ROSENTHAL CABIN

7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310

EXTERIOR PERSPECTIVES

NORTH

NORTHWEST

SHEET INDEX

REVISION INDEX

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SCOPE

NEW CONSTRUCTION OF FAMILY CABIN IN LOT 34R OF SUMMIT POWDER MOUNTAIN DEVELOPMENT

VICINITY MAP

CODE ANALYSIS

PARCEL ID:	CACHE COUNTY #16-112-0034, LOT 34R
ZONE:	RR, w/ SUMMIT POWDER MOUNTAIN DEVELOPMENT PRUD OVERLAY, PERMIT REVIEW PERFORMED BY WEBER COUNTY
BUILDING USE:	SINGLE FAMILY DWELLING
OCCUPANCY TYPE:	R-3
CONSTRUCTION TYPE:	V-B
STORIES ABOVE GRADE:	1 STORY FRONT YARD (STREET FACING), 2 STORY REAR YARD
LOT AREA:	34,058 SF
ALLOWABLE HEIGHT/AREA:	35 FT / 4500 BUILDING SF / 6309 FOOTPRINT SF
ACTUAL HEIGHT/AREA:	ACTUAL HEIGHT: 33.75 FT TOTAL FOOTPRINT AREA: 4669 SF TOTAL CONDITIONED AREA: 4016 SF LOWER FLOOR CONDITIONED: 1895 SF MAIN FLOOR CONDITIONED: 2121 SF
APPLICABLE CODES:	2015 INTERNATIONAL RESIDENTIAL CODE (IRC) 2014 NATIONAL ELECTRICAL CODE (NEC) 2015 INTERNATIONAL PLUMBING CODE (IPC) 2015 INTERNATIONAL MECHANICAL CODE (IMC) 2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) 2015 INTERNATIONAL FIRE CODE (IFC) 2009 ACCESSIBILITY CODE ANSI A117.1

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SEAL

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9/13/16

PROJECT PHASE
- ARC SUBMITTAL 07/22/2016
- HDR SET 08/10/2016
-
-
-

DRAWING REVISIONS

SHEET TITLE
COVER SHEET

SHEET NUMBER
G100

Exhibit A

DRAWING ABBREVIATIONS

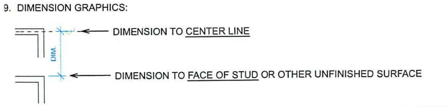
A.B.	ANCHOR BOLT
ABV.	ABOVE
A.C.	ASPHALTIC CONCRETE
ACOUS.	ACOUSTICAL
A.C.T.	ACOUSTICAL CEILING TILE
ADJ.	ADJUSTABLE, ADJACENT
A.F.	ACCESS FLOORING
A.F.F.	ABOVE FINISH FLOOR
ALUM.	ALUMINUM
ANOD.	ANODIZED
A.P.	ACCESS PANEL
ARCH.	ARCHITECTURAL
ASPH.	ASPHALT
A.W.P.	ACOUSTICAL WALL PANEL
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK OR BLOCKING
BM.	BEAM
BRKT.	BRACKET
B.U.R.	BUILT UP ROOF
BOT.	BOTTOM
C.	CARPET
CAB.	CABINET
C.B.	CATCH BASIN
CEM.	CEMENT
C.I.	CAST IRON
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
C.L.	CHAIN LINK
CLG.	CEILING
CLR.	CLEAR
CLOS.	CLOSET
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
COMM.	COMMUNICATION
COMPTR.	COMPUTER
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS, CONTROL
CORR.	CORRIDOR
C.P.	CONTROL POINT
C.T.	CERAMIC TILE
C.T.B.	CERAMIC TILE BASE
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DIV.	DIVISION(S)
DN.	DOWN
DR.	DOOR
DS.	DOWNSPOUT
DWGS.	DRAWINGS
EA.	EACH
E.	EAST
(E)	EXISTING
EXIST.	EXISTING
EXT'G.	EXISTING
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
E.O.C.	EMERGENCY OPERATIONS CENTER
EQ.	EQUAL
EQUIP.	EQUIPMENT
ETC.	ETCETERA
E.W.C.	ELECTRIC WATER COOLER
EXH.	EXHAUST
EXP'D.	EXPOSED
EXT.	EXTERIOR
F.D.	FLOOR DRAIN
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH
FIXT.	FIXTURE
FL.	FLOOR
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.S.	FACE OF STUD
FRAM'G.	FRAMING
F.S.	FINISH SURFACE
FT.	FOOT OR FEET
FTG.	FOOTING
FURR.	FURRING
G.	GAS LINE
GA.	GAUGE
GALV.	GALVANIZED
G.C.	GENERAL CONTRACTOR
G.I.	GALVANIZED IRON
GL.	GLASS
GLZ.	GLAZING
GYP.	GYPSUM WALLBOARD
GWB	GYPSUM WALLBOARD
H.	HIGH
H.C.	HOLLOW CORE OR HANDICAPPED
H.D.	SURFACE HARDENER
H.D.G.	HOT DIPPED GALVANIZED
HDR.	HEADER
HDWD.	HARDWOOD
HDWR.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
H.P.	HIGH POINT
HR.	HOUR
HT.	HEIGHT
HTR.	HEATER
HYDR.	HYDRAULIC
IN.	INCHES
INSUL.	INSULATION
INT.	INTERIOR
JAN.	JANITOR
JST.	JOIST
KITCH.	KITCHEN
L.A.	LANDSCAPE AREA
LAM.	LAMINATED
LAV.	LAVATORY
LBS.	POUNDS
LIB.	LIBRARY
L.P.	LOW POINT
LTG.	LIGHTING
M.B.	MACHINE BOLT
MAT'L.	MATERIAL
MAX.	MAXIMUM
MDL.	MODEL
MECH.	MECHANICAL
MED.	MEDIUM
MFR.	MANUFACTURER
MFRD.	MANUFACTURED
MIN.	MINIMUM
MOUNT.	MOUNTED
M.R.G.B.	MOISTURE RESISTANT GYP BD
M.S.	MAGNETIC SWITCH
MTL.	METAL
N.	NORTH
N/A	NOT APPLICABLE
N.I.C	NOT IN CONTRACT
N-R	NON-RATED
O/	OVER
O.C	ON CENTER
OCCUP.	OCCUPANCY
O.D.	OUTSIDE DIAMETER
OPP.	OPPOSITE
O.T.S.	OPEN TO STRUCTURE
PL.	PLATE
PL. CEM.	PLASTER CEMENT
P.LAM.	PLASTIC LAMINATE
PLAS.	PLASTIC
PLY.	PLYWOOD
P.P.	POWER POLE
PR.	PAIR
PRE.	FACTORY PREFINISHED
PROJ.	PROJECTION
PT.	PAINT
PTD.	PAINTED
PVMT.	PAVEMENT
R.	RADIUS
R.A.	RETURN AIR
R.B.	RUBBER BASE
R.C.P.	REFLECTED CEILING PLAN
RE:	REFER TO
REF.	REFRIGERATOR
REINF.	REINFORCING
REQ'D.	REQUIRED
REV.	REVISION
RI.	RISER
RM.	ROOM
R.R.	RUBBER FLOORING W/ PROFILE RINGS
R.T.	RUBBER TREAD/RISER
S.	SOUTH
S.A.	SUPPLY AIR
S.AQ.D.	SEE AQUATICS DRAWINGS
S.C.	SOLID CORE
SCHED.	SCHEDULE
SEAL.	CONCRETE OR STONE SEALER
SECT.	SECTION
S.E.D.	SEE ELECTRICAL DRAWINGS
SERV.	SERVER
S.F.	SQUARE FEET
SGL.	SINGLE
SHTG.	SHEATHING
SHLV.	SHELVING
SHT.	SHEET
SIM.	SIMILAR
SL.	SLOPE
S.M.	SHEET METAL
S.M.D.	SEE MECHANICAL DRAWINGS
S.P.D.	SEE PLUMBING DRAWINGS
SPEC.	SPECIFICATIONS
SQ.	SQUARE
S.R.F.	SHEET RUBBER FLOORING
S.S.	STAINLESS STEEL
S.S.D.	SEE STRUCTURAL DRAWINGS
ST.	STONE
STD.	STANDARD
STL.	STEEL
STN.	STAIN
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
SW.	SWITCH
T.	TREAD
T & B	TOP & BOTTOM
T.C.	TOP OF CURB
TEL.	TELEPHONE
TEMP.	TEMPERED
T & G	TONGUE & GROOVE
T.G.	TREE GRATE
THK.	THICK
TJI	TRUSS JOIST
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.P.	TOP OF PARAPET
T.O.PL.	TOP OF PLATE
T.P.	TOILET PARTITION
T.W.	TOP OF WALL
TYP.	TYPICAL
TS	TUBE STEEL
U.B.C.	UNIFORM BUILDING CODE
U.N.O.	UNLESS NOTED OTHERWISE
U.O.C.	UNLESS OTHERWISE CALLED
U.O.N.	UNLESS OTHERWISE NOTED
V.C.T.	VINYL COMPOSITION TILE
VCP.	VITRIFIED CLAY PIPE
VERT.	VERTICAL
VEST.	VESTIBULE
V.P.	VENEER PLASTIC
W.	WEST
WAINS.	WAINSCOT
W.C.	WATER CLOSET
WD.	WOOD
W/H	WATER HEATER
WDW.	WINDOW
W.M.	WIRE MESH
WP.	WEATHERPROOF
W/	WITH
W.R.	WATER RESISTANT
W.R.G.B.	WATER RESISTANT GYPSUM BOARD
W.W.M.	WELDED WIRE MESH
Ø	DIAMETER
#	POUND OR NUMBER
℄	CENTERLINE
&	AND
@	AT

GRAPHIC NOTES

DIMENSIONS:

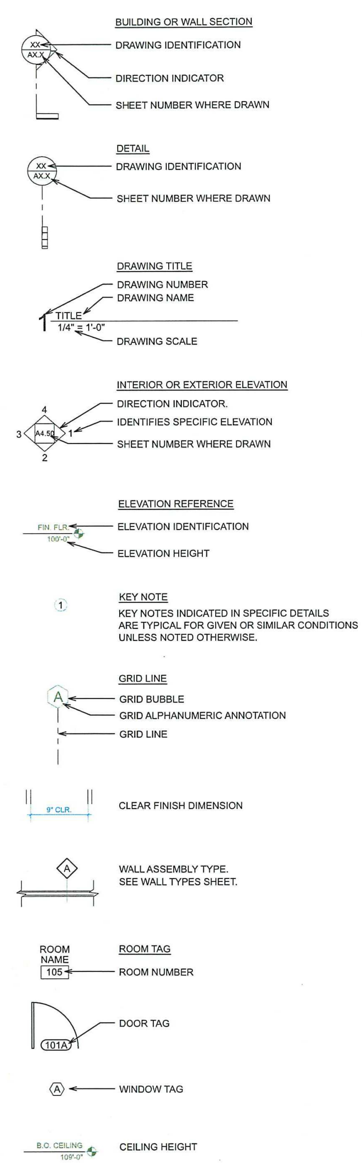
NOTE: DIMENSIONS IN THESE DRAWINGS ARE GENERALLY PLACED AS INDICATED BELOW, UNLESS NOTED OTHERWISE.

1. MASONRY: TO UNFINISHED FACE (NOTE @ SPLIT FACE CONDITION THESE DRAWINGS ASSUME STANDARD 8" OR 12" WIDE BLOCK)
2. CONCRETE: TO UNFINISHED FACE
3. STRUCTURAL: TO STEEL OR TUBING FACE OR CENTER LINE
4. COLUMNS: CENTER LINE
5. NONBEARING PARTITIONS: TO FACE OF STUD. SEE NOTE 9 BELOW
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ARCHITECTURAL DIMENSIONS TO ASSURE PROPER PLACEMENT OF ALL PARTS AND MATERIALS IN CONJUNCTION WITH ALL OTHER DISCIPLINES REPRESENTED IN THESE DOCUMENTS, PRIOR TO COMMENCING WORK.
7. VERIFY ALL DIMENSIONS INCLUDING SITE CONDITIONS BEFORE STARTING WORK.
8. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE.
9. DIMENSION GRAPHICS:

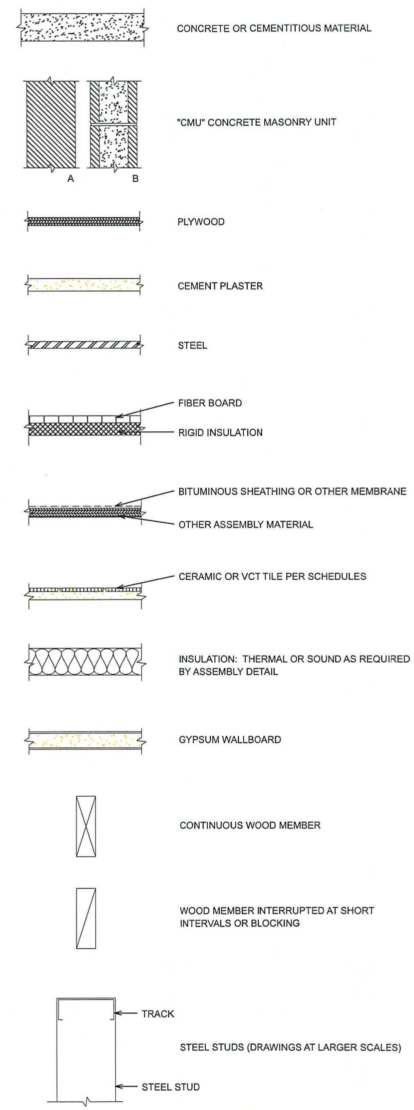


'CLR.' MEANS THE CLEAR SPACE DIMENSION, AFTER ALL FINISHES HAVE BEEN APPLIED TO THE SUBJECT SURFACES

DRAWING CALLOUT SYMBOLS



DRAWING GRAPHIC SYMBOLS



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- ARC SUBMITTAL	07/22/2016
- HDR SET	08/10/2016
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DRAWING REVISIONS

SHEET TITLE
SYMBOLS & ABBREVIATIONS

SHEET NUMBER
G101

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GENERAL CONSTRUCTION

1. These plan shall be designed and reviewed under 2012 IBC.

2. The contractor shall be responsible for obtaining all permits required for construction by the permitting authorities having jurisdiction.

3. The contractor shall carefully read, study, and understand all plans and specifications for trades. Coordination between trades will be necessary and the responsibility of the contractor, any questions that arise shall be clarified by the architect prior to construction.

4. Drawings are not to be scaled. Dimensional discrepancies are to be clarified with the architect before proceeding with construction.

5. The contractor shall verify existing power, water, data cable and other utilities prior to excavation. Contact blue-stakes or authorities having jurisdiction prior to any excavation. 208-2100

6. The contractor shall notify the designer of discrepancies in the documents, and of any field conditions that deviate from the documents.

7. The architects approval must be obtained for any deviations from the construction documents, including but not limited to changes in dimensions, design, materials, products, and finishes. In no case may the contractor make these changes without the approval of the architect.

8. Shop drawings and other submittals are to be submitted for approval by the architect with sufficient time for review prior to execution of work. Submittals must conform to the requirements indicated on construction documents, structural notes, and specifications.

9. See door and window schedule for sizes, types, and finishes.

10. All construction shall conform to and strictly comply with all applicable codes, covenants, restrictions, and Weber County building standards.

11. In no event shall the contractor substitute a standard construction detail for a detail specified in these documents. The contractor shall bring all work into conformity with the construction documents, as the designer orders, before approval of that construction will be granted.

12. The contractor is to verify all dimensions, datum & levels prior to construction. Exterior walls are dimensioned from face of exterior wall sheathing or face of concrete unless otherwise noted. Exterior wall studs at heated spaces shall be 2x6 except as noted. All other wall studs shall be 2x4 except where noted otherwise on construction documents.

13. Glazing in locations subject to human impact such as panes in doors, glazing within 12" of door opening, glazing within 18" of floor, and shower doors shall be tempered or laminated safety glass as per 2012 IBC.

14. Provide and install smoke detectors as per 2012 IBC.

15. Provide attic access, minimum 22" x 30" with minimum 30" headroom at unobstructed readily accessible opening as per 2012 IBC.

16. Building shall comply with Utah State Energy Code. The contractor is to seal and caulk all cracks to prevent air infiltration. The contractor shall insulate the walls to R-19, ceilings to R-38, and floors over unheated spaces to R-38 unless otherwise noted.

17. These drawings are the exclusive property of Lloyd Architects and may be reproduced only with the written permission of the architect. Authorized reproductions must bear the name of the architect.

18. Fireplaces shall conform to 2012 IBC. UL listing on fireplaces are as follows: Wood burning units, UL#MH5850 Enclosed gas units; ICBO #4030

19. SITE PLAN & GRADING: remove stumps, shrubs and clear and grub site near house as indicated on site plans including legal off-site disposal of all debris and unusable fill. Scrape topsoil layer before excavation and place onsite for finish landscape use. Excavate, trench, and backfill as required for footings, foundations, slabs, utility lines, mechanical, electrical and other work below grade required to complete the project. Maintain excavation free of water and provide an adequate system for the handling and removal of surface water.

20. Contact the Utah Division of Air Quality on all remodel projects: 536-4000

FOUNDATION

1. GEOTECHNICAL: SOIL BEARING: Assume 1500 psf soil load pressure per R401.4. CONCRETE: 3,000 psi in slabs and footings, 3000 psi in foundation walls, 3500 psi in garage slab and exterior steps.

2. CONCRETE FOOTING SIZES AND DEPTH: see footing schedule on structural sheets (minimum footing size 9" by 20", minimum depth 30" below grade). MINIMUM REBAR: see structural sheets for minimum reinforcing requirements.

3. ANCHOR BOLTS TO FOUNDATION: minimum 7" embedment per R403.1.6(maximum spacing allowed by code is 32" O.C.)

4. CONCRETE FOUNDATION WALLS: see structural drawings for size and reinforcing.

5. HEIGHT ABOVE FINISHED GRADE: concrete foundation wall to be 6" minimum above finish grade. Use treated sill plate where required.

6. FOUNDATION WALL DAMP-PROOFING AND FOUNDATION DRAIN: bituminous coating or equal to be applied on basement walls per R406. Foundation drain to be installed by new footings per R405.

7. PLATE WASHERS: All plate washers to be 3"X3"X.227" (1/4") square slotted plate per R602.11.1

8. WINDOW WELLS AND LADDERS: 9 sq ft min area, 36 inches out from window, if deeper than 44 inches affix a ladder.

CONSTRUCTION

1. EMERGENCY ESCAPE AND RESCUE OPENINGS: 44 inches max above floor, in every sleeping room, 5.7 sq ft or 5 sq ft if within 44 inches of grade, 20 inch min width, 24 inch min height.

2. EXIT DOORS AND HALLWAYS: one 3'-0" x 6'-8" door required, 36 inch min. width in hallways.

3. LANDINGS AT DOORS AND STAIRWAYS: 36" min. out from door and door width minimum.

4. RAMPS, SLOPES AND RAILS: maximum slope 1 in 8, railing required on ramps over 1 in 12 slope.

5. STAIRWAYS: 36" width minimum, TREADS AND RISERS: 8" rise and 9" tread minimum, HEADROOM: 6'- 8" minimum, UNDER STAIR PROTECTION: 1/2" GWB, HANDRAILS: required with (2) or more risers, 34" to 38" in height and 1 1/4 to 2 5/8" in diameter if circular.

6. GUARDRAILS (GUARDS): required at floors over 30" above grade, 36" min. height, a 4"sphere shall not pass through with design as to eliminate ladder effect.

7. LUMBER PROTECTION AGAINST DECAY: 18" minimum to grade under floor joists, 12" minimum to grade under floor girders. Provide treated plate on concrete slab less than 8" above exposed ground and framing and siding less than 6" from the ground. All lumber in contact with concrete, earth, or within 18" of finish grade shall be pressure treated. Pressure treat above ground items with water-borne preservatives complying with AWPB LP-2. Wood members in contact with ground shall be pressure treated with water-borne preservative complying AWPB LP-22.

8. WOOD COLUMNS: required to be 1" above the floor or finish grade, See structural for connection to foundation or slab.

9. MINIMUM AREA DIMENSIONS AND HEIGHTS: see all plan sheets for room sizes. All room minimums shall be: (1) 120 sf room, 70 sf bedrooms, 50 sf kitchen, 7 feet min. heights, sloping to 5 feet min. 3 feet min. passageways in kitchens

10. INTERIOR MOISTURE VAPOR RETARDERS: on "warm-in-winter" side of wall.

WALL CONSTRUCTION

1. INTERIOR WALL COVERINGS: 5/8" GWB. Green Gyp. board to be limited to R702.3.8.1 for no direct contact to moisture.

2. EXTERIOR WALL COVERINGS AND WEATHER BARRIERS: 15# felt paper or approved equal.

3. STRUCTURAL COLUMNS: see structural sheets for all column sizes and locations.

4. MID-HEIGHT BRIDGING: in unfinished walls

5. BRACED WALL LINES AND PANELS: see structural notes. Minimum requirement are to provide within 12'-6" of wall corner, at 4'-0" in length for plywood w/ nailing @ 6" O.C. @ edges and 12" O.C. in field, at 8'-0" for GWB w/ screws @ 7" O.C. @ edges and field.
DOORS AND WINDOWS

6. HABITABLE ROOMS AND BATHROOMS: 8% of area in glazing, 4% in openings, and 3 sf window in bathrooms or bathrooms to have exhaust fan per IRC 303.3

7. GARAGE SEPARATION FROM DWELLING: 1 hour separation. Walls shall have 1/2" GWB on walls and attic. If garage is below habitable rooms the ceiling shall have 5/8" type "X" GWB. Door shall have a 20 min. fire-resistance rating and shall be self-closing.

FLOOR CONSTRUCTION

1. FLOOR JOISTS: double joists under bearing partitions and blocking shall be installed at bearing walls.

2. DRAFT-STOPPING: shall be installed in all concealed spaces over 1,000 sq ft.

3. FIREBLOCKING: shall be installed in all concealed spaces at 10'-0" O.C.

4. SUBFLOOR SHEATHING: see structural sheets for all floor sheathing callouts (minimum requirements are as follows; 5/8 inch thick tongue & groove osb for joists @ 16" to 20" O.C. and 3/4" thick tongue & groove osb @ 24" O.C.)

5. FLOOR JOISTS SUPPORTING BEARING PARTITIONS OFFSETS: offset minimum floor joist depth.

6. EXPOSED LAMINATED TIMBERS: ATIC Rated Architectural grade Glu-laminated Timbers: See structural sheets for sizes and locations. not applicable

ROOF CONSTRUCTION

1. ROOF FRAMING: see structural sheets pre-engineered truss type and layout. Submit shop drawings to architect/engineer for approval.

2. ATTIC VENTILATION: Provide a 1 to 150 sq.ft. (or 1 to 300 if 50% is in soffit and 50-80% located more than 3'0" above soffits) of the attic area in ventilation. Provide insulation baffles to insure air flow through space. Cut or drill holes in truss blocking for vent air passage from soffit vents.

3. ROOF SLOPES and DRAINAGE: felt paper, 1/4" per foot minimum. provide "ice and water shield" at all valleys U.N.O.

4. ICE DAM PROTECTION: "ice and water shield" at eaves to 36" inside the wall plane of the building

5. CHIMNEY TERMINATION: chimney shall be 2'-0" higher than any portion of building within 10'-0", 3'-0" tall minimum.

MASONRY

1. MASONRY VENEERS, AND TIES: see structural sheets. provide minimum brick ties at 16 inches on center in either direction, with horizontal 9 gage wire mechanically attached to ties (if applicable)

2. LINTELS: see structural drawings for lintel sizes and locations. SHEARWALLS & HOLDDOWN SCHEDULE: see structural sheets

MECHANICAL

1. GAS FIREPLACE: ICBO #4030 on typical gas unit

2. FIREPLACE HEARTHS: Extend 20" min. from front of firebox and 12" min. extension on both sides.

3. RES-CHECK: 2009 IECC See attached REScheck report.

4. CENTRAL FURNACE, CLEARANCE, ACCESS, PLATFORM, LIGHT: provide 3" side and rear of platform, space is 12 inches wider than furnace, 6 inches in front if door or 30 inches in front, 30 x 30 inch access platform with light for servicing

5. BTU SIZES OF WATER HEATERS, FURNACES: see mechanical drawings for all mechanical sizing.

6. COMBUSTION AIR: provide duct or opening within 12 inches of ceiling and size of 1 sq inch for every 3000 btu/h.

7. ELEVATION OF COMBUSTION SOURCE OF APPLIANCES: see floor plans for floor heights.

8. APPLIANCE PROTECTION FROM IMPACT: N/A (mechanical not in garage).

9. CONDENSATE DISPOSAL: provide an indirect drain, secondary condensate if located in attic or on wood floor (to be trap seal primer type)

10. GAS LINE SCHEMATIC: See mechanical sheets.

11. WATER HEATERS, LOCATIONS, EXPANSION TANKS, AND PRESSURE RELIEF VALVES: can not be located in closets, bedrooms, or bathrooms. If located within sealed enclosures provide combustion air vent. Direct-vent water heaters are okay. Provide and install high-efficiency radiant hydronic heat system including connection of hot water storage tank, gas hot water heaters and piping from the hot water tank to all fixtures as indicated in drawings. Installation shall conform to all local codes, ordinances and regulations pertaining to this work. Manifold and thermostat locations to be approved by the Architect. Provide trap seal primer type drain at water heaters.

12. WATER HEATER ANCHORAGE, FLOOR DRAIN, AND PANS FOR DRAINAGE: provide seismic strap to top third and bottom third of water heater. Provide an indirect drain for water heaters. Provide pan for water heaters on wood floors.

13. CLOTHES DRYER EXHAUST: maximum 25'-0" to outside with 5'-0" reduction for 90 degree bends

14. EXHAUST VENT TERMINATIONS: 4'-0" below or beside and 1'-0" above doors or windows, 12" above grade

15. SHOWER SIZE AND DOOR: 900 sq inches and 30" diameter, door swings outward

16. HEATING: new construction to have a gas fired forced air furnace with air conditioning condenser unit. Heating facility to maintain 68 degrees.

PLUMBING

1. WATER PIPING: Shall be pex.

2. VENT PIPING: shall be ABS.

3. HOSE CONNECTION BACKFLOW PREVENTER: provide at all exterior hose bib locations. Use frostproof type with vacuum breaker.

4. FLOOR DRAINS: Deep seal or Trap seal primer required in laundry or mechanical rooms per IbC 3201.2

5. WASTE INTERIOR TO BE ABS, WASTE INTERIOR UNDER SLAB AND EXTERIOR TO BE ABS.

ELECTRICAL

1. WHIRLPOOL BATHTUB ACCESS PANEL: see plans for size and locations.

2. ELECTRICAL SERVICE PANEL LOCATION: shall not be located in bathrooms or firewalls. provide 30" clearance side to side and 36" clearance in front. Provide a minimum of 6'-6" in height.

3. RECEPTACLE OUTLETS: see electrical drawings for all outlet locations. Electrical sub-contractor to walk through project with owner to verify all electrical fixture locations prior to commencing work. Follow all local electrical codes.

4. ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION: provide in bedrooms.

5. GFCI PROTECTION: see electrical sheets for all locations. Provide in bathrooms and jetted tub motors, garage, outdoor, crawlspace, kitchen counters, kitchen islands, and wet-bar.

6. LIGHTING WALL SWITCHES: see electrical drawings for all switch locations. Electrical sub-contractor to walk through project with owner to verify all electrical fixture locations prior to commencing work. Follow all local electrical codes.

7. RECEPTACLES AND LIGHTING IN DAMP AND WET LOCATIONS: provide weatherproof covers for outlets, lighting to be listed for wet or damp locations.

8. LIGHT FIXTURES IN CLOSETS: incandescent fixtures 12" minimum to storage, fluorescent fixtures 6" minimum to storage

9. SUPPORT OF CEILING FANS: as per manufacturer's recommendations.

10. ELECTRICAL: all wiring to be in accordance with the National Electrical Code and applicable local codes. Locate main panel and meter where indicated on the Drawings. Provide underground power connection from source to main panel.80.

11. SMOKE DETECTORS: locate (1) inside each sleeping room, in corridors outside sleeping rooms, and on each level. All smoke detectors to be wired in series.

12. CO2 DETECTORS: Locate (1) on each level

FIRE

1. Home shall be provided with an NFPA 13D or 13R compliant fire suppression system to be included as a deferred submittal.

2. Temporary address marker to be provided at building site during construction.

3. If building is equipped with an fire suppression system, 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 w/ fire inspector).

4. If the building is equipped with a fire department connection (FDC) there shall be a cement pad measuring 3 ft x 3 ft under the FDC (coordinate w/ fire inspector).

01

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ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310

SEAL

PRINT DATE
9/13/16

PROJECT PHASE

- ARC SUBMITTAL	07/22/2016
- HDR SET	08/10/2016
-	
-	
-	

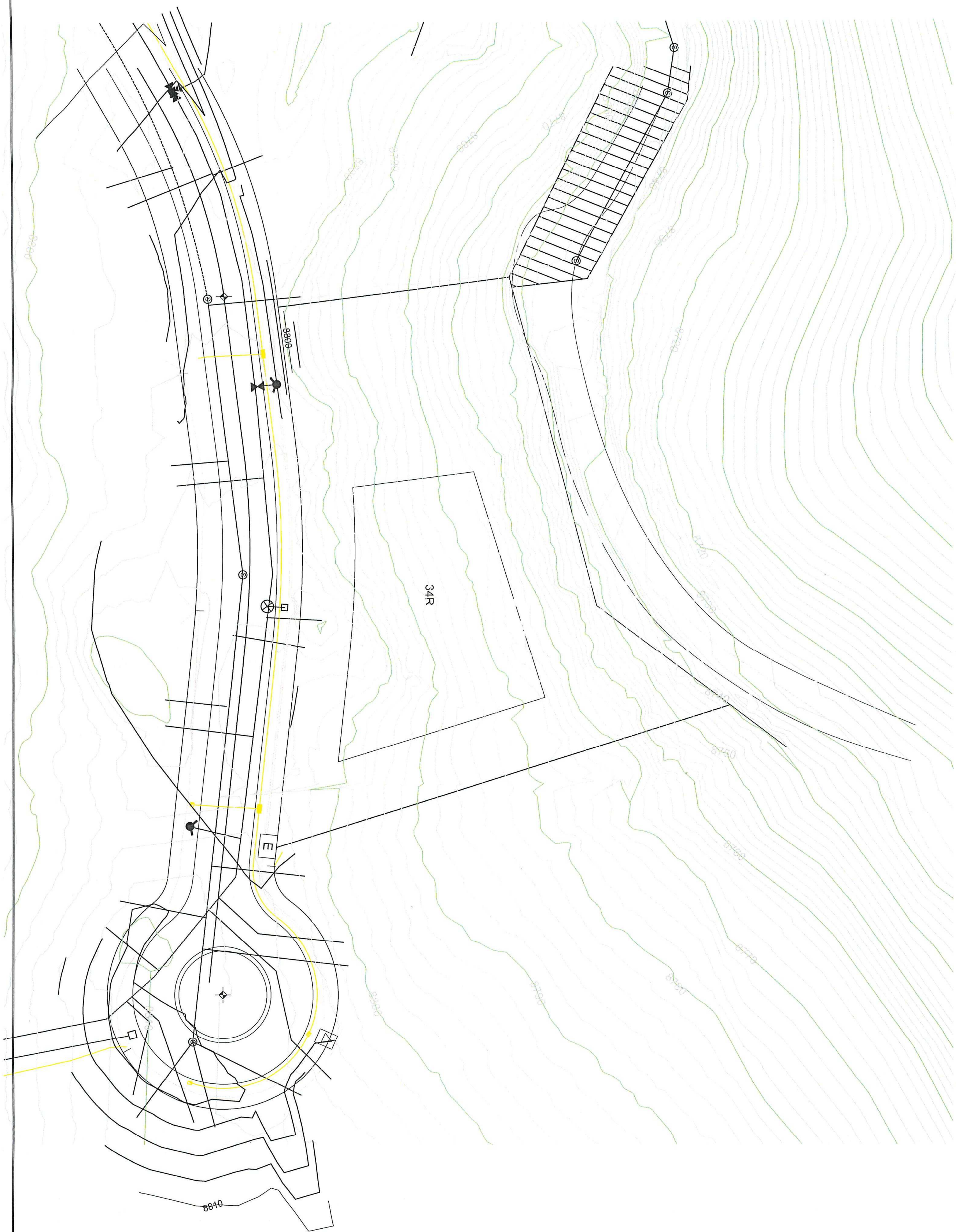
DRAWING REVISIONS

IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
G102

Exhibit A



SUMMIT AT POWDER MOUNTAIN PHASE1

LOT 34 EXISTING TOPOGRAPHY AND TREE LOCATION EXHIBIT

PREPARED FOR: SUMMIT

DATE SUBMITTED: 6/16/2014

NV5 BEYOND ENGINEERING
5217 SOUTH STATE STREET, SUITE 200
MURRAY, UT 84107
801.743.1300 TEL 801.743.0300 FAX
WWW.NV5.COM

SHEET NUMBER 1 OF 1 SHEETS

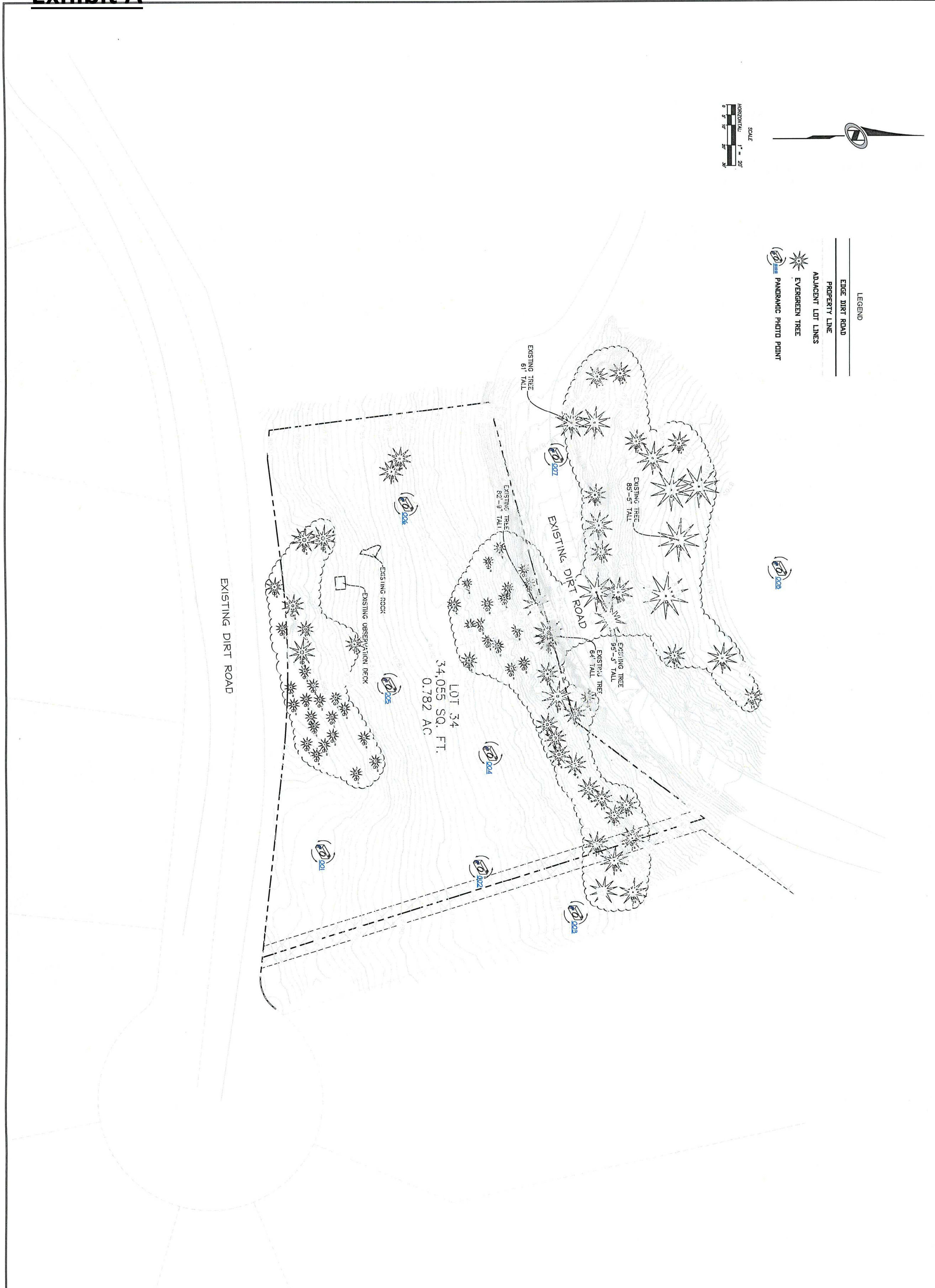
SCALE
VERTICAL: 1"=N/A
HORIZONTAL: 1"=20'

JOB NUMBER SLB0793

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

Exhibit A



JOB NUMBER SLB0793	SCALE VERTICAL: 1"= N/A HORIZONTAL: 1"= 20'	SHEET NUMBER 1 OF 1 SHEETS	NV5 BEYOND ENGINEERING 5217 SOUTH STATE STREET, SUITE 200 MURRAY, UT 84107 801.743.1300 TEL 801.743.0300 FAX WWW.NV5.COM	SUMMIT AT POWDER MOUNTAIN PHASE1 LOT 34 EXISTING TOPOGRAPHY AND TREE LOCATION EXHIBIT PREPARED FOR: SUMMIT DATE SUBMITTED: 6/16/2014

NO.	BY	DATE	REVISIONS:

CAUTION: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

Exhibit A

SURVEYOR'S CERTIFICATE

I, RICHARD W. MILLER, DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF UTAH IN ACCORDANCE WITH TITLE 58, CHAPTER 22, PROFESSIONAL ENGINEERS AND LAND SURVEYORS ACT; AND THAT I HAVE COMPLETED A SURVEY OF THE PROPERTY DESCRIBED ON THIS PLAT IN ACCORDANCE WITH SECTION 17-23-17 AND HAVE VERIFIED ALL MEASUREMENTS AND HAVE PLACED MONUMENTS AS REPRESENTED IN THIS PLAT, AND THAT THIS PLAT SUMMIT EDEN PHASE 1B, IN WEBER COUNTY, UTAH, HAS BEEN DRAWN CORRECTLY TO THE DESIGNATED SCALE AND IS A TRUE AND CORRECT REPRESENTATION OF THE HEREON DESCRIBED LANDS INCLUDING SAID SUBDIVISION, BASED UPON DATA COMPILED FROM RECORDS IN THE WEBER COUNTY RECORDER'S OFFICE AND FROM SAID SURVEY MADE BY ME ON THE GROUND. I FURTHER CERTIFY THAT THE REQUIREMENTS OF ALL APPLICABLE STATUTES AND ORDINANCES OF WEBER COUNTY CONCERNING ZONING REQUIREMENTS REGARDING LOT MEASUREMENTS HAVE BEEN COMPLIED WITH.

[signature]

RICHARD W. MILLER
PROFESSIONAL LAND SURVEYOR
UTAH CERTIFICATE NO. 155641

LEGAL DESCRIPTION

BEGINNING AT A POINT THAT IS SOUTH 01°09'01" WEST 995.75 FEET ALONG THE SECTION LINE AND EAST 515.18 FEET, FROM THE WEST QUARTER CORNER OF SECTION 5, TOWNSHIP 7 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN, (BASIS OF BEARING IS NORTH 89°55'51" WEST ALONG THE LINE BETWEEN THE NORTHEAST CORNER OF SECTION 1, TOWNSHIP 7 NORTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN AND THE SET WEBER COUNTY MONUMENT ON THE INTERSECTION OF THE WEBER/CACHE COUNTY LINE AND THE SECTION LINE.); RUNNING THENCE NORTH 87°12'29" EAST 272.77 FEET; THENCE SOUTH 02°47'31" EAST 224.41 FEET; THENCE SOUTH 44°55'24" EAST 113.68 FEET; THENCE SOUTH 04°47'44" EAST 154.04 FEET; THENCE SOUTH 83°04'32" EAST 367.66 FEET; THENCE NORTH 89°26'59" EAST 381.79 FEET; THENCE NORTH 83°08'05" EAST 309.86 FEET; THENCE SOUTH 82°18'33" EAST 415.15 FEET; THENCE SOUTH 49°18'31" EAST 210.20 FEET; THENCE SOUTH 30°26'35" EAST 270.66 FEET; THENCE SOUTH 62°09'42" EAST 391.77 FEET; THENCE SOUTH 62°09'42" EAST 1,191.29 FEET; THENCE SOUTH 240.39 FEET; THENCE EAST 455.19 FEET; THENCE SOUTH 35°01'14" WEST 550.33 FEET; THENCE NORTHWESTERLY ALONG A 455.00 FOOT RADIUS NON-TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 64°45'19" WEST A DISTANCE OF 244.33 FEET), THROUGH A CENTRAL ANGLE OF 31°08'57", A DISTANCE OF 247.36 FEET; THENCE SOUTH 09°40'13" WEST 25.00 FEET; THENCE WESTERLY ALONG A 430.00 FOOT RADIUS NON-TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 87°04'17" WEST A DISTANCE OF 100.96 FEET), THROUGH A CENTRAL ANGLE OF 13°28'59", A DISTANCE OF 101.19 FEET; THENCE SOUTH 86°11'14" WEST 193.22 FEET; THENCE WESTERLY ALONG A 570.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 88°46'32" WEST A DISTANCE OF 100.10 FEET), THROUGH A CENTRAL ANGLE OF 10°04'29", A DISTANCE OF 100.23 FEET; THENCE SOUTH 06°15'42" WEST 147.00 FEET TO THE NORTHERLY RIGHT OF WAY LINE OF SUMMIT PASS; THENCE ALONG SAID NORTHERLY LINE THE FOLLOWING THIRTY TWO (32) COURSES: 1) NORTH 83°44'18" WEST 166.47 FEET, 2) NORTHWESTERLY ALONG A 367.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 66°06'41" WEST A DISTANCE OF 222.27 FEET), THROUGH A CENTRAL ANGLE OF 35°15'14", A DISTANCE OF 225.81 FEET, 3) NORTH 48°29'04" WEST 89.38 FEET, 4) NORTHWESTERLY ALONG A 433.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 57°28'49" WEST A DISTANCE OF 135.41 FEET), THROUGH A CENTRAL ANGLE OF 17°59'29", A DISTANCE OF 135.97 FEET, 5) NORTH 66°28'34" WEST 225.95 FEET, 6) NORTHWESTERLY ALONG A 367.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 54°25'37" WEST A DISTANCE OF 153.22 FEET), THROUGH A CENTRAL ANGLE OF 24°05'53", A DISTANCE OF 154.36 FEET, 7) NORTH 42°22'41" WEST 79.01 FEET, 8) NORTHWESTERLY ALONG A 367.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 29°31'31" WEST A DISTANCE OF 163.28 FEET), THROUGH A CENTRAL ANGLE OF 25°42'21", A DISTANCE OF 164.65 FEET, 9) NORTH 16°40'20" WEST 261.55 FEET, 10) NORTHERLY ALONG A 537.42 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 11°39'00" WEST A DISTANCE OF 94.09 FEET), THROUGH A CENTRAL ANGLE OF 10°02'40", A DISTANCE OF 94.21 FEET, 11) NORTH 06°37'40" WEST 118.34 FEET, 12) NORTHERLY ALONG A 633.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 15°29'46" WEST A DISTANCE OF 195.17 FEET), THROUGH A CENTRAL ANGLE OF 17°44'11", A DISTANCE OF 195.95 FEET, 13) NORTH 24°21'51" WEST 113.52 FEET, 14) NORTHWESTERLY ALONG A 633.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 36°08'41" WEST A DISTANCE OF 258.47 FEET), THROUGH A CENTRAL ANGLE OF 23°33'40", A DISTANCE OF 260.30 FEET, 15) NORTH 47°55'31" WEST 81.02 FEET, 16) WESTERLY ALONG A 433.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 70°02'50" WEST A DISTANCE OF 326.12 FEET), THROUGH A CENTRAL ANGLE OF 44°14'39", A DISTANCE OF 334.37 FEET, 17) SOUTH 87°49'50" WEST 231.14 FEET, 18) WESTERLY ALONG A 267.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 81°03'41" WEST A DISTANCE OF 102.88 FEET), THROUGH A CENTRAL ANGLE OF 22°12'58", A DISTANCE OF 103.53 FEET, 19) NORTH 69°57'12" WEST 128.40 FEET, 20) WESTERLY ALONG A 533.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 76°12'08" WEST A DISTANCE OF 116.03 FEET), THROUGH A CENTRAL ANGLE OF 12°29'53", A DISTANCE OF 116.26 FEET, 21) NORTH 82°27'04" WEST 241.01 FEET, 22) WESTERLY ALONG A 533.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS SOUTH 87°57'27" WEST A DISTANCE OF 177.61 FEET), THROUGH A CENTRAL ANGLE OF 19°10'57", A DISTANCE OF 178.45 FEET, 23) SOUTH 78°21'59" WEST 163.17 FEET, 24) WESTERLY ALONG A 417.00 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 88°17'33" WEST A DISTANCE OF 192.44 FEET), THROUGH A CENTRAL ANGLE OF 26°40'57", A DISTANCE OF 194.19 FEET, 25) NORTH 74°57'04" WEST 46.14 FEET, 26) WESTERLY ALONG A 333.00 FOOT RADIUS TANGENT CURVE TO THE LEFT,(CHORD BEARS NORTH 84°06'02" WEST A DISTANCE OF 105.90 FEET), THROUGH A CENTRAL ANGLE OF 18°17'56", A DISTANCE OF 106.35 FEET, 27) WESTERLY ALONG A 333.00 FOOT RADIUS COMPOUND CURVE TO THE LEFT,(CHORD BEARS SOUTH 79°29'51" WEST A DISTANCE OF 84.08 FEET), THROUGH A CENTRAL ANGLE OF 14°30'18", A DISTANCE OF 84.30 FEET, 28) SOUTH 72°14'41" WEST 103.92 FEET, 29) WESTERLY ALONG A 234.82 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS SOUTH 82°56'30" WEST A DISTANCE OF 87.17 FEET), THROUGH A CENTRAL ANGLE OF 21°23'37", A DISTANCE OF 87.68 FEET, 30) NORTH 86°21'42" WEST 297.63, 31) WESTERLY ALONG A 2990.76 FOOT RADIUS TANGENT CURVE TO THE RIGHT,(CHORD BEARS NORTH 85°24'51" WEST A DISTANCE OF 98.90 FEET), THROUGH A CENTRAL ANGLE OF 01°53'41", A DISTANCE OF 98.91 FEET AND 32) NORTH 84°28'01" WEST 106.46 FEET TO A POINT ON THE EAST LINE OF THE WEBER STATE UNIVERSITY PARCEL; THENCE ALONG SAID PARCEL FOLLOWING TWO (2) COURSES: 1)NORTH 22°03'15" EAST 94.54 FEET, 2) NORTH 67°56'24" WEST 23.37 FEET; THENCE NORTH 57°01'18" EAST 296.12 FEET; THENCE NORTH 72°11'24" EAST 165.13 FEET; THENCE NORTH 51°37'45" EAST 258.96 FEET; THENCE SOUTH 63°37'15" EAST 119.37 FEET; THENCE NORTH 75°14'39" EAST 162.06 FEET; THENCE NORTH 37°00'00" EAST 133.88 FEET TO THE POINT OF BEGINNING.

CONTAINING 2,502,914 SQUARE FEET OR 57.459 ACRES.

SUMMIT EDEN PHASE 1B

LOCATED IN THE SOUTH ½ OF SECTION 6,
SOUTHEAST ¼ OF SECTION 5 AND NORTH ½ OF SECTION 8 OF
TOWNSHIP 7 NORTH, RANGE 2 EAST, SLBM.
JANUARY 2014

PLAT NOTES:

1. THIS PLAT IS SUBJECT TO THAT CERTAIN NEIGHBORHOOD DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS FOR SUMMIT EDEN MOUNTAIN HOMES ("NEIGHBORHOOD DECLARATION") EXECUTED BY SMHG PHASE I, LLC ("DECLARANT") AS WELL AS THAT CERTAIN MASTER DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS FOR SUMMIT EDEN ("MASTER DECLARATION") THAT HAVE BEEN OR WILL BE RECORDED IN THE OFFICE OF THE WEBER COUNTY RECORDER WHICH SHALL SET FORTH THE RESTRICTIONS AND GENERAL PLAN OF IMPROVEMENT FOR THE PROPERTY DESCRIBED IN THIS PLAT. CERTAIN TERMS NOT OTHERWISE DEFINED IN THIS PLAT SHALL HAVE THE MEANINGS SET FORTH IN THE NEIGHBORHOOD DECLARATION OR MASTER DECLARATION.

2. PURSUANT TO THE NEIGHBORHOOD DECLARATION, THE SUMMIT EDEN MOUNTAIN HOMES ASSOCIATION, INC., A UTAH NONPROFIT CORPORATION ("NEIGHBORHOOD ASSOCIATION") IS RESPONSIBLE FOR MAINTAINING ALL COMMON AREA, IF ANY, AND SHALL HAVE A PERPETUAL NON-EXCLUSIVE EASEMENT OVER ALL LOTS AND PARCELS FOR SUCH MAINTENANCE PURPOSES AS FURTHER DESCRIBED IN THE NEIGHBORHOOD DECLARATION. SUCH RESPONSIBILITY AND EASEMENT MAY BE DELEGATED AND ASSIGNED TO THE SUMMIT EDEN OWNERS ASSOCIATION, INC., A UTAH NONPROFIT CORPORATION ("COMMUNITY ASSOCIATION").

3. INTENTIONALLY DELETED.

4. THE PROPERTY AS DEPICTED ON THIS PLAT IS SUBJECT TO THE RIGHTS OF DECLARANT AS DESCRIBED IN THE NEIGHBORHOOD DECLARATION, AND THE RIGHTS OF MASTER DEVELOPER AS DESCRIBED IN THE MASTER DECLARATION, AND DECLARANT AND MASTER DEVELOPER SHALL HAVE THE RIGHT TO EXERCISE ANY APPLICABLE RIGHTS PROVIDED FOR IN SAID DECLARATIONS, INCLUDING, WITHOUT LIMITATION, RESERVATION AND GRANTING OF CERTAIN EASEMENTS, REDUCING OR RELOCATING IMPROVEMENTS WITHIN THE COMMUNITY, ADDING ADDITIONAL FACILITIES AND MAKING SUCH OTHER DEVELOPMENT DECISIONS AND CHANGES AS DECLARANT OR MASTER DEVELOPER SHALL DETERMINE IN EACH OF THEIR SOLE AND EXCLUSIVE DISCRETION.

5. THE LOTS ARE SERVED BY PRIVATE WATER AND WASTEWATER LATERAL LINES. EACH OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPLACEMENT OF ALL WATER AND SANITARY SEWER LATERALS SERVING THE RESIDENCE ON SUCH OWNER'S LOT IN ACCORDANCE WITH THE REQUIREMENTS OF THE POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT.

6. ALL UTILITIES WITHIN THE PROJECT SHALL BE UNDERGROUND. NOTWITHSTANDING DECLARANT'S GRANT OF BLANKET UTILITY EASEMENTS, DECLARANT RESERVES THE RIGHT TO RECORD ONE OR MORE INSTRUMENTS WHICH NARROW AND LIMIT SUCH GRANT OF UTILITY EASEMENT TO THE ACTUAL WIDTH OF THE UTILITY IN THOSE SPECIFIC AREAS WHICH ACTUALLY CONTAIN THE UTILITY FACILITIES AS DESCRIBED IN SUCH INSTRUMENT AND FOR THE PURPOSES DESCRIBED THEREIN. SUCH RESERVED RIGHT IS SUBJECT TO THE UTILITY COMPANIES' RIGHTS THEN LOCATED UNDER THE REAL PROPERTY DEPICTED ON THIS PLAT.

7. DECLARANT HEREBY GRANTS TO ALL UTILITY PROVIDERS AN EASEMENT OVER AND ACROSS ALL AREAS SHOWN HEREON AS PUBLIC UTILITY EASEMENTS FOR THE PURPOSE OF INSTALLING, MAINTAINING AND OPERATING EQUIPMENT AND FACILITIES ABOVE AND BELOW GROUND AS MAY BE NECESSARY OR DESIRABLE IN PROVIDING UTILITY SERVICES WITHIN AND WITHOUT THE LOTS, INCLUDING THE RIGHT OF ACCESS TO SUCH FACILITIES AND THE RIGHT TO REQUIRE REMOVAL OF ANY OBSTRUCTIONS INCLUDING STRUCTURES, TREES, AND VEGETATION THAT MAY HAVE BEEN PLACED WITHIN THE EASEMENTS. AT NO TIME MAY ANY PERMANENT STRUCTURES BE PLACED WITHIN THE PUBLIC UTILITY EASEMENTS WHICH INTERFERES WITH THE USE OF THE EASEMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF THE APPLICABLE UTILITY PROVIDERS.

8. THIS PLAT ESTABLISHES HEARTWOOD DRIVE, SHOWN HEREON AS "ROAD PARCEL A," AS A LEGALLY RECOGNIZED AND PROPERLY SUBDIVIDED SEPARATE PARCEL OF REAL PROPERTY AND AS A PUBLIC UTILITY EASEMENT. HEARTWOOD DRIVE IS A PRIVATE ROAD OPERATED, MAINTAINED AND REPAIRED BY THE NEIGHBORHOOD ASSOCIATION FOR THE USE AND BENEFIT AND AT THE EXPENSE OF ITS MEMBERS IN ACCORDANCE WITH THE NEIGHBORHOOD DECLARATION AND MASTER DECLARATION. DECLARANT SHALL CONVEY ROAD PARCEL A TO THE NEIGHBORHOOD ASSOCIATION IN ACCORDANCE WITH THE MASTER DECLARATION. HEARTWOOD DRIVE MAY BE RELOCATED BY DECLARANT AS DESCRIBED IN THE NEIGHBORHOOD DECLARATION AND IN ACCORDANCE WITH APPLICABLE WEBER COUNTY ORDINANCES. HEARTWOOD DRIVE IS NOT A PUBLIC ROAD OR RIGHT OF WAY. THIS PLAT SHALL NOT BE DEEMED TO GRANT ANY RIGHTS IN THE PUBLIC TO USE HEARTWOOD DRIVE OR CREATE ANY OBLIGATIONS ON THE PART OF WEBER COUNTY TO MAINTAIN OR REPAIR HEARTWOOD DRIVE. ALL SUCH USE AND MAINTENANCE SHALL BE GOVERNED BY THE TERMS AND PROVISIONS OF THE NEIGHBORHOOD DECLARATION.

9. ALL COMMON WATER AND SEWER MAINS WITHIN THE COMMUNITY WILL BE OWNED AND MAINTAINED BY POWDER MOUNTAIN WATER AND SEWER IMPROVEMENT DISTRICT.

10. AS FURTHER DESCRIBED IN THE MASTER DECLARATION, ALL LOTS, AND ALL RESIDENCES AND IMPROVEMENTS CONSTRUCTED THEREON, SHALL COMPLY WITH THE DESIGN GUIDE. NO CONSTRUCTION, INSTALLATION, OR OTHER WORK WHICH IN ANY WAY ALTERS THE APPEARANCE OF ANY PROPERTY OR LOT WITHIN THE PROJECT, OR ANY RESIDENCES OR IMPROVEMENTS LOCATED THEREON, SHALL BE MADE OR DONE WITHOUT COMPLIANCE WITH THE DESIGN GUIDE AS DESCRIBED IN THE MASTER DECLARATION.

11. DECLARANT RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, THE RIGHT TO UNILATERALLY AMEND THE PLAT, WITHOUT THE CONSENT OF THE AFFECTED OWNER, AT ANY TIME AND FROM TIME TO TIME IF SUCH AMENDMENT IS NECESSARY TO SATISFY THE REQUIREMENTS OF ANY GOVERNMENTAL AUTHORITY, TO CORRECT MISTAKES, REMOVE/CLARIFY AMBIGUITIES OR FOR ANY OTHER PURPOSE SO LONG AS SUCH AMENDMENT DOES NOT MATERIALLY ADVERSELY AFFECT TITLE TO ANY PROPERTY AND IS IN ACCORDANCE WITH WEBER COUNTY ORDINANCES AND UTAH LAW.

12. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, A BLANKET EASEMENT ACROSS ALL LOTS AND PARCELS, EXCLUDING THE BUILDING ENVELOPES, FOR CONSTRUCTING AND MAINTAINING HIKING AND BIKING TRAILS ("TRAIL EASEMENT"). THE EXACT LOCATION OF THE TRAILS MAY BE DESIGNATED, ADDED TO, DELETED, OR MODIFIED BY DECLARANT WITHOUT AN AMENDMENT TO THIS PLAT AS MORE FULLY DESCRIBED IN THE NEIGHBORHOOD DECLARATION. DECLARANT HEREBY GRANTS TO THE NEIGHBORHOOD ASSOCIATION, COMMUNITY ASSOCIATION, AND THEIR MEMBERS AN EASEMENT FOR USE AND ENJOYMENT OF THE TRAIL EASEMENT, IN THE AS-CONSTRUCTED LOCATIONS, AS MAY BE MODIFIED OR RELOCATED FROM TIME TO TIME, IN ACCORDANCE WITH ANY RULES AND REGULATIONS ADOPTED BY DECLARANT.

13. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, A BLANKET EASEMENT ACROSS ALL LOTS AND PARCELS, EXCLUDING THE BUILDING ENVELOPES, FOR CONSTRUCTING AND MAINTAINING SKI TRAILS AND OTHER SKI IMPROVEMENTS ("SKI EASEMENT"). DECLARANT MAY DESIGNATE, DEFINE, LOCATE, RELOCATE, AND MODIFY THE EXACT LOCATION OF THE SKI EASEMENT WITHOUT AN AMENDMENT TO THIS PLAT AS MORE FULLY DESCRIBED IN THE NEIGHBORHOOD DECLARATION. DECLARANT HEREBY GRANTS AN EASEMENT IN FAVOR OF THE NEIGHBORHOOD ASSOCIATION, COMMUNITY ASSOCIATION, AND THEIR MEMBERS FOR USE AND ENJOYMENT OF THE SKI EASEMENT IN THE AS-CONSTRUCTED LOCATIONS, AS MAY BE MODIFIED OR RELOCATED FROM TIME TO TIME, IN ACCORDANCE WITH ANY RULES AND REGULATIONS ADOPTED BY DECLARANT.

SURVEY NARRATIVE:

1-THIS SURVEY SUBDIVIDED THE AFORESAID TRACT OF LAND INTO LOTS, STREETS, PARCELS, AND EASEMENTS AS SHOWN HEREON AND AS DIRECTED BY THE CLIENT

2-BASIS OF BEARINGS FOR THIS PLAT IS NORTH 89°55'51" WEST ALONG THE LINE BETWEEN THE NORTHEAST CORNER OF SECTION 1, TOWNSHIP 7 NORTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN AND THE SET WEBER COUNTY MONUMENT ON THE INTERSECTION OF THE WEBER/CACHE COUNTY LINE AND THE SECTION LINE. THIS BASIS DIFFERS FROM WEBER COUNTY SURVEYORS BASIS BY 00°00'14" AS SHOWN ON COUNTY LINE DECLARATION RECORDED PLAT BOOK 74, PAGE 64.

PLAT NOTES (CONT.):

14. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, A TEMPORARY BLANKET EASEMENT ACROSS ALL LOTS ADJACENT TO A PRIVATE ROAD ("SLOPE EASEMENT") AS MORE FULLY DESCRIBED IN THE NEIGHBORHOOD DECLARATION. SUCH SLOPE EASEMENT IS FOR THE BENEFIT OF DECLARANT, ITS EMPLOYEES, AND CONTRACTORS, FOR THE PURPOSE OF STABILIZING, CONSTRUCTING CUT SLOPES AND FILL SLOPES, AND PERFORMING OTHER CONSTRUCTION AND MAINTENANCE TO PREVENT EROSION ALONG THE PRIVATE ROADS. THE SLOPE EASEMENT ON EACH LOT SHALL AUTOMATICALLY TERMINATE AT SUCH TIME AS A CERTIFICATE OF OCCUPANCY IS ISSUED FOR A RESIDENTIAL BUILDING CONSTRUCTED ON SUCH LOT, AT WHICH TIME A SUBSTITUTE EASEMENT MAY BE REQUIRED FOR ONGOING MAINTENANCE AND REPAIR. LOTS ADJACENT TO SUMMIT PASS OR SPRING PARK MAY HAVE ADDITIONAL SLOPE EASEMENTS AS SHOWN ON THE ROAD DEDICATION PLAT FOR SUMMIT PASS AND SPRING PARK AS RECORDED AND ON FILE WITH THE OFFICE OF THE WEBER COUNTY RECORDER.

15. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, A BLANKET EASEMENT AND RIGHT ON, OVER, UNDER AND ACROSS HEARTWOOD DRIVE FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF TUNNELS, BRIDGES AND/OR SKI LIFTS OVER AND UNDER THE ROAD. DECLARANT MAY CONVEY, TRANSFER, OR ASSIGN ITS RIGHTS WITH RESPECT TO SUCH EASEMENT.

16. CERTAIN PARCELS MAY BE DESIGNATED HEREON AS "OPEN SPACE." SUCH OPEN SPACE PARCELS SHALL BE INITIALLY OWNED BY DECLARANT AND ARE NOT PART OF ANY COMMON AREA UNLESS DESIGNATED AS SUCH BY DECLARANT OR CONVEYED BY DECLARANT TO THE NEIGHBORHOOD ASSOCIATION OR COMMUNITY ASSOCIATION. NOTWITHSTANDING THE DESIGNATION AS OPEN SPACE, THE PERMITTED USES AND ANY APPLICABLE RESTRICTIONS FOR SUCH PARCELS SHALL BE AS SET FORTH IN THE NEIGHBORHOOD DECLARATION AND MASTER DECLARATION. DECLARANT RESERVES THE RIGHT TO BUILD FACILITIES AND AMENITIES WITHIN ANY AREA DESIGNATED AS OPEN SPACE, AND RESERVES THE RIGHT TO AMEND, RELOCATE, REDUCE, OR OTHERWISE CHANGE THE AREAS DESIGNATED AS OPEN SPACE SO LONG AS THE AMOUNT OF DESIGNATED OPEN SPACE FOR THE ENTIRE COMMUNITY COMPLIES WITH THE OPEN SPACE REQUIREMENTS IMPOSED BY WEBER COUNTY.

17. DECLARANT GIVES NOTICE THAT THE LOTS SHOWN HEREON ARE IN A SKI RESORT AREA ("SKI RESORT") IN WHICH HEAVY SNOW FALLS, WIND PATTERNS, AND OTHER CONDITIONS HAVE THE POTENTIAL TO CAUSE AVALANCHES IN CERTAIN AREAS. NO STUDIES HAVE BEEN CONDUCTED TO DETERMINE WHETHER ANY OF THE LOTS OR BUILDING ENVELOPES SHOWN HEREON ARE WITHIN POTENTIAL AVALANCHE INFLUENCE AND AVALANCHE CONTROL ZONES. CERTAIN AREAS WITHIN THE SKI RESORT MAY BE SUBJECT TO AVALANCHE CONTROLS BY THE OPERATOR OF THE SKI RESORT AND SUCH CONTROL PROCEDURES MAY INVOLVE THE USE OF EXPLOSIVE CHARGES AND MAY TRIGGER AVALANCHES AS WELL AS OCCASIONAL ROAD, DRIVEWAY, AND SKI TRAIL CLOSURES. DECLARANT MAKES NO REPRESENTATION WITH RESPECT TO THE OPERATIONS OF THE SKI RESORT OR THE POTENTIAL RISKS OR HAZARDS ASSOCIATED WITH AVALANCHES OR AVALANCHE CONTROL. EACH OWNER OF A LOT SHOULD CONDUCT ITS OWN STUDIES PRIOR TO CONSTRUCTING ANY IMPROVEMENTS ON A LOT.

18. DEVELOPMENT PARCEL B IS INTENDED FOR FUTURE DEVELOPMENT INTO LOTS, UNITS, OR OTHER SUBDIVIDED PROPERTY INTERESTS AND IS VESTED WITH FIFTEEN (15) EQUIVALENT RESIDENTIAL UNITS OF DENSITY.

19. ALL LOTS AS DEPICTED ON THIS PLAT ARE LOCATED IN A LIGHTLY DEVELOPED SEMI-WILDERNESS AREA CONTAINING ANIMALS TYPICALLY FOUND IN THE ROCKY MOUNTAINS, INCLUDING WITHOUT LIMITATION, BEARS, MOUNTAIN LIONS, MOOSE, DEER, ELK, SKUNKS, SQUIRRELS, RACCOONS, AND OTHER ANIMALS, BIRDS, INSECTS, AND REPTILES NATIVE OR MIGRATORY TO THE AREA. SUCH ANIMALS ROAM FREELY AND MAY ENTER THE LOTS AND OTHER PRIVATELY OWNED PROPERTIES, SCAVENGING, EATING AND DAMAGING PLANTS, FLOWERS, SHRUBS AND TREES, AND CREATING POTENTIAL HAZARDS, NUISANCES AND DAMAGE TO PERSONS AND PROPERTY. EACH OWNER SHALL ASSUME ALL SUCH RISKS AND CONDITIONS FOR ANY SUCH DAMAGE.

20. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, AN EASEMENT OVER LOTS 31 AND 32 AS INDICATED HEREON FOR THE FUTURE EXTENSION OF HEARTWOOD DRIVE AS A PRIVATE ROAD, INCLUDING ALL CONSTRUCTION, USE, MAINTENANCE AND OPERATION OF THE EXTENDED ROAD. AT SUCH TIME AS THE EXTENSION IS CONSTRUCTED, THE OWNERS OF LOTS 31 AND 32 SHALL DEED TO DECLARANT OR ITS SUCCESSORS AND ASSIGNS FEE TITLE TO THE EASEMENT PROPERTY. DECLARANT HAS THE RIGHT TO CONVEY, TRANSFER, OR ASSIGN SUCH EASEMENT RIGHTS, OR GRANT SUB-EASEMENTS OVER THE EASEMENT PROPERTY.

21. DECLARANT HEREBY RESERVES FOR THE BENEFIT OF ITSELF, ITS SUCCESSORS AND ASSIGNS, A BLANKET EASEMENT OVER PARCEL D FOR A FUTURE ROADWAY, INCLUDING ALL CONSTRUCTION, USE, MAINTENANCE AND OPERATION OF SUCH ROAD. DECLARANT HAS THE RIGHT TO CONVEY, TRANSFER, OR ASSIGN SUCH EASEMENT RIGHTS, OR GRANT SUB-EASEMENTS OVER THE EASEMENT PROPERTY.

22. DUE TO THE TOPOGRAPHY AND THE LOCATION OF THIS SUBDIVISION, ALL OWNERS WILL ACCEPT RESPONSIBILITY FOR ANY STORM WATER RUNOFF FROM THE ROAD ADJACENT TO THIS PROPERTY UNTIL CURB AND GUTTER IS INSTALLED.

23. NOTICE TO PURCHASERS OF RESTRICTED (R) LOTS: LOTS DESIGNATED BY THE LETTER "R" AFTER THE LOT NUMBER ARE RESTRICTED LOTS AND BUILDING DEVELOPMENT ON SUCH LOTS IS SUBJECT TO THE PROVISIONS OF SECTION 108-14 OF THE WEBER COUNTY LAND USE CODE. APPROVAL OF A RESTRICTED LOT DOES NOT GUARANTEE THE LOT IS BUILDABLE. A HILLSIDE REVIEW AS OUTLINED IN THE LAND USE CODE SHALL BE DONE TO DETERMINE IF A LOT IS BUILDABLE.

24. PARKING ON ANY STREETS AND ROADS SHOWN HEREON IS PROHIBITED.

25. THE NEIGHBORHOOD DECLARATION AND MASTER DECLARATION SET FORTH THE TERMS AND RESTRICTIONS FOR NIGHTLY RENTALS AND LEASING OF LOTS IN THE PROJECT.

26. ACCESS TO THE PROJECT IS BY WAY OF A STATE HIGHWAY MAINTAINED BY THE UTAH DEPARTMENT OF TRANSPORTATION, WEBER COUNTY PUBLIC ROADS, AS WELL AS PRIVATE ROADS. SEVERE WEATHER CONDITIONS MAY MAKE CERTAIN ROADS IMPASSABLE OR SUBJECT TO REDUCED VISIBILITY, SNOW, ICE, AND OTHER RISKS, AND ROADS MAY BE CLOSED DURING CERTAIN PERIODS.

27. THIS PLAT DOES NOT AMEND ANY WEBER COUNTY ORDINANCES. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAT AND WEBER COUNTY ORDINANCES, THE WEBER COUNTY ORDINANCES SHALL CONTROL.

OWNER'S DEDICATION:

SMHG PHASE I LLC ("DECLARANT"), AS THE OWNER OF THE HEREIN DESCRIBED TRACT OF LAND, DOES HEREBY SET APART AND SUBDIVIDE THE SAME INTO LOTS AND PARCELS AS SHOWN HEREON, SUBJECT TO ALL OF THE RESTRICTIONS, RIGHTS AND LIMITATIONS SET FORTH IN THE PLAT NOTES, AND NAME SAID TRACT, TO BE KNOWN AS SUMMIT EDEN PHASE 1B, AND DOES HEREBY:

- PRIVATE STREETS, ACCESS, RIGHTS-OF-WAY. DEDICATE AND RESERVE UNTO DECLARANT, ITS HEIRS, GRANTEES AND ASSIGNS, A RIGHT-OF-WAY TO BE USED IN COMMON WITH ALL OTHERS WITHIN SAID SUBDIVISION (AND THOSE ADJOINING SUBDIVISIONS THAT MAY BE SUBDIVIDED BY THE UNDERSIGNED OWNER, ITS SUCCESSORS OR ASSIGNS) ON, OVER AND ACROSS ALL THOSE PORTIONS OR PARTS OF SAID TRACT OF LAND DESIGNATED ON SAID PLAT AS PRIVATE STREETS ACCESS TO THE INDIVIDUAL LOTS, TO BE MAINTAINED BY SUMMIT EDEN MOUNTAIN HOMES ASSOCIATION, INC., A UTAH NONPROFIT CORPORATION ("NEIGHBORHOOD ASSOCIATION"), WHOSE MEMBERSHIP CONSISTS OF DECLARANT AND THE OWNERS OF THE LOTS DEPICTED HEREON.
- PUBLIC UTILITY AND DRAINAGE EASEMENTS. GRANT AND DEDICATE A PERPETUAL RIGHT AND EASEMENT OVER, UPON AND UNDER THE LANDS DESIGNATED HEREOF AS PUBLIC UTILITY, STORM WATER DETENTION PONDS AND DRAINAGE EASEMENTS, THE SAME TO BE USED FOR THE INSTALLATION MAINTENANCE AND OPERATION OF PUBLIC UTILITY SERVICE LINE, STORM DRAINAGE FACILITIES, OR FOR THE PERPETUAL PRESERVATION OF WATER CHANNELS IN THEIR NATURAL STATE WHICHEVER IS APPLICABLE AS MAY BE AUTHORIZED BY THE GOVERNING AUTHORITY, WITH NO BUILDINGS OR STRUCTURES BEING ERECTED WITHIN SUCH EASEMENTS.
- PRIVATE EASEMENTS. GRANT AND DEDICATE THOSE CERTAIN EASEMENTS DESCRIBED IN NOTES 7, 12, 13, 14, 15, 20, AND 21 OF THIS PLAT. SUCH NOTES AND THE RESERVATION AND GRANT OF EASEMENTS DESCRIBED THEREIN ARE INCORPORATED HEREIN BY REFERENCE.

IN WITNESS WHEREOF, DECLARANT HAS EXECUTED THIS OWNER'S DEDICATION AS OF THE 21st DAY OF JANUARY, 2014.

SMHG PHASE I LLC, A DELAWARE LIMITED LIABILITY COMPANY

BY: SMHG INVESTMENTS, LLC, A DELAWARE LIMITED LIABILITY COMPANY
ITS: SOLE MEMBER

BY: [signature]
NAME: ELLIOTT BISNOW
TITLE: MANAGER

BY: [signature]
NAME: GREGORY VINCENT MAURO
TITLE: MANAGER

ACKNOWLEDGEMENT:

STATE OF UTAH } S.S.
COUNTY OF WEBER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 21st DAY OF January 2014 BY ELLIOTT BISNOW, MANAGER OF SMHG INVESTMENTS LLC, THE SOLE MEMBER OF SMHG PHASE I LLC.

[signature]
NOTARY PUBLIC
MY COMMISSION EXPIRES: 11/19/2014
RESIDING IN: Ogden Utah

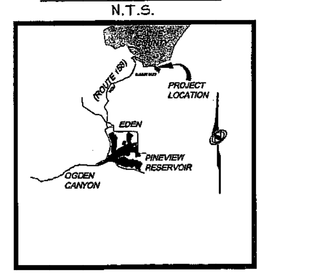
STATE OF UTAH } S.S.
COUNTY OF WEBER

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 21st DAY OF January 2014 BY GREGORY VINCENT MAURO, MANAGER OF SMHG INVESTMENTS LLC, THE SOLE MEMBER OF SMHG PHASE I LLC.

[signature]
NOTARY PUBLIC
MY COMMISSION EXPIRES: 11/19/2014
RESIDING IN: Ogden Utah

VICINITY MAP

N.T.S.



NV5
NOLTE VERTICALFIVE

RECORD OF SURVEY # 004961

Sheet 1 of 3

SUMMIT EDEN PHASE 1B
COVER SHEET, SIGNATURES, & VICINITY MAP

LOCATED IN THE SOUTH ½ OF SECTION 6, SOUTHEAST ¼ OF SECTION 5 AND NORTH ½ OF SECTION 8 OF TOWNSHIP 7 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN, WEBER COUNTY, UTAH

WEBER COUNTY ATTORNEY
I HAVE EXAMINED THE FINANCIAL GUARANTEE AND OTHER DOCUMENTS ASSOCIATED WITH THIS SUBDIVISION PLAT AND IN MY OPINION THEY CONFORM WITH THE COUNTY ORDINANCE APPLICABLE THERETO AND NOW IN FORCE AND AFFECT.
SIGNED THIS 22nd DAY OF Jan., 2014
[signature]
SIGNATURE

WEBER COUNTY SURVEYOR
I HEREBY CERTIFY THAT THE WEBER COUNTY SURVEYOR'S OFFICE HAS REVIEWED THIS PLAT FOR MATHEMATICAL CORRECTNESS, SECTION CORNER DATA AND FOR HARMONY WITH LINES AND MONUMENTS ON RECORD IN THE COUNTY OFFICES. THE APPROVAL OF THIS PLAT BY THE WEBER COUNTY SURVEYORS DOES NOT RELIEVE THE LICENSED LAND SURVEYOR WHO EXECUTED THIS PLAT FROM THE RESPONSIBILITIES AND/OR LIABILITIES ASSOCIATED THEREWITH. SIGNED THIS 21st DAY OF January 2014.
[signature]
COUNTY SURVEYOR

WEBER COUNTY ENGINEER
I HEREBY CERTIFY THAT THE REQUIRED PUBLIC IMPROVEMENT STANDARDS AND DRAWINGS FOR THIS SUBDIVISION CONFORM WITH COUNTY STANDARDS AND THE AMOUNT OF THE FINANCIAL GUARANTEE IS SUFFICIENT FOR THE INSTALLATION OF THESE IMPROVEMENTS.
SIGNED THIS 21st DAY OF January, 2014
[signature]
SIGNATURE

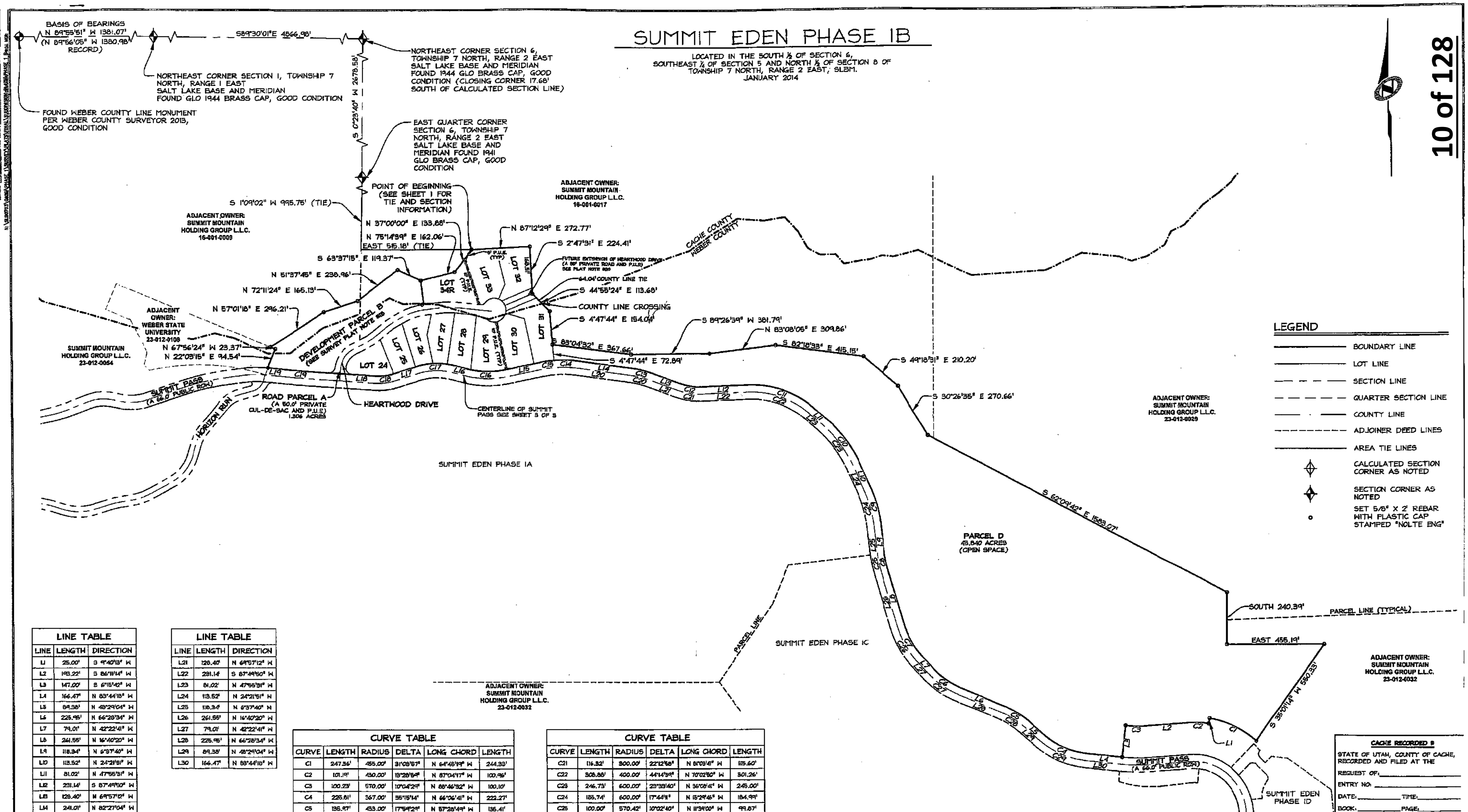
WEBER COUNTY PLANNING COMMISSION APPROVAL
THIS IS TO CERTIFY THAT THIS SUBDIVISION PLAT WAS DULY APPROVED BY THE WEBER COUNTY PLANNING COMMISSION ON THE DAY OF 21st January, 2014
[signature] Planning Director
CHAIRMAN-WEBER COUNTY PLANNING COMMISSION

WEBER COUNTY COMMISSION ACCEPTANCE
THIS IS TO CERTIFY THAT THIS SUBDIVISION PLAT, THE DEDICATION OF STREETS AND OTHER PUBLIC WAYS AND FINANCIAL GUARANTEE OF PUBLIC IMPROVEMENTS, IN ACCORDANCE WITH AN INTERLOCAL AGREEMENT BETWEEN WEBER COUNTY AND CACHE COUNTY, ENTRY #2637661, RECORDED 28 MAY 2013, ASSOCIATED WITH THIS SUBDIVISION THEREON ARE HEREBY APPROVED AND ACCEPTED BY THE COMMISSIONERS OF WEBER COUNTY, UTAH
THIS 21 DAY OF January, 2014
[signature] [signature] Admin. Assistant
CHAIRMAN, WEBER COUNTY COMMISSION

CACHE RECORDED #
STATE OF UTAH, COUNTY OF CACHE, RECORDED AND FILED AT THE
REQUEST OF: ____
ENTRY NO. ____
DATE: ____ TIME: ____
BOOK: ____ PAGE: ____
FEE $
CACHE COUNTY RECORDER

WEBER RECORDED #
STATE OF UTAH, COUNTY OF WEBER, RECORDED AND FILED AT THE
REQUEST OF: SMHG PH I LLC
ENTRY NO. 2672944
DATE: 21-Jan-2014 TIME: 10:21 AM
BOOK: 76 PAGE: 32 to 34
FEE $ 104.00
Ernest D Rowley
WEBER COUNTY RECORDER

Exhibit A



LINE TABLE		
LINE	LENGTH	DIRECTION
L1	25.00'	S 9°40'13" W
L2	193.22'	S 86°11'14" W
L3	147.00'	S 6°15'42" W
L4	166.47'	N 83°44'18" W
L5	89.38'	N 48°29'04" W
L6	225.95'	N 66°28'34" W
L7	79.01'	N 42°22'41" W
L8	261.55'	N 16°40'20" W
L9	118.34'	N 6°37'40" W
L10	113.52'	N 24°21'51" W
L11	81.02'	N 47°55'31" W
L12	231.14'	S 87°49'50" W
L13	128.40'	N 69°57'12" W
L14	241.01'	N 82°27'04" W
L15	163.17'	N 78°21'59" E
L16	46.14'	N 74°57'04" W
L17	103.92'	S 72°14'41" W
L18	297.63'	N 86°21'42" W
L19	105.46'	S 84°28'01" E
L20	241.01'	N 82°27'04" W

LINE TABLE		
LINE	LENGTH	DIRECTION
L21	128.40'	N 69°57'12" W
L22	231.14'	S 87°49'50" W
L23	81.02'	N 47°55'31" W
L24	113.52'	N 24°21'51" W
L25	118.34'	N 6°37'40" W
L26	261.55'	N 16°40'20" W
L27	79.01'	N 42°22'41" W
L28	225.95'	N 66°28'34" W
L29	89.38'	N 48°29'04" W
L30	166.47'	N 83°44'18" W

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	LONG CHORD	LENGTH
C1	247.36'	455.00'	31°08'57"	N 64°46'19" W	244.33'
C2	101.19'	430.00'	13°28'54"	N 87°04'17" W	100.96'
C3	100.23'	570.00'	10°04'29"	N 88°46'32" W	100.10'
C4	225.81'	367.00'	35°15'14"	N 66°06'41" W	222.27'
C5	136.97'	433.00'	17°59'29"	N 57°28'49" W	136.41'
C6	154.36'	367.00'	24°05'53"	N 54°25'37" W	153.22'
C7	164.65'	367.00'	25°42'21"	N 29°31'31" W	163.28'
C8	94.21'	537.42'	10°02'40"	N 11°39'00" W	94.09'
C9	195.95'	633.00'	17°44'11"	N 15°29'46" W	195.17'
C10	260.30'	633.00'	23°33'40"	N 36°08'41" W	258.47'
C11	334.37'	433.00'	44°14'39"	N 70°02'50" W	326.12'
C12	103.53'	267.00'	22°12'58"	N 81°03'41" W	102.88'
C13	116.26'	533.00'	12°29'53"	N 76°12'08" W	116.03'
C14	114.84'	533.00'	12°20'40"	N 88°37'24" W	114.61'
C15	63.61'	533.00'	6°50'17"	S 81°47'07" W	63.57'
C16	194.19'	417.00'	26°40'57"	N 88°17'33" W	192.44'
C17	190.65'	333.00'	32°48'14"	S 88°38'49" W	188.06'
C18	87.68'	234.82'	21°23'37"	S 82°56'30" W	87.17'
C19	98.91'	2990.76'	1°53'41"	S 85°24'51" E	98.90'
C20	109.07'	500.00'	12°29'53"	N 76°12'08" W	108.85'

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	LONG CHORD	LENGTH
C21	116.32'	300.00'	22°12'58"	N 81°03'41" W	115.60'
C22	308.88'	400.00'	44°14'39"	N 70°02'50" W	301.26'
C23	246.73'	600.00'	23°33'40"	N 36°08'41" W	245.00'
C24	185.74'	600.00'	17°44'11"	N 15°29'46" W	184.99'
C25	100.00'	570.42'	10°02'40"	N 11°39'00" W	99.87'
C26	179.46'	400.00'	25°42'21"	N 29°31'31" W	177.96'
C27	168.24'	400.00'	24°05'53"	N 54°25'37" W	167.00'
C28	125.60'	400.00'	17°59'29"	N 57°28'49" W	125.09'
C29	246.12'	400.00'	35°15'14"	N 66°06'41" W	242.25'

SUMMIT EDEN PHASE 1B
BOUNDARY AND PARCEL D

LOCATED IN THE SOUTH ½ OF SECTION 5, SOUTHEAST ¼ OF SECTION 6 AND NORTH ½ OF SECTION 8 OF TOWNSHIP 7 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN, WEBER COUNTY, UTAH

Sheet 2 of 3

NV5
NOLTE VERTICALFIVE

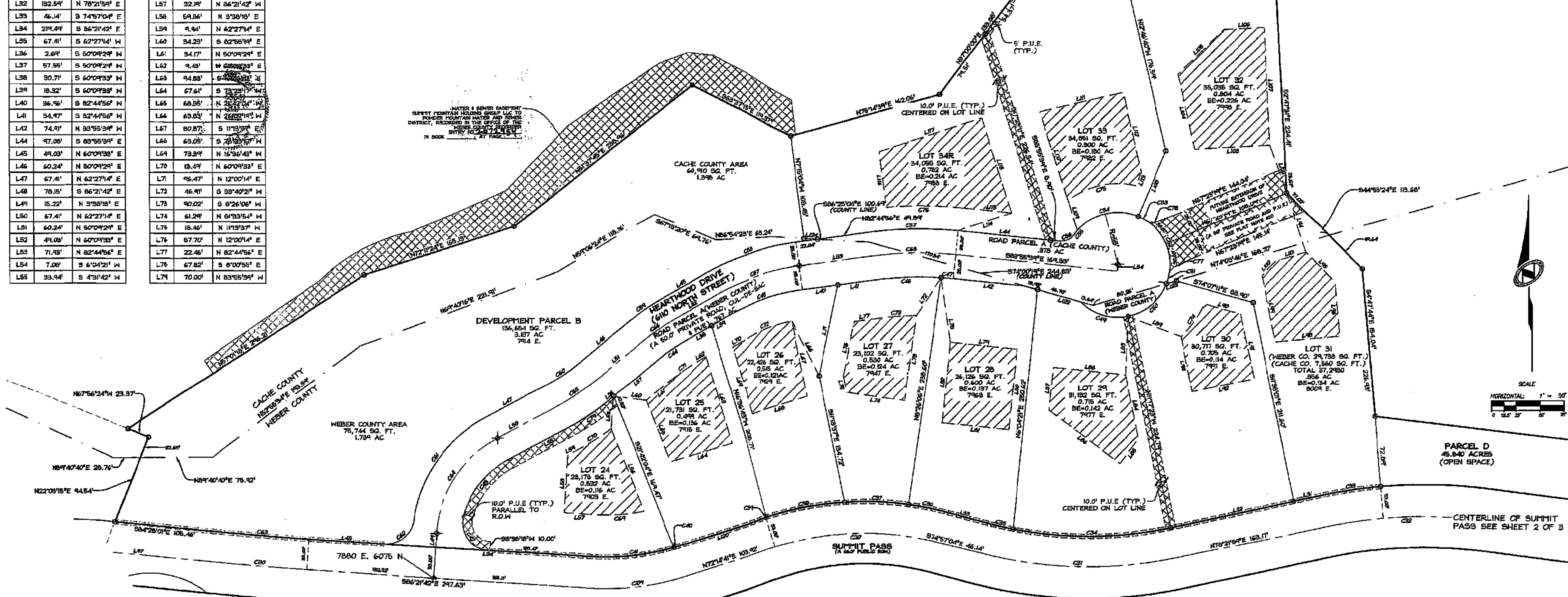
CACHE RECORDED #
STATE OF UTAH, COUNTY OF CACHE, RECORDED AND FILED AT THE REQUEST OF:
ENTRY NO.
DATE: TIME:
BOOK: PAGE:
FEE $
CACHE COUNTY RECORDER

WEBER RECORDED #
STATE OF UTAH, COUNTY OF WEBER, RECORDED AND FILED AT THE REQUEST OF:
ENTRY NO. 2672944
DATE: TIME:
BOOK: 75 PAGE: 33
FEE $
WEBER COUNTY RECORDER

Exhibit A

SUMMIT EDEN PHASE IB

LOCATED IN THE SOUTH ½ OF SECTION 6, SOUTHEAST ¼ OF SECTION 5 AND NORTH ½ OF SECTION 8 OF TOWNSHIP 7 NORTH, RANGE 2 EAST, SLBM.
JANUARY 2014



LINE	LENGTH	DIRECTION
L31	30.58'	N 78°21'59" E
L32	132.59'	N 78°21'59" E
L33	46.14'	S 74°57'04" E
L34	219.49'	S 86°21'42" E
L35	67.41'	S 62°27'14" W
L36	2.69'	S 50°09'29" W
L37	57.55'	S 50°09'29" W
L38	30.71'	S 60°09'33" W
L39	18.32'	S 60°09'33" W
L40	36.96'	S 82°44'56" W
L41	34.97'	S 82°44'56" W
L42	74.91'	N 83°55'39" W
L44	97.08'	S 83°55'39" E
L45	49.03'	N 60°09'33" E
L46	60.24'	N 50°09'29" E
L47	67.41'	N 62°27'14" E
L48	78.15'	S 86°21'42" E
L49	15.22'	N 3°38'18" E
L50	67.41'	N 62°27'14" E
L51	60.24'	N 50°09'29" E
L52	49.03'	N 60°09'33" E
L53	71.93'	N 82°44'56" E
L54	7.08'	S 6°04'21" W
L55	33.94'	S 4°31'42" W

LINE	LENGTH	DIRECTION
L56	91.90'	S 21°42'04" E
L57	32.19'	N 86°21'42" W
L58	69.86'	N 3°38'18" E
L59	9.94'	N 62°27'14" E
L60	34.23'	S 82°55'19" E
L61	34.17'	N 50°09'29" E
L62	9.43'	[illegible] E
L63	94.83'	[illegible] E
L64	67.61'	S 73°23'17" W
L65	68.55'	N 21°42'04" W
L66	63.83'	N 26°07'19" W
L67	80.87'	S 11°13'37" E
L68	63.05'	S [illegible] W
L69	73.39'	N 16°36'43" W
L70	13.49'	N 60°09'33" E
L71	96.47'	N 12°00'14" E
L72	46.91'	S 33°40'21" W
L73	90.02'	S 8°26'06" W
L74	61.29'	N 81°33'54" W
L75	18.46'	N 11°13'37" W
L76	57.70'	N 12°00'14" E
L77	22.46'	N 82°44'56" E
L78	67.82'	S 8°00'55" E
L79	70.00'	N 83°55'39" W

CURVE	LENGTH	RADIUS	DELTA	LONG CHORD	LENGTH
C30	171.76'	300.00'	32°48'14"	S 88°38'49" W	169.42'
C31	209.56'	450.00'	26°40'57"	S 88°17'33" E	207.67'
C32	167.40'	500.00'	19°10'57"	S 87°57'27" W	166.62'
C33	63.61'	533.00'	6°50'17"	S 81°47'07" W	63.57'
C34	166.44'	417.00'	22°52'06"	N 89°48'02" E	165.33'
C35	27.76'	417.00'	3°48'50"	S 76°51'29" E	27.75'
C36	38.44'	333.00'	6°36'50"	N 78°15'29" W	38.42'
C37	67.91'	333.00'	11°41'06"	N 87°24'27" W	67.80'
C38	84.30'	333.00'	14°30'18"	N 79°29'51" E	84.08'
C39	0.06'	333.00'	0°00'37"	S 72°15'00" W	0.06'
C40	1.04'	234.82'	0°15'16"	N 72°22'20" E	1.04'
C41	87.68'	234.82'	21°23'37"	N 82°56'30" E	87.17'
C42	54.01'	30.00'	103°08'42"	S 34°47'21" E	47.00'
C43	75.72'	95.00'	45°40'14"	S 39°37'07" W	73.74'
C44	39.27'	225.00'	10°00'04"	S 55°09'31" W	39.22'
C45	88.71'	225.00'	22°35'23"	S 71°27'14" W	88.14'
C46	74.35'	375.00'	11°21'36"	S 88°25'44" W	74.23'
C47	12.85'	375.00'	1°57'48"	N 84°54'34" W	12.85'
C49	54.44'	55.00'	56°42'33"	S 72°56'07" E	52.24'
C50	54.74'	55.00'	57°01'17"	N 50°11'58" E	52.51'

CURVE	LENGTH	RADIUS	DELTA	LONG CHORD	LENGTH
C51	11.64'	55.00'	12°07'44"	N 15°37'28" E	11.62'
C52	61.46'	55.00'	64°01'20"	N 22°27'03" W	58.31'
C53	11.74'	55.00'	12°13'40"	N 60°34'33" W	11.72'
C54	70.00'	55.00'	72°55'19"	S 76°50'57" W	65.37'
C55	4.65'	55.00'	4°50'27"	S 37°58'04" W	4.65'
C56	19.01'	18.00'	60°31'31"	N 65°48'55" E	18.14'
C57	98.83'	425.00'	13°19'25"	S 89°24'38" W	98.61'
C58	108.42'	275.00'	22°35'23"	S 71°27'14" W	107.72'
C59	48.00'	275.00'	10°00'04"	S 55°09'31" W	47.94'
C60	48.29'	225.00'	12°17'45"	N 56°18'22" E	48.19'
C61	136.58'	145.00'	53°58'12"	S 35°28'08" W	131.59'
C62	44.59'	30.00'	85°09'16"	N 51°03'40" E	40.60'
C63	98.91'	2990.76'	1°53'41"	S 85°24'51" E	98.90'
C64	129.18'	120.00'	58°48'56"	S 33°02'46" W	117.85'
C65	53.65'	250.00'	12°17'45"	N 56°18'22" E	53.55'
C66	43.64'	250.00'	10°00'04"	S 55°09'31" W	43.58'
C67	98.57'	250.00'	22°35'23"	S 71°27'14" W	97.93'
C68	93.02'	400.00'	13°19'26"	S 89°24'38" W	92.81'
C69	51.59'	189.82'	15°34'22"	S 85°51'07" W	51.43'
C70	43.32'	300.00'	8°16'24"	N 58°19'02" E	43.28'

CURVE	LENGTH	RADIUS	DELTA	LONG CHORD	LENGTH
C71	34.91'	200.00'	10°00'04"	N 55°09'31" E	34.87'
C72	57.90'	180.00'	18°25'45"	N 69°22'26" E	57.65'
C73	43.26'	335.00'	7°23'55"	N 86°26'53" E	43.23'
C74	42.24'	100.00'	24°12'11"	N 36°36'31" E	41.93'
C75	75.24'	55.00'	80°43'01"	S 77°47'15" W	72.81'
C76	78.24'	450.00'	9°57'44"	N 88°54'31" W	78.14'
C77	12.68'	18.00'	40°21'51"	S 47°12'24" W	12.42'
C78	12.27'	18.00'	39°03'49"	N 86°55'14" E	12.04'
C79	59.02'	275.00'	12°17'45"	N 56°18'22" E	58.90'
C109	100.00'	267.82'	21°23'37"	N 82°56'30" E	99.42'
C110	100.00'	3023.76'	1°53'41"	S 85°24'51" E	100.00'

LINE	LENGTH	DIRECTION
L80	85.00'	N 6°04'21" E
L81	70.00'	S 83°55'39" E
L82	85.00'	S 6°04'21" W
L83	60.53'	S 3°03'27" W
L84	68.67'	S 11°17'23" E
L85	32.34'	S 36°59'11" W
L86	92.48'	N 53°00'49" W
L87	45.78'	N 6°04'21" E
L88	75.47'	S 83°55'39" E
L89	59.15'	S 68°54'41" E
L90	39.62'	S 74°07'11" E
L91	68.96'	S 11°38'01" E
L92	66.77'	S 78°21'59" W
L93	89.34'	N 11°17'23" W
L94	66.06'	S 17°54'49" E
L95	43.87'	N 44°55'24" W
L96	56.22'	N 4°47'44" W
L97	114.11'	S 84°28'01" E
L98	68.76'	N 85°12'16" E
L99	70.44'	S 11°38'01" E
L100	20.65'	S 45°04'36" W
L101	93.72'	S 74°03'46" W
L102	52.67'	N 19°20'13" W
L103	79.38'	S 87°12'29" W

LINE	LENGTH	DIRECTION
L104	80.00'	N 12°46'40" W
L105	68.29'	N 45°50'30" E
L106	42.00'	N 87°12'29" E
L107	123.92'	S 2°47'31" E
L108	74.13'	N 23°18'36" E
L109	33.26'	N 17°23'11" W
L110	96.87'	N 17°23'11" W
L111	89.49'	N 77°13'20" E
L112	85.06'	S 12°46'40" E
L113	15.11'	S 23°18'36" W
L114	89.08'	N 71°02'16" E
L115	53.53'	S 83°55'39" E
L116	58.07'	N 7°15'04" W
L117	113.00'	N 72°36'49" E
L118	103.24'	S 17°23'11" E
L120	103.92'	N 72°14'41" E
L122	46.70'	S 74°00'19" E
L123	10.56'	N 74°03'46" E
L124	13.97'	S 86°25'04" E

AREA PER COUNTY				
LOT #	WEBER COUNTY ACRES	CACHE COUNTY ACRES	WEBER COUNTY SQ.FT.	CACHE COUNTY SQ.FT
ROAD PARCEL "A"	0.767	0.378	33,397	16,446
DEVELOPMENT PARCEL "B"	1.739	1.398	75,744	60,910
31	0.682	0.174	29,733	7,560

LEGEND

- BOUNDARY LINE
- LOT LINE
- SECTION LINE
- QUARTER SECTION LINE
- COUNTY LINE
- ADJOINER DEED LINES
- NO ACCESS LINE
- AREA TIE LINES
- CALCULATED SECTION CORNER AS NOTED
- SECTION CORNER AS NOTED
- STREET MONUMNET
- SET 5/8" X 2' REBAR WITH PLASTIC CAP STAMPED "NOLTE ENG"
- BUILDING ENVELOPE
- P.U.E AND FUTURE EXTENSION OF HEARTWOOD DRIVE

SUMMIT EDEN PHASE IB
DEVELOPMENT PARCEL B, ROAD PARCEL A AND LOTS 24 TO 34

LOCATED IN THE SOUTH ½ OF SECTION 5, SOUTHEAST ¼ OF SECTION 6 AND NORTH ½ OF SECTION 8 OF TOWNSHIP 7 NORTH, RANGE 2 EAST, SALT LAKE BASE AND MERIDIAN, WEBER COUNTY, UTAH

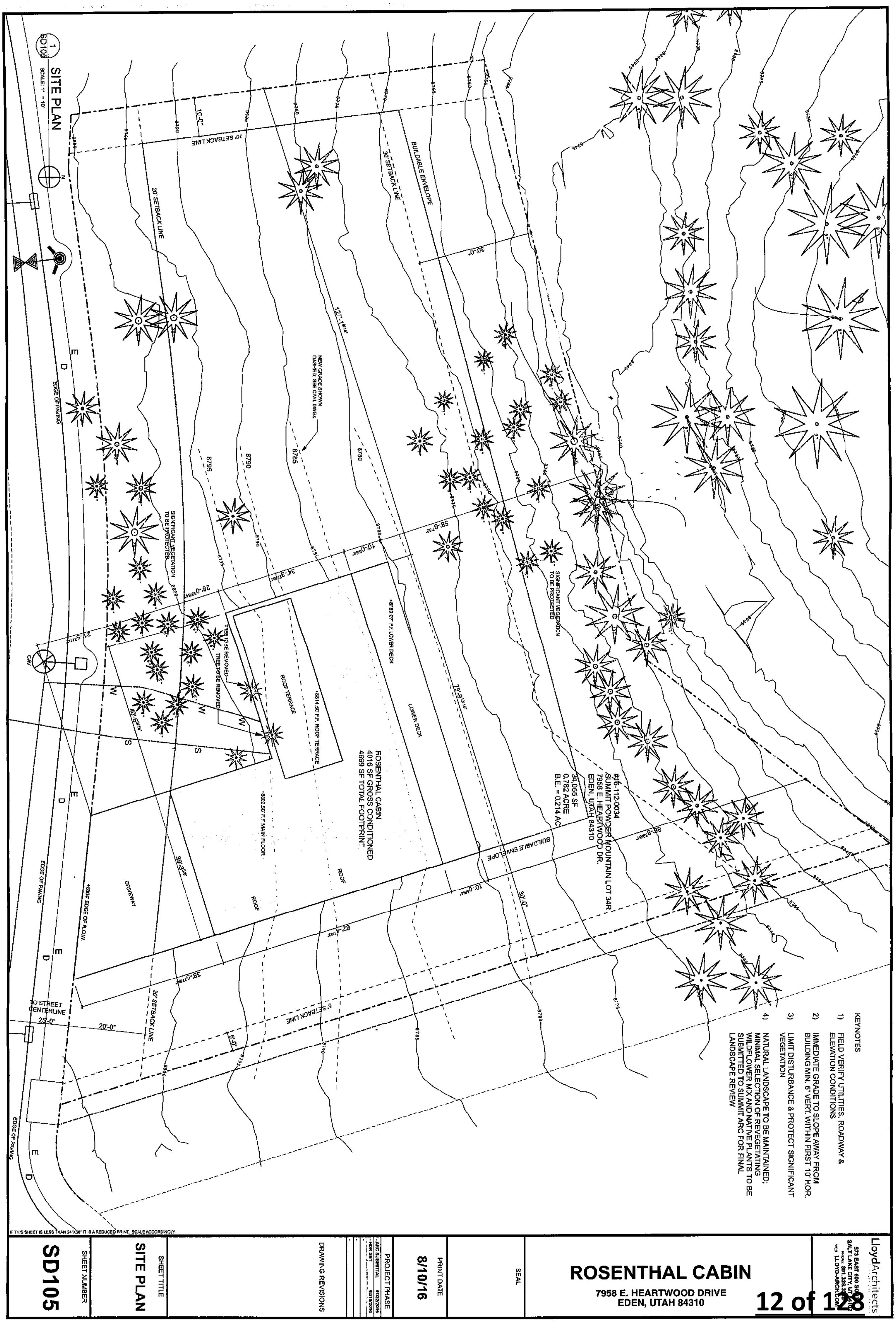
Sheet 3 of 3

NV5
NOLTE VERTICALFIVE
5217 SOUTH STATE STREET, SUITE 300 MURRAY, UT 84107
801.743.1300 TEL 801.743.0300 FAX WWW.NOLTE.COM

CACHE RECORDED #
STATE OF UTAH, COUNTY OF CACHE, RECORDED AND FILED AT THE
REQUEST OF: ____________
ENTRY NO: ____________
DATE: ________ TIME: ________
BOOK: ________ PAGE: ________
FEE $
CACHE COUNTY RECORDER

WEBER RECORDED #
STATE OF UTAH, COUNTY OF WEBER, RECORDED AND FILED AT THE
REQUEST OF: SmHG Ph I LLC
ENTRY NO: 2672944
DATE: 27-Jan-2014 TIME: 10:21 Am
BOOK: 75 PAGE: 34
FEE $ 104.00
Ernest D Rowley
WEBER COUNTY RECORDER

Exhibit A



SITE PLAN
SD105
KEYNOTES
1) FIELD VERIFY UTILITIES, ROADWAY & ELEVATION CONDITIONS
2) IMMEDIATE GRADE TO SLOPE AWAY FROM BUILDING MIN. 6" VERT. WITHIN FIRST 10' HOR.
3) LIMIT DISTURBANCE & PROTECT SIGNIFICANT VEGETATION
4) NATURAL LANDSCAPE TO BE MAINTAINED; MINIMAL SELECTION OF REVEGETATING WILDFLOWER MIX AND NATIVE PLANTS TO BE SUBMITTED TO SUMMIT ARC FOR FINAL LANDSCAPE REVIEW
ROSENTHAL CABIN
4016 SF GROSS CONDITIONED
4669 SF TOTAL FOOTPRINT
#16-112-0034
SUMMIT POWDER MOUNTAIN LOT 34R
7958 E. HEARTWOOD DR.
EDEN, UTAH 84310
34,055 SF
0.782 ACRE
B.E. = 0.214 AC
BUILDABLE ENVELOPE
20' SETBACK LINE
30' SETBACK LINE
10' SETBACK LINE
5' SETBACK LINE
EDGE OF PAVING
SIGNIFICANT VEGETATION TO BE PROTECTED
TREE TO BE REMOVED
ROOF TERRACE
LOWER DECK
DRIVEWAY
ROOF
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
LloydArchitects
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
DRAWING REVISIONS
SHEET TITLE
SITE PLAN
SHEET NUMBER
SD105

Exhibit A

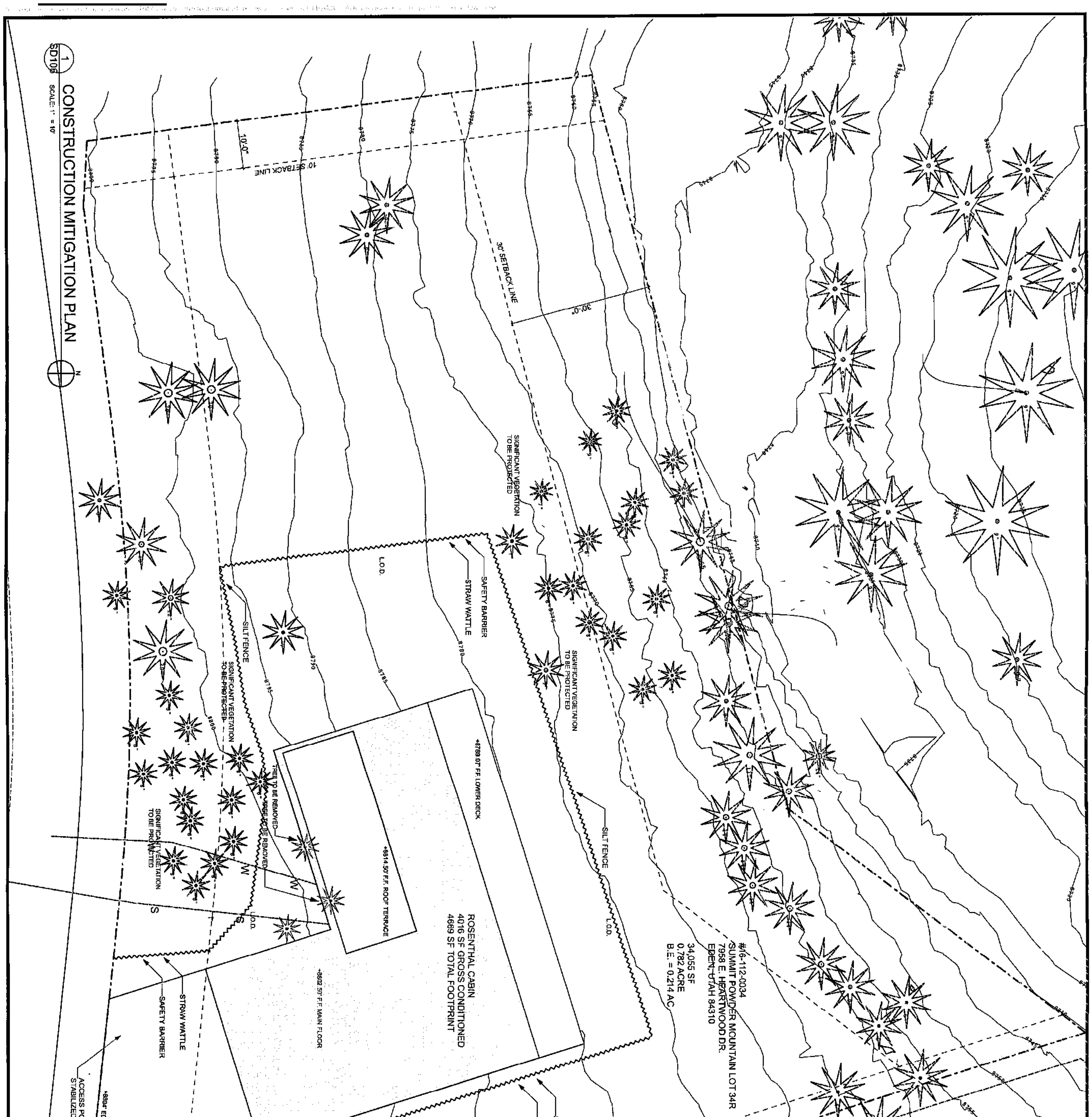
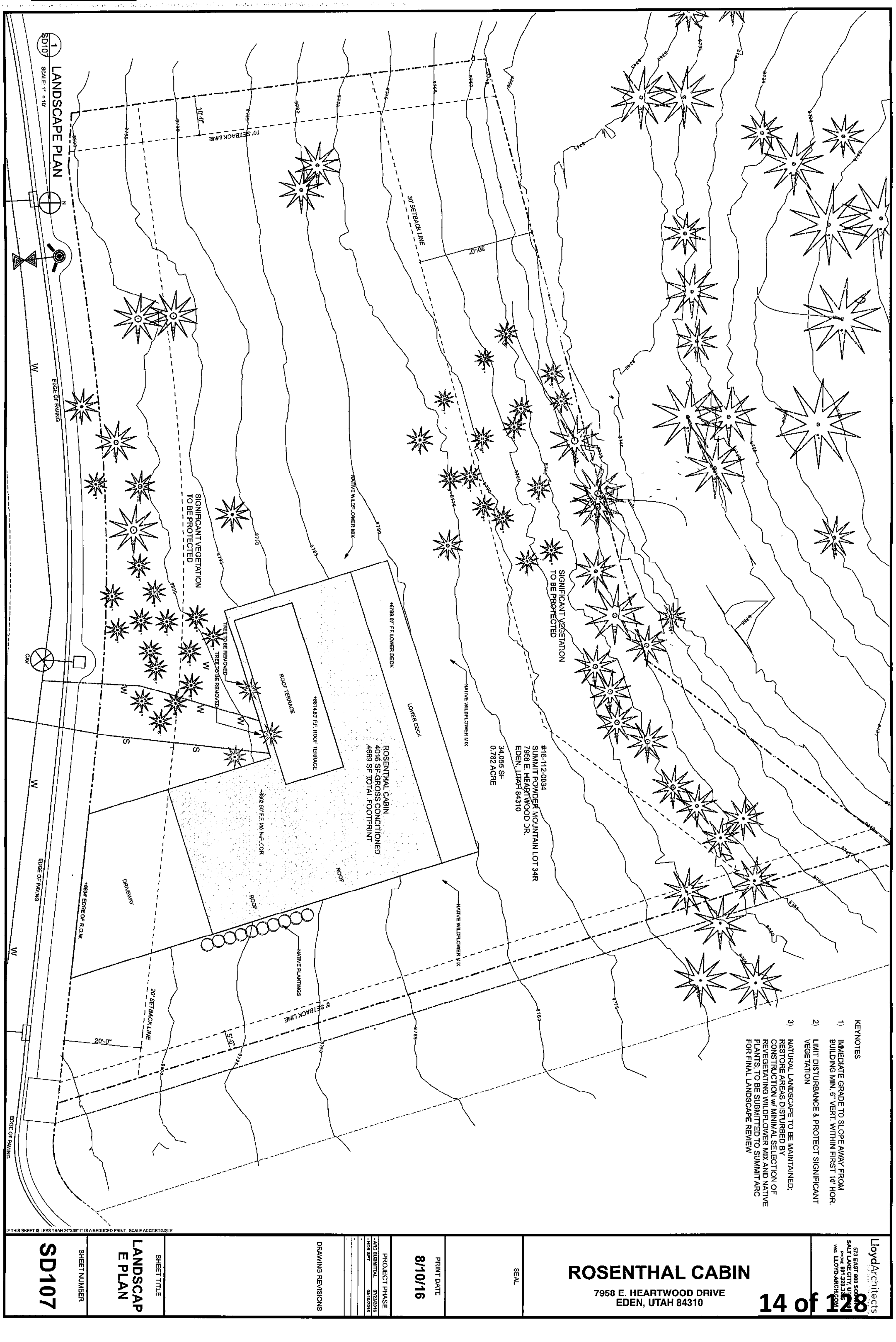

CONSTRUCTION MITIGATION PLAN
SCALE: 1" = 10'
ROSENTHAL CABIN
4016 SF GROSS CONDITIONED
4669 SF TOTAL FOOTPRINT
#16-112-0034
SUMMIT POWDER MOUNTAIN LOT 34R
7958 E. HEARTWOOD DR.
EDEN UTAH 84310
34,055 SF
0.782 ACRE
B.E. = 0.214 AC.
SILT FENCE
STRAW WATTLE
SAFETY BARRIER
L.O.D.
SIGNIFICANT VEGETATION TO BE PROTECTED
ACCESS POINT AT STABILIZED CONSTRUCTION ENTRANCE
10' SETBACK LINE
30' SETBACK LINE
20' SETBACK LINE
5' SETBACK LINE
KEYNOTES
1) FIELD VERIFY UTILITIES, ROADWAY & ELEVATON CONDITIONS
2) IMMEDIATE GRADE TO SLOPE AWAY FROM BUILDING MIN. 6" VERT. WITHIN FIRST 10' HOR.
3) LIMIT DISTURBANCE & PROTECT SIGNIFICANT VEGETATION
4) PORTABLE RESTROOMS, PARKING, AND DUMPSTER CONTAINED IN L.O.D.; OPTIMAL LOCATIONS BY CONTRACTOR
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
DRAWING REVISIONS
SHEET TITLE
CONSTRUCTION MITIGATION PLAN
SHEET NUMBER
SD106

Exhibit A



LANDSCAPE PLAN
SCALE: 1" = 10'
10'-0"
10' SETBACK LINE
30' SETBACK LINE
30'-0"
SIGNIFICANT VEGETATION TO BE PROTECTED
SIGNIFICANT VEGETATION TO BE PROTECTED
NATIVE WILDFLOWER MIX
TREE TO BE REMOVED
EDGE OF PAVING
ROOF TERRACE
LOWER DECK
ROOF
DRIVEWAY
NATIVE PLANTINGS
ROSENTHAL CABIN
4016 SF GROSS CONDITIONED
4669 SF TOTAL FOOTPRINT
#16-112-0034
SUMMIT POWDER MOUNTAIN LOT 34R
7958 E. HEARTWOOD DR.
EDEN, UTAH 84310
34,055 SF
0.782 ACRE
20' SETBACK LINE
5' SETBACK LINE
20'-0"
15'-0"
KEYNOTES
1) IMMEDIATE GRADE TO SLOPE AWAY FROM BUILDING MIN. 6" VERT. WITHIN FIRST 10' HOR.
2) LIMIT DISTURBANCE & PROTECT SIGNIFICANT VEGETATION
3) NATURAL LANDSCAPE TO BE MAINTAINED; RESTORE AREAS DISTURBED BY CONSTRUCTION w/ MINIMAL SELECTION OF REVEGETATING WILDFLOWER MIX AND NATIVE PLANTS; TO BE SUBMITTED TO SUMMIT ARC FOR FINAL LANDSCAPE REVIEW
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
LloydArchitects
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
DRAWING REVISIONS
SHEET TITLE
LANDSCAPE PLAN
SHEET NUMBER
SD107

Exhibit A

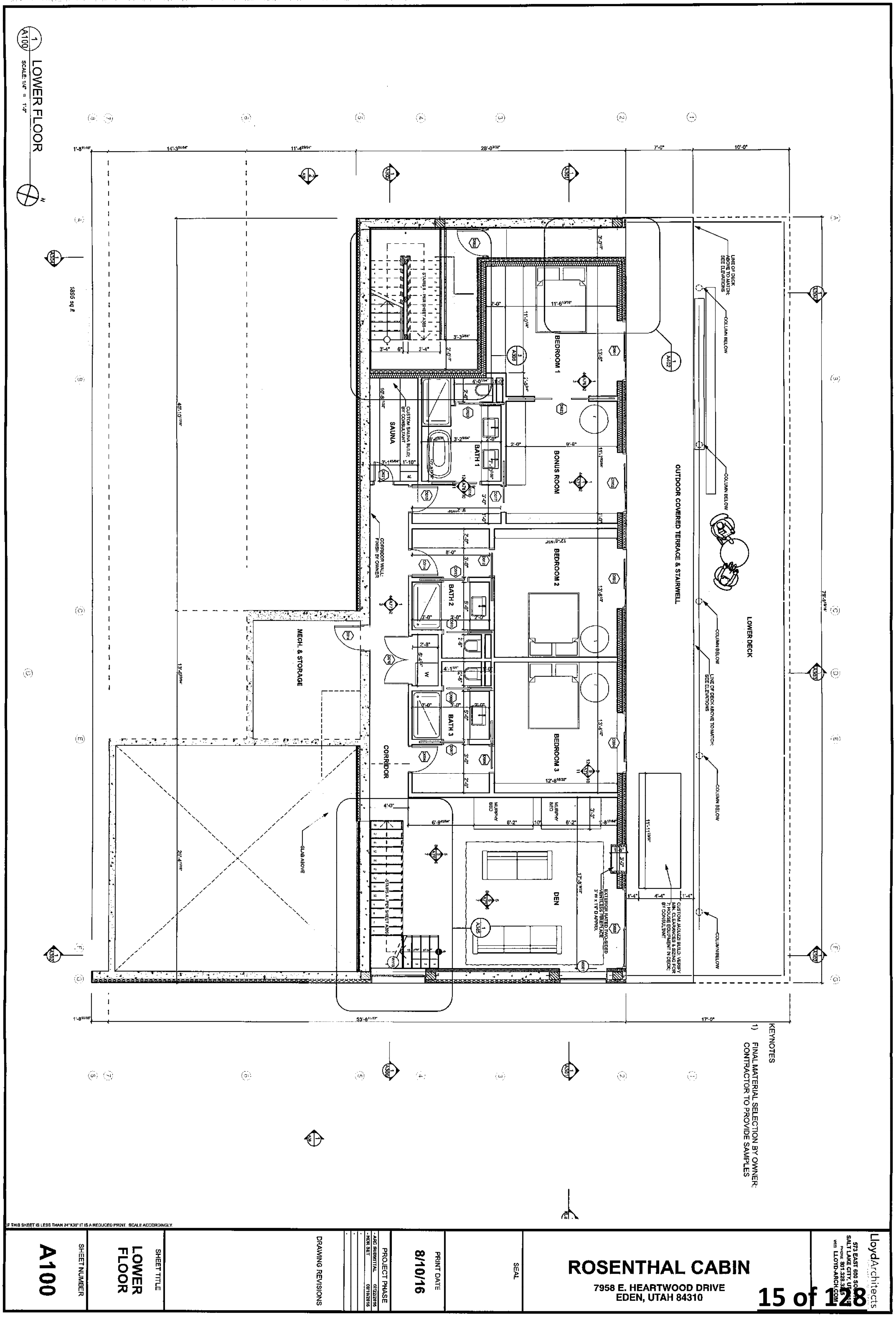

LOWER FLOOR
SCALE: 1/4" = 1'-0"
1895 sq ft
BEDROOM 1
BONUS ROOM
BATH 1
SAUNA
BEDROOM 2
BATH 2
BEDROOM 3
BATH 3
MECH. & STORAGE
CORRIDOR
DEN
OUTDOOR COVERED TERRACE & STAIRWELL
LOWER DECK
KEYNOTES
1) FINAL MATERIAL SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY
A100
SHEET NUMBER
LOWER FLOOR
SHEET TITLE
DRAWING REVISIONS
PROJECT PHASE
8/10/16
PRINT DATE
SEAL
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
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Exhibit A

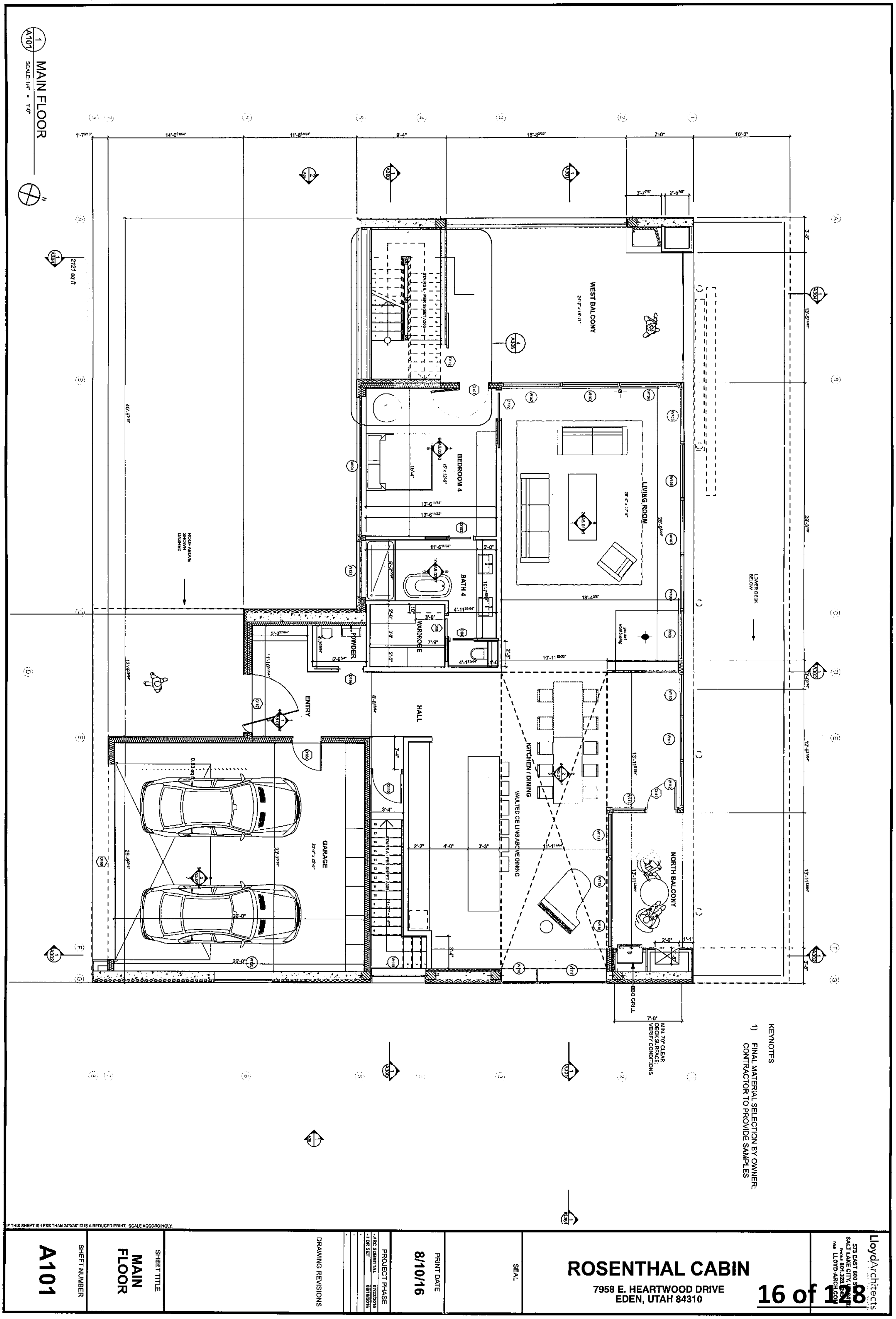
MAIN FLOOR
WEST BALCONY
BEDROOM 4
LIVING ROOM
BATH 4
POWDER
WARDROBE
ENTRY
HALL
KITCHEN / DINING
VAULTED CEILING ABOVE DINING
GARAGE
NORTH BALCONY
BBQ GRILL
LOWER DECK BELOW
2121 sq ft
KEYNOTES
1) FINAL MATERIAL SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
LloydArchitects
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
DRAWING REVISIONS
SHEET TITLE
MAIN FLOOR
SHEET NUMBER
A101

Exhibit A

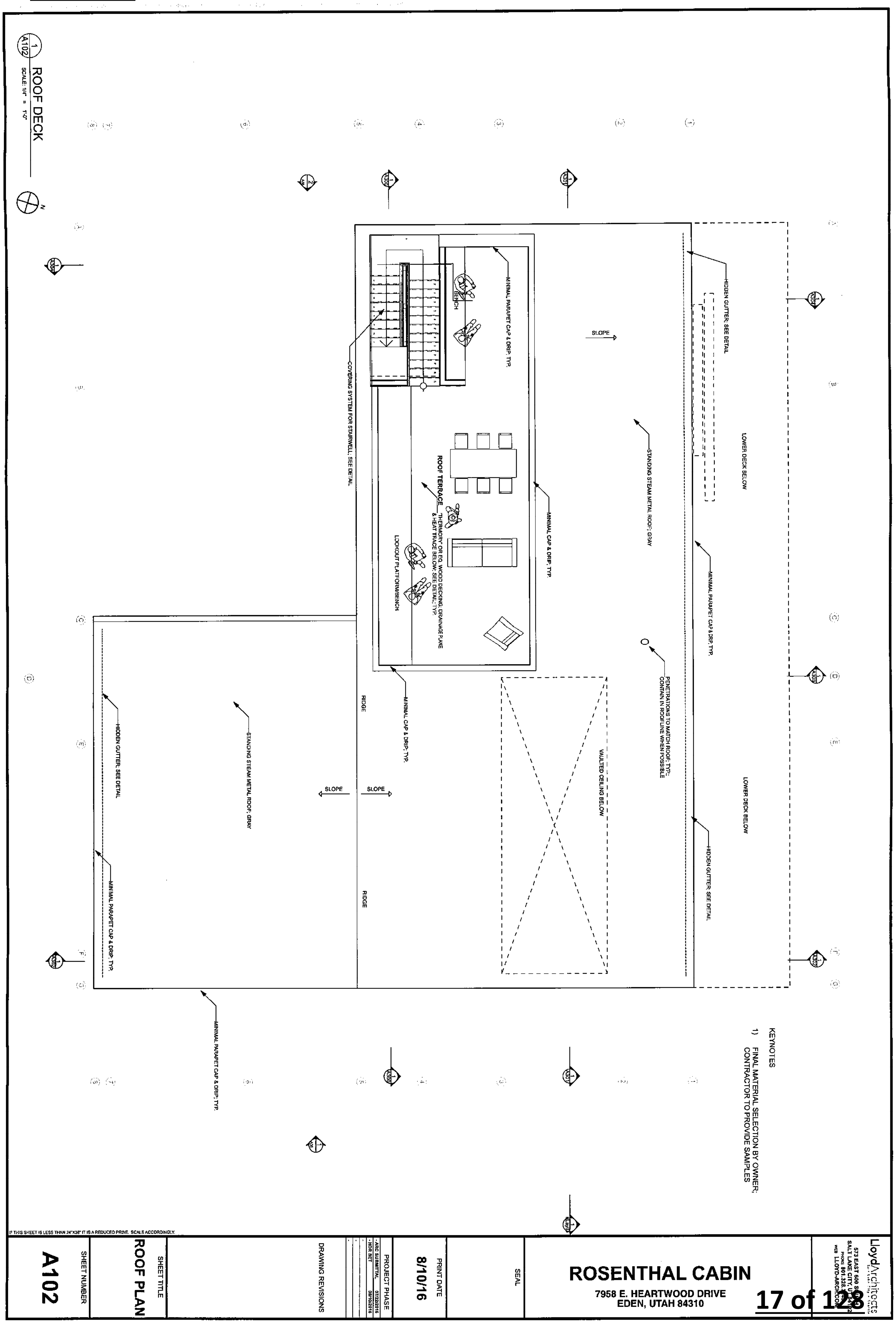
ROOF DECK
SCALE: 1/4" = 1'-0"
ROOF TERRACE
MINIMAL PARAPET CAP & DRIP, TYP.
BENCH
COVERING SYSTEM FOR STAIRWELL, SEE DETAIL
STANDING STEAM METAL ROOF; GRAY
THERMORY OR EQ. WOOD DECKING, DRAINAGE PLANE & HEAT TRACE BELOW; SEE DETAIL; TYP.
LOOKOUT PLATFORM/BENCH
MINIMAL CAP & DRIP, TYP.
HIDDEN GUTTER, SEE DETAIL
LOWER DECK BELOW
SLOPE
PENETRATIONS TO MATCH ROOF, TYP.; CONTAIN IN ROOFLINE WHEN POSSIBLE
VAULTED CEILING BELOW
RIDGE
KEYNOTES
1) FINAL MATERIAL SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
DRAWING REVISIONS
SHEET TITLE
ROOF PLAN
SHEET NUMBER
A102
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Exhibit A

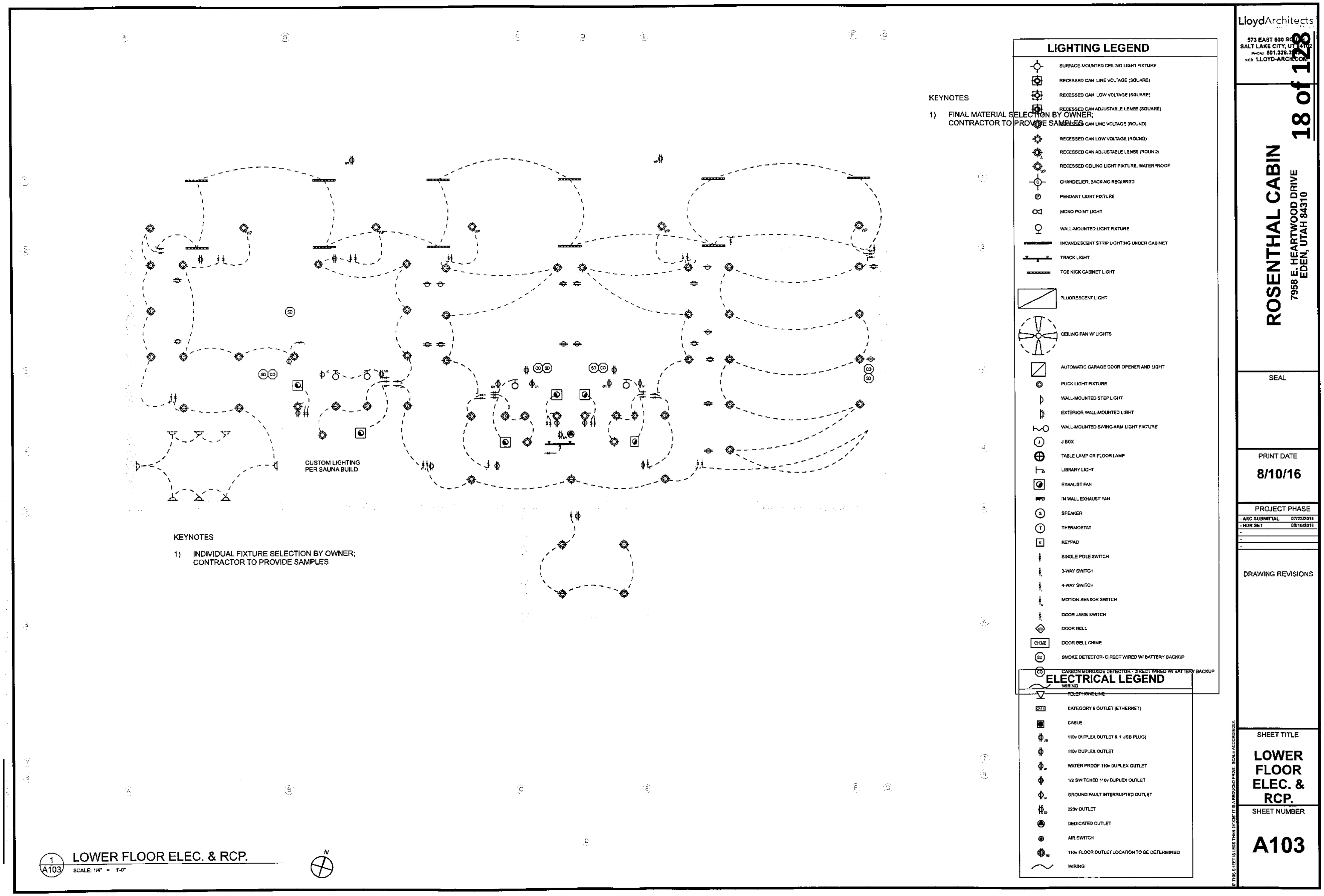
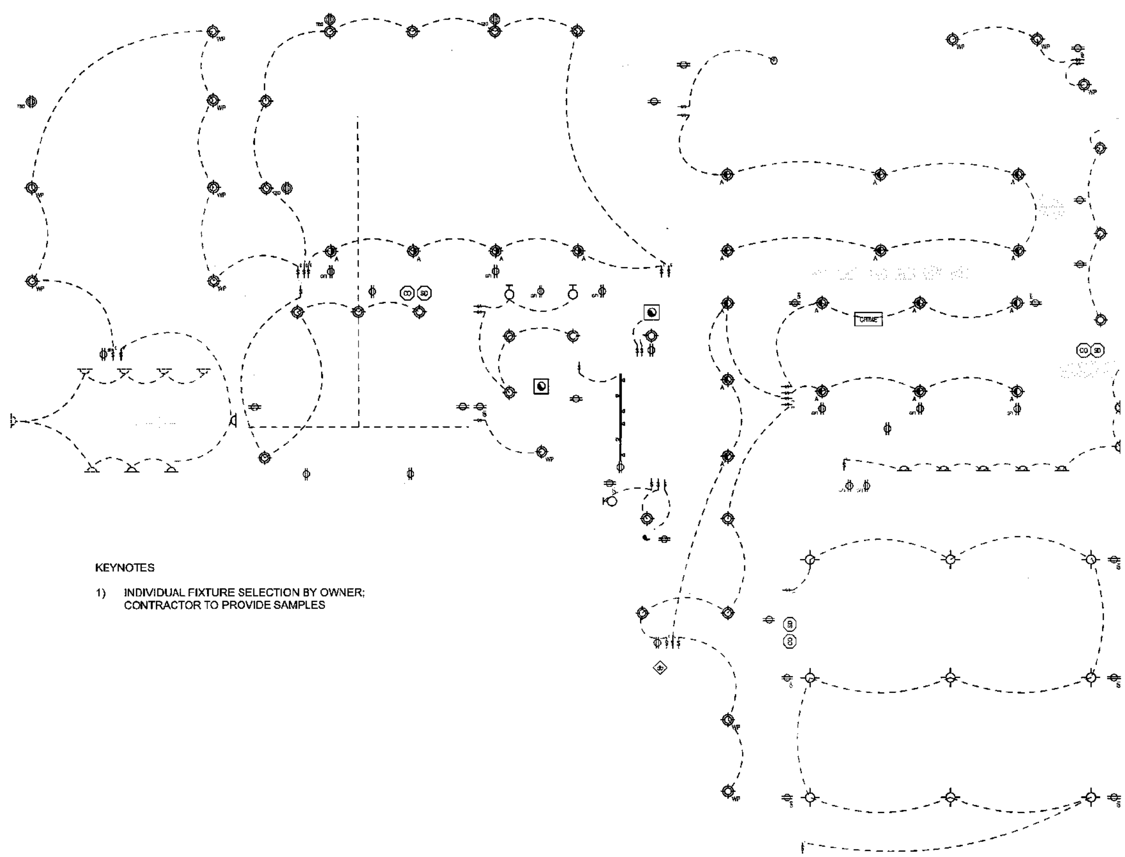

KEYNOTES
1) FINAL MATERIAL SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
CUSTOM LIGHTING PER SAUNA BUILD
KEYNOTES
1) INDIVIDUAL FIXTURE SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
1 A103 LOWER FLOOR ELEC. & RCP.
SCALE: 1/4" = 1'-0"
LIGHTING LEGEND
SURFACE-MOUNTED CEILING LIGHT FIXTURE
RECESSED CAN LINE VOLTAGE (SQUARE)
RECESSED CAN LOW VOLTAGE (SQUARE)
RECESSED CAN ADJUSTABLE LENSE (SQUARE)
RECESSED CAN LINE VOLTAGE (ROUND)
RECESSED CAN LOW VOLTAGE (ROUND)
RECESSED CAN ADJUSTABLE LENSE (ROUND)
RECESSED CEILING LIGHT FIXTURE, WATERPROOF
CHANDELIER, BACKING REQUIRED
PENDANT LIGHT FIXTURE
MONO POINT LIGHT
WALL-MOUNTED LIGHT FIXTURE
INCANDESCENT STRIP LIGHTING UNDER CABINET
TRACK LIGHT
TOE KICK CABINET LIGHT
FLUORESCENT LIGHT
CEILING FAN W/ LIGHTS
AUTOMATIC GARAGE DOOR OPENER AND LIGHT
PUCK LIGHT FIXTURE
WALL-MOUNTED STEP LIGHT
EXTERIOR WALL-MOUNTED LIGHT
WALL-MOUNTED SWING-ARM LIGHT FIXTURE
J BOX
TABLE LAMP OR FLOOR LAMP
LIBRARY LIGHT
EXHAUST FAN
IN WALL EXHAUST FAN
SPEAKER
THERMOSTAT
KEYPAD
SINGLE POLE SWITCH
3-WAY SWITCH
4-WAY SWITCH
MOTION SENSOR SWITCH
DOOR JAMB SWITCH
DOOR BELL
DOOR BELL CHIME
SMOKE DETECTOR- DIRECT WIRED W/ BATTERY BACKUP
CARBON MONOXIDE DETECTOR - DIRECT WIRED W/ BATTERY BACKUP
WIRING
ELECTRICAL LEGEND
TELEPHONE LINE
CATEGORY 6 OUTLET (ETHERNET)
CABLE
110v DUPLEX OUTLET & 1 USB PLUG)
110v DUPLEX OUTLET
WATER PROOF 110v DUPLEX OUTLET
1/2 SWITCHED 110v DUPLEX OUTLET
GROUND FAULT INTERRUPTED OUTLET
220v OUTLET
DEDICATED OUTLET
AIR SWITCH
110v FLOOR OUTLET LOCATION TO BE DETERMINED
WIRING
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
LloydArchitects
573 EAST 600 SOUTH
SALT LAKE CITY, UT 84102
PHONE 801.328.3245
WEB LLOYD-ARCH.COM
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
- ARC SUBMITTAL 07/22/2016
- HDR SET 08/10/2016
DRAWING REVISIONS
SHEET TITLE
LOWER FLOOR ELEC. & RCP.
SHEET NUMBER
A103

Exhibit A



KEYNOTES

1) INDIVIDUAL FIXTURE SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES

KEYNOTES

1) FINAL MATERIAL S CONTRACTOR TO

1 / A104 MAIN FLOOR ELEC. & RCP.

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

ELECTRICAL LEGEND

- TELEPHONE LINE
- CATEGORY 6 OUTLET (ETHERNET)
- CABLE
- 110v DUPLEX OUTLET & 1 USB PLUG)
- 110v DUPLEX OUTLET
- WATER PROOF 110v DUPLEX OUTLET
- 1/2 SWITCHED 110v DUPLEX OUTLET
- GROUND FAULT INTERRUPTED OUTLET
- 220v OUTLET
- DEDICATED OUTLET
- AIR SWITCH
- 110v FLOOR OUTLET LOCATION TO BE DETERMINED
- WIRING

LIGHTING LEGEND

- SURFACE-MOUNTED CEILING LIGHT FIXTURE
- RECESSED CAN LINE VOLTAGE (SQUARE)
- RECESSED CAN LOW VOLTAGE (SQUARE)
- RECESSED CAN ADJUSTABLE LENSE (SQUARE)
- RECESSED CAN LINE VOLTAGE (ROUND)
- RECESSED CAN LOW VOLTAGE (ROUND)
- RECESSED CAN ADJUSTABLE LENSE (ROUND)
- RECESSED CEILING LIGHT FIXTURE, WATERPROOF
- CHANDELIER, BACKING REQUIRED
- PENDANT LIGHT FIXTURE
- MONO POINT LIGHT
- WALL-MOUNTED LIGHT FIXTURE
- INCANDESCENT STRIP LIGHTING UNDER CABINET
- TRACK LIGHT
- TOE KICK CABINET LIGHT
- FLUORESCENT LIGHT
- CEILING FAN W/ LIGHTS
- AUTOMATIC GARAGE DOOR OPENER AND LIGHT
- PUCK LIGHT FIXTURE
- WALL-MOUNTED STEP LIGHT
- EXTERIOR WALL-MOUNTED LIGHT
- WALL-MOUNTED SWING-ARM LIGHT FIXTURE
- J BOX
- TABLE LAMP OR FLOOR LAMP
- LIBRARY LIGHT
- EXHAUST FAN
- IN WALL EXHAUST FAN
- SPEAKER
- THERMOSTAT
- KEYPAD
- SINGLE POLE SWITCH
- 3-WAY SWITCH
- 4-WAY SWITCH
- MOTION SENSOR SWITCH
- DOOR JAMB SWITCH
- DOOR BELL
- DOOR BELL CHIME
- SMOKE DETECTOR- DIRECT WIRED W/ BATTERY BACKUP
- CARBON MONOXIDE DETECTOR - DIRECT WIRED W/ BATTERY BACKUP
- WIRING

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PHONE 801.328.3245
WEB LLOYD-ARCH.COM

ROSENTHAL CABIN

7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310

SEAL

PRINT DATE

8/10/16

PROJECT PHASE

- ARC SUBMITTAL	07/22/2016
- HDR SET	08/10/2016
-	
-	
-	

DRAWING REVISIONS

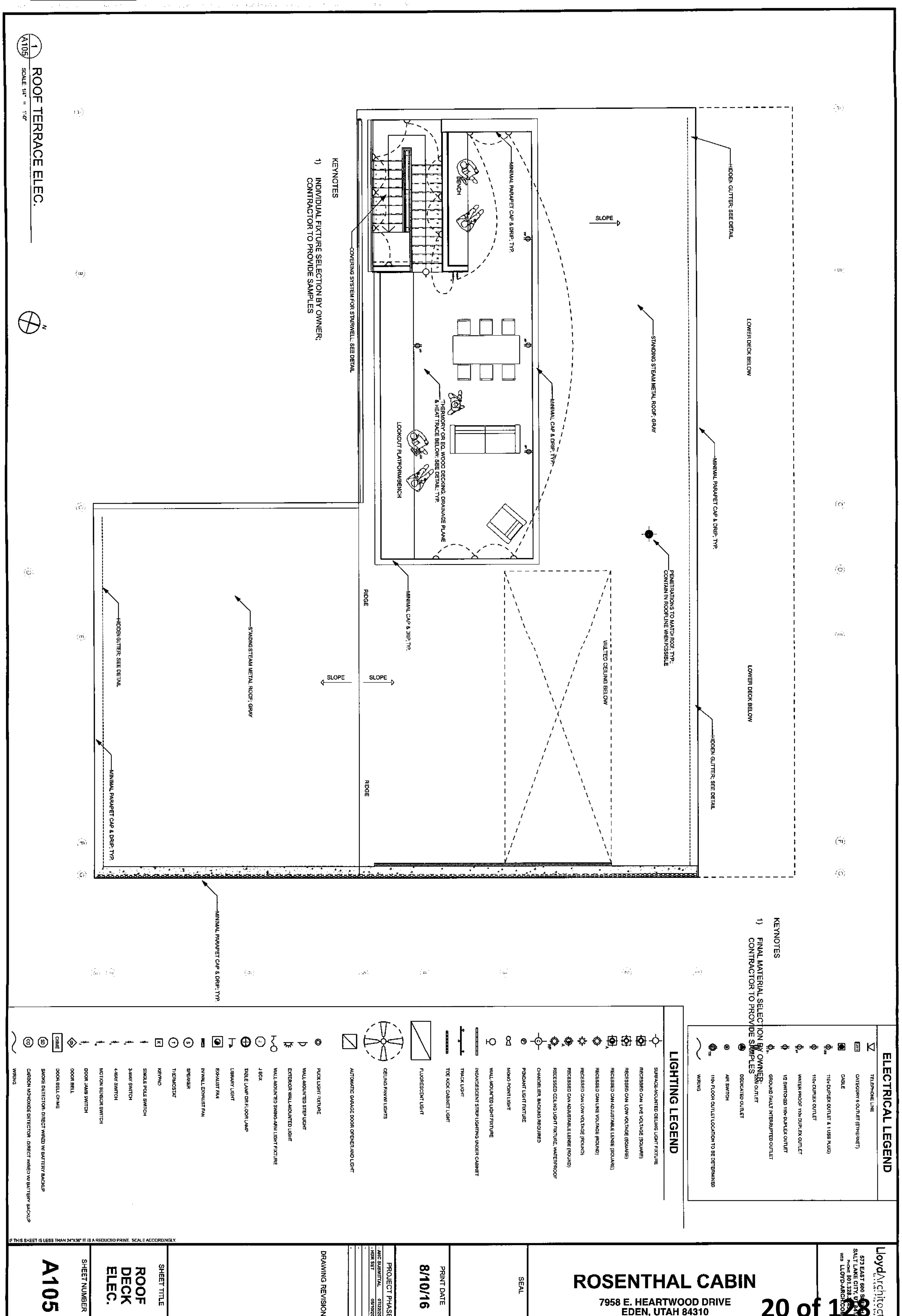
SHEET TITLE

MAIN FLOOR ELEC. & RCP.

SHEET NUMBER

A104

Exhibit A


LOWER DECK BELOW
LOWER DECK BELOW
HIDDEN GUTTER; SEE DETAIL
MINIMAL PARAPET CAP & DRIP; TYP.
HIDDEN GUTTER; SEE DETAIL
PENETRATIONS TO MATCH ROOF; TYP.; CONTAIN IN ROOFLINE WHEN POSSIBLE
STANDING STEAM METAL ROOF; GRAY
SLOPE
VAULTED CEILING BELOW
MINIMAL CAP & DRIP; TYP.
MINIMAL PARAPET CAP & DRIP; TYP.
BENCH
'THERMORY' OR EQ. WOOD DECKING; DRAINAGE PLANE & HEAT TRACE BELOW; SEE DETAIL; TYP.
LOOKOUT PLATFORM/BENCH
MINIMAL CAP & DRIP; TYP.
RIDGE
RIDGE
SLOPE
SLOPE
COVERING SYSTEM FOR STAIRWELL; SEE DETAIL
KEYNOTES
1) INDIVIDUAL FIXTURE SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
STANDING STEAM METAL ROOF; GRAY
MINIMAL PARAPET CAP & DRIP; TYP.
HIDDEN GUTTER; SEE DETAIL
MINIMAL PARAPET CAP & DRIP; TYP.
KEYNOTES
1) FINAL MATERIAL SELECTION BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
1 A105 ROOF TERRACE ELEC.
SCALE: 1/4" = 1'-0"
N
ELECTRICAL LEGEND
TELEPHONE LINE
CATEGORY 6 OUTLET (ETHERNET)
CABLE
110v DUPLEX OUTLET & 1 USB PLUG)
110v DUPLEX OUTLET
WATER PROOF 110v DUPLEX OUTLET
1/2 SWITCHED 110v DUPLEX OUTLET
GROUND FAULT INTERRUPTED OUTLET
220V OUTLET
DEDICATED OUTLET
AIR SWITCH
110v FLOOR OUTLET LOCATION TO BE DETERMINED
WIRING
LIGHTING LEGEND
SURFACE-MOUNTED CEILING LIGHT FIXTURE
RECESSED CAN LINE VOLTAGE (SQUARE)
RECESSED CAN LOW VOLTAGE (SQUARE)
RECESSED CAN ADJUSTABLE LENSE (SQUARE)
RECESSED CAN LINE VOLTAGE (ROUND)
RECESSED CAN LOW VOLTAGE (ROUND)
RECESSED CAN ADJUSTABLE LENSE (ROUND)
RECESSED CEILING LIGHT FIXTURE, WATERPROOF
CHANDELIER, BACKING REQUIRED
PENDANT LIGHT FIXTURE
MONO POINT LIGHT
WALL-MOUNTED LIGHT FIXTURE
INCANDESCENT STRIP LIGHTING UNDER CABINET
TRACK LIGHT
TOE KICK CABINET LIGHT
FLUORESCENT LIGHT
CEILING FAN W/ LIGHTS
AUTOMATIC GARAGE DOOR OPENER AND LIGHT
PUCK LIGHT FIXTURE
WALL-MOUNTED STEP LIGHT
EXTERIOR WALL-MOUNTED LIGHT
WALL-MOUNTED SWING-ARM LIGHT FIXTURE
J BOX
TABLE LAMP OR FLOOR LAMP
LIBRARY LIGHT
EXHAUST FAN
IN WALL EXHAUST FAN
SPEAKER
THERMOSTAT
KEYPAD
SINGLE POLE SWITCH
3-WAY SWITCH
4-WAY SWITCH
MOTION SENSOR SWITCH
DOOR JAMB SWITCH
DOOR BELL
DOOR BELL CHIME
SMOKE DETECTOR- DIRECT WIRED W/ BATTERY BACKUP
CARBON MONOXIDE DETECTOR - DIRECT WIRED W/ BATTERY BACKUP
WIRING
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
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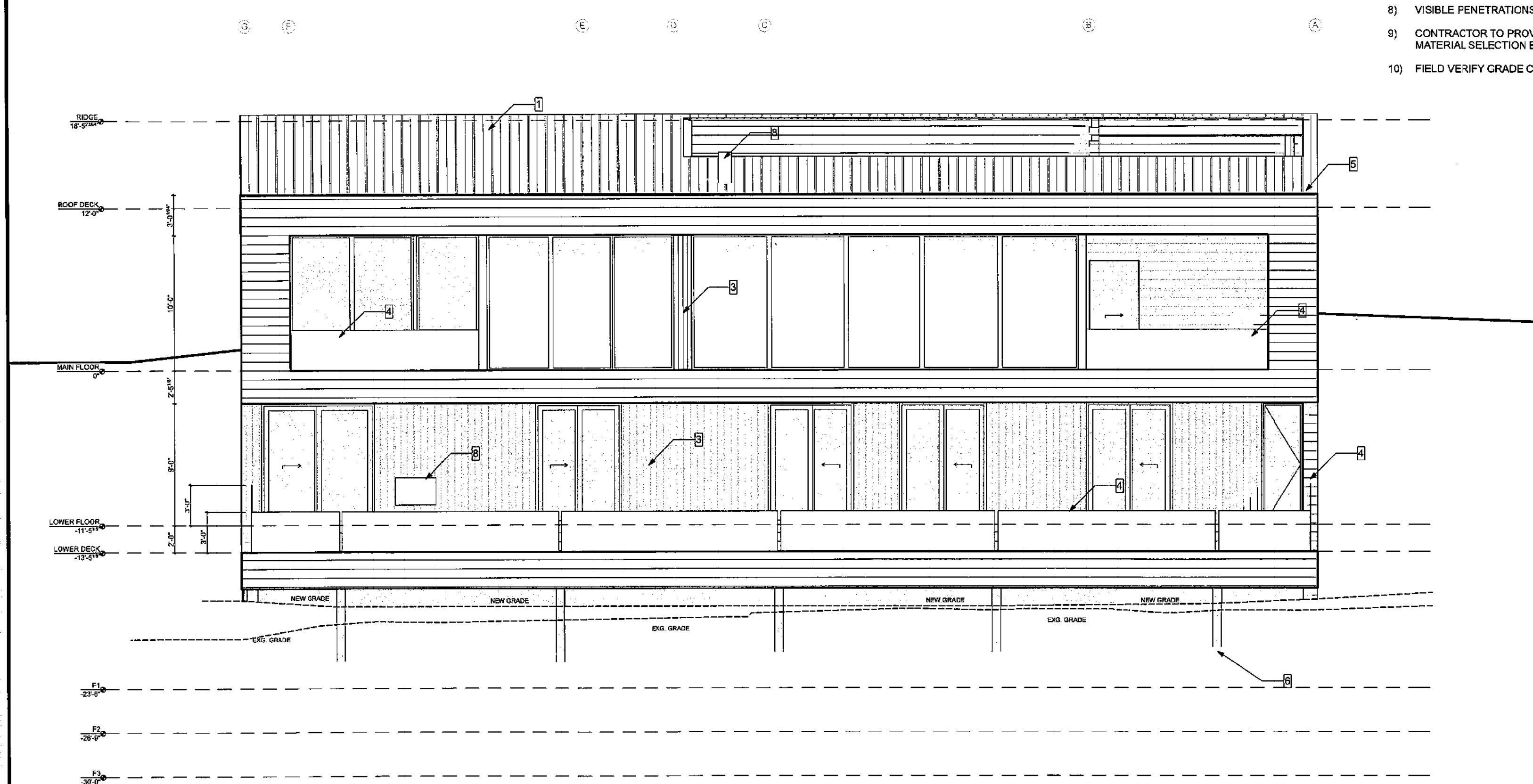
PHONE 801.328.3245
WEB LLOYD-ARCH.COM
ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310
SEAL
PRINT DATE
8/10/16
PROJECT PHASE
ARC SUBMITTAL 07/22/2016
HDR SET 08/10/2016
DRAWING REVISIONS
SHEET TITLE
ROOF DECK ELEC.
SHEET NUMBER
A105

Exhibit A

KEYNOTE LEGEND

1) STANDING SEAM ROOF; COLOR TO MATCH WEATHERED CLADDING
2) HORIZONTAL 'THERMORY' SIDING OR EQ.; TO WEATHER
3) VERTICAL 'THERMORY' SIDING OR EQ.; TO WEATHER
4) GLASS GUARDRAIL; MIN. 34"
5) MINIMAL DRIP EDGE; COLOR TO MATCH ROOF
6) COLUMN; SEE STRUCT. DWGs.
7) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE
8) VISIBLE PENETRATIONS TO MATCH ROOF
9) CONTRACTOR TO PROVIDE SAMPLES FOR FINAL MATERIAL SELECTION BY OWNER
10) FIELD VERIFY GRADE CONDITIONS



1 A200 NORTH ELEVATION

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

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PROJECT PHASE
- ARC SUBMITTAL 07/22/2016
- HCR SET 08/10/2016

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SHEET TITLE
ELEVATIONS

SHEET NUMBER
A200

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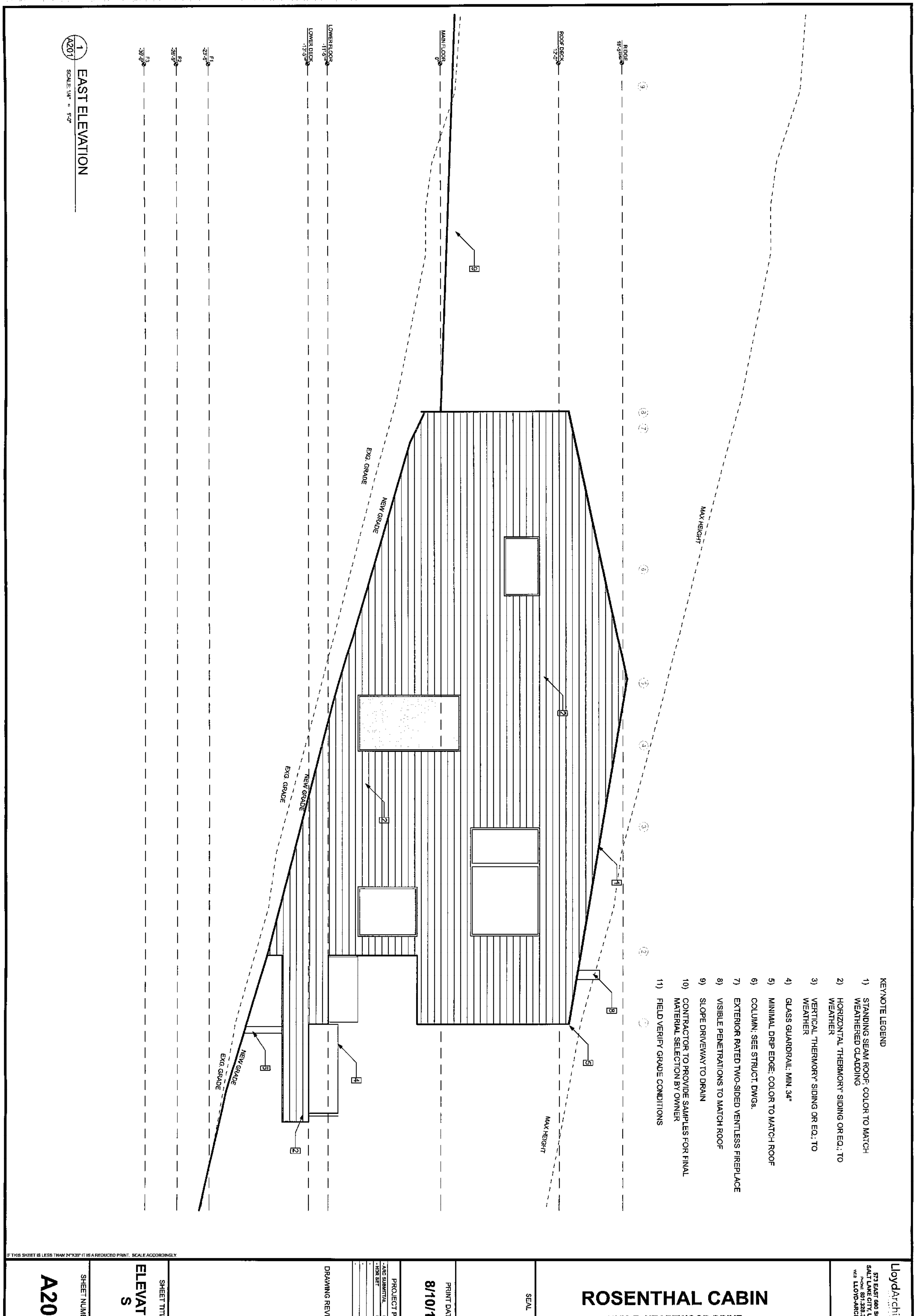
Exhibit A



1 A201 EAST ELEVATION
SCALE: 1/4" = 1'-0"
RIDGE
ROOF DECK
MAIN FLOOR
LOWER FLOOR
LOWER DECK
F1
F2
F3
EXG. GRADE
NEW GRADE
MAX HEIGHT
KEYNOTE LEGEND
1) STANDING SEAM ROOF; COLOR TO MATCH WEATHERED CLADDING
2) HORIZONTAL 'THERMORY' SIDING OR EQ.; TO WEATHER
3) VERTICAL 'THERMORY' SIDING OR EQ.; TO WEATHER
4) GLASS GUARDRAIL: MIN. 34"
5) MINIMAL DRIP EDGE; COLOR TO MATCH ROOF
6) COLUMN; SEE STRUCT. DWGs.
7) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE
8) VISIBLE PENETRATIONS TO MATCH ROOF
9) SLOPE DRIVEWAY TO DRAIN
10) CONTRACTOR TO PROVIDE SAMPLES FOR FINAL MATERIAL SELECTION BY OWNER
11) FIELD VERIFY GRADE CONDITIONS
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY
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ELEVATIONS
SHEET NUMBER
A201

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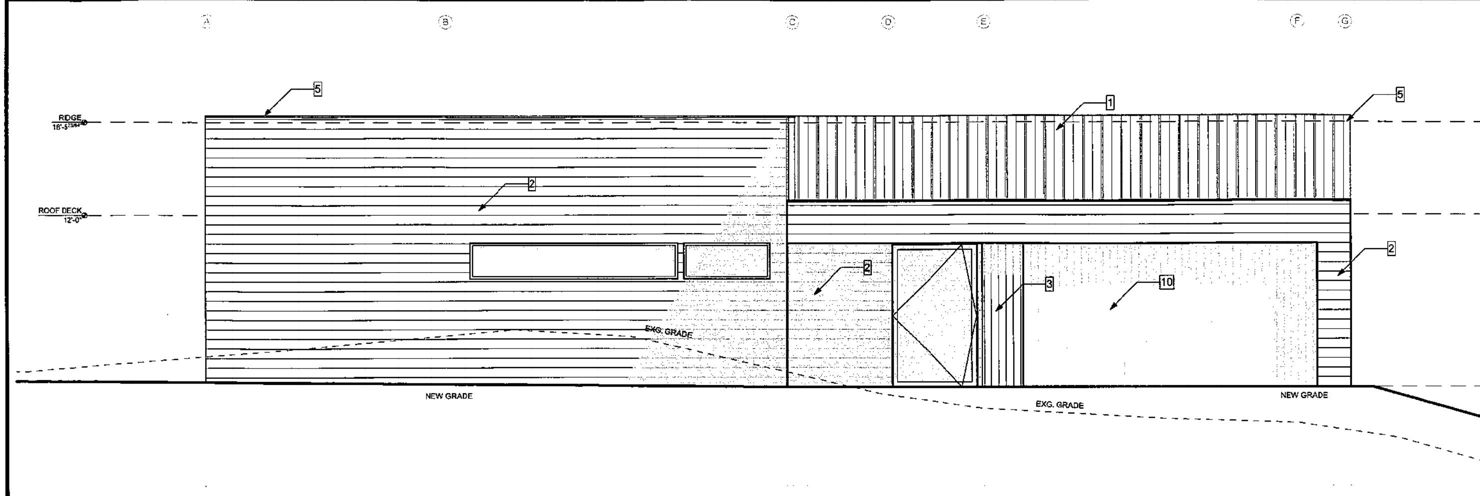
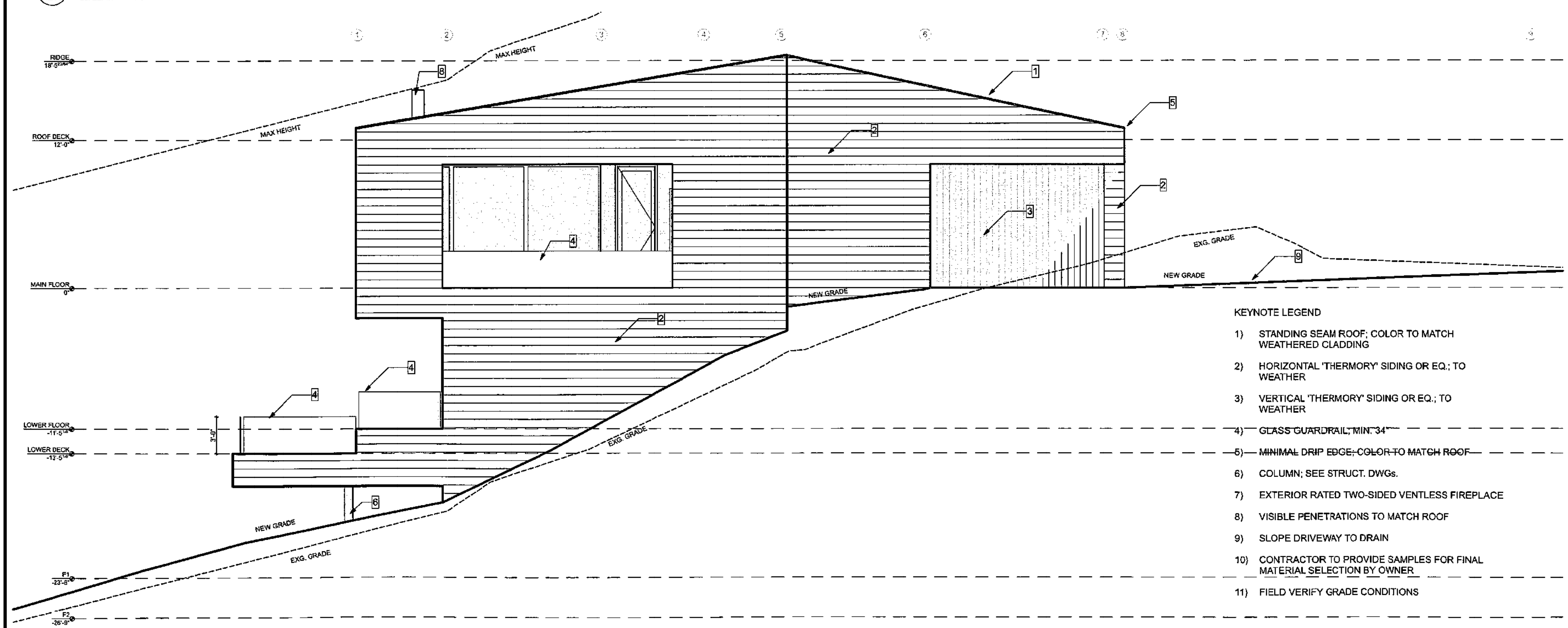


KEYNOTE LEGEND

1) STANDING SEAM ROOF; COLOR TO MATCH WEATHERED CLADDING
2) HORIZONTAL 'THERMORY' SIDING OR EQ.; TO WEATHER
3) VERTICAL 'THERMORY' SIDING OR EQ.; TO WEATHER
4) GLASS GUARDRAIL; MIN. 34"
5) MINIMAL DRIP EDGE; COLOR TO MATCH ROOF
6) COLUMN; SEE STRUCT. DWGs.
7) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE
8) VISIBLE PENETRATIONS TO MATCH ROOF
9) SLOPE DRIVEWAY TO DRAIN
10) CLAD GARAGE DOOR; TO MATCH WALL
11) CONTRACTOR TO PROVIDE SAMPLES FOR FINAL MATERIAL SELECTION BY OWNER
12) FIELD VERIFY GRADE CONDITIONS

1 A202 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



KEYNOTE LEGEND

1) STANDING SEAM ROOF; COLOR TO MATCH WEATHERED CLADDING
2) HORIZONTAL 'THERMORY' SIDING OR EQ.; TO WEATHER
3) VERTICAL 'THERMORY' SIDING OR EQ.; TO WEATHER
4) GLASS GUARDRAIL; MIN. 34"
5) MINIMAL DRIP EDGE; COLOR TO MATCH ROOF
6) COLUMN; SEE STRUCT. DWGs.
7) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE
8) VISIBLE PENETRATIONS TO MATCH ROOF
9) SLOPE DRIVEWAY TO DRAIN
10) CONTRACTOR TO PROVIDE SAMPLES FOR FINAL MATERIAL SELECTION BY OWNER
11) FIELD VERIFY GRADE CONDITIONS

2 A202 WEST ELEVATION
SCALE: 1/4" = 1'-0"

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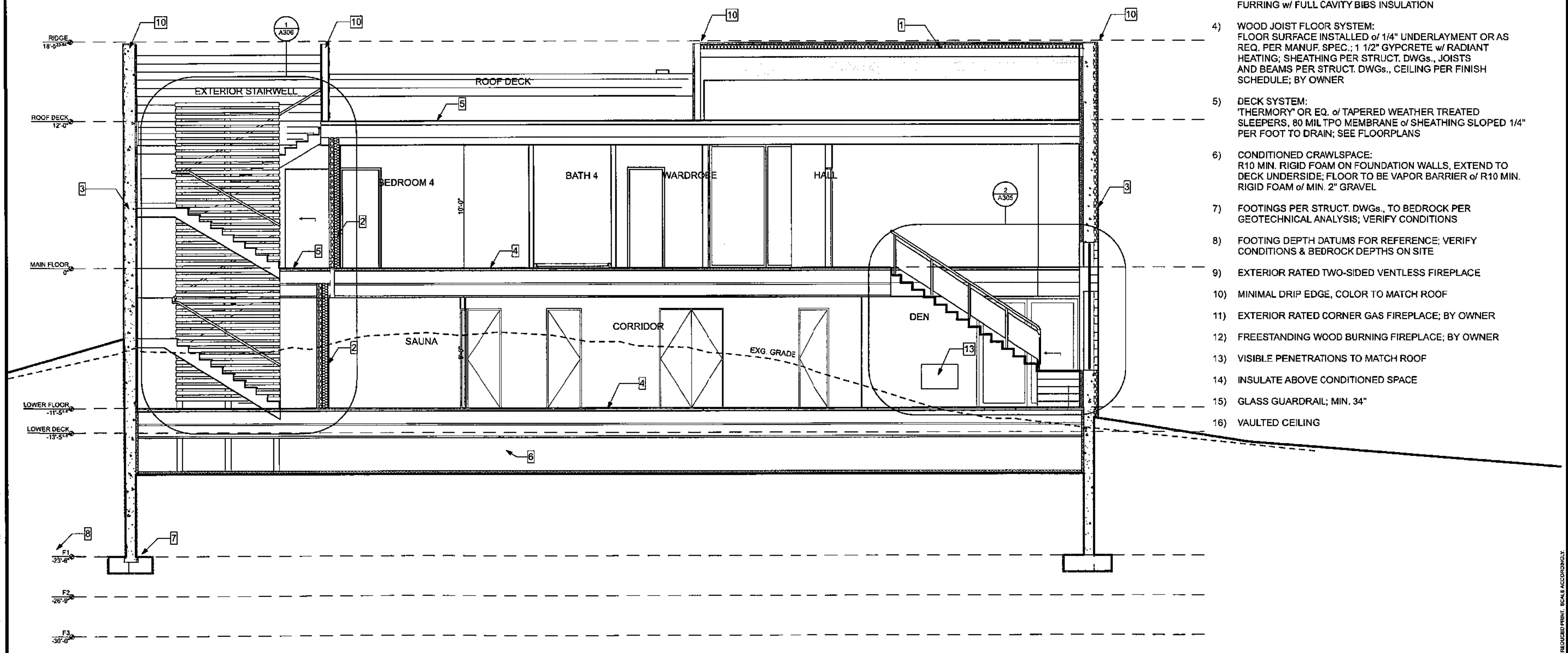
ELEVATIONS

SHEET NUMBER
A202

Exhibit A



BUILDING SECTION 1

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

KEYNOTE LEGEND

1) STANDING SEAM ROOF SYSTEM (MIN R38): STANDING SEAM ROOFING o/ ICE & WATER SHIELD UNDERLAYMENT; 4" RIGID FOAM w/ NAILBASE; PLY. SHEATHING PER STRUCT DWGs., PREFAB TRUSSES w/ BIBS INSULATION

2) EXT. WOOD CLAD 2x WALLS TYP. (MIN R20): 'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, 2x6 FRAMING w/ FULL CAVITY BIBS INSULATION

3) EXT. WOOD CLAD CONC. WALLS w/ FURRING (MIN R20): 'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, CONCRETE WALL PER STRUCT. DWGs, 2x4 INTERIOR FURRING w/ FULL CAVITY BIBS INSULATION

4) WOOD JOIST FLOOR SYSTEM: FLOOR SURFACE INSTALLED o/ 1/4" UNDERLAYMENT OR AS REQ. PER MANUF. SPEC.; 1 1/2" GYPCRETE w/ RADIANT HEATING; SHEATHING PER STRUCT. DWGs., JOISTS AND BEAMS PER STRUCT. DWGs., CEILING PER FINISH SCHEDULE; BY OWNER

5) DECK SYSTEM: 'THERMORY' OR EQ. o/ TAPERED WEATHER TREATED SLEEPERS, 80 MIL TPO MEMBRANE o/ SHEATHING SLOPED 1/4" PER FOOT TO DRAIN; SEE FLOORPLANS

6) CONDITIONED CRAWLSPACE: R10 MIN. RIGID FOAM ON FOUNDATION WALLS, EXTEND TO DECK UNDERSIDE; FLOOR TO BE VAPOR BARRIER o/ R10 MIN. RIGID FOAM o/ MIN. 2" GRAVEL

7) FOOTINGS PER STRUCT. DWGs., TO BEDROCK PER GEOTECHNICAL ANALYSIS; VERIFY CONDITIONS

8) FOOTING DEPTH DATUMS FOR REFERENCE; VERIFY CONDITIONS & BEDROCK DEPTHS ON SITE

9) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE

10) MINIMAL DRIP EDGE, COLOR TO MATCH ROOF

11) EXTERIOR RATED CORNER GAS FIREPLACE; BY OWNER

12) FREESTANDING WOOD BURNING FIREPLACE; BY OWNER

13) VISIBLE PENETRATIONS TO MATCH ROOF

14) INSULATE ABOVE CONDITIONED SPACE

15) GLASS GUARDRAIL; MIN. 34"

16) VAULTED CEILING

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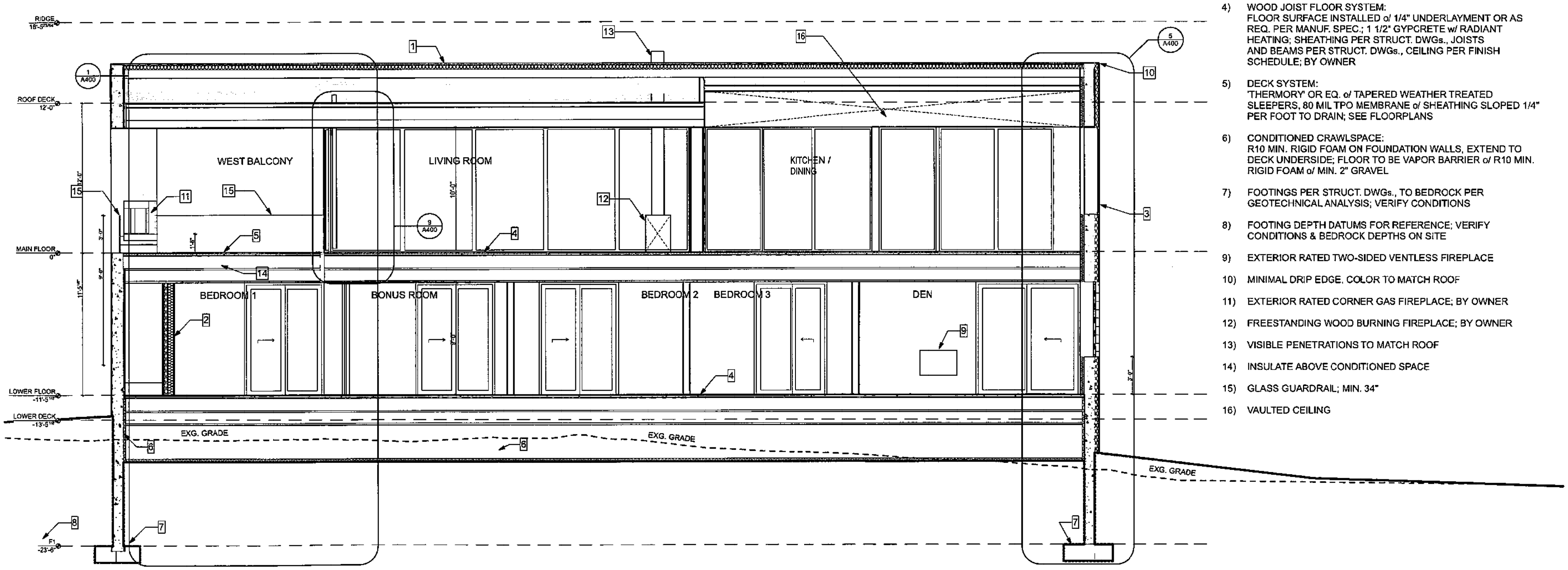
SHEET TITLE
BUILDING SECTIONS

SHEET NUMBER
A300

Exhibit A



1 A301 BUILDING SECTION 2
SCALE: 1/4" = 1'-0"

KEYNOTE LEGEND

1) STANDING SEAM ROOF SYSTEM (MIN R38): STANDING SEAM ROOFING o/ ICE & WATER SHIELD UNDERLAYMENT; 4" RIGID FOAM w/ NAILBASE; PLY. SHEATHING PER STRUCT DWGs., PREFAB TRUSSES w/ BIBS INSULATION

2) EXT. WOOD CLAD 2x WALLS TYP. (MIN R20): 'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, 2x6 FRAMING w/ FULL CAVITY BIBS INSULATION

3) EXT. WOOD CLAD CONC. WALLS w/ FURRING (MIN R20): 'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, CONCRETE WALL PER STRUCT. DWGs, 2x4 INTERIOR FURRING w/ FULL CAVITY BIBS INSULATION

4) WOOD JOIST FLOOR SYSTEM: FLOOR SURFACE INSTALLED o/ 1/4" UNDERLAYMENT OR AS REQ. PER MANUF. SPEC.; 1 1/2" GYPCRETE w/ RADIANT HEATING; SHEATHING PER STRUCT. DWGs., JOISTS AND BEAMS PER STRUCT. DWGs., CEILING PER FINISH SCHEDULE; BY OWNER

5) DECK SYSTEM: 'THERMORY' OR EQ. o/ TAPERED WEATHER TREATED SLEEPERS, 80 MIL TPO MEMBRANE o/ SHEATHING SLOPED 1/4" PER FOOT TO DRAIN; SEE FLOORPLANS

6) CONDITIONED CRAWLSPACE: R10 MIN. RIGID FOAM ON FOUNDATION WALLS, EXTEND TO DECK UNDERSIDE; FLOOR TO BE VAPOR BARRIER o/ R10 MIN. RIGID FOAM o/ MIN. 2" GRAVEL

7) FOOTINGS PER STRUCT. DWGs., TO BEDROCK PER GEOTECHNICAL ANALYSIS; VERIFY CONDITIONS

8) FOOTING DEPTH DATUMS FOR REFERENCE; VERIFY CONDITIONS & BEDROCK DEPTHS ON SITE

9) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE

10) MINIMAL DRIP EDGE, COLOR TO MATCH ROOF

11) EXTERIOR RATED CORNER GAS FIREPLACE; BY OWNER

12) FREESTANDING WOOD BURNING FIREPLACE; BY OWNER

13) VISIBLE PENETRATIONS TO MATCH ROOF

14) INSULATE ABOVE CONDITIONED SPACE

15) GLASS GUARDRAIL; MIN. 34"

16) VAULTED CEILING

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SHEET TITLE
BUILDING SECTIONS

SHEET NUMBER
A301

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Exhibit A

KEYNOTE LEGEND

1) STANDING SEAM ROOF SYSTEM (MIN R38):
STANDING SEAM ROOFING o/ ICE & WATER SHIELD UNDERLAYMENT; 4" RIGID FOAM w/ NAILBASE; PLY. SHEATHING PER STRUCT DWGs., PREFAB TRUSSES w/ BIBS INSULATION

2) EXT. WOOD CLAD 2x WALLS TYP. (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, 2x6 FRAMING w/ FULL CAVITY BIBS INSULATION

3) EXT. WOOD CLAD CONC. WALLS w/ FURRING (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, CONCRETE WALL PER STRUCT. DWGs, 2x4 INTERIOR FURRING w/ FULL CAVITY BIBS INSULATION

4) WOOD JOIST FLOOR SYSTEM:
FLOOR SURFACE INSTALLED o/ 1/4" UNDERLAYMENT OR AS REQ. PER MANUF. SPEC.; 1 1/2" GYPCRETE w/ RADIANT HEATING; SHEATHING PER STRUCT. DWGs., JOISTS AND BEAMS PER STRUCT. DWGs., CEILING PER FINISH SCHEDULE; BY OWNER

5) DECK SYSTEM:
'THERMORY' OR EQ. o/ TAPERED WEATHER TREATED SLEEPERS, 80 MIL TPO MEMBRANE o/ SHEATHING SLOPED 1/4" PER FOOT TO DRAIN; SEE FLOORPLANS

6) CONDITIONED CRAWLSPACE:
R10 MIN. RIGID FOAM ON FOUNDATION WALLS, EXTEND TO DECK UNDERSIDE; FLOOR TO BE VAPOR BARRIER o/ R10 MIN. RIGID FOAM o/ MIN. 2" GRAVEL

7) FOOTINGS PER STRUCT. DWGs., TO BEDROCK PER GEOTECHNICAL ANALYSIS; VERIFY CONDITIONS

8) FOOTING DEPTH DATUMS FOR REFERENCE; VERIFY CONDITIONS & BEDROCK DEPTHS ON SITE

9) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE

10) MINIMAL DRIP EDGE, COLOR TO MATCH ROOF

11) EXTERIOR RATED CORNER GAS FIREPLACE; BY OWNER

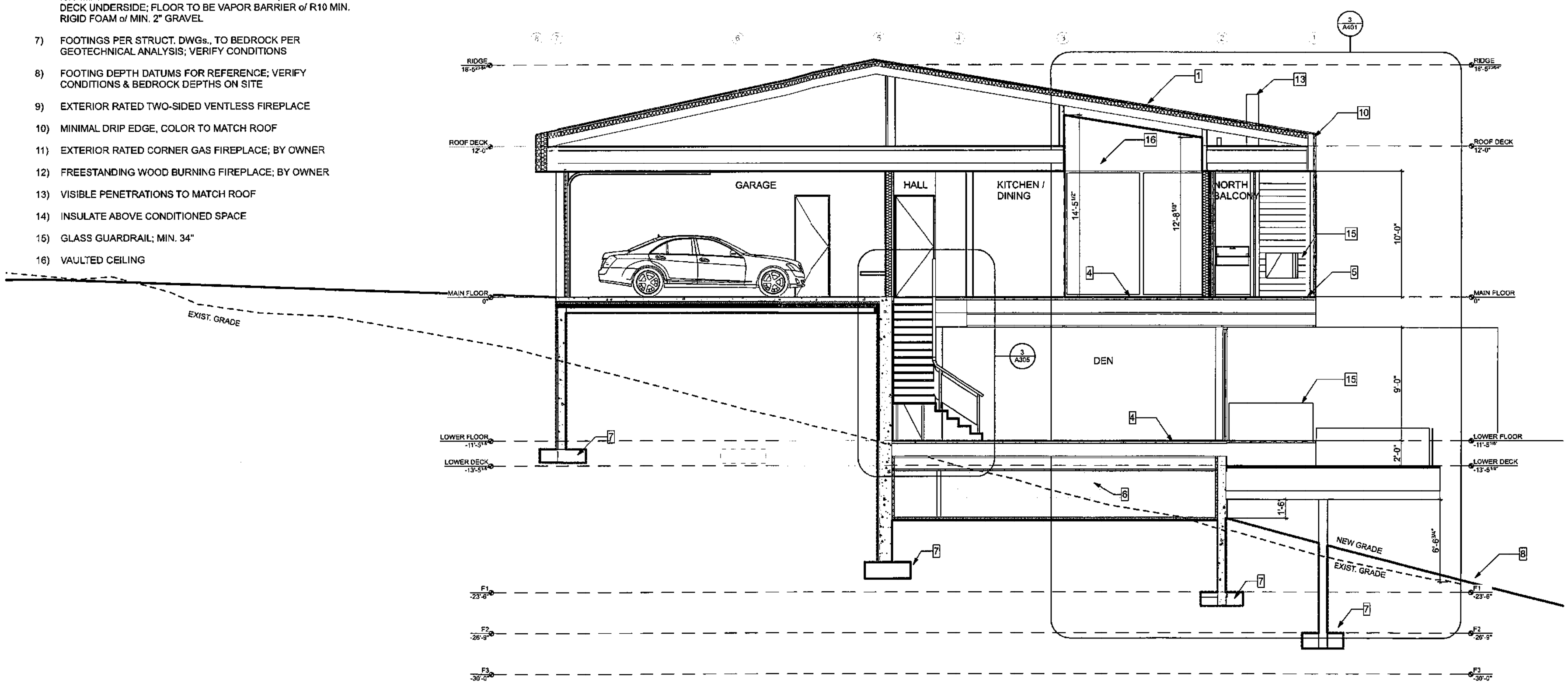
12) FREESTANDING WOOD BURNING FIREPLACE; BY OWNER

13) VISIBLE PENETRATIONS TO MATCH ROOF

14) INSULATE ABOVE CONDITIONED SPACE

15) GLASS GUARDRAIL; MIN. 34"

16) VAULTED CEILING



1 A302 BUILDING SECTION 3
SCALE: 1/4" = 1'-0"

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- HDR SET 08/10/2016

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SHEET TITLE
BUILDING SECTIONS

SHEET NUMBER
A302

Exhibit A

KEYNOTE LEGEND

1) STANDING SEAM ROOF SYSTEM (MIN R38):
STANDING SEAM ROOFING o/ ICE & WATER SHIELD UNDERLAYMENT; 4" RIGID FOAM w/ NAILBASE; PLY. SHEATHING PER STRUCT. DWGs., PREFAB TRUSSES w/ BIBS INSULATION

2) EXT. WOOD CLAD 2x WALLS TYP. (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, 2x6 FRAMING w/ FULL CAVITY BIBS INSULATION

3) EXT. WOOD CLAD CONC. WALLS w/ FURRING (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, CONCRETE WALL PER STRUCT. DWGs, 2x4 INTERIOR FURRING w/ FULL CAVITY BIBS INSULATION

4) WOOD JOIST FLOOR SYSTEM:
FLOOR SURFACE INSTALLED o/ 1/4" UNDERLAYMENT OR AS REQ. PER MANUF. SPEC.; 1 1/2" GYPCRETE w/ RADIANT HEATING; SHEATHING PER STRUCT. DWGs., JOISTS AND BEAMS PER STRUCT. DWGs., CEILING PER FINISH SCHEDULE; BY OWNER

5) DECK SYSTEM:
'THERMORY' OR EQ. o/ TAPERED WEATHER TREATED SLEEPERS, 80 MIL TPO MEMBRANE o/ SHEATHING SLOPED 1/4" PER FOOT TO DRAIN; SEE FLOORPLANS

6) CONDITIONED CRAWLSPACE:
R10 MIN. RIGID FOAM ON FOUNDATION WALLS, EXTEND TO DECK UNDERSIDE; FLOOR TO BE VAPOR BARRIER o/ R10 MIN. RIGID FOAM o/ MIN. 2" GRAVEL

7) FOOTINGS PER STRUCT. DWGs., TO BEDROCK PER GEOTECHNICAL ANALYSIS; VERIFY CONDITIONS

8) FOOTING DEPTH DATUMS FOR REFERENCE; VERIFY CONDITIONS & BEDROCK DEPTHS ON SITE

9) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE

10) MINIMAL DRIP EDGE, COLOR TO MATCH ROOF

11) EXTERIOR RATED CORNER GAS FIREPLACE; BY OWNER

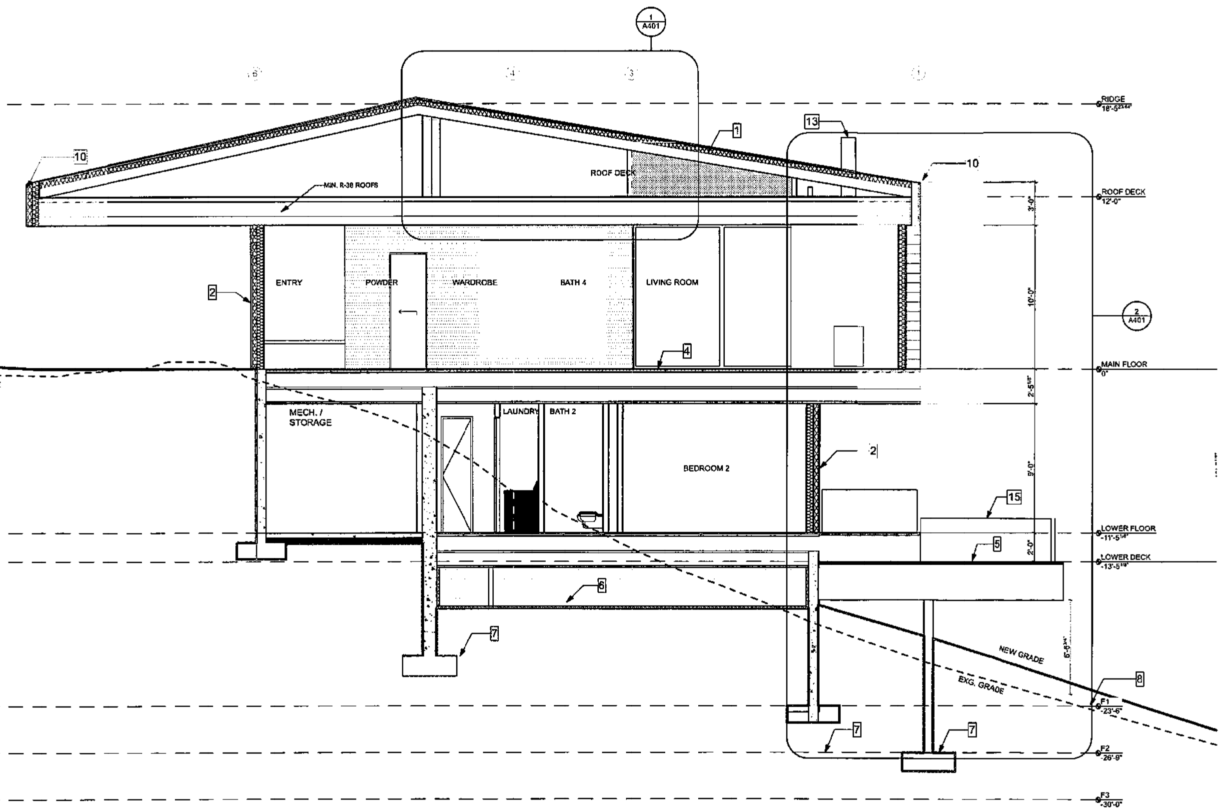
12) FREESTANDING WOOD BURNING FIREPLACE; BY OWNER

13) VISIBLE PENETRATIONS TO MATCH ROOF

14) INSULATE ABOVE CONDITIONED SPACE

15) GLASS GUARDRAIL; MIN. 34"

16) VAULTED CEILING



1 A303 BUILDING SECTION 4
SCALE: 1/4" = 1'-0"

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- ARC SUBMITTAL 07/22/2016
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DRAWING REVISIONS

SHEET TITLE
BUILDING SECTIONS

SHEET NUMBER
A303

Exhibit A

KEYNOTE LEGEND

1) STANDING SEAM ROOF SYSTEM (MIN R38):
STANDING SEAM ROOFING o/ ICE & WATER SHIELD UNDERLAYMENT; 4" RIGID FOAM w/ NAILBASE; PLY. SHEATHING PER STRUCT DWGs., PREFAB TRUSSES w/ BIBS INSULATION

2) EXT. WOOD CLAD 2x WALLS TYP. (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, 2x6 FRAMING w/ FULL CAVITY BIBS INSULATION

3) EXT. WOOD CLAD CONC. WALLS w/ FURRING (MIN R20):
'THERMORY' OR EQ. RAINSCREEN CLADDING ATTACHED PER MANUF. SPEC., 3" EXTERIOR RIGID INSULATION, WEATHER BARRIER, CONCRETE WALL PER STRUCT. DWGs, 2x4 INTERIOR FURRING w/ FULL CAVITY BIBS INSULATION

4) WOOD JOIST FLOOR SYSTEM:
FLOOR SURFACE INSTALLED o/ 1/4" UNDERLAYMENT OR AS REQ. PER MANUF. SPEC.; 1 1/2" GYPCRETE w/ RADIANT HEATING; SHEATHING PER STRUCT. DWGs., JOISTS AND BEAMS PER STRUCT. DWGs., CEILING PER FINISH SCHEDULE; BY OWNER

5) DECK SYSTEM:
'THERMORY' OR EQ. o/ TAPERED WEATHER TREATED SLEEPERS, 80 MIL TPO MEMBRANE o/ SHEATHING SLOPED 1/4" PER FOOT TO DRAIN; SEE FLOORPLANS

6) CONDITIONED CRAWLSPACE:
R10 MIN. RIGID FOAM ON FOUNDATION WALLS, EXTEND TO DECK UNDERSIDE; FLOOR TO BE VAPOR BARRIER o/ R10 MIN. RIGID FOAM o/ MIN. 2" GRAVEL

7) FOOTINGS PER STRUCT. DWGs., TO BEDROCK PER GEOTECHNICAL ANALYSIS; VERIFY CONDITIONS

8) FOOTING DEPTH DATUMS FOR REFERENCE; VERIFY CONDITIONS & BEDROCK DEPTHS ON SITE

9) EXTERIOR RATED TWO-SIDED VENTLESS FIREPLACE

10) MINIMAL DRIP EDGE, COLOR TO MATCH ROOF

11) EXTERIOR RATED CORNER GAS FIREPLACE; BY OWNER

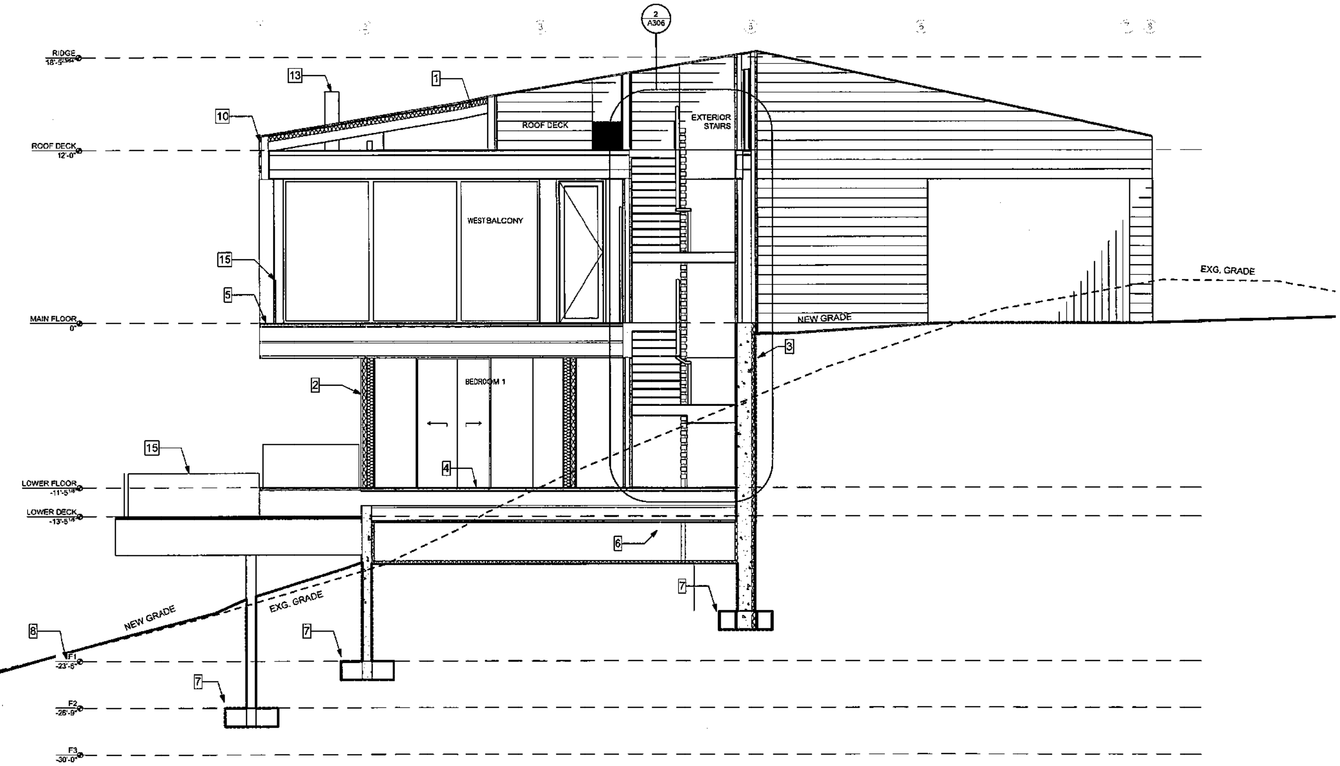
12) FREESTANDING WOOD BURNING FIREPLACE; BY OWNER

13) VISIBLE PENETRATIONS TO MATCH ROOF

14) INSULATE ABOVE CONDITIONED SPACE

15) GLASS GUARDRAIL; MIN. 34"

16) VAULTED CEILING



1 A304 BUILDING SECTION 5
SCALE: 1/4" = 1'-0"

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SHEET TITLE
BUILDING SECTIONS

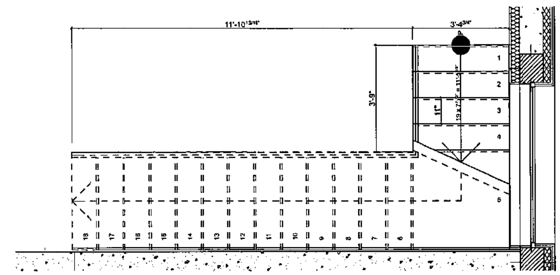
SHEET NUMBER
A304

Exhibit A

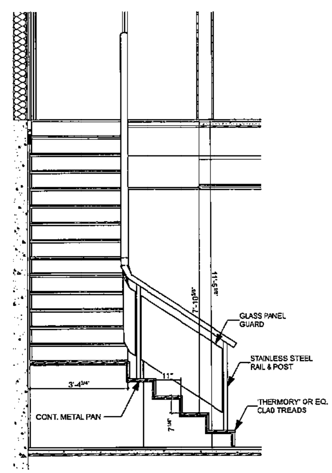
KEYNOTES

1) COORDINATE FINAL DETAILING & DESIGN OF STAIR w/ FABRICATOR

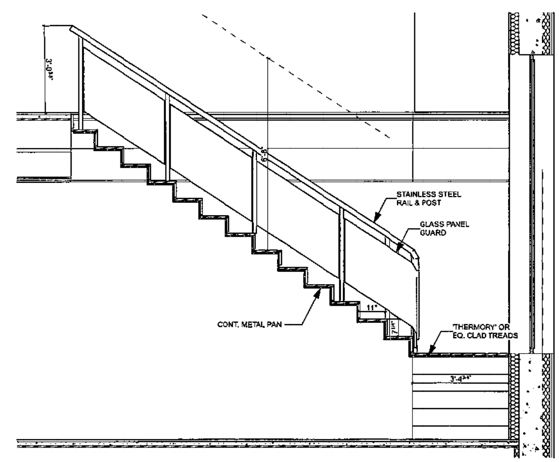
2) MATERIAL & FINISH SELECTIONS BY OWNER; CONTRACTOR TO PROVIDE SAMPLES



1 A305 STAIRS A - PLAN
SCALE: 1/2" = 1'-0"



3 A305 STAIRS A - SECTION 2
SCALE: 1/2" = 1'-0"



2 A305 STAIRS A - SECTION 1
SCALE: 1/2" = 1'-0"

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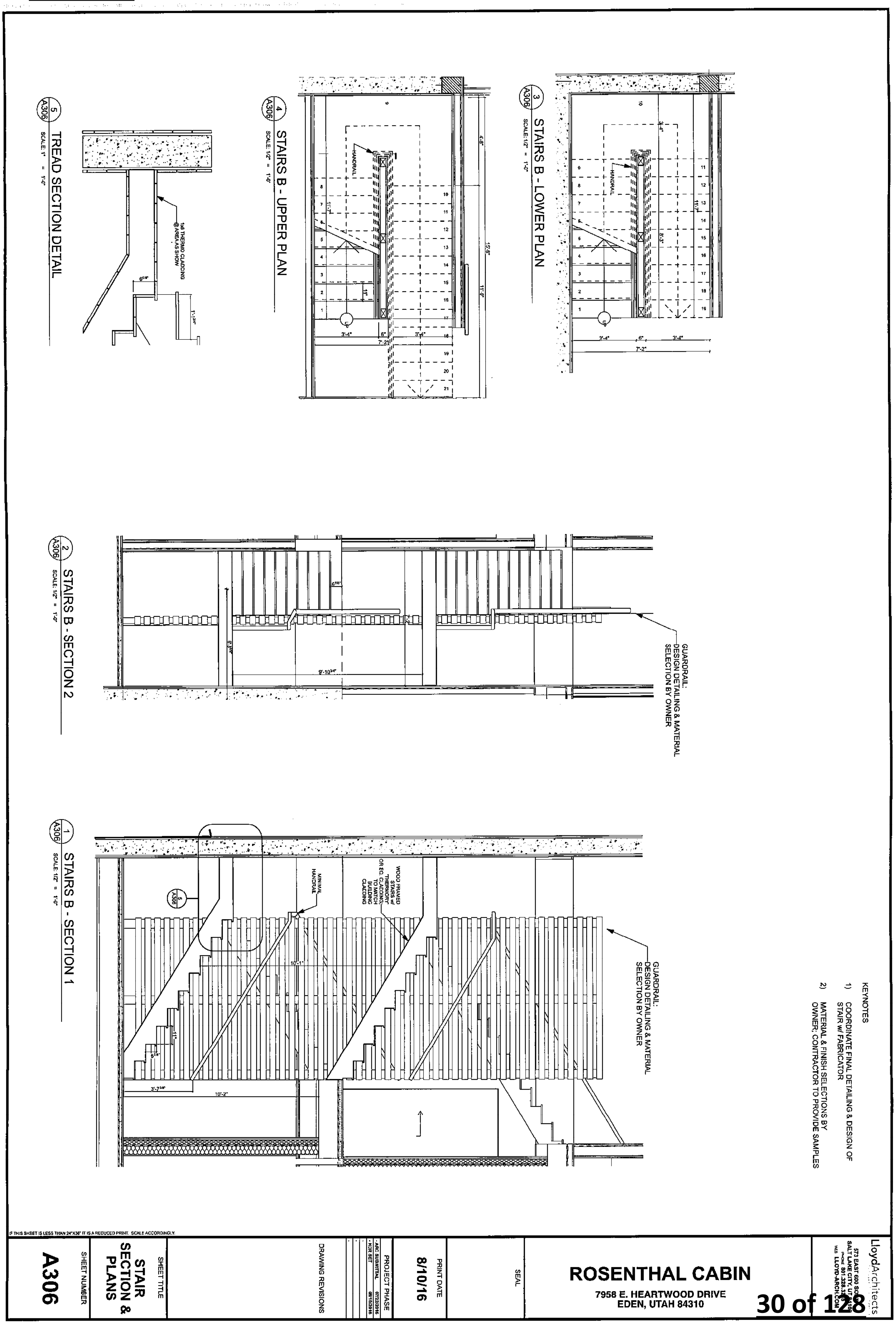
SHEET TITLE
STAIR SECTION & PLANS

SHEET NUMBER
A305

Exhibit A



TREAD SECTION DETAIL
SCALE: 1" = 1'-0"
STAIRS B - UPPER PLAN
SCALE: 1/2" = 1'-0"
STAIRS B - LOWER PLAN
SCALE: 1/2" = 1'-0"
HANDRAIL
STAIRS B - SECTION 2
SCALE: 1/2" = 1'-0"
GUARDRAIL: DESIGN DETAILING & MATERIAL SELECTION BY OWNER
STAIRS B - SECTION 1
SCALE: 1/2" = 1'-0"
MINIMAL HANDRAIL
KEYNOTES
1) COORDINATE FINAL DETAILING & DESIGN OF STAIR w/ FABRICATOR
2) MATERIAL & FINISH SELECTIONS BY OWNER; CONTRACTOR TO PROVIDE SAMPLES
IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.
SHEET NUMBER
A306
SHEET TITLE
STAIR SECTION & PLANS
DRAWING REVISIONS
PROJECT PHASE
PRINT DATE
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GENERAL STRUCTURAL NOTES

GENERAL

1. Changes to these contract drawings may be made only by an authorized representative of the engineer or architect. The architect or engineer shall not be held responsible or liable for any claims arising directly or indirectly from changes made without written authorization by an authorized representative.
2. Omissions or conflicts between the contract drawings and/or specifications shall be brought to the attention of the architect/engineer before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the architect/engineer at no additional cost to the owner.
2.Omissions or conflicts between the contract drawings and/or specifications shall be brought to the attention of the architect/engineer before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the architect/engineer at no additional cost to the owner.
3. The contractor shall be responsible for means, methods, techniques, sequences, and procedures in order to comply with the contract drawings and specifications. The contractor shall provide adequate shoring and bracing as required for the chosen method of erection. Shoring and bracing shall remain in place until final connections for the permanent members are completed. The building shall not be considered stable until all connections are completed. Walls shall not be considered self-supporting and shall be braced until the floor/roof system is completed.
4. The contractor shall coordinate with all trades any items that are to be integrated into the structural system such as openings, penetrations, mechanical and electrical equipment, etc. Sizes and locations of mechanical and other equipment that differs from those shown on the contract drawings shall be reported to the architect/engineer.
5. The contractor shall submit a written request to the architect/engineer before proceeding with any changes, substitutions, or modifications. Any work done by the contractor before receiving written approval will be at the contractor's risk.
6. The contractor shall verify all site conditions and dimensions. If actual conditions differ from those shown in the contract drawings, the contractor shall immediately notify the architect/engineer before proceeding with the fabrication or construction of any affected elements.
7. The structural notes are intended to complement the project specifications. Specific notes and details in the drawings shall govern over the structural notes and typical details.
8. Typical details and sections shall apply where specific details are not shown.
9. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings. The structural drawings shall be used in conjunction with the architectural and other consultants' drawings. Most dimensions and most non-structural elements such as elevations, depressions, slopes, mechanical housekeeping pads, etc. are not shown in the structural drawings. 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.
10. Shop drawings made from reproductions of the drawings will be rejected unless the contractor signs a release agreement prior to the shop drawings being reviewed.
11. Review of shop drawing submittals by the engineer is for general compliance only and is not intended for approval. The shop drawing review shall not relieve the contractor from the responsibility of completing the project according to the contract documents.
12. All work shall be done in accordance with OSHA requirements. Potential conflicts between these documents and OSHA requirements shall be brought to the attention of the structural engineer before proceeding with the work.
13. Site observations by the engineer and or architect shall not be construed as approval of construction, the procedures, nor special inspection.
14. The terms "Engineer" and "Engineer of Record" (EOR) are meant to refer to an authorized representative of M J Structural Engineers.

BASIS FOR DESIGN

1. Governing Building Code — International Building Code 2012
2. Risk Category — II
3. Floor Live Loads
   - 3.1 Uniformly Distributed Loads — 40 psf
4. Roof Live Load* — 20 psf
   - *(Not concurrent with Roof Snow Load)
5. Roof Snow Load
   - 5.1 Ground Snow Load — P/g = 274 psf
   - 5.2 Flat Roof Snow Load — P/f = 211 psf
   - 5.3 Snow Exposure Factor — C/e = 1.0
   - 5.4 Thermal Factor — C/t = 1.1
   - 5.5 Snow Load Importance Factor — I/Snow = 1.0
6. Wind Load
   - 6.1 Basic Wind Speed (3 Second Gust) — 115 mph
   - 6.2 Wind Exposure — C
   - 6.3 Internal Pressure Coefficient — ± 0.18
7. Seismic Design Criteria
   - 7.1 Mapped Spectral Response Accelerations
     - 7.1.1 Short Period Acceleration — S/S = .825 g
     - 7.1.2 1-Second Acceleration — S/1 = .274 g
   - 7.2 Site Class (Soil Profile) — B
   - 7.3 Spectral Response Coefficients
     - 7.3.1 Short Period Acceleration — S/DS = .550 g
     - 7.3.2 1-Second Acceleration — S/D1 = .183 g
   - 7.4 Seismic Importance Factor — I/Seismic = 1.0
   - 7.5 Seismic Design Category — D
   - 7.6 Effective Structural Seismic Weight — W
   - 7.7 Basic Seismic Force Resisting System — Special Reinforced Concrete ShearWalls
     - 7.7.1 Response Modification Coefficient — R = 5.0
     - 7.7.2 System Over-Strength Factor — Ω/0 = 2.5
     - 7.7.3 Deflection Amplification Factor — C/D = 5.0
     - 7.7.4 Design Base Shear — V = C/S*W = 0.1106W
   - 7.8 Analysis Procedure — Equivalent Lateral Force

FOUNDATION

1. Soils Report by: — IGES
   Dated: — August 11, 2015
2. Soil Bearing Pressure: — 5000psf, on Bedrock
3. Frost Protection: — 42 inches minimum
4. Lateral Soil Pressure Fluid Equivalent Density:
   - 4.1. Active — 35 pcf (retaining walls)
   - 4.2. At Rest — 55 pcf (rigid foundation walls)
   - 4.3. Passive — 320 pcf
5. Coefficient of Friction — 0.45
6. The soils engineer shall review all excavations and fill placement prior to placing concrete.

EARTHWORK

1. Clearing: The entire building area, including 3 feet beyond the building perimeter, shall be scraped to the depth necessary (4" minimum) to remove all vegetation, topsoil, loose/disturbed surficial soils, debris, undocumented fills, and any other deleterious materials.
2. Proof Rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete to check for the presence of unsuitable fills, soft spots, or other undesirable materials or conditions. Remove sub-grade materials that are unsuitable and replace with compacted structural fill.
3. Compacted Structural Fill: All fill material shall be a well-graded granular material with a maximum size less than 4" and with not more than 10% passing a #200 sieve. It shall be compacted to 95% of the maximum laboratory density as determined by ASTM D 1557. All fill shall be tested. Compacted structural fill shall be placed in lifts not exceeding 8" in uncompacted thickness.
4. Floor slabs thicknesses shall be as indicated in the drawings and underlain by a granular layer (of thickness indicated in the drawings) (at least 4" thick). The granular fill shall be free-draining fill such as "pea" gravel or three-quarters- to one-inch minus clean gap-graded gravel with not more than 5% passing a #200 sieve and shall be compacted to at least 90% of the maximum laboratory density as determined by ASTM D 1557.
5. Consult the project specifications and soils report for further earthwork requirements. The soils engineer shall review all excavations and fill placement prior to placing concrete.

CONCRETE

1. Materials unless noted otherwise:
   - 1.1. Normal Weight Aggregates — ASTM C 33
   - 1.2. Light Weight Aggregates — ASTM C 330
     - Light Weight Concrete shall not exceed 110 pcf (± 3 pcf)
   - 1.3. Fly Ash, Class F Pozzolan — ASTM C618
   - 1.4. Reinforcing Steel
     - General — ASTM 615 Grade 60 (60 ksi)
     - Frame Members, Shearwall Boundaries — ASTM A706 (60 ksi)
       ASTM A615 is permitted if mill certifications are submitted showing that actual yield strength does not exceed the specified strength by more than 18000 psi and the ratio of tensile to yield strength is greater than 1.25.
   - 1.5. Deformed Bar Anchors (DBA) — ASTM A496
   - 1.6. Headed Stud Anchors (HSA) — ASTM A108
   - 1.7. Anchor Bolts: See steel and/or wood section(s) of general notes.
   - 1.8. Admixtures: Air-entraining admixtures shall comply with ASTM C 260 (when used). Calcium chloride shall not be added to the concrete mix. Unreinforced concrete slabs on grade may have calcium chloride not exceeding one percent.
   - 1.9. Cement complying with ASTM C-150 shall be used for all concrete. See table of concrete properties for cement type.
   - 1.10. No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.
2.

CONCRETE USE	EXPOSURE CLASSIFICATIONS				CEMENT TYPE	(MIN) f'c (psi)	(MAX) w/cm RATIO	(MAX) FLAYASH PERCENT	(MAX) AIR CONTENT PERCENT	(MAX) AGG SIZE	(MAX) SLUMP
Interior Footings	F0	S0	P0	C0	I/II	3000	0.50	30	2	1"	5.00"
Exterior Footings	F2	S0	P0	C1	I/II	3000	0.50	30	6	1"	5.00"
Interior Slabs on Grade	F0	S0	P0	C0	I/II	3500	0.50	30	2	3/4"	5.00"
Interior Walls	F0	S0	P0	C0	I/II	3000	0.50	30	2	3/4"	5.00"
Exterior Walls above Grade	F1	S0	P0	C1	I/II	4000	0.45	30	5	3/4"	5.00"
Exterior Walls below Grade	F2	S0	P0	C1	I/II	4000	0.45	30	6	3/4"	5.00"
Interior Columns	F0	S0	P0	C0	I/II	4000	0.50	30	2	3/4"	5.00"
Exterior Columns	F1	S0	P0	C1	I/II	4000	0.45	30	5	3/4"	5.00"
Interior Piers	F0	S0	P0	C0	I/II	3000	0.50	30	2	3/4"	5.00"
Exterior Piers	F2	S0	P0	C1	I/II	3000	0.45	30	6	3/4"	5.00"
Joists, Beams and Suspended Slabs (Int.)	F0	S0	P0	C0	I/II	4500	0.50	30	2	3/4"	5.00"
Joists, Beams and Suspended Slabs (Ext.)	F1	S0	P0	C1	I/II	4500	0.45	30	5	3/4"	5.00"

3. Reinforce composite slabs over metal deck with 6" x 6" - W2.1/W2.1 welded wire reinforcement minimum, unless noted otherwise. Welded wire reinforcement shall be placed 1" to 1 1/2" below the top of the slab. Welded wire reinforcement may be substituted with "Fibermesh Fibers" manufactured by Propex Concrete Systems Corporation, as approved by ICC ER-4811. The rate of fiber application shall be based on ICC ER-4811. Other substitutions may be permitted if an ICC Evaluation report is submitted to and approved by the Structural Engineer.
4. The contractor shall be responsible for the design, detailing, care, placement and removal of all formwork and shores.
   - 4.1. Supporting forms and shoring shall not be removed until structural members have acquired sufficient strength to safely support their own weight and any construction load to which they may be subjected. In no case, however, shall forms and shoring be removed in less than 24 hours after concrete placement.
   - 4.2. Suspended slabs shall be re-supported after form removal until concrete reaches its 28-day specified compressive strength.
5. Reinforcement shall have the following concrete cover: — Clear Cover:
   - 5.1. Cast-in-place Concrete
     - Cast against and permanently exposed to earth — 3"
     - Formed concrete exposed to earth or weather:
       - #6 thru #18 bars — 2"
       - #5 and smaller bars — 1 1/2"
     - Concrete not exposed to weather or in contact with ground:
       - Slabs, Walls, Joists; #11 Bars and Smaller — 3/4"
       - Beams, Columns: Primary Reinforcement, Ties,Stirrups, Spirals — 1 1/2"
6. Construction Joints and Control Joints:
   - 6.1. All horizontal and vertical construction joints, including between top of footing and foundation walls, shall be intentionally roughened to a full amplitude of approximately 1/4".
   - 6.2. Install construction or control joints in slabs on grade at a spacing not to exceed 30 times the slab thickness in any direction, unless noted otherwise. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. Control joints may be installed by either:
     - Saw cut with depth of 1/4 the thickness of the slab
     - Tooled joints with depth of 1/4 the thickness of the slab
   - 6.3. Construction joints shall not exceed a distance of 125'-0" on center in any direction.
7. Construction
   - 7.1. Use chairs or other support devices recommended by the CRSI to support bar and tie reinforcement bars and WWF prior to placing concrete. WWF shall be continuously supported at 36" on center maximum. Reinforcing steel for slabs on grade shall be adequately supported on precast concrete units. Lifting the reinforcing off the grade during placement of concrete is not permitted.
   - 7.2. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
   - 7.3. All embeds and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
   - 7.4. No pipes, ducts, sleeves, etc. shall be placed in structural concrete unless specifically detailed or approved by the structural engineer. Penetrations through walls when approved shall be built into the wall prior to concrete placement. Penetrations will not be allowed in footings or grade beams unless detailed. Piping shall be routed around these elements and footings stepped to avoid piping.
   - 7.5. Reinforcing bars shall not be welded unless specifically shown on drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for DBAs or HSAs.
   - 7.6. Top of concrete columns shall be flush (±1/4") with bottom of supported cast-in-place members.
8. Detailing
   - 8.1. Lap splice lengths shall be detailed to comply with the "Reinforcing Bar Lap Splice Schedule" contained within the contract drawings.
     - Do not splice stirrups and ties. Do not splice vertical bars in retaining walls unless specifically shown.
     - At shearwall boundary elements and at moment frame beams to columns, lap lengths shall be increased by 25%.
     - Splices may be made with mechanical splices capable of 125% tension capacity of the bar being spliced. Mechanical splices shall be the positive connecting type coupler and shall meet all ACI requirements. Use "Cadweld", "Lenton" Standard Couplers, "Bar-Lock" or equal with internal protector. If mechanical splices are used, splices or couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
   - 8.2. At joints provide reinforcing dowels to match the member reinforcing, unless noted otherwise.
   - 8.3. At all discontinuous control or construction slab on grade joints, provide (2) #4 x 48".
   - 8.4. Provide corner bars at intersecting wall corners using the same bar size and spacing as the horizontal wall reinforcing.
   - 8.5. All vertical reinforcing shall be doweled to footings, or to the structure below with the same size and spacing as the vertical reinforcing for the element above. Dowels extending into footings shall terminate with a 90° standard hook and shall extend to within 4" of the bottom of the footing. Footing dowels (#8 bars and smaller) with hooks need not extend more than 20" into footings.
   - 8.6. In concrete shearwalls, the horizontal wall reinforcing shall terminate at ends of walls and openings into the far end of the jamb column with a 90° standard hook plus a 6 bar diameter extension. Horizontal wall reinforcing shall be continuous through construction and control joints.
   - 8.7. See details for reinforcing around miscellaneous openings (8" to 36" wide). For openings wider than 36", contact the engineer. All recesses that interrupt reinforcing shall be reinforced the same as an opening.

STRUCTURAL STEEL

1 Codes and Standards: Fabrication and installation shall comply with the latest edition of the following:
   - 1.1. American Institute of Steel Construction (AISC), "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings," with "Commentary".
   - 1.2. AISC "Code of Standard Practice" excluding sections 3.4, 4.4 and 4.4.1.
   - 1.3. AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts"
   - 1.4. AISC "Seismic Provisions for Structural Steel Buildings."
   - 1.5. American Welding Society (AWS), Structural Welding Codes D1.1, D1.3, D1.4, and D1.8, except as modified by the "Steel Construction Manual".
2. Material:
   - 2.1. Wide Flange Sections — ASTM A992 (50 ksi)
   - 2.2. Plate
     - Typical — ASTM A36
     - Braced/Moment Frames — ASTN A572 Grade 50
   - 2.3. Notch-toughness requirements apply for Group 3, 4, and 5 shapes with flange thickness greater than 1 1/2" and plate 2" and thicker which are a part of the Seismic Load Resisting System (SLRS). Minimum Charpy V-Notch requirements are 20 ft-lbs at 70°F.
   - 2.4. Pipe — ASTM A53 Grade B Type E/S
   - 2.5. Hollow Structural Shapes
     - Rectangular — ASTM A500 Grade B (46 ksi)
     - Round — ASTM A500 Grade B (42 ksi)
   - 2.6. Base Plates
     - Less than 4 inches thick — ASTM A36
     - Over 4 inches to 6 inches thick — ASTM A572 Grade 42
   - 2.7. Other Structural Shapes (M, C, etc) — ASTM A36
   - 2.8. Bolted Connections — ASTM A325
   - 2.9. Anchor Bolts
     - All Columns unless noted otherwise: ASTM F1554 Grade 36 with ASTM A563 heavy hex nuts with Grade A hardened washers.
     - Braced Frame/Moment Frame Columns unless noted otherwise: ASTM F1554 Grade 55 (equiv to A572 Grade 55) ASTM F1554 Grade 105 (equiv to A193 Grade B7) with ASTM A563 heavy hex nuts with ASTM F436 minimum 5/16" thick washers.
   - 2.10. Weld Filler Metal
     - Shielded Metal Arc Welding — AWS A5.1, low-hydrogen only
       Low-hydrogen restrictions do not apply when welding sheet steels in accordance with AWS D1.3, including attaching these steels to structural members.
     - Gas-Metal & Metal-Cored Arc Welding — AWS A5.18
     - Flux-Cored Arc Welding — AWS A5.20
       - E7XT-4 or E7XT-11 electrodes are not permitted.
     - Intermixing of welds made from self-shielded welding electrodes with gas-shielded electrodes is not allowed in seismic critical welds, unless tested in accordance with AWS D1.8, annex B. The Field Erection Contractor is responsible for verifying intermixing of self-shielded and gas-shielded welding will not occur, or alternatively, the welding procedure is qualified by testing.
     - Use E70 class electrodes only, unless noted otherwise. E60 class electrodes may be used for welding steel floor and roof decks. All electrodes to be low hydrogen.
   - 2.11. Non-Shrink Grout — ASTM C1107 Grade B
     - Non-shrink grout shall be prepackaged, non-metallic and non-gaseous.
     - Furnish certified independent test data to Structural Engineer.
     - Fluid Consistency (flow cone) = 20 to 30 seconds
     - Compressive Strength in 28 days = 7,500 psi
3. Structural Detailing
   - 3.1. Provide full depth web stiffener plates at each side of all beams at all bearing points. Stiffener plates shall be the thickness called out below unless noted otherwise. Stiffeners shall be welded on both sides of the plate-to-flange and plate-to-web interfaces. Do not weld into the web-to-flange fillet region of the member.

FLANGE WIDTH	STIFFENER THICKNESS	WELD SIZE
Less than 8 1/4"	1/4"	3/16"
8 1/4" to 12 1/4"	3/8"	1/4"
12 1/4" to 16 1/2"	1/2"	5/16"
16 1/2" to 20 3/4"	5/8"	3/8"

   - 3.2. Bolting and Fasteners
     - Ordinary steel-to-steel connections, simple span framing, and beam/girder-to-bearing plates are the standard connection used throughout the design drawings, unless noted otherwise:
       - Use A325N bolts or tension-controlled bolts.
       - Tighten these fasteners to a "snug tight" condition.
       - Where a steel-to-steel connection is not shown, provide a standard AISC framed connection of one half the total uniform load capacity of the beam for the span and steel specified.
     - Pretensioned connections are shown on the structural design drawings. They join steel-to-steel connections, unless noted otherwise:
       - Use A325N or A325X bolts or tension-controlled bolts.
       - Pretension these fasteners as required by AISC "Specification for Structural Joints Using ASTM A325 or a A490 bolts."
     - Slip Critical connections (SC) are shown on the structural design drawings. They join steel-to-steel connections in Seismic Load-Resisting Systems (SLRS).
     - Fasteners and washers shall not be reused. Scrap dirty, rusted, or water-contaminated bolt assemblies.
   - 3.3. Welding
     - All intersecting steel shapes which are not bolted shall be connected by a fillet weld all around, unless noted otherwise. Where fillet weld sizes are not shown, they shall be 1/16" less than the thinnest of the connected parts for thicknesses 1/4" and larger. Fillet welds on plates less than 1/4" shall be of the same size as the thinnest of the connected part.
     - Field weld symbols indicate welds that may be performed in the field. The general contractor shall coordinate shop and field welds between the fabricator and erector.
   - 3.4. Reduced Beam Sections
     - Fabrication of the reduced flange sections of beams used in SLRS is restricted to mechanically guided thermal cutting processes. Freehand cutting is not permitted.
     - Flange cuts shall meet the requirements of AISC 358.
     - Repair of gouges, notches, mill imperfections, shall conform to the requirements of the AISC and AWS provisions.
   - 3.5. Weld Access Holes and Temporary Attachments
     - Fabricate beam copes and weld access holes using the geometry described in AISC 360 Section J1.6.
     - Runoff tabs are to be removed unless noted otherwise.
   - 3.6. Backup Bars: Remove backup bars from all beam bottom flange connections in demand critical welds, unless noted otherwise. Backgouge the root and weld to sound metal. Reweld the gouged area and add a 5/16" reinforcing fillet weld.
   - 3.7. Protected Zones: No connections, other than those on the design drawings, shall be made within the protected zone of the SLRS as identified in AISC341.
     - Locate headed studs, welds, miscellaneous metal, etc outside of the protected zone.
     - Paint the protected zones with bright paint before and after fire coating operations to identify them.
4. Welding of Reinforcing Steel or Bolts
   - 4.1. Reinforcing Bars: Do not weld rebar except as specifically detailed in the drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for deformed bar anchors, structural bolts, or headed stud anchors.
   - 4.2. Do not weld anchor bolts, including "tack" welds.
   - 4.3. Headed Stud Anchor welding and Deformed Bar Anchor welding shall conform to the manufacturer's specifications.

POST-INSTALLED ANCHORS

1. Follow all ICC Evaluation Report and manufacturers' requirements and recommendations for post-installed anchor installation. Where conflicts may exist, the most stringent requirement applies.
2. All holes in hollow, brick, or stone masonry shall be performed in the "rotary-only" mode with the hammer function off.
3. Follow manufacturer and ICC evaluation report requirements for installation temperature of adhesive anchors. Adhesive anchors shall not be installed or cured outside of approved temperature ranges.
   - 3.1. Adhesive anchors in concrete shall be
     - HIT RE-500 SD by Hilti (ESR-2322) - normal weight concrete only
     - SET-XP by Simpson (ESR-2508)
     - PE1000+ by Powers Fasteners (ESR-2583) - 1/2" to 7/8" diameter only
   - 3.2. Adhesive anchors in grouted masonry shall be
     - HIT HY-150 MAX by Hilti (ESR-1967)
     - SET by Simpson (ESR-1772)
   - 3.3. Adhesive anchors in brick or stone masonry shall be
     - HIT HY-20 by Hilti (ESR-4815)
     - SET by Simpson (ESR-1772)
     - CIA-GEL 7000 Epoxy by USP (ESR-1702)
4. Mechanical (Expansion) anchors
   - 4.1. Mechanical anchors in concrete shall be
     - Kwik Bolt TZ by Hilti (ESR-1917)
     - Strong-Bolt by Simpson (ESR 1771)
     - Trubolt+ by ITW Redhead (ESR-2427)
   - 4.2. Mechanical anchors in grouted masonry shall be
     - Kwik Bolt 3 by Hilti (ESR-1385)
5. The Contractor may submit, for review and approval, the manufacturer's ICC evaluation report of alternate anchor systems. The alternate method shall provide minimum capacities equal to or greater than those in the above noted anchors. The alternate method shall be approved by the engineer of record prior to the substitution.
6. Special Inspection and Testing
   - 6.1. Special inspection shall be performed according to the requirements of the ICC evaluation report, per section 1704.13 of the IBC.
   - 6.2. Testing shall be done according to the more stringent requirements of the ICC evaluation report and the values listed below.
     - Adhesive Anchors in Concrete or Solid Grouted Masonry: 50% of anchors in non-redundant elements (e.g. column, brace connections, boundary steel, hold-downs) and 10% of anchors in redundant elements shall be tension tested at the following load(s):

STRUCTURAL ENGINEERS
5673 S Redwood Rd.
Salt Lake City, UT 84123
Office: 801-905-1097
mjstructualengineers.com

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SALT LAKE CITY, UT 84102
801/328 3245
6211 ROOSEVELT WAY NE
SEATTLE, WA 98115
LLOYD-ARCH.COM

ROSENTHAL CABIN

ISSUE DATA
ISSUE DATE: 07/22/2016
ISSUE TYPE: 90% REVIEW SET
DRAWN BY: SDB
DESIGNED BY: JB
CHECKED BY:
MJSE PROJECT #: 16062

SEAL

DATE
07/22/2016

REVISIONS
--/--/--

SHEET TITLE
GENERAL STRUCTURAL NOTES

SHEET NO.
S101

Exhibit A

Exhibit A

GENERAL STRUCTURAL NOTES

WOOD

1. Materials
   - 1.1. Dimension Lumber and Timbers (Sawn Lumber)
     - All dimensioned lumber shall comply with USDOC PS20.
     - Visually graded dimension lumber shall be Douglas Fir-Larch #2 or better.
     - Visually graded timbers (5" x 5" and larger) shall be Douglas Fir-Larch #1 or better.
     - Machine stress rated (MSR) lumber shall be 1600f-1.6E or better.
     - End jointed lumber may be used interchangeably with solid sawn members of the same species and grade with written approval from the Engineer.
   - 1.2. Wood Structural Panel Sheathing
     - Wood sheathing shall be APA rated sheathing Exposure 1 unless noted otherwise and shall conform to the requirements for its type in USDOC PS1 or USDOC PS2. The panes must be identified by the trademarks of the approving testing and inspection agency.
     - Wood sheathing minimum thicknesses, span ratings, and nailing requirements shall be as indicated in the Roof and Floor Sheathing Schedule, unless noted otherw
       - Wood sheathing shall have the following minimum thicknesses and span ratings, unless noted otherwise:

Roof	19/32"(40/20)
Floor	23/32"(48/24)
Wall	15/32"(32/16), 7/16"(24/16)

     - Nails or other approved fasteners used to connect sheathing to the structure shall be driven such that their head or crown is flush with the surface of the sheathing. Do not overdrive fasteners.
   - 1.3. Prefabricated Wood I-joists
     - I-joists shall
     - All prefabricated wood joists shall be as called out on plan and manufactured by the following:
       BCI: Manufactured by Boise Cascade.
       TJI: Manufactured by i-Level (Weyerhaeuser).
       LPI: Manufactured by LP Building Products (Louisiana-Pacific Corporation).
     - I-joists of equal design properties as those called for on plan, including depth, stiffness and flange width may be substituted with written approval from the Engineer.
     - Handle, store and install all wood I-joists per the manufacturer's guidelines.
     - DO NOT cut or notch flanges.
     - Holes cut in the webs of the I-joists shall be per the manufacturer's guidelines.
   - 1.4. Structural Glued Laminated Timber (GLB)
     - Structural glued laminated timber shall be manufactured and identified as required in ANSI A190.1 and ASTM D3737.
     - Glulam beams shall be the following species and combination number:
       - Simple-Span Glulam Beams: Douglas-fir 24F-V4 1.8E
       - Continuous-Span and Cantilevered Glulam Beams: Douglas-fir 24F-V8 1.8E
     - Hybrid combination glulams with equivalent design properties may also be used with written approval from the Engineer.
     - Appearance of members shall be Framing or Industrial appearance.
     - Camber: unless otherwise noted on the drawings, all stock glulam beams shall be cambered to industry standard 3500'-0" radius. Stock beams with zero camber are acceptable where available.
   - 1.5. Laminated Veneer Lumber (LVL), Laminated Strand Lumber (LSL), and Rim Board
     - LVL, LSL and Rim Board shall comply with ASTM D5456.
     - All LVL shall be a minimum of 13/4" thick have the following minimum properties, U.N.O.:
       Fb = 2600 psi; E = 1.9x10^6 psi; Fv = 285 psi; Ft = 1555 psi; Fc∥ = 2510 psi; Fc_|_ = 750 psi
     - All LSL shall be a minimum of 1¼" thick and shall have the following minimum properties, U.N.O.:
       Fb = 1700 psi; E = 1.3x10^6 psi; Fv = 400 psi; Ft = 1075 psi; Fc∥ = 1400 psi; Fc_|_ = 680 psi
     - All Rim Boards shall be a minimum of 1¼" thick and shall have the following minimum properties, U.N.O.:
       Fb = 1130 psi; E = 0.8x10^6 psi; Fv = 355 psi; Fc_|_ = 1415 psi
     - Handle, store and install all LVL, LSL, and Rim Boards per the manufacturer's guidelines.
     - Connect multiple members together per the manufacturer's guidelines and as shown in the details.
       - Where discrepancies exist between the manufacturer's guidelines and the details shown in these plans, use the more stringent of the requirements.
   - 1.6. Nails
     - All Nails shall conform with the tolerances specified in ASTM F1667, "Standard Specification of Driven Fasteners: Nails, Spikes and Staples."
     - All nails shall be common nails with the following properties:

Nail Size	Shank Diameter	Min. Penetration into Support Member
6d	0.113"	1.25"
8d	0.131"	1.50"
10d	0.148"	1.63"
12d	0.148"	1.63"
16d	0.162"	1.75"

     - Nails with properties less than those listed above shall not be used without prior written approval from the Engineer.
     - Nails shall have round (full) heads. Nails with "T", brad, finish or casing heads are not permitted.
     - Deformed shank nails shall have either a helical (screw) or an annular (ring) shank.
   - 1.7. Bolts
     - Anchor Bolts: ASTM F1554 Grade 36 (or A307 Grade A/C or A36)
       - All anchor bolts connecting the sill plate to the concrete foundation shall have a PL1/4"x3"x3" washer between the sill plate and the nut and have a minimum 7" embedment into concrete.
     - Connection Bolts: ASTM A307 Grade A/C/ or A36
       - All bolted connections shall have a standard cut or larger washer on both sides of the connection (between the head and the wood member and between the nut and the wood member).
     - Bolt holes shall be a minimum of 1/32" to a maximum of 1/16" larger than the bolt diameter. Holes shall be accurately aligned in main members and side plates or side members. Bolts shall not be forcibly driven.
     - All bolted connections shall have a standard cut or larger washer on both sides of the connection
2. Connection Hardware
   - 2.1. All connection hardware shown shall be supplied by Simpson Strong-Tie Incorporated or USP structural connectors.
   - 2.2. Install all hardware per the manufacturer's guidelines.
   - 2.3. Connection hardware of equal design properties by other manufacturers may be substituted with written approval from the Engineer.
3. All fasteners in contact with pressure-treated or fire-treated wood shall be hot-dipped zinc-coated galvanized or stainless steel.
4. All wood in contact with concrete, masonry or soil shall be pressure treated or redwood.
5. General framing and carpentry shall be connected as per "THE MINIMUM NAILING SCHEDULE" unless noted otherwise.
6. Provide rim board or solid blocking at all joist, rafter, and truss bearing points U.N.O. Where blocking is used, it shall be at least 2" (nominal) thick full depth of joist and shaped to match slope of blocked member.
   - 6.1. Rim board or blocking between joists shall be nailed to the wood plate at the top of the wall with one Simpson "A35" framing anchor per each piece of blocking. Fill all holes in the framing anchors with 8d x 11/2" nails (12 nails per A35), unless shown otherwise on the drawings.
7. Provide approved bridging at 8'-0" on center maximum between joist or rafter end supports where both the top and bottom chord of the member are not braced with sheathing or wall board.
8. Built-up beams of 2x members shall be connected together as shown in the details.
   - 8.1. Where a built-up beam connection is not shown in the details, built-up beams shall be connected as follows:
     - Members 12" or less in depth shall be spiked together with not less than 16d spikes at 12" on center, staggered.
     - Members more than 12" shall be connected together with 1/2" diameter bolts at 24" on center, staggered. Bolts shall be placed one-quarter of the depth of the member from the top and bottom of the member.
9. All bearing and shear walls shall have a minimum of 2 top plates. Splices in top plates shall be made as shown in the top-plate splice schedule.
   - 9.1. Where a top-plate splice is not shown in the details, top plates splices shall be staggered a minimum of 4'-0" from the nearest splice in adjoining top plate and spiked together with a minimum of (20) 16d nails between splices unless noted otherwise.
10. Provide a double joist under parallel partitions.
11. Do not cut or notch any wood stud greater than 25% of its width. Do not bore a hole in any wood stud greater in diameter than 40% of its width. Bored holes shall be centered in the stud whenever possible. In no case shall the edge of any bored hole be nearer than 1" to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.
    - 11.1. Bored holes up to 60% of the stud width are allowed provided that an additional stud is placed adjacent to the stud to be bored, that the bored hole is centered in the stud, and no more than two successive sets of studs are so bored.

PREFABRICATED WOOD TRUSSES

1. Prefabricated metal plate wood trusses shall be designed, signed, and sealed by a Professional Engineer registered in the same state as the project location. They shall be designed to support the concentrated and uniform loads shown on the plans, unbalanced and sliding snow loads, and the following uniform loads:

Dead Load (Top Chord):	10 psf
Dead Load (Bottom Chord):	10 psf
Live or Snow Load (Top Chord):	211 psf
Live Load (Bottom Chord):	10 psf – Does not occur concurrently with top chord live load.
Max Total Load:	231 psf

   Loads listed above do not include drifting, unbalanced, or sliding snow. Designs shall include an additional 9 psf Dead Load at all overbuild framing locations. A dead load no greater than 8 psf shall be assumed for the design of trusses and attachments for wind uplift.

   Coordinate the truss design with mechanical equipment, fire sprinkling systems and hanging walls supported by the trusses. Provide additional trusses as necessary.

2. The deflection of all prefabricated wood trusses shall be limited to the following values:
   - 2.1. Live Load Span/360
   - 2.2. Total Load Span/240
3. No stress increase is allowed for snow loads.
4. All truss-to-truss connections shall be designed and provided by the truss manufacturer.
5. Design, handling, erection, stability, and permanent bracing of metal plate connected wood trusses shall be in accordance with ANSI/TPI-1, National Design Standard for Metal Plated Connected Wood Truss Construction and the Truss Plate Institute publications entitled "Commentary and Recommendations for Bracing Wood Trusses" and "Commentary and Recommendations for Handling and Erecting Wood Trusses."
6. Steel Connector Plates: All steel gusset plates shall be galvanized and shall have a current ICBO approval. Values established by the approved ICBO report must be indicated o
   - 6.1. The minimum size for any connector shall be 8 in².
   - 6.2. All steel gusset plates shall be located on the joint as the stresses require and shall provide a minimum bite of 2.5" on all tension members.
   - 6.3. Plates shall be pressed or rolled into member to obtain full penetration without crushing the outer surfaces of wood.
   - 6.4. All steel plate dimensions shall be increased by 10% above that required by analysis. Duration of load stress increases for steel connector plate design are not allowed.
   - 6.5. Submit a copy of the ICBO report for the connector plate used.
7. No wane, knots, skips, or other defects shall occur in the plated contact area or scarfed area of web members. Plates shall be centered with one required each side of wood truss.
8. The truss shall be handled and stored in a manner to prevent moisture from being absorbed by the wood.
9. Shop Drawings: Complete calculations and shop drawings indicating all member forces, stresses, duration factors, lumber grades, dimensions, truss-to-truss connections, metal plate sizes and locations, and applied loads shall be submitted and reviewed by the engineer before fabrication. Each connector shall be dimensioned on the shop drawings as to its exact size and location at the joi

LEGEND OF MARKS AND ABBREVIATIONS

ALT	Alternate	JST	Joist
ARCH	Architect	JSTs	Joists
BLDG	Building	K	Kip(S) = 1000 Pounds
BLK	Blocking	klf	Kips Per Lineal Foot
BN	Boundary Nail	ksf	Kips Per Square Foot
BOTT	Bottom		
BRG	Bearing	LB	Pounds (#)
BTWN	Between	LSL	Laminated Strand Lumber
BYND	Beyond	LVL	Laminated Veneer Lumber
CANT	Cantilever	MAS	Masonry
CGS	Center of Gravity of Strand	(MAX)	Maximum
C J	Control Joint	MECH	Mechanical
CJP	Complete Joint Penetration	MEZZ	Mezzanine
CL	Center Line	MFR	Manufacturer
CLR	Clear	(MIN)	Minimum
CMU	Concrete Masonry Unit	MISC	Miscellaneous
COL	Column	MTL	Metal
CONC	Concrete		
CONT	Continuous	(N)	New
CS	Coil Strap		
		oc	On Center
DB	Deck Bearing	OPNG	Opening
DBA	Deformed Bar Anchor	OPP	Opposite
DBL	Double	OSB	Orientated Strand Board
DIM	Dimension		
DWG	Drawing	PCF	Pounds per Cubic Foot
		PERP	Perpendicular
(E)	Existing	PL	Plate
EA	Each	plf	Pounds per Lineal Foot
ELEC	Electrical	PRE-FAB	Prefabricated
EMBED	Embedment	psf	Pounds per Square Foot
EN	Edge Nail	psi	Pounds per Square Inch
EQ	Equal	PT	Post Tension
EQUIP	Equipment	PT/DF	Pressure Treated Douglas Fir
EXT	Exterior		
		RD	Roof Drain
FD	Floor Drain	REINF	Reinforce/Reinforcement/Reinforcing
FND	Foundation	REQD	Required/Requirements/Requiring
FLR	Floor	RTU	Roof Top Unit
FTG	Footing		
FRT	Fire Retardant Treatment	SCHED	Schedule
		SCW	Seismic Critical Weld
ga	Gage	SIM	Similar
GALV	Galvanized	STD	Standard
GLB	Glued Laminated Beam	STIFF	Stiffener
GSN	General Structural Notes	STL	Steel
		STRUCT	Structural
HD	Hold-down		
HDR	Header	T&G	Tongue and Groove
HORIZ	Horizontal	TEMP	Temperature
HSA	Headed Stud Anchor	TYP	Typical
HSS	Hollow Structural Section		
		U.N.O.	Unless Noted Otherwise
ICBO	International Conference of Building Officials		
IBC	International Building Code	VERT	Vertical
INT	Interior		
		w/	with
		WWR	Welded Wire Reinforcement
		WP	Working Point

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ISSUE TYPE: 90% REVIEW SET
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DESIGNED BY: JB
CHECKED BY:
MJSE PROJECT #: 16062

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07/22/2016

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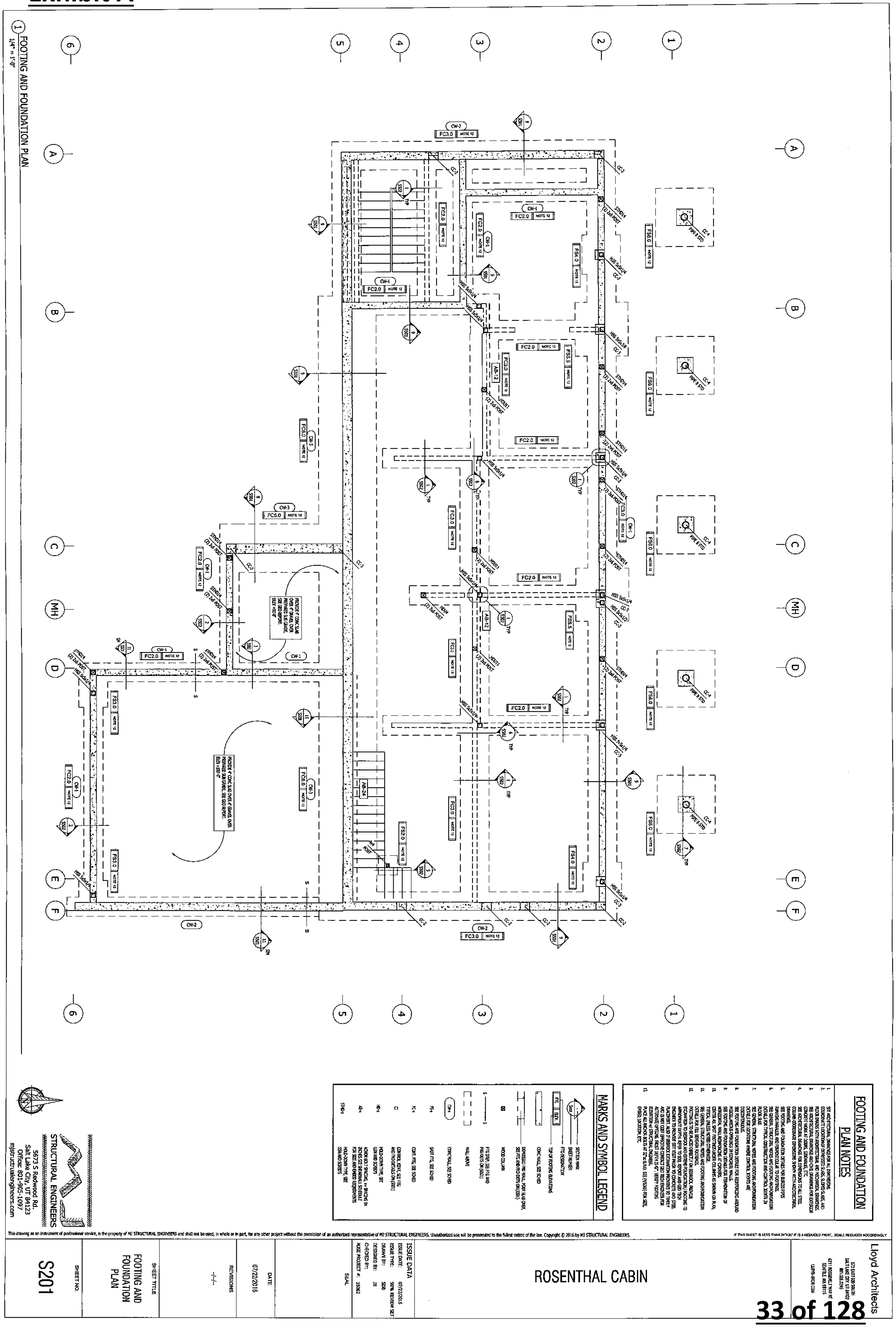
SHEET TITLE
GENERAL STRUCTURAL NOTES

SHEET NO.
S102

Exhibit A



FOOTING AND FOUNDATION PLAN
1/4" = 1'-0"
FOOTING AND FOUNDATION PLAN NOTES
MARKS AND SYMBOL LEGEND
MJ STRUCTURAL ENGINEERS
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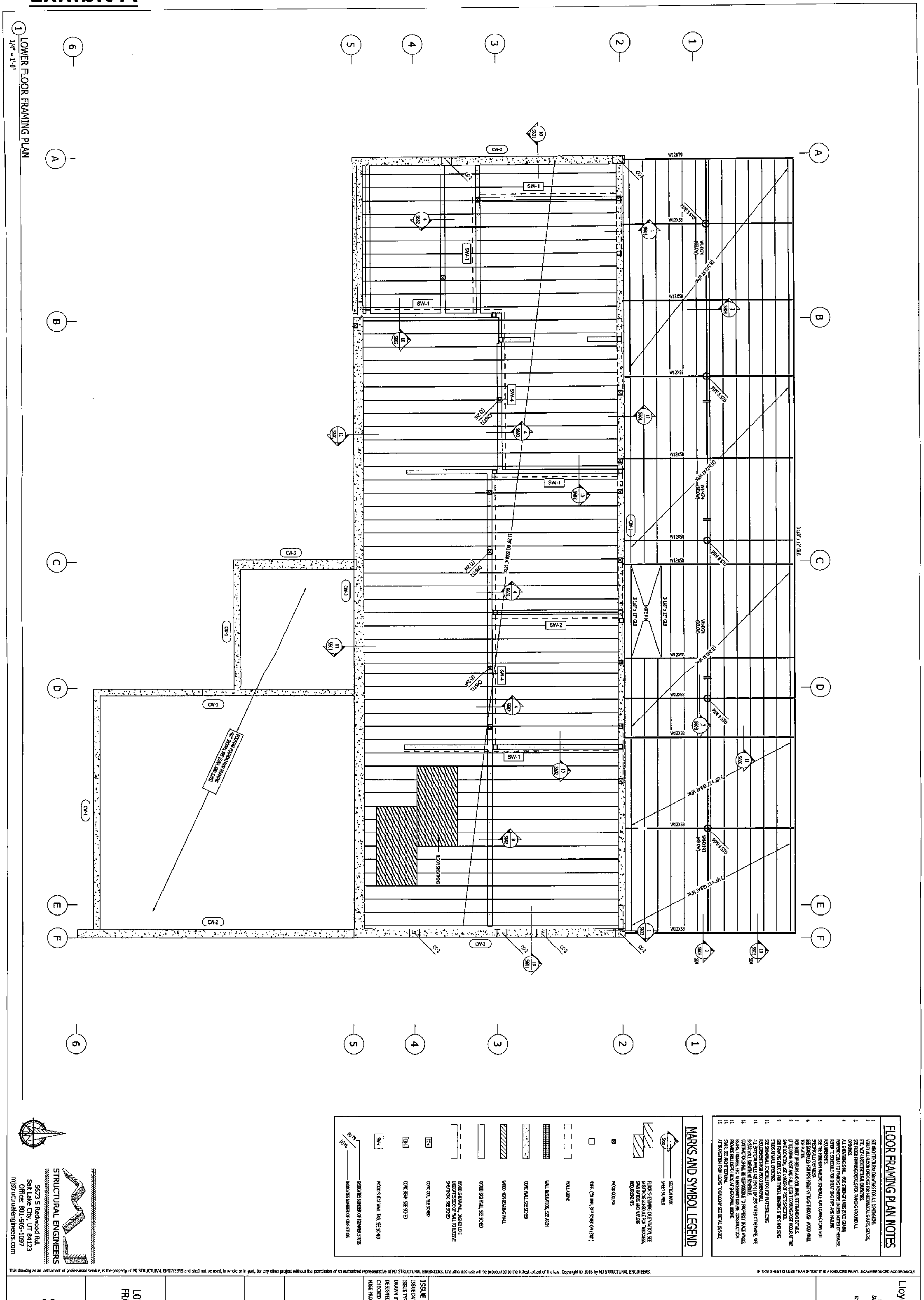
ROSENTHAL CABIN
ISSUE DATA
07/22/2016
FOOTING AND FOUNDATION PLAN
S201

Exhibit A



LOWER FLOOR FRAMING PLAN
1/4" = 1'-0"
FLOOR FRAMING PLAN NOTES
MARKS AND SYMBOL LEGEND
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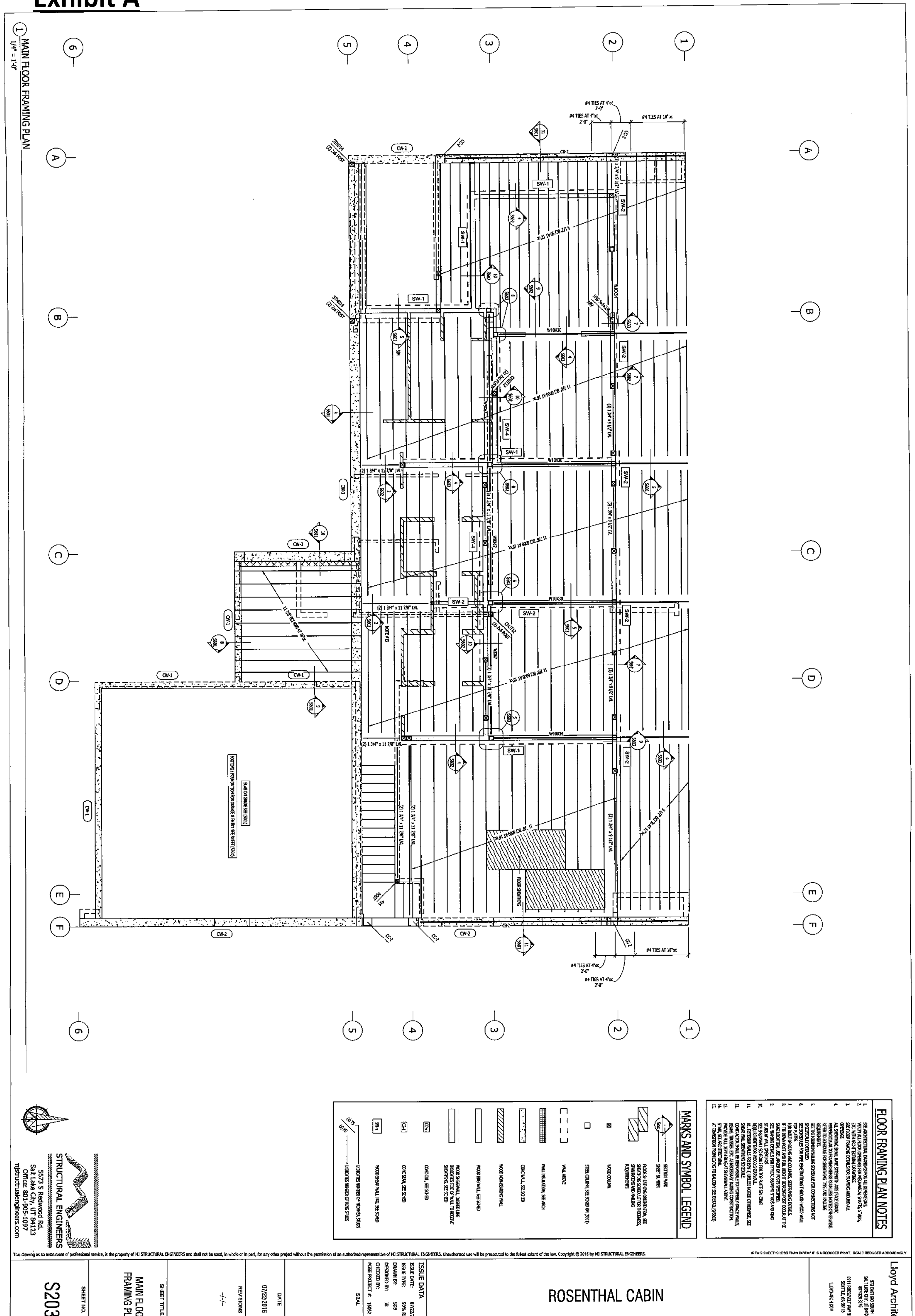
07/22/2016
LOWER FLOOR FRAMING PLAN
S202



MAIN FLOOR FRAMING PLAN
1/4" = 1'-0"
FLOOR FRAMING PLAN NOTES
MARKS AND SYMBOL LEGEND
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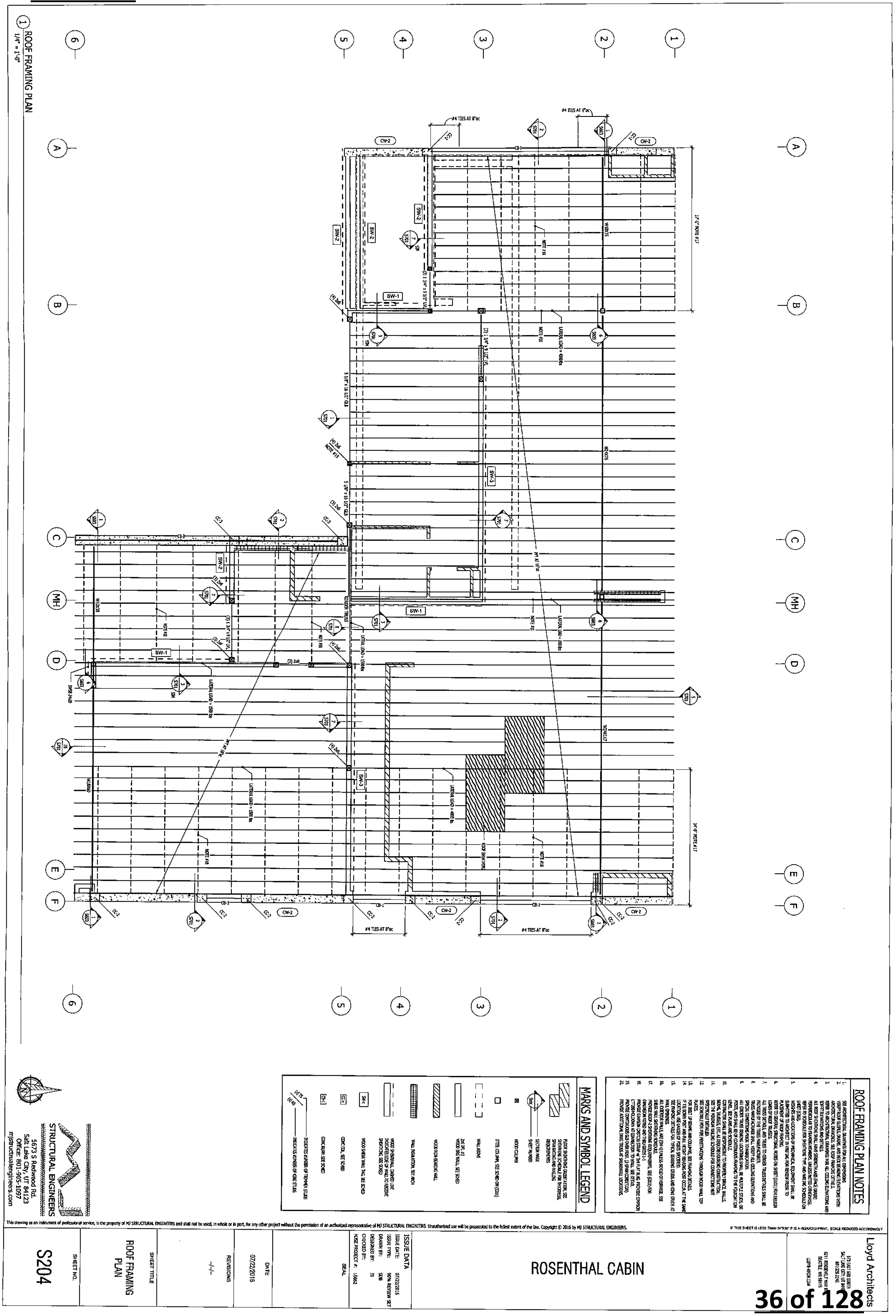
07/22/2016
MAIN FLOOR FRAMING PLAN
S203

Exhibit A



ROOF FRAMING PLAN
1/4" = 1'-0"
ROOF FRAMING PLAN NOTES
MARKS AND SYMBOL LEGEND
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DATE 07/22/2016
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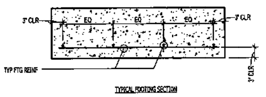
SHEET TITLE ROOF FRAMING PLAN
SHEET NO. S204

CONCRETE FOOTING SCHEDULE												
MARK	WIDTH	LENGTH	DEPTH	REINFORCING CROSSWISE				REINFORCING LENGTHWISE				COMMENTS
				NO	SIZE	LENGTH	SPACING	NO	SIZE	LENGTH	SPACING	
FC2.0	2'-0"	CONT	12"	—	—	—	—	3	#4	CONT	EQ	
FC3.0	3'-0"	CONT	12"	—	#5	2'-6"	14"	3	#5	CONT	EQ	
FC4.0	4'-0"	CONT	12"	—	#5	3'-6"	14"	4	#5	CONT	EQ	
FC5.0	5'-0"	CONT	14"	—	#6	4'-6"	14"	5	#6	CONT	EQ	
FC6.0	6'-0"	CONT	14"	—	#6	5'-6"	14"	6	#6	CONT	EQ	
FS3.0	3'-0"	3'-0"	12"	3	#5	2'-6"	EQ	3	#5	2'-6"	EQ	
FS3.5	3'-6"	3'-6"	12"	3	#5	3'-0"	EQ	3	#5	3'-0"	EQ	
FS4.0	4'-0"	4'-0"	12"	4	#5	3'-6"	EQ	4	#5	3'-6"	EQ	
FS4.5	4'-6"	4'-6"	13"	5	#5	4'-0"	EQ	5	#5	4'-0"	EQ	
FS5.0	5'-0"	5'-0"	14"	6	#5	4'-6"	EQ	6	#5	4'-6"	EQ	
FS5.5	5'-6"	5'-6"	15"	5	#6	5'-0"	EQ	5	#6	5'-0"	EQ	
FS6.0	6'-0"	6'-0"	15"	6	#6	5'-6"	EQ	6	#6	5'-6"	EQ	

C3000-S5000



CONCRETE FOOTING NOTES:

1. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER, UNLESS NOTED OTHERWISE.
2. TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" MINIMUM CONCRETE COVER.
3. IF FOOTINGS ARE EARTH FORMED, FOOTING WIDTH AND LENGTH SHALL BE 6" WIDER AND LONGER THAN SCHEDULED.
4. SEE GENERAL STRUCTURAL NOTES FOR ALL OTHER REQUIREMENTS.
5. NOT ALL FOOTINGS ARE USED, SEE FOUNDATION PLAN FOR FOOTING MARKS.
6. RUN CONTINUOUS BARS IN 'FC' FOOTING THROUGH INTERSECTED 'FS' FOOTINGS.

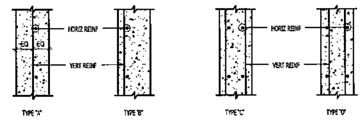
1 / S301 CONCRETE FOOTING SCHEDULE
NO SCALE:

CONCRETE WALL						
MARK	THICKNESS	REINFORCING			WALL TYPE	COMMENTS
		VERTICAL	HORIZONTAL	TOP AND BOTTOM		
CW-1	8"	(1) #5 AT15"oc	(1) #5 AT16"oc	(1) #5	A	—
CW-2	10"	(2) #5 AT16"oc	(2) #5 AT16"oc	(2) #5	C	—
CW-3	12"	(2) #5 AT12"oc	(2) #5 AT11"oc	(2) #5	C	—

CONCRETE WALL NOTES:

1. SEE GENERAL STRUCTURAL NOTES FOR COVER AND OTHER REQUIREMENTS NOT NOTED IN SCHEDULE.
2. PLACE STEEL IN THE CENTER OF THE WALL (EXCEPT TYPE 'B' AND RETAINING WALLS). WALLS THICKER THAN 10" SHALL HAVE TWO CURTAINS OF REINFORCEMENT (PLACED NEAR EA FACE OF THE WALL), UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

WALL REINFORCEMENT PLACEMENT TYPES:

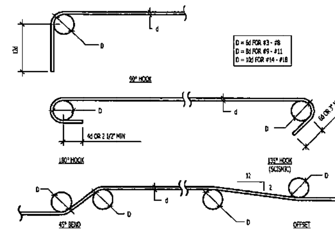


2 / S301 CONCRETE WALL SCHEDULE
NO SCALE:

CONCRETE REINFORCING BAR LAP SPLICE SCHEDULE																
BAR SIZE	f'c = 3000 PSI				f'c = 4000 PSI				f'c = 4500 PSI				f'c = 5000 PSI			
	REGULAR		TOP		REGULAR		TOP		REGULAR		TOP		REGULAR		TOP	
	CLASS		CLASS		CLASS		CLASS		CLASS		CLASS		CLASS		CLASS	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
#3	17"	22"	22"	28"	15"	19"	19"	25"	14"	18"	18"	23"	13"	17"	17"	22"
#4	22"	29"	29"	38"	19"	25"	25"	33"	18"	24"	24"	31"	17"	23"	23"	29"
#5	28"	36"	36"	47"	24"	31"	31"	41"	23"	30"	30"	38"	22"	28"	28"	36"
#6	33"	43"	43"	56"	29"	37"	37"	49"	27"	35"	35"	46"	26"	34"	34"	49"
#7	48"	63"	63"	81"	42"	54"	54"	71"	40"	51"	51"	67"	38"	49"	49"	63"
#8	55"	72"	72"	93"	48"	62"	62"	81"	45"	59"	59"	76"	43"	56"	56"	72"
#9	62"	81"	81"	105"	54"	70"	70"	91"	51"	66"	66"	86"	48"	63"	63"	81"
#10	70"	91"	91"	118"	61"	79"	79"	102"	57"	74"	74"	96"	54"	71"	71"	92"
#11	78"	101"	101"	131"	67"	87"	87"	114"	64"	82"	82"	107"	60"	78"	78"	102"

CONCRETE REINFORCING BAR LAP SPLICE NOTES:

1. THIS SCHEDULE SHALL BE USED FOR ALL SPLICES, UNLESS NOTED OTHERWISE.
2. HORIZONTAL BARS ARE CLASSIFIED AS TOP BARS WHERE 12", OR MORE, OF FRESH CONCRETE IS CAST BELOW THE REINFORCING BARS.
3. CLASS 'B' SPLICES SHALL BE USED FOR ALL SPLICES UNLESS NOTED OTHERWISE.
4. TIES AND STIRRUPS SHALL NOT BE SPLICED.
5. FOR ALL LIGHTWEIGHT CONCRETE, LAP LENGTHS SHALL BE MULTIPLIED BY 1.3.
6. FOR ALL EPOXY COATED BARS, LAP LENGTHS SHALL BE MULTIPLIED BY 1.3 FOR TOP BARS AND 1.5 FOR REGULAR BARS.
7. LAP LENGTHS SHALL BE MULTIPLIED BY 1.25 AT SHEARWALL BOUNDARY ELEMENTS.
8. DEVELOPMENT LENGTH 'Ld' IS EQUAL TO CLASS 'A' SPLICE.

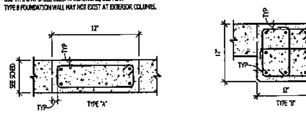


3 / S301 CONCRETE REINFORCING BAR LAP SPLICE SCHEDULE / BAR BENDING DIAGRAMS
NO SCALE:

CONCRETE COLUMN SCHEDULE					
MARK	PIER SIZE	REINFORCING		TIES	COMMENTS
		VERTICAL	TIES		
CC-1	8" x12"	(4) #5	#3 AT8"oc	A	
CC-2	10" x12"	(4) #5	#3 AT8"oc	A	
CC-3	12" x12"	(8) #5	#3 AT8"oc	A,B	
CC-4	20" x20"	(8) #6	#4 AT8"oc	B	

CONCRETE PIER NOTES:

1. INSTALL (3) SETS OF TIES AT 3"oc AT TOP OF ALL COLUMNS (UNO).
2. ALTERNATE POSITION OF HOOKS IN PLACING SUCCESSIVE SETS OF TIES.
3. USE TYPE B AT STEEL COLUMN LOACTIONS, SEE PLAN
4. TYPE B FOUNDATION WALL MAY NOT EXIST AT EXTERIOR COLUMNS.

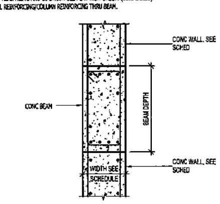


4 / S301 CONCRETE PIER SCHEDULE
NO SCALE:

CONCRETE BEAM SCHEDULE					
MARK	THICKNESS	DEPTH	REINFORCING		REMARKS
			TOP AND BOTTOM	TIES	
CB-1	10"	2'- 0"	(2) #6	#4 AT 12"oc	NOTE 5
CB-2	10"	2'- 0"	(2) #7	#4 AT 8"oc	NOTE 5
CB-3	12"	2'- 6"	(8) #7 TOP (4) #7 BOTT	#4 AT 8"oc	NOTE 5

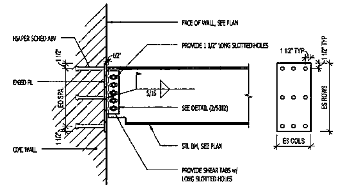
CONCRETE BEAM NOTES:

1. LINTEL WIDTH AND MATERIAL TYPE SHALL BE THE SAME AS THE WALL IN WHICH THE LINTEL IS CONSTRUCTED.
2. TOP BARS MAY BE SPLICED AT THE MID-SPAN OF LINTELS ONLY.
3. BOTTOM BARS MAY BE SPLICED OVER SUPPORTS OF LINTELS ONLY.
4. TIES AND STIRRUPS MAY NOT BE SPLICED.
5. FOR ADDITIONAL TIE SPACING AND LOCATION SEE PLAN VIEW SHEETS (S202 & S203)
6. CANTILEVER WALL REINFORCING/COLUMN REINFORCING THRU BEAM.



5 / S301 CONCRETE LINTEL SCHEDULE
NO SCALE:

EMBED PLATE CONNECTION SCHEDULE		
BEAM DEPTH	BEAM PLATE	ANCHORS
W8, W10, W12	1/2"x10"x12" (HIGH)	(2) HORIZ ROWS (2) 3/4"Ø x 5" HSA (4) TOTAL
W14, W16	1/2"x10"x16" (HIGH)	(3) HORIZ ROWS (2) 3/4"Ø x 5" HSA (6) TOTAL
W18, W21	1/2"x12"x20" (HIGH)	(4) HORIZ ROWS (3) 3/4"Ø x 5" HSA (12) TOTAL
W24, W27	1/2"x14"x26" (HIGH)	(5) HORIZ ROWS (4) 3/4"Ø x 5" HSA (20) TOTAL



6 / S301 CONCRETE LINTEL SCHEDULE
NO SCALE:

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SHEET NO.
S301

STEEL COLUMN SCHEDULE				
MARK	SIZE	STEEL BASE PLATE	STEEL CAP PLATE THICKNESS	COMMENTS
SC-1	HSS5x5x1/4"	3/4" (SBP - 1)	3/4" (SCP - 1)	AT END COND USE (SCP-2)
SC-2	HSS5x5x3/8"	3/4" (SBP - 1)	3/4" (SCP - 1)	AT END COND USE (SCP-2)
SC-3	HSS5x5x1/2"	3/4" (SBP - 1)	3/4" (SCP - 1)	AT END COND USE (SCP-2)
SC-4	PIPE 8 STD	3/4" (SBP - 1)	3/4" (SCP - 1)	

STEEL COLUMN NOTES:

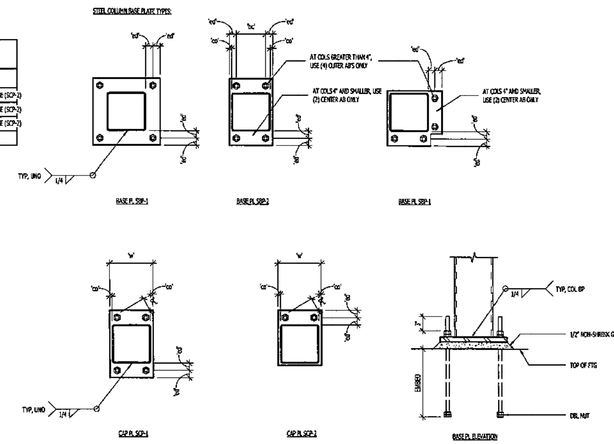
1. UNLESS NOTED OTHERWISE, ALL COLUMNS SHALL BE INSTALLED WITH 3/4"Ø HEADED (OR DOUBLE NUT) ANCHOR BOLTS. PROJECT ANCHOR BOLTS 3" MINIMUM ABOVE THE TOP OF THE BASE PLATE. EMBEDMENT SHALL BE 9" MINIMUM. ALL BOLTS SHALL BE INSTALLED WITH HARDENED WASHERS BENEATH THE NUT. ANY BOLT HOLES LARGER THAN THE BOLT DIAMETER PLUS 5/16" SHALL HAVE A PLATE WASHERS INSTALLED BENEATH THE HARDENED WASHERS.
2. ANCHOR BOLTS SHALL NOT BE WELDED (INCLUDING TACK WELDS).
3. IF DESIRED SPLICE LOCATIONS DIFFER FROM THOSE LEVELS SHOWN ON PLAN, NOTIFY STRUCTURAL ENGINEER PRIOR TO FABRICATION. WRITTEN APPROVAL REQUIRED.
4. ALL CAP PLATE BOLTS SHALL BE 3/4"Ø A325N BOLTS, TYPICAL UNLESS NOTED OTHERWISE.
5. SEE GENERAL STRUCTURAL NOTES FOR OTHER REQUIREMENTS.
6. ERECTION AIDS TO BE REMOVED AFTER COLUMN SPLICING.

BASE PL LEGEND:

'co' = 1/2" MINIMUM
'ed' = 1 1/2" MINIMUM
'bc' = 3" MINIMUM

CAP PL LEGEND:

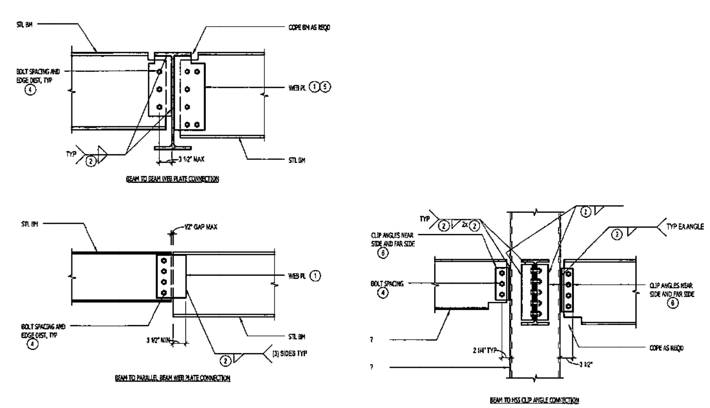
'co' = 1/2" MINIMUM
'ed' = 1 1/2" MINIMUM
'bc' = BEAM OR GIRDER GAGE
'w' = BEAM OR GIRDER GAGE + 3"
OR
BEAM OR GIRDER FLANGE WIDTH + 1"
OR
COLUMN WIDTH + 1"
WHICHEVER IS GREATER



1 STEEL COLUMN SCHEDULE
S302 NO SCALE:

A-325 BOLT SCHEDULE		
MAXIMUM BEAM SIZE IN EACH BEAM DEPTH GROUP	A325N BOLTS	
	No. PER BEAM	SIZE
W10	2	7/8"Ø
W12	3	7/8"Ø
W18	5	7/8"Ø
W24	7	7/8"Ø

(1) BEAM WEB CONNECTION PLATES. THICKNESS EQUALS THE BEAM WEB THICKNESS PLUS 1/8" (1/2" MIN).
(2) FILLET WELDS SHALL BE AS FOLLOWS:
ONE SIDE: PLATE THICKNESS MINUS 1/16" (1/4" MINIMUM)
TWO SIDES: 1/2 PLATE THICKNESS PLUS 1/16" (1/4" MINIMUM) EA SIDE.
(3) THICKNESS EQUALS BEAM FLANGE THICKNESS OF BEAM FRAMING INTO COLUMN WEB (3/8" MINIMUM).
(4) BOLT EDGE DISTANCE SHALL BE 1 1/2" MINIMUM AT ALL EDGES. BOLT SPACING SHALL BE AT 3". BOLT SPACING MAY BE REDUCED TO 3x THE BOLT DIAMETER IF IT IS REQUIRED FOR A SINGLE ROW OF BOLTS. A SINGLE ROW OF BOLTS IS PREFERRED.
(5) WHEN MORE THAN ONE COLUMN OF BOLTS IS NEEDED, THE FIRST COLUMN SHALL BE COMPLETE WITH THE REMAINDER OF THE BOLTS PLACED IN THE SECOND COLUMN.
(6) CLIP ANGLES: L5x3 1/2. THICKNESS SHALL BE EQUAL TO ONE HALF THE BEAM WEB THICKNESS PLUS 1/16" (1/4" MIN). FOR TWO ROWS OF BOLTS OR SKEWED CONNECTIONS, USE BENT PLATES. WHERE COLUMN WIDTH IS SMALLER THAN THE CONNECTING CLIP ANGLES, ANGLE LEGS MAY BE REDUCED TO MATCH WIDTH OF COLUMN.



2 TYPICAL BOLTED WEB PLATE CONNECTIONS WITH BOLT SCHEDULE (SINGLE SHEAR)
S302 NO SCALE:

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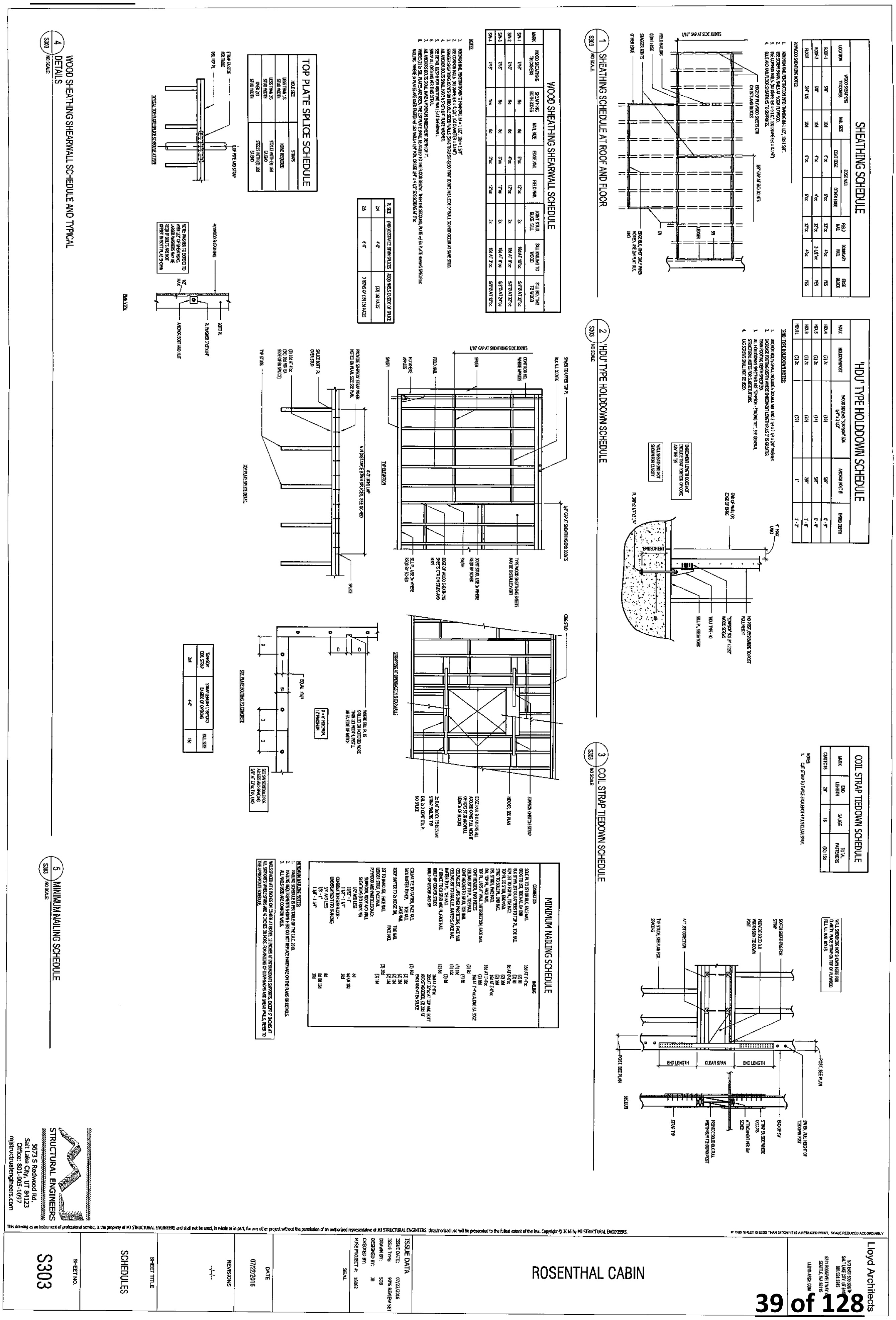
SHEET TITLE
SCHEDULES

SHEET NO.
S302

Exhibit A


SHEATHING SCHEDULE
1 SHEATHING SCHEDULE AT ROOF AND FLOOR
S303 NO SCALE
"HDU" TYPE HOLDDOWN SCHEDULE
2 "HDU" TYPE HOLDDOWN SCHEDULE
S303 NO SCALE
COIL STRAP TIEDOWN SCHEDULE
3 COIL STRAP TIEDOWN SCHEDULE
S303 NO SCALE
WOOD SHEATHING SHEARWALL SCHEDULE
TOP PLATE SPLICE SCHEDULE
4 WOOD SHEATHING SHEARWALL SCHEDULE AND TYPICAL DETAILS
S303 NO SCALE
MINIMUM NAILING SCHEDULE
5 MINIMUM NAILING SCHEDULE
S303 NO SCALE
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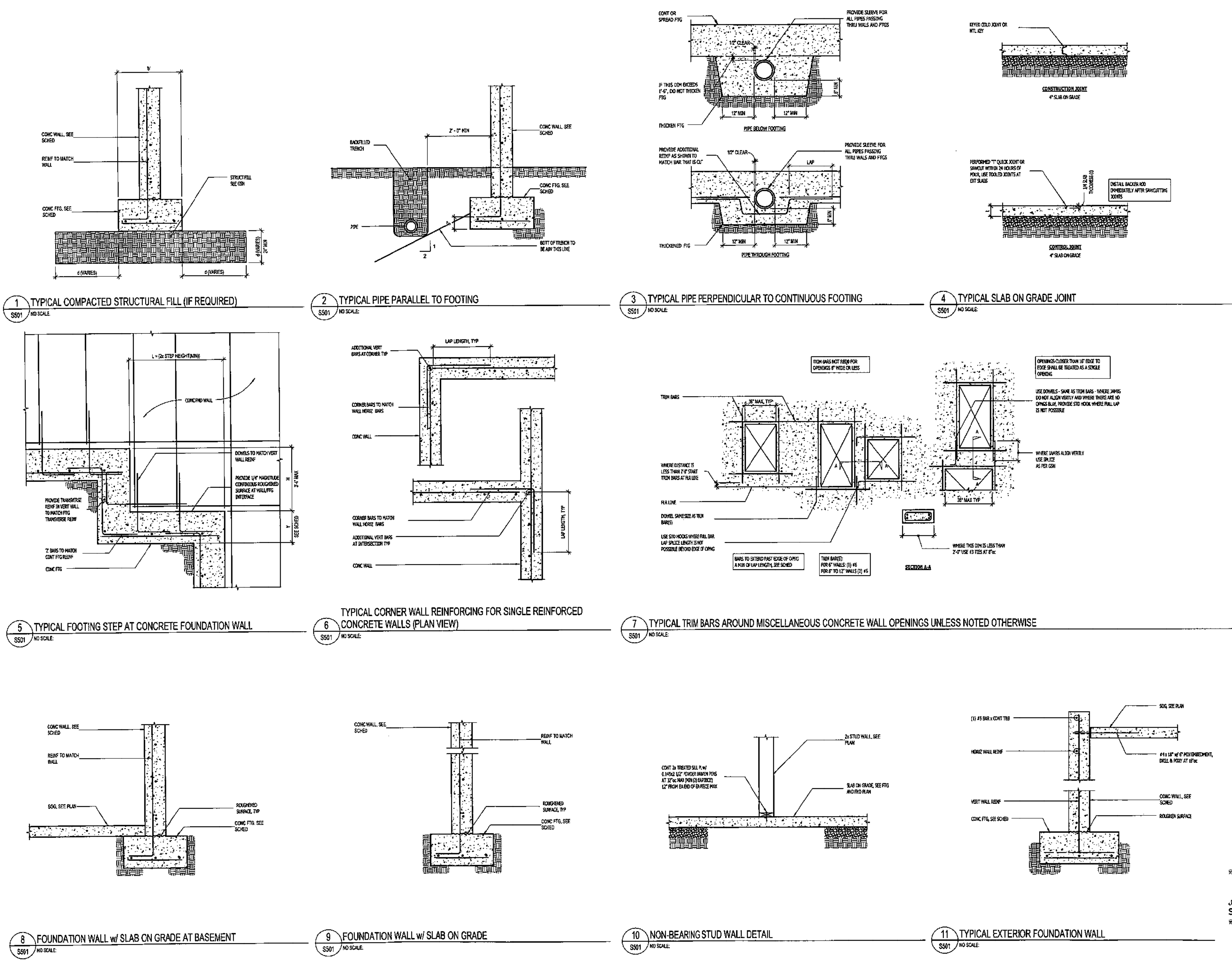
SCHEDULES
SHEET NO.
S303

Exhibit A



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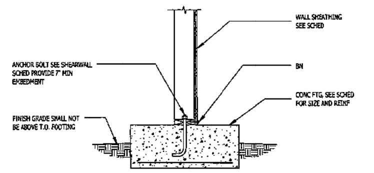
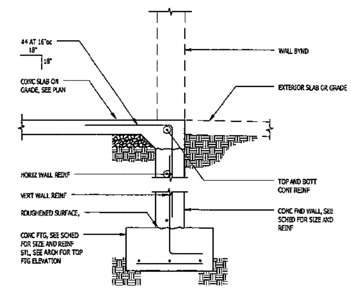
SHEET TITLE
FOOTING FOUNDATION DETAILS

SHEET NO.
S501

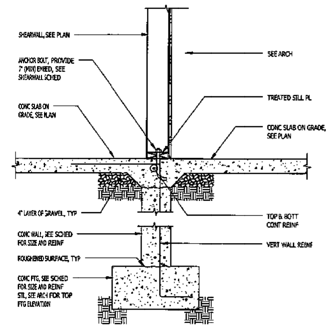
Exhibit A



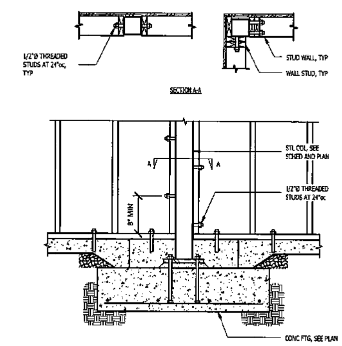
1 WOOD SHEARWALL TO FOOTING
S502 NO SCALE



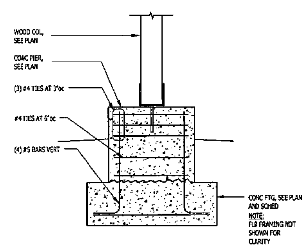
2 FOUNDATION WALL OPENING AT DOOR
S502 NO SCALE



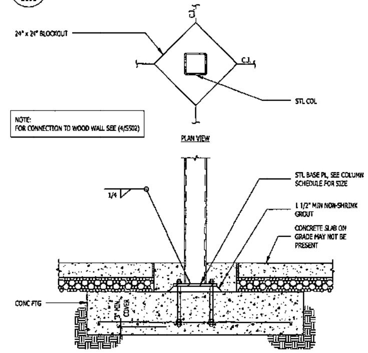
3 TYPICAL LOW FOUNDATION WALL AT SLAB ON GRADE
S502 NO SCALE



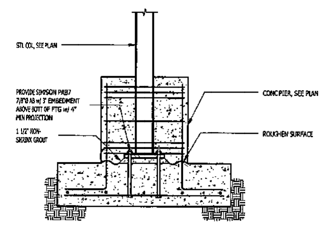
4 STEEL COLUMN IN WOOD WALL
S502 NO SCALE



5 WOOD COLUMN TO CONCRETE FOOTING
S502 NO SCALE



6 TYPICAL COLUMN AT CONCRETE FOOTING
S502 NO SCALE



7 COLUMN AT CONCRETE PIER DETAIL
S502 NO SCALE

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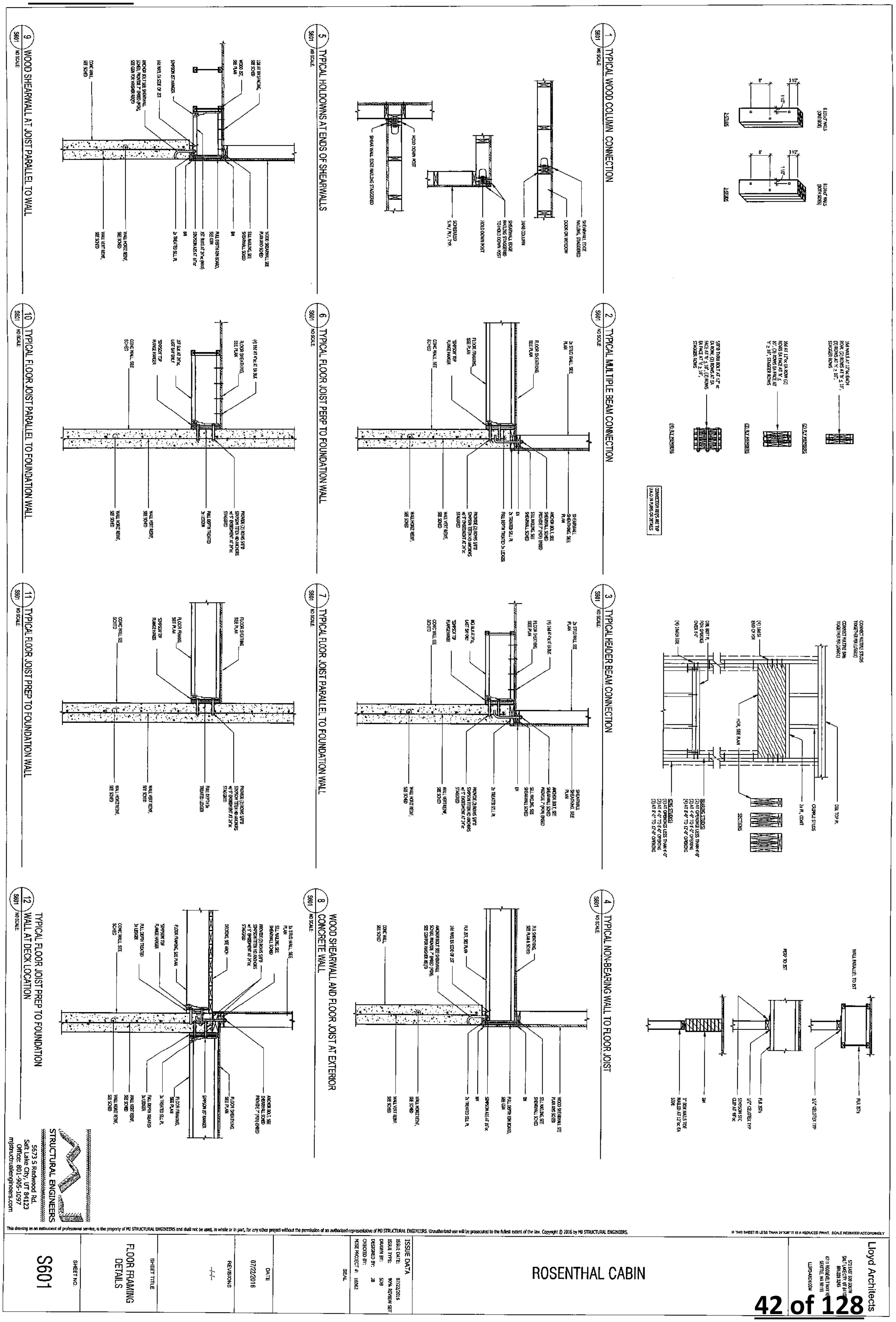

1 TYPICAL WOOD COLUMN CONNECTION S601 NO SCALE
2 TYPICAL MULTIPLE BEAM CONNECTION S601 NO SCALE
3 TYPICAL HEADER BEAM CONNECTION S601 NO SCALE
4 TYPICAL NON-BEARING WALL TO FLOOR JOIST S601 NO SCALE
5 TYPICAL HOLDOWNS AT ENDS OF SHEARWALLS S601 NO SCALE
6 TYPICAL FLOOR JOIST PERP TO FOUNDATION WALL S601 NO SCALE
7 TYPICAL FLOOR JOIST PARALLEL TO FOUNDATION WALL S601 NO SCALE
8 WOOD SHEARWALL AND FLOOR JOIST AT EXTERIOR CONCRETE WALL S601 NO SCALE
9 WOOD SHEARWALL AT JOIST PARALLEL TO WALL S601 NO SCALE
10 TYPICAL FLOOR JOIST PARALLEL TO FOUNDATION WALL S601 NO SCALE
11 TYPICAL FLOOR JOIST PREP TO FOUNDATION WALL S601 NO SCALE
12 TYPICAL FLOOR JOIST PREP TO FOUNDATION WALL AT DECK LOCATION S601 NO SCALE
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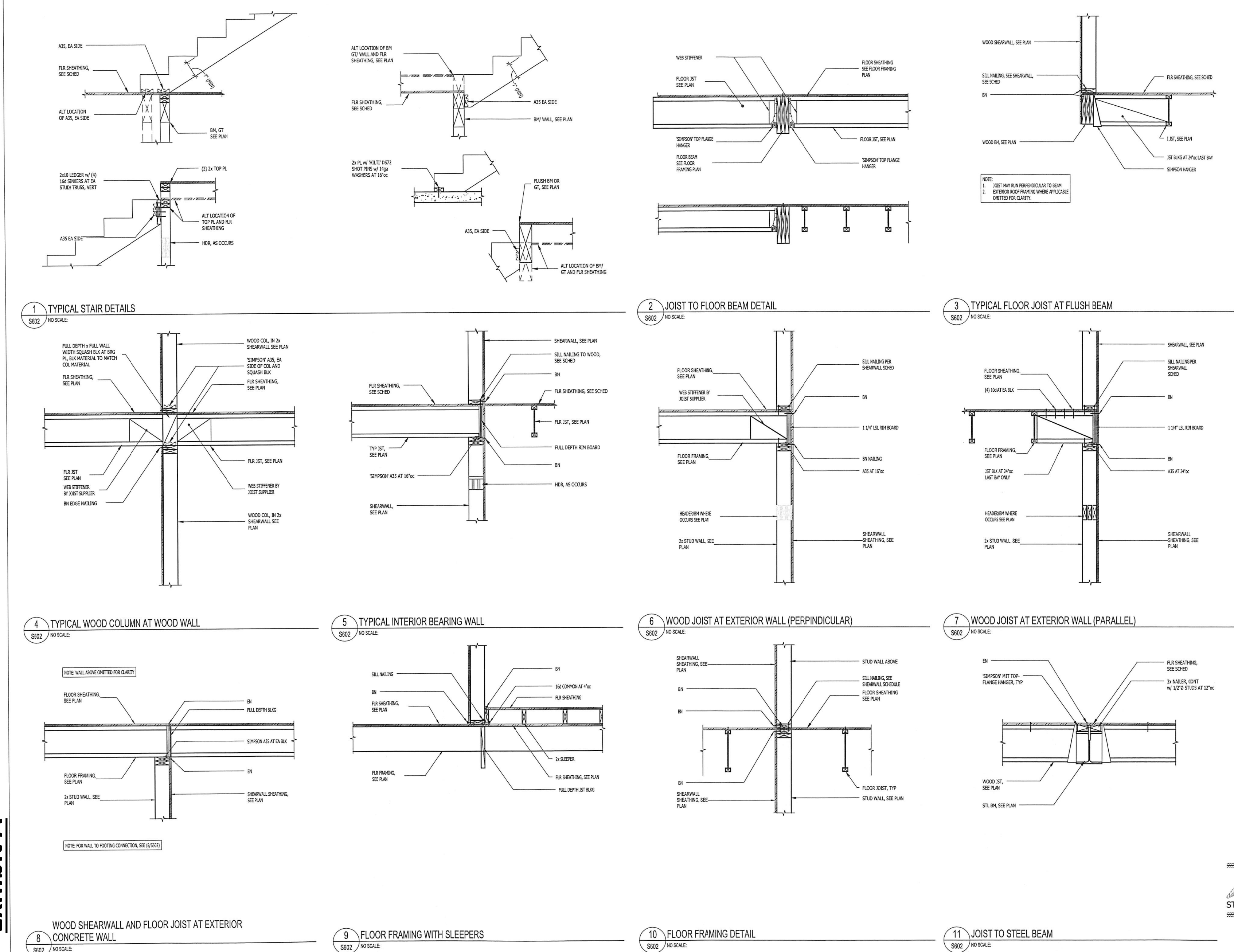
SHEET TITLE FLOOR FRAMING DETAILS
SHEET NO. S601

Exhibit A



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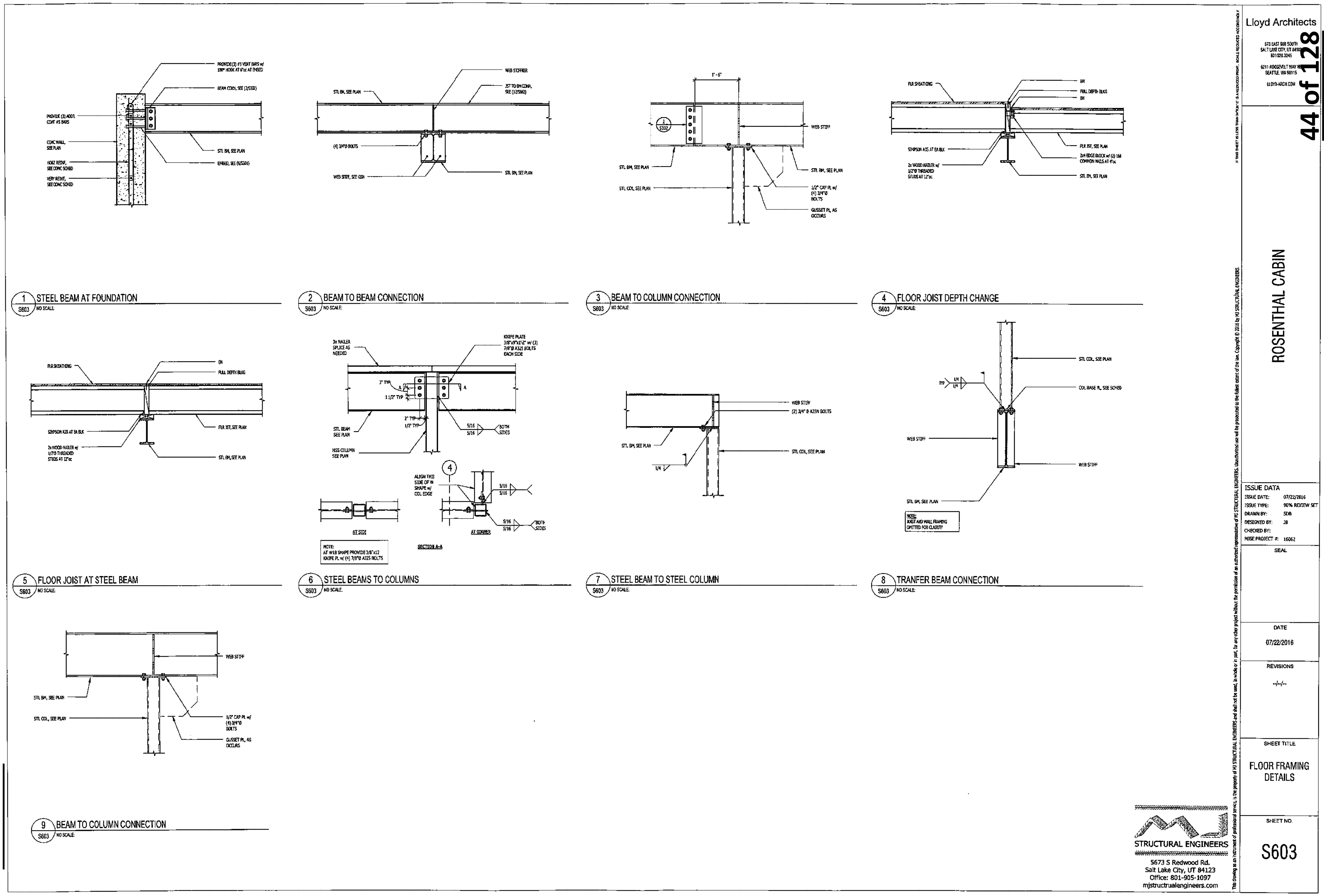
SHEET TITLE

FLOOR FRAMING DETAILS

SHEET NO.

S602

Exhibit A



1 STEEL BEAM AT FOUNDATION
S603 NO SCALE
2 BEAM TO BEAM CONNECTION
S603 NO SCALE
3 BEAM TO COLUMN CONNECTION
S603 NO SCALE
4 FLOOR JOIST DEPTH CHANGE
S603 NO SCALE
5 FLOOR JOIST AT STEEL BEAM
S603 NO SCALE
6 STEEL BEAMS TO COLUMNS
S603 NO SCALE
7 STEEL BEAM TO STEEL COLUMN
S603 NO SCALE
8 TRANFER BEAM CONNECTION
S603 NO SCALE
9 BEAM TO COLUMN CONNECTION
S603 NO SCALE
WEB STIFF
STL BM, SEE PLAN
STL COL, SEE PLAN
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SHEET TITLE
FLOOR FRAMING DETAILS
SHEET NO.
S603
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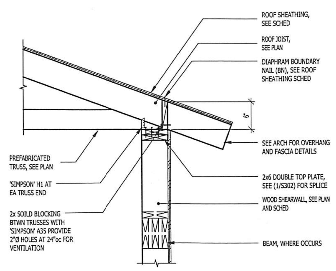
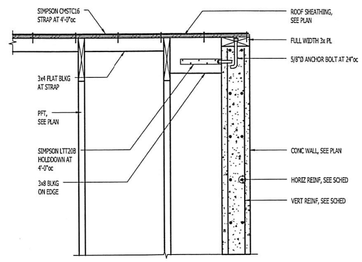
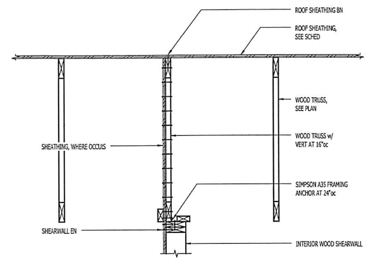
Exhibit A



1 TRUSS PERPINDICULAR TO WALL
S701 NO SCALE:

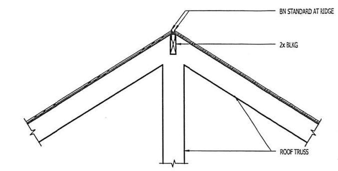


2 ROOF FRAMING PARALLEL TO WALL
S701 NO SCALE:

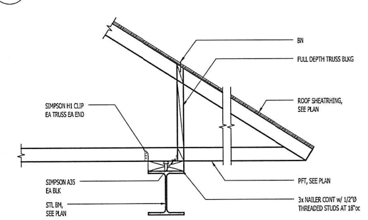


NOTE: IF TRUSS STEP CONNECTION OCCURS AT SHEARWALL SEE (2/S702) FOR INFORMATION.

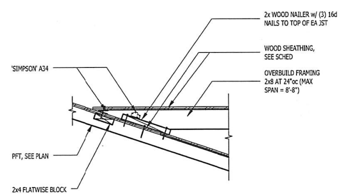
3 INTERIOR SHEARWALL PARALLEL TO ROOF TRUSSES
S701 NO SCALE:

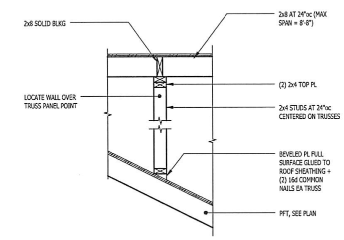


4 TYPICAL WOOD BEAM CAP SEAT AT STEEL COLUMN
S701 NO SCALE:

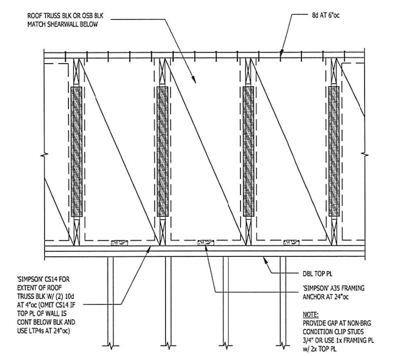


5 TRUSS AT EXTERIOR WALL (BEAM)
S701 NO SCALE:

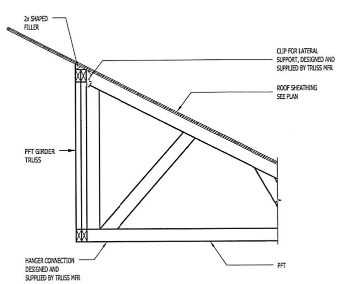




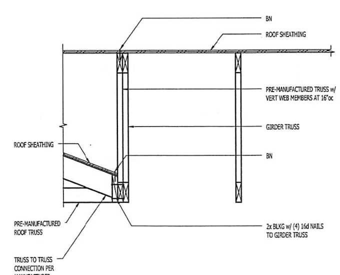
6 OVERBUILD DETAIL
S701 NO SCALE:



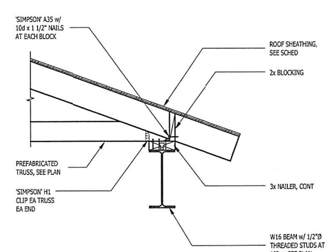
7 SHEARWALL TRANSFER PERPENDICULAR TO TRUSS
S701 NO SCALE:



8 TYPICAL TRUSS CONNECTION DETAIL
S701 NO SCALE:



9 TRUSS TO TRUSS CONNECTION
S701 NO SCALE:



10 CANOPY FRAMING
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SHEET TITLE
ROOF FRAMING DETAILS

SHEET NO.
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Exhibit A

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ROOF FRAMING PLAN

SHEET NO.

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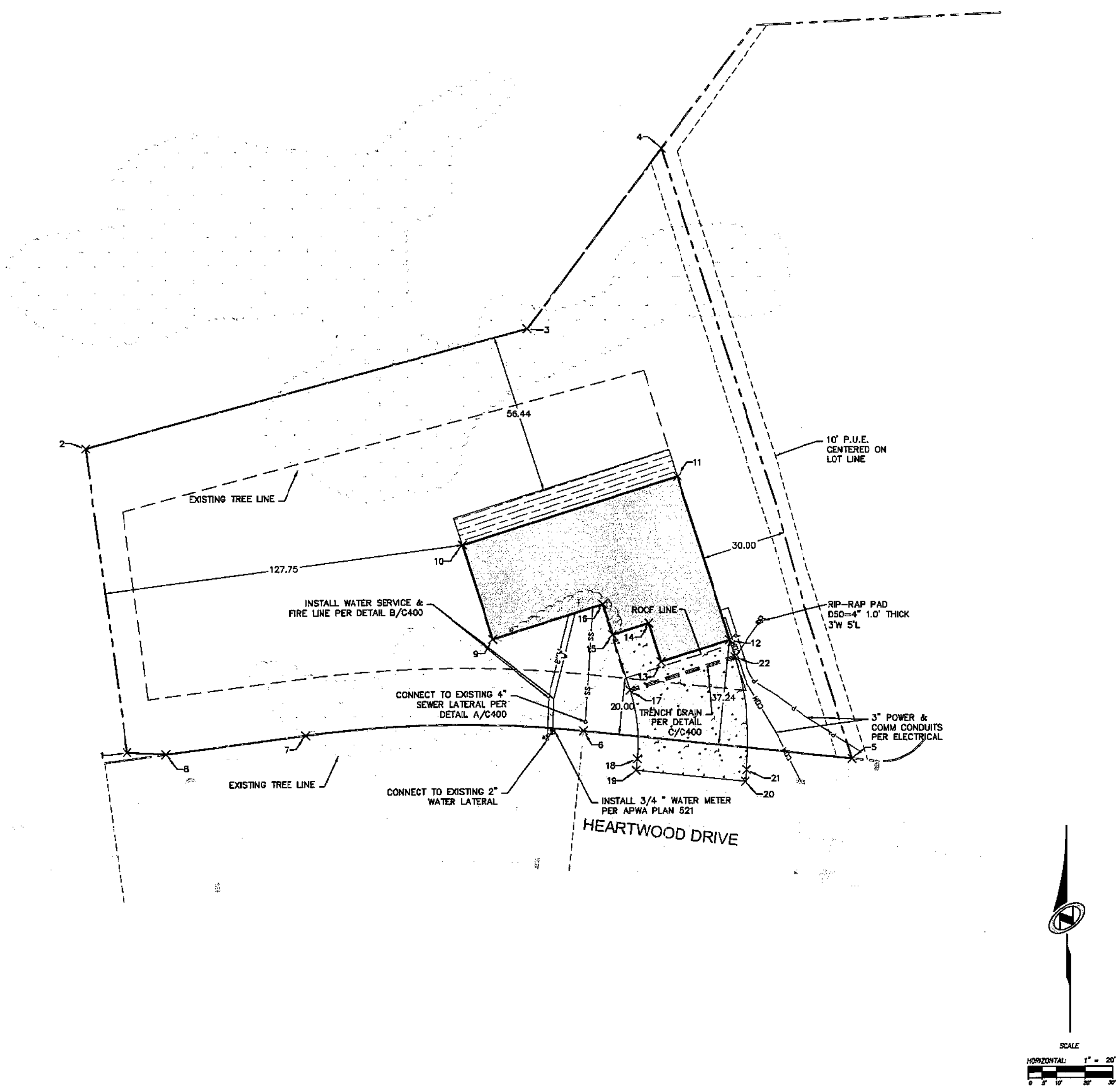

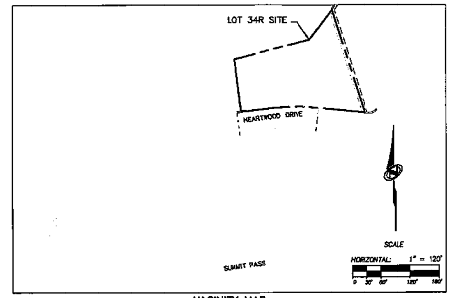

VACINITY MAP

GENERAL NOTES:
THE CONTRACTOR TO USE BEST MANAGEMENT PRACTICES FOR PROVIDING EROSION CONTROL FOR CONSTRUCTION OF THIS PROJECT. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO WEBER COUNTY ORDINANCES AND ALL WORK SHALL BE SUBJECT TO INSPECTION BY WEBER COUNTY. ALSO, INSPECTORS WILL HAVE THE RIGHT TO REQUEST CHANGES TO THE FACILITIES AS NEEDED.

DUST MUST BE KEPT TO A MINIMUM. CONTRACTOR SHALL KEEP THE SITE WATERED TO CONTROL DUST. CONTACT POWDER MOUNTAIN WATER & SEWER IMPROVEMENT DISTRICT TO LOCATE A NEARBY HYDRANT FOR USE AND TO INSTALL TEMPORARY METER.

THE CONTRACTOR SHALL MODIFY EROSION CONTROL MEASURES TO ACCOMMODATE PROJECT PLANNING.

ALL ACCESS TO PROPERTY WILL BE FROM PUBLIC RIGHT-OF-WAYS.

THE CONTRACTOR IS REQUIRED BY STATE AND FEDERAL REGULATIONS TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN AND FILE A "NOTICE OF INTENT" WITH THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY.

ENSURE ALL GRADING SLOPES AWAY FROM STRUCTURE AT 5% FOR A MINIMUM OF 10' PER IRC R401.3

UTILITIES:
ENSURE MINIMUM BURIED DEPTH PER BUILDING CODE FOR ALL BURIED UTILITIES.

PLACE UTILITIES WITHIN 5' FROM BUILDING, UTILITIES SHOWN BEYOND THAT ARE FOR REFERENCE ONLY. SEE MECHANICAL FOR CONTINUATION.

LEGEND

- TREE LINE
- PROTECT EXISTING TREES
- REMOVE EXISTING TREES AS NESSECARY
- BUILDING
- DECK
- CONCRETE

POINT TABLE

POINT#	NORTHING	EASTING
1	3658423.1189	1569595.6678
2	3658530.7050	1569581.9789
3	3658571.9829	1569738.6981
4	3658635.4820	1569786.5478
5	3658419.2878	1569854.2427
6	3658429.5574	1569757.7073
7	3658428.5430	1569659.1058
8	3658422.2458	1569609.6138
9	3658462.1496	1569725.6910
10	3658495.5801	1569715.2232
11	3658519.4466	1569791.4446

POINT TABLE

POINT#	NORTHING	EASTING
12	3658461.4882	1569809.5933
13	3658453.8943	1569785.3473
14	3658467.5651	1569781.0667
15	3658463.5173	1569768.1393
16	3658474.3764	1569764.7391
17	3658443.8165	1569774.3074
18	3658419.5425	1569776.7121
19	3658415.5136	1569776.2835
20	3658411.3956	1569814.9919
21	3658415.5502	1569815.4338
22	3658455.4582	1569811.4807

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PROJECT PHASE
- SCHEMATIC DESIGN

DRAWING REVISIONS

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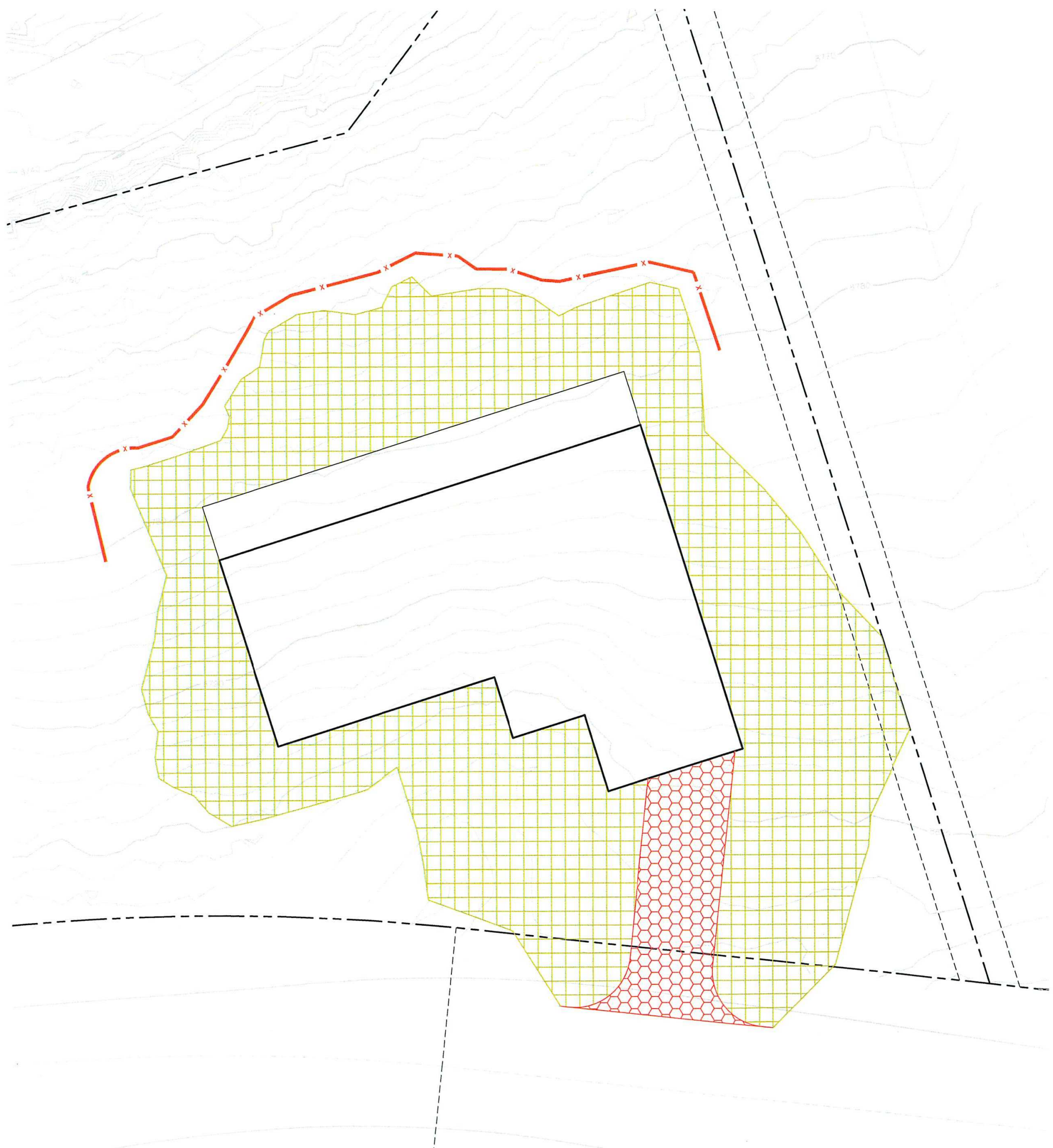
SITE PLAN

SHEET NUMBER
C100

Exhibit A

BIM Server: server ... private - BIM Server 20/Rosenthal/2016-06-21 Rosenthal TEAMWORK Monday, August 8, 2016 10:03 AM



SCALE
HORIZONTAL: 1" = 10'
0 2.5' 5' 10' 15'

EROSION CONTROL GENERAL NOTES:

THE CONTRACTOR TO USE BEST MANAGEMENT PRACTICES FOR PROVIDING EROSION CONTROL FOR CONSTRUCTION OF THIS PROJECT. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO WEBER COUNTY ORDINANCES AND ALL WORK SHALL BE SUBJECT TO INSPECTION BY THE COUNTY. ALSO, INSPECTORS WILL HAVE THE RIGHT TO CHANGE THE FACILITIES AS NEEDED.

CONTRACTOR SHALL KEEP THE SITE WATERED TO CONTROL DUST. CONTRACTOR TO LOCATE A NEARBY HYDRANT FOR USE AND TO INSTALL TEMPORARY METER. CONSTRUCTION WATER COST TO BE INCLUDED IN BID.

WHEN GRADING OPERATIONS ARE COMPLETED AND THE DISTURBED GROUND IS LEFT "OPEN" FOR 14 DAYS OR MORE, THE AREA SHALL BE FURROWED PARALLEL TO THE CONTOURS.

THE CONTRACTOR SHALL MODIFY EROSION CONTROL MEASURES TO ACCOMMODATE PROJECT PLANNING.

ALL ACCESS TO PROPERTY WILL BE FROM PUBLIC RIGHT-OF-WAYS.

THE CONTRACTOR IS REQUIRED BY STATE AND FEDERAL REGULATIONS TO PREPARE A STORM WATER POLLUTION PREVENTION PLAN AND FILE A "NOTICE OF INTENT" WITH THE UTAH DIVISION OF WATER QUALITY.

MAINTENANCE:
ALL BEST MANAGEMENT PRACTICES (BMP'S) SHOWN ON THIS PLAN MUST BE MAINTAINED AT ALL TIMES UNTIL VEGETATION IS RE-ESTABLISHED.

THE CONTRACTOR'S RESPONSIBILITY SHALL INCLUDE MAKING BI-WEEKLY CHECKS ON ALL EROSION CONTROL MEASURES TO DETERMINE IF REPAIR OR SEDIMENT REMOVAL IS NECESSARY. CHECKS SHALL BE DOCUMENTED AND COPIES OF THE INSPECTIONS KEPT ON SITE.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF BARRIER.

SEDIMENT TRACKED ONTO PAVED ROADS MUST BE CLEANED UP AS SOON AS PRACTICAL, BUT IN NO CASE LATER THAN THE END OF THE NORMAL WORK DAY. THE CLEAN UP WILL INCLUDE SWEEPING OF THE TRACKED MATERIAL, PICKING IT UP, AND DEPOSITING IT TO A CONTAINED AREA.

EXPOSED SLOPES:
ANY EXPOSED SLOPE THAT WILL REMAIN UNTOUCHED FOR LONGER THAN 14 DAYS MUST BE STABILIZED BY ONE OR MORE OF THE FOLLOWING METHODS:

A) SPRAYING DISTURBED AREAS WITH A TACKIFIER VIA HYDROSEED
B) TRACKING STRAW PERPENDICULAR TO SLOPES
C) INSTALLING A LIGHT-WEIGHT, TEMPORARY EROSION CONTROL BLANKET

SCOPE OF WORK:
PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS:

HATCHING INDICATES AREAS TO RECEIVE 4" TOPSOIL AND TO BE SEEDED FOR NATURAL VEGETATION. AREAS RECEIVING SEEDING FOR NATURAL REVEGETATION MUST BE COVERED WITH AN EROSION CONTROL BLANKET AFTER THE FINAL GRADING AND SEEDING ARE FINISHED. INSTALL NORTH AMERICAN GREEN SC-150 BLANKET OR APPROVED EQUAL. FOLLOW MANUFACTURER'S SPECIFICATIONS.

STABILIZED CONSTRUCTION ENTRANCE FOR SITE INGRESS/EGRESS. IF ALTERNATE ACCESS POINTS ARE APPROVED BY OWNER, ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES WILL BE REQUIRED. PER APWA DETAIL 126 ON SHEET C301.

INSTALL SILT FENCE ALONG DOWN GRADIENT LIMITS OF DISTURBANCE AS SHOWN ON PLAN. PER APWA DETAIL 122 ON SHEET 301.

* SEED MIXTURE FOR REVEGETATION
40% MOUNTAIN BROME (BROMUS MARGINATUS)
25% SLENDER WHEATGRASS (ELYMUS TRACHYCAULUS SSP. TRACHYCAULUS)
5% SHEEP FESCUE (FESTUCA OVINA SPP. DURIUSCULA)
5% ALPINE BLUEGRASS (POA ALPINE)
25% THICKSPIKE WHEATGRASS (ELYMUS LANCEOLATUS SSP. LANCEOLATUS)

SEEDING RATE IS 40 POUNDS PER ACRE.

CALL BEFORE YOU DIG! IT'S THE LAW BLUE STAKES 1 800 662 4111

IF THIS SHEET IS LESS THAN 24"X36" IT IS A REDUCED PRINT. SCALE ACCORDINGLY.

LloydArchitects
573 EAST 600 SOUTH
SALT LAKE CITY, UT 84102
PHONE 801.328.3245
WEB LLOYD-ARCH.COM

ROSENTHAL CABIN
7958 E. HEARTWOOD DRIVE
EDEN, UTAH 84310

SEAL

PRINT DATE
8/8/16

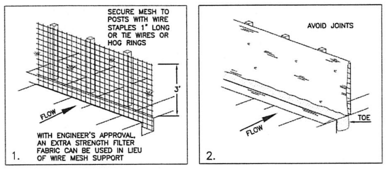
PROJECT PHASE
- SCHEMATIC DESIGN __/__/__

DRAWING REVISIONS

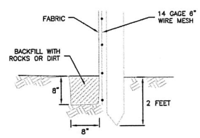
SHEET TITLE
EROSION CONTROL PLAN

SHEET NUMBER
C300

NARRATIVE: THIS PLAN MAY BE USED FOR THE CONSTRUCTION OF A STORM WATER BEST MANAGEMENT PRACTICE (BMP). IT IS NOT INCLUSIVE OF ALL PRACTICES AVAILABLE AND IS ONLY SPECIFIC TO THE CONSTRUCTION OF THIS TYPE. MAINTENANCE OF THIS TYPE OF INSTALLATION IS IMPORTANT AND SHOULD BE CONTINUOUSLY MONITORED BY THE CONTRACTOR AND ENGINEER. DETAILS SHOWN HERE HIGHLIGHT IMPORTANT PARTS OF CONSTRUCTION, AND SHOULD BE MODIFIED AS NEEDED.



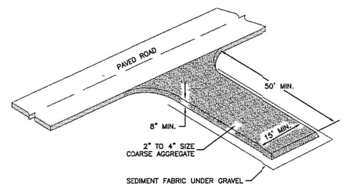
INSTALLATION SEQUENCE



TOE DETAIL

February 2006 | *Silt fence* 7 | Plan 122

NARRATIVE: THIS PLAN MAY BE USED FOR THE CONSTRUCTION OF A STORM WATER BEST MANAGEMENT PRACTICE (BMP). IT IS NOT INCLUSIVE OF ALL PRACTICES AVAILABLE AND IS ONLY SPECIFIC TO THE CONSTRUCTION OF THIS TYPE. MAINTENANCE OF THIS TYPE OF INSTALLATION IS IMPORTANT AND SHOULD BE CONTINUOUSLY MONITORED BY THE CONTRACTOR AND ENGINEER. DETAILS SHOWN HERE HIGHLIGHT IMPORTANT PARTS OF CONSTRUCTION, AND SHOULD BE MODIFIED AS NEEDED.



February 2006 | *Stabilized roadway entrance* 19 | Plan 126

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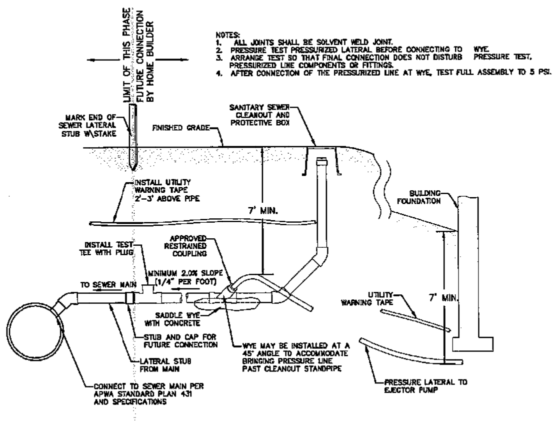
PROJECT PHASE
- SCHEMATIC DESIGN __/__/__

DRAWING REVISIONS

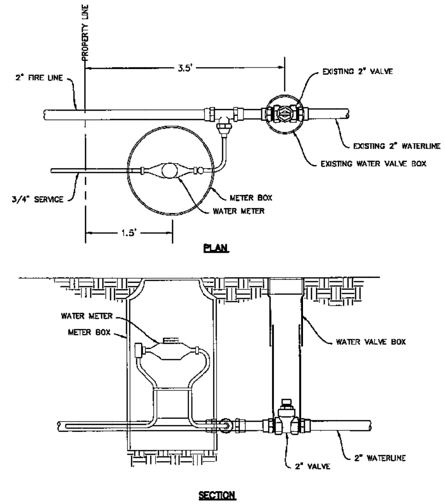
SHEET TITLE
EROSION CONTROL DETAILS

SHEET NUMBER
C301

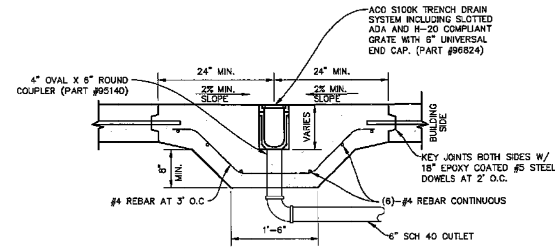
Exhibit A



A SEWER LATERAL CONNECTION
SCALE: 1" = N.T.S.

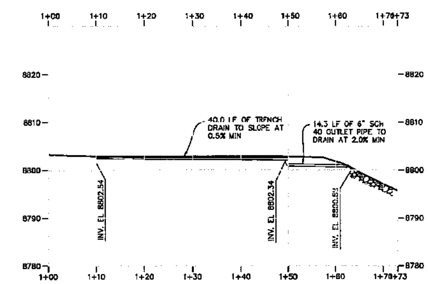


B WATER LATERAL CONNECTION
SCALE: 1" = N.T.S.



GENERAL NOTE:

TRENCH DRAIN SYSTEM TO BE 40.0 LINEAR FEET PER PLAN. CORE BOTTOM OF LAST SECTION OF DRAIN AND PROVIDE A 4" OVAL X 6" ROUND COUPLER. CONNECT A 6" SCH 40 PIPING WITH ELBOW TO CONNECT TO 6" STORM DRAIN LINE. CONNECT 6" SCH 40 PIPE INTO CATCH BASIN. USE EPOXY TO SEAL BOTTOM OF TRENCH DRAIN AND PIPING PER MANUFACTURER'S RECOMMENDATIONS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. CONTACT ACO DRAIN FOR ADDITIONAL INFORMATION AT 1-800-543-4764



C TRENCH DRAIN DETAIL
SCALE: N.T.S.

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SEAL

PRINT DATE
8/8/16

PROJECT PHASE
SCHEMATIC DESIGN _/_/_

DRAWING REVISIONS

SHEET TITLE
DETAILS

SHEET NUMBER
C400

IGES®
Intermountain GeoEnvironmental Services, Inc.
12429 South 300 East Suite 100, Draper, Utah 84020 ~ T: (801) 748-4044 ~ F: (801) 748-4045

August 7, 2014

Mr. Grant H. Blakeslee
Summit, LLC
3632 North Wolf Creek Drive
Eden, Utah 84310

IGES Project No. 01628-006

RE: Geotechnical Investigation Report
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

Mr. Blakeslee,

As requested, IGES has conducted a geotechnical investigation for the proposed residence to be constructed on Lot 34R of the Powder Mountain Resort located at 7958 East Heartwood Drive in Weber County, Utah. The approximate location of the property is illustrated on the *Site Vicinity Map* (Figure A-1 in Appendix A). The purposes of our investigation was to assess the nature and engineering properties of the subsurface soils at the proposed home site and to provide recommendations for the design and construction of foundations, grading, and drainage. The scope of work completed for this study included subsurface exploration, laboratory testing, engineering analyses and preparation of this letter.

Project Understanding

Our understanding of the project is based primarily on our previous involvement with the Powder Mountain resort project, which included two geotechnical investigations for the greater 200-acre Powder Mountain Resort expansion project (IGES, 2012a and 2012b).

The Powder Mountain Resort expansion project is located southeast of SR-158 (Powder Mountain Road), south of previously developed portions of Powder Mountain Resort, in unincorporated Weber County, Utah. The project is accessed by Powder Ridge Road.

Lot 34R is a ¾-acre single-family residential lot with a buildable envelope of approximately 0.21 acres. A single-family home will be constructed at the site, presumably a high-end vacation home. Construction plans were not available for our review; however, we assume the new home will be a one- or two-story wood-framed structure, with a basement, founded on conventional spread footings. The development is expected to include improvements common for residential developments such as underground utilities, curb and gutter, flatwork, landscaping, and possibly appurtenant structures.

METHOD OF STUDY

Literature Review

IGES completed a geotechnical investigation for the Powder Mountain Resort expansion in 2012 (2012a, 2012b). Our previous work included twenty-two test pits and one soil boring excavated at various locations across the 200-acre development; as a part of this current study, the logs from relevant nearby test pits and other data from our reports were reviewed. In addition, Western Geologic (2012) completed a geologic hazard study for the greater 200-acre Powder Mountain expansion project – this report was reviewed to assess the potential impact of geologic hazards on the subject lot.

Field Investigation

Subsurface soils were investigated by excavating one test pit approximately 12 feet below the existing site grade. The approximate location of the test pit is illustrated on the *Geotechnical Map* (Figure A-2 in Appendix A). The soil types and conditions were visually logged at the time of the excavation in general accordance with the Unified Soil Classification System (USCS). Subsurface soil classifications and descriptions are included on the test pit log included as Figure A-3 in Appendix A. A key to USCS symbols and terminology is included as Figure A-4.

Laboratory Testing

Samples retrieved during the subsurface investigation were transported to the laboratory for evaluation of engineering properties. Specific laboratory tests include:

- Moisture Content and Unit Weight
- Soluble Sulfate, Soluble Chloride, pH and Resistivity

Results of the laboratory testing are discussed in this report and presented in Appendix B. Some test results, including moisture content; and unit weight, have been incorporated into the test pit log (Figure A-3).

In addition to laboratory testing on samples obtained from this lot, engineering analysis was also based on previously completed laboratory work on soil samples obtained near the site (IGES, 2012a & 2012b).

Engineering Analysis

Engineering analyses were performed using soil data obtained from laboratory testing and empirical correlations based on 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. An allowable bearing pressure value was proportioned based on estimated shear strength of bearing soils.

FINDINGS

Surface Conditions

At the time of the excavation, the lot was in a relatively natural state and was covered with a variety of vegetation including weeds and native grasses. Frequent boulders (>12 inches) were observed throughout the site. The site is relative flat, draining gently to the north, away from Heartwood Drive.

Earth Materials

The soil at the surface of the site consists of approximately 6 inches of poorly-developed topsoil consisting of mottled, medium-dense silty sand. The topsoil encountered was characterized by an abundance of organic matter (roots, etc.). The topsoil was underlain by medium dense clayey sand extending to a depth of approximately 9 feet below existing grade. Underlying this layer, we encountered coarse colluvium consisting of medium-dense clayey gravel. The colluvium was characterized by abundant coarse angular rock fragments, which extended to the bottom of the excavation (approximately 12 feet below the existing grade).

Detailed descriptions of earth materials encountered are presented on the test pit log, Figure A-3, in Appendix A.

Groundwater

Groundwater was not encountered in the test pit excavation. Based on our observations, groundwater is not anticipated to adversely impact the proposed construction. However, groundwater levels could rise at any time based on several factors including recent precipitation, on- or off-site runoff, irrigation, and time of year (e.g., spring run-off). Should the groundwater become a concern during the proposed construction, IGES should be contacted so that dewatering recommendations may be provided.

Geology and Geologic Hazards

Geology and geologic hazards have been previously addressed by Western Geologic in a separate submittal (Western Geologic, 2012). This work has also been referenced in our previous geotechnical reports for the project (IGES, 2012a and 2012b). The report by Western Geologic indicates that the lot is located outside of known geologically unstable areas.

During our subsurface investigation, potentially adverse geologic structures (e.g., evidence of faulting or landslides) were not evident to the maximum depth of exploration (12 feet). Geomorphic expressions of shallow, surficial landslides were not observed on, or near the lot. Based on currently available data and our observations, the potential for geologic hazards such as landslides, liquefaction, or surface fault rupture impacting the site is considered low.

Seismicity

Following the criteria outlined in the 2012 International Building Code (IBC, 2012), spectral response at the site was evaluated for the *Maximum Considered Earthquake* (MCE) which equates to a probabilistic seismic event having a two percent probability of exceedance in 50 years (2PE50). Spectral accelerations were determined based on the location of the site using the *U.S. Seismic "DesignMaps" Web Application* (USGS, 2012); this software incorporates seismic hazard maps depicting probabilistic ground motions and spectral response data 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, 2012).

To account for site effects, site coefficients that vary with the magnitude of spectral acceleration and *Site Class* are used. Site Class is a parameter that accounts for site amplification effects of soft soils and is based on the average shear wave velocity of the upper 100 feet; based on our field exploration and our understanding of the geology in this area, the subject site is appropriately classified as Site Class C (*Very Dense Soil and Soft Rock*). Based on IBC criteria, the short-period (F_a) coefficient is 1.070 and long-period (F_v) site coefficient is 1.526. Based on the design spectral response accelerations for a *Building Risk Category* of I, II or III, the site's *Seismic Design Category* is D. The short- and long-period *Design Spectral Response Accelerations* are presented in Table 1.0; a summary of the *Design Maps* analysis is presented in Appendix C. The *peak ground acceleration* (PGA) may be taken as $0.4*S_{MS}$.

Table 1.0
Short- and Long-Period Spectral Accelerations for MCE

Parameter	Short Period (0.2 sec)	Long Period (1.0 sec)
MCE Spectral Response Acceleration (g)	$S_S = 0.826$	$S_1 = 0.274$
MCE Spectral Response Acceleration Site Class C (g)	$S_{MS} = S_sF_a = 0.883$	$S_{M1} = S_1F_v = 0.419$
Design Spectral Response Acceleration (g)	$S_{DS} = S_{MS}*{}^2/_3 = 0.589$	$S_{D1} = S_{M1}*{}^2/_3 = 0.279$

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the field observations, laboratory testing and previously completed geotechnical investigation (IGES, 2012a), the subsurface conditions are considered suitable for the proposed construction provided that the recommendations presented in this report are incorporated into the design and construction of the project.

General Site Preparation and Grading

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

Below proposed structures, fills, and man-made improvements, all vegetation, topsoil, debris and undocumented fill soils (if any) should be removed. Any existing utilities should be re-routed or protected in place. The exposed native soils should then be proof-rolled with heavy rubber-tired equipment such as a scraper or loader. Any soft/loose areas identified during proof-rolling should be removed and replaced with structural fill. All excavation bottoms should be observed by an IGES representative during proof rolling or otherwise prior to placement of engineered fill to evaluate whether soft, loose, or otherwise deleterious earth materials have been removed and that recommendations presented in this report have been complied with.

Excavations

Soft, loose, or otherwise unsuitable soils beneath structural elements, hardscape or pavements may need to be over-excavated and replaced with structural fill. If over-excavation is required, the excavations should extend 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. Structural fill should consist of granular materials and should be placed and compacted in accordance with the recommendations presented in this report.

Prior to placing engineered fill, all excavation bottoms should be scarified to at least 6 inches, moisture-conditioned as necessary at or slightly above optimum moisture content (OMC), and compacted to at least 90 percent of the maximum dry density (MDD) as determined by ASTM D-1557 (Modified Proctor). Even though we did not encountered bedrock in the test pit for this lot, shallow bedrock was observed in most of the adjacent lots. Thus, it is possible shallow bedrock exists in some area of the lot. Scarification is not required where bedrock is exposed.

Excavation Stability

The contractor is responsible for site safety, including all temporary trenches excavated at the site and the design of any required temporary shoring. The contractor is responsible for providing the "competent person" required by Occupational Safety and Health (OSHA) standards to evaluate soil conditions. For planning purposes, Soil Type C is expected to predominate at the site (sands and gravels). Close coordination between the competent person and IGES should be maintained to facilitate construction while providing safe excavations.

Based on OSHA guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied. Where very moist soil conditions or groundwater is encountered, or 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. As an alternative to shoring or shielding, trench walls may be laid back at one and one half horizontal to one vertical (1½H:1V) (34 degrees) in accordance with OSHA Type C soils. Trench walls may need to be laid back at a steeper grade pending evaluation of soil conditions by the geotechnical engineer. Soil conditions should be evaluated in the field on a case-by-case basis. Large rocks exposed on excavation walls should be removed (scaled) to minimize rock fall hazards.

Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements should consist of structural fill. Structural fill should consist of granular native soils, which may be defined as soils with less than 25% fines, 10-60% sand, and contain no rock larger than 4 inches in nominal size (6 inches in greatest dimension). Structural fill should also be free of vegetation and debris. Soils not meeting these criteria may be suitable for use as structural fill; however, such soils should be evaluated on a case by case basis and should be approved by IGES prior to use.

All structural fill should be placed in maximum 4-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 6-inch loose lifts if compacted by light-duty rollers, and maximum 8-inch loose lifts if compacted by heavy duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. Additional lift thickness may be allowed by IGES provided the Contractor can demonstrate sufficient compaction can be achieved with a given lift thickness with the equipment in use. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by IGES. Structural fill underlying all shallow footings and pavements should be compacted to at least 95 percent of the MDD as determined by ASTM D-1557. The moisture content should be at, or slightly above, the OMC for all structural fill. Any imported fill materials should be approved prior to importing. Also, prior to placing any fill, the excavations should be observed by IGES to confirm that unsuitable materials have been removed.

Specifications from governing authorities such as Weber County and/or special service districts having their own precedence for backfill and compaction should be followed where more stringent.

Utility Trench Backfill

Utility trenches should be backfilled with structural fill in accordance with the previous section. Utility trenches can be backfilled with the onsite soils free of debris, organic and oversized material. Prior to backfilling the trench, pipes should be bedded in and shaded with a uniform granular material that has a Sand Equivalent (SE) of 30 or greater. Pipe bedding may be water-densified in-place (jetting). Alternatively, pipe bedding and shading may consist of clean ¾-inch gravel, which generally does not require densification. Native earth materials can be used as backfill over the pipe bedding zone. All utility trenches backfilled below pavement sections, curb and gutter, hardscape, should be backfilled with structural fill compacted to at least 95 percent of the MDD as determined by ASTM D-1557. All other trenches should be backfilled and compacted to approximately 90 percent of the MDD (ASTM D-1557). However, in all cases the pipe bedding and shading should meet the design criteria of the pipe manufacturer. Specifications from governing authorities having their own precedence for backfill and compaction should be followed where they are more stringent.

Oversize Material

Even though we did not encountered bedrock in the test pit for this lot, shallow bedrock was observed on some of the adjacent lots. Thus, it is possible shallow bedrock exists in some area of the lot. Frequent boulders (>12 inches) were also observed on the surface of the site. Based on our observations at the site and previously completed geotechnical investigation, there is a moderate potential for the presence of oversize materials (larger than 6 inches in greatest dimension). Large rocks, particularly boulders, may require special handling, such as segregation from structural fill, and disposal. Particularly large boulders may require special equipment for removal during excavation of the basement.

Foundations

Based on our field observations and considering the presence of relatively competent native earth materials, we recommend that the footings for proposed home be founded either *entirely* on competent native soils or *entirely* on structural fill. Native/fill transition zones are not allowed beneath a single structure footprint. If soft, loose, or otherwise deleterious earth materials are exposed in the footing excavations, then the footings should be deepened such that all footings bear on relatively uniform, competent native earth materials. Alternatively, the foundation excavation may be over-excavated a minimum of 2 feet below the bottom of proposed footings and replaced with structural fill, such that the footings bear entirely on a uniform fill blanket. We recommend that IGES inspect the bottom of the foundation excavation prior to the placement of steel or concrete to identify the competent native earth materials as well as any unsuitable soils or transition zones. Additional over-excavation may be required based on the actual subsurface conditions observed.

Shallow spread or continuous wall footings constructed entirely on competent, uniform native earth materials or on a minimum of 2 feet of *structural fill* may be proportioned utilizing a maximum net allowable bearing pressure of **2,200 pounds per square foot (psf)** for dead load plus live load conditions. The net allowable bearing value presented above is for dead load plus live load conditions. The minimum recommended footing width is 20 inches for continuous wall footings and 30 inches for isolated spread footings.

All conventional foundations exposed to the full effects of frost should be established at a minimum depth of 42 inches below the lowest adjacent final grade. Interior footings, not subjected to the full effects of frost (i.e., *a continuously heated structure*), may be established at higher elevations, however, a minimum depth of embedment of 12 inches is recommended for confinement purposes.

Foundation drains should be installed around below-ground foundations (e.g., basement walls) to minimize the potential for flooding from shallow groundwater, which may be present at various times during the year, particularly spring run-off.

Settlement

Static settlement of properly designed and constructed conventional foundations, founded as described above, are anticipated to be on the order of 1 inch or less. Differential settlement is expected to be half of total settlement over a distance of 30 feet.

Competent native earth materials and/or properly compacted structural fill is expected to exhibit negligible seismically-induced settlement during a MCE seismic event.

Earth Pressure 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 0.45 for sandy native soils or structural fill should be used.

Ultimate lateral earth pressures from *granular* backfill acting against retaining walls, temporary shoring, or buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in Table 2.0:

Table 2.0
Lateral Earth Pressure Coefficients

Condition	Level Backfill		2H:1V Backfill	
	Lateral Pressure Coefficient	Equivalent Fluid Density (pcf)	Lateral Pressure Coefficient	Equivalent Fluid Density (pcf)
Active (Ka)	0.33	35	0.53	56
At-rest (Ko)	0.50	55	0.80	85
Passive (Kp)	3.0	320	—	—

These coefficients and densities assume no buildup of hydrostatic pressures. The force of water should be added to the presented values if hydrostatic pressures are anticipated.

Clayey soils drain poorly and may swell upon wetting, thereby greatly increasing lateral pressures acting on earth retaining structures; therefore, clayey soils should not be used as retaining wall backfill. Backfill should consist of native granular soil with an Expansion Index (EI) less than 20.

Walls and structures allowed to rotate slightly should use the active condition. If the element is to be constrained against rotation (i.e., a basement or buried tank wall), 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.

Concrete Slab-on-Grade Construction

To minimize settlement and cracking of slabs, and to aid in drainage beneath the concrete floor slabs, all concrete slabs should be founded on a minimum 4-inch layer of compacted gravel overlying properly prepared subgrade. The gravel should consist of free-draining gravel or road base with a 3/4-inch maximum particle size and no more than 5 percent passing the No. 200 mesh sieve. The layer should be compacted to at least 95 percent of the MDD as determined by ASTM D-1557.

All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with a welded wire fabric, re-bar, or fibermesh. Slab reinforcement should be designed by the structural engineer; however, as a minimum, slab reinforcement should consist of 4''×4'' W4.0×W4.0 welded wire mesh within the middle third of the slab. We recommend that concrete be tested to assess that the slump and/or air content is in compliance with the plans and specifications. We recommend that concrete be placed in general accordance with the requirements of the American Concrete Institute (ACI). A Modulus of Subgrade Reaction of **260 psi/inch** may be used for design.

A moisture barrier (vapor retarder) consisting of 10-mil thick Visqueen (or equivalent) plastic sheeting should be placed below slabs-on-grade where moisture-sensitive floor coverings or equipment is planned. Prior to placing this moisture barrier, any objects that could puncture it, such as protruding gravel or rocks, should be removed from the building pad. Alternatively, the subgrade may be covered with 2 inches of clean sand.

Moisture Protection

Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented. The new home may be subject to sheet flow during periods of heavy rain or snow melt; therefore, the Civil Engineer may also wish to consider construction of additional surface drainage to intercept surface runoff, or a curtain drain to intercept seasonal groundwater flow, if any.

We recommend that hand watering, desert landscaping or Xeriscape be considered within 5 feet of the foundations. We further recommend roof runoff devices be installed to direct all runoff a minimum of 10 feet away from structures. The home builder should be responsible for compacting the exterior backfill soils around the foundation. Additionally, the ground surface within 10 feet of the house should be constructed so as to slope a minimum of **five** percent away from the home. Pavement sections should be constructed to divert surface water off of the pavement into storm drains. Parking strips and roadway shoulder areas should be constructed to prevent infiltration of water into the areas surrounding pavement. Landscape plans must conform to Weber County development codes.

IGES recommends a perimeter foundation drain be constructed for the proposed residential structure in accordance with the International Residential Code (IRC).

Soil Corrosion Potential

Laboratory testing of a representative soil sample obtained from the test pit indicated that the soil sample tested had a sulfate content of 8 ppm. Accordingly, the soils are classified as having a 'low' potential for deterioration of concrete due to the presence of soluble sulfate. As such, conventional Type I/II Portland cement may be used for all concrete in contact with site soils.

To evaluate the corrosion potential of ferrous metal in contact with onsite native soil a sample was tested for soil resistivity, soluble chloride and pH. The test indicated that the onsite soil tested has a minimum soil resistivity of 3,156 OHM-cm, soluble chloride content of 3.8 ppm and a pH of 8.2. Based on this result, the onsite native soil is considered to be *moderately corrosive* to ferrous metal. Consideration should be given to retaining the services of a qualified corrosion engineer to provide an assessment of any metal that may be associated with construction of ancillary water lines and reinforcing steel, valves etc.

Construction Considerations

Although shallow bedrock was not identified during our subsurface investigation, it is known that shallow bedrock may occur locally within this area. Although not anticipated, if shallow bedrock is encountered, this material may require special equipment and/or blasting for removal during excavation of the basement.

In addition, several large boulders were observed during our subsurface exploration; as such, excavation of the basement may generate an abundance of over-size material that may require special handling, processing, or disposal.

CLOSURE

The recommendations presented in this letter are based on limited field exploration, literature review, and a general understanding of the proposed construction. The subsurface data used in the preparation of this letter were obtained from the exploration(s) made for this investigation. It is possible that variations in the soil and groundwater conditions could exist beyond the point 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 letter, IGES should be immediately notified so that any necessary revisions to recommendations contained in this letter may be made. In addition, if the scope of the proposed construction changes from that described in this letter, IGES should also 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 letter in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

Additional Services

The recommendations presented in this report are based on the assumption that an adequate program of tests and observations will be made during the construction. IGES 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.
- Consultation as may be required during construction.
- Quality control testing of cast-in-place concrete.
- Review of plans and specifications to assess compliance with our recommendations.

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 contact the undersigned at (801) 748-4044.

Respectfully submitted,
IGES, Inc.

Shun Li, P.E.I.
Staff Engineer

Reviewed by:

PROFESSIONAL ENGINEER
No. 6370734
DAVID A.
GLASS
08-07-14
ELECTRONIC SEAL
STATE OF UTAH

David A. Glass, P.E.
Senior Geotechnical Engineer

Attachments:

References

Appendix A
Figure A-1 – Site Vicinity Map
Figure A-2 – Geotechnical Map
Figure A-3 – Test Pit Log
Figure A-4 – Key to Soil Symbols and Terminology

Appendix B – Laboratory Results

Appendix C – 2012 IBC MCE and Design Response Acceleration

References

AMEC, 2001, Report Engineering Geologic Reconnaissance/Geotechnical Study Powder Mountain Resort.

Federal Emergency Management Agency [FEMA], 1997, *NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures,* FEMA 302, Washington, D.C.

Frankel, A., Mueller, C., Barnard, T., Perkins, D., Leyendecker, E.V., Dickman, N., Hanson, S., and Hopper, M., 1996, *National Seismic-hazard Maps: Documentation*, U.S. Geological Survey Open-File Report 96-532, June.

IGES, Inc., 2012a, Design Geotechnical Investigation, Powder Mountain Resort, Weber County, Utah, Project No. 01628-003, dated November 9, 2012.

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International Building Code [IBC], 2012, International Code Council, Inc.

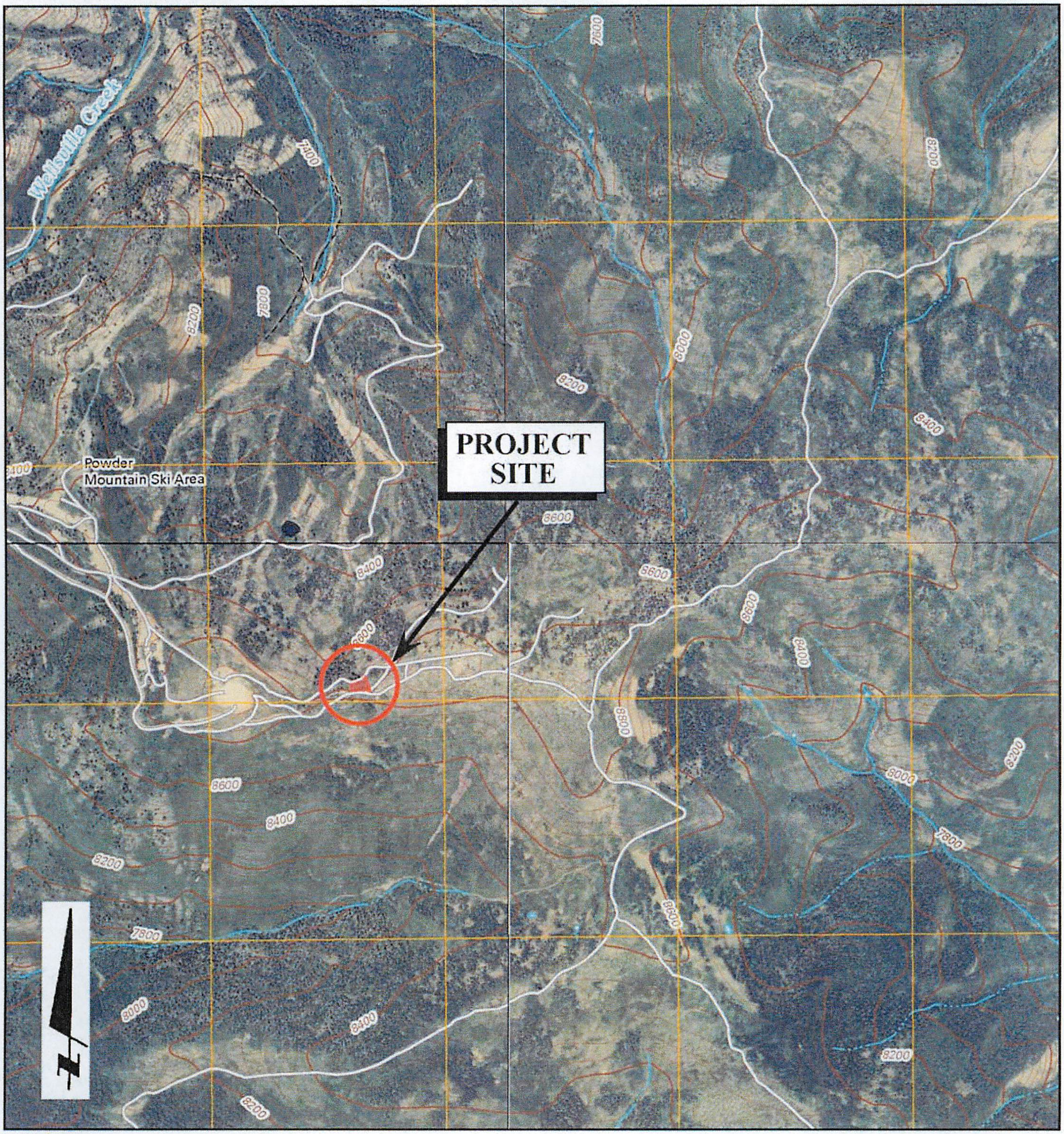
PSI, 2012, Geophysical ReMi Investigation, Powder Mountain Resort, Phase 1A, Weber County, Utah, PSI Project No. 0710375, dated September 18, 2012.

U.S. Geological Survey, 2012, U.S. *Seismic "Design Maps" Web Application*, site: https://geohazards.usgs.gov/secure/designmaps/us/application.php.

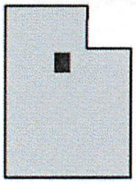
Western Geologic, 2012, Report: Geologic Hazards Reconnaissance, Proposed Area 1 Mixed-Use Development, Powder Mountain Resort, Weber County, Utah, dated August 28, 2012.

APPENDIX A

Exhibit B



BASE MAP:
USGS Huntsville, Browns Hole, James Peak and Sharp Mountain
7.5-Minute Quadrangle Topographic Maps (2011)



MAP LOCATION

0 1000' 2000'

SCALE 1:24,000

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Project No. 01628-006

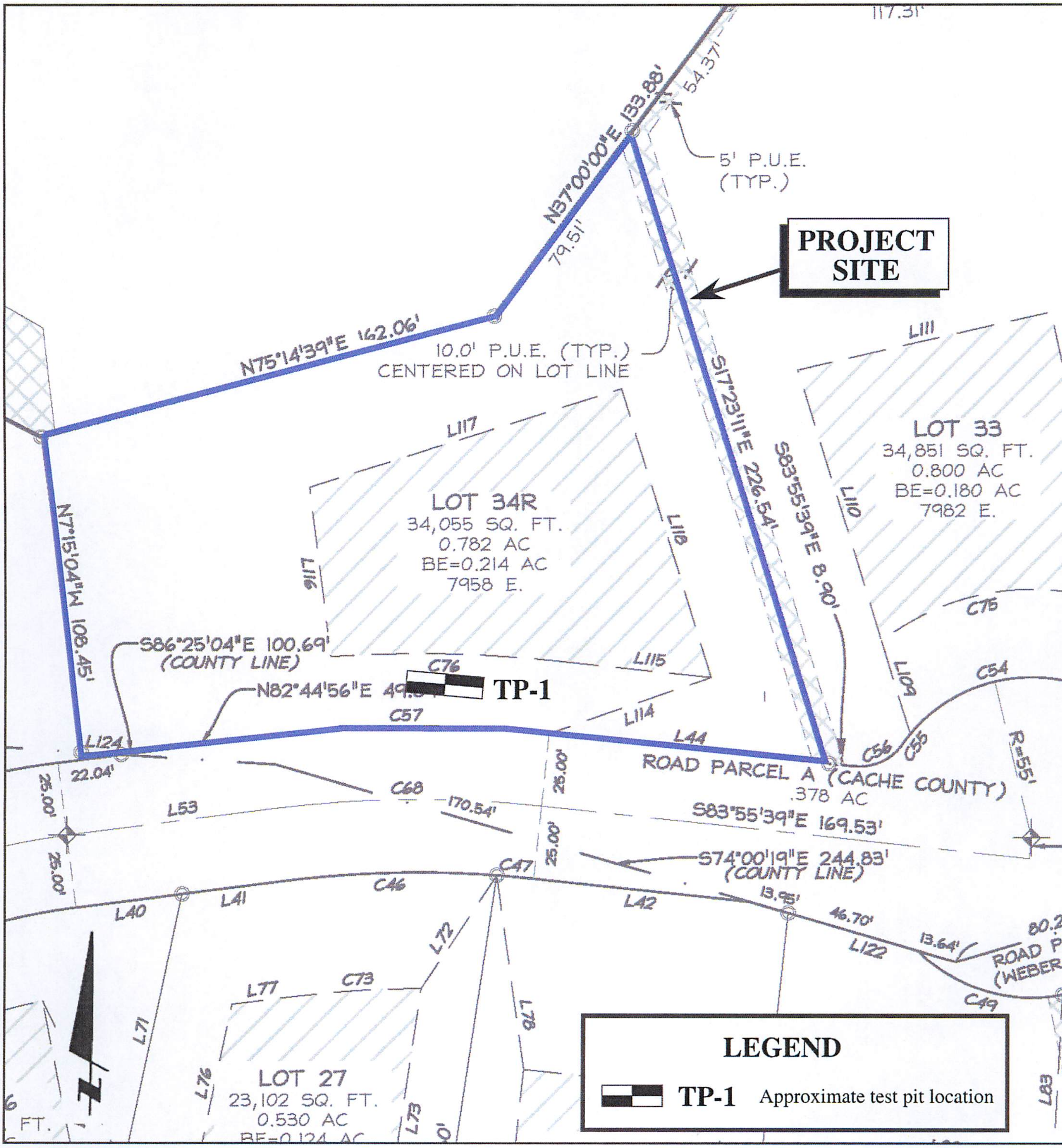
Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

SITE VICINITY MAP

Figure

A-1

Exhibit B



0 25 50

SCALE 1"=50'

Base Map:
Summit Eden Phase 1B, Sheet 3
Prepared by NV5, Dated January 2014

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Project No. 01628-006

Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

GEOTECHNICAL MAP

Figure

A-2

Exhibit B

DATE	
STARTED:	7/18/14
COMPLETED:	7/18/14
BACKFILLED:	7/18/14

Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah
Project Number 01628-006

IGES Rep: SL
Rig Type: trackhoe

TEST PIT NO:
TP-1
Sheet 1 of 1

LOCATION
LATITUDE 41.36961 LONGITUDE -111.75790 ELEVATION 8,808

MATERIAL DESCRIPTION

DEPTH (FEET)	ELEVATION	SAMPLES	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0			SM	Silty SAND - medium dense, moist, mottled, heavy roots in upper 18 inches					
2			SC	Clayey SAND - loose, moist, brown, occasional roots					
	8805								
~4.2		3" O.D. thin-walled hand sampler			83.8	27.2			
5									
	8800								
9			GC	Clayey GRAVEL with sand - loose to medium dense, moist, reddish brown, coarse angular rock (colluvium) disaggregated into angular rock fragments up to 3 inches in diameter					
~9.8		Grab sample				14.9			
10									
12				No groundwater encountered Bottom of Test Pit @ 12 Feet					
	8795								

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

LOG OF TEST PITS (A) -(4 LINE HEADER W ELEV) 01628-006 LOT 34R.GPJ IGES.GDT 8/6/14

IGES®

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

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

FIGURE
A - 3

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

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

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
SEAM	1/16 - 1/2"
LAYER	1/2 - 12"

DESCRIPTION	THICKNESS
OCCASIONAL	ONE OR LESS PER FOOT OF THICKNESS
FREQUENT	MORE THAN ONE PER FOOT OF THICKNESS

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.

IGES

Key to Soil Symbols and Terminology

Figure A-4

IGES, Inc. Project No.: 01628-006

APPENDIX B

Exhibit B

Water Content and Unit Weight of Soil

(In General Accordance with ASTM D7263 Method B and D2216)

IGES

Project: GTI - Powder Mountain Resort
No: 01628-006
Location: Weber County, Utah
Date: 7/29/2014
By: MP

Sample Info.	Boring No.								
	Sample:	Lot34TP1							
	Depth:	4.0'							
Unit Weight Info.	Sample height, H (in)	5.446							
	Sample diameter, D (in)	2.416							
	Sample volume, V (ft^3)	0.0144							
	Mass rings + wet soil (g)	948.80							
	Mass rings/tare (g)	250.66							
	Moist soil, Ws (g)	698.14							
	Moist unit wt., γ_m (pcf)	106.53							
Water Content	Wet soil + tare (g)	819.67							
	Dry soil + tare (g)	670.76							
	Tare (g)	122.36							
Water Content, w (%)		**27.2**							
Dry Unit Wt., γ_d (pcf)		**83.8**							

Entered by:__________

Reviewed:__________

Exhibit B

Minimum Laboratory Soil Resistivity, pH of Soil for Use in Corrosion Testing, and Ions in Water by Chemically Suppressed Ion Chromatography *(AASHTO T 288, T 289, ASTM D4327, and C1580)*

IGES

Project: GTI - Powder Mountain Resort
No: 01628-006
Location: Weber County, Utah
Date: 8/5/2014
By: ET

Sample info.	Boring No.					
	Sample		Lot 34 TP1			
	Depth		9.5'			
Water content data	Wet soil + tare (g)		140.57			
	Dry soil + tare (g)		127.24			
	Tare (g)		37.80			
	Water content (%)		14.9			
Chem. data	pH		8.16			
	Soluble chloride* (ppm)		3.8			
	Soluble sulfate** (ppm)		8			
Resistivity data	Pin method		2			
	Soil box		Miller Small			
			Approximate Soil condition (%)	Resistance Reading (Ω)	Soil Box Multiplier (cm)	Resistivity (Ω-cm)
			As Is	8550	0.67	5729
			+3	6570	0.67	4402
			+6	4710	0.67	3156
			+9	4760	0.67	3189
	Minimum resistivity (Ω-cm)		**3156**			

* Performed by AWAL using EPA 300.0

** Performed by AWAL using ASTM C1580

Entered by:__________

Reviewed:__________

Z:\PROJECTS\01628_Powder_Mountain\006_GTI\[RESv3.xls]1

APPENDIX C

Exhibit B

USGS Design Maps Summary Report

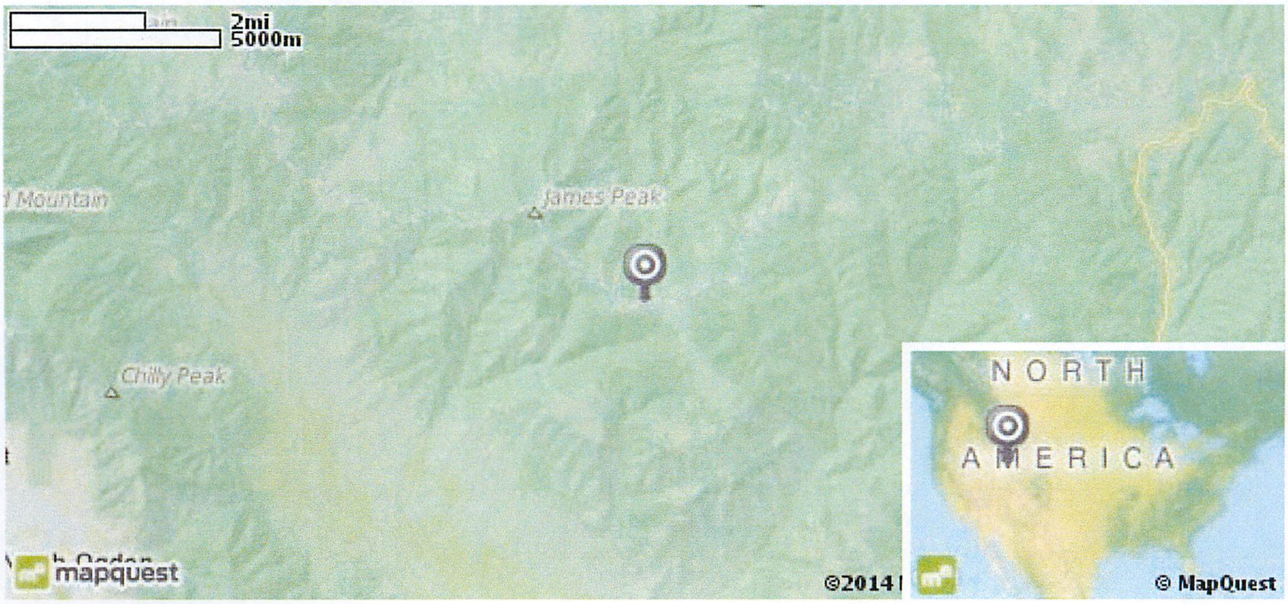
User–Specified Input

Building Code Reference Document 2012 International Building Code
(which utilizes USGS hazard data available in 2008)

Site Coordinates 41.36961°N, 111.7579°W

Site Soil Classification Site Class C – "Very Dense Soil and Soft Rock"

Risk Category I/II/III

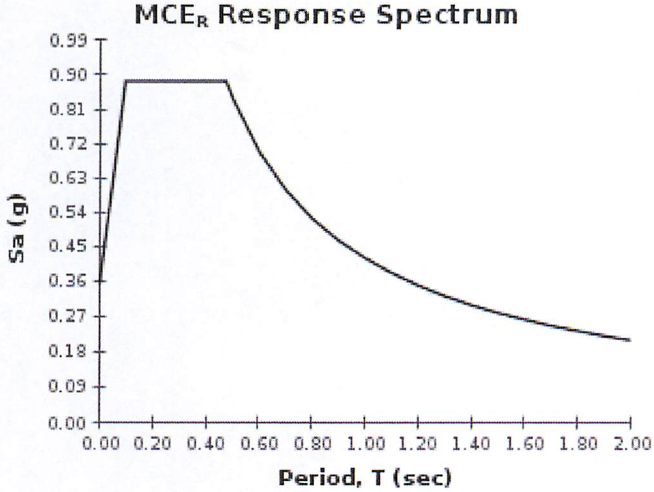


USGS–Provided Output

S_S =	0.826 g	S_{MS} =	0.883 g	S_{DS} =	0.589 g
S_1 =	0.274 g	S_{M1} =	0.419 g	S_{D1} =	0.279 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

MCE_R Response Spectrum



Design Response Spectrum

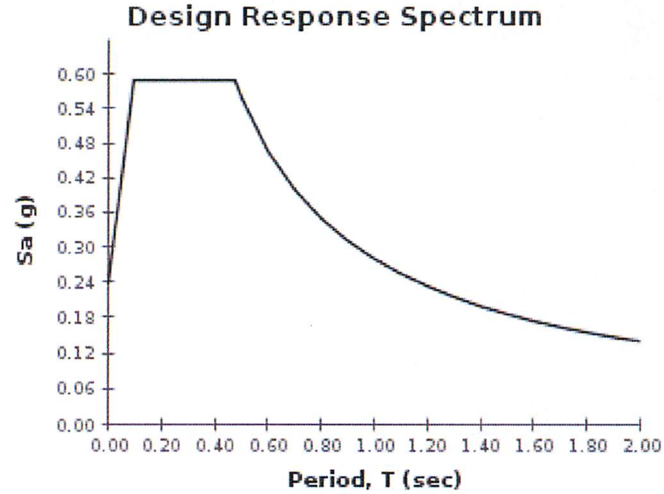


Exhibit B

USGS Design Maps Detailed Report

2012 International Building Code (41.36961°N, 111.7579°W)

Site Class C – "Very Dense Soil and Soft Rock", Risk Category I/II/III

Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_S) and 1.3 (to obtain S_1). Maps in the 2012 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

From Figure 1613.3.1(1) [1] $S_S = 0.826$ g

From Figure 1613.3.1(2) [2] $S_1 = 0.274$ g

Section 1613.3.2 — Site class definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class C, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard – Table 20.3-1
SITE CLASS DEFINITIONS

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index $PI > 20$, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\bar{s}_u < 500$ psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Exhibit B

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F_a

Site Class	Mapped Spectral Response Acceleration at Short Period				
	$S_S \leq 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \geq 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

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

For Site Class = C and S_s = 0.826 g, F_a = 1.070

TABLE 1613.3.3(2)
VALUES OF SITE COEFFICIENT F_v

Site Class	Mapped Spectral Response Acceleration at 1-s Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

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

For Site Class = C and S_1 = 0.274 g, F_v = 1.526

Equation (16-37): $S_{MS} = F_aS_S = 1.070 \times 0.826 = 0.883$ g

---

Equation (16-38): $S_{M1} = F_vS_1 = 1.526 \times 0.274 = 0.419$ g

---

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39): $S_{DS} = ⅔ S_{MS} = ⅔ \times 0.883 = 0.589$ g

---

Equation (16-40): $S_{D1} = ⅔ S_{M1} = ⅔ \times 0.419 = 0.279$ g

---

Exhibit B

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \le S_{DS} < 0.33g$	B	B	C
$0.33g \le S_{DS} < 0.50g$	C	C	D
$0.50g \le S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.589 g, Seismic Design Category = D

TABLE 1613.3.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \le S_{D1} < 0.133g$	B	B	C
$0.133g \le S_{D1} < 0.20g$	C	C	D
$0.20g \le S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.279 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = D

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 1613.3.1(1)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
2. *Figure 1613.3.1(2)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf

Exhibit B

Intermountain GeoEnvironmental Services, Inc.
12429 South 300 East Suite 100, Draper, Utah 84020 ~ T: (801) 748-4044 ~ F: (801) 748-4045

August 11, 2014

Mr. Grant H. Blakeslee
Summit, LLC
3632 North Wolf Creek Drive
Eden, Utah 84310

IGES Project No. 01628-006

RE: Geotechnical Investigation Report (Revised)
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

Mr. Blakeslee,

As requested, IGES has conducted a geotechnical investigation for the proposed residence to be constructed on Lot 34R of the Powder Mountain Resort located at 7958 East Heartwood Drive in Weber County, Utah. The approximate location of the property is illustrated on the *Site Vicinity Map* (Figure A-1 in Appendix A). The purposes of our investigation was to assess the nature and engineering properties of the subsurface soils at the proposed home site and to provide recommendations for the design and construction of foundations, grading, and drainage. The scope of work completed for this study included subsurface exploration, laboratory testing, engineering analyses and preparation of this letter. This report has been revised from the original report dated August 7, 2014 to further discuss the presence of bedrock at the site.

Project Understanding

Our understanding of the project is based primarily on our previous involvement with the Powder Mountain resort project, which included two geotechnical investigations for the greater 200-acre Powder Mountain Resort expansion project (IGES, 2012a and 2012b).

The Powder Mountain Resort expansion project is located southeast of SR-158 (Powder Mountain Road), south of previously developed portions of Powder Mountain Resort, in unincorporated Weber County, Utah. The project is accessed by Powder Ridge Road.

Lot 34R is a ¾-acre single-family residential lot with a buildable envelope of approximately 0.21 acres. A single-family home will be constructed at the site, presumably a high-end vacation home. Construction plans were not available for our review; however, we assume the new home will be a one- or two-story wood-framed structure, with a walk-out basement, founded on conventional spread footings. The development is expected to include improvements common for residential subdivisions such as underground utilities, curb and gutter, flatwork, landscaping, and possibly appurtenant structures.

METHOD OF STUDY

Literature Review

IGES completed a geotechnical investigation for the Powder Mountain Resort expansion in 2012 (2012a, 2012b). Our previous work included twenty-two test pits and one soil boring excavated at various locations across the 200-acre development; as a part of this current study, the logs from relevant nearby test pits and other data from our reports were reviewed. In addition, Western Geologic (2012) completed a geologic hazard study for the greater 200-acre Powder Mountain expansion project – this report was reviewed to assess the potential impact of geologic hazards on the subject lot.

Field Investigation

Subsurface soils were investigated by excavating one test pit approximately 12 feet below the existing site grade. The approximate location of the test pit is illustrated on the *Geotechnical Map* (Figure A-2 in Appendix A). The soil types and conditions were visually logged at the time of the excavation in general accordance with the Unified Soil Classification System (USCS). Subsurface soil classifications and descriptions are included on the test pit log included as Figure A-3 in Appendix A. A key to USCS symbols and terminology is included as Figure A-4.

Laboratory Testing

Samples retrieved during the subsurface investigation were transported to the laboratory for evaluation of engineering properties. Specific laboratory tests include:

- Moisture Content and Unit Weight
- Soluble Sulfate, Soluble Chloride, pH and Resistivity

Results of the laboratory testing are discussed in this report and presented in Appendix B. Some test results, including moisture content; and unit weight, have been incorporated into the test pit log (Figure A-3).

In addition to laboratory testing on samples obtained from this lot, engineering analysis was also based on previously completed laboratory work on soil samples obtained near the site (IGES, 2012a & 2012b).

Engineering Analysis

Engineering analyses were performed using soil data obtained from laboratory testing and empirical correlations based on 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. An allowable bearing pressure value was proportioned based on estimated shear strength of bearing soils.

FINDINGS

Surface Conditions

At the time of the excavation, the lot was in a relatively natural state and was covered with a variety of vegetation including mature pine trees, native grasses and shrubs. The lot slopes relatively steeply toward north at a gradient of approximately 2.4H:1V, away from Heartwood Drive. On the southern boundary of the lot there is a 'ridge' jutting northeast into the building envelope, forming a topographic high point for the lot. This ridge is covered with a stand of mature pine trees. The ridge also represents an exposure of bedrock (dolomite). The remainder of the lot is essentially a sloped grassy field. Aside from the rocky outcrops on the ridge, several angular boulders could be observed at various locations on the surface.

Earth Materials

The earth materials exposed at the site consist of a rocky northeast-southwest-trending salient exposing dolomite bedrock, surrounded by a thick sequence of sandy colluvial cover (this is illustrated on Figure A-2). The soil at the surface of the site consists of approximately 6 inches of poorly-developed topsoil consisting of mottled silty sand characterized by an abundance of organic matter (roots, etc.). The topsoil was underlain by medium dense clayey sand extending to a depth of approximately 9 feet below existing grade. Underlying this layer, we encountered coarse colluvium consisting of medium-dense clayey gravel. The colluvium was characterized by abundant coarse angular rock fragments, which extended to the bottom of the excavation (approximately 12 feet below the existing grade). Due to the coarsness of the colluvium at 12 feet, it is postulated that bedrock could have been within a few feet of the bottom of the test pit; however, difficult excavating conditions limited the depth of the test pit.

Upon the topographic high point of the lot (illustrated on Figure A-2 in red, designated as geologic unit Ꞓr), we observed bedrock outcrops consisting of highly weathered, closely fractured dark gray dolomite. The rock unit is fairly hard – samples could only be obtained with a firm blow from a rock hammer. It should be noted that the rock/colluvium contact it thought to dip steeply, since bedrock was not encountered in the test pit even though the test pit was excavated near the bedrock outcrop.

Detailed descriptions of earth materials encountered are presented on the test pit log, Figure A-3, in Appendix A.

Groundwater

Groundwater was not encountered in the test pit excavation. Based on our observations, groundwater is not anticipated to adversely impact the proposed construction. However, groundwater levels could rise at any time based on several factors including recent precipitation, on- or off-site runoff, irrigation, and time of year (e.g., spring run-off). Should the groundwater become a concern during the proposed construction, IGES should be contacted so that dewatering recommendations may be provided.

Geology and Geologic Hazards

Geology and geologic hazards have been previously addressed by Western Geologic in a separate submittal (Western Geologic, 2012). This work has also been referenced in our previous geotechnical reports for the project (IGES, 2012a and 2012b). The report by Western Geologic indicates that the lot is located outside of known geologically unstable areas. The Western Geologic report also includes a large-scale geologic map that shows the subject lot in an area mapped as "undifferentiated dolomite". Dolomite is a rock that has similar mechanical properties to limestone and is fairly hard, often forming cliffs and other near-vertical formations.

During our subsurface investigation, potentially adverse geologic structures (e.g., evidence of faulting or landslides) were not evident to the maximum depth of exploration (12 feet). Geomorphic expressions of shallow, surficial landslides were not observed on, or near the lot. Based on currently available data and our observations, the potential for geologic hazards such as landslides, liquefaction, or surface fault rupture impacting the site is considered low.

Seismicity

Following the criteria outlined in the 2012 International Building Code (IBC, 2012), spectral response at the site was evaluated for the *Maximum Considered Earthquake* (MCE) which equates to a probabilistic seismic event having a two percent probability of exceedance in 50 years (2PE50). Spectral accelerations were determined based on the location of the site using the *U.S. Seismic "DesignMaps" Web Application* (USGS, 2012); this software incorporates seismic hazard maps depicting probabilistic ground motions and spectral response data 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, 2012).

To account for site effects, site coefficients that vary with the magnitude of spectral acceleration and *Site Class* are used. Site Class is a parameter that accounts for site amplification effects of soft soils and is based on the average shear wave velocity of the upper 100 feet; based on our field exploration and our understanding of the geology in this area, the subject site is appropriately classified as Site Class B (*Rock*). Based on IBC criteria, the short-period (F_a) coefficient is 1.0 and long-period (F_v) site coefficient is 1.0. Based on the design spectral response accelerations for a *Building Risk Category* of I, II or III, the site's *Seismic Design Category* is D. The short- and long-period *Design Spectral Response Accelerations* are presented in Table 1.0; a summary of the *Design Maps* analysis is presented in Appendix C. The *peak ground acceleration* (PGA) may be taken as $0.4 * S_{MS}$.

Table 1.0
Short- and Long-Period Spectral Accelerations for MCE

Parameter	Short Period (0.2 sec)	Long Period (1.0 sec)
MCE Spectral Response Acceleration (g)	$S_S = 0.826$	$S_1 = 0.274$
MCE Spectral Response Acceleration Site Class C (g)	$S_{MS} = S_S F_a = 0.826$	$S_{M1} = S_1 F_v = 0.274$
Design Spectral Response Acceleration (g)	$S_{DS} = S_{MS} * {}^2/_3 = 0.551$	$S_{D1} = S_{M1} * {}^2/_3 = 0.183$

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the field observations, laboratory testing and previously completed geotechnical investigation (IGES, 2012a), the subsurface conditions are considered suitable for the proposed construction provided that the recommendations presented in this report are incorporated into the design and construction of the project.

General Site Preparation and Grading

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

Below proposed structures, fills, and man-made improvements, all vegetation, topsoil, debris and undocumented fill soils (if any) should be removed. Any existing utilities should be re-routed or protected in place. The exposed native soils should then be proof-rolled with heavy rubber-tired equipment such as a scraper or loader. Any soft/loose areas identified during proof-rolling should be removed and replaced with structural fill. All excavation bottoms should be observed by an IGES representative during proof rolling or otherwise prior to placement of engineered fill to evaluate whether soft, loose, or otherwise deleterious earth materials have been removed and that recommendations presented in this report have been complied with.

Excavations

Soft, loose, or otherwise unsuitable soils beneath structural elements, hardscape or pavements may need to be over-excavated and replaced with structural fill. If over-excavation is required, the excavations should extend 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. Structural fill should consist of granular materials and should be placed and compacted in accordance with the recommendations presented in this report.

Prior to placing engineered fill, all excavation bottoms should be scarified to at least 6 inches, moisture-conditioned as necessary at or slightly above optimum moisture content (OMC), and compacted to at least 90 percent of the maximum dry density (MDD) as determined by ASTM D-1557 (Modified Proctor). Scarification is not required where bedrock is exposed.

Excavation Stability

The contractor is responsible for site safety, including all temporary trenches excavated at the site and the design of any required temporary shoring. The contractor is responsible for providing the "competent person" required by Occupational Safety and Health (OSHA) standards to evaluate soil conditions. For planning purposes, Soil Type C is expected to predominate at the site (sands and gravels). Close coordination between the competent person and IGES should be maintained to facilitate construction while providing safe excavations.

Based on OSHA guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied. Where very moist soil conditions or groundwater is encountered, or 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. As an alternative to shoring or shielding, trench walls may be laid back at one and one half horizontal to one vertical (1½H:1V) (34 degrees) in accordance with OSHA Type C soils. Trench walls may need to be laid back at a steeper grade pending evaluation of soil conditions by the geotechnical engineer. Soil conditions should be evaluated in the field on a case-by-case basis. Large rocks exposed on excavation walls should be removed (scaled) to minimize rock fall hazards. Where dolomite bedrock is exposed, near-vertical walls (0.25H:1V) may be permitted provided adverse jointing or bedding patterns are absent and the excavation is assessed by the OSHA 'competent person' prior to occupancy.

Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements should consist of structural fill. Structural fill should consist of granular native soils, which may be defined as soils with less than 25% fines, 10-60% sand, and contain no rock larger than 4 inches in nominal size (6 inches in greatest dimension). Structural fill should also be free of vegetation and debris. Soils not meeting these criteria may be suitable for use as structural fill; however, such soils should be evaluated on a case by case basis and should be approved by IGES prior to use.

All structural fill should be placed in maximum 4-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 6-inch loose lifts if compacted by light-duty rollers, and maximum 8-inch loose lifts if compacted by heavy duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. Additional lift thickness may be allowed by IGES provided the Contractor can demonstrate sufficient compaction can be achieved with a given lift thickness with the equipment in use. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by IGES. Structural fill underlying all shallow footings and pavements should be compacted to at least 95 percent of the MDD as determined by ASTM D-1557.

The moisture content should be at, or slightly above, the OMC for all structural fill. Any imported fill materials should be approved prior to importing. Also, prior to placing any fill, the excavations should be observed by IGES to confirm that unsuitable materials have been removed.

Specifications from governing authorities such as Weber County and/or special service districts having their own precedence for backfill and compaction should be followed where more stringent.

Utility Trench Backfill

Utility trenches should be backfilled with structural fill in accordance with the previous section. Utility trenches can be backfilled with the onsite soils free of debris, organic and oversized material. Prior to backfilling the trench, pipes should be bedded in and shaded with a uniform granular material that has a Sand Equivalent (SE) of 30 or greater. Pipe bedding may be water-densified in-place (jetting). Alternatively, pipe bedding and shading may consist of clean ¾-inch gravel, which generally does not require densification. Native earth materials can be used as backfill over the pipe bedding zone. All utility trenches backfilled below pavement sections, curb and gutter, hardscape, should be backfilled with structural fill compacted to at least 95 percent of the MDD as determined by ASTM D-1557. All other trenches should be backfilled and compacted to approximately 90 percent of the MDD (ASTM D-1557). However, in all cases the pipe bedding and shading should meet the design criteria of the pipe manufacturer. Specifications from governing authorities having their own precedence for backfill and compaction should be followed where they are more stringent.

Foundations

Based on our field observations and considering the presence of bedrock exposures within the building envelope, we recommend that the footings for proposed home be founded *entirely* on bedrock. Bedrock/soil transition zones are not allowed. However, it is possible, and even likely, that deep colluvial deposits located on the north side of the building envelope may preclude the practical construction of all foundation on bedrock; as such, as an alternative to extending all foundations to bedrock, foundations constructed over colluvium may be underpinned with micropiles or a similar underpinning technology. This is conceptually illustrated on Figure D-1 in Appendix D.

Since the bedrock/colluvium contact cannot be known with certainty, and since the design of the new home is currently in the planning stages, the extent to which micropiles will be necessary (or perhaps not required) will not be evident until the basement is excavated. We recommend that IGES inspect the bottom of the foundation excavation prior to the placement of steel or concrete to identify any unsuitable soils or transition zones. If bedrock/soil transitions zones are identified, the Contractor may wish to pot-hole to assess the depth to bedrock and thus determine if deepening the foundations is practical, or if underpinning the foundations is the preferred option.

It should be noted that the bedrock at the site is expected to be very difficult to excavate (see *Construction Considerations* on page 11 of this report).

Shallow spread or continuous wall footings constructed entirely on competent bedrock may be proportioned utilizing a maximum net allowable bearing pressure of **5,000 pounds per square foot (psf)** for dead load plus live load conditions. The net allowable bearing value presented above is for dead load plus live load conditions. The minimum recommended footing width is 20 inches for continuous wall footings and 30 inches for isolated spread footings.

All conventional foundations exposed to the full effects of frost should be established at a minimum depth of 42 inches below the lowest adjacent final grade. Interior footings, not subjected to the full effects of frost (i.e., *a continuously heated structure*), may be established at higher elevations, however, a minimum depth of embedment of 12 inches is recommended for confinement purposes.

Foundation drains should be installed around below-ground foundations (e.g., basement walls) to minimize the potential for flooding from shallow groundwater, which may be present at various times during the year, particularly spring run-off.

Underpinning

Underpinning, if used, should be designed by IGES or an engineer experienced in deep foundation design. *For planning purposes*, underpinning may consist of micropiles conforming to the following criteria:

- Injection Bore micropile, R38N hollow bar, uncased.
- 6-inch grouted diameter.
- Socket a minimum of three feet into bedrock or 20 feet into colluvium, whichever is shorter.
- A single micropile, as described above, may be assumed to have an allowable axial capacity of 35 kips.
- Lateral resistance, if required by the Structural Engineer, will require a cased micropile and must be designed for specific project requirements.

Settlement

Static settlement of properly designed and constructed conventional foundations, founded as described above, are anticipated to be on the order of 1 inch or less. Differential settlement is expected to be half of total settlement over a distance of 30 feet.

Competent native earth materials and/or properly compacted structural fill is expected to exhibit negligible seismically-induced settlement during a MCE seismic event.

Earth Pressure 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 0.45 for sandy native soils or structural fill should be used.

Ultimate lateral earth pressures from *granular* backfill acting against retaining walls, temporary shoring, or buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in Table 2.0. These lateral pressures should be assumed even if the backfill is placed in a relatively narrow gap between a vertical bedrock cut and the foundation wall.

Table 2.0
Lateral Earth Pressure Coefficients

Condition	Level Backfill		2H:1V Backfill	
	Lateral Pressure Coefficient	Equivalent Fluid Density (pcf)	Lateral Pressure Coefficient	Equivalent Fluid Density (pcf)
Active (Ka)	0.33	35	0.53	56
At-rest (Ko)	0.50	55	0.80	85
Passive (Kp)	3.0	320	—	—

These coefficients and densities assume no buildup of hydrostatic pressures. The force of water should be added to the presented values if hydrostatic pressures are anticipated.

Clayey soils drain poorly and may swell upon wetting, thereby greatly increasing lateral pressures acting on earth retaining structures; therefore, clayey soils should not be used as retaining wall backfill. Backfill should consist of native granular soil with an Expansion Index (EI) less than 20.

Walls and structures allowed to rotate slightly should use the active condition. If the element is to be constrained against rotation (i.e., a basement or buried tank wall), 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.

Concrete Slab-on-Grade Construction

To minimize settlement and cracking of slabs, and to aid in drainage beneath the concrete floor slabs, all concrete slabs should be founded on a minimum 4-inch layer of compacted gravel overlying properly prepared subgrade. The gravel should consist of free-draining gravel or road base with a 3/4-inch maximum particle size and no more than 5 percent passing the No. 200 mesh sieve. The layer should be compacted to at least 95 percent of the MDD as determined by ASTM D-1557.

All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with a welded wire fabric, re-bar, or fibermesh. Slab reinforcement should be designed by the structural engineer; however, as a minimum, slab reinforcement should consist of 4''×4'' W4.0×W4.0 welded wire mesh within the middle third of the slab. We recommend that concrete be tested to assess that the slump and/or air content is in compliance with the plans and specifications. We recommend that concrete be placed in general accordance with the requirements of the American Concrete Institute (ACI). A Modulus of Subgrade Reaction of **400 psi/inch** may be used for design.

A moisture barrier (vapor retarder) consisting of 10-mil thick Visqueen (or equivalent) plastic sheeting should be placed below slabs-on-grade where moisture-sensitive floor coverings or equipment is planned. Prior to placing this moisture barrier, any objects that could puncture it, such as protruding gravel or rocks, should be removed from the building pad. Alternatively, the subgrade may be covered with 2 inches of clean sand.

Moisture Protection

Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented. The new home may be subject to sheet flow during periods of heavy rain or snow melt; therefore, the Civil Engineer may also wish to consider construction of additional surface drainage to intercept surface runoff, or a curtain drain to intercept seasonal groundwater flow, if any.

We recommend that hand watering, desert landscaping or Xeriscape be considered within 5 feet of the foundations. We further recommend roof runoff devices be installed to direct all runoff a minimum of 10 feet away from structures. The home builder should be responsible for compacting the exterior backfill soils around the foundation. Additionally, the ground surface within 10 feet of the house should be constructed so as to slope a minimum of **five** percent away from the home. Pavement sections should be constructed to divert surface water off of the pavement into storm drains. Parking strips and roadway shoulder areas should be constructed to prevent infiltration of water into the areas surrounding pavement. Landscape plans must conform to Weber County development codes.

IGES recommends a perimeter foundation drain be constructed for the proposed residential structure in accordance with the International Residential Code (IRC).

Soil Corrosion Potential

Laboratory testing of a representative soil sample obtained from the test pit indicated that the soil sample tested had a sulfate content of 8 ppm. Accordingly, the soils are classified as having a 'low' potential for deterioration of concrete due to the presence of soluble sulfate. As such, conventional Type I/II Portland cement may be used for all concrete in contact with site soils.

To evaluate the corrosion potential of ferrous metal in contact with onsite native soil a sample was tested for soil resistivity, soluble chloride and pH. The test indicated that the onsite soil tested has a minimum soil resistivity of 3,156 OHM-cm, soluble chloride content of 3.8 ppm and a pH of 8.2. Based on this result, the onsite native soil is considered to be *moderately corrosive* to ferrous metal. Consideration should be given to retaining the services of a qualified corrosion engineer to provide an assessment of any metal that may be associated with construction of ancillary water lines and reinforcing steel, valves etc.

Construction Considerations

- Excavation Difficulty: bedrock consisting of relatively hard dolomite is exposed at the surface within the building envelope. Based on conversations with contractors currently working in the vicinity, this rock is expected to be relatively difficult to remove. Special heavy-duty excavation equipment will likely be required, such as a hammer hoe.
- Over-Size Material: A bedrock outcrop was observed within the building footprint of this lot. In addition, large boulders up to 12 inches were observed on the surface; larger boulders may be present within the colluvial soil. As such, development of the lot is expected to generate a substantial amount of over-size material (rocks larger than 6 inches in greatest dimension). Large rocks, particularly boulders, may require special handling, such as segregation from structural fill, and disposal. Bedrock is expected to require specialized equipment for removal during excavation of the basement.

CLOSURE

The recommendations presented in this letter are based on limited field exploration, literature review, and a general understanding of the proposed construction. The subsurface data used in the preparation of this letter were obtained from the exploration(s) made for this investigation. It is possible that variations in the soil and groundwater conditions could exist beyond the point 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 letter, IGES should be immediately notified so that any necessary revisions to recommendations contained in this letter may be made. In addition, if the scope of the proposed construction changes from that described in this letter, IGES should also 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 letter in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

Additional Services

The recommendations presented in this report are based on the assumption that an adequate program of tests and observations will be made during the construction. IGES 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.
- Consultation as may be required during construction.
- Quality control testing of cast-in-place concrete.
- Review of plans and specifications to assess compliance with our recommendations.

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 contact the undersigned at (801) 748-4044.

Respectfully submitted,
IGES, Inc.

Reviewed by:

Shun Li, P.E.I.
Staff Engineer

David A. Glass, P.E.
Senior Geotechnical Engineer

Attachments:

References

Appendix A
- Figure A-1 – Site Vicinity Map
- Figure A-2 – Geotechnical Map
- Figure A-3 – Test Pit Log
- Figure A-4 – Key to Soil Symbols and Terminology

Appendix B – Laboratory Results

Appendix C – 2012 IBC MCE and Design Response Acceleration

Appendix B – Laboratory Results
- Figure D-1 – Conceptual Cross-Section – Foundation Underpinning
- Figure D-2 – Conceptual Cross-Section – Source Plan-View

References

AMEC, 2001, Report Engineering Geologic Reconnaissance/Geotechnical Study Powder Mountain Resort.

Federal Emergency Management Agency [FEMA], 1997, *NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures,* FEMA 302, Washington, D.C.

Frankel, A., Mueller, C., Barnard, T., Perkins, D., Leyendecker, E.V., Dickman, N., Hanson, S., and Hopper, M., 1996, *National Seismic-hazard Maps: Documentation*, U.S. Geological Survey Open-File Report 96-532, June.

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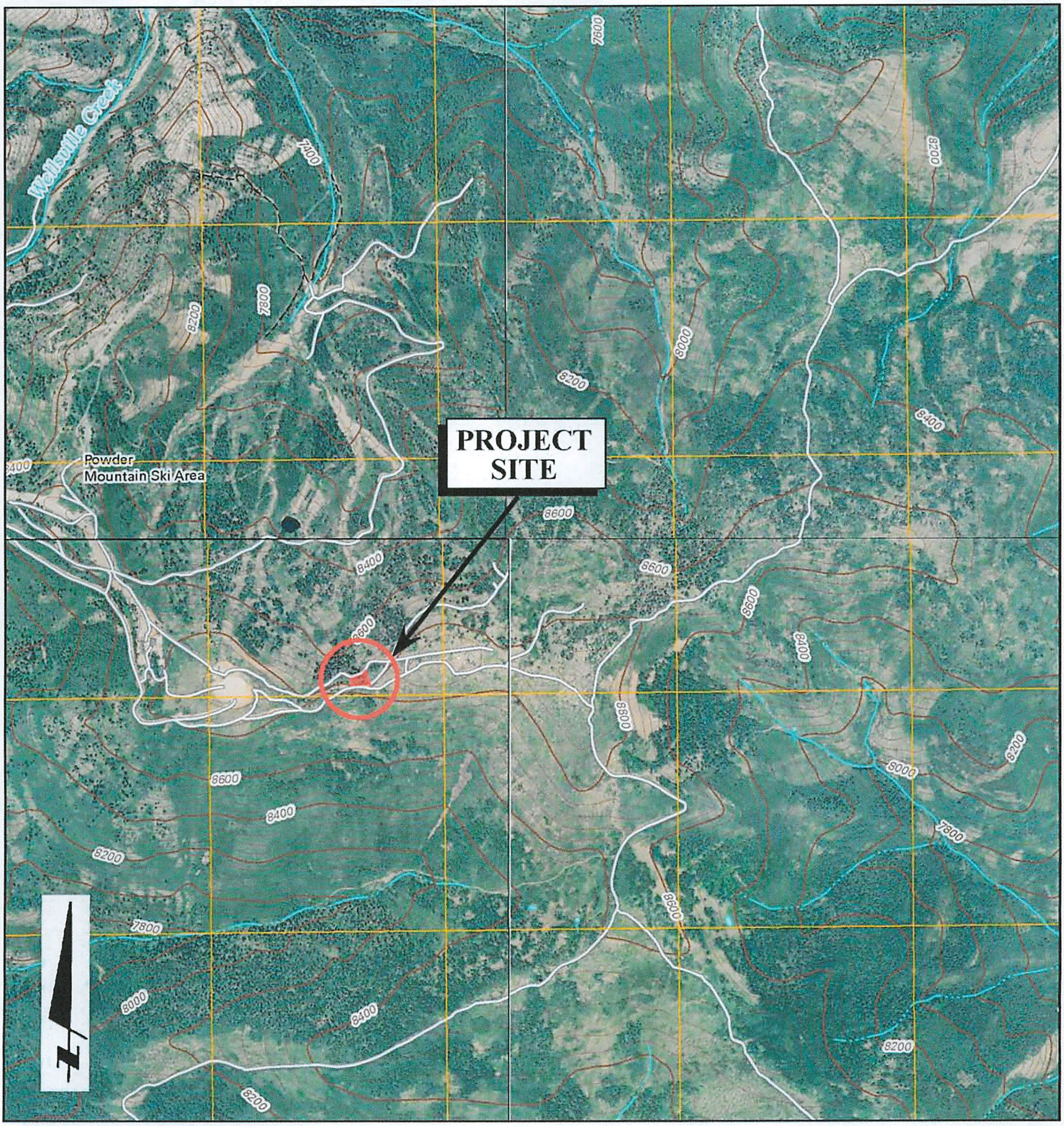
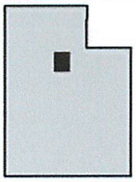
Western Geologic, 2012, Report: Geologic Hazards Reconnaissance, Proposed Area 1 Mixed-Use Development, Powder Mountain Resort, Weber County, Utah, dated August 28, 2012.

APPENDIX A

Exhibit B



BASE MAP:
USGS Huntsville, Browns Hole, James Peak and Sharp Mountain
7.5-Minute Quadrangle Topographic Maps (2011)



MAP LOCATION

0 1000' 2000'
SCALE 1:24,000

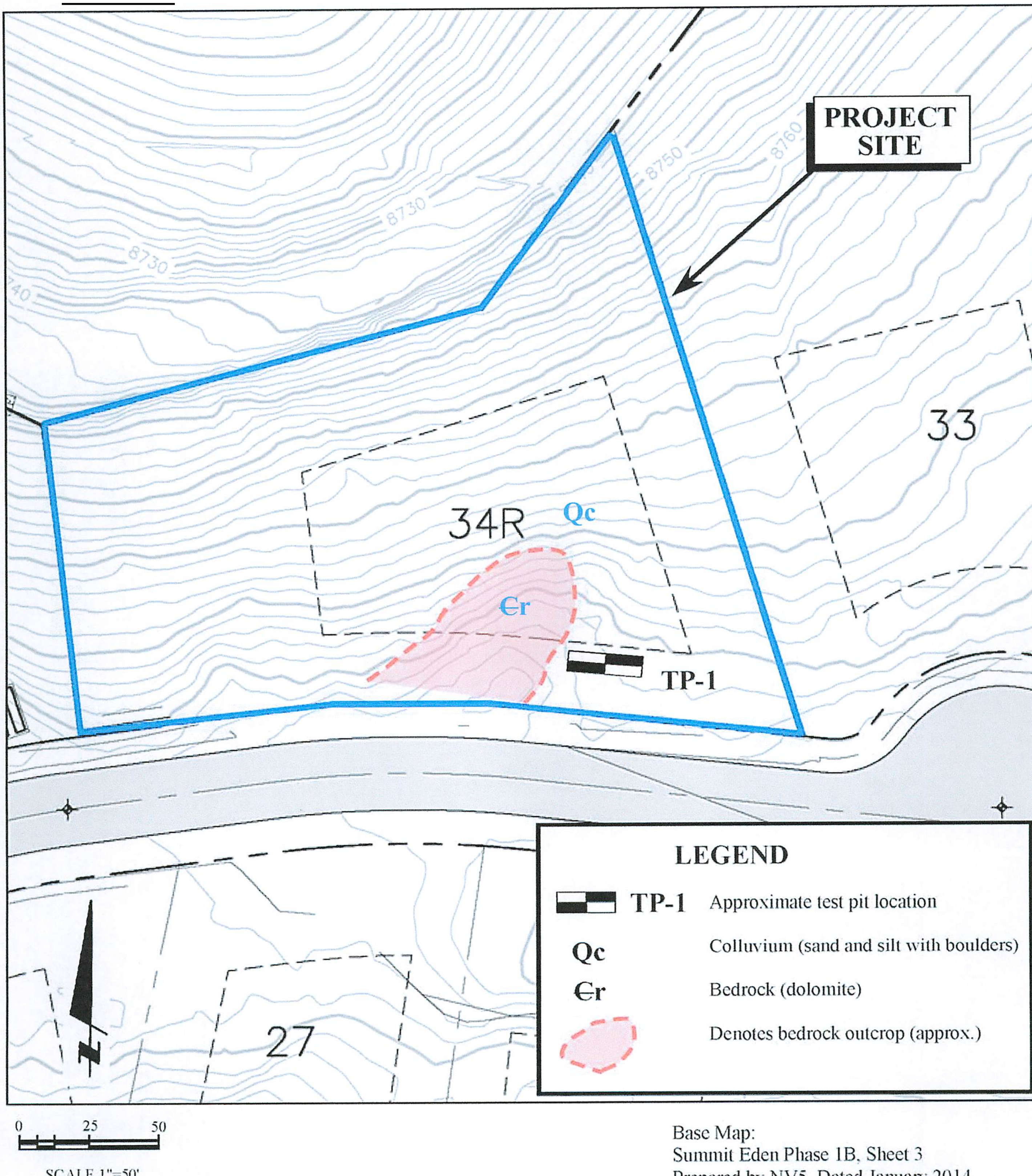
IGES®
Project No. 01628-006

Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

SITE VICINITY MAP

Figure
A-1

Exhibit B



Base Map:
Summit Eden Phase 1B, Sheet 3
Prepared by NV5, Dated January 2014

IGES®

Project No. 01628-006

Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

GEOTECHNICAL MAP

Figure A-2

DATE	
STARTED:	7/18/14
COMPLETED:	7/18/14
BACKFILLED:	7/18/14

Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah
Project Number 01628-006

IGES Rep: SL
Rig Type: trackhoe

TEST PIT NO: **TP-1**
Sheet 1 of 1

LOCATION
LATITUDE 41.36961 LONGITUDE -111.75790 ELEVATION 8,808

ELEVATION	DEPTH (FEET)	SAMPLES	WATER LEVEL	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
	0			SM	Silty SAND - medium dense, moist, mottled, heavy roots in upper 18 inches					
				SC	Clayey SAND - loose, moist, brown, occasional roots					
8805										
		3" O.D. thin-walled hand sampler				83.8	27.2			
	5									
8800										
				GC	Clayey GRAVEL with sand - loose to medium dense, moist, reddish brown, coarse angular rock (colluvium) disaggregated into angular rock fragments up to 3 inches in diameter					
	10	Grab sample					14.9			
8795					No groundwater encountered Bottom of Test Pit @ 12 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 (A) -(4 LINE HEADER W ELEV) 01628-006 LOT 34R.GPJ IGES.GDT 8/6/14

IGES®

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

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

FIGURE
A - 3

Exhibit B

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

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

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

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

CONSISTENCY	SPT (blows/ft)	TORVANE UNTRAINED SHEAR STRENGTH (tsf)	POCKET PENETROMETER UNCONFINED COMPRESSIVE STRENGTH (tsf)	FIELD TEST
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.

IGES

Key to Soil Symbols and Terminology

Figure A-4

IGES, Inc. Project No.: 01628-

APPENDIX B

Water Content and Unit Weight of Soil

(In General Accordance with ASTM D7263 Method B and D2216)

IGES

Project: GTI - Powder Mountain Resort
No: 01628-006
Location: Weber County, Utah
Date: 7/29/2014
By: MP

Sample Info.	Boring No.								
	Sample:	Lot34TP1							
	Depth:	4.0'							
Unit Weight Info.	Sample height, H (in)	5.446							
	Sample diameter, D (in)	2.416							
	Sample volume, V (ft^3)	0.0144							
	Mass rings + wet soil (g)	948.80							
	Mass rings/tare (g)	250.66							
	Moist soil, Ws (g)	698.14							
	Moist unit wt., γ_m (pcf)	106.53							
Water Content	Wet soil + tare (g)	819.67							
	Dry soil + tare (g)	670.76							
	Tare (g)	122.36							
Water Content, w (%)		**27.2**							
Dry Unit Wt., γ_d (pcf)		**83.8**							

Entered by:___________

Reviewed:___________

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Exhibit B

~~Minimum~~ Laboratory Soil Resistivity, pH of Soil for Use in Corrosion Testing, and Ions in Water by Chemically Suppressed Ion Chromatography *(AASHTO T 288, T 289, ASTM D4327, and C1580)*

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Project: GTI - Powder Mountain Resort
No: 01628-006
Location: Weber County, Utah
Date: 8/5/2014
By: ET

Sample info.	Boring No.					
	Sample		Lot 34 TP1			
	Depth		9.5'			
Water content data	Wet soil + tare (g)		140.57			
	Dry soil + tare (g)		127.24			
	Tare (g)		37.80			
	Water content (%)		14.9			
Chem. data	pH		8.16			
	Soluble chloride* (ppm)		3.8			
	Soluble sulfate** (ppm)		8			
Resistivity data	Pin method		2			
	Soil box		Miller Small			
			Approximate Soil condition (%)	Resistance Reading (Ω)	Soil Box Multiplier (cm)	Resistivity (Ω-cm)
			As Is	8550	0.67	5729
			+3	6570	0.67	4402
			+6	4710	0.67	3156
			+9	4760	0.67	3189
	Minimum resistivity (Ω-cm)		**3156**			

* Performed by AWAL using EPA 300.0

** Performed by AWAL using ASTM C1580

Entered by:___________
Reviewed:___________

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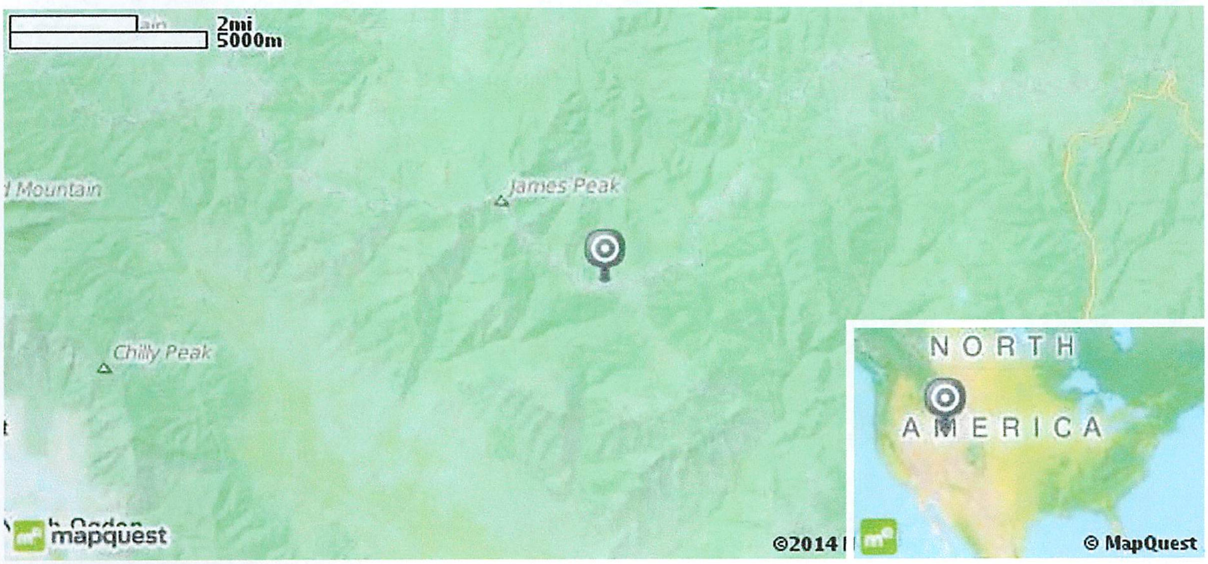
APPENDIX C

Exhibit B

USGS Design Maps Summary Report

User–Specified Input

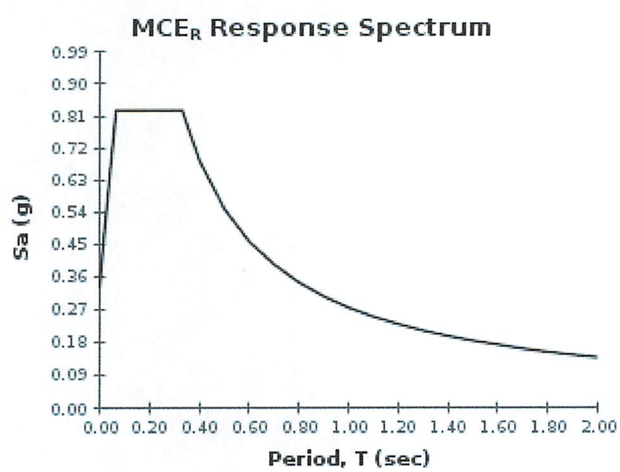
Report Title	Lot 34R Tue August 12, 2014 00:42:37 UTC
Building Code Reference Document	2012 International Building Code (which utilizes USGS hazard data available in 2008)
Site Coordinates	41.3696°N, 111.7579°W
Site Soil Classification	Site Class B – "Rock"
Risk Category	I/II/III

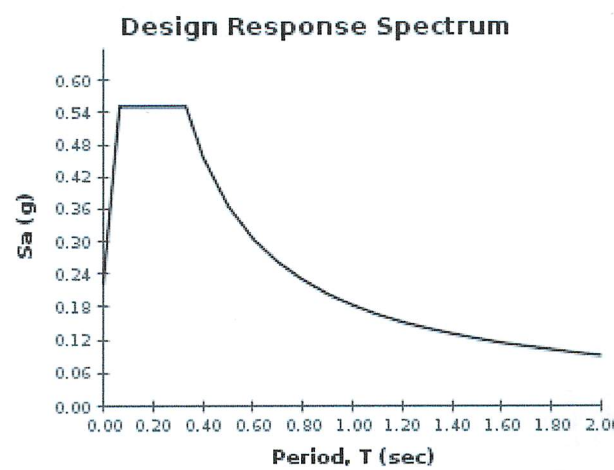


USGS–Provided Output

S_S = 0.826 g	S_{MS} = 0.826 g	S_{DS} = 0.551 g
S_1 = 0.274 g	S_{M1} = 0.274 g	S_{D1} = 0.183 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

Exhibit B

USGS Design Maps Detailed Report

2012 International Building Code (41.3696°N, 111.7579°W)

Site Class B – "Rock", Risk Category I/II/III

Section 1613.3.1 — Mapped acceleration parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_s) and 1.3 (to obtain S_1). Maps in the 2012 International Building Code are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 1613.3.3.

From Figure 1613.3.1(1) [1]	S_s = 0.826 g
From Figure 1613.3.1(2) [2]	S_1 = 0.274 g

Section 1613.3.2 — Site class definitions

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class B, based on the site soil properties in accordance with Section 1613.

2010 ASCE-7 Standard – Table 20.3-1
SITE CLASS DEFINITIONS

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index PI > 20, • Moisture content w ≥ 40%, and • Undrained shear strength $\bar{s}_u$ < 500 psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Exhibit B

Section 1613.3.3 — Site coefficients and adjusted maximum considered earthquake spectral response acceleration parameters

TABLE 1613.3.3(1)
VALUES OF SITE COEFFICIENT F_a

Site Class	Mapped Spectral Response Acceleration at Short Period				
	$S_s \le 0.25$	$S_s = 0.50$	$S_s = 0.75$	$S_s = 1.00$	$S_s \ge 1.25$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

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

For Site Class = B and S_s = 0.826 g, F_a = 1.000

TABLE 1613.3.3(2)
VALUES OF SITE COEFFICIENT F_v

Site Class	Mapped Spectral Response Acceleration at 1-s Period				
	$S_1 \le 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \ge 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

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

For Site Class = B and S_1 = 0.274 g, F_v = 1.000

Exhibit B

Equation (16-37): $S_{MS} = F_a S_S = 1.000 \times 0.826 = 0.826$ g

Equation (16-38): $S_{M1} = F_v S_1 = 1.000 \times 0.274 = 0.274$ g

Section 1613.3.4 — Design spectral response acceleration parameters

Equation (16-39): $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 0.826 = 0.551$ g

Equation (16-40): $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.274 = 0.183$ g

Exhibit B

Section 1613.3.5 — Determination of seismic design category

TABLE 1613.3.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \le S_{DS} < 0.33g$	B	B	C
$0.33g \le S_{DS} < 0.50g$	C	C	D
$0.50g \le S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 0.551 g, Seismic Design Category = D

TABLE 1613.3.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \le S_{D1} < 0.133g$	B	B	C
$0.133g \le S_{D1} < 0.20g$	C	C	D
$0.20g \le S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.183 g, Seismic Design Category = C

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 1613.3.5(1) or 1613.3.5(2)" = D

Note: See Section 1613.3.5.1 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 1613.3.1(1)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(1).pdf
2. *Figure 1613.3.1(2)*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/IBC-2012-Fig1613p3p1(2).pdf

IGES®
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February 11, 2016

Summit Powder Mountain
c/o Ms. Andrea Milner
3632 North Wolf Creek Drive
Eden, Utah 84310

IGES Project No. 01628-006

Subject: Addendum to Geotechnical Report – Geology & Slope Stability
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah

Ms. Milner:

As requested, IGES has prepared the following addendum to the referenced geotechnical report to further address geologic issues, such as the presence (or absence) of geologic hazards and slope stability. This addendum is intended to address issues that have recently come to light during the review process for adjacent properties; specifically, geologic review comments by the Weber County geologist. The purpose of this addendum is to adequately address geology consistent with recent questions brought up by the Weber County geologist, and to comply with the *Weber County Hillside Development Review Procedures*.

Description of Geologic Units

A geologic investigation that included geologic mapping of Lot 13 and the surrounding area was conducted by IGES between August 26 and 27, 2015 (IGES, 2015a). This investigation covered the Lot 34R property area within its area of investigation, and included field mapping, aerial photograph review, and the review of other available geologic data (Western Geologic, 2012; Sorenson and Crittenden, Jr., 1979) pertaining to the area of interest. A brief description of the geologic units found adjacent to and across the Lot 34R property is presented in the following paragraphs.

A prominent bedrock outcrop of the Dolomite Member of the Cambrian St. Charles Limestone near the southwestern corner of Lot 27 (located just south of Lot 34R) provided an understanding of the bedrock stratigraphy. At lot 27, approximately 45 feet of bedrock is continuously exposed, and displays four distinct lithologic units:

1. Unit 1: The uppermost unit is a dark gray, sparry[1] dolomite found to contain abundant round, curved, whitish-yellow shell fragments in massive blocks. The exposed thickness of this unit at this location is approximately 3 feet.

[1] A term loosely applied to ay transparent or translucent light-colored crystalline mineral, usually readily cleavable and somewhat lustrous (AGI, 1984).

2. Unit 2: Immediately underlying Unit 1 is a dark gray to light gray sparry dolomite containing faint laminations in thickly bedded blocks. Within the unit are distinct dark gray beds that contain abundant rounded *Girvanella*[2] nodules up to 1 centimeter in diameter. Bedding becomes more prominent with depth in this unit, which is approximately 10 to 12 feet thick.

3. Unit 3: Immediately underlying Unit 2 is a dark gray, sparry dolomite that is transitional between the overlying two units, in that it contains some laminations and curved shelly material. The unit is thickly to moderately bedded, and is distinct from the overlying units in that it contains abundant thin yellow stringers of calcium carbonate. The unit is seen to be approximately 20 to 25 feet thick.

4. Unit 4: The basal unit in the exposed outcrop is a light gray to pinkish gray, finely sparry dolomite with a highly variegated, mottled coloration in irregular, elongated lobes. Distinct to this unit is the presence of small vugs up to 2 inches in diameter, commonly filled with recrystallized dolomite. The exposed thickness of this unit at this location is approximately 5 feet.

Bedding at this outcrop (Lot 27) was found to strike at N24°W and dip at 25°NE, which was largely characteristic of the bedding found on Lot 34R and the Ridge Nest property to the west, which, as a whole, consist largely of bedrock outcrops. Across Lot 34R and adjacent properties to the west and south, the bedrock was found to have blocky jointing, with the two major joint sets being orthogonal to one another. The joint set parallel to the bedding has the same strike and dip orientation as the bedding, while the other major joint set perpendicular to the first has a strike of approximately N24°W and a dip of approximately 65°SW.

Bedrock was found to be largely moderately fractured (distance between fractures ~0.5-1.0 feet) to little fractured (distance between fractures ~1.0-4.0 feet), with localized areas of intense fracturing (distance between fractures ~0.05-0.1 feet). Joint spacing was largely found to be a product of the lithology. The finer-grained dolomite lithologies were more thinly bedded, and therefore had a smaller distance (approximately 1 to 4 inches) between bedding plane joints. These lithologies also tended to fracture into rectangular blocks generally between 4 and 18 inches in length and width, and contained both bedding-confined and through-going fractures. Coarser-grained dolomite lithologies were more thickly bedded to massive, with bedding plane joints separated by between 6 inches to as much as several feet. These lithologies tended to fracture into rectangular blocks with highly variable dimensions, ranging in width and length from between a couple inches to several feet, though larger blocks (with dimensions of several feet x several feet x several feet) were most common. Most fracturing associated with the coarser-grained dolomite lithologies consisted of large through-going fractures.

Nearly all of the joints encountered in the field investigation were open, had slightly rough to rough surfaces, and did not contain a secondary mineralization, except rare calcite infilling in places. No slickensides were observed on any joint surface. Joint apertures varied from between

[2] Girvanella is a *microbial biscuit* (hemispherical or disk-shaped calcareous mass) characterized by a complex of microscopic filaments (AGI, 2005).

a few millimeters to a couple inches in width. Joints with smaller apertures tended to be devoid of any sort of fill, while the larger aperture joints were often filled with soil.

The dolomite bedrock described above covers all of the Lot 34R property, with the exception of the southeastern corner of the property. This area, where TP-1 was excavated, contains a veneer of undifferentiated Quaternary colluvial and slopewash deposits up to as much as 12 feet thick. This unit is comprised of a combination of angular dolomite and rounded quartzite clasts, with the dolomite clasts commonly found to be moderately weathered and oxidized.

The preceding bedrock characteristics were discussed between the engineering geologist and the geotechnical engineer and were taken into consideration in development of the subsurface model, geologic cross section, and subsequent slope stability analysis.

Faulting

Based upon a review of the available geologic data for the Lot 34R property and surrounding area, no evidence of faulting was observed. According to the USGS Quaternary Fault and Fold Database of the United States (USGS and UGS, 2006), the closest fault to the area of investigation is approximately 2.5 miles to the southwest. IGES reviewed three stereo pairs of aerial photographs that cover the Ridge Nests property and adjacent areas. The aerial photographs reviewed for this exercise are listed in Table 1. The aerial photographs were examined stereoscopically for the presence of photo-lineaments which might be indicative of faulting, as well as other additional geomorphic features. No photo-lineaments were observed either crossing or projecting toward the subject property. Additionally, no fault-related geomorphic features indicative of past surface faulting at or near the property, including fault scarps, vegetation lineaments, gullies, vegetation/soil contrasts, aligned springs or seeps, sag ponds, aligned or disrupted drainages, faceted spurs, grabens, or displaced landforms were observed in either the aerial photographs reviewed or the site reconnaissance.

Table 1
Stereoscopic Aerial Photographs Reviewed

SOURCE*	DATE	FLIGHT	PHOTOGRAPHS	SCALE
1947 AAJ	August 10, 1946	AAJ_1B	88-90	1:20,000
1953 AAI	September 14, 1952	AAI_4K	34-36	1:20,000
1963 ELK	June 25, 1963	ELK_3	57-59	1:15,840

*https://geodata.geology.utah.gov/imagery/

Slope Stability Analysis

The global stability of the slope was modeled using gSTABL7 slope stability software. Bishop's Method and Janbu's Simplified method was used to model the slope, as appropriate. For our analysis, we have assessed Section A-A', illustrated on Figure 1 (*Geologic Map*) and the *Geologic Cross-Section*, Figure 2, attached. Calculations for stability were developed by searching for the minimum factor-of-safety for both a circular-type failure and a block-type (translational) failure. For the circular analysis model, arcuate failure surfaces and homogenous earth materials were assumed. For the block analysis, anisotropic strength parameters in the bedrock was assumed, based on the apparent dip of bedding and jointing as measured at bedrock outcrops just west and north of Lot 34R (apparent dip of approximately 4 degrees, the slope stability software has been allowed to search between 0 and 15 degrees). A minimum static factor-of-safety of 1.5 and seismic factor-of-safety of 1.0 (global stability) was considered acceptable for this project considering the available information and design assumptions.

The earth materials present on Lot 34R generally consist of relatively competent, moderately weathered dolomite and coarse colluvium. The software package RocLab (V. 1.033), which is based on the Hoek-Brown failure Criterion (1997) was utilized to estimate equivalent strength parameters for dolomite (friction angle and cohesion) to be used in conventional limit-equilibrium slope stability software. Input parameters utilized to estimate reasonable strength parameters were as follows:

- Uniaxial Compressive Strength: 1,500 ksf
- GSI: 45 (geologic strength index)
- Mi Value: 9 (intact rock parameter)
- D: 0.7 (disturbance factor)
- MR: 425 (Modulus Ratio, used to estimate the intact rock deformation modulus, Ei)

Based on these input parameters, RocLab indicates an equivalent cohesion of 44.844 ksf and a friction angle of 20.1 degrees for the dolomite. For our analysis, IGES has conservatively reduced the estimated equivalent cohesion by approximately 20% to 35 ksf. For our anisotropic analysis, strength along bedding and/or jointing has been estimated to have a friction angle of 42 degrees and a cohesion of zero (IGES, 2015b). The output file for RocLab is attached.

The surficial unit described on the geologic map as Qc-sw is undifferentiated colluvium and slope wash. This material is generally very coarse and bouldery; constituents generally have a moderate degree of angularity. Accordingly, we have assigned a friction angle of 42 degrees and a cohesion of zero for the colluvium north of Lot 34R.

For the seismic (pseudo-static) assessment of the slopes, the seismic coefficient k_h is modeled as equal to 50% of the peak ground acceleration (PGA) resulting from a MCE seismic event (2PE50). From our referenced geotechnical report, the PGA resulting from a 2PE50 seismic event is taken as 0.33g. Therefore, for seismic analysis we have adopted a seismic coefficient of 0.165g.

The exact configuration of the new home's foundations is currently unknown; however, based on experience with similar projects, IGES has estimated an approximate and reasonable foundation configuration to assess the impact of a new home to the slope. Various surcharge loads have been included in the analysis to model a) possible fill sections, and b) foundation loading of 1500 psf.

Based on our analysis, the global stability of the north-facing natural slope meets the minimum factors-of-safety of 1.5 and 1.0 for static and seismic conditions, respectively. The results of the global stability analyses are attached.

Conclusions

Based on the geologic evidence presented on the attached *Geologic Map* (Figure 1), the associated *Geologic Cross-Section* (Figure 2), and the slope stability assessment presented herein, the following conclusions are made:

1. The stability of the slope is not adversely impacted by the geologic, stratigraphic, or hydrologic conditions observed.

2. There are no evident potential on-site or off-site geologic hazards that can adversely affect the subject property, and the site is considered suitable for development from a geologic hazards standpoint.

3. The site is considered suitable for development from a geotechnical perspective, provided the recommendations presented in the referenced 2014 geotechnical report are incorporated into the design and construction of the project.

Also, once construction plans are established, IGES should review the plans and assess compatibility with our recommendations and conclusions. The impact of the proposed foundation and grading to slope stability should also be assessed.

Closure

We appreciate the opportunity to provide you with our services. If you have any questions please contact the undersigned at your convenience (801) 748-4044.

Respectfully Submitted,
IGES, Inc.

Peter E. Doumit, P.G., C.P.G.
Senior Geologist

Reviewed by:

LICENSED PROFESSIONAL GEOLOGIST
No. 5248599
C. CHARLES PAYTON
02-11-16
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STATE OF UTAH

C. Charles Payton, P.G.
Engineering Geologist

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No. 6370734
DAVID A. GLASS
02-11-16
ELECTRONIC SEAL
STATE OF UTAH

David A. Glass, P.E.
Senior Geotechnical Engineer

Attachments:

References
Figure 1 – Geologic Map
Figure 2 – Geologic Cross-Section A-A'
Slope Stability Analysis

References

American Geological Institute (AGI), 1984, Dictionary of Geological Terms (Third Edition), Robert L. Bates and Julia A. Jackson, Editors.

AGI, 2005, Glossary of Geology, 5th Edition, Neuendorf, K.K, Mehr, Fr., J.P., and Jackson, J.A., editors.

Hoek, E., and Brown, E.T., 1997, Practical Estimates of Rock Mass Strength, in *International Journal of Rock Mechanics & Mining Science & Geomechanics Abstracts*, 34(8), 1165-1186.

IGES, Inc., 2014, Geotechnical Investigation Report (Revised), Lot 34 of Powder Mountain Resort, 7958 East Heartwood Drive, Weber County, Utah, Project No. 01628-006, dated August 11, 2014.

IGES, Inc., 2015a, Response to Review Comments-Geology, Geotechnical Investigation, The Ridge Nests Development, Powder Mountain Resort, Weber and Cache Counties, Utah, Project No. 01628-008, dated September 1, 2015.

IGES, Inc., 2015b, Response to Review Comments-Geotechnical Engineering, Geotechnical Investigation, The Ridge Nests Development, Powder Mountain Resort, Weber and Cache Counties, Utah, Project No. 01628-008, dated December 4, 2015.

Sorensen, M.L., and Crittenden, M.D., Jr., 1979, Geologic map of the Huntsville quadrangle, Weber and Cache Counties, Utah: U.S. Geological Survey Geologic Quadrangle Series Map GQ-1503, scale 1:24,000.

U.S. Geological Survey and Utah Geological Survey, 2006, Quaternary fault and fold database for the United States, accessed August 31, 2015, from USGS web site: http://earthquake.usgs.gov/hazards/qfaults/.

Western Geologic, 2012, Report: Geologic Hazards Reconnaissance, Proposed Area 1 Mixed-Use Development, Powder Mountain Resort, Weber County, Utah, dated August 28, 2012.

Exhibit B

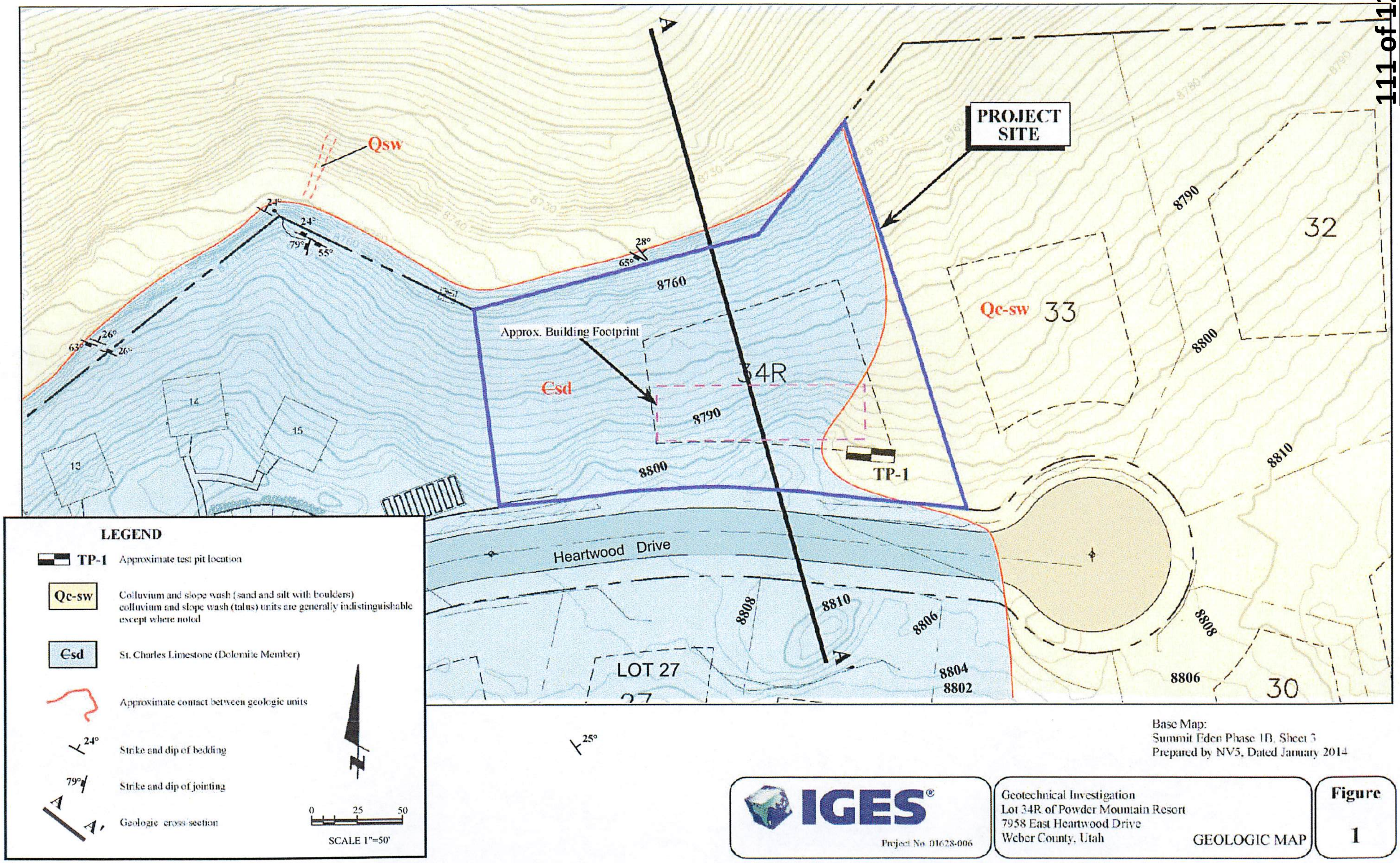
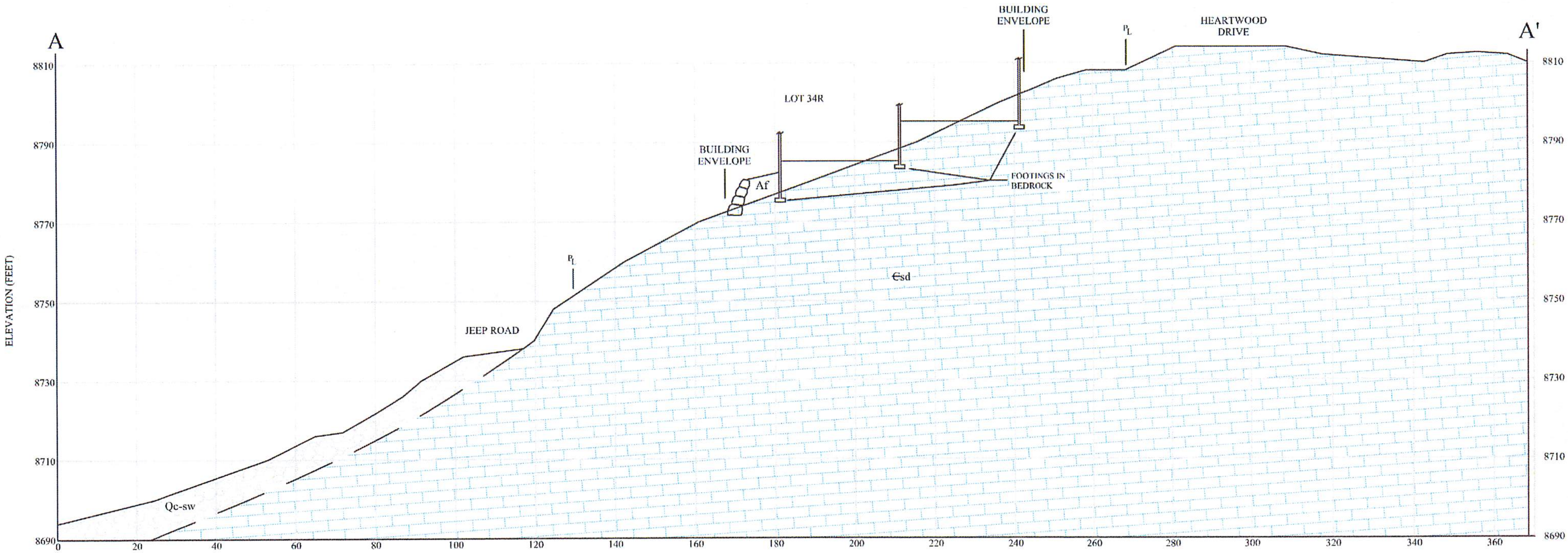

PROJECT SITE
Qsw
Qc-sw
33
32
30
Ꞓsd
34R
Approx. Building Footprint
TP-1
LOT 27
Heartwood Drive
A
A'
8760
8790
8800
8810
8808
8806
8804
8802
LEGEND
TP-1 Approximate test pit location
Qc-sw Colluvium and slope wash (sand and silt with boulders) colluvium and slope wash (talus) units are generally indistinguishable except where noted
Ꞓsd St. Charles Limestone (Dolomite Member)
Approximate contact between geologic units
24° Strike and dip of bedding
79° Strike and dip of jointing
A A' Geologic cross-section
0 25 50
SCALE 1"=50'
Base Map:
Summit Eden Phase 1B, Sheet 3
Prepared by NV5, Dated January 2014
IGES
Project No. 01628-006
Geotechnical Investigation
Lot 34R of Powder Mountain Resort
7958 East Heartwood Drive
Weber County, Utah
GEOLOGIC MAP
Figure
1

Exhibit B

FOUNDATION CONFIGURATION CONCEPTUAL ONLY



LEGEND

Af	ENGINEERED FILL
Qc-sw	COLLUVIUM (SOIL PROFILE)
Csd	DOLOMITE BEDROCK

SCALE: 1" = 25' (0, 25, 50)

MARK		DATE	BY	CHK

REVISIONS

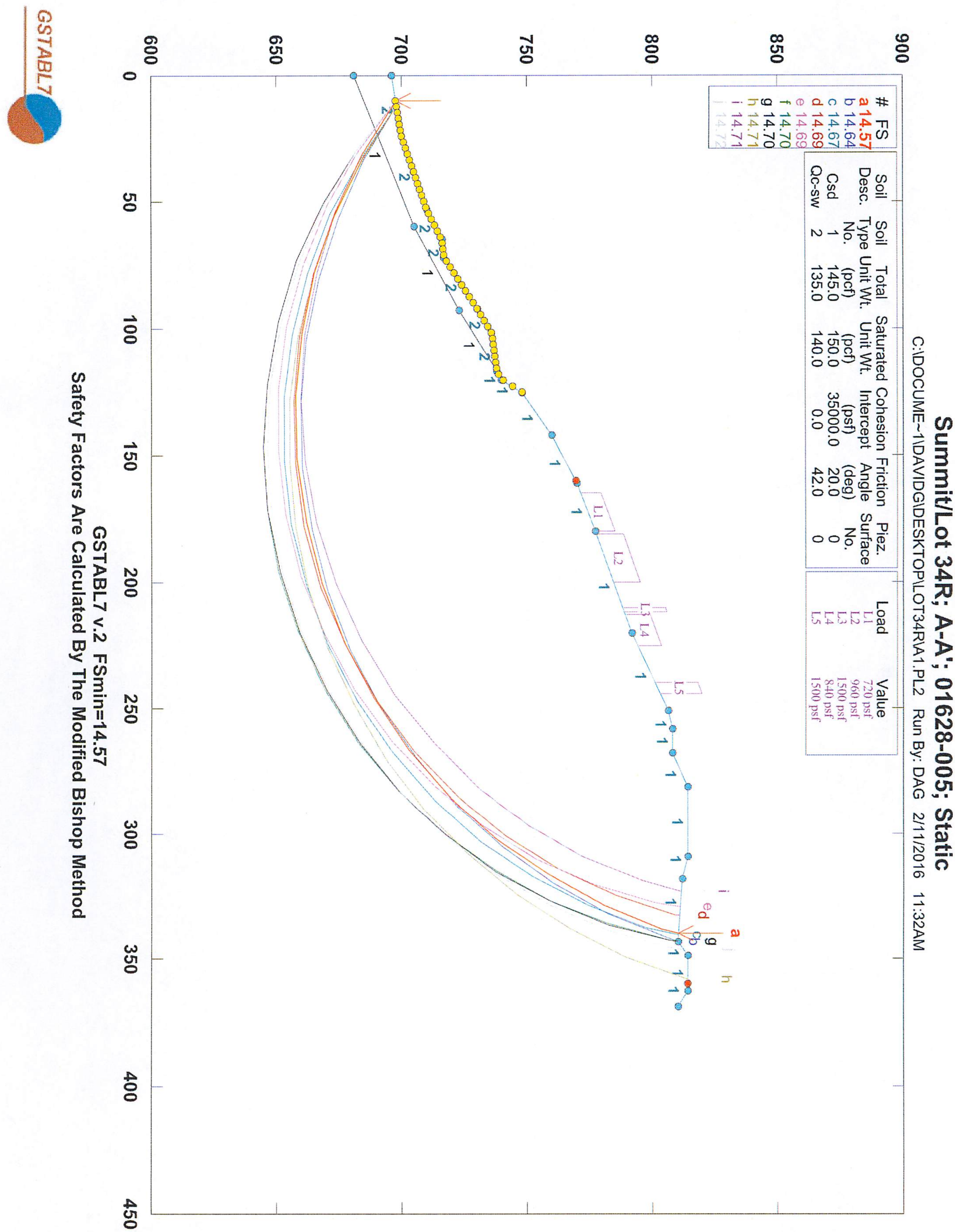
IGES®

12429 SOUTH 300 EAST, STE. 100
DRAPER, UTAH 84020
(801) 748-4044 FAX: (801) 748-4045

GEOTECHNICAL INVESTIGATION
LOT 34R, POWDER MOUNTAIN
7958 HEARTWOOD DRIVE
WEBER COUNTY, UTAH
GEOLOGIC CROSS SECTION

DESIGNED BY:	DAG FEB 11, 2016	PLOT SCALE 1=1	
DRAWN BY:	DAG FEB 11, 2016	DWG SCALE 1"=25'	
IGES PROJECT NO. 01628-006	FIGURE NO. 2	REV. N/A	

Exhibit B


Summit/Lot 34R; A-A'; 01628-005; Static
C:\DOCUME~1\DAVIDG\DESKTOP\LOT34RA1.PL2 Run By: DAG 2/11/2016 11:32AM
FS
a 14.57
b 14.64
c 14.67
d 14.69
e 14.69
f 14.70
g 14.70
h 14.71
i 14.71
Soil Desc. | Soil Type No. | Total Unit Wt. (pcf) | Saturated Unit Wt. (pcf) | Cohesion Intercept (psf) | Friction Angle (deg) | Piez. Surface No.
Csd 1 145.0 150.0 35000.0 20.0 0
Qc-sw 2 135.0 140.0 0.0 42.0 0
Load Value
L1 720 psf
L2 960 psf
L3 1500 psf
L4 840 psf
L5 1500 psf
GSTABL7 v.2 FSmin=14.57
Safety Factors Are Calculated By The Modified Bishop Method
GSTABL7

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **

****

SLOPE STABILITY ANALYSIS SYSTEM
Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static Earthquake, and Applied Force Options.

** 1

Analysis Run Date: 2/11/2016
Time of Run: 11:32AM
Run By: DAG
Input Data Filename: C:a1.
Output Filename: C:a1.OUT
Unit System: English

Plotted Output Filename: C:a1.PLT

PROBLEM DESCRIPTION: Summit/Lot 34R; A-A'; 01628-005; Static 1

BOUNDARY COORDINATES

23 Top Boundaries
26 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	696.00	24.00	700.00	2
2	24.00	700.00	53.00	710.00	2
3	53.00	710.00	65.00	716.00	2
4	65.00	716.00	72.00	717.00	2
5	72.00	717.00	92.00	730.00	2
6	92.00	730.00	102.00	736.00	2
7	102.00	736.00	117.00	738.00	2
8	117.00	738.00	120.00	740.00	1
9	120.00	740.00	125.00	748.00	1
10	125.00	748.00	142.00	760.00	1
11	142.00	760.00	161.00	770.00	1
12	161.00	770.00	180.00	777.00	1
13	180.00	777.00	220.00	792.00	1
14	220.00	792.00	251.00	806.00	1
15	251.00	806.00	258.00	808.00	1
16	258.00	808.00	268.00	808.00	1
17	268.00	808.00	281.00	814.00	1
18	281.00	814.00	309.00	814.00	1
19	309.00	814.00	318.00	812.00	1
20	318.00	812.00	343.00	810.00	1
21	343.00	810.00	349.00	814.00	1
22	349.00	814.00	363.00	814.00	1
23	363.00	814.00	369.00	810.00	1
24	0.00	681.00	60.00	705.00	1
25	60.00	705.00	93.00	723.00	1
26	93.00	723.00	117.00	738.00	1

1

User Specified Y-Origin = 600.00(ft)

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	145.0	150.0	35000.0	20.0	0.00	0.0	0
2	135.0	140.0	0.0	42.0	0.00	0.0	0

BOUNDARY LOAD(S)

5 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	165.00	180.00	720.0	0.0
2	181.00	200.00	960.0	0.0
3	210.00	212.00	1500.0	0.0
4	213.00	225.00	840.0	0.0
5	240.00	244.00	1500.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Circular Surfaces, Has Been Specified.

2500 Trial Surfaces Have Been Generated.

50 Surface(s) Initiate(s) From Each Of 50 Points Equally Spaced Along The Ground Surface Between X = 10.00(ft) and X = 125.00(ft)

Each Surface Terminates Between X = 160.00(ft) and X = 360.00(ft)

Unless Further Limitations Were Imposed, The Minimum Elevation At Which A Surface Extends Is Y = 0.00(ft)

25.00(ft) Line Segments Define Each Trial Failure Surface.

Restrictions Have Been Imposed Upon The Angle Of Initiation. The Angle Has Been Restricted Between The Angles Of -40.0 And -20.0 deg.

Following Is Displayed The Most Critical Of The Trial Failure Surfaces Evaluated.

* * Safety Factors Are Calculated By The Modified Bishop Method * *

Total Number of Trial Surfaces Evaluated = 2500

Statistical Data On All Valid FS Values:
FS Max = 58.513 FS Min = 14.573 FS Ave = 20.333
Standard Deviation = 4.572 Coefficient of Variation = 22.49 %

Failure Surface Specified By 18 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.00	697.67
2	31.16	684.34
3	53.72	673.57
4	77.38	665.50
5	101.82	660.24
6	126.70	657.85
7	151.70	658.38
8	176.46	661.81
9	200.66	668.09
10	223.96	677.15
11	246.04	688.86
12	266.62	703.06
13	285.40	719.56
14	302.14	738.13
15	316.60	758.53
16	328.60	780.46
17	337.95	803.64
18	339.76	810.26

Circle Center At X = 134.64 ; Y = 871.83 ; and Radius = 214.17

Factor of Safety
*** 14.573 ***

Individual data on the 48 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	12.3	8133.7	0.0	0.0	0.	0.	0.0	0.0	0.0
2	1.7	2417.1	0.0	0.0	0.	0.	0.0	0.0	0.0
3	7.2	14526.4	0.0	0.0	0.	0.	0.0	0.0	0.0
4	21.8	84015.9	0.0	0.0	0.	0.	0.0	0.0	0.0
5	0.7	3726.1	0.0	0.0	0.	0.	0.0	0.0	0.0
6	6.3	35411.4	0.0	0.0	0.	0.	0.0	0.0	0.0
7	5.0	31606.3	0.0	0.0	0.	0.	0.0	0.0	0.0
8	7.0	48209.4	0.0	0.0	0.	0.	0.0	0.0	0.0
9	5.4	40488.5	0.0	0.0	0.	0.	0.0	0.0	0.0
10	14.6	129033.2	0.0	0.0	0.	0.	0.0	0.0	0.0
11	1.0	9792.5	0.0	0.0	0.	0.	0.0	0.0	0.0
12	8.8	91454.4	0.0	0.0	0.	0.	0.0	0.0	0.0
13	0.2	2006.5	0.0	0.0	0.	0.	0.0	0.0	0.0
14	15.0	168010.6	0.0	0.0	0.	0.	0.0	0.0	0.0
15	3.0	34958.1	0.0	0.0	0.	0.	0.0	0.0	0.0
16	5.0	62166.5	0.0	0.0	0.	0.	0.0	0.0	0.0
17	1.7	22374.9	0.0	0.0	0.	0.	0.0	0.0	0.0
18	15.3	214257.1	0.0	0.0	0.	0.	0.0	0.0	0.0
19	9.7	146611.8	0.0	0.0	0.	0.	0.0	0.0	0.0
20	9.3	146411.4	0.0	0.0	0.	0.	0.0	0.0	0.0
21	4.0	64261.1	0.0	0.0	0.	0.	0.0	0.0	0.0
22	11.5	187060.3	0.0	0.0	0.	0.	0.0	0.0	8251.2
23	3.5	58559.0	0.0	0.0	0.	0.	0.0	0.0	2548.8
24	1.0	16578.0	0.0	0.0	0.	0.	0.0	0.0	0.0
25	19.0	318154.6	0.0	0.0	0.	0.	0.0	0.0	18240.0
26	0.7	11096.6	0.0	0.0	0.	0.	0.0	0.0	0.0
27	9.3	157957.4	0.0	0.0	0.	0.	0.0	0.0	0.0
28	2.0	33787.5	0.0	0.0	0.	0.	0.0	0.0	3000.0

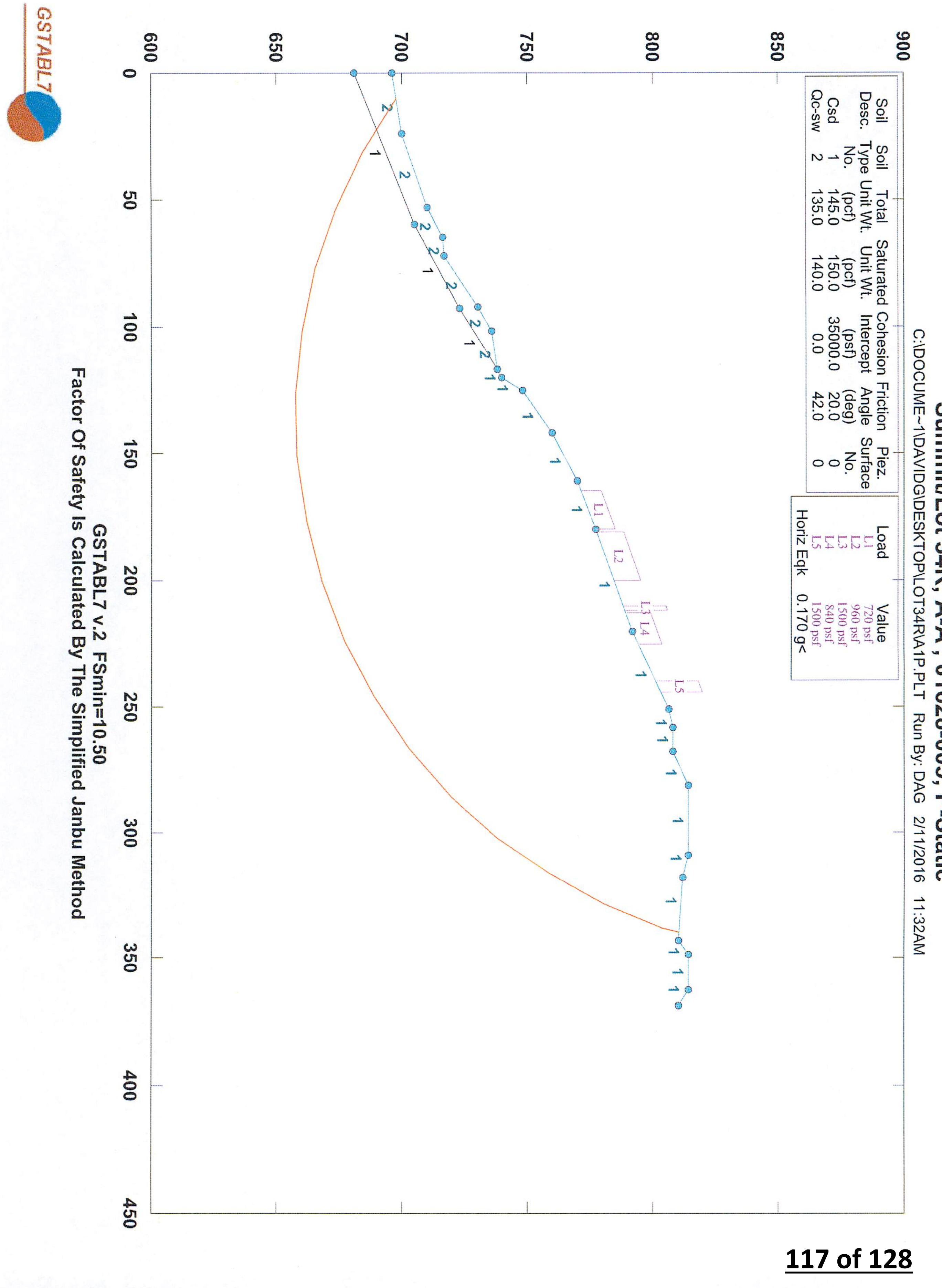
Exhibit B

A1

29	1.0	16890.7	0.0	0.0	0.	0.	0.0	0.0	0.0
30	7.0	118178.9	0.0	0.0	0.	0.	0.0	0.0	5880.0
31	4.0	66842.3	0.0	0.0	0.	0.	0.0	0.0	3323.6
32	1.0	17638.6	0.0	0.0	0.	0.	0.0	0.0	876.4
33	15.0	252215.8	0.0	0.0	0.	0.	0.0	0.0	0.0
34	4.0	66824.9	0.0	0.0	0.	0.	0.0	0.0	6000.0
35	2.0	34088.2	0.0	0.0	0.	0.	0.0	0.0	0.0
36	5.0	82132.1	0.0	0.0	0.	0.	0.0	0.0	0.0
37	7.0	113984.7	0.0	0.0	0.	0.	0.0	0.0	0.0
38	8.6	134881.5	0.0	0.0	0.	0.	0.0	0.0	0.0
39	1.4	20871.8	0.0	0.0	0.	0.	0.0	0.0	0.0
40	13.0	190412.8	0.0	0.0	0.	0.	0.0	0.0	0.0
41	4.4	61542.3	0.0	0.0	0.	0.	0.0	0.0	0.0
42	16.7	206650.8	0.0	0.0	0.	0.	0.0	0.0	0.0
43	6.9	70645.8	0.0	0.0	0.	0.	0.0	0.0	0.0
44	7.6	66138.6	0.0	0.0	0.	0.	0.0	0.0	0.0
45	1.4	10602.0	0.0	0.0	0.	0.	0.0	0.0	0.0
46	10.6	62689.0	0.0	0.0	0.	0.	0.0	0.0	0.0
47	9.4	25409.1	0.0	0.0	0.	0.	0.0	0.0	0.0
48	1.8	887.0	0.0	0.0	0.	0.	0.0	0.0	0.0

**** END OF GSTABL7 OUTPUT ****

Exhibit B



Summit/Lot 34R; A-A'; 01628-005; P-Static
C:\DOCUME~1\DAVIDG\DESKTOP\LOT34RA1P.PLT Run By: DAG 2/11/2016 11:32AM
Soil Desc. | Soil Type No. | Total Unit Wt. (pcf) | Saturated Unit Wt. (pcf) | Cohesion Intercept (psf) | Friction Angle (deg) | Piez. Surface No.
Csd 1 145.0 150.0 35000.0 20.0 0
Qc-sw 2 135.0 140.0 0.0 42.0 0
Load Value
L1 720 psf
L2 960 psf
L3 1500 psf
L4 840 psf
L5 1500 psf
Horiz Eqk 0.170 g<
L1
L2
L3
L4
L5
900
850
800
750
700
650
600
0
50
100
150
200
250
300
350
400
450
GSTABL7 v.2 FSmin=10.50
Factor Of Safety Is Calculated By The Simplified Janbu Method
GSTABL7

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **

****

SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static Earthquake, and Applied Force Options.

*** 1

Analysis Run Date: 2/11/2016
Time of Run: 11:32AM
Run By: DAG
Input Data Filename: C:a1p.
Output Filename: C:a1p.OUT
Unit System: English

Plotted Output Filename: C:a1p.PLT

PROBLEM DESCRIPTION: Summit/Lot 34R; A-A'; 01628-005; P-Stati
c 1

BOUNDARY COORDINATES

23 Top Boundaries
26 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	696.00	24.00	700.00	2
2	24.00	700.00	53.00	710.00	2
3	53.00	710.00	65.00	716.00	2
4	65.00	716.00	72.00	717.00	2
5	72.00	717.00	92.00	730.00	2
6	92.00	730.00	102.00	736.00	2
7	102.00	736.00	117.00	738.00	2
8	117.00	738.00	120.00	740.00	1
9	120.00	740.00	125.00	748.00	1
10	125.00	748.00	142.00	760.00	1
11	142.00	760.00	161.00	770.00	1
12	161.00	770.00	180.00	777.00	1
13	180.00	777.00	220.00	792.00	1
14	220.00	792.00	251.00	806.00	1
15	251.00	806.00	258.00	808.00	1
16	258.00	808.00	268.00	808.00	1
17	268.00	808.00	281.00	814.00	1
18	281.00	814.00	309.00	814.00	1
19	309.00	814.00	318.00	812.00	1
20	318.00	812.00	343.00	810.00	1
21	343.00	810.00	349.00	814.00	1
22	349.00	814.00	363.00	814.00	1
23	363.00	814.00	369.00	810.00	1
24	0.00	681.00	60.00	705.00	1
25	60.00	705.00	93.00	723.00	1
26	93.00	723.00	117.00	738.00	1

User Specified Y-Origin = 600.00(ft)

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	145.0	150.0	35000.0	20.0	0.00	0.0	0
2	135.0	140.0	0.0	42.0	0.00	0.0	0

BOUNDARY LOAD(S)

5 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	165.00	180.00	720.0	0.0
2	181.00	200.00	960.0	0.0
3	210.00	212.00	1500.0	0.0
4	213.00	225.00	840.0	0.0
5	240.00	244.00	1500.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed
Force Acting On A Horizontally Projected Surface.

A Horizontal Earthquake Loading Coefficient
Of0.170 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of0.000 Has Been Assigned

Cavitation Pressure = 0.0(psf)

Janbu's Empirical Coef. is being used for the case of c & phi both > 0

1

Trial Failure Surface Specified By 18 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	10.00	697.67
2	31.16	684.34
3	53.72	673.57
4	77.38	665.50
5	101.82	660.24
6	126.70	657.85
7	151.70	658.38
8	176.46	661.81
9	200.66	668.09
10	223.96	677.15
11	246.04	688.86
12	266.62	703.06
13	285.40	719.56
14	302.14	738.13
15	316.60	758.53
16	328.60	780.46
17	337.95	803.64
18	339.76	810.26

Janbu's Empirical Coefficient (fo) = 1.082

* * Factor Of Safety Is Calculated By The Simplified Janbu Method * *

Factor Of Safety For The Preceding Specified Surface = 10.498

Table 1 - Individual Data on the 48 Slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	12.3	8133.7	0.0	0.0	0.0	0.0	1382.7	0.0	0.0
2	1.7	2418.5	0.0	0.0	0.0	0.0	411.1	0.0	0.0
3	7.2	14540.2	0.0	0.0	0.0	0.0	2471.8	0.0	0.0
4	21.8	84009.5	0.0	0.0	0.0	0.0	14281.6	0.0	0.0
5	0.7	3747.7	0.0	0.0	0.0	0.0	637.1	0.0	0.0
6	6.3	35391.8	0.0	0.0	0.0	0.0	6016.6	0.0	0.0
7	5.0	31607.3	0.0	0.0	0.0	0.0	5373.2	0.0	0.0
8	7.0	48210.3	0.0	0.0	0.0	0.0	8195.8	0.0	0.0
9	5.4	40514.8	0.0	0.0	0.0	0.0	6887.5	0.0	0.0
10	14.6	129004.5	0.0	0.0	0.0	0.0	21930.8	0.0	0.0
11	1.0	9792.1	0.0	0.0	0.0	0.0	1664.7	0.0	0.0
12	8.8	91493.0	0.0	0.0	0.0	0.0	15553.8	0.0	0.0
13	0.2	1962.9	0.0	0.0	0.0	0.0	333.7	0.0	0.0
14	15.0	168004.5	0.0	0.0	0.0	0.0	28560.8	0.0	0.0
15	3.0	34957.6	0.0	0.0	0.0	0.0	5942.8	0.0	0.0
16	5.0	62166.3	0.0	0.0	0.0	0.0	10568.3	0.0	0.0
17	1.7	22349.7	0.0	0.0	0.0	0.0	3799.4	0.0	0.0
18	15.3	214280.1	0.0	0.0	0.0	0.0	36427.6	0.0	0.0
19	9.7	146663.4	0.0	0.0	0.0	0.0	24932.8	0.0	0.0
20	9.3	146350.7	0.0	0.0	0.0	0.0	24879.6	0.0	0.0
21	4.0	64259.0	0.0	0.0	0.0	0.0	10924.0	0.0	0.0
22	11.5	187054.9	0.0	0.0	0.0	0.0	31799.3	0.0	8251.2
23	3.5	58556.7	0.0	0.0	0.0	0.0	9954.6	0.0	2548.8
24	1.0	16577.7	0.0	0.0	0.0	0.0	2818.2	0.0	0.0
25	19.0	318158.6	0.0	0.0	0.0	0.0	54087.0	0.0	18240.0
26	0.7	11160.5	0.0	0.0	0.0	0.0	1897.3	0.0	0.0
27	9.3	157901.7	0.0	0.0	0.0	0.0	26843.3	0.0	0.0
28	2.0	33789.2	0.0	0.0	0.0	0.0	5744.2	0.0	3000.0
29	1.0	16891.6	0.0	0.0	0.0	0.0	2871.6	0.0	0.0
30	7.0	118184.9	0.0	0.0	0.0	0.0	20091.4	0.0	5880.0
31	4.0	66902.2	0.0	0.0	0.0	0.0	11373.4	0.0	3326.4
32	1.0	17583.0	0.0	0.0	0.0	0.0	2989.1	0.0	873.6
33	15.0	252226.1	0.0	0.0	0.0	0.0	42878.4	0.0	0.0
34	4.0	66826.5	0.0	0.0	0.0	0.0	11360.5	0.0	6000.0
35	2.0	34011.1	0.0	0.0	0.0	0.0	5781.9	0.0	0.0
36	5.0	82211.0	0.0	0.0	0.0	0.0	13975.9	0.0	0.0
37	7.0	113987.2	0.0	0.0	0.0	0.0	19377.8	0.0	0.0
38	8.6	134881.5	0.0	0.0	0.0	0.0	22929.9	0.0	0.0
39	1.4	20877.3	0.0	0.0	0.0	0.0	3549.1	0.0	0.0
40	13.0	190416.4	0.0	0.0	0.0	0.0	32370.8	0.0	0.0
41	4.4	61485.8	0.0	0.0	0.0	0.0	10452.6	0.0	0.0
42	16.7	206696.9	0.0	0.0	0.0	0.0	35138.5	0.0	0.0
43	6.9	70654.4	0.0	0.0	0.0	0.0	12011.2	0.0	0.0
44	7.6	66105.3	0.0	0.0	0.0	0.0	11237.9	0.0	0.0
45	1.4	10626.3	0.0	0.0	0.0	0.0	1806.5	0.0	0.0
46	10.6	62712.3	0.0	0.0	0.0	0.0	10661.1	0.0	0.0
47	9.3	25390.5	0.0	0.0	0.0	0.0	4316.4	0.0	0.0
48	1.8	887.6	0.0	0.0	0.0	0.0	150.9	0.0	0.0

Table 2 - Base Stress Data on the 48 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-32.20	16.15	14.54	743.84	-257.28
2	-32.20	23.15	2.01	42912.03	-553.53

Exhibit B

3	-32.20	27.58	8.46	43179.41	-790.11
4	-25.52	42.08	24.20	41013.98	-1067.05
5	-25.52	53.36	0.80	41571.14	-1443.93
6	-18.83	56.86	6.64	39615.59	-912.54
7	-18.83	62.50	5.28	39882.49	-1023.59
8	-18.83	68.50	7.40	40102.65	-1115.19
9	-18.83	74.69	5.68	40353.05	-1219.38
10	-12.15	84.69	14.95	39380.42	-390.09
11	-12.15	92.50	1.02	39743.63	-432.90
12	-12.15	97.41	9.02	39961.65	-458.60
13	-5.49	101.91	0.18	39279.25	802.59
14	-5.49	109.50	15.07	39387.63	824.34
15	-5.49	118.50	3.01	39553.54	857.62
16	-5.49	122.50	5.02	39839.96	915.08
17	-5.49	125.85	1.71	40101.78	967.61
18	1.21	134.35	15.30	40077.04	2677.22
19	1.21	146.85	9.70	40482.55	2890.30
20	7.89	156.35	9.39	40920.07	4809.29
21	7.89	163.00	4.04	41040.07	4909.57
22	7.89	170.73	11.57	41397.59	5087.11
23	14.55	178.23	3.66	42269.74	7057.69
24	14.55	180.50	1.03	42014.96	6891.94
25	14.55	190.50	19.63	42435.13	7202.70
26	14.55	200.33	0.68	42138.72	7030.00
27	21.25	205.33	10.02	43567.57	8805.46
28	21.25	211.00	2.15	44141.17	9343.14
29	21.25	212.50	1.07	43562.03	8797.96
30	21.25	216.50	7.51	43882.61	9098.20
31	21.25	221.98	4.25	43886.84	9103.93
32	27.94	224.48	1.18	46081.69	10854.00
33	27.94	232.50	16.98	45704.82	10403.78
34	27.94	242.00	4.53	46267.78	11039.48
35	27.94	245.02	2.31	45647.00	10315.35
36	34.61	248.52	6.03	48687.77	11732.37
37	34.61	254.50	8.50	48562.13	11526.46
38	34.61	262.31	10.47	48287.30	11076.00
39	41.30	267.31	1.84	52325.61	11917.28
40	41.30	274.50	17.30	52099.46	11538.40
41	41.30	283.20	5.86	51782.88	11007.97
42	47.97	293.77	25.00	56800.55	10576.62
43	54.67	305.57	11.86	63881.96	9415.23
44	54.67	312.80	13.14	62921.02	7951.28
45	61.31	317.30	2.92	73980.15	7277.94
46	61.31	323.30	22.08	72786.53	5672.85
47	68.03	333.27	24.99	88590.83	2691.10
48	74.71	338.85	6.86	118363.88	495.02

Sum of the Resisting Forces (including Pier/Pile, Tieback, Reinforcing Soil Nail, and Applied Forces if applicable) = ********** (lbs)

Average Available Shear Strength (including Tieback, Pier/Pile, Reinforcing, Soil Nail, and Applied Forces if applicable) = 49454.76(psf)

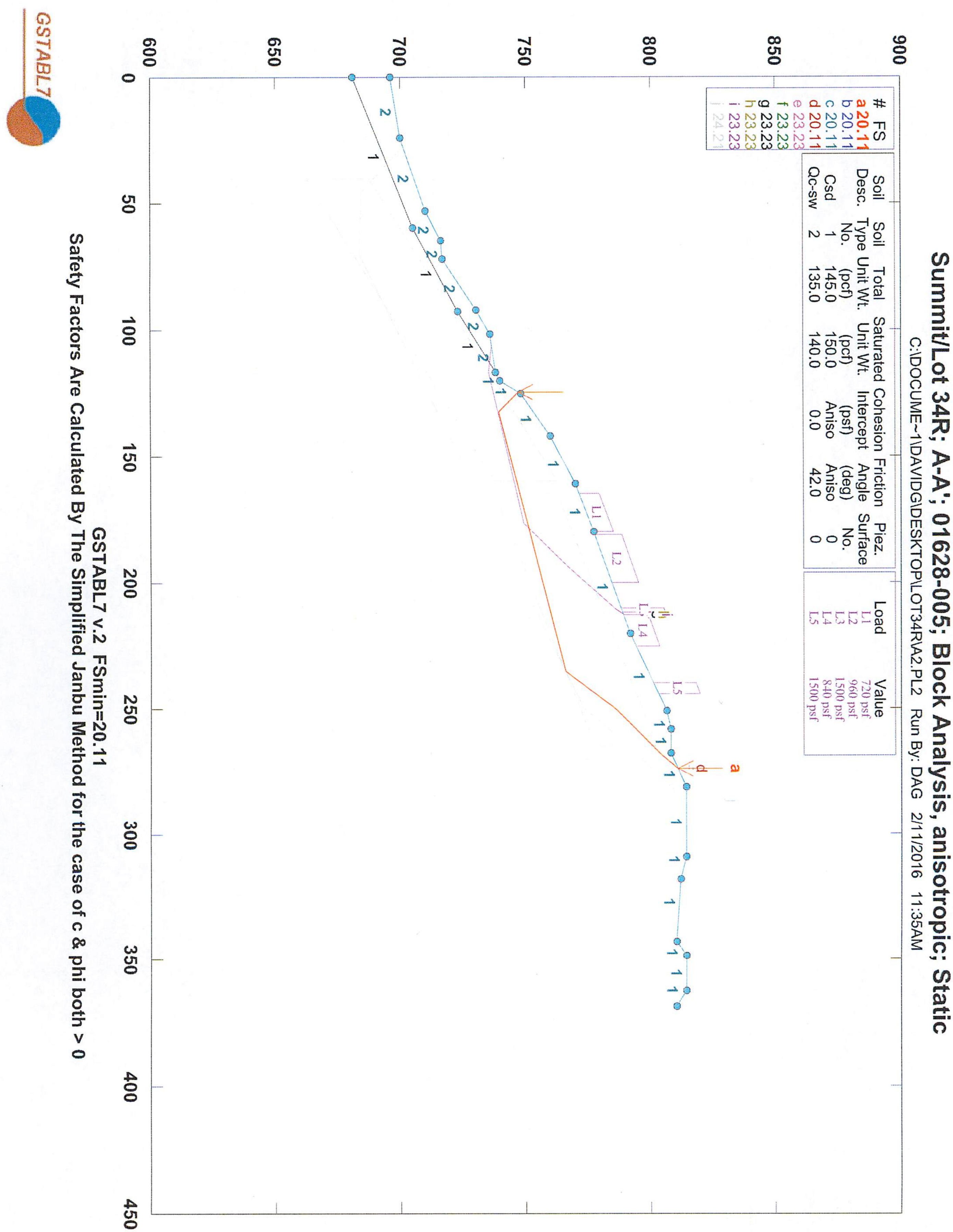
Sum of the Driving Forces = 2074292.50 (lbs)

Average Mobilized Shear Stress = 5098.31(psf)

Total length of the failure surface = 406.86(ft)

**** END OF GSTABL7 OUTPUT ****

A1P



Summit/Lot 34R; A-A'; 01628-005; Block Analysis, anisotropic; Static
C:\DOCUME~1\DAVIDG\DESKTOP\LOT34RA2.PL2 Run By: DAG 2/11/2016 11:35AM
FS
a 20.11
b 20.11
c 20.11
d 20.11
e 23.23
f 23.23
g 23.23
h 23.23
i 23.23
j 24.21
Soil Desc. | Soil Type No. | Total Unit Wt. (pcf) | Saturated Unit Wt. (pcf) | Cohesion Intercept (psf) | Friction Angle (deg) | Piez. Surface No.
Csd 1 145.0 150.0 Aniso Aniso 0
Qc-sw 2 135.0 140.0 0.0 42.0 0
Load Value
L1 720 psf
L2 960 psf
L3 1500 psf
L4 840 psf
L5 1500 psf
GSTABL7 v.2 FSmin=20.11
Safety Factors Are Calculated By The Simplified Janbu Method for the case of c & phi both > 0
GSTABL7

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static Earthquake, and Applied Force Options.

****

Analysis Run Date: 2/11/2016
Time of Run: 11:35AM
Run By: DAG
Input Data Filename: C:a2.
Output Filename: C:a2.OUT
Unit System: English

Plotted Output Filename: C:a2.PLT

PROBLEM DESCRIPTION: Summit/Lot 34R; A-A'; 01628-005; Block A
nalysis, anisotropic; Static

BOUNDARY COORDINATES

23 Top Boundaries
26 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	696.00	24.00	700.00	2
2	24.00	700.00	53.00	710.00	2
3	53.00	710.00	65.00	716.00	2
4	65.00	716.00	72.00	717.00	2
5	72.00	717.00	92.00	730.00	2
6	92.00	730.00	102.00	736.00	2
7	102.00	736.00	117.00	738.00	2
8	117.00	738.00	120.00	740.00	1
9	120.00	740.00	125.00	748.00	1
10	125.00	748.00	142.00	760.00	1
11	142.00	760.00	161.00	770.00	1
12	161.00	770.00	180.00	777.00	1
13	180.00	777.00	220.00	792.00	1
14	220.00	792.00	251.00	806.00	1
15	251.00	806.00	258.00	808.00	1
16	258.00	808.00	268.00	808.00	1
17	268.00	808.00	281.00	814.00	1
18	281.00	814.00	309.00	814.00	1
19	309.00	814.00	318.00	812.00	1
20	318.00	812.00	343.00	810.00	1
21	343.00	810.00	349.00	814.00	1
22	349.00	814.00	363.00	814.00	1
23	363.00	814.00	369.00	810.00	1
24	0.00	681.00	60.00	705.00	1
25	60.00	705.00	93.00	723.00	1
26	93.00	723.00	117.00	738.00	1

User Specified Y-Origin = 600.00(ft)

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	145.0	150.0	35000.0	20.0	0.00	0.0	0
2	135.0	140.0	0.0	42.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	35000.00	20.00
2	15.0	0.00	42.00
3	90.0	35000.00	20.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and

Exhibit B

A2

C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and
C equal to zero, with water weight in the tension crack.

1

BOUNDARY LOAD(S)

5 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	165.00	180.00	720.0	0.0
2	181.00	200.00	960.0	0.0
3	210.00	212.00	1500.0	0.0
4	213.00	225.00	840.0	0.0
5	240.00	244.00	1500.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed Force Acting On A Horizontally Projected Surface.

Janbus Empirical Coef is being used for the case of c & phi both > 0

1

A Critical Failure Surface Searching Method, Using A Random Technique For Generating Sliding Block Surfaces, Has Been Specified.

2500 Trial Surfaces Have Been Generated.

2 Boxes Specified For Generation Of Central Block Base

Length Of Line Segments For Active And Passive Portions Of Sliding Block Is 25.0

Box No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Height (ft)
1	40.00	675.00	160.00	750.00	25.00
2	165.00	750.00	265.00	790.00	25.00

Following Is Displayed The Most Critical Of The Trial Failure Surfaces Evaluated.

* * Safety Factors Are Calculated By The Simplified Janbu Method * *

Total Number of Trial Surfaces Evaluated = 2500

Statistical Data On All Valid FS Values:
FS Max = 480.270 FS Min = 20.109 FS Ave = 45.025
Standard Deviation = 35.793 Coefficient of Variation = 79.50

Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	124.48	747.18
2	132.69	738.99
3	235.36	766.12
4	250.66	785.89
5	268.15	803.76
6	273.79	810.67

Factor of Safety
*** 20.109 ***

Individual data on the 22 slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	0.5	50.1	0.0	0.0	0.	0.	0.0	0.0	0.0
2	7.7	8793.7	0.0	0.0	0.	0.	0.0	0.0	0.0
3	9.3	22270.3	0.0	0.0	0.	0.	0.0	0.0	0.0
4	19.0	57962.4	0.0	0.0	0.	0.	0.0	0.0	0.0
5	4.0	13767.2	0.0	0.0	0.	0.	0.0	0.0	0.0
6	15.0	53778.7	0.0	0.0	0.	0.	0.0	0.0	10800.0
7	1.0	3706.5	0.0	0.0	0.	0.	0.0	0.0	0.0
8	19.0	73474.1	0.0	0.0	0.	0.	0.0	0.0	18240.0
9	10.0	40998.3	0.0	0.0	0.	0.	0.0	0.0	0.0
10	2.0	8392.3	0.0	0.0	0.	0.	0.0	0.0	3000.0
11	1.0	4220.2	0.0	0.0	0.	0.	0.0	0.0	0.0
12	7.0	29991.1	0.0	0.0	0.	0.	0.0	0.0	5880.0
13	5.0	22042.7	0.0	0.0	0.	0.	0.0	0.0	4200.0
14	10.4	47810.9	0.0	0.0	0.	0.	0.0	0.0	0.0
15	4.6	20784.4	0.0	0.0	0.	0.	0.0	0.0	0.0
16	4.0	15792.9	0.0	0.0	0.	0.	0.0	0.0	6000.0
17	6.7	21966.6	0.0	0.0	0.	0.	0.0	0.0	0.0
18	0.3	982.9	0.0	0.0	0.	0.	0.0	0.0	0.0
19	7.0	17441.8	0.0	0.0	0.	0.	0.0	0.0	0.0
20	10.0	13775.7	0.0	0.0	0.	0.	0.0	0.0	0.0

21	0.1	92.4	0.0	0.0	0.	0.	0.0	0.0	0.0
22	5.6	1764.8	0.0	0.0	0.	0.	0.0	0.0	0.0

**** END OF GSTABL7 OUTPUT ****

Exhibit B

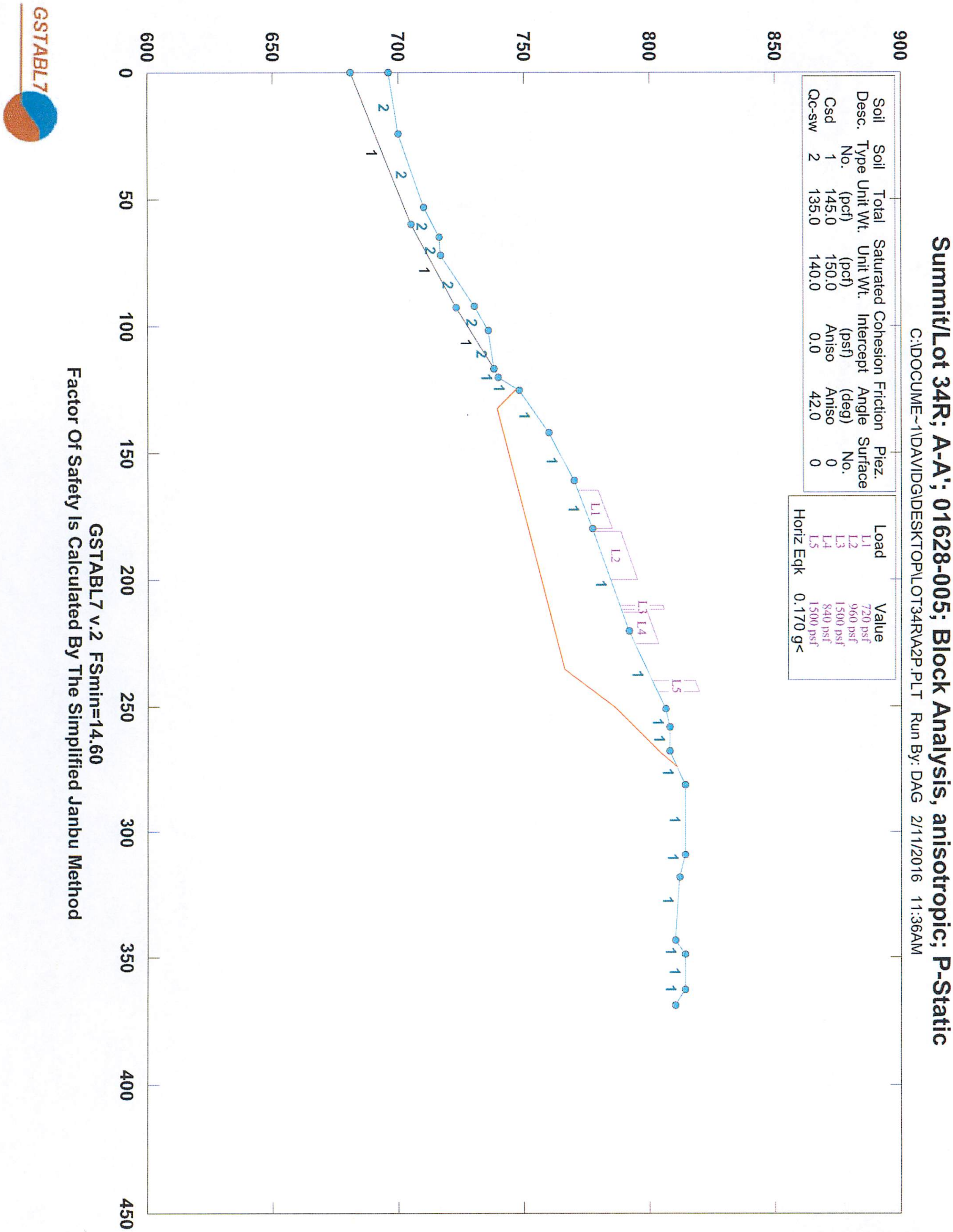
Summit/Lot 34R; A-A'; 01628-005; Block Analysis, anisotropic; P-Static
C:\DOCUME~1\DAVIDG\DESKTOP\LOT34RVA2P.PLT Run By: DAG 2/11/2016 11:36AM
Soil Desc. | Soil Type No. | Total Unit Wt. (pcf) | Saturated Unit Wt. (pcf) | Cohesion Intercept (psf) | Friction Angle (deg) | Piez. Surface No.
Csd | 1 | 145.0 | 150.0 | Aniso | Aniso | 0
Qc-sw | 2 | 135.0 | 140.0 | 0.0 | 42.0 | 0
Load | Value
L1 | 720 psf
L2 | 960 psf
L3 | 1500 psf
L4 | 840 psf
L5 | 1500 psf
Horiz Eqk | 0.170 g<
GSTABL7 v.2 FSmin=14.60
Factor Of Safety Is Calculated By The Simplified Janbu Method
GSTABL7

Exhibit B

*** GSTABL7 ***

** GSTABL7 by Garry H. Gregory, P.E. **

** Original Version 1.0, January 1996; Current Version 2.002, December 2001 **

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SLOPE STABILITY ANALYSIS SYSTEM

Modified Bishop, Simplified Janbu, or GLE Method of Slices.
(Includes Spencer & Morgenstern-Price Type Analysis)
Including Pier/Pile, Reinforcement, Soil Nail, Tieback,
Nonlinear Undrained Shear Strength, Curved Phi Envelope,
Anisotropic Soil, Fiber-Reinforced Soil, Boundary Loads, Water
Surfaces, Pseudo-Static Earthquake, and Applied Force Options.

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1

Analysis Run Date: 2/11/2016
Time of Run: 11:36AM
Run By: DAG
Input Data Filename: C:a2p.
Output Filename: C:a2p.OUT
Unit System: English

Plotted Output Filename: C:a2p.PLT

PROBLEM DESCRIPTION: Summit/Lot 34R; A-A'; 01628-005; Block A nalysis, anisotropic; P-Static

BOUNDARY COORDINATES

23 Top Boundaries
26 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	0.00	696.00	24.00	700.00	2
2	24.00	700.00	53.00	710.00	2
3	53.00	710.00	65.00	716.00	2
4	65.00	716.00	72.00	717.00	2
5	72.00	717.00	92.00	730.00	2
6	92.00	730.00	102.00	736.00	2
7	102.00	736.00	117.00	738.00	2
8	117.00	738.00	120.00	740.00	1
9	120.00	740.00	125.00	748.00	1
10	125.00	748.00	142.00	760.00	1
11	142.00	760.00	161.00	770.00	1
12	161.00	770.00	180.00	777.00	1
13	180.00	777.00	220.00	792.00	1
14	220.00	792.00	251.00	806.00	1
15	251.00	806.00	258.00	808.00	1
16	258.00	808.00	268.00	808.00	1
17	268.00	808.00	281.00	814.00	1
18	281.00	814.00	309.00	814.00	1
19	309.00	814.00	318.00	812.00	1
20	318.00	812.00	343.00	810.00	1
21	343.00	810.00	349.00	814.00	1
22	349.00	814.00	363.00	814.00	1
23	363.00	814.00	369.00	810.00	1
24	0.00	681.00	60.00	705.00	1
25	60.00	705.00	93.00	723.00	1
26	93.00	723.00	117.00	738.00	1

User Specified Y-Origin = 600.00(ft)

ISOTROPIC SOIL PARAMETERS

2 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	145.0	150.0	35000.0	20.0	0.00	0.0	0
2	135.0	140.0	0.0	42.0	0.00	0.0	0

ANISOTROPIC STRENGTH PARAMETERS
1 soil type(s)

Soil Type 1 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	0.0	35000.00	20.00
2	15.0	0.00	42.00
3	90.0	35000.00	20.00

ANISOTROPIC SOIL NOTES:
(1) An input value of 0.01 for C and/or Phi will cause Aniso C and/or Phi to be ignored in that range.
(2) An input value of 0.02 for Phi will set both Phi and

C equal to zero, with no water weight in the tension crack.
(3) An input value of 0.03 for Phi will set both Phi and
C equal to zero, with water weight in the tension crack.

1

BOUNDARY LOAD(S)

5 Load(s) Specified

Load No.	X-Left (ft)	X-Right (ft)	Intensity (psf)	Deflection (deg)
1	165.00	180.00	720.0	0.0
2	181.00	200.00	960.0	0.0
3	210.00	212.00	1500.0	0.0
4	213.00	225.00	840.0	0.0
5	240.00	244.00	1500.0	0.0

NOTE - Intensity Is Specified As A Uniformly Distributed
Force Acting On A Horizontally Projected Surface.

A Horizontal Earthquake Loading Coefficient
Of0.170 Has Been Assigned

A Vertical Earthquake Loading Coefficient
Of0.000 Has Been Assigned

Cavitation Pressure = 0.0(psf)

Janbu's Empirical Coef. is being used for the case of c & phi both > 0

1

Trial Failure Surface Specified By 6 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	124.48	747.17
2	132.69	738.99
3	235.36	766.12
4	250.66	785.89
5	268.15	803.76
6	273.79	810.67

Janbu's Empirical Coefficient (fo) = 1.062

* * Factor Of Safety Is Calculated By The Simplified Janbu Method * *

Factor Of Safety For The Preceding Specified Surface = 14.598

Table 1 - Individual Data on the 22 Slices

Slice No.	Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Surcharge Load (lbs)
1	0.5	50.9	0.0	0.0	0.0	0.0	8.7	0.0	0.0
2	7.7	8802.3	0.0	0.0	0.0	0.0	1496.4	0.0	0.0
3	9.3	22266.1	0.0	0.0	0.0	0.0	3785.2	0.0	0.0
4	19.0	57963.8	0.0	0.0	0.0	0.0	9853.8	0.0	0.0
5	4.0	13767.8	0.0	0.0	0.0	0.0	2340.5	0.0	0.0
6	15.0	53781.7	0.0	0.0	0.0	0.0	9142.9	0.0	10800.0
7	1.0	3706.8	0.0	0.0	0.0	0.0	630.2	0.0	0.0
8	19.0	73480.0	0.0	0.0	0.0	0.0	12491.6	0.0	18240.0
9	10.0	41002.3	0.0	0.0	0.0	0.0	6970.4	0.0	0.0
10	2.0	8393.2	0.0	0.0	0.0	0.0	1426.8	0.0	3000.0
11	1.0	4220.7	0.0	0.0	0.0	0.0	717.5	0.0	0.0
12	7.0	29994.4	0.0	0.0	0.0	0.0	5099.1	0.0	5880.0
13	5.0	22045.2	0.0	0.0	0.0	0.0	3747.7	0.0	4200.0
14	10.4	47839.4	0.0	0.0	0.0	0.0	8132.7	0.0	0.0
15	4.6	20767.1	0.0	0.0	0.0	0.0	3530.4	0.0	0.0
16	4.0	15796.6	0.0	0.0	0.0	0.0	2685.4	0.0	6000.0
17	6.7	21975.0	0.0	0.0	0.0	0.0	3735.7	0.0	0.0
18	0.3	979.1	0.0	0.0	0.0	0.0	166.4	0.0	0.0
19	7.0	17444.4	0.0	0.0	0.0	0.0	2965.5	0.0	0.0
20	10.0	13777.7	0.0	0.0	0.0	0.0	2342.2	0.0	0.0
21	0.1	94.6	0.0	0.0	0.0	0.0	16.1	0.0	0.0
22	5.6	1762.0	0.0	0.0	0.0	0.0	299.5	0.0	0.0

Table 2 - Base Stress Data on the 22 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-44.89	124.74	0.73	50710.71	-57.28
2	-44.89	128.85	10.85	51262.16	-669.93
3	14.80	137.35	9.63	2191.63	1004.09
4	14.80	151.50	19.65	2795.61	1280.80
5	14.80	163.00	4.14	3154.11	1445.05
6	14.80	172.50	15.51	3945.40	1689.24
7	14.80	180.50	1.03	3396.79	1556.23
8	14.80	190.50	19.65	4423.67	1868.91
9	14.80	205.00	10.34	3757.35	1721.42
10	14.80	211.00	2.07	5220.21	2145.09
11	14.80	212.50	1.03	3867.72	1771.99
12	14.80	216.50	7.24	4696.34	2013.55

13	14.80	222.50	5.17	4810.09	2065.67
14	14.80	230.18	10.72	4231.54	1938.67
15	52.26	237.68	7.58	57980.70	4005.19
16	52.26	242.00	6.54	58541.56	4720.28
17	52.26	247.33	10.88	57303.10	2952.70
18	45.62	250.83	0.49	50256.29	2400.38
19	45.62	254.50	10.01	50059.62	2077.31
20	45.62	263.00	14.30	49494.21	1148.48
21	45.62	268.08	0.21	49115.23	525.92
22	50.79	270.97	8.92	53895.55	275.64

Sum of the Resisting Forces (including Pier/Pile, Tieback, Reinforcing Soil Nail, and Applied Forces if applicable) = 4157308.00 (lbs)

Average Available Shear Strength (including Tieback, Pier/Pile, Reinforcing, Soil Nail, and Applied Forces if applicable) = 23526.56(psf)

Sum of the Driving Forces = 302453.66 (lbs)

Average Mobilized Shear Stress = 1711.61(psf)

Total length of the failure surface = 176.71(ft)

**** END OF GSTABL7 OUTPUT ****