified.

All services were completed in accordance with the current standard of care and generally accepted standard of practice at the time and in the place our services were completed. No other warranty, expressed or implied, is made. Development of property in the immediate vicinity of geologic hazards involves a certain level of inherent risk. It is impossible to predict where geologic hazards will occur. New geologic hazards may develop and existing geologic hazards may expand beyond their current limits.

All services were performed for the exclusive use and benefit of the above addressee. No other person is entitled to rely on GeoStrata’s services or use the information contained in this letter without the express written consent of GeoStrata. We are not responsible for the technical interpretations by others of the information described or documented in this report. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

9.0 REFERENCES CITED

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Appendix

Exhibit B-Geologic Report

Legend

1 inch = 4,000 feet

Base Map:
2009 1 meter NAIP aerial imagery and hillshades derived from 5 meter digital elevation model (DEM) provided by the State of Utah AGRC.

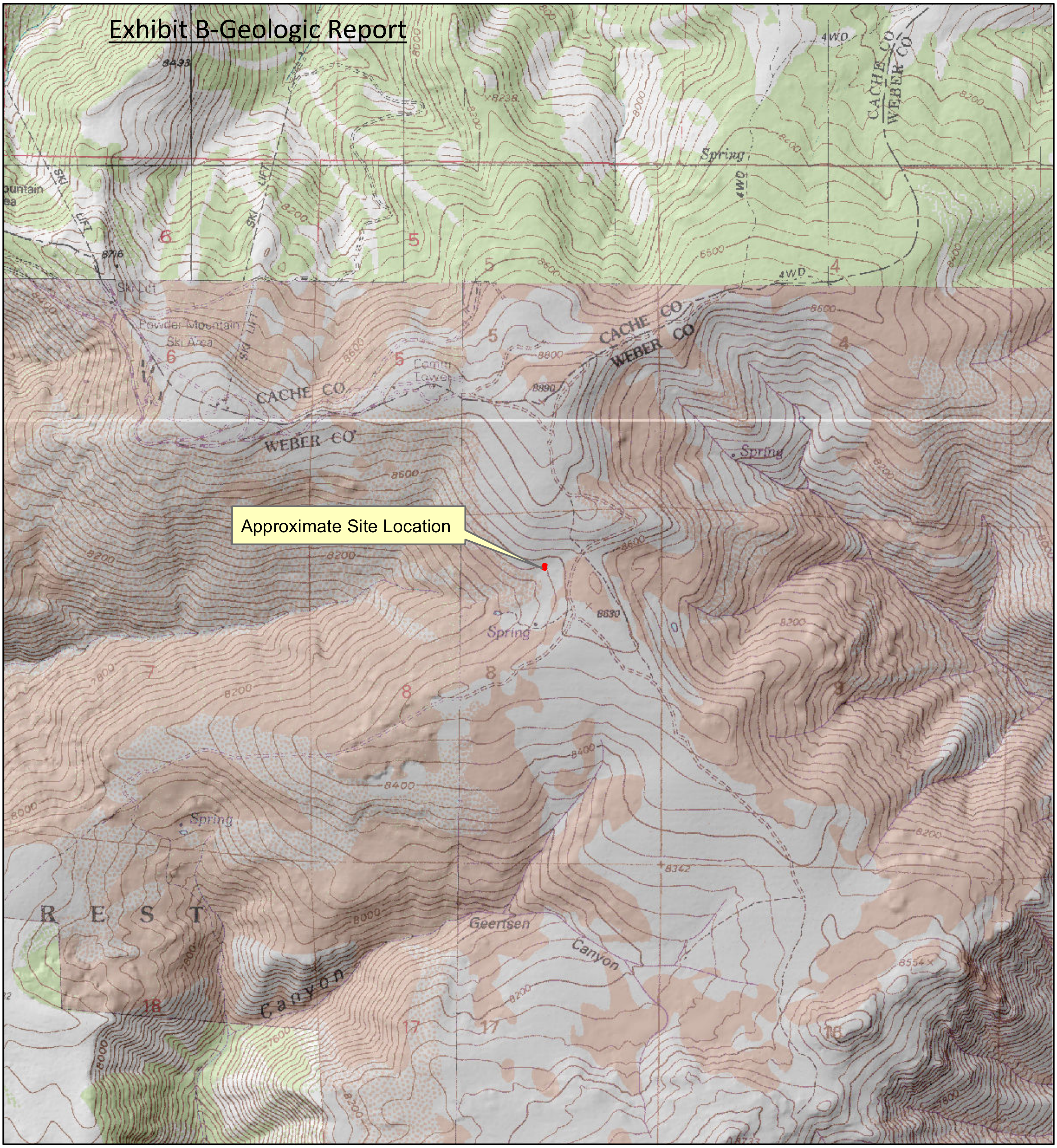
GeoStrata

Geologic Hazards Assessment
Lot 70R Summit Eden Phase 1C
8492 East Spring Park Road
Eden, Utah
Project Number: 594-005

Site Vicinity Map

Plate 1

Exhibit B-Geologic Report



Legend

🟥 Approximate Site Boundary

0 750 1,500 3,000 4,500 6,000 Feet

N

1 inch = 2,000 feet
Base Map:
Browns Hole, Huntsville, James Peak and Sharp Mountain Quadrangles, Utah 7.5 Minute Series (Topographic), USGS and hillshades derived from 5 meter DEM provided by the State of Utah AGRC.

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Project Number: 594-005

Topographic Map

Plate 2

Exhibit B-Geologic Report

Legend

🟥 Approximate Site Boundary

1 inch = 200 feet

Base Map:
Hillshades derived from 2016 0.5 meter LiDAR
provided by the State of Utah AGRC.

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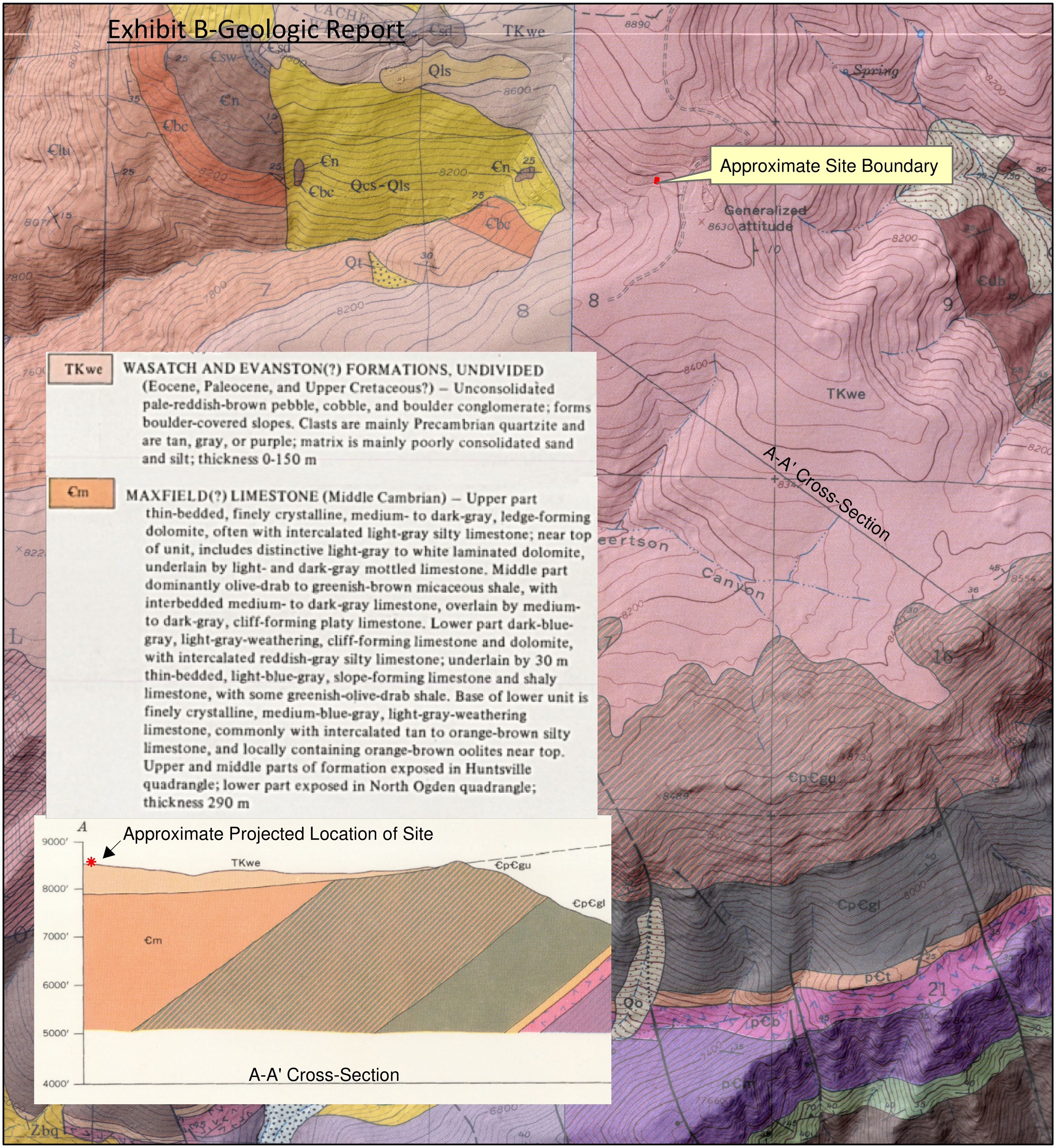
8492 East Spring Park Road
Eden, Utah
Project Number: 594-005

HIllshade Map

Plate
3

Exhibit B-Geologic Report



TKwe WASATCH AND EVANSTON(?) FORMATIONS, UNDIVIDED (Eocene, Paleocene, and Upper Cretaceous?) – Unconsolidated pale-reddish-brown pebble, cobble, and boulder conglomerate; forms boulder-covered slopes. Clasts are mainly Precambrian quartzite and are tan, gray, or purple; matrix is mainly poorly consolidated sand and silt; thickness 0-150 m

€m MAXFIELD(?) LIMESTONE (Middle Cambrian) – Upper part thin-bedded, finely crystalline, medium- to dark-gray, ledge-forming dolomite, often with intercalated light-gray silty limestone; near top of unit, includes distinctive light-gray to white laminated dolomite, underlain by light- and dark-gray mottled limestone. Middle part dominantly olive-drab to greenish-brown micaceous shale, with interbedded medium- to dark-gray limestone, overlain by medium- to dark-gray, cliff-forming platy limestone. Lower part dark-blue-gray, light-gray-weathering, cliff-forming limestone and dolomite, with intercalated reddish-gray silty limestone; underlain by 30 m thin-bedded, light-blue-gray, slope-forming limestone and shaly limestone, with some greenish-olive-drab shale. Base of lower unit is finely crystalline, medium-blue-gray, light-gray-weathering limestone, commonly with intercalated tan to orange-brown silty limestone, and locally containing orange-brown oolites near top. Upper and middle parts of formation exposed in Huntsville quadrangle; lower part exposed in North Ogden quadrangle; thickness 290 m

Legend

🟥 Approximate Site Boundary

0 750 1,500 3,000 4,500 6,000 Feet

1 inch = 2,000 feet

Base Map:
Geologic Map of the Browns Hole Quadrangle, Utah, Crittenden, 1972. Geologic Map of the Huntsville Qudrangle, Weber and Cache Counties, Utah, Sorensen and Crittenden,1970. Hillshades derived from 2016 0.5 meter LiDAR provided by the State of Utah AGRC.

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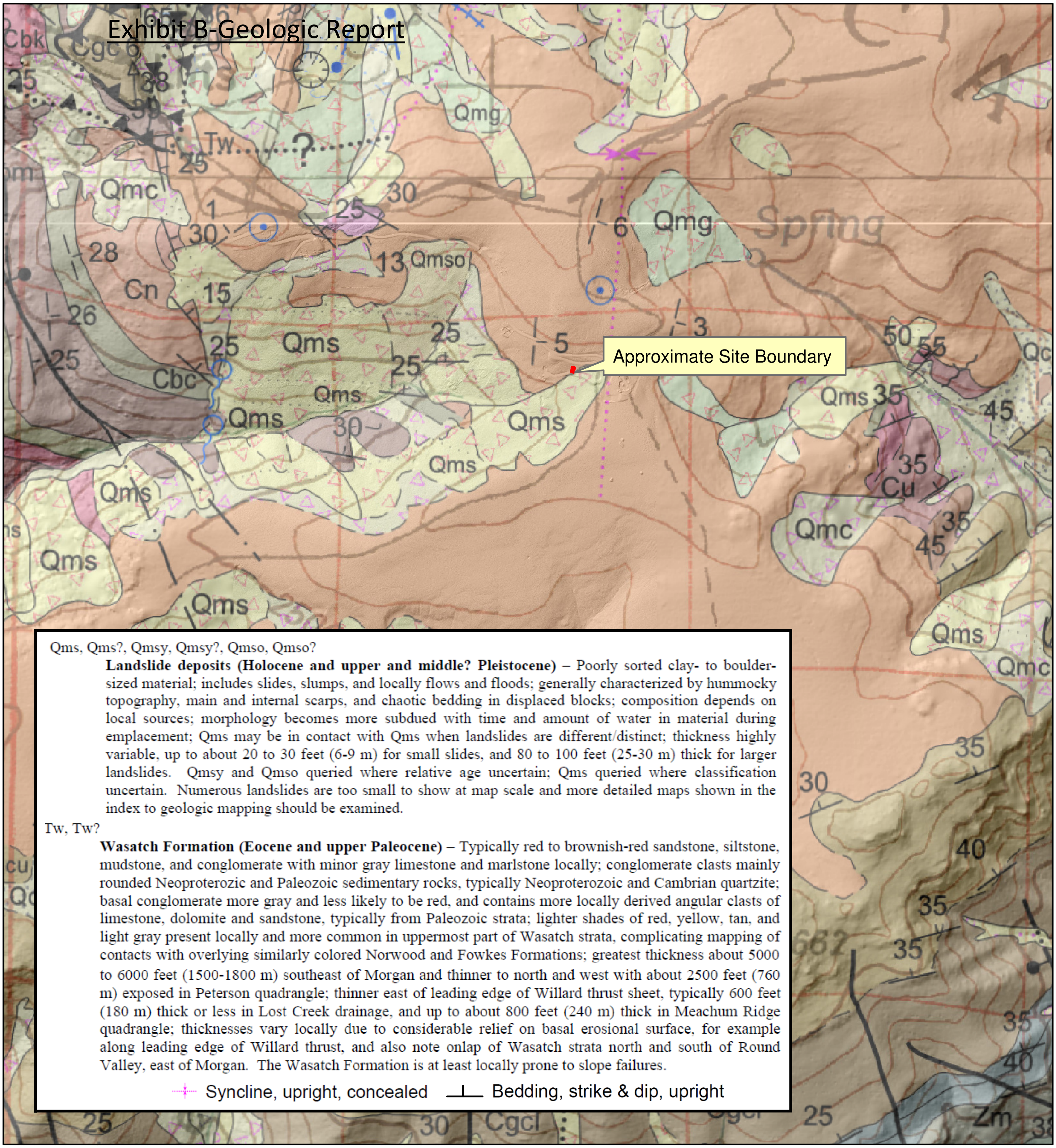
Site Vicinity Geologic Map

Plate 4

Exhibit B-Geologic Report



Qms, Qms?, Qmsy, Qmsy?, Qmso, Qmso?

Landslide deposits (Holocene and upper and middle? Pleistocene) – Poorly sorted clay- to boulder-sized material; includes slides, slumps, and locally flows and floods; generally characterized by hummocky topography, main and internal scarps, and chaotic bedding in displaced blocks; composition depends on local sources; morphology becomes more subdued with time and amount of water in material during emplacement; Qms may be in contact with Qms when landslides are different/distinct; thickness highly variable, up to about 20 to 30 feet (6-9 m) for small slides, and 80 to 100 feet (25-30 m) thick for larger landslides. Qmsy and Qmso queried where relative age uncertain; Qms queried where classification uncertain. Numerous landslides are too small to show at map scale and more detailed maps shown in the index to geologic mapping should be examined.

Tw, Tw?

Wasatch Formation (Eocene and upper Paleocene) – Typically red to brownish-red sandstone, siltstone, mudstone, and conglomerate with minor gray limestone and marlstone locally; conglomerate clasts mainly rounded Neoproterozic and Paleozoic sedimentary rocks, typically Neoproterozoic and Cambrian quartzite; basal conglomerate more gray and less likely to be red, and contains more locally derived angular clasts of limestone, dolomite and sandstone, typically from Paleozoic strata; lighter shades of red, yellow, tan, and light gray present locally and more common in uppermost part of Wasatch strata, complicating mapping of contacts with overlying similarly colored Norwood and Fowkes Formations; greatest thickness about 5000 to 6000 feet (1500-1800 m) southeast of Morgan and thinner to north and west with about 2500 feet (760 m) exposed in Peterson quadrangle; thinner east of leading edge of Willard thrust sheet, typically 600 feet (180 m) thick or less in Lost Creek drainage, and up to about 800 feet (240 m) thick in Meachum Ridge quadrangle; thicknesses vary locally due to considerable relief on basal erosional surface, for example along leading edge of Willard thrust, and also note onlap of Wasatch strata north and south of Round Valley, east of Morgan. The Wasatch Formation is at least locally prone to slope failures.

Syncline, upright, concealed

Bedding, strike & dip, upright

Legend

🟥 Approximate Site Boundary

0 750 1,500 3,000 4,500 6,000 Feet

N

1 inch = 2,000 feet

Base Map:
Interim Geologic Map of the Ogden 30' x 60' Quadrangle, Box Elder, Cache, Davis, Morgan, Rich, and Summit Counties, Utah and Uinta County, Wyoming, Coogan and King, 2016. Hillshades derived from 5 meter DEM provided by the State of Utah AGRC.

Geologic Hazards Assessment
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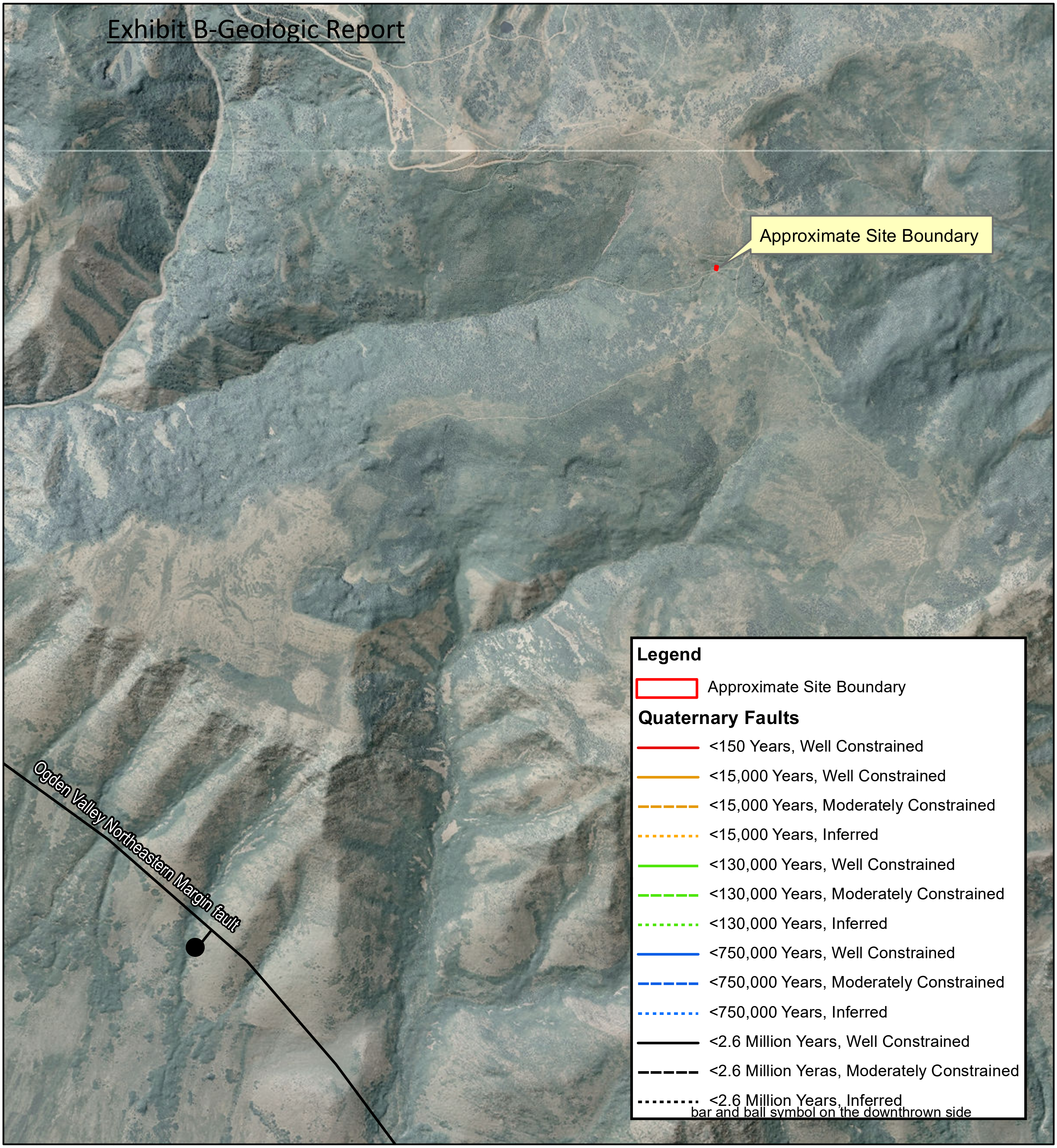
Site Vicinity 30x60 Geologic Map

Plate
5

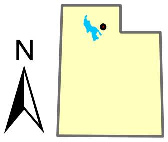
Exhibit B-Geologic Report



0 900 1,800 3,600 5,400 7,200 Feet

1 inch = 2,500 feet

Base Map:
UGS Quaternary Fold and Fault Database. 2009 1
meter NAIP aerial imagery and hillshades derived from
5 meter DEM provided by the State of Utah AGRC.



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Geologic Hazards Assessment
Lot 70R Summit Eden Phase 1C
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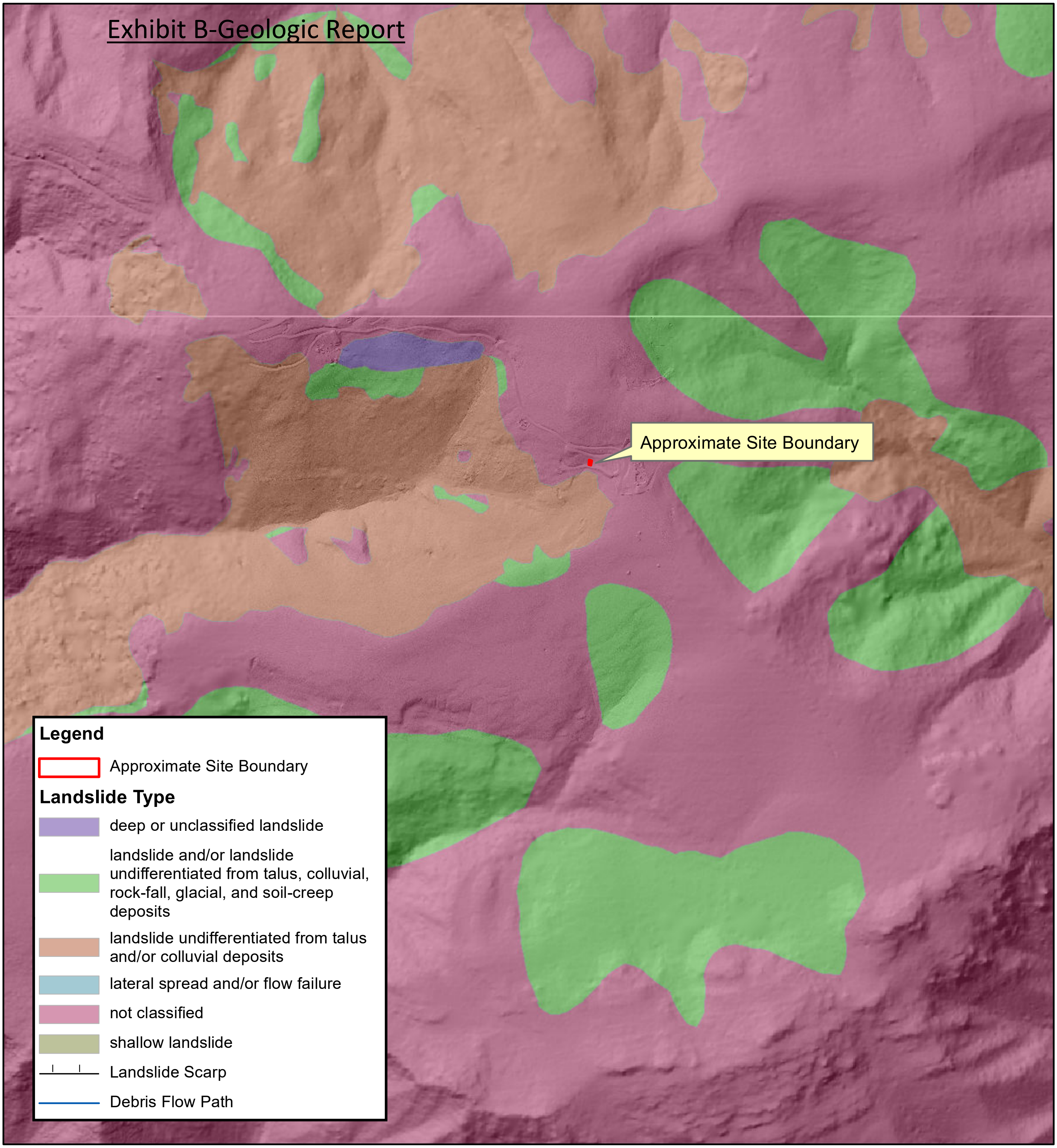
Eden, Utah
Project Number: 594-005

Quaternary Fault Map

Plate 6

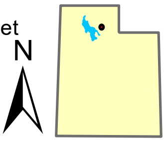
Exhibit B-Geologic Report



0 750 1,500 3,000 4,500 6,000 Feet

1 inch = 2,000 feet

Base Map:
UGS Quaternary Fold and Fault Database. Hillshades derived from 5 meter DEM provided by the State of Utah AGRC.



GeoStrata

Geologic Hazards Assessment
Lot 70R Summit Eden Phase 1C
8492 East Spring Park Road
Eden, Utah
Project Number: 594-005

Landslide Hazard Map

Plate 7

Exhibit B-Geologic Report

Legend

🟥 Approximate Site Boundary

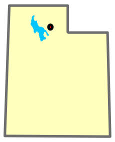
┈ Stream (National Hydrology Dataset)

0 750 1,500 3,000 4,500 6,000 Feet

1 inch = 2,000 feet

Base Map:
National Hydrology Dataset, 2009 1 meter NAIP aerial imagery and hillshades derived from 5 meter DEM provided by the State of Utah AGRC.

N



GeoStrata

Geologic Hazards Assessment
Lot 70R Summit Eden Phase 1C
8492 East Spring Park Road
Eden, Utah
Project Number: 594-005

Hydrology Map

Plate 8