

#### Spring Creek Design and Construction Standards Exhibit

#### Kitchen:

- Granite Counters (kitchen)
- Stainless Steel Appliances
  - Stove/dishwasher/microwave
- Oversized Island
- Pendant Lights
- Shaker Style Cabinets
  - o 42" Uppers w/Crown Molding
- Stained Finish Cabinets
- Pull-down Faucet
- Undermount Sink

#### Baths:

- Dual Vanity in Master
- Comfort Height Counters in Master
- Moen Fixtures
- Solid Surface Surround in Master
- Pedestal Sink (main floor)
- Stained Finish Cabinet
- Chrome finishes

#### Interior:

- Vinyl and Carpet Flooring
- Modern 5" mission style Baseboards
- One Tone Paint
- Custom Shelving in Closets
- Wooden Handrail (on stairs)
- LED Can Lights throughout
- 3 coax jacks (in living room, master, and bonus room)
- 3 Cat 6 jacks (in living room, master, and bonus room)
- USB outlets in kitchen and master
- Vaulted Ceilings in master and second bedroom
- Round Interior Door Knobs
- Ceiling Fans in the master, second bedroom

#### **Exterior:**

- Stucco, Hardi-board, and Stone Exteriors
- Rain Gutters
- Roofing -- 30 year Composition Shingles
- Craftsman Front Door (with window)
- Garage Door (Oversized 18'x7')
- Garage Entry -- keyless
- Fully Landscaped
- Perimeter Privacy Fence

#### Construction:

- 2 Stage Furnace
- LED Can Lights
- 2x6 Exterior Framing
- Ceiling Insulation to be R38
- Interior Wall Insulation R21 (blown in)
- Common Wall Insulation R19
- Low E Vinyl windows
- Pex Plumbing
- Professional Home Cleaning
- Builder Warranty (1 Year)
- Water Heater (50 gallon)
- Elongated Toilet Bowls

#### HOA:

- Landscaping and Park Maintenance
- Garbage Removal
- Splash Pad Maintenance
- Snow Removal
- Exterior Water (landscaping)
- Insurance
- Site/HOA management



Spring Creek Development

Suilding Number 9 Units 40-46 - 7-Plex

Address: 1000 E 1060 S

Provo, Utah 84606

Bu

# **Project: Spring Creek Townhomes**

Utah County Tax Parcel 22:036:0068

# **Building Code Information:**

International Residential Code, 2015 edition (IRC) International Fire Code, 2015 edition (IFC) International Fuel Gas Code, 2015 edition (IBC) International Plumbing Code, 2015 edition (IBC) International Mechanical Code, 2015 edition (IBC) National Electric Code, 2014 edition (NEC)

International Energy Conservation Code, 2015 edition (IECC)

# **Code Analysis:**

Occupancy: Townhouse (IRC 101.2) Construction Type: V-B (IBC 506.2) Fire Rated Assemblies: 2Hr. Common Walls (IRC 302.2 (2)) Fire Protection System: Not required (IRC 302.2.2) Provide 2-Hour common wall assembly to meet ASTM E119 or UL263

# **Unit Area Calculation:**

Garage: 495 Square Feet

> 272 Square Feet Living Area:

Living Area: 815 Square Feet Level 2 833 Square Feet Living Area:

(Area calculations are nominal with slight variations possible)

# Spring Creek Townhomes Provo, Utah

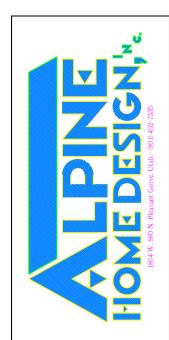
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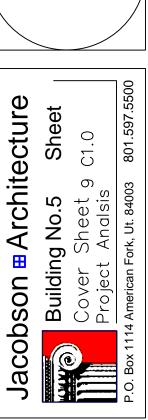
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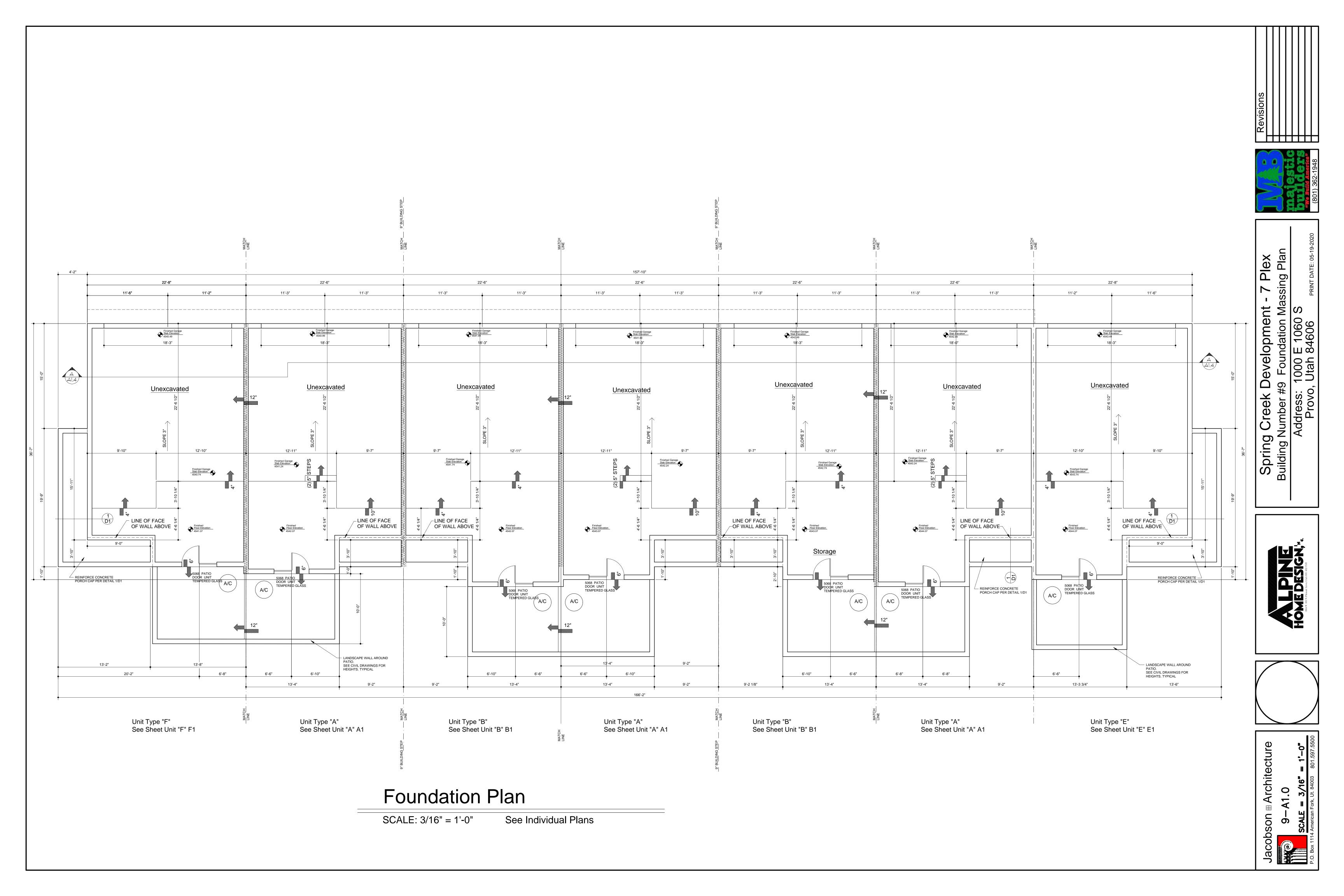
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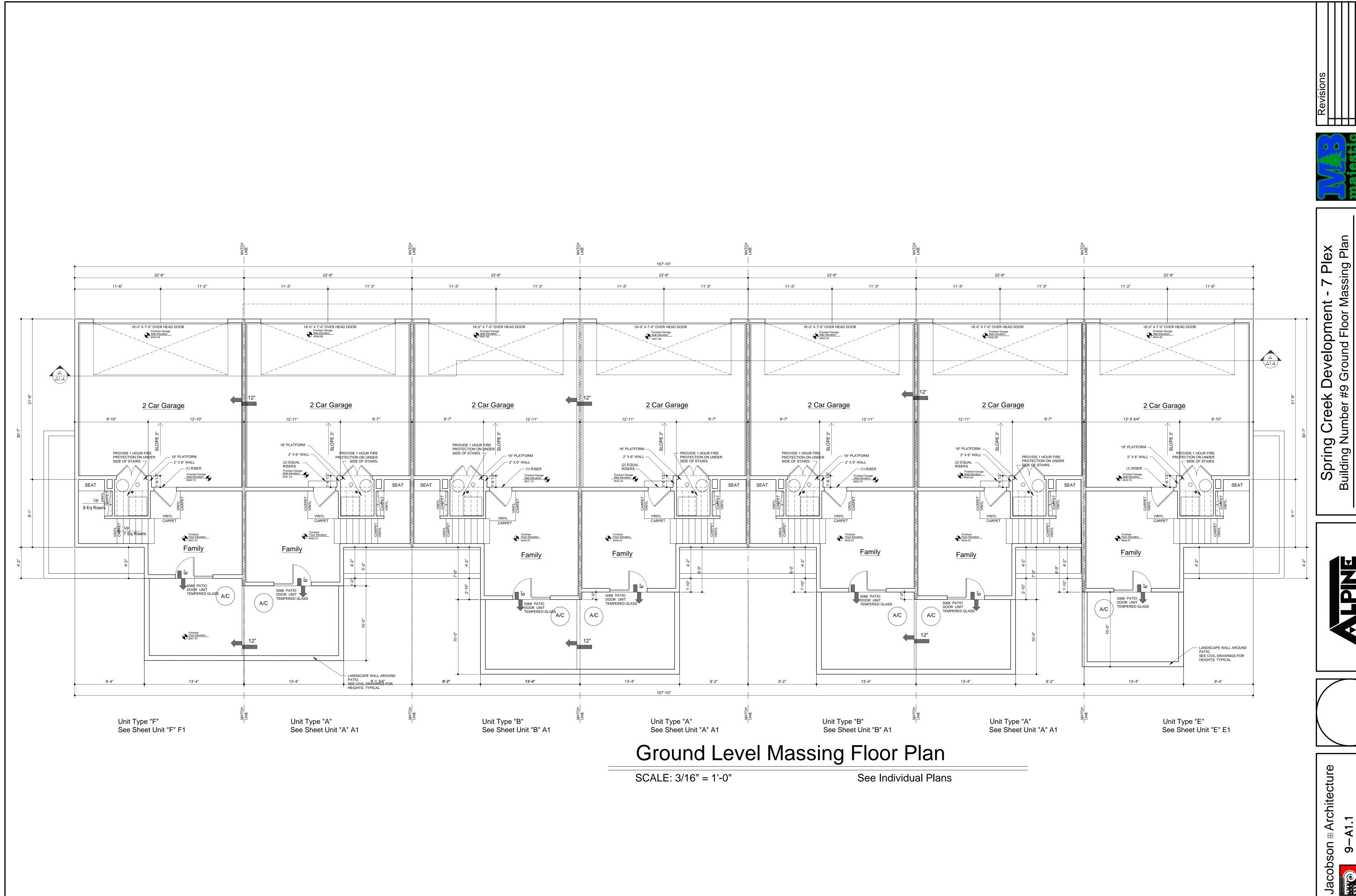
# Structural Drawings

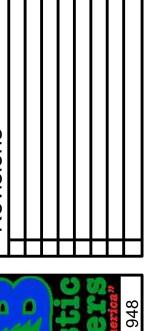
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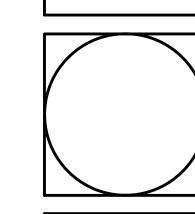


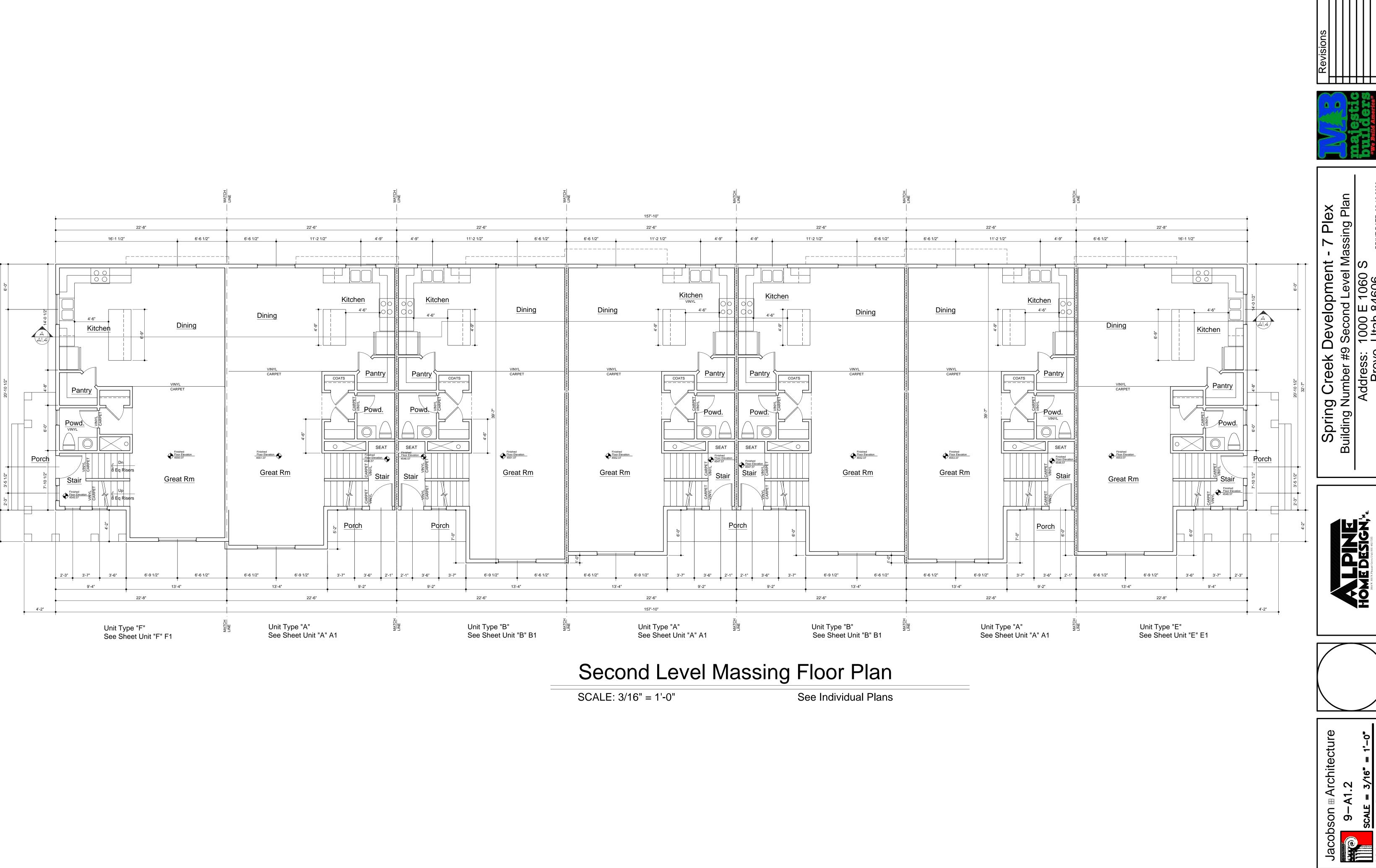




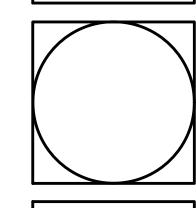


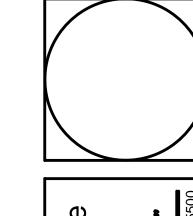
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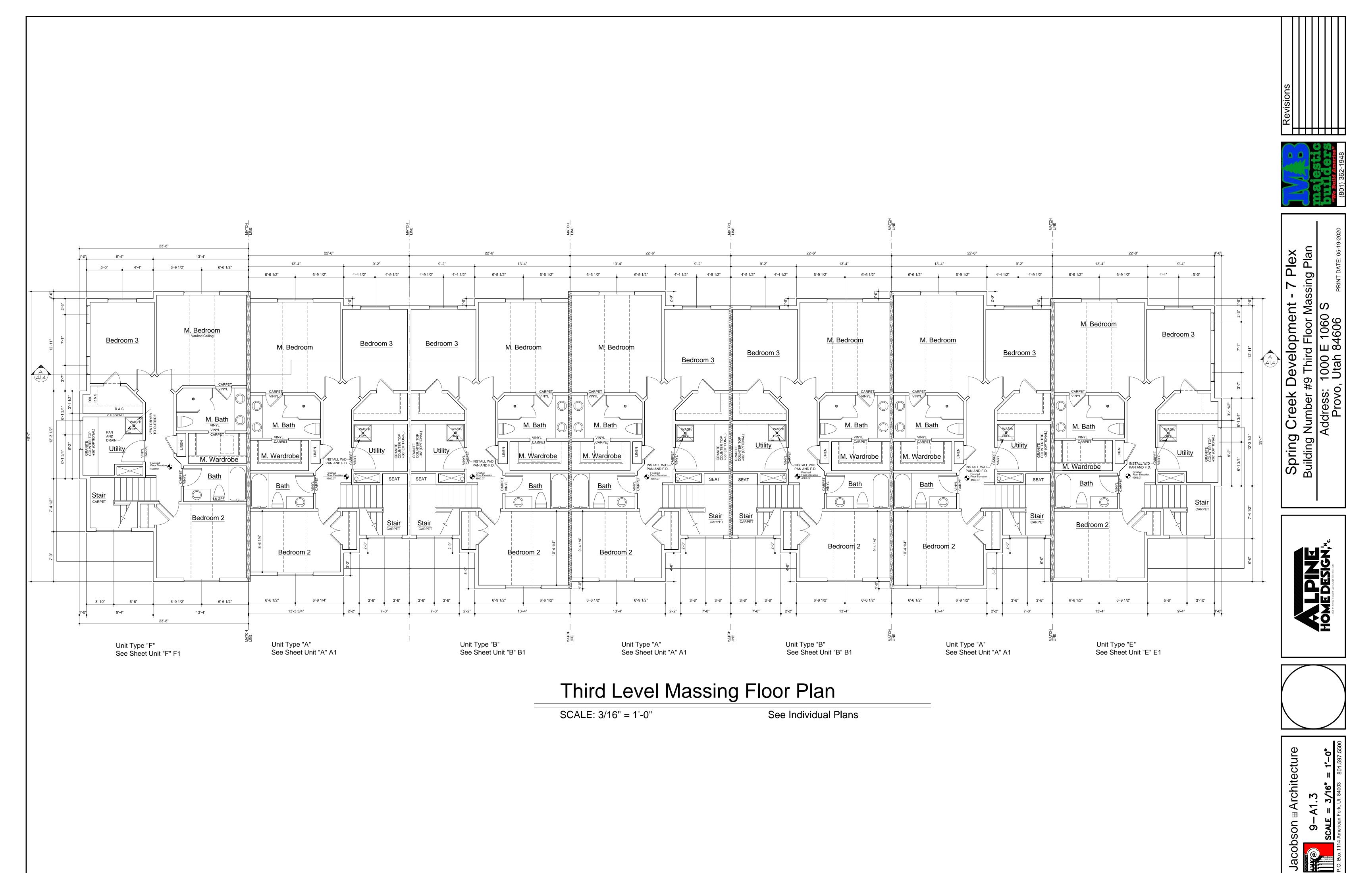


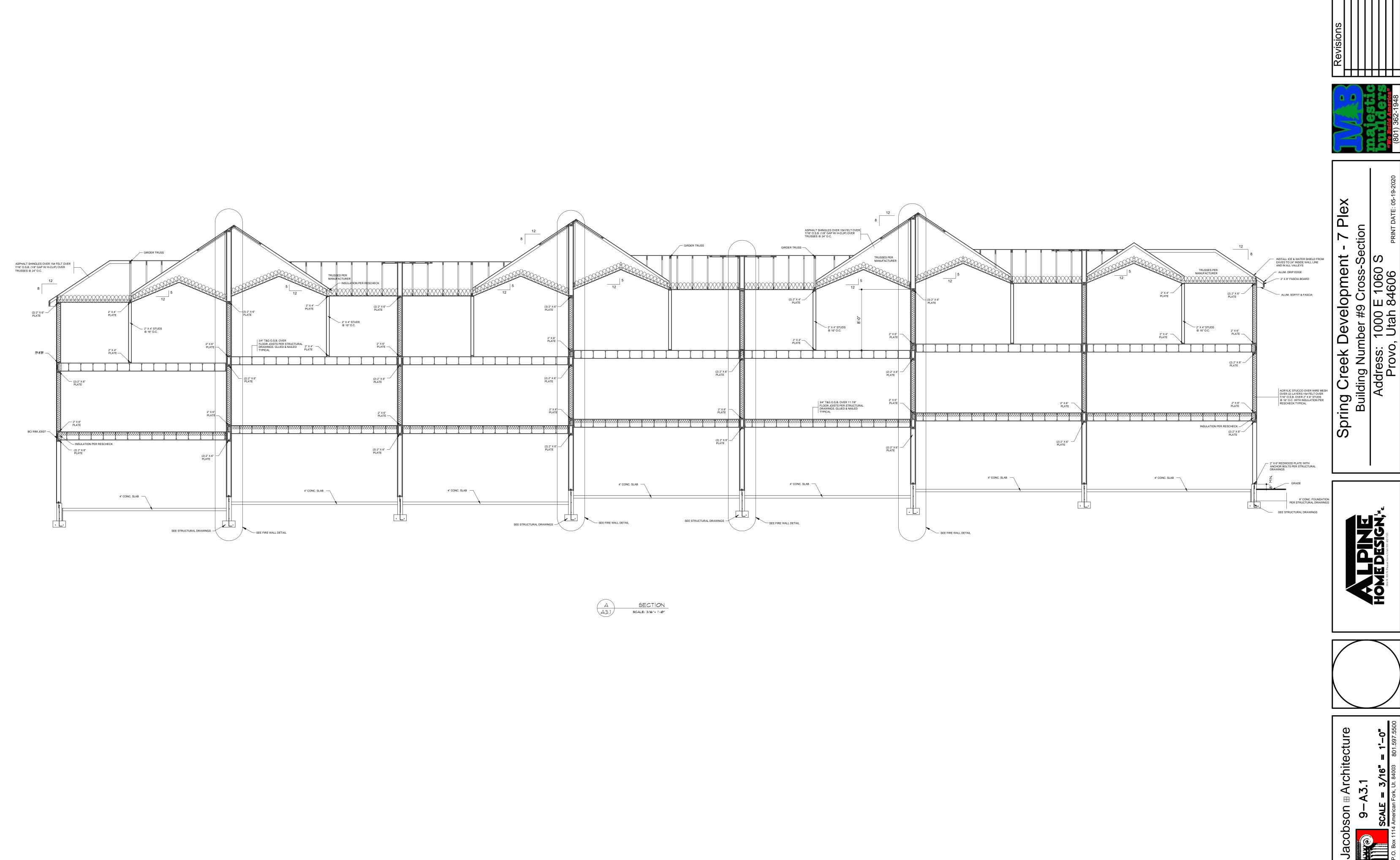


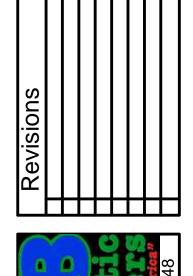




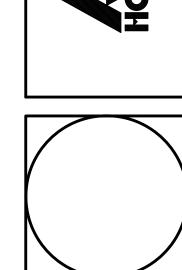


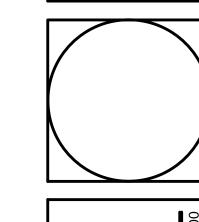


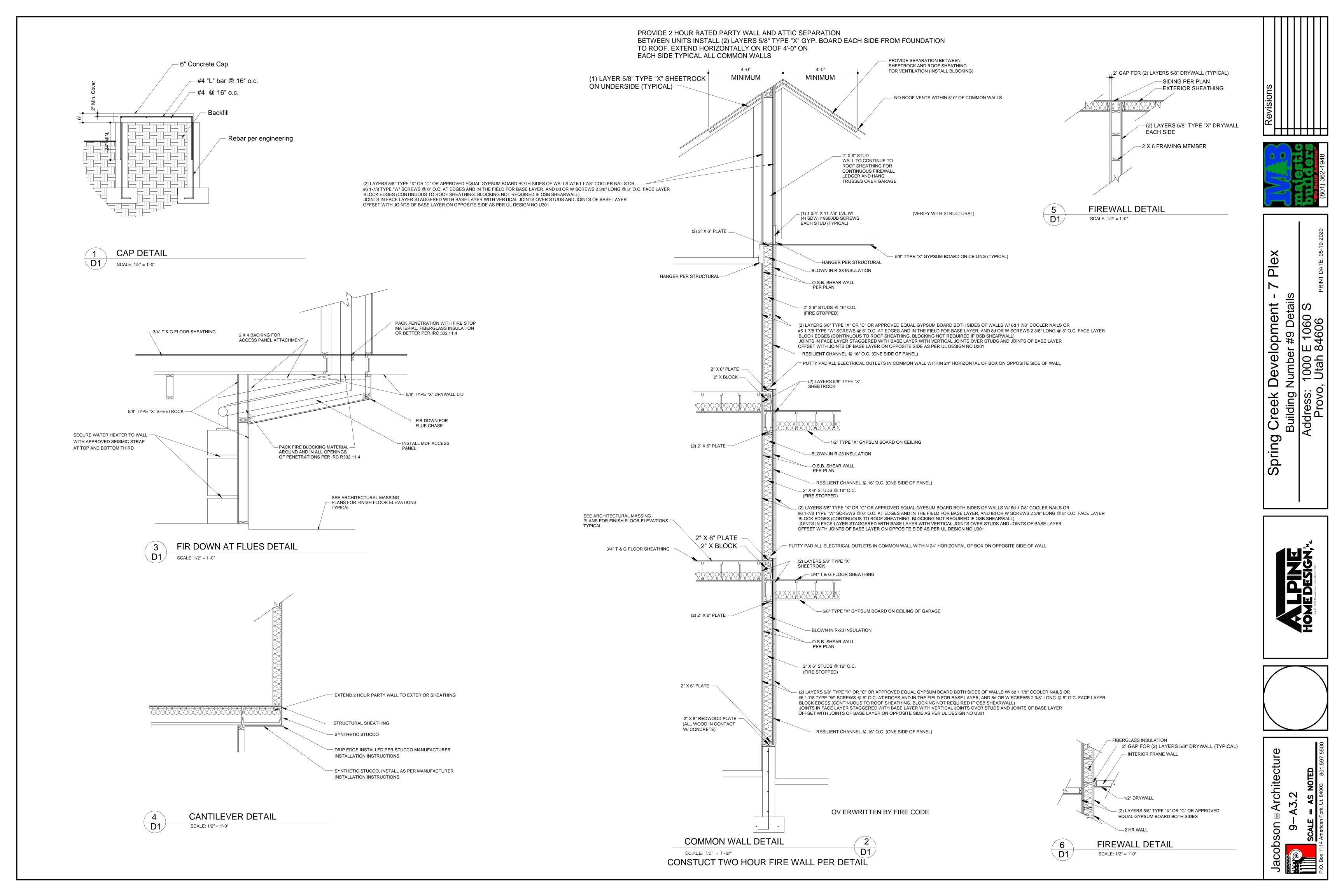












#### CONCRETE NOTES

- 1. CONCRETE MATERIAL PROPERTIES FOR FOOTING, GRADE BEAMS AND WALLS: 28 DAY COMPRESSIVE STRENGTHS ARE TO BE 3000 PSI. STRUCTURAL DESIGN IS BASED ON 2500 PSI.
- 2. CONCRETE MATERIAL PROPERTIES FOR ALL EXTERIOR FLATWORK, INCLUDING GARAGE
- FLOORS TO BE 4000 PSI.
- 3. CONCRETE MATERIAL PROPERTIES FOR SUSPENDED SLABS AND CANTILEVER SLABS 28 DAY COMPREHENSIVE STRENGTH TO BE 4000 PSI.
- 4. PROVIDE ISOLATION JOINTS AROUND ALL COLUMNS AT ALL EXPOSED SLAB ON GRADE AREAS.
- 5. ALL HOLDOWNS ARE PER SIMPSON STRONGTIE OR APPROVED IRC EQUAL.
- 6. ALL STHD STRAP HOLDOWNS SHALL HAVE (1) #4 X 30" LONG PER MANUFACTURER'S DESIGN RECOMMENDATIONS. 7. SHEARWALL EDGE NAILING SHALL BE INSTALLED TO THE SAME POSTS ON WHICH THE HOLDOWNS ARE ATTACHED.
- 8. HOLDOWNS W/ "RJ" DESIGNATION TO BE USED AT ALL RIM JOIST APPLICATIONS. 9. HOLDOWN LOCATIONS ARE APPROXIMATE REFER TO FLOOR PLANS FOR ADDITIONAL INFORMATION
- FOR ACCURATE PLACEMENT.
- 10. FOOTING STEP LOCATIONS AND ELEVATIONS ARE ASSUMED. ADJUST AS REQUIRED ON SITE TO BRING
- FOOTING TO BEAR ON NATURAL UNDISTURBED SOIL.
- 11. BEFORE CONCRETE IS POURED VERIFY WITH ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, HOLD DOWNS, ETC., RELATIVE TO WORK.
- 12. CONTRACTOR IS RESPONSIBLE FOR ALL SHORING AND FORM WORK.
- 13. ALL REINFORCEMENT SHALL BE ASTM A-615 GRADE-60 OR BETTER.
- 14. REINFORCEMENT SHALL BE FREE FROM MUD, OIL, OR OTHER NONMETALLIC COATINGS THAT ADVERSELY EFFECT BONDING CAPACITY.
- 15. ALL EXTERIOR FOOTINGS SHALL BE CONTINUOUS AND POURED MONOLITHICALLY.
- 16. ALL CHANGES IN VERTICAL FOOTING ELEVATION SHALL BE STEPPED. THE MINIMUM DISTANCE OF THE
- VERTICAL STEP SHALL BE NO LESS THAN 6"
- 17. MINIMUM FOOTING THICKNESS SHALL BE NOT LESS THAN 10"
- 18. USE 5/8" DIA. ANCHOR BOLTS @ 32" O.C. W/ 3" X 3" X 1/4" PLATE WASHERS, AND STANDARD CUT WASHER 7" MIN. EMBED (U.N.O.) PROVIDE PRESSURE TREATED PLATE @ ALL SILL PLATES (U.N.O. PER SHEAR WALL REQ.) SEE SHEAR WALL
- SCHEDULE FOR SIZE AND SPACING @ SHEARWALL LOCATIONS. 19. SOIL BEARING PRESSURE = 1,200 P.S.F. CONTRACTOR SHALL BE RESPONSIBLE FOR EVALUATING SOIL CONDITIONS AND
- SUITABILITY AFTER EXCAVATION. 20. PROVIDE (2) COATS OF ASPHALT EMULSION DAMP-PROOFING CONTINUOUS OVER TOP OF FOOTING AND EXTERIOR OF FOUNDATION
- WALLS TO FINISHED GRADE. PLASTER (PARDGE) EXPOSED FOUNDATIONS WALLS ABOVE FINISHED GRADE.
- 21. CONTRACTOR SHALL BE RESPONSIBLE FOR LATERALLY SUPPORTING FOUNDATION WALLS WHILE BACK-FILLING AND UNTIL ALL SUPPORTING MEMBERS HAVE BEEN PLACED. (SUCH AS FLOORS)
- 22. BACK FILL FOUNDATIONS IN 8" LIFTS TO 98% MAX. DENSITY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CONCRETE SLAB PLACEMENT FOR GARAGE AND DRIVEWAYS OVER ADEQUATE COMPACTED BACK FILL MATERIAL (4" FREE DRAINING GRAVEL OVER EXISTING GRADE OR APPROVED FILL.)
- 23. ALL FOOTINGS SHALL BE PLACED 12" BELOW EXISTING GRADE AND MINIMUM OF 30" BELOW FINISHED GRADE OR PER LOCAL CODE FOR FROST DEPTH.
- 24. FOUNDATION WALLS SHALL HAVE A MINIMUM EXPOSURE OF 6" ABOVE FINISHED GRADE.
- 25. THE LOCAL BUILDING OFFICIAL IS TO ASSURE COMPLIANCE WITH CODE AND CONSTRUCTION REQUIREMENTS.
- 26. CONCRETE FLOOR SLABS, EXCEPT FOR THOSE IN UNHEATED ACCESSORY STRUCTURES, SHALL HAVE A VAPOR RETARDER CONSISTING OF A 6 MIL (.006 INCH) POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6" PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR THE PREPARED SUB-GRADE WHERE NO BASE COURSE EXISTS.

FOUNDATION CREW, PLEASE MARK LOCATION OF UFER GROUND WITH HIGHLY VISIBLE SPRAY PAINT ON INTERIOR OF FOUNDATION WALL

SPACE ANCHOR BOLTS BETWEEN FLOOR JOISTS

ALL FOUNDATION STRAPS MUST BE NAILED WITH A 0.148 MINIMUM DIAMETER NAIL.

ALL CONCRETE OPENINGS TO HAVE (2) #5 HORIZONTAL IN BOTTOM OF LINTEL ABOVE OPENING EXTENDING 2'-0" PAST OPENING (1) #4 BAR ON EACH SIDE OF OPENING TERMINATING 3" FROM TOP OF CONCRETE (1) #4 HORIZONTAL BAR BELOW OPENING

EXTENDING 2'-0" PAST

8' TALL WALLS FRAMED WITH STUDS @ 16" O.C. 10' AND TALLER WALLS SEE ENGINEERING.

DIMENSIONS ON FLOOR PLANS ARE TO ROUGH FRAMING UNLESS NOTED OTHERWISE.

2" X 4" STUD WALLS ASSUMED TO BE 3 1/2" WIDE.

2" X 6" STUD WALLS ASSUMED TO BE 5 1/2" WIDE.

WINDOW HEAD HEIGHT @ 6'-8" U.N.O.

LANDINGS OR FINISHED FLOORS AT THE REQUIRED EGRESS DOOR SHALL NOT BE MORE THAN 1 1/2" LOWER THAN THE TOP OF THE THRESHOLD. THE LANDING OF FLOOR ON THE EXTERIOR SIDE SHALL NOT BE MORE THAN 7 3/4" BELOW THE TOP OF THE THRESHOLD PROVIDED THE DOOR DOES NOT SWING OVER THE LANDING OF FLOOR

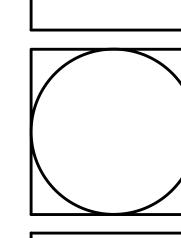
BACKFLOW PREVENTERS OR VACUUM BREAKERS FOR PROTECTION OF POTABLE WATER ON HOSE BIBS, IRRIGATION OR SPRINKLER SYSTEM, BOILERS AND HEAT EXCHANGERS

A BACKWATER VALVE IS REQUIRED TO PROTECT PLUMBING FIXTURES THAT ARE LOCATED BELOW THE ELEVATION LEVEL OF THE NEAREST UPSTREAM MAN HOLE COVER. FIXTURES THAT ARE ABOVE THE ELEVATION OF THE MAN HOLE COVER SHALL NOT DISCHARGE THROUGH THE BACK WATER VALVE

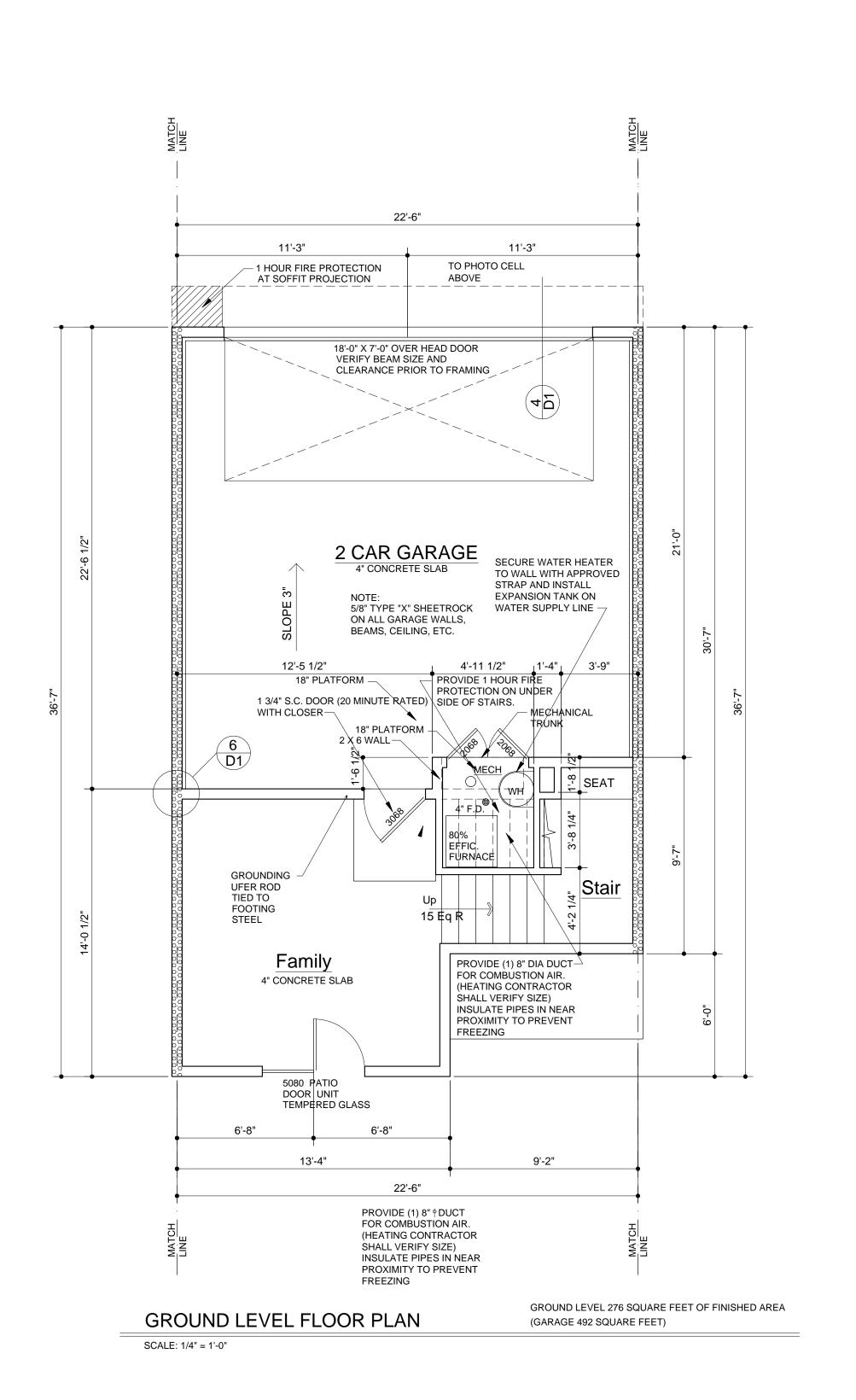
FLOOR DRAINS MUST HAVE TRAP PRIMERS OR DEEP SEAL TRAPS

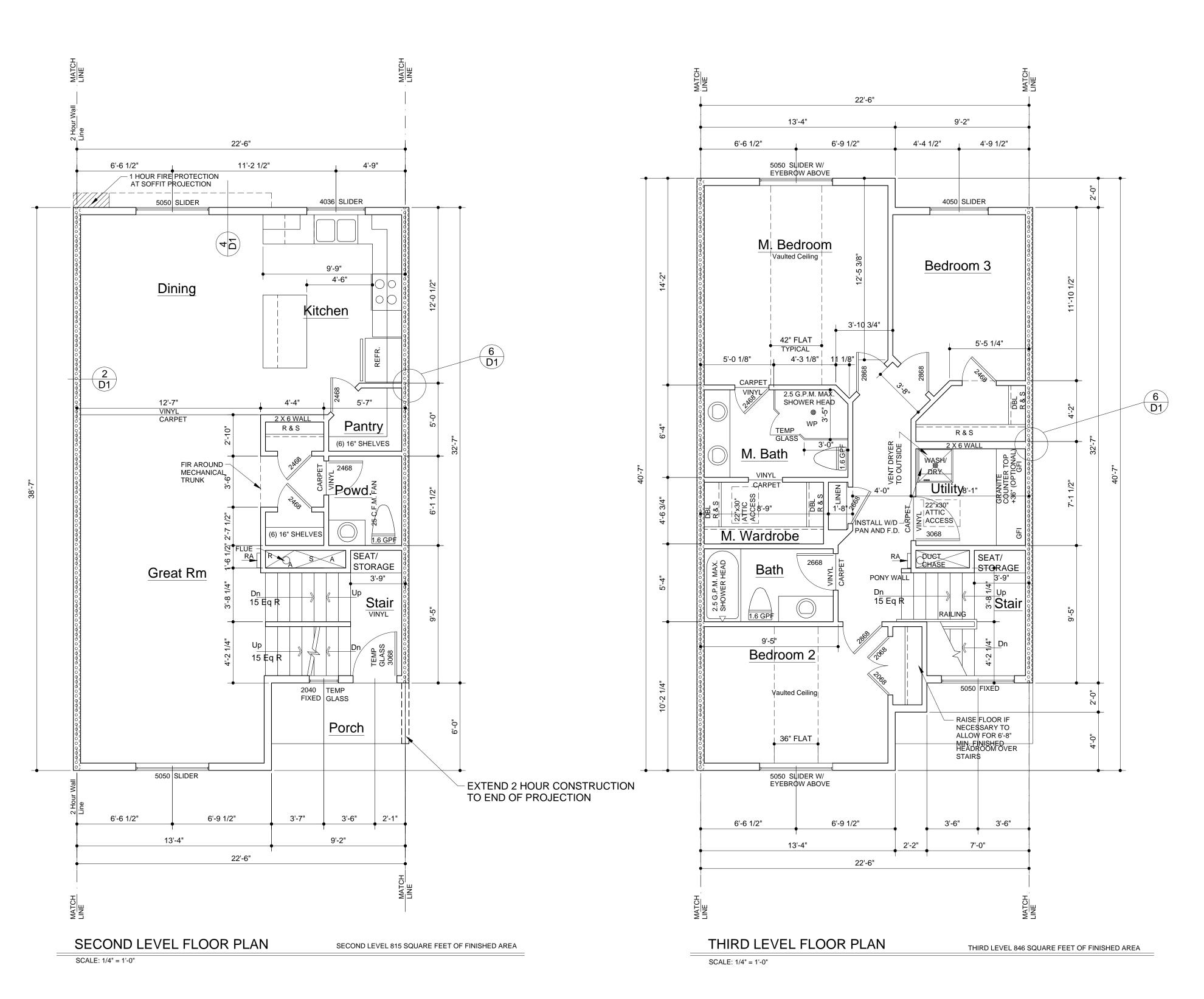




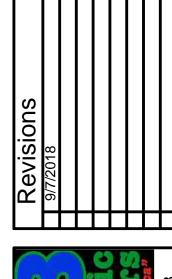












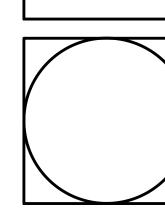


nit A

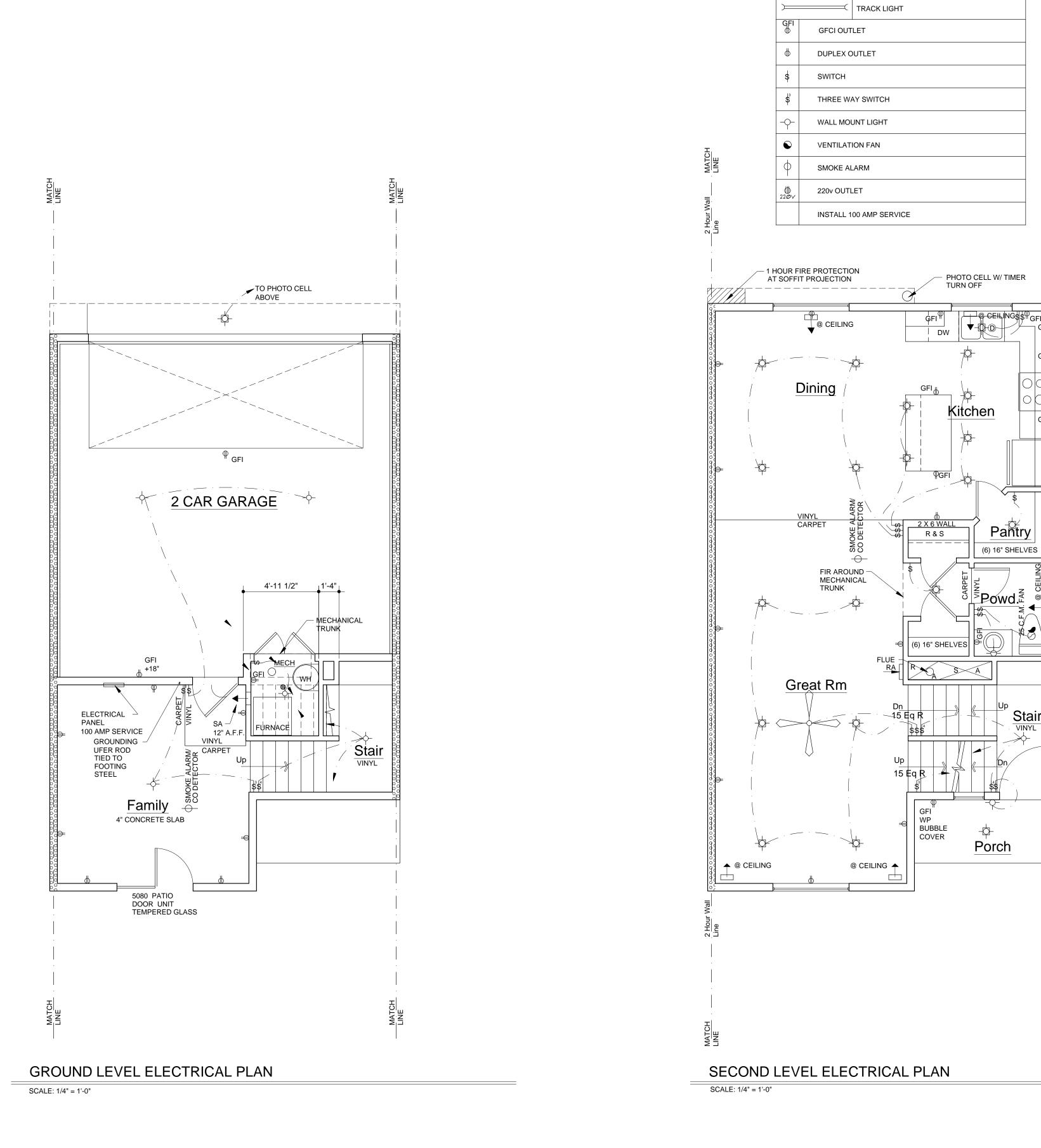
uilding Number #9 Unit A dress: 1000 E 1060 S

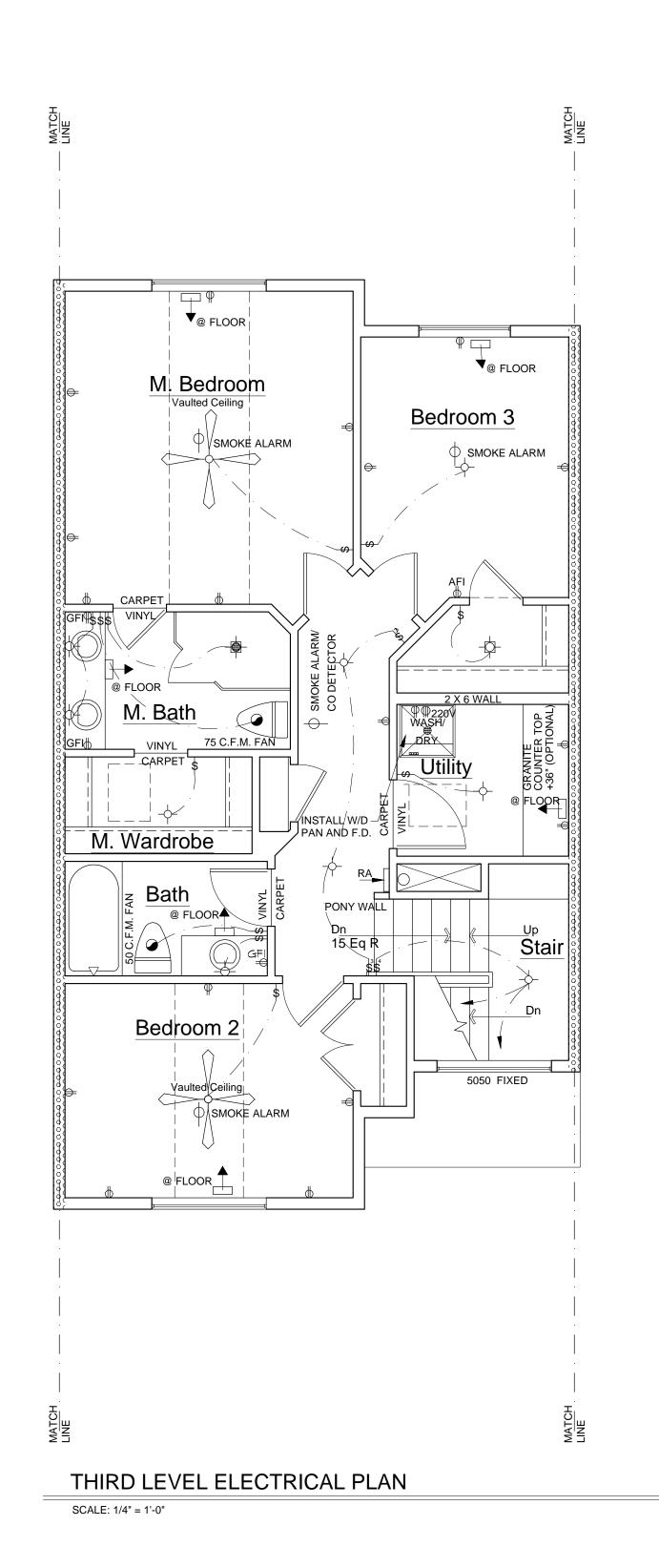
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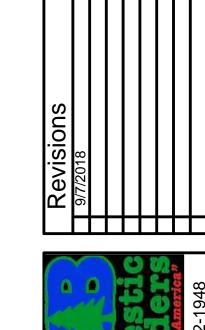
HOME DESIGNAL BOOK North Pleasant Grove, Utah-18001) 492-7335













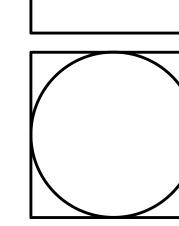
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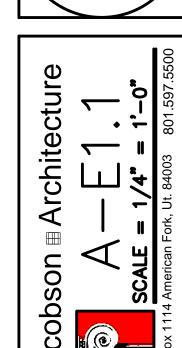
 Number #9 Unit A

 1000 E 1060 S

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OME DESIGNATION OF THE PRESENT Grove, Utah-1800 J. 492-75355



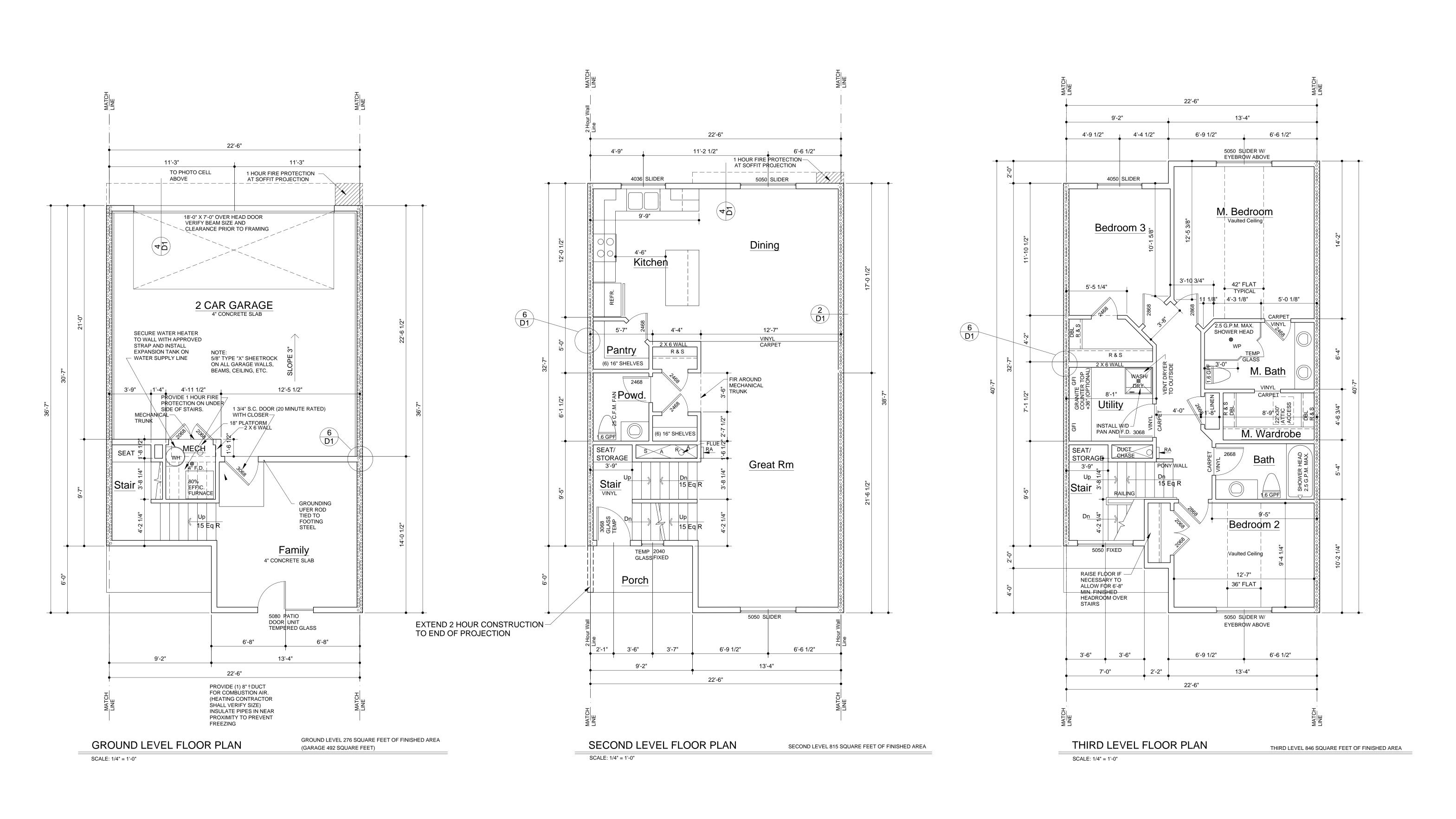


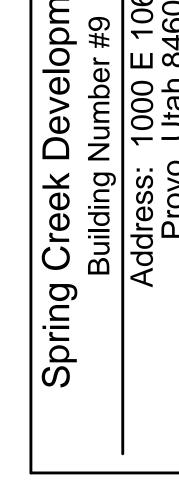
# UNIT TYPE "A"

**ELECTRICAL SCHEDULE** 

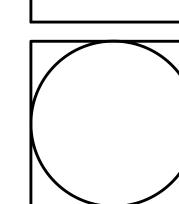
SURFACE MOUNT FIXTURE

RECESSED LIGHT FIXTURE

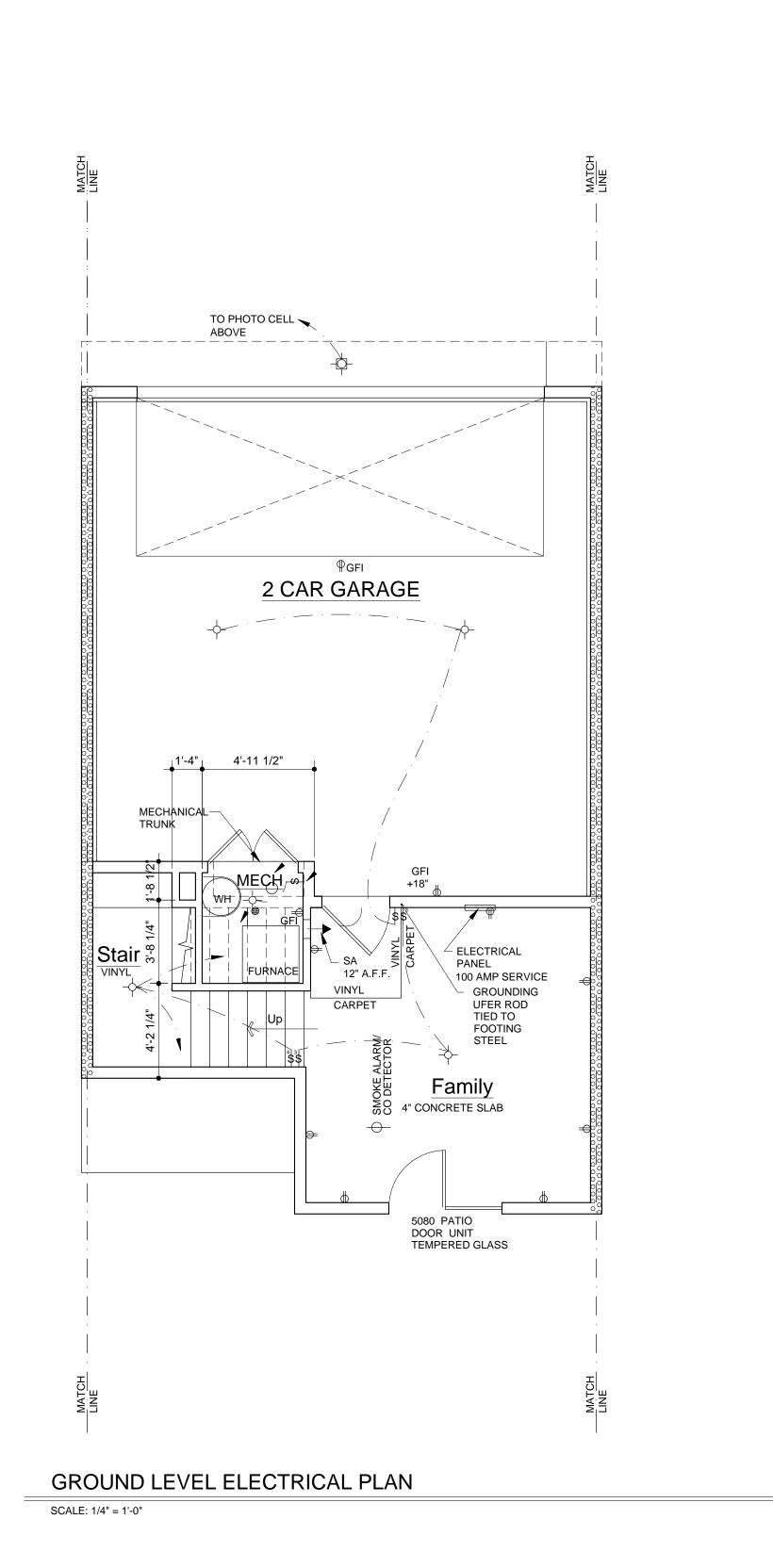


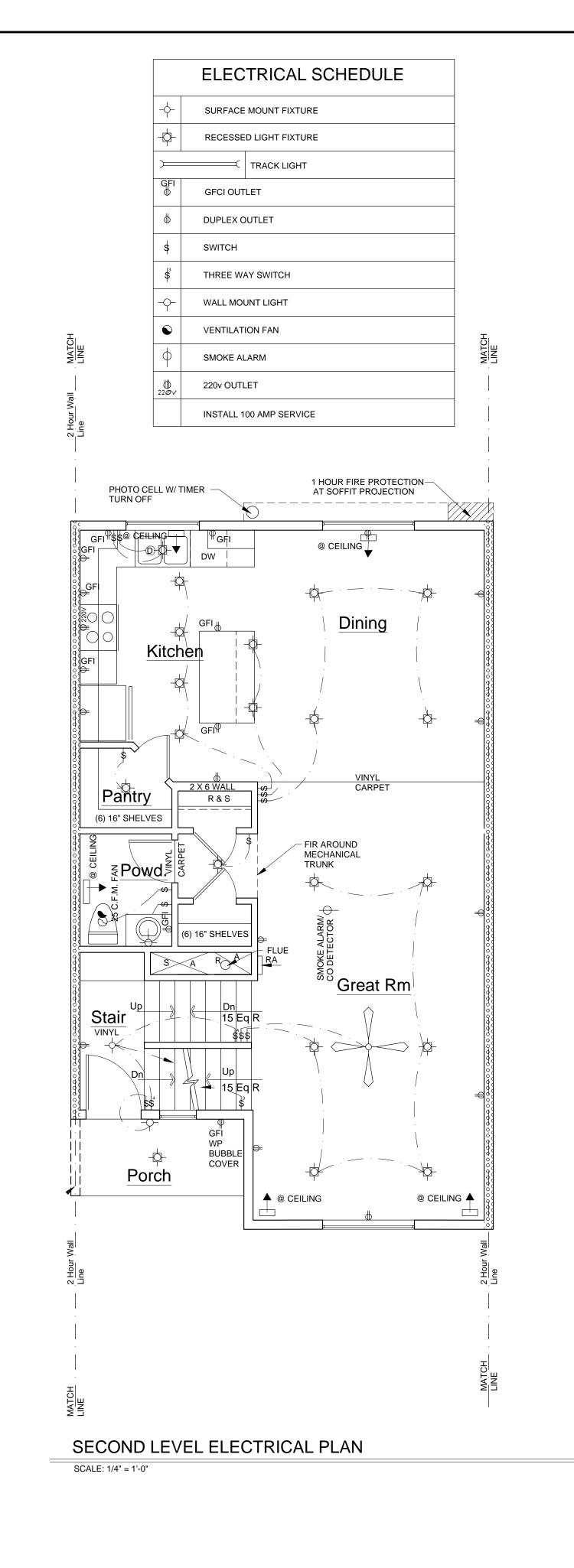


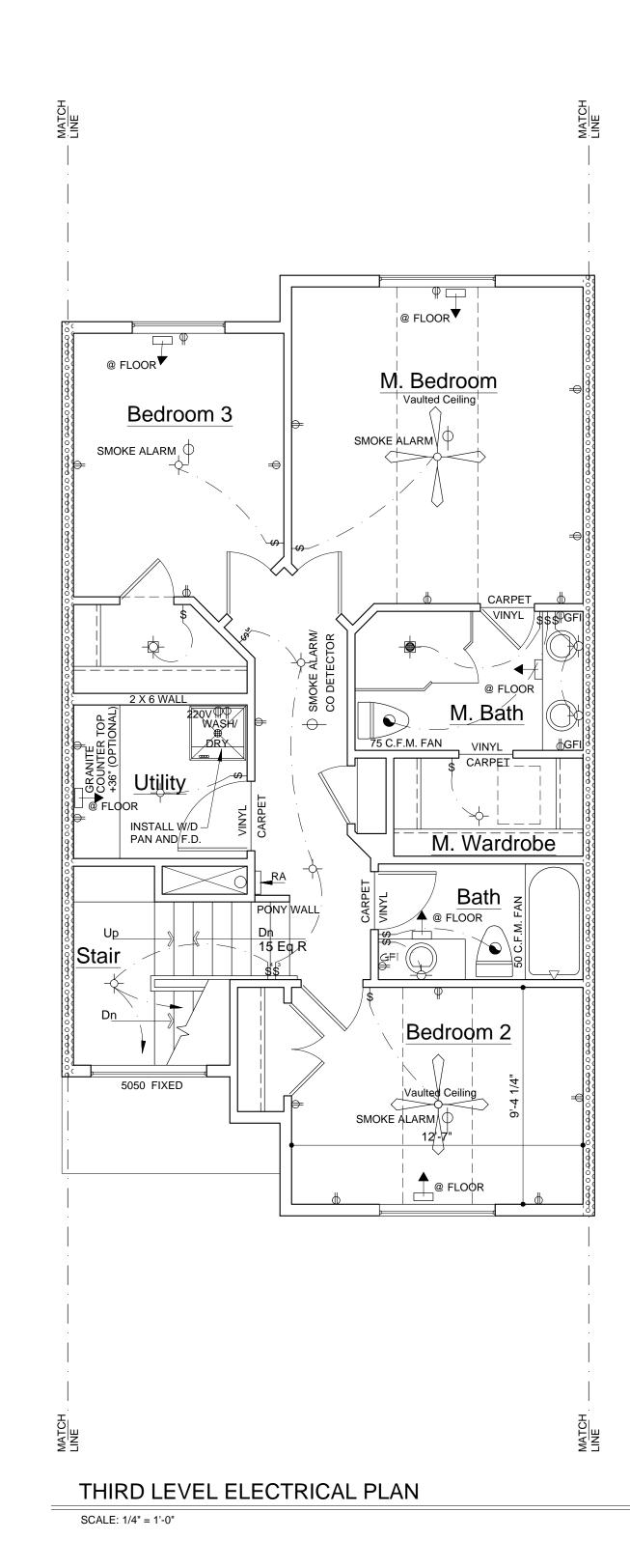


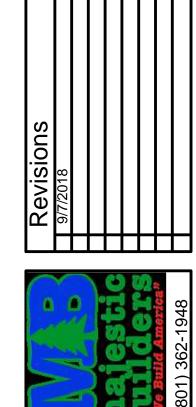






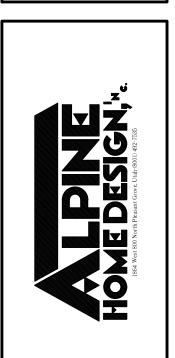


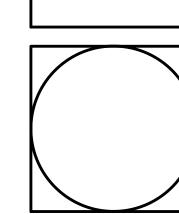


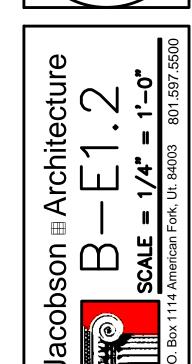




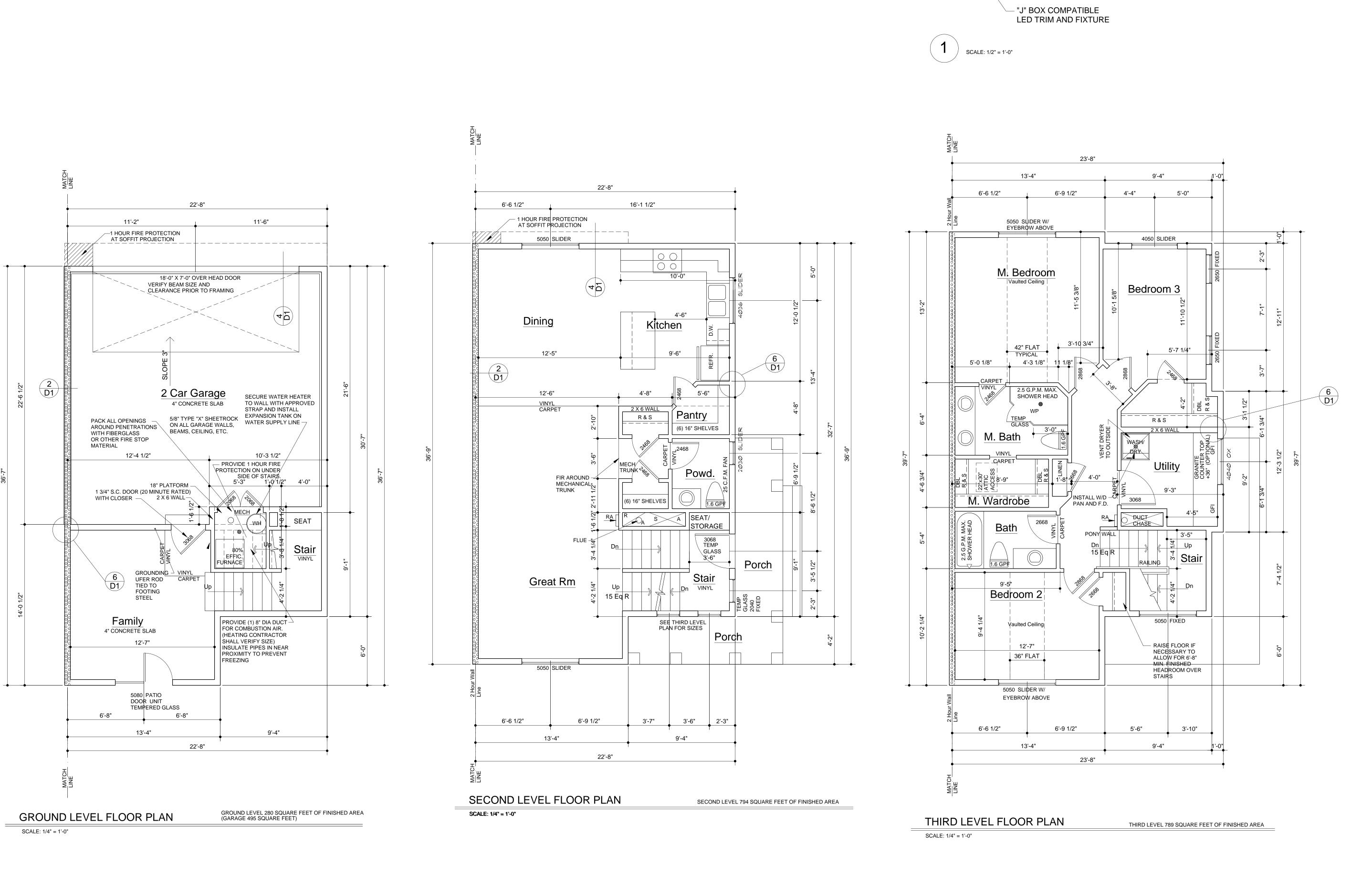
Development pring



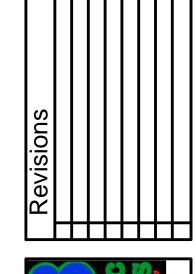




# UNIT TYPE "B"







4" CEILING "J" BOX

-LED FIXTURE

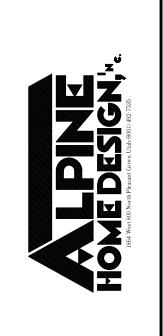


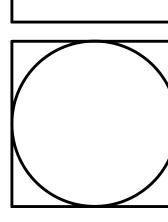


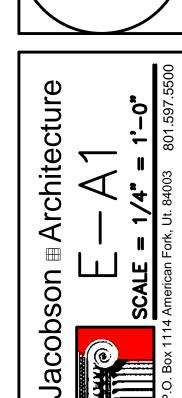
Spring Creek Development - 7

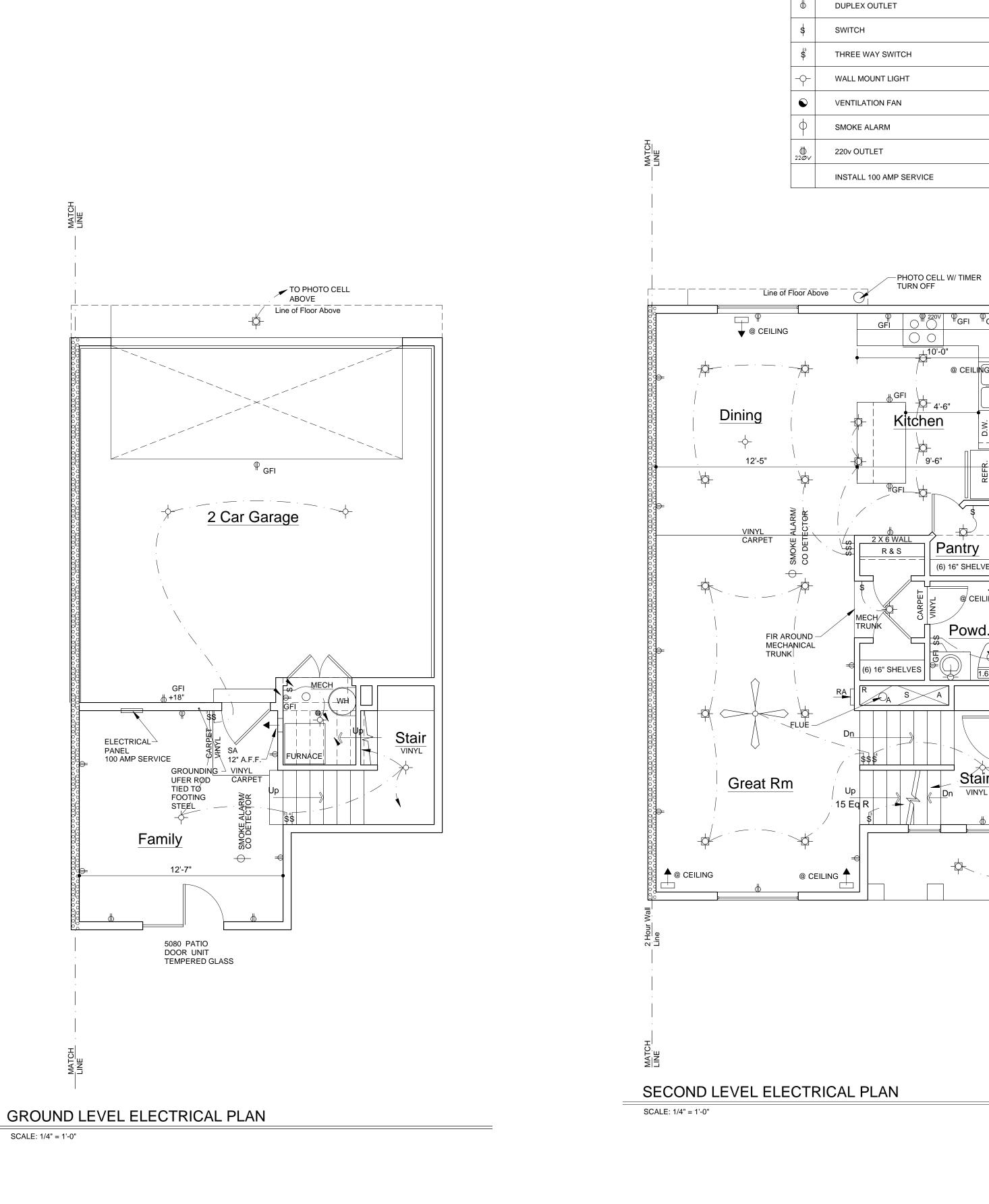
Building Number #9 Unit E

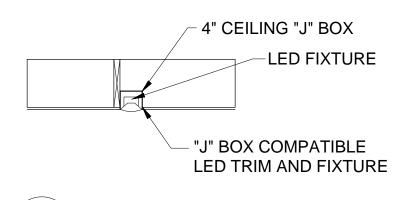
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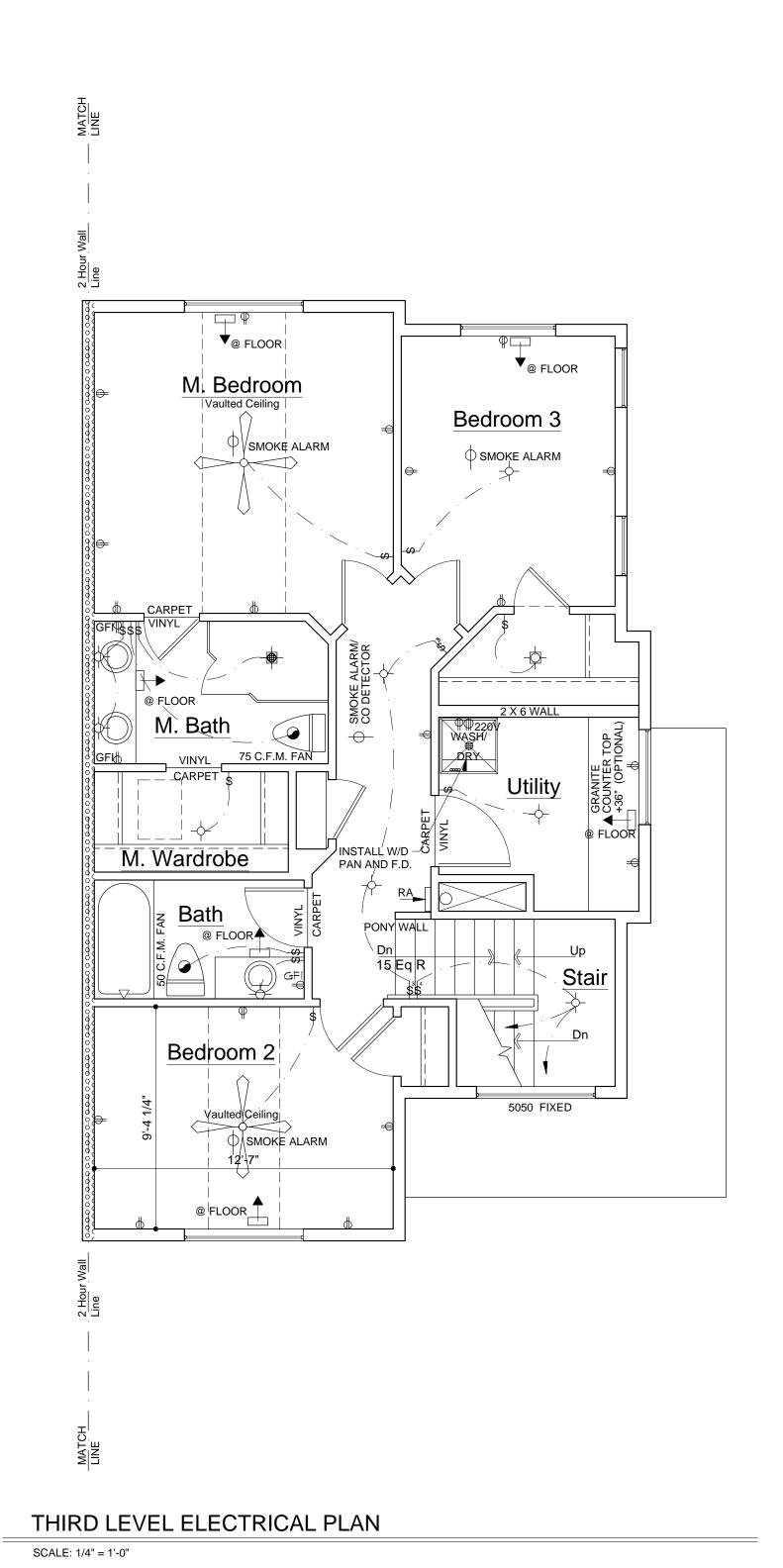








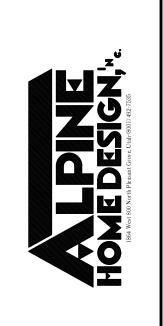
PREFERRED RECESSED LIGHT DETAIL

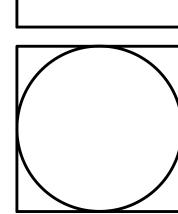


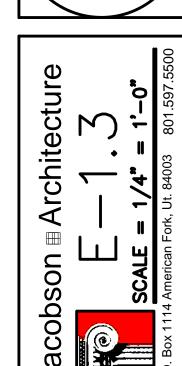




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**ELECTRICAL SCHEDULE** 

9'-6"

√ Pantry

(6) 16" SHELVES

@ CEILING <sup>∟</sup>

BUBBLE

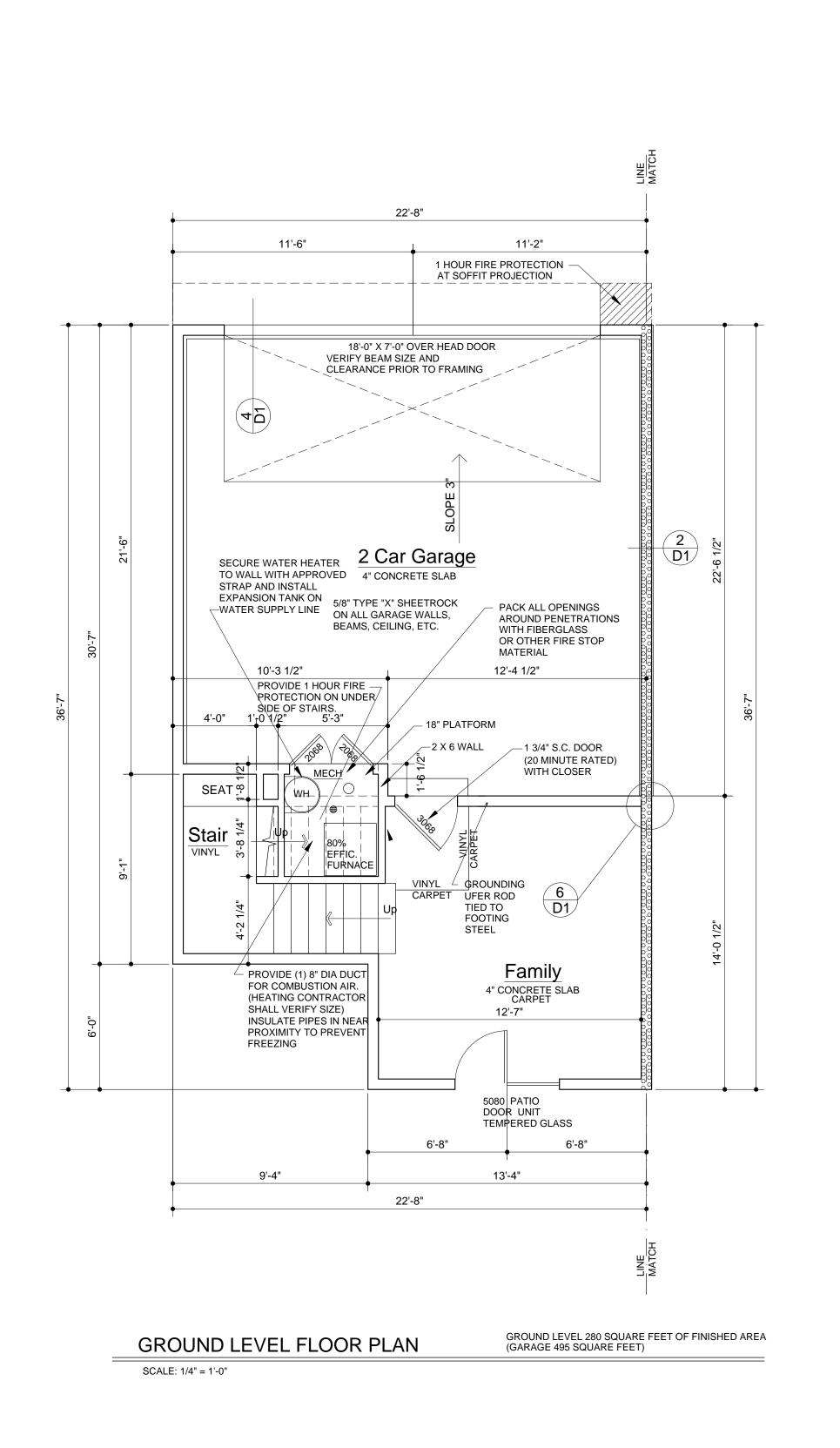
Porch

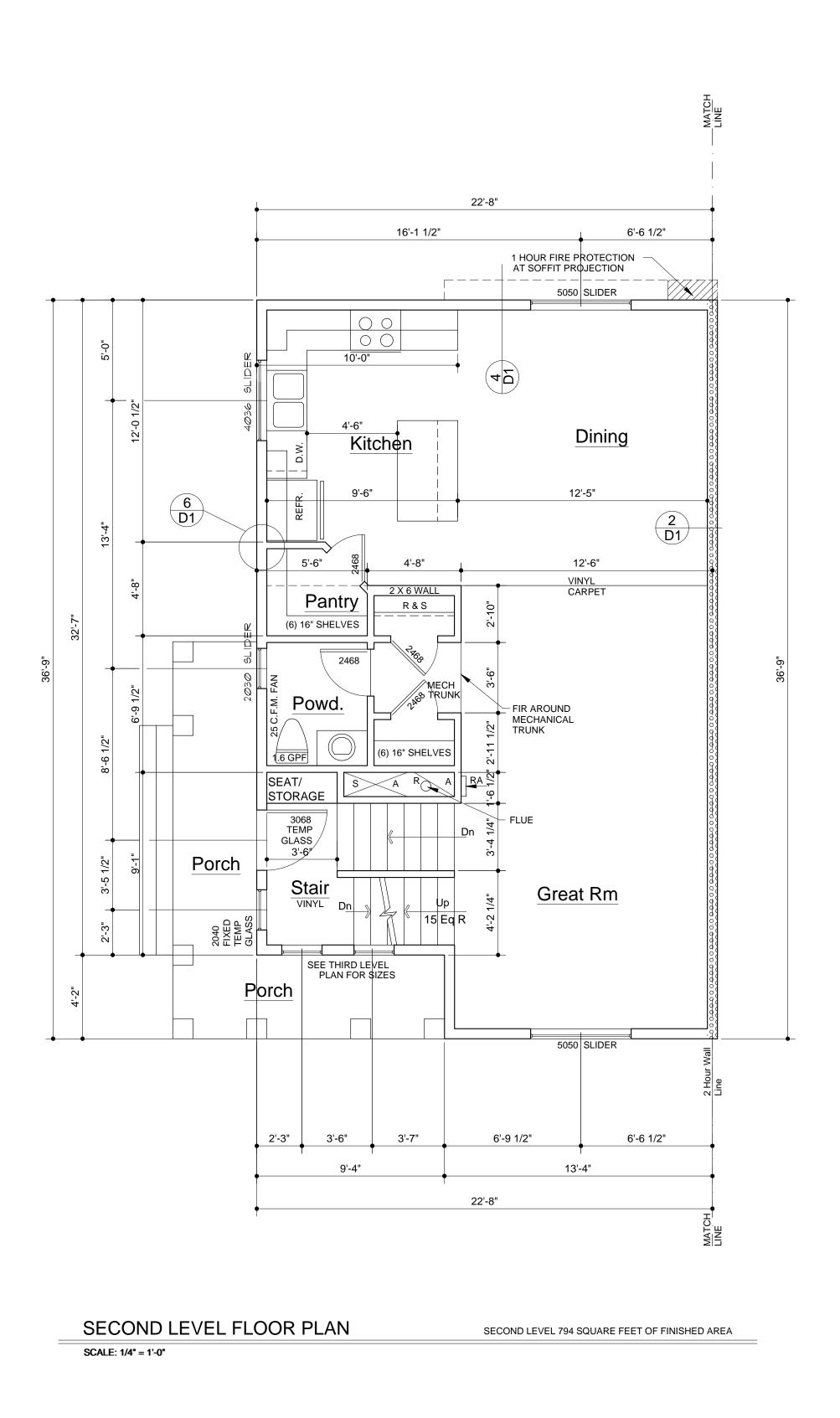
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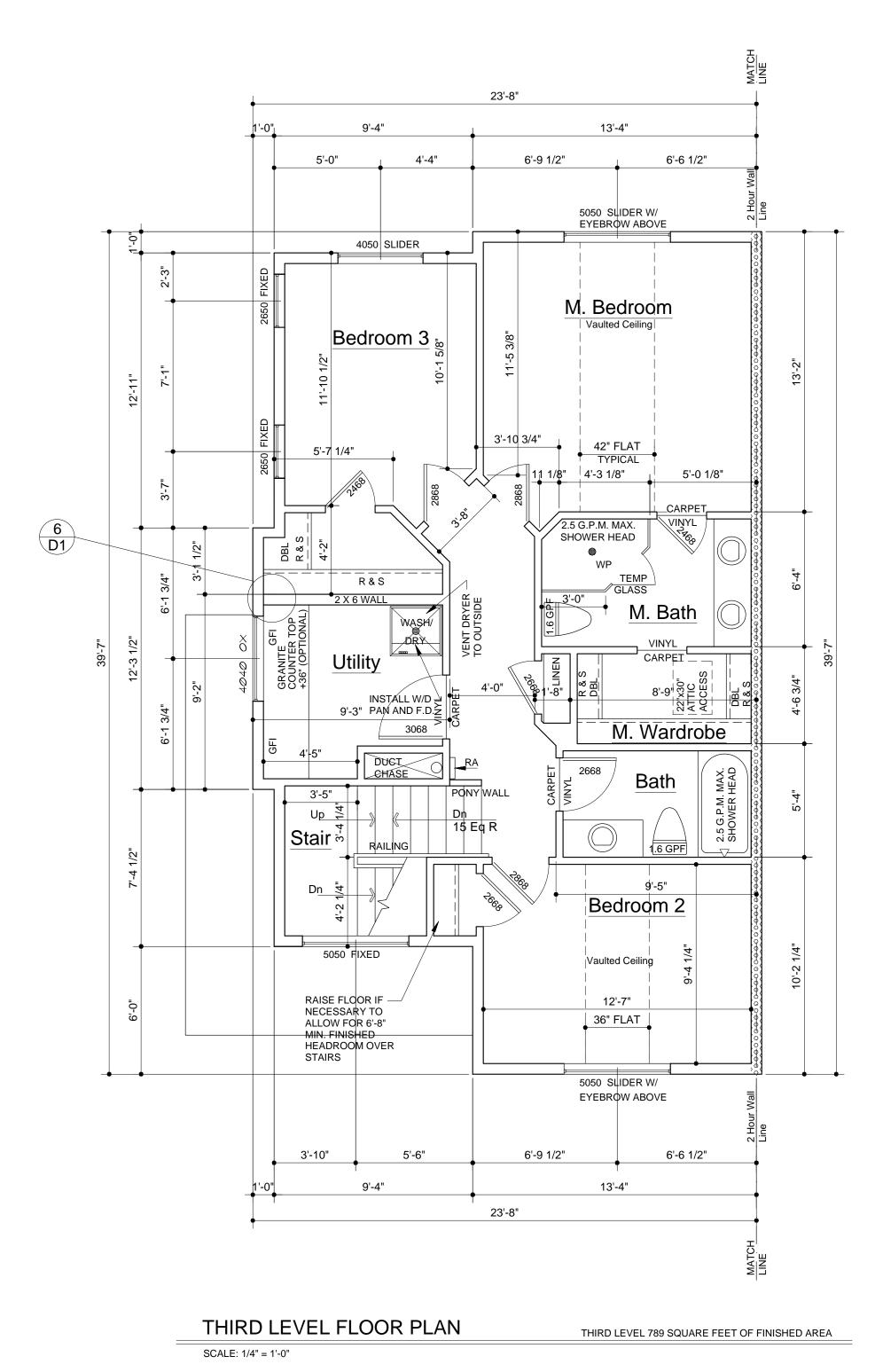
RECESSED LIGHT FIXTURE

TRACK LIGHT

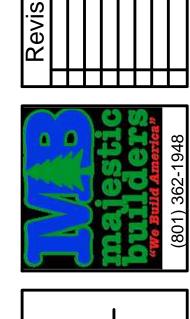
GFCI OUTLET

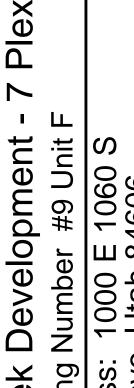




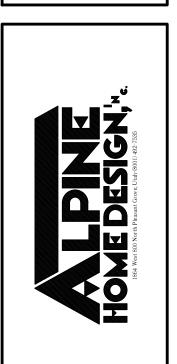


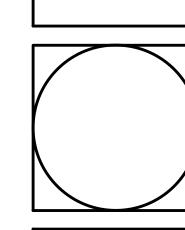


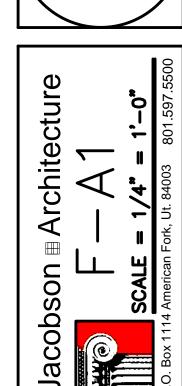


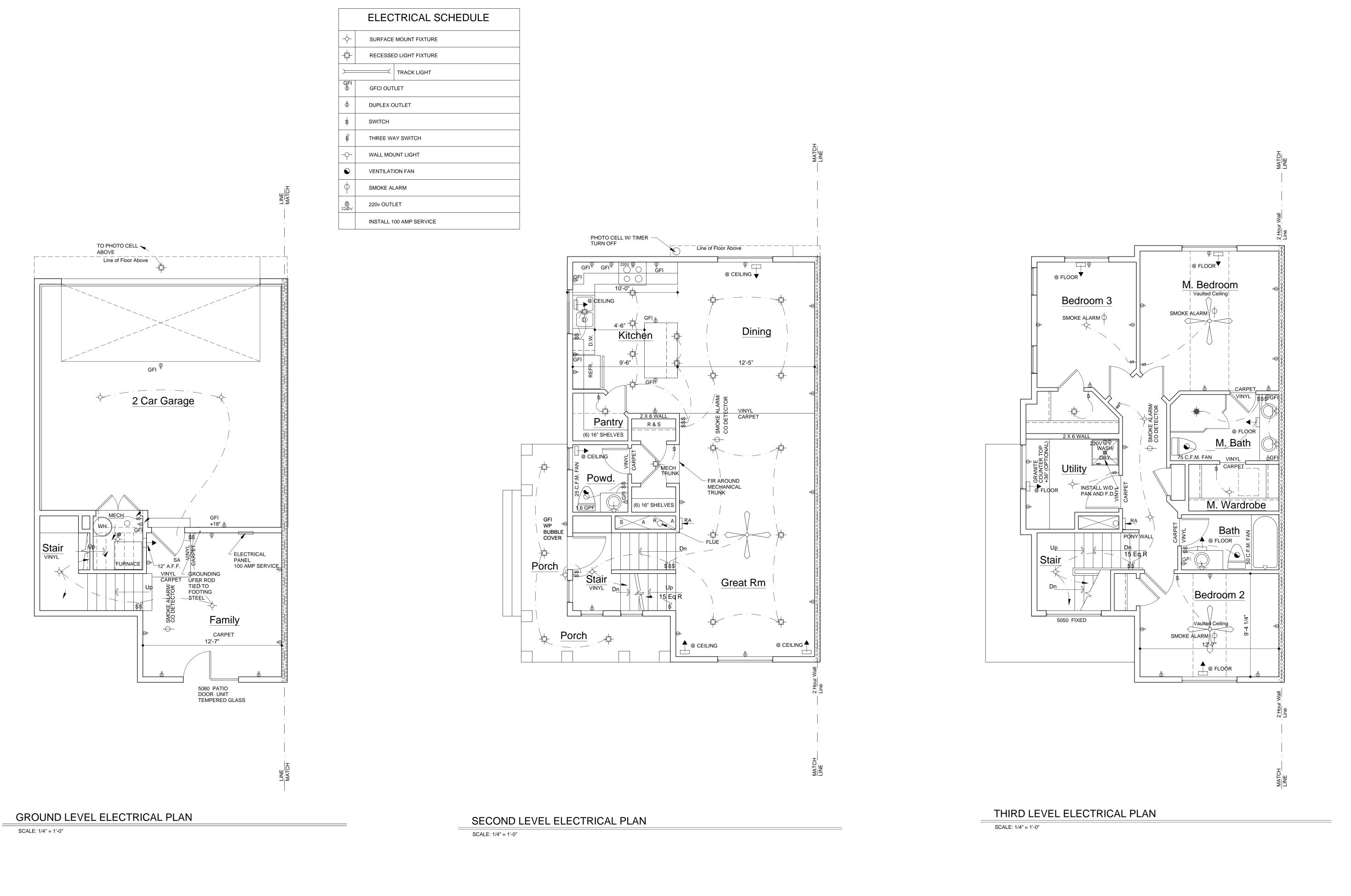


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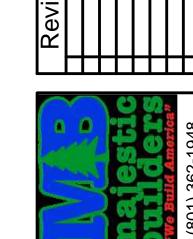




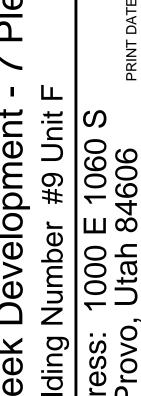




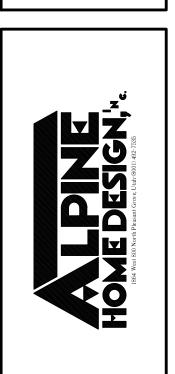
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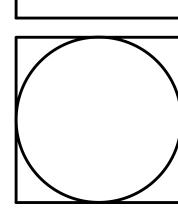


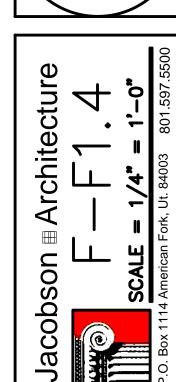




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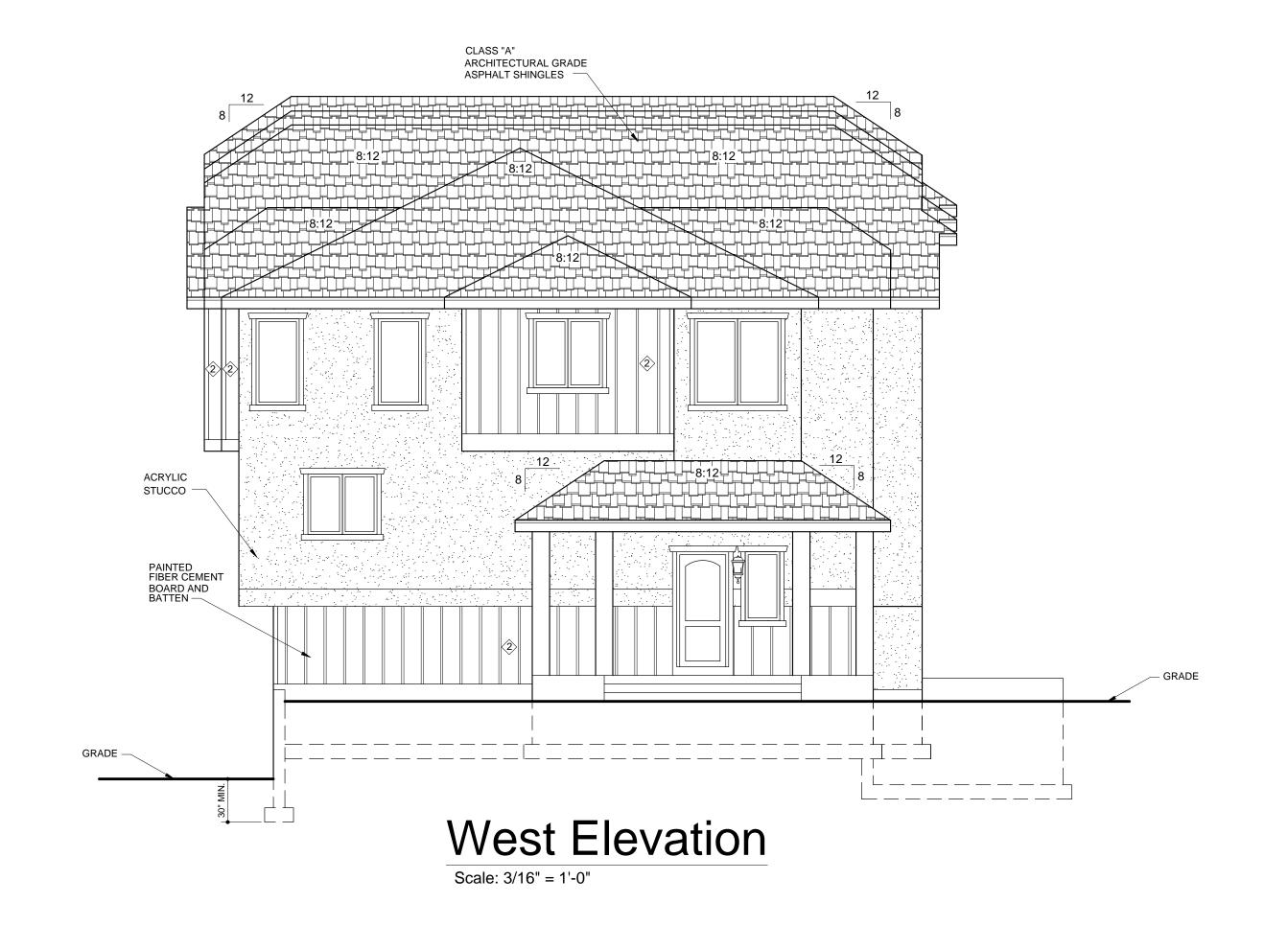










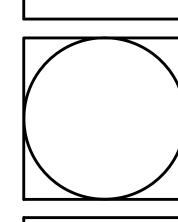




- SYNTHETIC STUCCO PROJECT BASE COLOR
- 2 PAINTED FIBER CEMENT ACCENT COLOR BY OWNER
  3 SYNTHETIC STUCCO ACCENT COLOR PRIMARY
- 4 SYNTHETIC STUCCO
  ACCENT COLOR SECONDARY
- EMBOSSED STEEL OVER HEAD DOOR COLOR GD #1
- 6 STONE

NOTE: BASE AND ACCENT COLORS TO BE COORDINATED BY OWNERS REP. SEE OWNER FOR COLOR CHART FOR EACH BUILDING

Creek Development pring





# STRUCTURAL GENERAL NOTES

#### A. GENERAL

- 1. The contractor shall verify all dimensions prior to starting construction. The architect shall be notified of any discrepancies or inconsistencies.
- 2. Dimensions shall take precedence over scale shown on drawings.
- . Notes and details on drawings shall take precedence over general notes and typical notes.
- 4. All work shall conform to the minimum standards of the following code. The 2015 edition of the International Building Code, and any other regulating agencies which have authority over any portion of the work, and those codes and standards listed in these notes and specifications.
- 5. See architectural drawings for the following:
  - Size and location of all door and window openings, except as noted.
  - Size and location of all interior and exterior nonbearing partitions.
  - Size and location of all concrete curbs, floor drains, slopes, depressed areas, changes in level, chamfers, grooves, inserts, etc.
  - Size and location of floor and roof openings except as shown
  - Floor and roof finishes
  - Stair framing and details (except as shown)
- 6. See mechanical, plumbing, and electrical drawings for the following:
- Pipe runs, sleeves, hangers, trenches, wall and slab openings, etc. Except as shown or noted.
- Electrical conduit runs, boxes, outlets in walls and slabs.
- Concrete inserts for electrical, mechanical or plumbing fixtures.

   Circumstally and least in a second plumbing fixtures.
- Size and location of machine or equipment bases, anchor bolts for mounts.
- 7. The contract structural drawings and specifications represent the finished structure. They do not indicate the method of construction. The contractor shall provide all measures necessary to protect the structure during construction. Such measure shall include, but not be limited to, bracing, shoring for loads due to construction equipment, etc. Observation visits to the site by the structural engineer shall not include inspection of the above structural members.
- 8. Openings, pockets, etc. larger than 6 inches shall not be placed in slabs, decks, beams, joists, columns, walls, etc. unless specifically detailed on the structural drawings. Notify the structural engineer when drawings by others show openings, pockets, etc. not shown on the structural drawings, but which are located on structural members.
- ASTM specifications noted shall be the latest revision.
- 10. Contractor shall investigate site during clearing and earthwork operations for filled excavations or buried structures such as cesspools, cisterns, foundations, etc. If any such structures are found, the structural engineer shall be notified immediately.
- 11. Construction materials shall be spread out if placed on floors or roof. Load shall not exceed the design live load per square foot. Provide adequate shoring and/or bracing where structure has not attained design strength.
- 12. Design Loads:

  O Roof:
  - 16 psf DEAD
  - 10 psi DEAD
  - 20 psf LIVE30 psf SNOW (Pg = 43 psf)
  - o Floor:
  - 12 psf DEAD
  - 40 psf LIVE (Reducible)
  - Wind.
  - Velocity 115 mph (3 sec. Gust)
  - Exposure "B"Risk Category = II
  - Risk Category = IISeismic:
  - 1. Importance Factor: I = 1.0
  - 2.  $S_s = 1.193$   $S_1 = 0.439$
  - 3. Site Class: "D"
  - 4. S<sub>DS</sub> = 0.813 S<sub>D1</sub> = 0.457
  - 5. Seismic Design Category "D"6. Seismic Force Resisting System: Timber roof & floor diaphragms with wood shear walls.
  - 7. Base Shear:

     V = 43.1 kips (6-plex)
  - 8. C<sub>s</sub> = 0.125 9. R = 6.5
  - 10. Analysis Procedure: Equivalent lateral force method.
  - 11. Risk Category: "II"

# B. FOUNDATION

1. Footings are designed based on an allowable soil pressure of 3000 PSF per the project soils report. Footings and foundations have been designed in accordance with the soils report prepared by:

Company: Geo Strata
Job Number: 1004-002
Date: November 22, 2016

- 2. Contractor shall provide for proper de-watering of excavations from surface water, ground water, seepage, etc.
- 3. Footings shall be placed according to depths shown on the drawings.
- 4. Footing back fill and utility trench back fill within building area shall be mechanically compacted in layers.

  Flooding will not be permitted.
- All abandoned footings, utilities, etc. that interfere with new construction shall be removed.
- The soil under perimeter beams and slabs shall be above optimum moisture as described in the referenced geotechnical report prior to concrete placement and shall be verified by the soils engineer.
- 7. Holdown anchor bolts shall meet the requirements of detail 9/SD-1.
- 8. All 1/2" Ø anchor bolts may be replaced with ICC approved 1/2"Ø Titen HD screws or 1/2"Ø all thread rod in 5/8" Ø hole with 4" embed using Simpson SET-XP epoxy at the same spacing indicated on the plans.

## C. CONCRETE

- All phases of work pertaining to the concrete construction shall conform to the "Building Code
  Requirements for Reinforced Concrete" (ACI 318 latest approved edition) with modifications as noted in
  the drawings and specifications.
- Reinforced concrete design is by the "Ultimate Strength Design Method", ACI 318-(latest edition)
   Schedule of structural concrete 28-day strengths and types:
  - Location in structure

    Strength PSI

    Type

    Slabs on Grade

    3000

    Hard rock

    Footings

    3000

    Hard rock
  - Footings 3000 Hard rock
    Design based on 2500 PSI, 28-day strength, special inspection is not required.
- Concrete mix design shall be submitted to the engineer for approval with the following requirements:
- a. Compressive strength at age 28 days as specified above.
- b. Large aggregate-hardrock, ¾" maximum size conforming to ASTM C-33
   c. Cement-ASTM C-150, Type I or II Portland cement
- d. Maximum slump 5-inches, max water cement ratio: 0.50
- e. No admixtures, except for entrained air, and as approved by the engineer.
- 5. Concrete mixing operations, etc. shall conform to ASTM C-94
- 6. Placement of concrete shall conform to ACI standard 514 and project specifications.
- 7. Clear coverage of concrete over outer reinforcing bars shall be as follows: Concrete poured directly against earth 3 inches clear, structural slabs 3/4 inches clear (top and bottom), formed concrete with earth back fill 2 inches clear.
- All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.
- 9. Provide sleeves for plumbing and electrical openings in concrete before placing. Do not cut any reinforcing that may conflict. Coring in concrete is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.
- 10. Conduit or pipe size (O.D.) shall not exceed 30% of slab thickness and shall be placed between the top and bottom reinforcing, unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.
- 11. Modulus of elasticity of concrete, when tested in accordance with ASTM C-460, shall be at least the value given by the equations in section 8.5.1 of ACI 318 for the specified 28-day strength.
- 12. Shrinkage of concrete, when tested in accordance with ASTM C-157, shall not exceed 0.0004 inches/inch.

#### D. REINFORCING STEEL

- Reinforcing bars shall conform to the requirements of ASTM A-615 grade 60.
- All reinforcing bar bends shall be made cold
- Minimum lap of welded wire fabric shall be 6 inches or one full mesh and one half, which ever is greater.
  All bars shall be marked so their identification can be made when the final in-place inspection is made.
- 5. Rebar splices are to be: Class "B"
- 6. Reinforcing splices shall be made only where indicated on the drawings.
- 7. Dowels between footings and walls or columns shall be the same grade, size and spacing or number as the vertical reinforcing, respectively.

## E. WOOD

- 1. Framing Lumb
  - a. Douglas fir larch No. 2 grade for 2x and 4x framing except for 2x4, 2x6 studs use Douglas fir stud grade, U.N.O.
  - b. 6x framing DFL No. 1 grade
- 2. Bolt holes shall be 1/16" maximum larger than the bolt size. Re-tighten all nuts prior to closing in.
- Standard cut washers shall be used under all sill plate anchor bolts, U.N.O. at shear walls. See the Shear Wall Schedule on sheet S1.1 for anchor bolt spacing and washer requirements at shear walls.
   All sills or plates resting on concrete or masonry shall be pressure treated Douglas Fir. Bolts shall be
- placed 9 inches from the end of a plate, or from a notch greater than ½ the width of the plate, and spaced at intervals noted.

  5. Do not notch joists, rafters or beams except where shown in details. Obtain engineer's approval for any holes or notches not detailed. Holes through sills, plates, studs and double plates in interior, bearing and
- shear walls shall conform with detail 6/S1.2.

  6. Connection hardware shall be by USP or Simpson Strong-Tie, or ICC approved equal.

	DUAL SPECIFICATION TABLE						
SIMPSON CONNECTOR	USP CONNECTOR	SIMPSON CONNECTOR	USP CONNECTOR				
CS16	RS150	HDU2	PHD2A				
ST6224	KST224	HDU4	PHD4A				
A35	MPA1	HDU5	PHD5A				
LUS24-2	JUS24-2	HDU8	PHD8				
H1	RT15	HDU11	UPHD11				
H10	RT16A						
LTP4	MP4F	STHD10	STAD10				
LSSU	LSSH	STHD14	STAD14				

- Fastening schedule per 2015 edition of the International Building Code, table No. 2304.9.1. Unless noted otherwise.
- 8. All nails, bolts, holdowns, straps or other steel fasteners in contact with pressure treated timber shall be hot-dipped galvanized, stainless steel or otherwise treated or isolated to prevent chemical attack. Contractor shall verify treatment method and confirm appropriate corrosion resistance be provided in accordance with hardware supplier recommendations.
- 9. Non-bearing, non-shear interior walls to be anchored to floor and /or roof as indicated on detail 10/S1.1.

## F. PREFABRICATED WOOD TRUSSES

- 1. Prefabricated wood roof trusses shall be as designed by the truss manufacturer. Bridging size and spacing by truss manufacturer unless noted otherwise. Contractor shall submit shop drawings, erection drawings and design calculations sealed by an engineer, registered in the state of Utah, for review prior to manufacture. Calculations and shop drawings shall show any special details required at bearing points. All connectors shall be Simpson or equivalent with current ICC approval.
- 2. Truss manufacturer to design trusses for lateral load (LAT. = xxxx) in pounds, as shown on plans. Lateral loads are ASD level loads.
- 3. Additional trusses shall be supplied as required to support mechanical equipment.
- All truss-to-truss and truss-to-beam connectors per truss manufacturer.

#### G. GLUE LAMINATED BEAMS (GLB)

1. Glue laminated beams shall be 24F-V4 (cantilevers and continuous beams shall be 24F-V8) and have the following minimum properties: fb=2400 psi, Fv=190 psi, Fc (perpendicular)=650 psi, E=1,800,000 psi. All beams shall be fabricated using waterproof glue. Fabrication and handling per latest AITC and WCCA standards. Beams to bear grade stamp and AITC stamp and certificate. Moisture content shall be limited to 12% or less.

#### H. LAMINATED VENEER LUMBER (LVL)

- 1. Laminated veneer lumber to have: Fb=2600 psi, Fv=285 psi, E=1.9x10^6psi
- Double & triple LVL beams shall be nailed together as follows:
- Provide (2) rows of 16d sinkers at 12" O.C. for beams < 11 7/8" deep Provide (3) rows of 16d sinkers at 12" O.C. for beams > 11 7/8" deep
- 3. Beams w/ (4) or more plies shall be bolted together as indicated in the manufacturer's written specifications.

#### WOOD STRUCTURAL PANELS

- 1. All wood structural panels shall be plywood or APA rated oriented strand board. Panels shall bear the stamp of an approved agency. Panels shall be of the span/index rating shown on the plans. Fastening shall be indicated on the plans.
- 2. All plywood shall be C-D interior sheathing with exterior glue. Plywood shall be 4-ply, minimum.

#### J. SHOP DRAWINGS

- . Shop drawings shall be submitted for all structural items in addition to items required by architectural
- The contractor shall review all shop drawings prior to submittal. Items not in accordance with contract drawings shall be flagged for review.
- drawings snall be flagged for review.

  Nerify all dimensions with architect.
- 4. Any changes, substitutions, or deviations from original contract drawings shall be redlined or flagged by submitting parties, shall be considered approved after engineers review, unless noted otherwise.
- . The engineer has the right to approve or disapprove any changes to the original drawings at anytime
- before or after shop drawings review.
  The shop drawings do not replace the original contract drawings. Items omitted or shown incorrectly and are not flagged by the structural engineer or architect are not to be considered changes to the original
- contract drawings.

  7. The adequacy of engineering designs and layout performed by the others rests with the designing or
- Reviewing is intended only as an aid to the contractor in obtaining correct shop drawings. Responsibility for corrections shall rest with the contractor.

#### K. SHEATHING

- 1. Roof sheathing
  - 15/32" wood structural panel: plywood or oriented strand board (O.S.B.) panel index = 32/16, unblocked, nail with 8d common nails at 6" O.C. at all boundaries and supported edges, 12" O.C. field. Minimum penetration 1" in supporting member (NER 272).
- 2. Floor sheathing

  3/4" (min.) wood structural panel: plywood or oriented strand board (O.S.B.) T & G, panel index = 48/24,
- unblocked, nail with 10d common nails at 6" O.C. at all boundaries and supported edges, 12" O.C. field. Shear wall sheathing

  Sheathing for shear walls shall be as indicated on the shear wall plans and schedules. Sheathing at shear walls may be installed with panels horizontal or vertical. All shear wall panels shall have minimum

# L. STRUCTURAL STEEL

- 1. Hot-rolled structural steel shapes & plates shall be per ASTM A36 with the following exception. All
- W-Flange shapes shall be per ASTM A992.

  Structural steel pipe shall be per ASTM A53 grade B, Tube steel per ASTM A500 Grade B.

wood structural panel span rating of 24/0 or "Wall-16."

- 3. Nuts & bolts in structural steel connections shall be per ASTM 325N, with hardened washers. Design is based upon bearing type connections with thread not excluded, therefore, no special inspection required, U.N.O. in note M below.
- 4. Anchor bolts shall be per ASTM A307, U.N.O.
- Welds shall be by E70XX, low hydrogen electrodes, all welding shall be performed in a shop approved by the building official.
- 6. Grout material for base plates shall be non-metallic, non-shrink, pre-packaged grout conforming to ASTM C 1107.

# M. SPECIAL INSPECTION / QUALITY ASSURANCE PLAN

- 1. The seismic lateral load resisting system consists of timber roof diaphragms with wood shear walls.
- Special inspections shall be required:
  - All post-installed anchorage to concrete (epoxy grout applications)
  - When required by the local building department: All timber elements of the lateral force resisting system components
- a. The owners shall employ special inspectors who shall provide additional inspections during construction in accordance with IBC section 17.
- testing agency, licensed and approved by the building department.
  c. The testing agency shall send copies of all structural testing and inspection reports directly to Vector

b. All special inspections shall be performed by an independent certified inspector from an established

- Structural Engineering and all interested parties.

  3. Structural testing is not required.
- All reports shall be distributed on a monthly basis to the engineer of record, owner, contractor, and to the building official.
- 5. No structural observation is required. However, the engineer of record reserves the right to make field observations during construction approximately once per week.

# SHEET INDEX

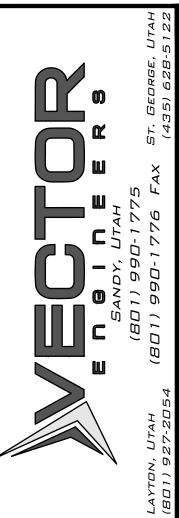
SHT #	SHEET NAME		ORIGIN	3-30	<u> </u> ∆ 05–20	_3 MM−[	 J-MM <u>⟨\$</u>	J−MM _6	MM−[	_ MM _ [
S1	STRUCTURAL GENERAL NOTES		•							
S1.1	STANDARD DETAILS & SCHEDULES		•							
S1.2	STANDARD DETAILS & SCHEDULES		•							
S2	FOUNDATION PLAN		•	•	•					
S3	MAIN FLOOR FRAMING PLAN		•	•	•					
S4	UPPER FLOOR FRAMING PLAN		•	•	•					
<b>S</b> 5	ROOF FRAMING PLAN		•	•						
S6	MAIN LEVEL SHEAR WALL PLAN		•		•					
<b>S</b> 7	2ND LEVEL SHEAR WALL PLAN		•	•						
S8	3RD LEVEL SHEAR WALL PLAN		•							
SD-1	FOUNDATION DETAILS		•	•						
SD-2	STRUCTURAL DETAILS		•							
	ABBR	REVIAT		NS						
A.B. ARCH'L	ANCHOR BOLT  ARCHITECTURAL DRAWINGS	LVL MFR		+	LAMINA MANUF		R LUMI	BER		

A.B.	ANCHOR BOLT	LVL	LAMINATED VENEER LUMBER
ARCH'L	ARCHITECTURAL DRAWINGS	MFR	MANUFACTURED
BLDG	BUILDING	N.T.S.	NOT TO SCALE
BLK	BLOCK	0/	OVER
BLK'G	BLOCKING	0.C.	ON CENTER
ВМ	BEAM	OPT'L	OPTIONAL
CANT'L	CANTILEVERED	0.S.B.	ORIENTED STRAND BOARD
C.L.	CENTER LINE	PSL	PARALLEL STRAND LUMBER
CLG	CEILING	PL	PLATE
CMU	CONCRETE MASONRY UNIT	REQ'D	REQUIRED
COL	COLUMN	SHTH'G	SHEATHING
CONT	CONTINUOUS	SHT	SHEET
DBL	DOUBLE	SIM	SIMILAR
DTL	DETAIL	STL	STEEL
EL	ELEVATION	SW	STRONG-WALL
EOR	ENGINEER OF RECORD	T.O.F.	TOP OF FOOTING
FND	FOUNDATION	T.O.W.	TOP OF WALL
FTG	FOOTING	T&B	TOP AND BOTTOM
GL	GLUE LAMINATED (BEAM)	TYP.	TYPICAL
HDR	HEADER	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	VERT.	VERTICAL
H.D.	HOLD DOWN	w/	WITH

RELEASE DATE JANUARY 29, 2020

LAMINATED STRAND LUMBER

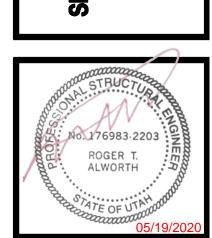
# DATE: 1–29–2020 ENG: JBA DWN: MGP CHK: RTA REV. # DATE BY: DESCRIPTION



STEVE TURLEY

ING CREEK MULTI-FAMILY HOMES 7-PLEX 
1050 S. 1000 E.

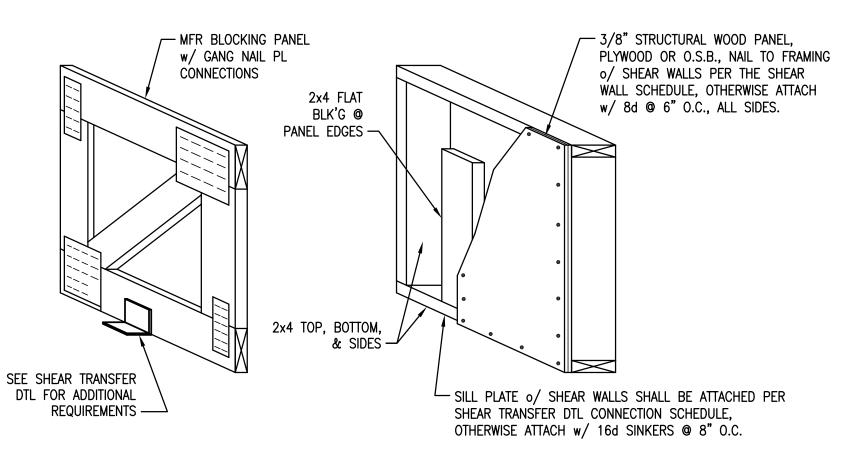
PROVO, UTAH



ROGER T. ALWORTH, S.E. 176983

U3003-002-191

**S1** 



#### (2) 2x4 STUD @ 16" O.C. 12'-0" 13'-6" 14'-0" 2x4 DFL #2 @ 16" O.C. 9'-0" 11'-0" 13'-0" 2x4 DFL #2 @ 12" O.C. 10'-6" 13'-0" 14'-0" (2) 2x4 DFL #2 @ 16" O.C. 13'-0" 14'-0" 13'-6" 14'-6" 2x6 STUD @ 16" O.C. 19'-0" 20'-0" 17'-0" 2x6 STUD @ 12" O.C. 21'-0" 22'-0" (2) 2x6 STUD @ 16" O.C. 21'-0" 22'-0" 22'-6" 2x6 DFL #2 @ 16" O.C. 16**'**–6" 19'-6" 20'-0" 2x6 DFL #2 @ 12" O.C. 18**'**–6" 21'-6" 22'-0" (2) 2x6 DFL #2 @ 16" O.C. 22'-6" 22'-6" 22'-6" 2x8 DFL #2 @ 16" O.C. 22'-0" 26'-6" 27'-0" 2x8 DFL #2 @ 12" O.C. 25'-6" 28'-0" 30'-0" (2) 2x8 DFL #2 @ 16" O.C. 29'-6" 29'-6" 30**'**–0" 1-3/4 x 7-1/4 LVL STUDS @ 16" 0.0 27'-0" 30**'**–0" 30**'**-0" TYPICAL BLOCKING PANEL 1-3/4 x 5-1/2 LVL STUDS @ 16" O.C 20'-6" 21'-6" 22'-0"

8

9

(10)

2x4 STUD @ 16" O.C.

2x4 STUD @ 12" O.C.

STUD WALL TYPE

THIS TABLE ASSUMES IBC 5psf

THIS TABLE ASSUMES IBC WIND INTERIOR WALLS. THIS TABLE ASSUMES AXIAL DL

N.T.S.

NOT USED

STANDARD STUD TABLE

STUD HEIGHT TABLE

INTERIOR

10**'**-0"

11'–6"

BEARING AND/OR SHEAR

WALLS (MAX. HEIGHT)

EXTERIOR

8'-6"

9'-6"

) LOADS w/ 115 mph, EXP. "C" AT EXTERIOR WALLS AND 5 psf LATERAL LOAD AT	
_ = 710 lb/ft, LL = 760 lb/ft. AT EXTERIOR AND INTERIOR WALLS. LATERAL LOAD @ INTERIOR WALLS.	

NON-BEARING AND NON-SHEAR WALLS

(MAX. HEIGHT)

INTERIOR ONLY

13'-0"

14'-0"

TOP PL, RAKED

WHERE OCCURS

**5** 

À	3/8" PLYWOOD OR O.S.B.		OMMON 6" O.C.	8d COMMON NAILS @ 12" (		16d SINKERS @ 6" O.C.	260 plf	<u></u> \$\hat{\sh}	
<u>P2</u>	3/8" PLYWOOD OR O.S.B.		OMMON 4" O.C.	8d COMMON NAILS @ 12" (		16d SINKERS @ 4" O.C.	350 plf	\$2	
<u>A</u>	3/8" PLYWOOD OR O.S.B.		OMMON 3" O.C.	8d COMMON NAILS @ 12" (		16d SINKERS @ 3" O.C.	490 plf	<u>\$3</u>	
<u></u>	3/8" PLYWOOD OR O.S.B.		OMMON 2" O.C.	8d COMMON NAILS @ 12" (		16d SINKERS @ 2" O.C.	640 plf	<u>\$</u>	
			0.01.15	-5	Г				
SILL ANCHORAGE SCHEDULE    SHEAR WALL LENGTH									
MARK	NOMINAL SILL PL THICKNESS	1/2"ø A.B. SPACING	5/8"ø A.B. SPACING	CAPACITY	TOLERANCES			ES	
<u>\$</u> 1	2x	32" O.C.	48" O.C.	370 plf	SPECIFIED SHEAR WALL LENGTH SHEAR WALL			ACCEPTABLE SHEAR WALL	
<u>\$2</u>	2x	24" O.C.	32" O.C.	520 plf				TOLERANCE	
/32\	27		02 0.0.	0_0 p		UP TO 3'-		± 2"	
<u>\$3</u>	2x	16" O.C.	24" O.C.	740 plf	L	OVER 3'-0" AND U		± 3"	
7307	27		21 0.0.		L	OVER 5'-0" AND U		± 4"	
<u>\$4</u>	2x	12" O.C.	16" O.C.	1040 plf		OVER 7'-0" AND UP		± 6"	
/341	27	12 0.0.	10 0.0.		OVER 10'-0" ± 8"				
. ALL	ALL SHEAR WALLS SHALL BE FRAMED TO THE MINIMUM LENGTHS SHOWN ON THE PLANS WITH THE TOLERANCES								

SHEAR WALL SCHEDULE

FIELD NAILING SOLE PL NAILING, SHEAR WALL DEFAULT SILL ANCHORAGE, U.N.O.

INDICATED ON THE TABLE ABOVE, U.N.O. ON PLAN W/ MINIMUM WALL LENGTH.

2. ALL SHEAR WALLS SHALL TERMINATE ON AT LEAST (1) FULL HEIGHT STUD. ADDITIONAL STUDS OR SOLID POSTS SHALL BE INSTALLED AS REQUIRED FOR HOLDOWNS WHERE THEY OCCUR.

3. 8d COMMON NAIL SHANK DIAMETER = .131", 16d SINKER SHANK DIAMETER = .148"

4. FOR "P3" AND "P4" SHEAR WALLS, ALL FRAMING RECEIVING EDGE NAILING FROM ADJOINING PANEL EDGES SHALL BE 3-INCH NOMINAL OR WIDER AND NAILS SHALL BE STAGGERED. AS AN ALTERNATE, (2) 2x STUDS MAY BE USED PROVIDED THEY ARE NAILED TOGETHER w/ (2) 16d SINKERS @ 6" O.C. FULL HEIGHT.

5. FOR "P2", "P3" AND "P4" DOUBLE-SIDED SHEAR WALLS, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS, OR FRAMING SHALL BE 3-INCH NOMINAL OR WIDER AT ADJOINING PANEL EDGES AND NAILS ON EACH SIDE SHALL BE STAGGERED.

6. ALL ANCHOR BOLTS SHALL HAVE 7" MINIMUM EMBEDMENT.

MIN. BLOCKED | EDGE / BOUNDARY

NAILING

MATERIAL

7. ALL SHEAR WALL ANCHOR BOLTS SHALL INCLUDE A STEEL 3"x3"x0.229" PLATE WASHER BETWEEN THE SILL PL & NUT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/6" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 13/4" PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. ANCHOR BOLTS & PLATE WASHERS ARE TO BE OFFSET TOWARD THE SHEATHED WALL EDGE TO LIMIT THE GAP BETWEEN THE EDGE OF WASHER TO SHEATHING TO A MAXIMUM OF 1/2". WHERE BOTH SIDES OF A 2x6 WALL IS SHEATHED A STEEL 4-1/2"x3"x0.229" PLATE WASHER SHALL BE CENTERED ON THE SILL PLATE, PER DTL 2/-.

STANDARD SHEAR WALL SCHEDULE

# STRAP PER PLAN -(2) 2x TOP PL, U.N.O. — — HDR, SEE FRAMING PLAN -(3) 16d SINKERS, KING STUD TO PL, U.N.O. ∠2x KING-STUD, ATTACH KING STUDS w/ 16d SINKERS @ 12" O.C. MULTIPLE KING-STUDS, WHERE OCCURS PER PLAN BEAM PER FRAMING PLAN -2x TRIMMER, ATTACH TRIMMERS TO KING-STUDS w/ 16d SINKERS @ 12" O.C. -MULTIPLE TRIMMERS, WHERE OCCURS PER PLAN - REDWOOD OR PRESSURE TREATED DF SILL PL - ANCHOR BOLTS PER FOUNDATION PLAN TYPICAL WALL FRAMING

EXTEND STRAPS

TO SHEAR WALL ENDS,

OR 4'-0" MAX.

BEYOND OPENING

**ELEVATION** 

FORCE TRANSFER AROUND OPENING

SHEAR WALL MATERIAL —

SHEAR WALL OPENING -

PROVIDE

CS16 STRAP o/ 2x BLK'G

w/ 8d @ 3" O.C., TYP.,

UNDER/OVER THE OPENING \_

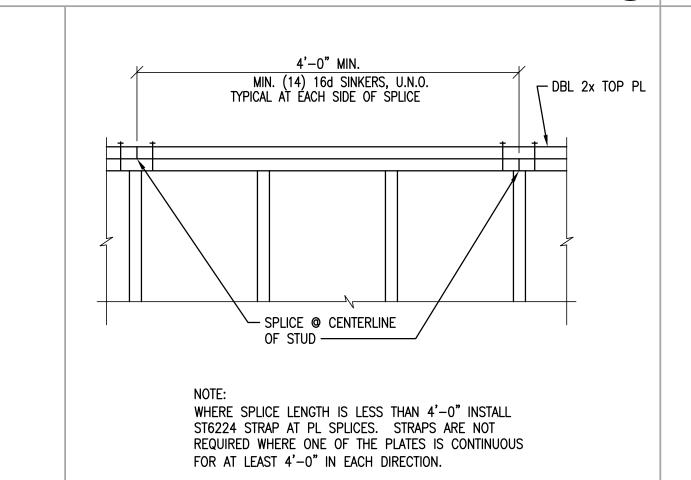
BLK'G & NAILING NOT REQ'D

N.T.S.

STRAPS ON

BOTH SIDES

OF WALL AT DOUBLE-SIDED SHEAR WALLS - N.T.S.

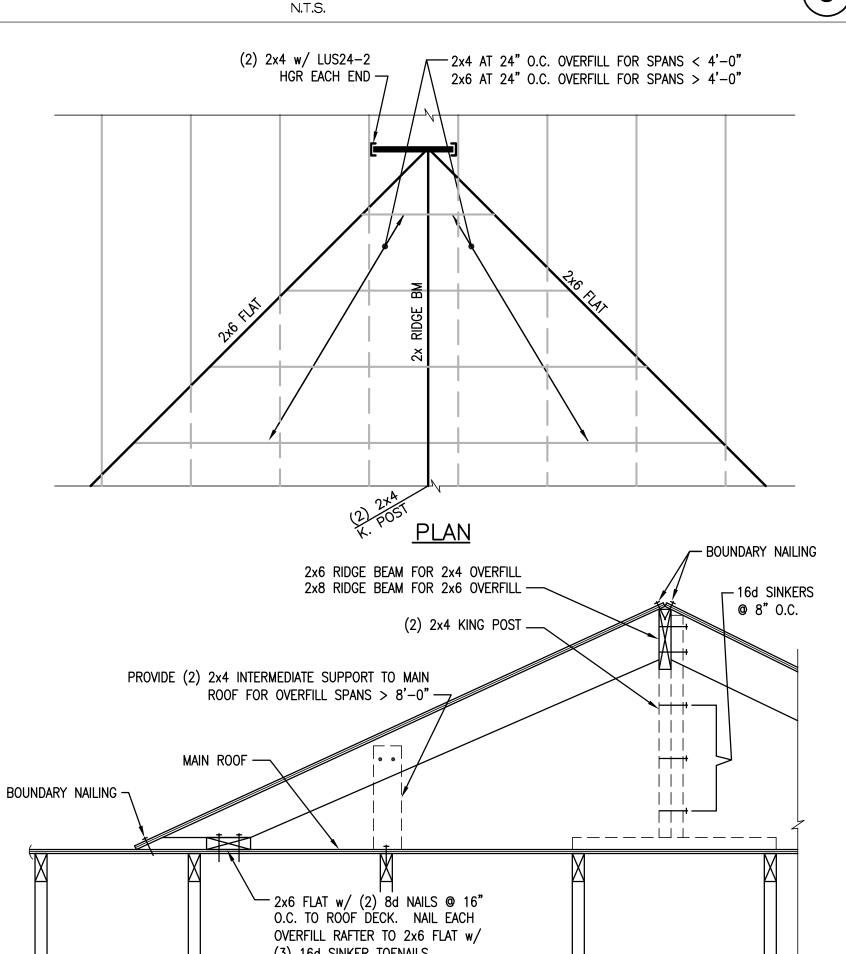


TYPICAL TOP PLATE SPLICE

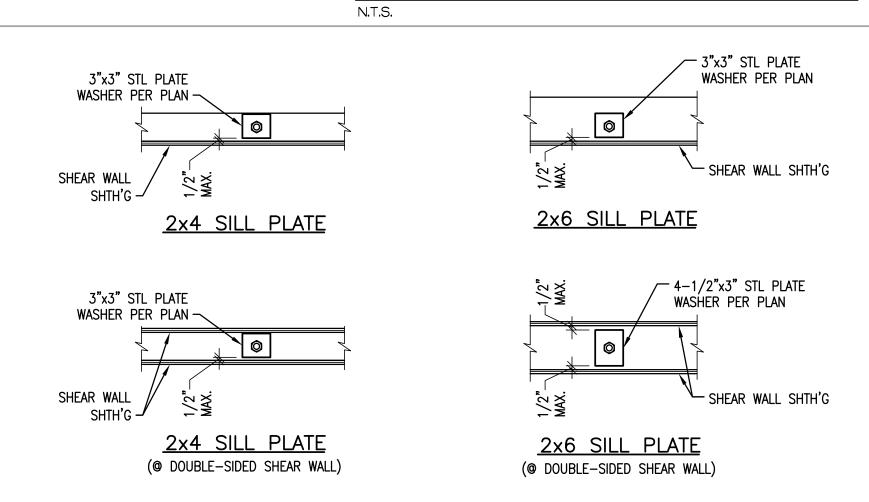
NOT USED

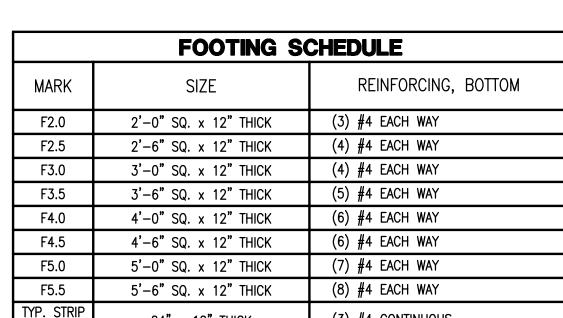
N.T.S.

(11)



N.T.S.





N.T.S.

TYP. SHEAR WALL WASHERS

FOOTING SCHEDULE							
MARK	SIZE	REINFORCING, BOTTOM					
F2.0	2'-0" SQ. x 12" THICK	(3) #4 EACH WAY					
F2.5	2'-6" SQ. x 12" THICK	(4) #4 EACH WAY					
F3.0	3'-0" SQ. x 12" THICK	(4) #4 EACH WAY					
F3.5	3'-6" SQ. x 12" THICK	(5) #4 EACH WAY					
F4.0	4'-0" SQ. x 12" THICK	(6) #4 EACH WAY					
F4.5	4'-6" SQ. x 12" THICK	(6) #4 EACH WAY					
F5.0	5'-0" SQ. x 12" THICK	(7) #4 EACH WAY					
F5.5	5'-6" SQ. x 12" THICK	(8) #4 EACH WAY					
TYP. STRIP	24" x 12" THICK	(3) #4 CONTINUOUS					

STANDARD FOOTING SCHEDULE **3**)

| (3) #7 (3) 16d SINKER TOENAILS. TYPICAL OVERBUILD

6

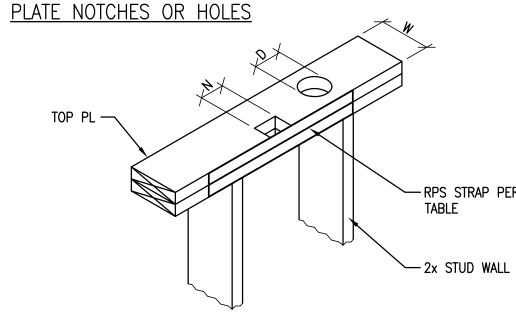
1050 S. 1000 E. PROVO, UTAH DETAILS &

lo. 176983-2203 ROGER T. ALWORTH

2

ROGER T. ALWORTH, S.E. 176983

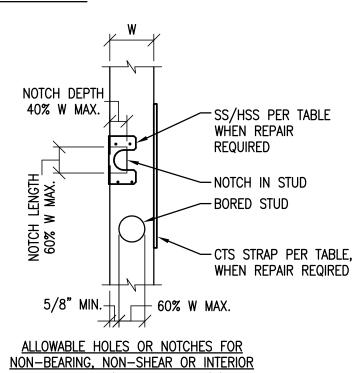
U3003-002-191



2x4	2x6	2x4 & 2x6	
PLATE	PLATE	PLATE	
HOLE DIA 'D'	HOLE DIA 'D'	NOTCH WIDTH 'N' (MAX. NOTCH DEPTH = $W/2$ )	RPS STRAP
≤ 7/8 <b>"</b>	≤ 1"	≤ 1"	NONE
≤ 1"	≤ 1 3/8"	≤ 2 1/2 <b>"</b>	(1) RPS18
≤ 1 3/8"	≤ 2 1/8"	≤ 5 1/2 <b>"</b>	(2) RPS18
≤ 2°	≤ 3 1/4"	≤ 12 <b>"</b>	(2) RPS28

- <u>Notes:</u> 1. Use RPSZ for Sill Plate. 2. CENTER STRAPS @ NOTCH OR HOLE.
- 3. WHERE ROOF TRUSS OR FLOOR JOIST IS BEARING WITHIN STUD BAY OF THE HOLE OR NOTCH, INSTALL AN ADDITIONAL STUD DIRECTLY BELOW THE TRUSS OR JOIST UNLESS NO RPS STRAP IS REQUIRED OR WHERE EXISTING STUD FACE IS WITHIN 3" OF TRUSS OR JOIST FACE.
- 4. NOTCHES & HOLES MUST BE SEPARATED BY "2xD" OR "2xN". 5. WHERE MULTIPLE HOLES ARE LOCATED ADJACENT TO EACH OTHER, THE STRAP REPAIR MAY BE WITH A CS16 STRAP ON EACH SIDE OF THE UPPER PLATE. THE STRAPS AND NAILING SHALL EXTEND AT LEAST 9" BEYOND EACH END OF THE WHOLE GROUP. NAILING BETWEEN THE HOLES IS NOT REQUIRED. NAILS IN THE CS16 STRAPS MAY BE N8'S OR N10'S.

## STUD NOTCHES OR HOLES



HOLE / N	NOTCH SCH	HEDULE		
HOLE / NOTCH % OF 'W'	2x4 STUD	2x6 STUD		
25%	3/4"	1-3/8"		
40%	1-3/8"	2-1/8"		
60%	2"	3-1/4"		

PARTITIONS (NO REPAIR REQ'D)

NOTES:
1. HOLES & NOTCHES SHALL NOT OCCUR IN THE SAME STUD. 2. WHERE HOLES OR NOTCHES EXCEED THOSE SHOWN ABOVE, REPAIR PER TABLE BELOW. 3. ALL NOTCHES IN BEARING OR SHEAR OR EXTERIOR WALLS REQUIRE REPAIRS.

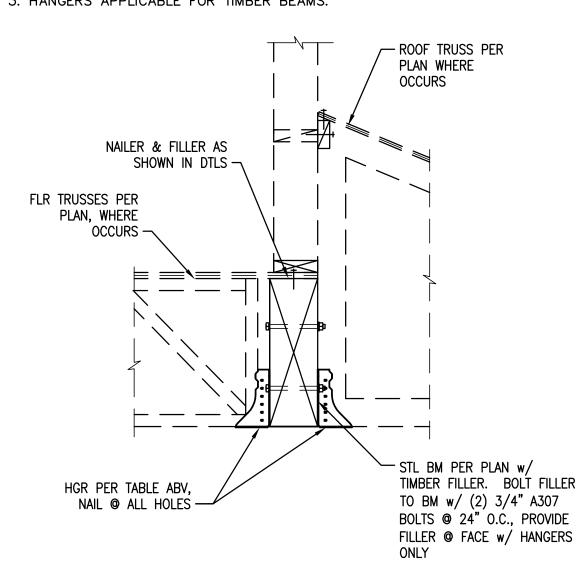
STUD HOLE REPAIR						
	2x4 STUD	2x6 STUD				
	HOLE DIA 'D'	HOLE DIA 'D'	REPAIR			
NON-BEARING & NON-SHEAR & INTERIOR	≤ 2 3/4"	≤ 4 1/2"	(1) CTS218 w/ 10d			
BEARING OR SHEAR OR EXTERIOR WALL	≤ 3/4"	≤ 1 3/8"	(1) CTS218 w/ 10d			
BEARING OR SHEAR OR EXTERIOR	≤ 2 3/4"	≤ 4 1/2"	(2) CTS218 TWO-SIDED w/ 10d			

	STU	D NOTCI	H REPAIR	₹	
	2x4 STUD	2x4 STUD	2x6 STUD	2x6 STUD	
	NOTCH DEPTH	NOTCH LENGTH	NOTCH DEPTH	NOTCH LENGTH	REPAIR
NON-BEARING & NON-SHEAR & INTERIOR	≤ 2 1/2"	≤ 4 1/2"	≤ 3 3/4"	≤ 4 1/2"	(1) CTS218 w/ 10d
BEARING OR SHEAR OR EXTERIOR	≤ 2 1/2"	≤ 2 1/2"	≤ 2 1/2"	≤ 2 1/2"	SS w/ 10d
BEARING OR SHEAR OR EXTERIOR	≤ 2 3/4"	≤ 4 1/2"	≤ 4 1/2"	≤ 4 1/2"	(2) CTS218 TWO-SIDED w/ 10d

# MFR TRUSS TO BEAM HANGERS

CARRYING MEMBER	CARRIED MBR WIDTH	HANGER TYPE	MAX. REACTION (FROM TRUSS CALCS.) (LBS)	NOTES
STEEL OR TIMBER	1-1/2"	LUS210	1275	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HUS26	2565	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HGUS26	3750	FACE MOUNT
STEEL OR TIMBER	1-1/2"	HGUS28	5720	FACE MOUNT
STEEL OR TIMBER	3"	LUS26-2	1000	FACE MOUNT
STEEL OR TIMBER	3"	HHUS26-2	2580	FACE MOUNT
STEEL OR TIMBER	3"	HGUS26-2	3940	FACE MOUNT
STEEL OR TIMBER	3"	HGUS28-2	6805	FACE MOUNT
STEEL OR TIMBER	3"	HGUS210-2	8650	FACE MOUNT
STEEL OR TIMBER	3-1/2"	LUS46	1000	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HHUS46	2580	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HGUS46	3940	FACE MOUNT
STEEL OR TIMBER	3-1/2"	HGUS48	6805	FACE MOUNT
STEEL OR TIMBER	6"	HGUS26-4	3940	FACE MOUNT
STEEL OR TIMBER	6"	HGUS210-4	8780	FACE MOUNT
STEEL OR TIMBER	6"	HGUS212-4	9155	FACE MOUNT

- 1. FOR STEEL BEAMS CARRYING FLOOR TRUSSES, PROVIDE TIMBER FILLER PER DTL BELOW.
- 2. ALTERNATE HANGERS MAY BE USED AT THE CONTRACTOR'S OPTION. SUBMIT TO ENGINEER OF RECORD FOR APPROVAL.
- 3. HANGERS APPLICABLE FOR TIMBER BEAMS.



# TYPICAL BEAM

# TYPICAL TRUSS HANGERS

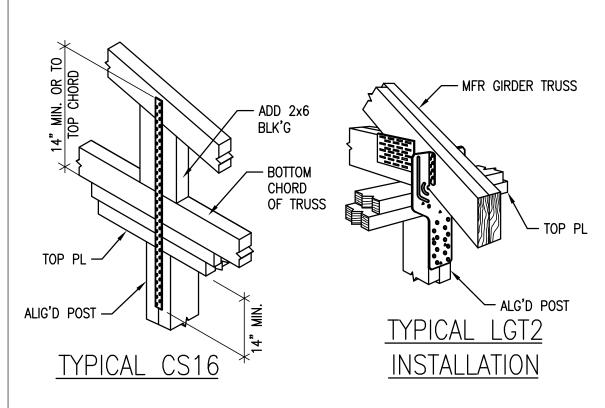
.S.	

	STANDARD TI TIE-DOWNS	- <del>-</del>
* UPLIFT LOAD PER TRUSS MANUFACTURER	SIMPSON TIE-DOWN	REQ'D ALIGNED HOLDOWN & POST
200 TO 365 LBS	H2.5 OR CS16	NA
< 400 LBS	H1 OR CS16	NA
< 845 LBS	H10 OR H7Z OR CS16	NA
< 1265 LBS	H16 OR CS16	HDU2 & (2) 2x4 POST
< 1785 LBS	LGT2	HDU2 & (2) 2x4 POST
< 6485 LBS	HGT-2	(2) 2x4 POST w/HDU4 @ BASE & (2) HDU2 @ TOP TO HGT-2. AT (1) PLY TRUSS, INSTALL 2x SHAPED FILLER ADJACENT TO TRUSS AT BRN'G

\*TIE-DOWN CAPACITIES ARE BASED ON SPRUCE PINE FIR \*TRUSS UPLIFT OF LESS THAN 2001bs: NO HOLD DOWN REQUIRED

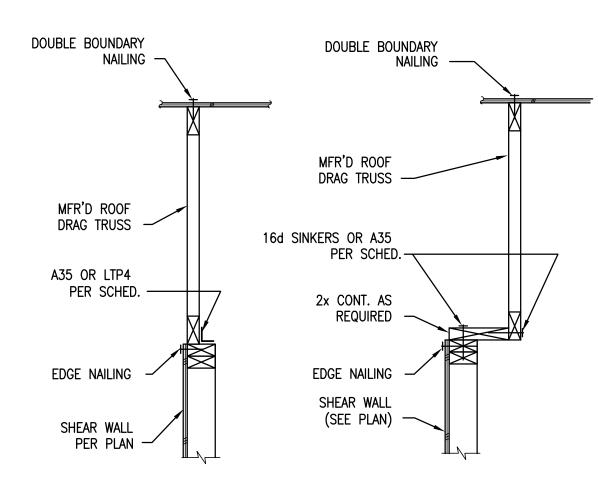
STANDAI	RD FLOOR-TO STRAPS	O-FLOOR
* UPLIFT LOAD PER TRUSS MANUFACTURER	SIMPSON TIE-DOWN	REQ'D ALIGNED POST
< 1705 LBS	CS16	2x4 POST
< 3410 LBS	(2) CS16	(2) 2x4 POST

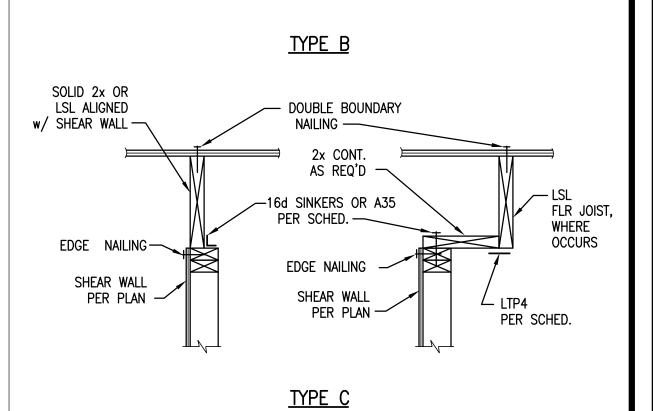
- 1. INSTALL CS16 STRAPS TO 2x STUDS ABOVE AND BELOW FLOOR FRAMING. NAIL EACH END w/(11) 10d NAILS. (STRAP LENGTH = 48").
- 2. WHERE UPLIFT OCCURS ABOVE HDR OR BM, PROVIDE STRAP PER SCHEDULE AT EACH TRIMMER OR POST
- 3. FLOOR TO FLOOR STRAPS REQUIRED ALGN'D WITH ROOF TRUSS ABV.

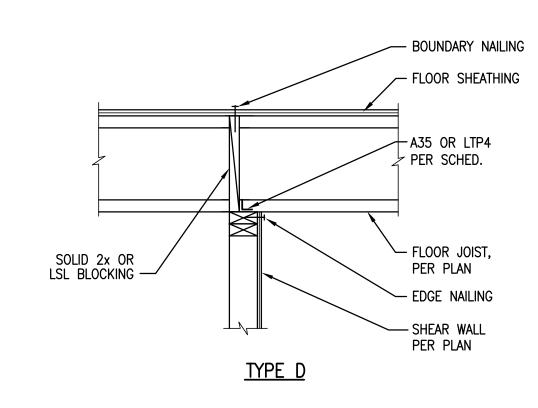


TYPICAL TRUSS ANCHORAGE

#### DBL BOUNDARY NAILING -16d SINKERS OR A35, PER SCHEDULE — -MF'G TRUSSES -16d @ 8" O.C. BLK'G PANEL SIDE TO TRUSS VERT., FOR MFR'S BLK'G PANEL PROVIDE A35 @ 18" O.C., (2) MIN., TO TRUSS VERT. BLK'G PANEL PER DTL -/-— SHEAR WALL PER PLAN TYPE A







2

3

N.T.S.

CONI	NECTION SC	HEDULE
SHEAR WALL	A35 OR LTP4	16d SINKERS
P1	18" O.C.	6" O.C.
P2	12" O.C.	4" O.C.
Р3	10" O.C.	3" O.C. (STAGGERED)
P4	8" O.C.	2" O.C. (STAGGERED)

NOTE: DOUBLE-SIDED SHEAR WALLS, SEE PLAN

annima.
STRUCTUS - 100 176983 2203
ROGER T. ALWORTH
05/19/2020

1050 S. 1000 E. PROVO, UTAH DETAILS &

STANDARD

ROGER T. ALWORTH, S.E. 176983

U3003-002-191

DRILLING & NOTCHING OF PLATES & STUDS

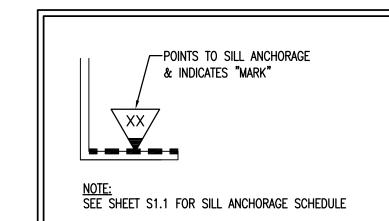
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NOT USED

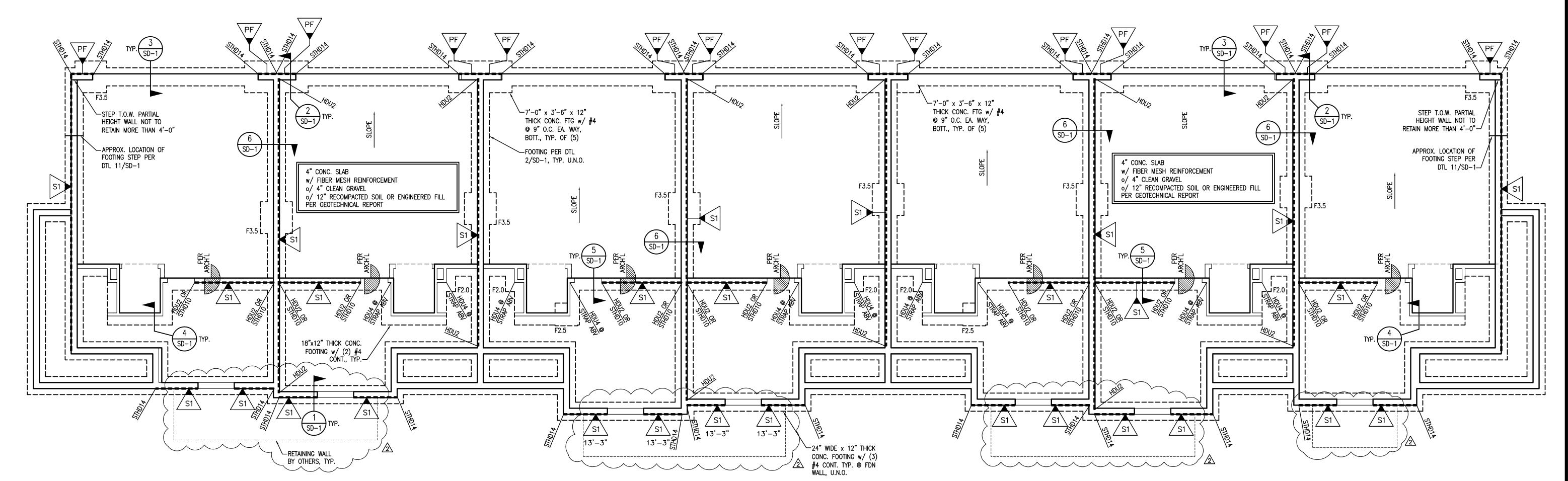
NOT USED

## FOUNDATION NOTES:

- 1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
- 2. ALL EXTERIOR WALLS, INTERIOR BEARING WALLS & SHEAR WALLS TO BE ATTACHED TO THE FOUNDATION w/ 1/2"ø x 10" LONG ANCHOR BOLTS (7" EMBED.) AT 48" O.C., U.N.O. SEE THIS PLAN & SHEAR WALL SCHEDULE FOR ANCHOR BOLT REQUIREMENTS AT SHEAR WALLS. ANCHOR BOLTS AT SHEAR WALLS TO HAVE WASHERS PER SHEAR WALL SCHEDULE (S1.1). ALL OTHER ANCHOR BOLTS TO HAVE WASHERS PER NOTE "E" IN GENERAL NOTES (S1).
- 3. ALL HOLDOWNS SHALL BE INSTALLED AS SHOWN ON DETAIL 9/SD-1.
- 4. ISOLATED FOOTINGS & INTERIOR STRIP FOOTINGS TO BE CENTERED BELOW POSTS & BEARING/SHEAR WALLS, RESPECTIVELY.
- 5. SEE SHEET S1.1 FOR SPOT/ISOLATED FOOTING SCHEDULE.
- 6. MASA MUDSILL ANCHORS MAY BE USED IN PLACE OF ANCHOR BOLTS, INSTALLED AT THE SAME SPACING INDICATED FOR ANCHOR BOLTS, INCLUDING REDUCED SPACING AT SHEAR WALLS.
- PF INDICATES LOCATION OF PORTAL FRAME PER DTL 10/SD-1.



SILL ANCHORAGE KEY



3/16" = 1'-0"

AYTON, UTAH
(801) 990-1776 FAX ST. GEORGE, UTAH
(801) 927-2054
(435) 628-5122

STEVE TUKLEY

PRING CREEK MULTI-FAMILY HOMES 7
PROVO, UTAH

FOUNDATION PLAN



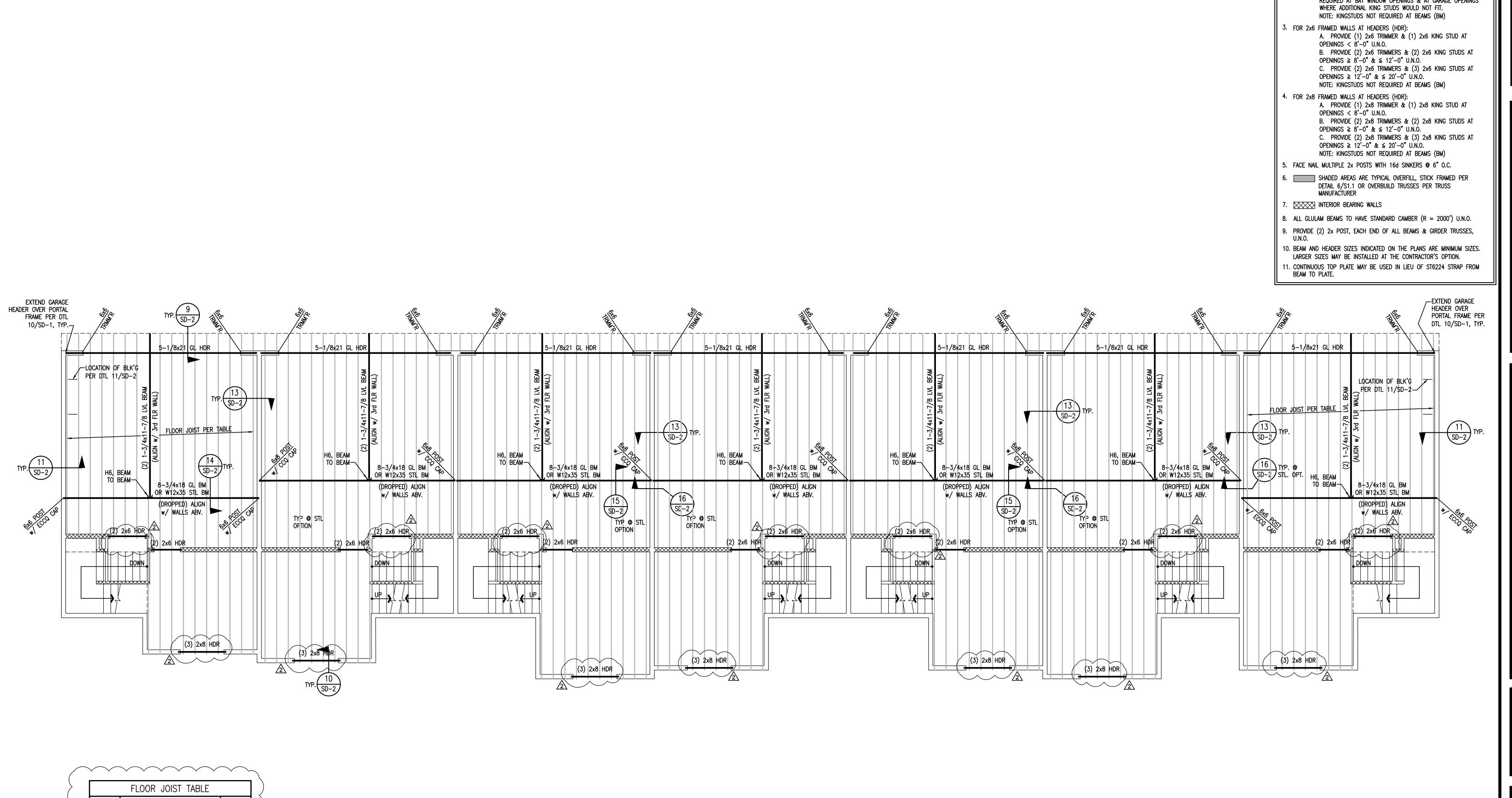
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U3003-002-191

**S2** 

FOUNDATION PLAN

CTION 1



MAIN FLOOR FRAMING PLAN

FLOOR JOIST

11-7/8" TJI 210 @ 16" O.C.

11-7/8" TJI 360 @ 16" O.C.

NOTE: FLOOR JOIST TABLE DESIGNED FOR L/480 LIVE LOAD DEFLECTION. CONSULT JOIST SUPPLIER IF STIFFER PERFORMANCE IS DESIRED.

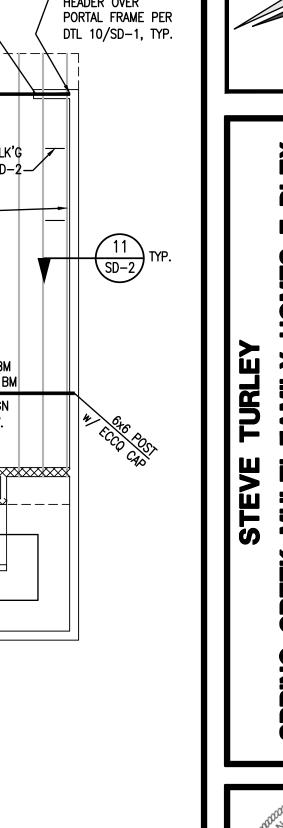
11-7/8" TJI 560 @ 19.2" O.C.

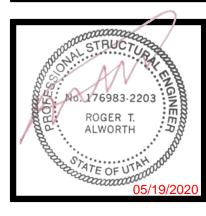
ALL FRAMED WALLS TO BE 2x @ 16" O.C. (MAX) PER ARCHITECTURAL PLANS AND SHALL MEET REQUIREMENTS OF WALL TABLE ON SHEET S1.1.

2. FOR 2x4 FRAMED WALLS AT HEADERS (HDR): A. PROVIDE (1) 2x4 TRIMMER & (1) 2x4 KING STUD AT OPENINGS < 6'-0" U.N.O. B. PROVIDE (2) 2x4 TRIMMERS & (2) 2x4 KING STUDS AT

FRAMING NOTES:

OPENINGS  $\ge 6'-0" \& \le 10'-0" \text{ U.N.O.}$ C. PROVIDE (2) 2x4 TRIMMERS & (3) 2x4 KING STUDS AT OPENINGS  $\ge 10'-0" \& \le 18'-0" \text{ U.N.O.}$  (1) KING STUD REQUIRED AT BAY WINDOW OPENINGS & AT GARAGE OPENINGS





ROGER T. ALWORTH, S.E. 176983

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- 1. ALL FRAMED WALLS TO BE 2x @ 16" O.C. (MAX) PER ARCHITECTURAL PLANS AND SHALL MEET REQUIREMENTS OF WALL TABLE ON SHEET S1.1.
- 2. FOR 2x4 FRAMED WALLS AT HEADERS (HDR):
  A. PROVIDE (1) 2x4 TRIMMER & (1) 2x4 KING STUD AT
  OPENINGS < 6'-0" U.N.O.
  B. PROVIDE (2) 2x4 TRIMMERS & (2) 2x4 KING STUDS AT
  - OPENINGS  $\geq$  6'-0" &  $\leq$  10'-0" U.N.O. C. PROVIDE (2) 2x4 TRIMMERS & (3) 2x4 KING STUDS AT OPENINGS  $\geq$  10'-0" &  $\leq$  18'-0" U.N.O. (1) KING STUD REQUIRED AT BAY WINDOW OPENINGS & AT GARAGE OPENINGS WHERE ADDITIONAL KING STUDS WOULD NOT FIT. NOTE: KINGSTUDS NOT REQUIRED AT BEAMS (BM)
- 3. FOR 2x6 FRAMED WALLS AT HEADERS (HDR):
  - A. PROVIDE (1) 2x6 TRIMMER & (1) 2x6 KING STUD AT OPENINGS < 8'-0" U.N.O.

    B. PROVIDE (2) 2x6 TRIMMERS & (2) 2x6 KING STUDS AT OPENINGS  $\ge 8'-0"$  &  $\le 12'-0"$  U.N.O.
  - C. PROVIDE (2) 2x6 TRIMMERS & (3) 2x6 KING STUDS AT OPENINGS ≥ 12'-0" & ≤ 20'-0" U.N.O.

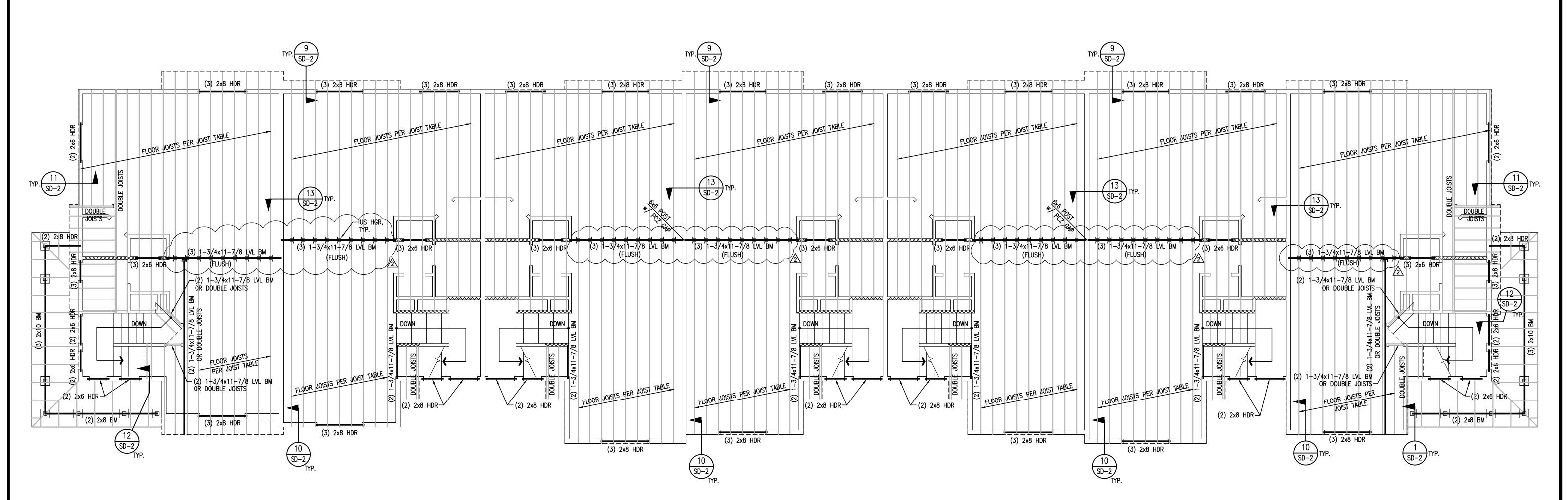
    NOTE: KINGSTUDS NOT REQUIRED AT BEAMS (BM)

- 4. FOR 2x8 FRAMED WALLS AT HEADERS (HDR):
  - A. PROVIDE (1) 2x8 TRIMMER & (1) 2x8 KING STUD AT OPENINGS < 8'-0" U.N.O.

    B. PROVIDE (2) 2x8 TRIMMERS & (2) 2x8 KING STUDS AT
  - OPENINGS  $\geq 8'-0$ " &  $\leq 12'-0$ " U.N.O.

    C. PROVIDE (2) 2x8 TRIMMERS & (3) 2x8 KING STUDS AT OPENINGS  $\geq 12'-0$ " &  $\leq 20'-0$ " U.N.O.
- NOTE: KINGSTUDS NOT REQUIRED AT BEAMS (BM)

  5. FACE NAIL MULTIPLE 2x POSTS WITH 16d SINKERS @ 6" O.C.
- 6. SHADED AREAS ARE TYPICAL OVERFILL, STICK FRAMED PER
  DETAIL 6/S1.1 OR OVERBUILD TRUSSES PER TRUSS
  MANUFACTURER
- 7. INTERIOR BEARING WALLS
- 8. ALL GLULAM BEAMS TO HAVE STANDARD CAMBER (R = 2000') U.N.O.
- 9. PROVIDE (2) 2x POST, EACH END OF ALL BEAMS & GIRDER TRUSSES,
- 10. BEAM AND HEADER SIZES INDICATED ON THE PLANS ARE MINIMUM SIZES. LARGER SIZES MAY BE INSTALLED AT THE CONTRACTOR'S OPTION.
- 11. CONTINUOUS TOP PLATE MAY BE USED IN LIEU OF ST6224 STRAP FROM BEAM TO PLATE.



SPAN	FLOOR JOIST	CANT'L
16'-6"	11-7/8" TJI 210 @ 16" O.C.	2'-0"
16'-6"	11-7/8" TJI 230 @ 19.2" O.C.	2'-0"
20'-4"	11-7/8" TJI 360 @ 16" O.C.	0'-0"
22'-0"	11-7/8" TJI 560 @ 19.2" O.C.	0'-0"
<u>NOTE:</u> FLOO	DR JOIST TABLE DESIGNED	

UPPER FLOOR FRAMING PLAN

7/16" - 1' 0"

 DATE: 1-29-2020
 ENG: JBA
 DWN: MGP
 CHK: RTA

 REV. #
 DATE
 BY:
 DESCRIPTION

 ↑
 3-30-20
 JBA/MGP
 AS SHOWN

 ♠
 05-20-2020
 JBA/LSB
 AS SHOWN



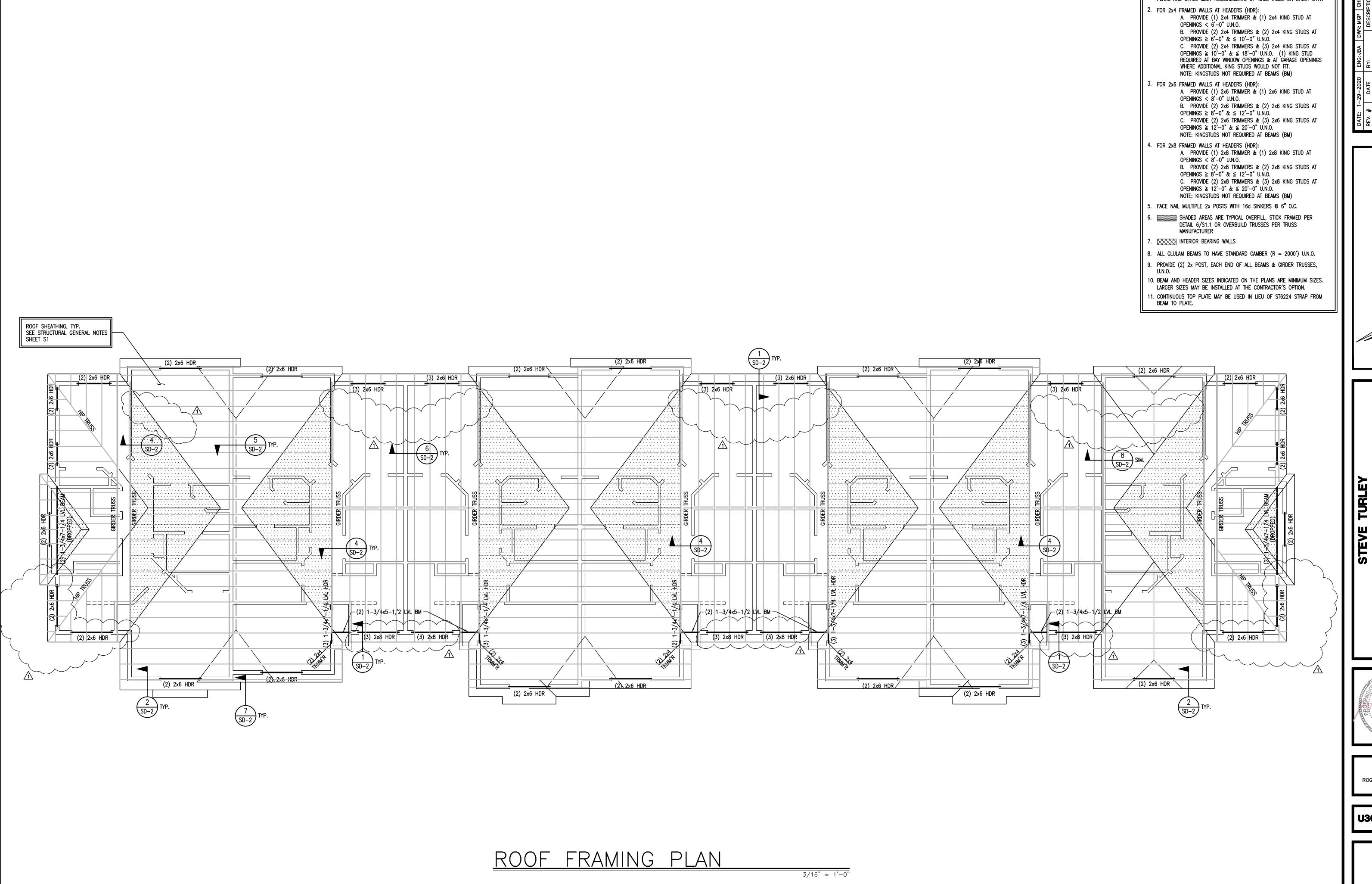
STEVE TURLEY
RING CREEK MULTI-FAMILY HOMES 71050 S. 1000 E.
PROVO, UTAH
UPPER FLOOR FRAMING PLAN



ROGER T. ALWORTH, S.E. 176983

U3003-002-191

**S4** 



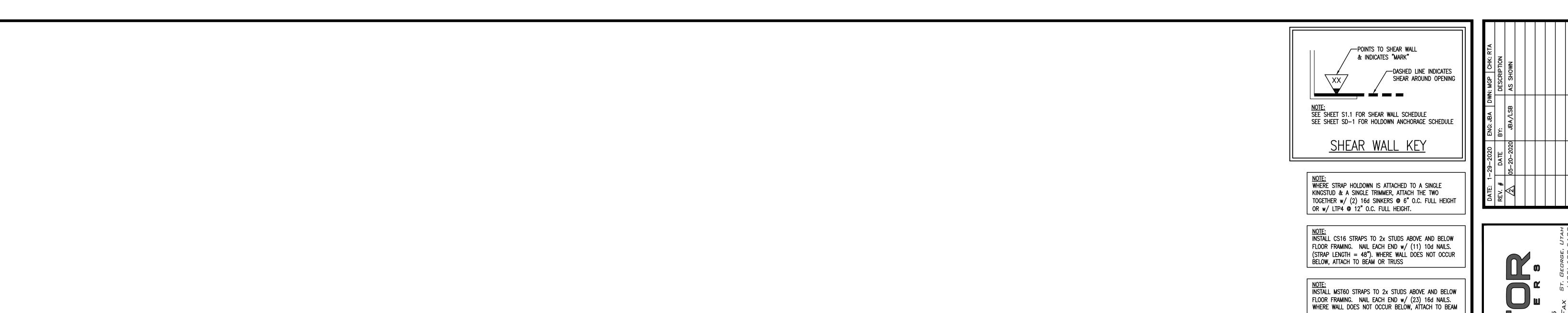
FRAMING NOTES:

1. ALL FRAMED WALLS TO BE 2x @ 16" O.C. (MAX) PER ARCHITECTURAL PLANS AND SHALL MEET REQUIREMENTS OF WALL TABLE ON SHEET S1.1.



ROGER T. ALWORTH, S.E. 176983

U3003-002-191



E n G I D E E R S

SANDY, UTAH
(B01) 927-2054
(B01) 927-2054

NOTE: SHEAR WALL SHEATHING MAY BE ON EITHER SIDE OF

NOTE:
INDICATE PORTAL FRAME PER DTL 10/SD-1

INDICATED WALL.

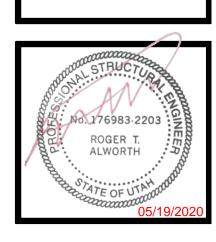
FAMILY HOMES 7-PLEX

1000 E

5, UTAH

EAR WALL PLAN

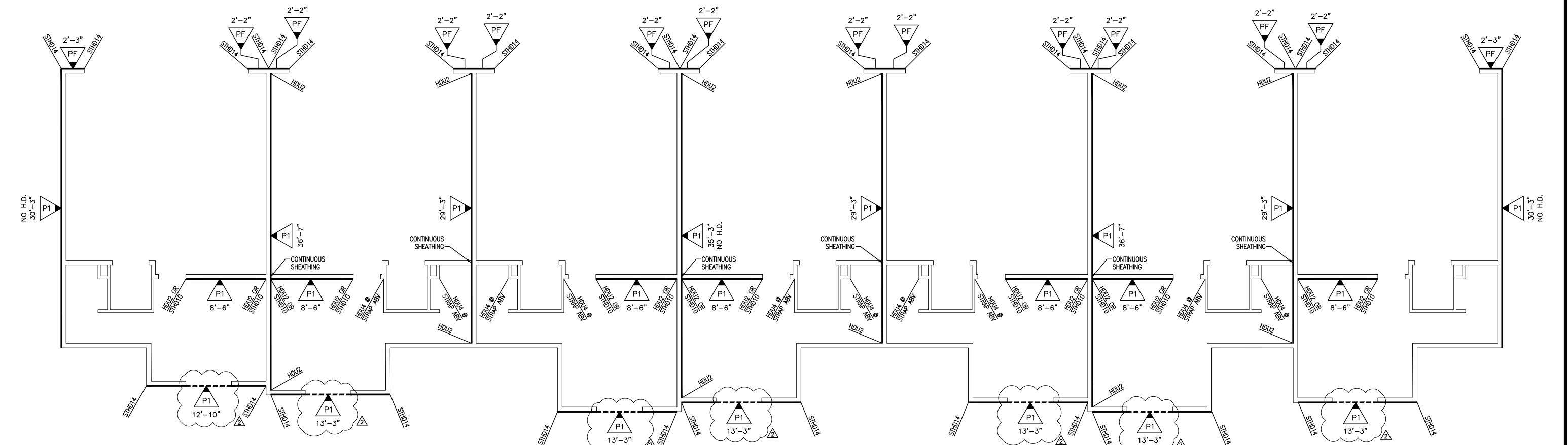
SIEVE IUKLEY
PRING CREEK MULTI-FAMILY HOMI
1050 S. 1000 E.
PROVO, UTAH
MAIN LEVEL SHEAR WALL P



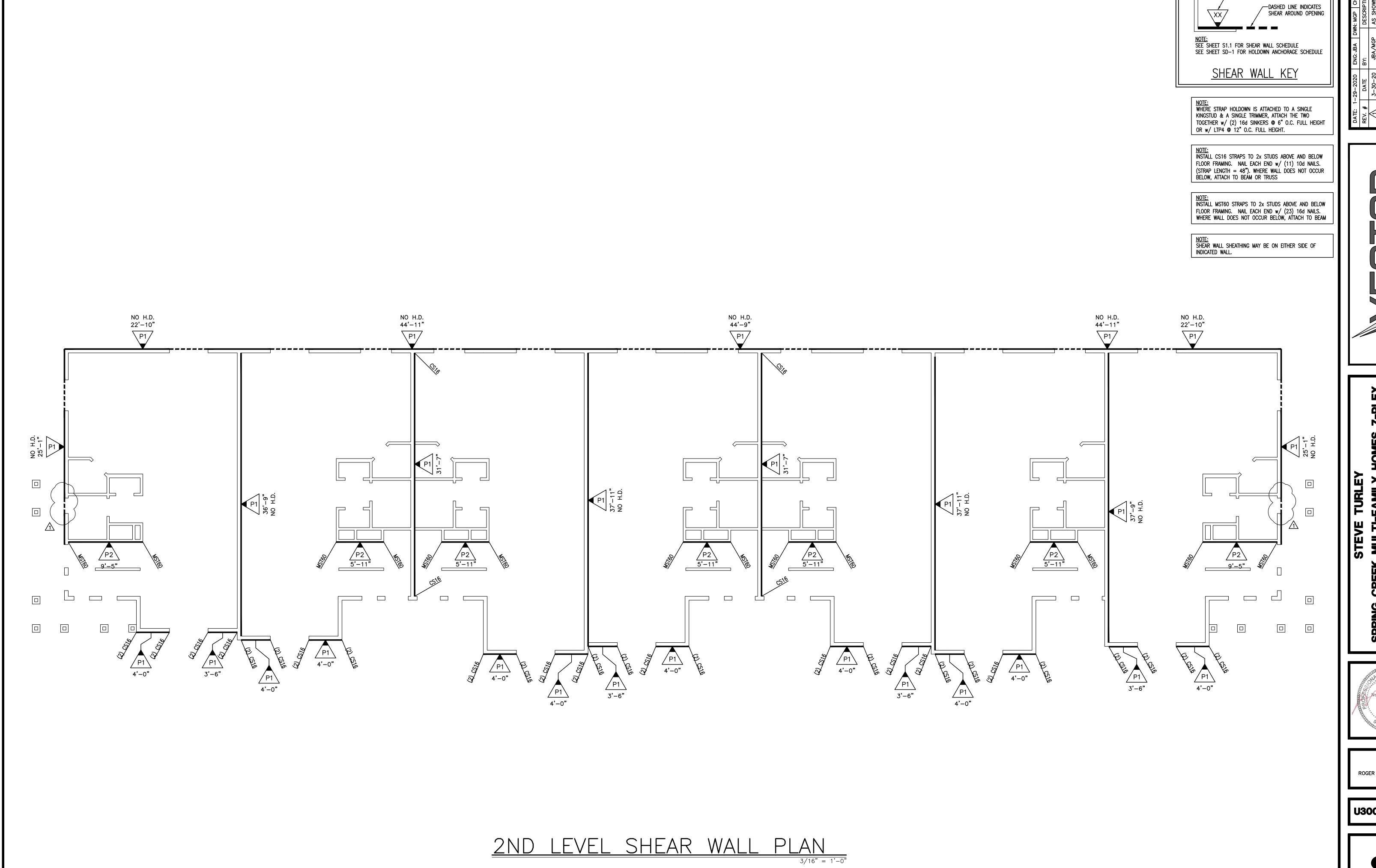
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U3003-002-191

**S6** 



MAIN LEVEL SHEAR WALL PLAN
3/16" = 1'-0"



ATE: 1–29–2020 ENG: JBA | DWN: MGP | CHK: RTA

NEV. # DATE BY: DESCRIPTION

↑ 3–30–20 JBA/MGP AS SHOWN

POINTS TO SHEAR WALL & INDICATES "MARK"



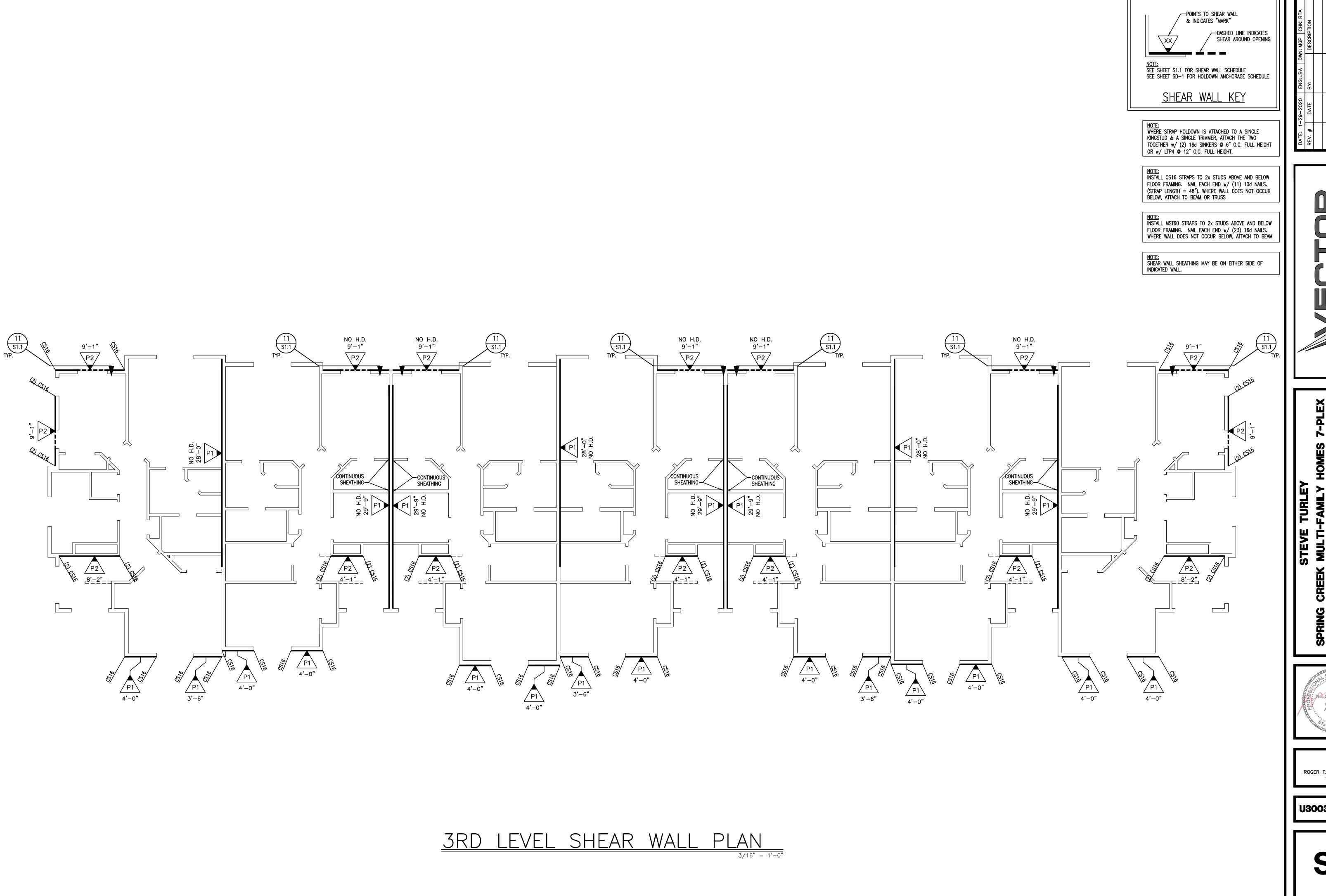
NG CREEK MULTI-FAMILY HOMES 7-PI
1050 S. 1000 E.
PROVO, UTAH
2ND LEVEL SHEAR WALL PLAN

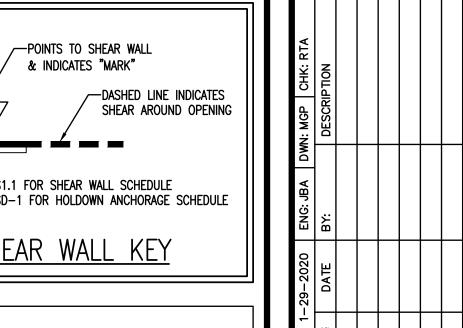


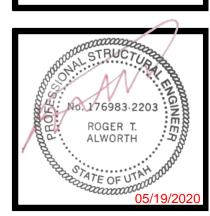
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**S7** 



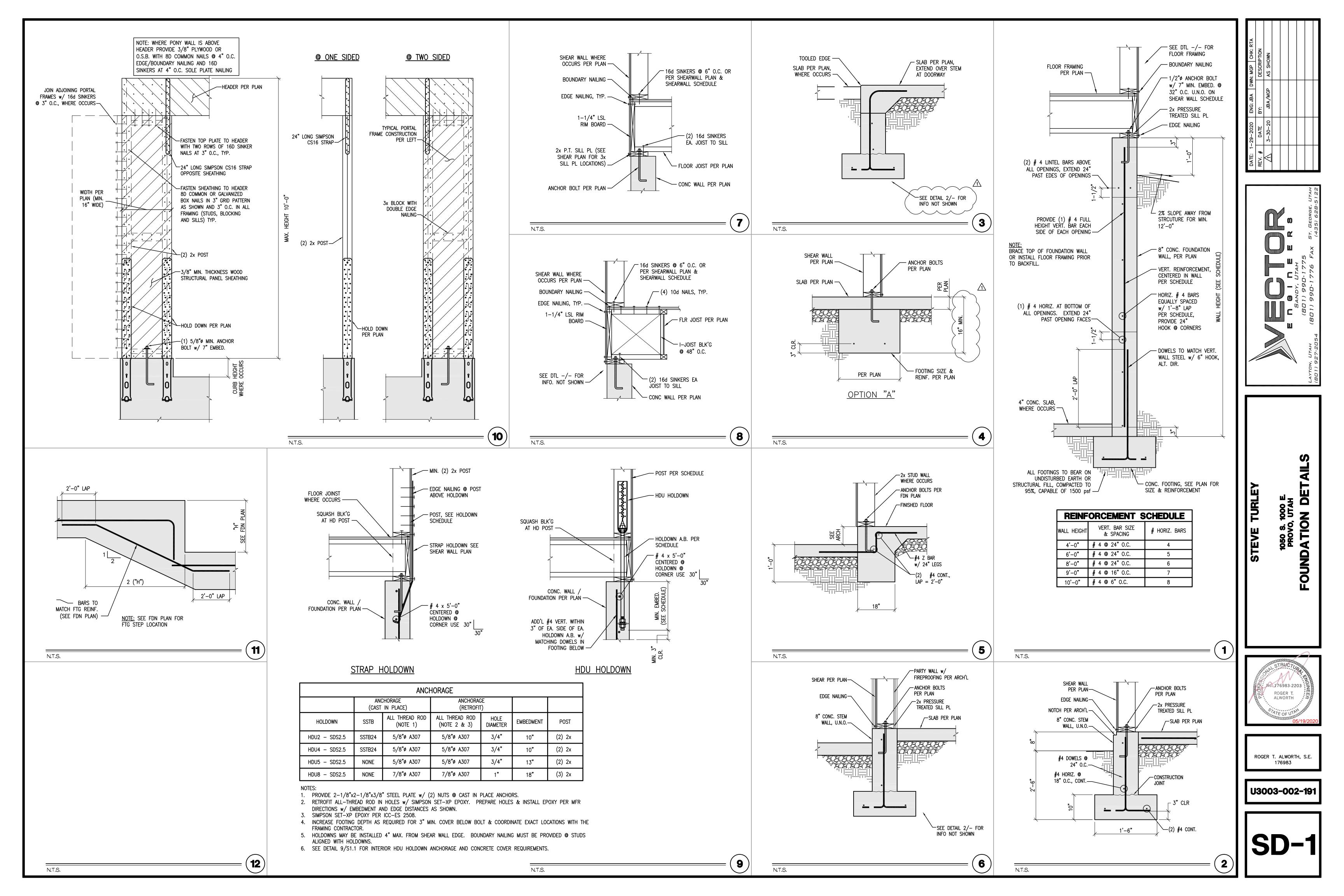


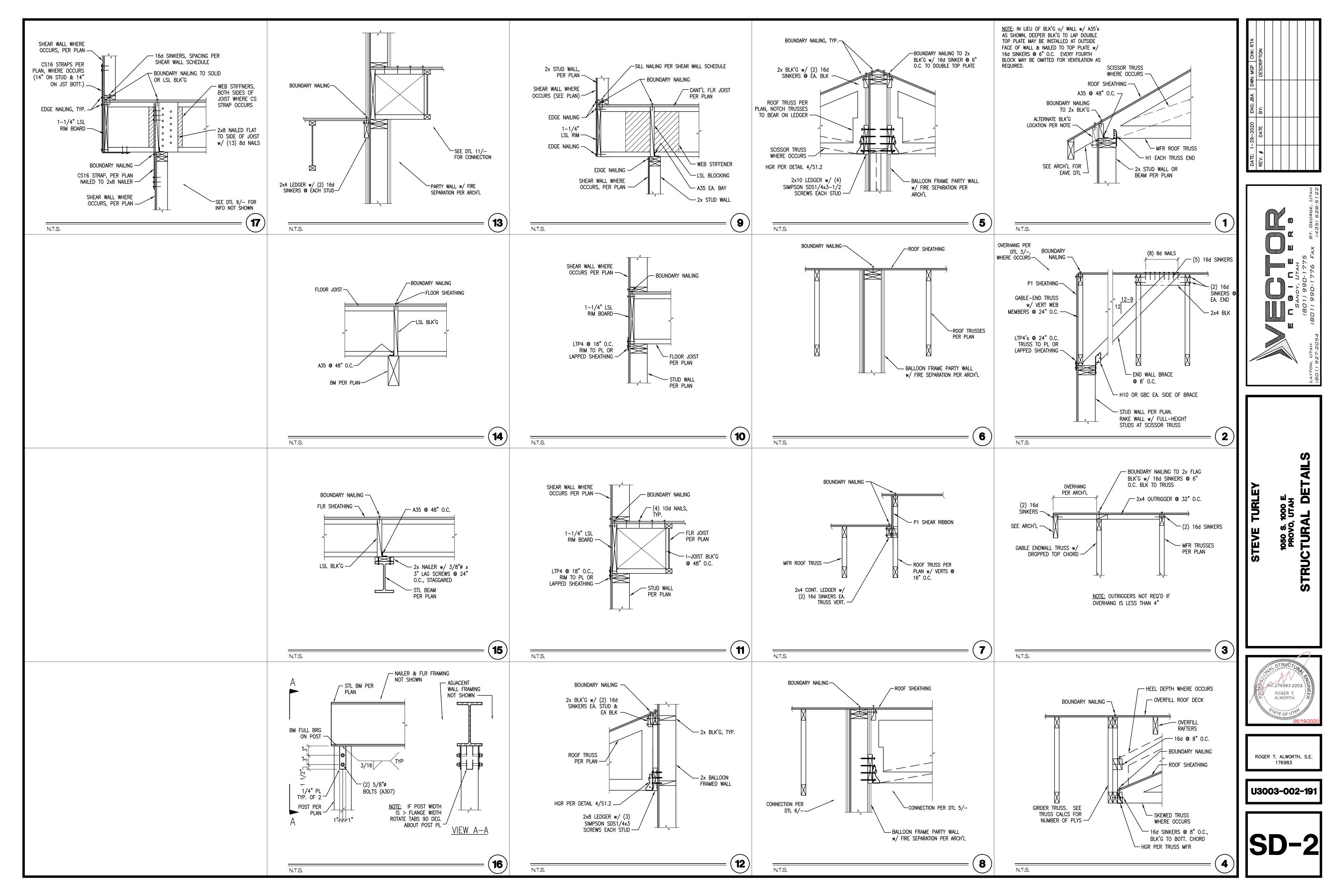


ROGER T. ALWORTH, S.E. 176983

U3003-002-191

**S8** 







Project Number: U3003-002-191

May 18, 2020

Steve Turley 1480 S. State St. Provo, UT 84606

REFERENCE: Spring Creek Apts. - Phase III Summary of Revision 2

Dear Steve,

Changes have occurred to the structural plans. All changes have been identified on the structural plans with a rev 1 cloud. The following is a description of the changes:

#### Sheet S1

Sheet index updated

#### Sheet S2

- Minor sill changes
- Added retaining wall outlines to for coordination with arch'l

#### Sheet S3

- Clarified mechanical chase
- Clarifications to floor joist table
- Added header for new door opening

#### Sheet S4

Beam changed from dropped to flush

#### Sheet S6

• New opening in shearwalls

For the items mentioned above, revised calculations have been attached (as applicable). The revised calculations are for the building department plan reviewer to reference.

We hope this meets your needs. If you have any further questions regarding this matter, please call this office at your convenience.

Very truly yours,

VECTOR STRUCTURAL ENGINEERING, LLC

Roger T. Alworth, SE Project Engineer

RTA/jba

Enclosure





SUBJECT: BEAMS

| LOAD |

LC 2: D+L

LC 3: D+(Lr or S) LC 4: D+.75L+.75(Lr or S)

CRITERIA (L/)	$D_{TL}$	$D_{LL}$	$D_{DL}$	$D_{Lr/S}$
$A_{(BLANK)}$	240	360		240
В	240	480		240
С	600		800	240
С	600		800	240

Abbrev	GRADE	ES		F <sub>bxx</sub> (psi)	F <sub>vxx</sub> (psi)	E <sub>xx</sub> (psi)		g (lb/ft <sup>3</sup> )
DFL#2	DOUGLA	AS FIR LA	RCH #2	875	180	16000	000	31.2
DF1 (5x)	Douglas	Fir Larch	#1 5x & L	1,350	170	17000	000	31.2
DFL#1	DOUGLA	AS FIR LA	RCH #1	1,000	180	17000	000	31.2
24F-V4	Glue Lan	ninated Ti	mber 24F	2,400	265	18000	000	39.9
24F-V8	Glue Lan	ninated Ti	mber 24F	2,400	265	18000	000	39.9
LVL (1.9)	MICROL	LAM LVL	(1.9E)	2,600	285	19000	000	41.8
LVL (2.0)	VERSA-I	LAM (2.0E	)	2,800	285	20000	000	41.8
LSL	TIMBER	STRAND I	SL (1.3E	1,700	400	13000	000	41.8
PSL	PARALL	AM PSL (2	2.0E)	2,900	290	20000	000	41.8
STL36	GRADE :	36 STEEL		21,600	14,400	29,000	,000	490
STL46	GRADE 4	46 STEEL		27,700	16,500	29,000	,000	490
STL50	GRADE	50 STEEL		30,000	20.000	29 000	000	490

										_									0																	
								Add'l		Re			Roof						Ö																	
				Floor									Load	Load	#			ž	괵																1.5DL	
		Length	Trib	Trib	Trib	Load	Load	Load	Load	\$	'a'	'P <sub>LL</sub> '	'P <sub>Lr/S</sub> '	'P <sub>DL</sub> '	Р.			王	副						$M_{max}$	M <sub>allow</sub>	$V_{max}$	$V_{allow}$	$D_{TL}$	$D_{TLallow}$	$D_{LL}$	D <sub>LLallow</sub>	$D_{Lr/S}$	D <sub>Lr/Sallow</sub>	GLB	
La	abel	'L' (ft)	(ft)	(ft)	(ft)	(plf)	(plf)	(plf)	From	,B)	(ft)	(lb)	(lb)	(lb)	ES	Grade	Size	R,	₽	$C_r$	$C_D$	$C_{F,V,}C_{L}$	R <sub>a</sub> (lb)	R <sub>b</sub> (lb)	(ft-lb)	(ft-lb)	(lb)	(lb)	(in)	(in)	(in)	(in)	(in)	(in)	Camb	Check
B11		5.33		6.5	10				UB7	Α		1173	160	852	(3)	DFL#2	2X8	Н	В	1.00	1.00	1.20	3457	1273	1697	3449	985	3915	0.038	0.267	0.021	0.133		0.267		0.49 M



Plate h (ft)=

6.66 Yes

83%

Max opening height (ft)= Apply aspect ratio reduction? Total per wall

Perforated SW? Yes

1314

386

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Shear Length (ft)= 8.25

PROJECT: Spring Creek Phase III JOB NO.: U3003-002-191 SUBJECT: SHEAR WALLS Roof DL (psf) = (includes seismic snow where occurs) Fp/Fx 16 Loc  $\rho_i$ Min Diaphragm Width (ft) = Floor DL (psf) = 39 1.00 12 A - A&B-1ST 1.00 Allowable Seismic Aspect Ratio = 1.00 - E&F-2N0 1.00 ρ calculated in accordance with: Allowable Wind Aspect Ratio = 3.5 A -A&B-3RD ASCE7-16 Section 12.3.4.2 Comb. Overstrength Factors: (Ω-0.5)= 1.00 No Exception in ASCE 7 12.3.4.2b met? 2.50 LINE: C 1ST STORY Occurs 7 times **Timber Framed Shearwall Calculations** Perf/FTAO Wall Info Rdl (ft) Line Loads (plf) Loads from above Actual Applied Loads (plf unless noted otherwise) Diaphragm Shear (plf) Trib w (ft) E.Z. Appl\* 8.5 Major Span (ft) 17 Location 0.7E (lbs) 0.6W (lbs)
Offset 
 ρ\*Seis
 Wind
 E.Z. Wind
 2a (ft)
 E.Z. P (lb)
 Drag (ft)
 Seis (Load vs. Allow.)
 Ltotal (ft)

 125.1
 86.4
 106.4
 7.8
 120
 13.25
 80
 109
 Co
 Fdl (ft) 6.5 158 Load Line 13.25 1.00 DL (plf) ω5 198 None Wall type Offset P1 C-2ND Wind (Load vs. Allow.) HD STHD14 8"-Endwall 1.00 Above 1844

Include Ω for irregularities (above)? No

Story V (K)= 44330

T (lb)

Wind (plf)

159 47 HD cap

166 233

Cap (plf) Cap (plf)

	Openir	g elevation		Force Tr	ansfer @	Openings?	No	Wall	DL (psf)=	10	Max allo	ow. drift (in)	2.4						Δ (in)	0.33
Shear-		1		Tension		1		HD	ОТМ	(0.6-		1	1							
Wall				From				Capacity	(wind,	.2SDs)		Aspect	Seis.	Seis.						Max
	Roof <sub>DI</sub> 'w'	Floor <sub>DI</sub> 'w'	Othern	Above	Wall		Holdown	(Stem/floor		*RM	Aspect	Ratio	Shear	Wall Cap.	Wind	Wind Wall	Sill Plate	Tension	HD	Shear-
(ft)	(ft)	(ft)	'w' (plf)	(lb)	Type	Sill Type	Strap	config)	(ft-lb)	(ft-lb)	Ratio	Reduc.	(plf)			Cap. (plf)				Wall δ (in)
4.125		PERF/F	TAO SHEA	CALCULA	TIONS APP	PLY - SEE /	ABOVE			1.94	1.00									
4.125											1.94	1.00								
Add'l	Comments:																		Max:	