Vanguard

Lee's Summit, Missouri

PROJECT NO.: 20-078

ISSUE DATE: 9.24.2021 PERMIT COMMENTS

GENERAL NOTES

- ONLY CONTRACT DOCUMENTS APPROVED FOR CONSTRUCTION AND REVIEWED SHOP DRAWINGS SHALL BE USED FOR CONSTRUCTION. GENERAL
- IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE THE SUBCONTRACTOR WORK WITH THESE PROJECT
- DIMENSIONS TO THE EXTERIOR OF THE BUILDING ARE TO THE EXTERIOR OF FOUNDATION/MASONRY UNLESS NOTED OTHERWISE. DO NOT SCALE DRAWINGS.
- THE WORD 'ALIGN' AS USED IN THESE DOCUMENTS SHALL SUPERSEDE DIMENSIONAL INFORMATION.
- NO PRODUCTS CONTAINING ASBESTOS SHALL BE INSTALLED IN OR USED DURING THE CONSTRUCTION OF THIS PROJECT. IT SHALL BE THE

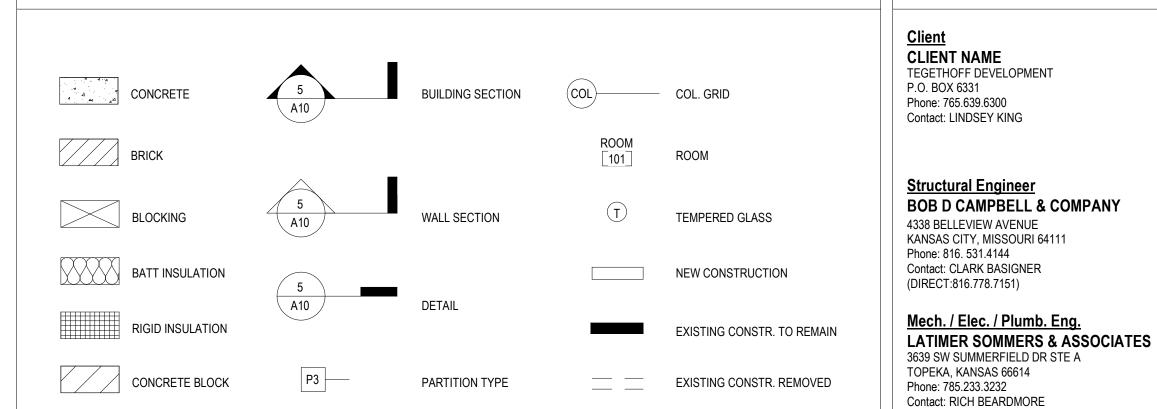
- REFERENCE CIVIL DRAWINGS FOR SITE WORK, INCLUDING THE BUILDING LOCATION ON THE SITE.

ABBREVIATIONS

	ADDI				
ABV	ABOVE	HDWD	HARDWOOD	SCHED	SCHEDULE
AFF	ABOVE FINISH FLOOR	HDPB	HIGH DENSITY	SECT	SECTION
ACT	ACOUSTICAL	1101 0	PARTICLE BOARD	SHT	SHEET
ALUM	ALUMINUM	HT	HEIGHT	SIM	SIMILAR
&	AND			SC	SOLID CORE
		HR	HOUR		
@	AT	INCLII	INCLUATION	SPEC	SPECIFICATION
DUI	DI OOK	INSUL	INSULATION	SQ	SQUARE
BLK	BLOCK			SF	SQUARE FOOT
BD	BOARD	JT	JOINT	SS	STAINLESS STEEL
ВО	BOTTOM OF			STD	STANDARD
01.0	OF ILINO	LAV	LAVATORY	STL	STEEL
CLG	CEILING			STRUCT	STRUCTURAL
€ CT	CENTER LINE	MO	MASONRY OPENING	SUSP	SUSPENDED
	CERAMIC TILE	MSRY	MASONRY		
CLR	CLEAR	MDF	MEDIUM DENSITY	TEL	TELEPHONE
CONC	CONCRETE		FIBERBOARD	THK	THICK
CMU	CONC. MASONRY UNIT	MECH	MECHANICAL	TO	TOP OF
CONT	CONTINOUS	MTL	METAL	T&G	TONGUE & GROOVE
CONTR	CONTRACTOR	IVIIL	WEIAL	TYP	TYPICAL
CFCI	CONTRACTOR FURNISHED			ITP	TYPICAL
OI OI	CONTRACTOR INSTALLED	NIC	NOT IN CONTRACT	UNF	UNFINISHED
0.1		NTS	NOT TO SCALE	UNO	UNLESS NOTED OTHERWISE
CJ	CONTROL JOINT			0110	ONLEGO NOTED OTTERWISE
CG	CORNER GUARD	OFCI	OWNER FURNISHED	VEDT	VEDTICAL
DTL	DETAIL		CONTRACTOR INSTALLED	VERT	VERTICAL
DIA		OFOI	OWNER FURNISHED	VEST	VESTIBULE
	DIAMETER		OWNER INSTALLED		
DR	DOOR	OC	ON CENTER	WP	WATERPROOF
DS	DOWNSPOUT	OPNG	OPENING	WT	WEIGHT
DWG	DRAWING			W/	WITH
EOS	EDGE OF SLAB	PTD	PAINTED	W/O	WITH OUT
ELEC	ELECTRICAL	PLAM	PLASTIC LAMINATE	WD	WOOD
ELEV	ELEVATION	PLYWD	PLYWOOD	2	
EQ	EQUAL	PT	PRESSURE TREATED		
EQUIP	EQUIPMENT				
EXIST	EXISTING	RAD	RADIUS		
		RE:	REFERENCE		
EJ	EXPANSION JOINT	REINF	REINFORCING		
FT	FEET	RCP	REFLECTED CEILING PLAN		
FG	FINISH GRADE	REQ'D	REQUIRED CEILING PLAN		
FF	FINISH FLOOR	RD	ROOF DRAIN		
FR FL	FIRE RETARDANT FLOOR	RM	ROOM		
ΓL	FLOOR	RO	ROUGH OPENING		
GC	GENERAL CONTR.				
GYP	GYPSUM				

SYMBOLS





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TR,i ARCHITECTS

1790 BRENTWOOD BLVD

PROJECT DIRECTORY **General Contractor GENERAL CONTRACTOR** ADDRESS Phone: XXX.XXX.XXXX

Contact: CONTACT NAME

*FOR COMPLETE CODE ANALYSIS SEE LIFE SAFETY PLAN SHEET AXXX - AXXX PROJECT NAME: Vanguard Villas PROJECT ADDRESS: Lee's Summit, Missouri

PROJECT DESCRIPTION: SINGLE FAMILY TOWNHOMES **BUILDING CODES:** 2018 International Mechanical Code 2018 International Plumbing Code 2018 International Fire Code

OCCUPANCY TYPE / USE GROUP: R-2

2018 International Energy Conservation Code **ACCESSIBILITY** 2010 ADA Guidelines & 2009 ICC/ANSI A117.1 & FAIR HOUSING ACT

PROJECT SUMMARY

LOCATION MAP

9.2.2021 REVISIONS /#\ 9.2.2021 100% BID/PERMIT PERMIT COMMENTS

ARCHITECTS

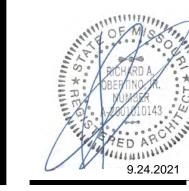
St. Louis, Missouri 63119

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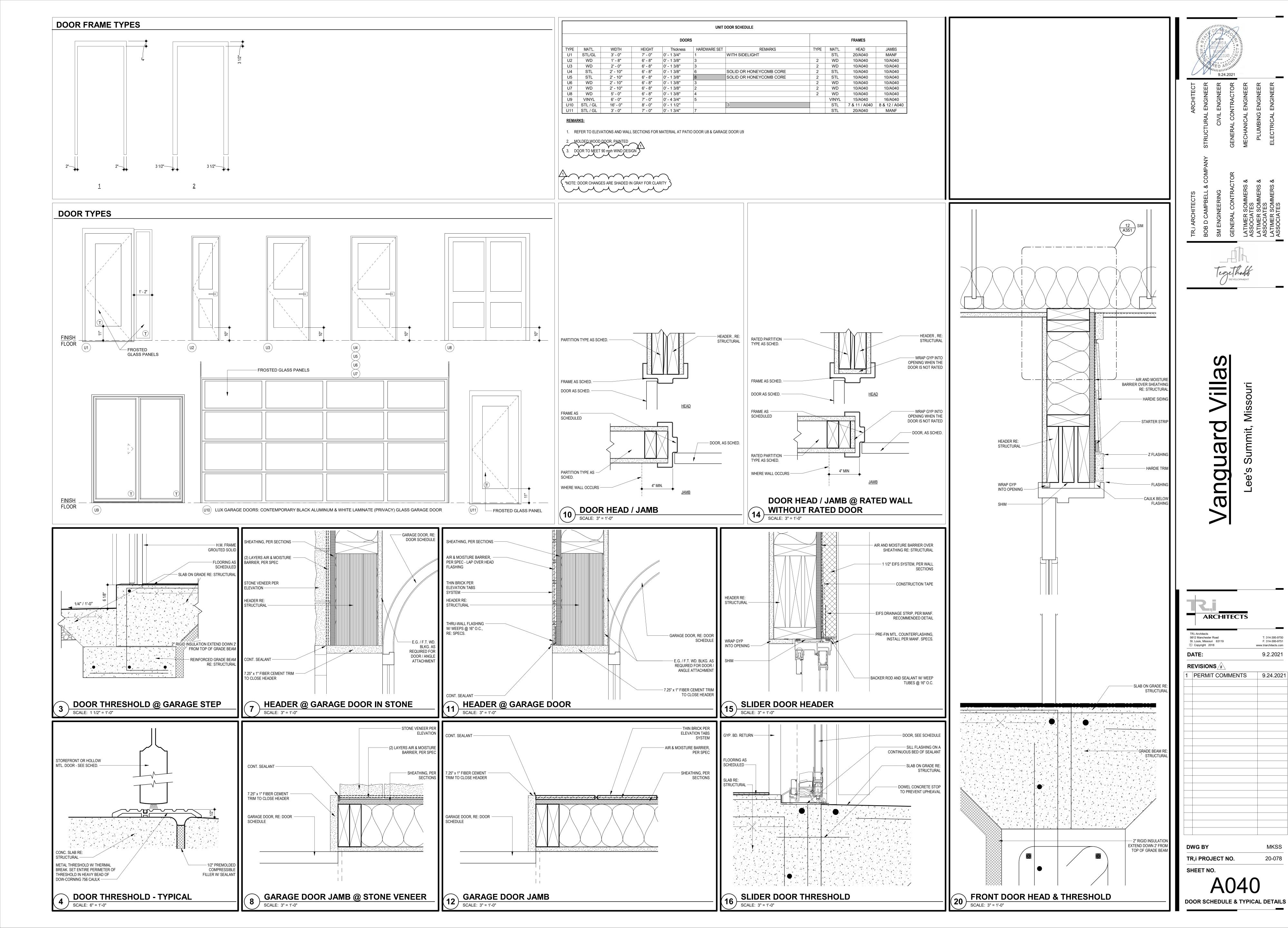
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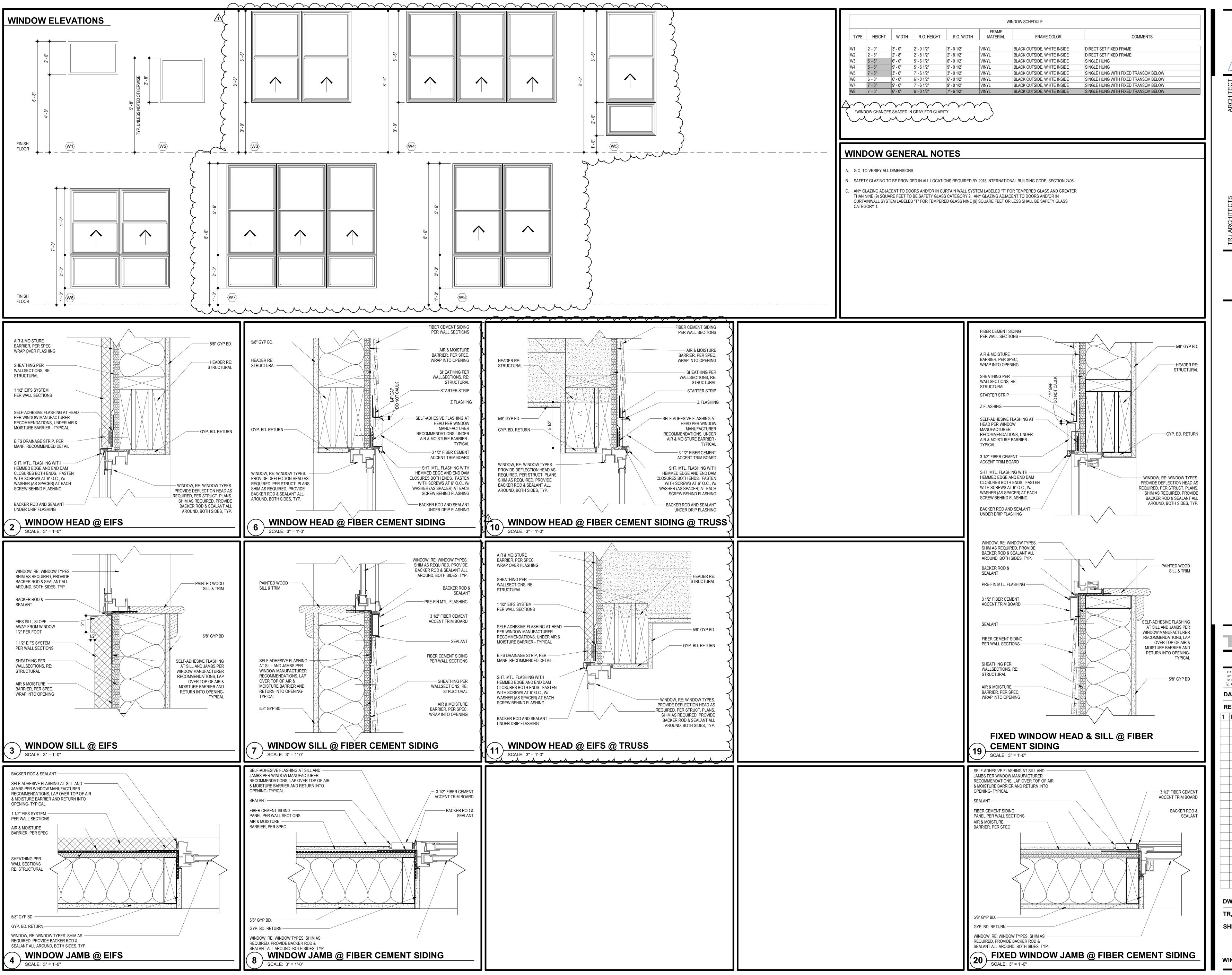


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SHEET NO.







CIVIL ENGINEER

CIVIL ENGINEER

HANICAL ENGINEER

LIMBING ENGINEER

& COMPANY STRUCTURAI
CIVII
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RS & MECHANICAI

SM ENGINEERING

GENERAL CONTRACTO

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ASSOCIATES

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Vanguard Villas

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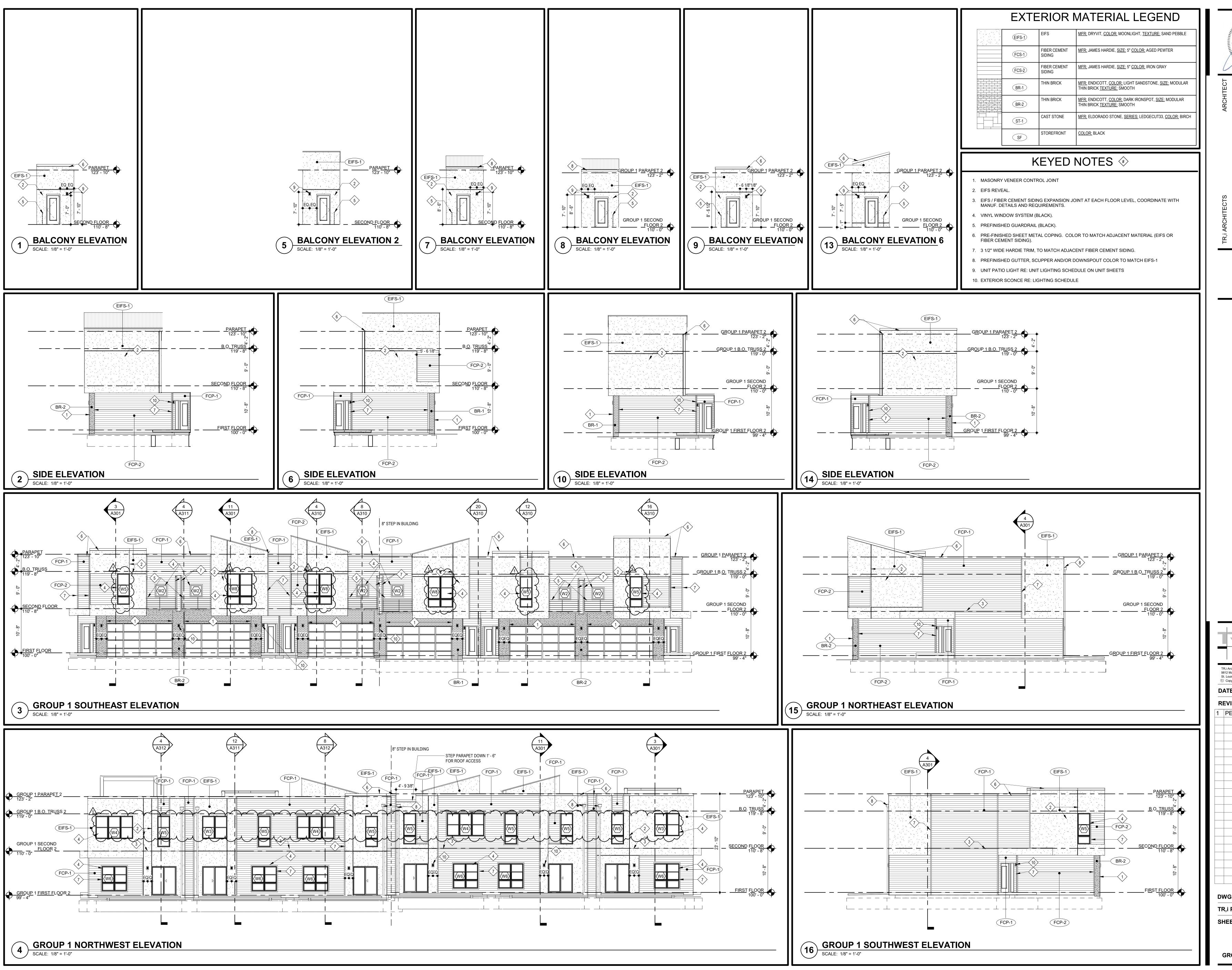
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A050
WINDOW & STOREFRONT SCHEDULE
& TYPICAL DETAILS____



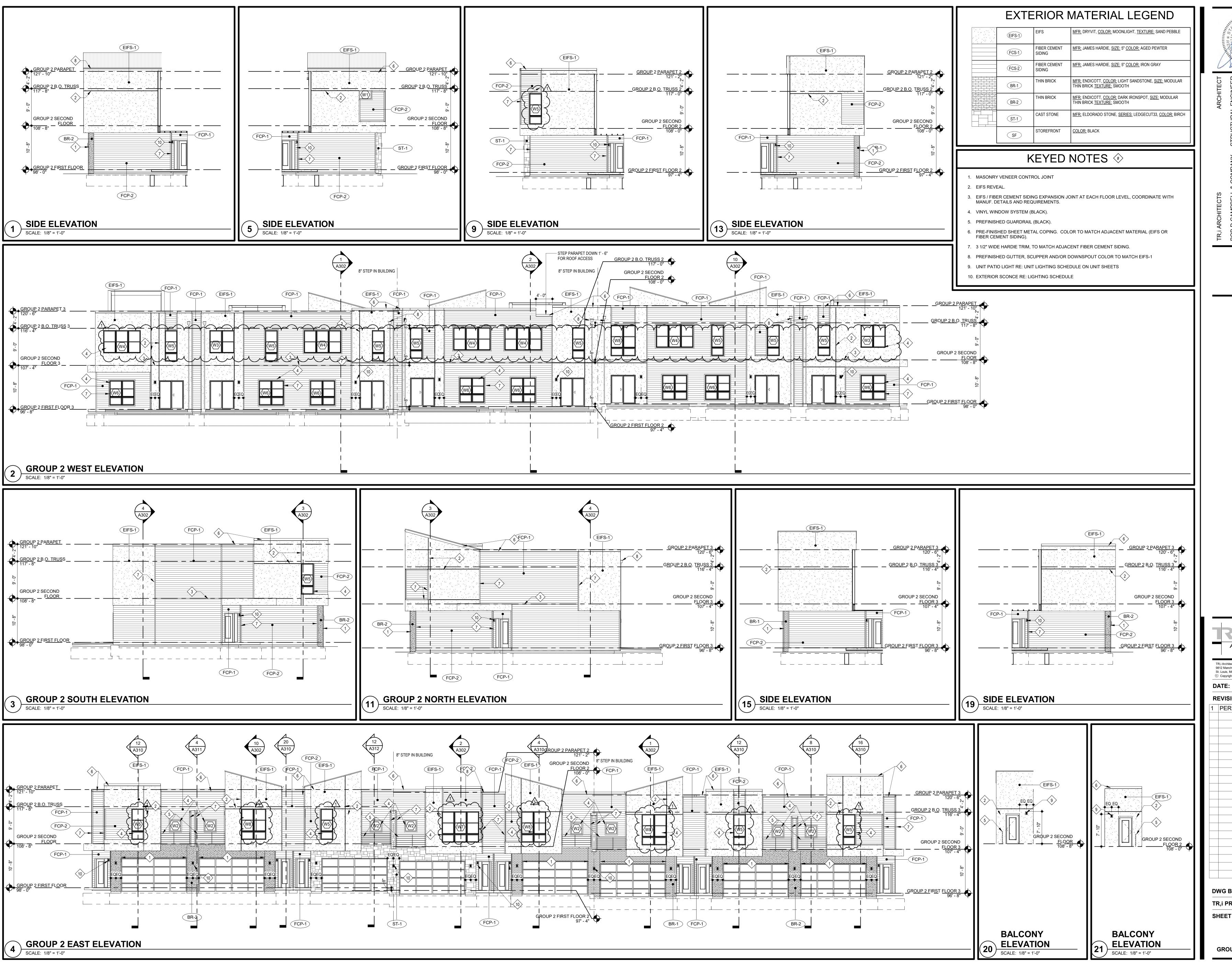


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9.24.2021

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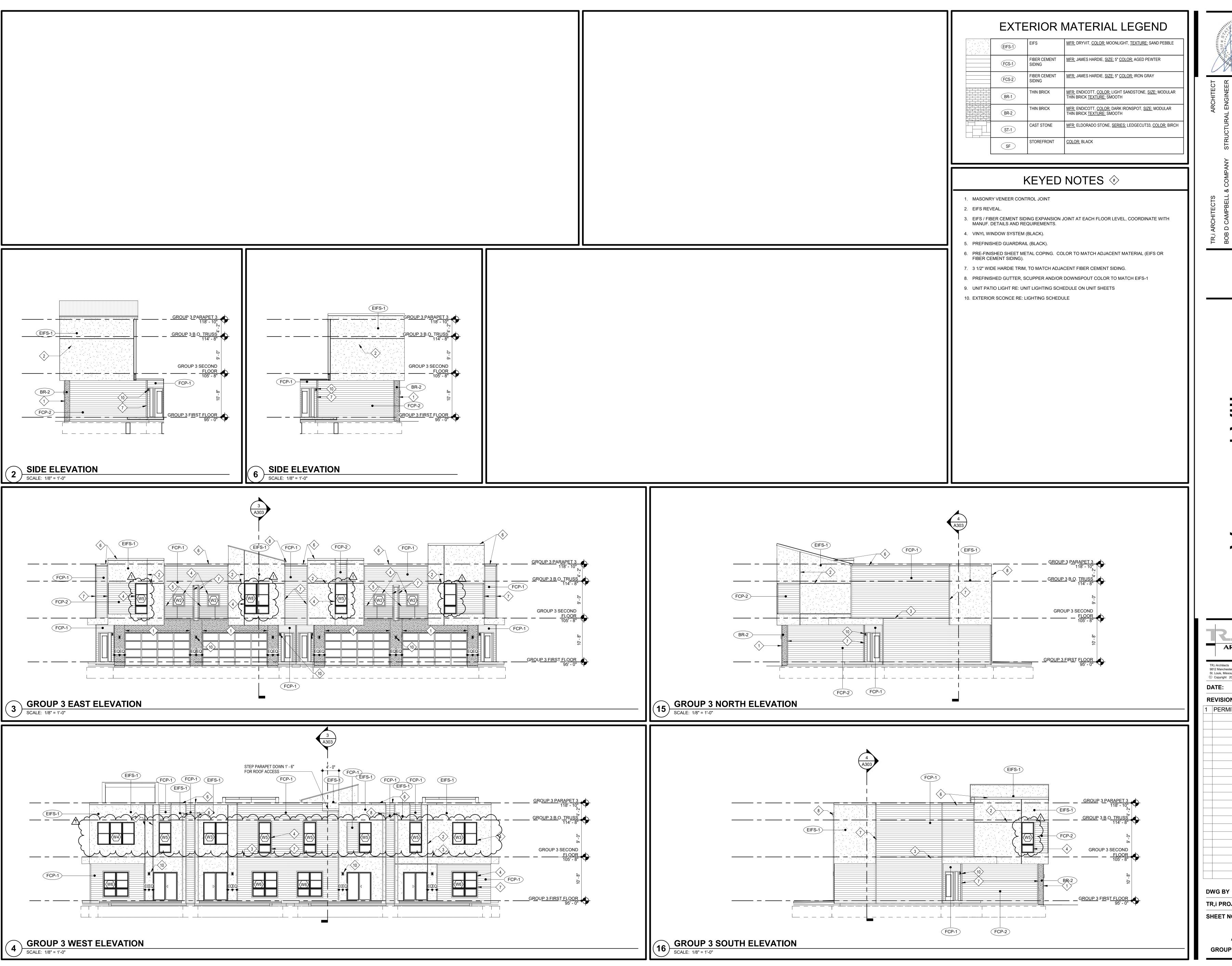
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A202
GROUP 2 EXTERIOR ELEVATIONS





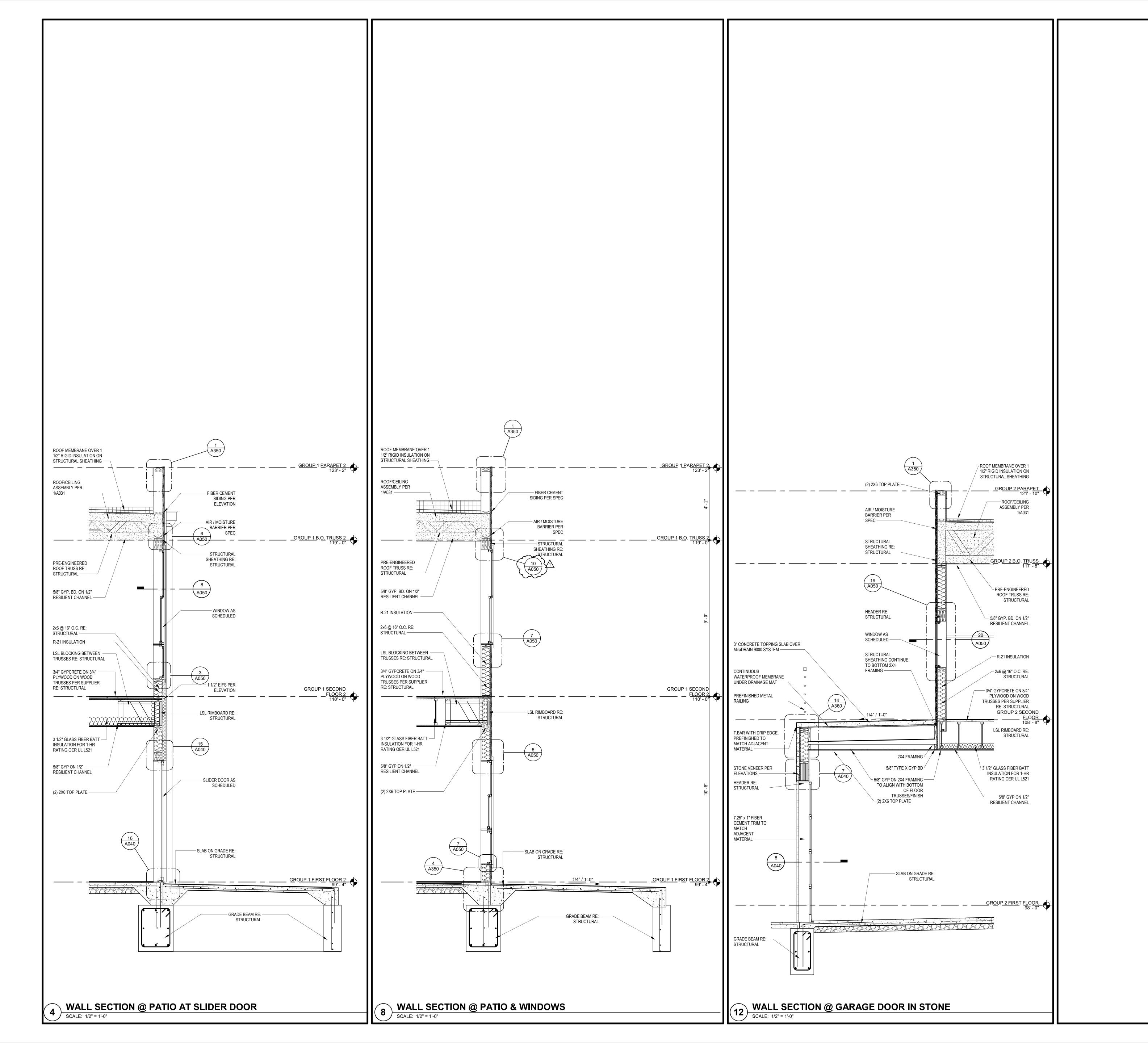
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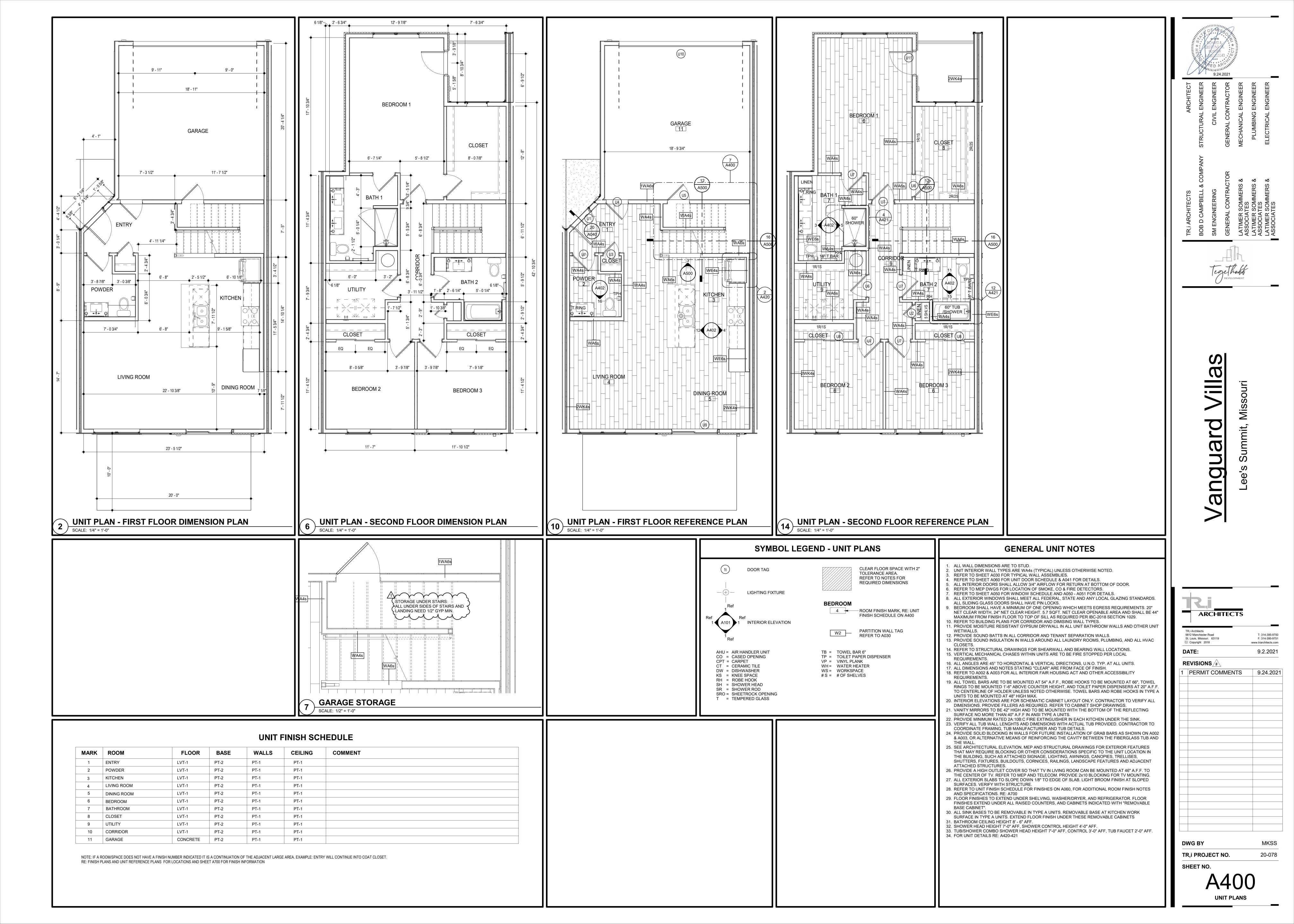


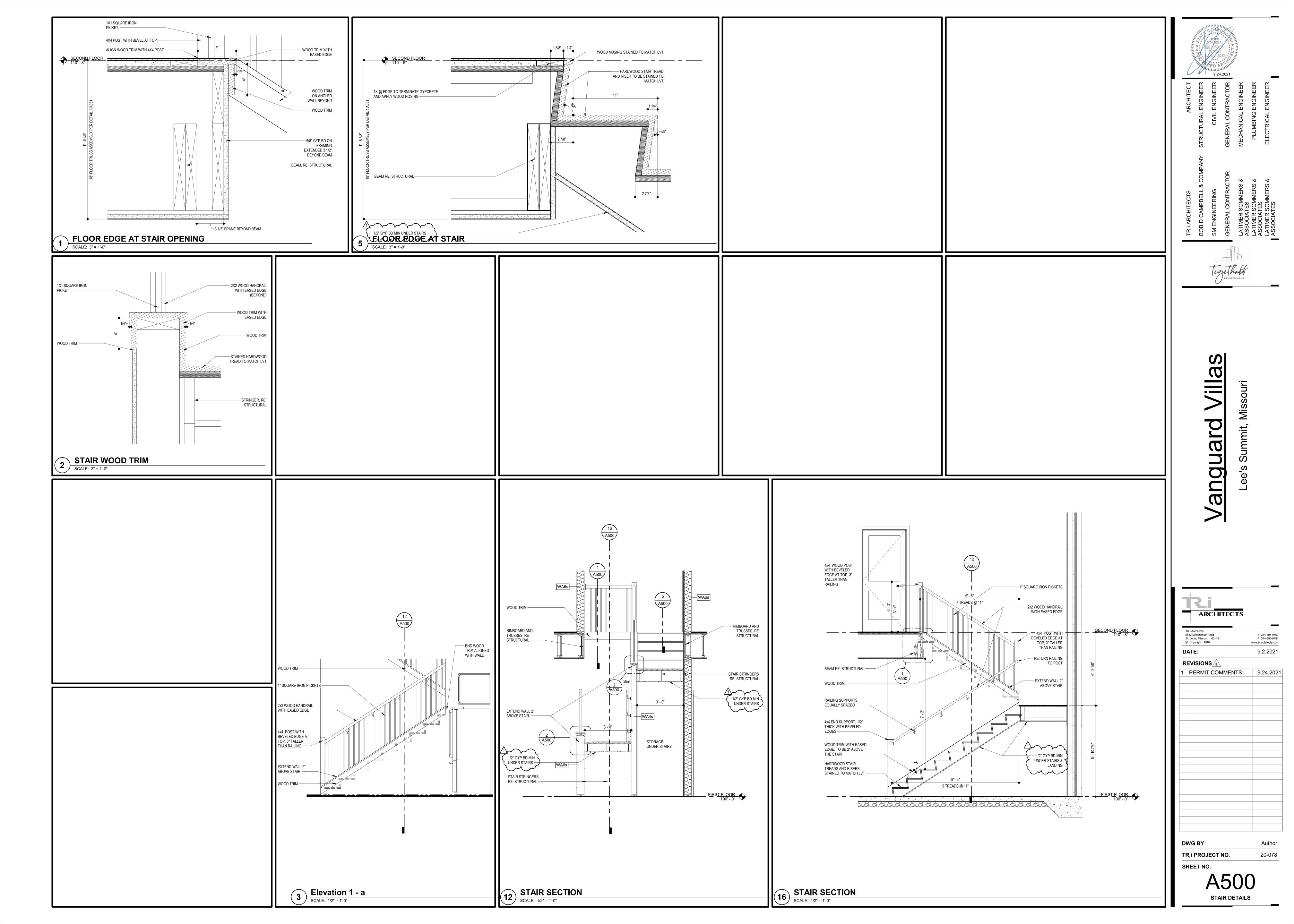


Lee's Summit. Missouri

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1. General Information

- A. The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding
- B. The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on architectural, mechanical, or electrical drawings. In the case of work in an existing building the contractor shall scan existing structure to locate all rebar in the area of the new core/opening using ground penetrating radar and notify the engineer of record for review prior to coring/cutting. Conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect or engineer's attention for direction
- C. All design and construction work for this project shall conform to the requirements of the following governing design codes: 1.) International Building Code (IBC 2018) as amended by the city of Lee's Summit. Missouri
- 2.) Minimum Design Loads for Buildings and Other Structures (ASCE7-16) 3.) Building Code Requirements for Structural Concrete (ACI 318-14) 4.) North American Specification for the Design of Cold-Formed Steel Structural Members (AISI S100-07/S1-1) 5.) National Design Specification (NDS) for Wood Constriction with 2015
- Supplements (ANSI/AWC NDS-2015) 6.) Special Design Provisions for Wind and Seismic (AWC SDPWS-2015) These drawings are for this specific project and no other use is authorized.

2. Structural Load Design Criteria

A.	Dead Load:	
	Deck Floors	= 35 psf
	Apartment Floors	= 35 psf
	Roofs	= 20 psf
	Stairs	= 40 psf
B.	Live Load:	•
	Public Rooms	= 100 psf
	Stairs	= 100 psf
	Apartment Floors (Private Rooms)	= 40 psf
	Corridors	= 100 psf
	Storage Areas	= 125 psf
	Decks/Balconies (Private)	= 60 psf
	Decks/Balconies (Public)	= 100 psf
	Roofs	= 20 psf
C.	Snow:	
	D. 00 f O. 40	

Pg = 20 psf, Ce = 1.0 Pf = 14 psf, Pm = 20 psf ls = 1.0, Cs = 1.0, Ct = 1.0

Drift & unbalanced snow loads per ASCE/SEI 7-10 D. Lateral Loads: 1.) Wind V(ult) = 109 mph, Exposure B, GCpi = \pm 0.18

Design wind pressures to be used for the deisgn of exterior components and cladding material son the designated zones of walls and roof structures shall be per section 30.7 and table 30.7-2 of ASCE/SEI 7-16. Tabulated pressures shall be multiplied by effective are

reduction factors, exposure adjustment factors, and topographic factors where applicable. 2.) Seismic: Ss = 0.099, S1 = 0.068. le = 1.0 Sds=0.086; Sd1=0.068; Site Classification C Seismic Design Category B

Basic Seismic Force-Resisting System: A.17- Light-Framed Walls with Shear Panels of All Other Materials R=2, Omega = 2 1/2, Cd = 2, V=0.043W E. This project is designed to resist the most critical effects

resulting from the load combinations of section 1605.3 of the

2018 International Building Code.

3. Concrete

- A. All concrete for foundations (walls, grade beams, footings and piers) shall develop minimum ultimate compressive design strength of 3500 psi in 28 days. but not less than 500 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 6 gallons of water per 100 pounds of cement and not over 4 inches of slump.
- B. All concrete for garage slab on grade shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 525 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 5.75 gallons of water per 100 pounds of cement and not over 4 inches of slump. Concrete mix shop drawing shall contain testing data proving concrete design mix shrinkage is less than 0.034% at 28 days when
- tested according to ASTM C157 (air drying method only). All concrete for interior flatwork (except garage slab on grade) shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 540 pounds of cement shall be used per cubic vard of concrete regardless of strengths obtained, not over 5.40 gallons of water per 100 pounds of cement and not over 4 inches of slump. Concrete mix shop drawing shall contain testing data proving concrete design mix shrinkage is less than 0.034%
- at 28 days when tested according to ASTM C157 (air drying method only). D. All concrete for exterior flatwork shall have a minimum design compressive strength of 4500 psi in 28 days, with not less than 560 pounds of cement per cubic yard of concrete, not over 5 gallons of water per 100 pounds of cement, with 6% +/- 1% air entrainment, and a maximum of 4 inches of slump.
- conforming to ASTM C494 added to the mix at manufacturer's dosage rates for improved workability. F. The preceding minimum mix requirements may have up to 15% maximum of the

The preceding minimum mix requirements may have water-reducing admixtures

- cement content replaced with an approved ASTM C618 Class C fly ash, provided the total minimum cementitious content is not reduced. G. All interior concrete slabs on grade shall be placed over 15 mil, Class A Vapor
- Barrier per ASTM E1745 with less than 0.01 perms, tested after mandatory conditioning. All joints shall be lapped and sealed per manufacturer's recommendations. All penetrations, as well as damaged vapor barrier material shall also be sealed per manufacturer's recommendation prior to concrete placement. Install barrier per manufacturer recommended details at all discontinuous edges (at interior columns, exterior edge of slab, etc.) to ensure terms of warranty are followed. The vapor barrier shall be placed over freedraining granular material as prescribed by the project soils report.
- H. Basement foundation walls shall be braced at the base and top of wall by the contractor until the slab on grade at the base and the floor framing/slab at the top of wall is complete and the concrete has achieved 75% of the design strength. The contractor is responsible for engineering and design of the wall bracing, if required. All concrete is reinforced concrete unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any details not shown shall be detailed per ACI 315 and meet
- requirements of ACI 318, current editions Control joints in dirt formed slab to be as shown on plans. Where not shown, limit controlled areas to not more than 144 square feet, or 12 feet on any side. Slab panel side ratio shall not exceed 1 1/2 to 1.
- K. Contractor shall verify that all concrete inserts, reinforcing and embedded items are correctly located and rigidly secured prior to concrete placement. L. Construction joints in beams, slabs, and grade beams shall occur at midspan
- (middle third) unless noted otherwise. Provide 2 x 4 horizontal keys at construction joints for shear transfer.
- M. No aluminum items shall be embedded in any concrete.

4. Reinforcing Steel

- A. All reinforcing steel shall conform to the requirements of ASTM A615 or A706 grade 60 steel. Welded plain wire fabric shall be supplied in sheets and conform to the requirements of ASTM A185.
- B. Clear minimum coverage of concrete over reinforcing steel shall be as follows: 1.) Concrete placed against earth: 3"
- 2.) Formed concrete against earth: 2" 3.) Slabs: 1-1/2" 4.) Beams or Columns:
- 5.) Other All coverage shall be nominal bar diameter minimum. . All dowels shall be the same size and spacing as adjoining main bars (splice lap

of wall, supply 3 - #4 vertical support bars for corner bars.

- 48 bar diameters or 24" minimum unless noted otherwise). . At corners of all walls, beams, and grade beams supply corner bars (minimum 2'-0" in each direction or 48 bar diameters) in outside face of wall, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face
- (2'-0" minimum) at splices and embedments, unless shown otherwise. Splice top bars near midspan and splice bottom bars over supports, unless noted F. At all holes in concrete walls and slabs, add 2 - #5 bars (opening dimension plus

E. Bars marked continuous and all vertical steel shall be lapped 48 bar diameters

- 96 diameters long) at each of four sides and add 2 #5 x 5'-0" diagonally at each of four corners of hole. Openings in 8" thick walls are reinforced similar, but with 1 - #5 instead of 2 - #5, respectively. G. Unless otherwise covered on architectural plans or specifications, vertical control
- joints in concrete wall shall be spaced at a maximum of 20'-0" on center and coordinated with the architect. Every other horizontal wall reinforcing bar shall be discontinuous at control joints except heavy top and bottom bars unless noted otherwise. Provide base seal waterstop style number 772 (by Greenstreak Inc. or approved equal) on dirt face side of wall at all walls below grade.
- H. Accessories shall be as specified in latest edition of the ACI Detailing Handbook and the concrete Reinforcing Steel Institute Design Handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed surfaces are to have plastic coated feet. All slabs and stairs not shown otherwise shall be 6" thick with #4 bars at 12" on center each way. All exterior porches and stoops not otherwise detailed may be
- constructed in any standard manner, solid or hollow, but must be reinforced with #4 bars at 12" on center each way minimum. Porches shall be doweled to adjacent walls or grade beams with #4 bars at 12" on center, hooked or embedded 48 diameters into both members. Slope porches 1/8" per foot for drainage unless noted otherwise.
- Allow 1 ton of reinforcing bars #4 or larger to be used as directed in the field for special conditions by the engineer of record (labor for placing same to be included).

5. Structural Steel

- A. All structural steel beams and columns shall be ASTM A992, grade 50 steel and all miscellaneous steel shall be ASTM A36 grade steel (except at moment connections where plates shall be ASTM A572, grade 50). Hollow Structural Sections (HSS) shall be ASTM A500, grade B. Fabrication and erection shall be in accordance with AISC 303-05 "Code of Standard Practice for Steel Buildings and Bridges" in the
- 13th Edition of the AISC Steel Construction Manual. All welding shall conform to the recommendations of the AWS.
- . All exterior steel and connections, and brick relief angles shall be hot-dip galvanized. D. All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. All beam connections shall be designed per the AISC Manual of Steel Construction "Framed Beam Connections" for the indicated reactions or at least 0.3 x beam total shear capacity, Vn/Omega, shown in the maximum total uniform load tables, whichever is greater; and, shall account for eccentricity when the bolt line is more than 2" from the center of the support.
- All connections must be two bolt minimum. E. All anchor bolts shall be 3/4" diameter, ASTM F1554, Grade 36 unless noted otherwise. Washers of minimum size and thickness for the given anchor diameter in Table 14-2 of the AISC Steel Construction Manual shall be provided at every column anchor bolt. Washers shall have a standard size hole for the anchor bolt.

6. Post Installed Anchors

- A. Post-installed anchors shall be used only where specified on the drawings unless approved in writing by the engineer of record. See drawings for anchor diameter, spacing and embedment. Performance values of the anchors shall be obtained for specified products using appropriate design procedures and/or standards as required by the governing building code. Anchors installed in concrete shall have an ICC-ES Evaluation Service Report. Special inspection is required for all post installed anchors. The contractor shall coordinate an on-site meeting with the post installed anchor manufacturer field representative to educate the construction
- team on the anchor installation guidelines and requirements. B. Mechanical anchors used in cracked and uncracked concrete shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193. All anchors shall be installed per the anchor manufacturer's written instructions. Adhesive anchors used in cracked and uncracked concrete shall have been tested
- and qualified for use in accordance with ICC-ES AC308. All anchors shall be installed per the anchor manufacturer's written instructions. D. Mechanical anchors used in solid grouted masonry shall have been tested and qualified for use in accordance with ICC-ES AC01. All anchors shall be installed

per the anchor manufacturer's written instructions.

appropriate screen tubes used for adhesives

qualified for use in accordance with ICC-ES AC58. All anchors shall be installed per the anchor manufacturer's written instructions. F. Anchors used in hollow concrete masonry shall have been tested and qualified in accordance with ICC-ES AC106 or ICC-ES AC58 as appropriate. All anchors shall be installed per the anchor manufacturer's written instructions with

Adhesive anchors used in solid grouted masonry shall have been tested and

7. Foundations

- A. The soil investigation was prepared by CFS Engineers, the report
- number is 20-5555 and their telephone number is 913-627-9040. B. Spread footings, grade beams, and retaining walls are designed to bear on insitu clay or engineered clay fill capable of safely sustaining 2,500 psf.
- Retaining walls are designed for an active lateral load of 55 pcf equivalent
- fluid pressure. D. Basement walls are designed for an at rest lateral load of 80 pcf equivalent fluid pressure. See General Note 3H for wall bracing requirements.
- E. Contractor shall provide for dewatering at excavations from either surface water or F. All foundation excavations shall be inspected by a qualified soil engineer, approved
- by the architect and/or structural engineer, prior to placement of steel or concrete. This inspection shall be at the owner's expense. G. All concrete in the structural portion retaining the backfill shall have attained its
- design strength prior to being backfilled. H. Moisture content in soils beneath building locations should not be allowed to change after footing excavations and after grading for slabs on grade are completed. If subgrade materials become desiccated or softened by water or other conditions, aterials to the density and water content specified for engineered fill. Do not place concrete on frozen ground.

8. Timber and Wood Framing

- A. Quality and construction of wood framing members and their fasteners for load supporting purposes not otherwise indicated on the drawings shall be in accordance with the nternational Building Code.
- B. All studs and top and bottom plates shall be Douglas Fir No. 2 grade visually graded lumber, with an allowable fiber stress in bending of 900 psi minimum and an elastic modulus

 11. Copyright and Disclaimer of 1,600,000psi unless noted otherwise. All joist, truss members, and headers to be No. grade 2 (min.) unless noted otherwise. All lumber for exterior decks and balconies shall be treated Southern Yellow Pine No. 2 grade.
- . Blocking of stud bearing walls and shear walls shall be solid, matching sheathing joints. Joist blocking and bridging shall be solid wood or cross bridging of either wood or metal straps. Spacing, in any case, shall not exceed 8'-0".
- E. Wood members and sheathing shall be fastened with number and size of fasteners not less than that set forth in Table 2304.9.1 of the International Building Code. Floor sheathing shall be APA rated tongue and groove Sturd-I-Floor, exposure 1, glued and nailed with 8d ring shank nails or # 10 screws at 12" on center to all supports. Sheathing of shear walls or roof diaphragms shall be edge nailed with 8d common nails at 6" on center and nailed to intermediate framing and/or blocking members with 8d common nails at 12" on center unless otherwise noted on the drawings. All floor sheathing shall be installed with 1/8 inch
- gaps between panel edges and end joints. Sill plates shall be bolted to concrete walls or steel beams with 1/2" diameter bolts at 32" on center. Sill plates in direct contact with concrete or masonry shall be treated lumber.
- G. Joist hangers shall have Uniform Building Code approval and shall be equal to Simpson Strong Tie "LUS" for wood application and "LB" for steel weld-on application.
- H. Service condition dry with moisture content at or below 19% in service. I. Laminated veneer lumber (LVL) shall have an allowable flexural stress (Fb) of 2,600 psi (reduced by size factor) and an elastic modulus (E) of 1,900,000 psi.
- J. Parallel Strand Lumber (PSL) shall have an allowable flexural stress (Fb) of 2,900 psi (reduced by size factor) and an elastic modulus (E) of 2,000,000 psi. K. Pre-engineered wood trusses shall be designed in accordance with the Truss Plate Institute's national design standard for metal-plate connected wood truss construction (ANSI/TPI-1 latest edition). Trusses shall be designed and manufactured by an authorized member of the Wood Truss Council of America (WTCA). Truss design shall conform to specified codes, allowable stress increases, deflection limitations and other applicable
- criteria of the governing code. L. Shop drawings showing complete erection and fabrication details and calculations (including connections) shall be submitted to the project architect/engineer for review prior to fabrication and/or erection. Such drawings shall bear the seal of a professional engineer, registered in the state of the project location. Shop drawings shall also be submitted to the local government controlling agency when requested by that agency.
- M. All trusses shall be securely braced both during erection and permanently, as indicated on the approved truss design drawings and in accordance with TPI's commentary and recommendations for handling, installing and bracing metal-plate connected wood trusses (HIB-91, booklet) and the latest edition of ANSI/TPI-1.
- N. The truss manufacturer shall supply all hardware and fasteners for joining truss members together and fastening truss members to their supports. Metal connector plates shall be manufactured by a member of the Wood Truss Council of America (WTCA) and shall be 20 gauge minimum. Connector plates shall meet or exceed ASTM A653, grade 33, with ASTM A924 galvanized coating designation G60.
- O. Shipment, handling, and erection of trusses shall be by experienced, qualified persons and shall be performed in a manner so as not to endanger life or property. Apparent truss damage shall be reported to the truss manufacturer for evaluation prior to erection. Cutting or alteration of trusses is not permitted.
- P. Contractor shall coordinate truss layout for openings and penetrations required by other trades including for plumbing, HVAC, electrical, roof access hatches, chases, etc. Q. Pre-engineered floor truss and I-Joist design load and deflection criteria are as
- Top Chord Dead Load = Per General Note 2A Top Chord Live Load Bottom Chord Dead Load = 5nsf Allowable Total Load Deflection = L/360
- Allowable Live Load Deflection = L/480; ½" maximum R. Pre-engineered roof truss design load and deflection criteria are as follows: Top Chord Dead Load Top Chord Live Load = 20psf
- Bottom Chord Dead Load = 10psf Allowable Total Load Deflection = L/300Allowable Live Load Deflection = L/360
- Roof trusses shall be designed for wind uplift loads indicated in Building Components & Cladding Wind Loads Diagram.

9. Shop Drawing Review

- A. Bob D. Campbell and Company, Inc. will review the General Contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall structural system designed by Bob D. Campbell and Company, Inc.
- B. Prior to submittal of a shop drawing or any related material to Bob D. Campbell and Company, Inc., the GC shall:
- 1.) Review each submission for conformance with the means, methods. techniques, sequences and operations of construction and safety precautions and programs incidental thereto, all of which are the sole responsibility of the GC. 2.) Review and approve each submission.
- 3.) Stamp each submission as approved. C. Bob D. Campbell and Company, Inc. shall assume that no submission comprises a variation unless the GC advises Bob D. Campbell and Company, Inc. with
- written documentation. D. Bob D. Campbell and Company, Inc. shall review shop drawings and related materials with comments provided that each submission has met the above requirements. Bob D. Campbell and Company, Inc. shall return without comment unrequired material or submissions without GC approval stamp.
- E. Shop drawings and related material (if any) required are indicated below. Should Bob D. Campbell and Company, Inc. require more than ten (10) working days to perform the review, Bob D. Campbell and Company, Inc. shall so notify
- 1.) Concrete mix designs and material certificates including admixtures and compounds applied to the concrete after placement.

2.) Reinforcing steel shop drawings including erection drawings and

bending details. Bar list will not be reviewed for correct quantities. 3.) Construction and control joint plans and/or elevations. 4.) Miscellaneous anchors shown on the structural drawings. 5.) Wood truss design calculations and detailed erection and fabrication

drawings. Standard stick framing shop drawings need not be submitted.

- 10. Statement of Structural Special Inspections A. The structural design for this project is based on completion of special inspections during construction in accordance with section 1704 of the International Building Code. The owner shall employ one or more qualified special inspectors to provide the required special inspections.
- B. The special inspector shall furnish inspection reports to the building official, owner, architect and structural engineer, and any other designated person. C. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority, building official and structural engineer.
- D. The special inspector shall submit a final signed report stating that the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of the building code. E. The following inspections and tests are required with the frequency (continuous or periodic) as defined within the referenced section or standard listed below. The
- General Contractor shall provide notification to the inspector when items requiring inspection are ready to be inspected and provide access for those
- 1. Shop Fabrication pre-engineered wood trusses per Section 1704.2.5 unless TPI certified shop 2. Concrete Construction per Section 1705.3 and Table 1705.3 a. Reinforcing Steel Placement
 - b. Reinforcing Steel Welding c. Cast in Place Anchors d. Post Installed Anchors e. Design Mix Verification
 - f. Concrete Sampling and Testing g. Concrete Placement h. Concrete Curing
- 3. Verification of Soils per Table 1705.6 4. Wood Lateral System (periodic) a. Wood shearwalls (include sheathing, rim board and bottom plate
- attachments) b. Portal frames c. Shear wall and portal frame holdowns
- d. Shear wall tension rod system
- 5. Wood Gravity Framing and Placement (adjust frequency of random sampling where indicated as required) a. Heavy timber/SCL/glulam beams and supports (periodic)
- b. Headers and jambs (random sampling) c. Bearing walls (random sampling) d. Connector/hardware installation (random sampling) e. Floor and roof trusses (random sampling)

- A. All drawings in the structural set (S-series drawings) are the copyrighted work of Bob D. Campbell and company, Inc. These drawings may not be photographed, traced, or copies in any manner without the written permission of Bob D. Campbell and Company, Inc. Exception: Original drawings may be printed for distribution to the owner, architect, and general contractor for coordination, bidding, and construction. Subcontractors may not reproduce these drawings for any purpose or in any manner.
- B. I, Clark A. Basinger, P.E., registered engineer and a representative of Bob D. Campbell and Company, Inc., do hereby accept professional responsibility as required by the professional registration laws of this state for the structural design drawings consisting of S-series drawings. I hereby disclaim responsibility for all other drawings in the construction document package, they being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction document package.

ESTIMATED BUILDING MOVEMENT TABLE							
FLOOR	ACCUMULATIVE WOOD SHRINKAGE	HEIGHT OF BRICK	ACCUMULATIVE BRICK EXPANSION				
ROOF	0.7"	20'	0.22"				
2nd FLOOR	0.35"	10'	0.11"				

Wood Shrinkage Notes:

Bob D. Campbell & Company takes no responsibility for the naturally-occurring shrinkage that will occur in a wood structure or the impact the movement will have on the architectural, mechanical, electrical and plumbing systems that are designed by others. The analysis provided below are estimated values in accordance with IBC Section 2304.3.3 and indicate the systems and/or routing of the systems shall be designed to accommodate the movement. Failure to follow the considerations below can result in a failure of the impacted components within the system.

Estimated values are based on the following moisture content in the framing a. At install (MC) = 19% b. At equilibrium (EMC) = 8%

Reference wall sections on this sheet for estimated cumilative values per floor. The following is a list of recommendations to minimize potential issues

- related to wood shrinkage and veneer expansion. Veneer expansion is seasonable and variable depending on sun exposure. The majority of wood shrinkage will occur in the first 24 months of occupancy with minor seasonal variations. MEP System Considerations
- a. Postpone MEP installation as long as possible to allow as much dead load to be applied--allowing construction gaps to close.
- b. Provide oversized and vertically slotted holes at pipe horizontal penetration and notches. Refer to typical notching and cutting of stud
- wall detail for additional considerations on size limitations. c. Plumbing pipe and electrical conduit joints and connections shall be flexible and allow for
- expansion/contraction to prevent a rigid assembly. d. Hangers and necessary rigid connections shall be adjusted prior to completion of construction or closing of wall/ceiling assembly.
- e. Horizontal vent penetrations through exterior veneers shall be provided with double flashing.
- All sheet metal vertical down spouts shall have intermediate slip joints. Roof drains shall utilize adjustable fittings that are adjusted back to the roof finish sheathing elevation at the completion of construction and
- then shall be adjusted as required to maintain proper drainage. 2. Architectural System Considerations a. At stucco, EIFS and thin set veneer systems provide
- horizontal expansion joints, slip joints with appropriate flashing, this includes transitions between changes in veneer material. b. At brick and stone veneers provide veneers ties designed to accommodate differential movement.
- c. Refer to architectural window and door head and sill; parapet; and horizontal material changes for specific
- horizontal gap requirements between materials. 3. Construction Tolerance Considerations a. All studs shall be cut level, square and tight to top and
- bottom plates to reduce any additional shortening of the building due to nesting.
- b. All wood structural panels on the walls shall have a 1/2" relief gap at each floor level to reduce the potential for bulging. c. All floor sheathing shall have 1/8" gaps around all four sides
- at time of install to allow for expannsion. d. All shearwall holdown shall be checked and retighten immediately prior to sheathing of the walls. If a continuous rod system is utilized for holdowns or uniform uplift anchors, the take-up devise pins shall be
- verified to have been pulled prior to sheathing the walls. 4. Material Storage and Protection a. All stored material shall remain covered and elevated from

temporary pond.

LEGEND:

SPAN DIRECTION OF DECK

SHEET S001

SAW JOINT PER 1/S200

CONSTRUCTION JOINT PER 2/S200

FOOTING MARK - SEE SCHEDULE ON

BEAM OR HEADER PER SCHEDULE ON S002

SHEAR WALL PER SCHEDULE ON SHEET S003

FDN

FTG

FOUNDATION

FAR FACE

FINISH

FLOOR

FAR SIDE

FOOTING FIELD VERIFY

UPSET BEAM OR HEADER PER SCHEDULE ON S002

- the elements to reduce the potential for an increase in moisture content. b. Do not allow water to pond on the floor sheathing. Provide drain holes in the floor sheathing as required to relieve any water that might
- 5. Post Occupancy Consideration months of occupancy and then annually and adjusted as needed.
- a. Recommend a review of roof drains every 3 months for the first 24 b. Recommend a review of vertical joints at exterior doors, windows and at changes in materials. Caulked as needed as shrinkage occurs and original joint fails.

INO.	CONNECTION	ATTACTIVICITIE	(REF NOTE #3 and #4)
1	JOIST TO SILL OR GIRDER	3- 3" x 0.131" NAILS-TOENAIL	3-8d NAILS-TOENAIL
2	BRIDGING TO JOIST	2- 3" x 0.131" NAILS-TOENAIL EACH END	2-8d NAILS-TOENAIL EACH END
3	SOLE PLATE TO JOIST OR BLOCKING	3" x 0.131" NAILS AT 8"o.c TYPICAL FACE NAIL 4-3" x 0.131" NAILS AT 6"o.c. BRACED WALL PANELS	16d BOX NAILSZ AT 16"o.c. MAX. FACE NAILING 3-16d BOX NAILS AT 16"o.c. BRACED WALL PANEL
4	TOP PLATE TO STUD	3- 3" x 0.131" NAILS-END NAIL	2-16d NAILS-END NAIL
5	STUD TO SOLE PLATE	4- 3" x 0.131" NAILS-TOENAIL OR 3- 3" x 0.131" NAILS-END NAIL	4-8d NAILS-TOENAIL OR 2-16d NAILS-END NAIL
6	DOUBLE STUDS	3" x 0.131" NAILS AT 8"o.cFACE NAIL	16d BOX NAILS AT 24"o.c. MAX. FACE NAIL
7	DOUBLED TOP PLATES	3" x 0.131" NAILS AT 12"o.cFACE NAIL	16d BOX NAILS AT 16"o.c. MAX. FACE NAIL
8	DOUBLE TOP PLATE LAPS AND INTERSECTIONS	12-3" x 0.131" NAILS	 8-16d NAILS
9	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3-3" x 0.131" NAILS -TOENAIL	3-8d NAILS-TOENAIL
10	RIM JOIST TO TOP PLATE	3" x 0.131" NAILS AT 6"o.cTOENAIL	8d NAILS AT 6"o.c. MAXTOENAIL
11	TOP PLATE LAPS AND INTERSECTIONS	3- 3" x 0.131" NAILS-FACE NAIL	2-16d NAILS-FACE NAIL
12	CONTINUOUS HEADER, TWO PIECES	3" x 0.131" NAILS AT 10"o.c. ALONG EACH EDGE	16d NAILS AT 16"o.c. MAX. ALONG EACH EDGE-TOENAIL
13	CEILING JOISTS TO PLATE	5- 3" x 0.131" NAILS-TOENAIL	3-8d NAILS-TOENAIL
14	CONTINUOUS HEADER TO STUD	4- 3" x 0.131" NAILS-TOENAIL	4-8d NAILS-TOENAIL
15	CEILING JOISTS, LAPS OVER PARTITIONS	4- 3" x 0.131" NAILS-FACE NAIL	3-16d NAILS-FACE NAIL
16	CEILING JOISTS TO PARALLEL RAFTERS	4- 3" x 0.131" NAILS-FACE NAIL	3-16d NAILS-FACE NAIL
17	RAFTER TO PLATE	3- 3" x 0.131" NAILS-TOENAIL	3-8d NAILS-TOENAIL
18	1" BRACE TO EACH STUD	2- 3" x 0.131" NAILS-FACE NAIL	2-8d NAILS-FACE NAIL

3" x 0.131" NAILS AT 24"o.c. FACE NAILED

OPPOSITE SIDES 3- 3" x 0.131" NAILS AT

TOP AND BOTTOM STAGGERED ON

3" x 0.131" NAILS AT 6"o.c. TOP AND

4- 3" x 0.131" NAILS AT EACH SUPPORT

2- 3" x 0.131" FACE NAILS (IT/IB @ EA.

3" x 0.131" NAILS AT 16"o.c.

ENDS AND EACH SPLICE

BOTTOM ALONG EDGE

NAILING SCHEDULE (REFER TO NOTES #1 and #2)

CONNECTION

AND PLATE

MULTIPLE STUDS

BUILT-UP CORNER AND

BUILT-UP GIRDER AND

BUILT-UP LAMINATED

23 RIM BOARD TO TRUSS

BUILD-UP STUD-PACK

22 2" PLANKING

VENEER LUMBER BEAMS

ATTACHMENTS (REF NOTE #3 and #4)

2-8d NAILS-FACE NAIL

16d NAILS AT 24"o.c. MAX.

ENDS AND EACH SPLICE

BOTTOM ALONG EDGE

(IT/IB @ EA. TRUSS)

20d NAILS AT 32"o.c. MAX. TOP

AND BOTTOM, STAGGERED ON

OPPSITE SIDES. 2-20d NAILS AT

16d NAILS AT 12"o.c. TOP AND

16d NAILS AT EACH SUPPORT

2- 10d NAILS - FACE NAILS

REFER TO DETAIL 3/S003 REFER TO DETAIL 3/S003 COLUMNS 1.) ALL NAILS SHALL BE AS NOTED UNLESS OTHERWISE SPECIFIED ON STRUCTURAL DRAWINGS OR ALTERNATE PROVIDED BY ENGINEER IN WRITING. 2.) CONDITIONS NOT SPECIFIED SHALL BE IN ACCORDANCE WITH CURRENT INTERNATIONAL BUILDING CODE. 3.) NAILING DESIGNATION: 4 - 3" x 0.131" NAILS DIAMETER IN INCHES ———— NAIL LENGTH

— QUANITY 4.) ALL NAILS NOTED AS 8d, 10d, 16d, ETC. SHALL BE COMMON NAILS UNLESS NOTED BOX.

STRUCTURAL DECK & SLAB SCHEDULE DESCRIPTION COMPOSITE DECKING PER ARCHITECTURAL DRAWINGS/SPECIFICATIONS 3/4" GYPCRETE ATOP 23/32" T&G PLYWOOD SHEATHING. SHEATHING SHALL BE GLUED AND NAILED W/ 8d RING SHANK NAILS OR #10 SCREWS @ 6"o.c. @ EDGES & 12"o.c. AT FIELD. 19/32" PLYWOOD SHEATHING ATTACHED WITH 8d NAILS @ 6"o.c. AT EDGES _ 4" CONCRETE SLAB REINFORCED W/ 6x6-W2.9xW2.9 WWF ATOP VAPOR BARRIER PER GENERAL NOTES ATOP 4" OPEN GRADED STONE ATOP 12" OF SUBGRADE TREATED WITH 5% PORTLAND CEMENT (DRY UNIT WEIGHT)

- 1. CD = COMPOSITE/CONCRETE DECK TYPE 2. FD = FLOOR DECK TYPE
- 3. NCD = NON-COMPOSITE DECK TYPE 4. RD = ROOF DECK TYPE
- SOG = SLAB-ON-GRADE TYPE 6. REFER TO NOTE 10.T ON SHEET S0.01 FOR FIRE - RETERDANT TREAD SHEATHING REQUIREMENTS. PROVIDE 1" DEEP TOOLED CONTROL JOINT (TRANSVERSE DIRECTION) @ MID-SPAN OF SINGLE BAY BALCONY OR @ THIRD POINTS OF DOUBLE BAY BALCONY. FILL JOINT w/ SEALANT

STRUCTURAL ABBREVIATIONS

D	AT	GA	GAGE	RAD	RADIUS
2	AND	GALV	GALVANIZE(D)	RD-#	ROOF DECK TYPE
) j	ROUND, DIAMETER	GEN	GENERAL	REF	REFERENCE
DTL	ADDITIONAL	GR	GRADE	REINF	REINFORCEMENT
.FF	ABOVE FINISHED FLOOR	HORIZ	HORIZONTAL	REQD	REQUIRED
 LT	ALTERNATE	HSS	HOLLOW STRUCTURAL SECTION	REV	REVISION
RCH	ARCHITECTURAL	IF	INSIDE FACE	RLL	ROOF LIVE LOAD
LDG	BUILDING	 INFO	INFORMATION	RTU	ROOF TOP UNIT
1	BOTTOM OF	INT	INTERIOR	SC	SLIP CRITICAL
, M	BEAM	JST	JOIST	SCHED	SCHEDULE(D)
OTT	BOTTOM	JT	JOINT	SECT	SECTION
RG	BEARING	K	KIPS (1000 LBS)	SHT	SHEET
NG.	CAMBER	KSF	KIPS PER SQUARE FOOT	SIM	SIMILAR
, ;D-#	CONCRETE DECK TYPE	KSI	KIPS PER SQUARE FOOT KIPS PER SQUARE INCH	SIIVI	SAW JOINT
				SL	
;J	CONSTRUCTION/CONTROL JOIN	LBS, #	POUNDS		SNOW LOAD
JP	COMPLETE JOINT PENETRATION	Ld	DEVELOPMENT LENGTH	SOG	SLAB-ON-GRADE
L.	CENTERLINE	LL	LIVE LOAD	SOG-#	SLAB-ON-GRADE TYPE
MU	CONCRETE MASONRY UNIT	LLH	LONG LEG HORIZONTAL	SPCG	SPACING
OL	COLUMN	LLV	LONG LEG VERTICAL	SPEC	SPECIFICATION
ONC	CONCRETE	LONG	LONGITUDINAL	SPRT	SUPPORT
ONN	CONNECTION	LSLT	LONG-SLOTTED HOLE TRANSVERSE	SQ	SQUARE
ONT	CONTINUOUS	LTWT	LIGHTWEIGHT	SS	STAINLESS STEEL
OORD	COORDINATE	М	MOMENT FORCE	SSLT	SHORT-SLOTTED HOLE TRANSVERSE
OV, CVR	COVER	MAX	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS MASONRY METAL NEAR FACE NEAR SIDE NOT TO SCALE	STD	STANDARD
BL	DOUBLE	MECH	MECHANICAL	STIFF	STIFFENER
ET	DETAIL	MFGR	MANUFACTURER	STIR	STIRRUP
NΑ	DIAMETER	MIN	MINIMUM	STL	STEEL
MI	DIMENSION	MISC	MISCELLANEOUS	STRUCT	STRUCTURE, STRUCTURAL
)L	DEAD LOAD	MSRY	MASONRY	T/	TOP OF
WG	DRAWING	MTL	METAL	THRU	THROUGH
A	EACH	NF	NEAR FACE	TOS	TOP OF STEEL, TOP OF SLAB
F	EACH FACE	NS	NEAR SIDE	TRANS	TRANSVERSE
J	EXPANSION JOINT	NTS		TYP	TYPICAL
L, ELEV	ELEVATION	NW	NORMAL WEIGHT	UNO	UNLESS NOTED OTHERWISE
MBED	EMBEDMENT, EMBEDDED	OC	ON CENTER	V	SHEAR FORCE
NGR	ENGINEER	OF	OUTSIDE FACE	VERT	VERTICAL
OD	EDGE OF DECK	OPNG	OPENING	W/	WITH
OR	ENGINEER OF RECORD	OPP	OPPOSITE	W/0	WITHOUT
OS	EDGE OF SLAB	OVS	OVERSIZED HOLE	WF	WIDE FLANGE
.Q	EQUAL	Р	AXIAL FORCE	WL	WIND LOAD
QUIP	EQUIPMENT	PAF	POWDER ACTUATED FASTENER	WP	WORK POINT
:W	EACH WAY	PC	PRECAST	WWF	WELDED WIRE FABRIC
XP	EXPANSION	PCF	POUNDS PER CUBIC FOOT		
XT	EXTERIOR	PEMB	PRE-ENGINEERED METAL BUILDING		
XTG, EXIST	EXISTING	PERP	PERPENDICULAR		
D-#	FLOOR DECK TYPE	PL	PLATE		
DN	FOLINDATION	 D. E	DOLINDO DED LINEAD FOOT		

POUNDS PER LINEAR FOOT

PARTIAL JOINT PENETRATION

POUNDS PER SQUARE FOOT

POUNDS PER SQUARE INCH

QUANTITY

PSF

PSI

QTY

ARCHITECTS

DATE:

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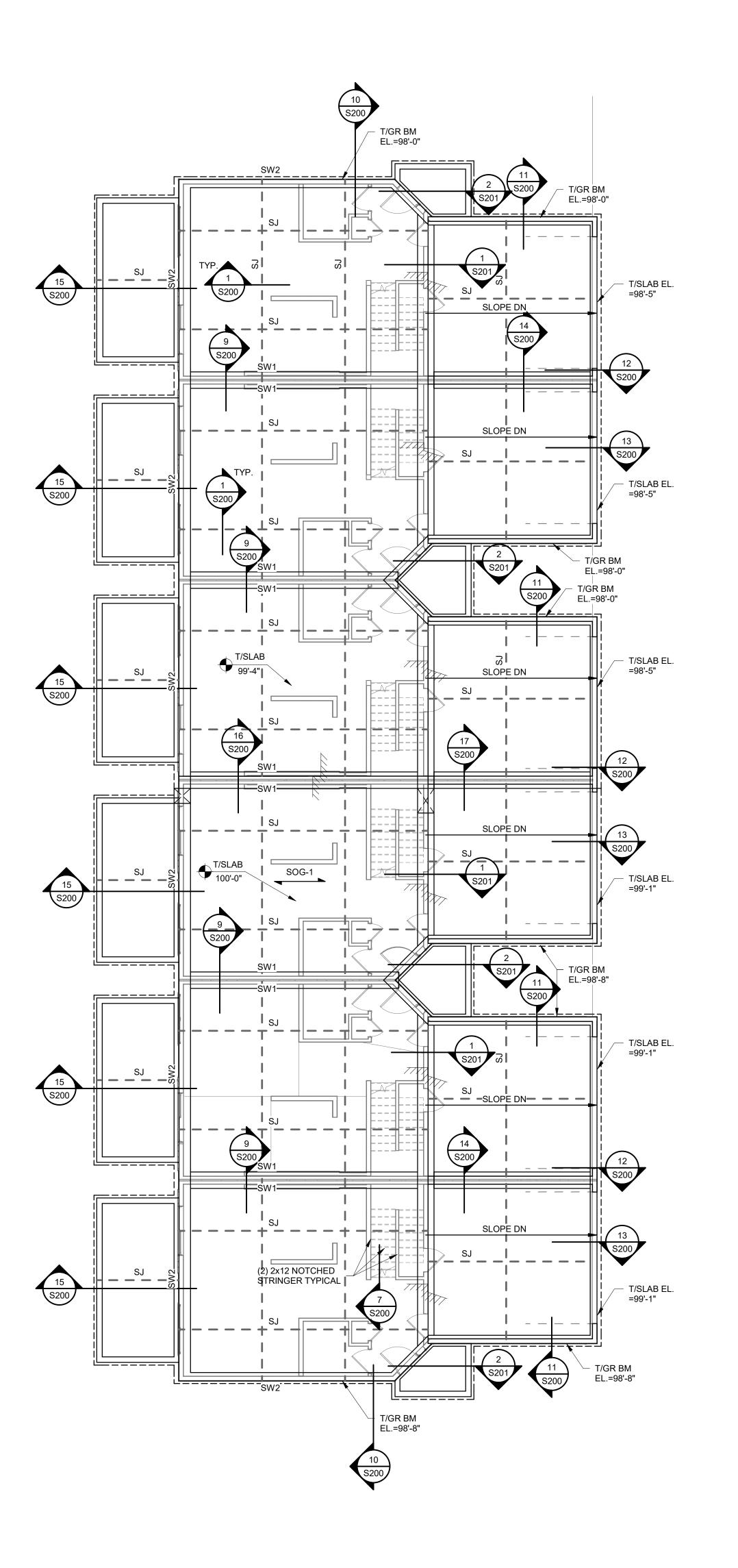
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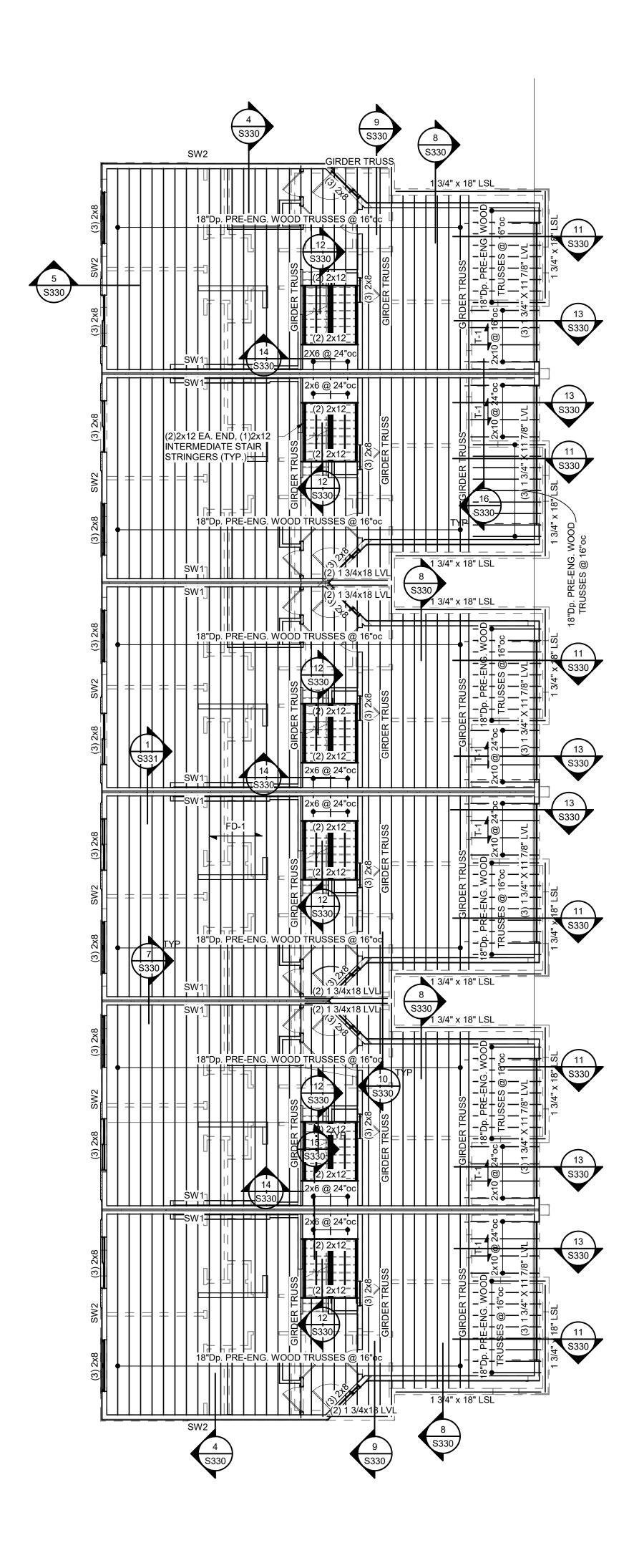
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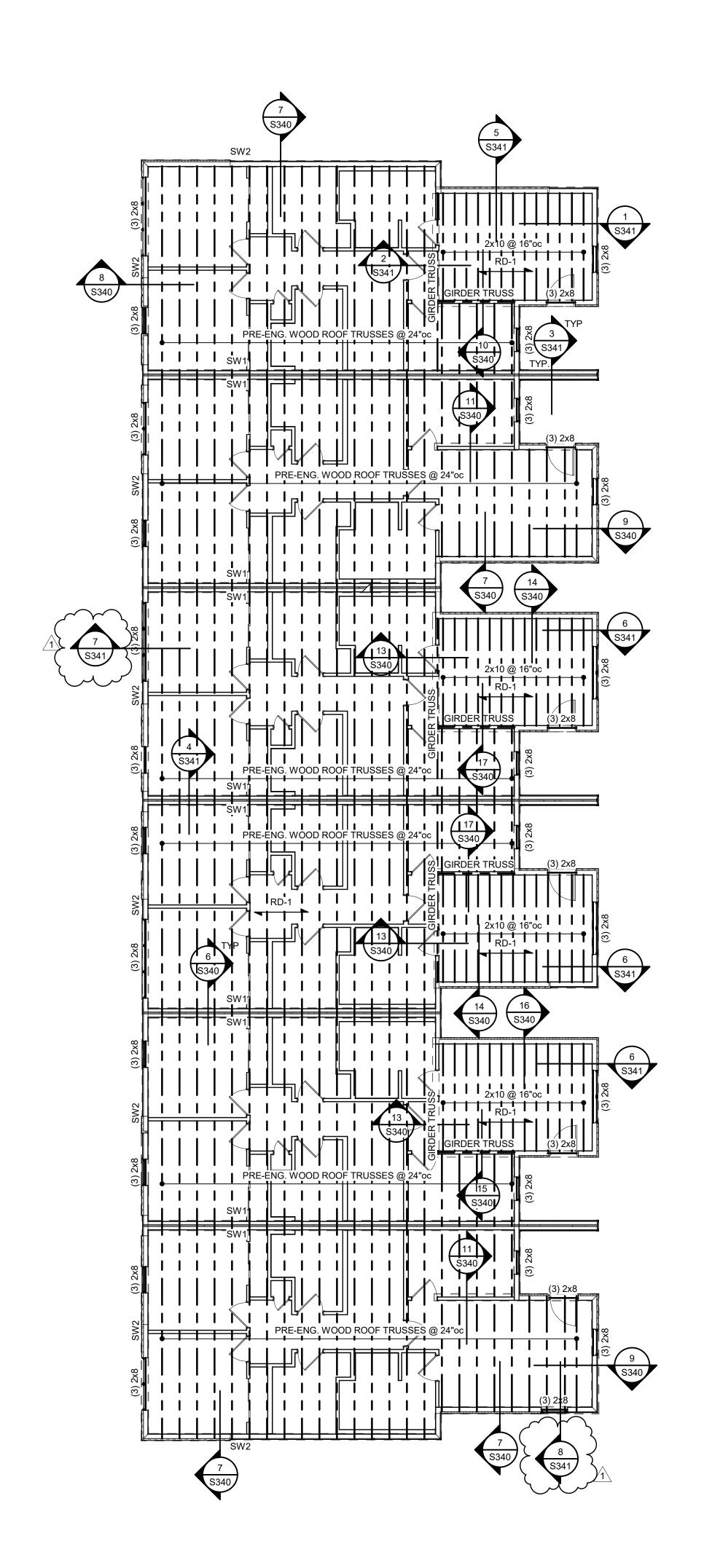
1 GROUP 1 - FOUNDATION PLAN

1/8" = 1'-0"



2 GROUP 1 - SECOND FLOOR FRAMING PLAN

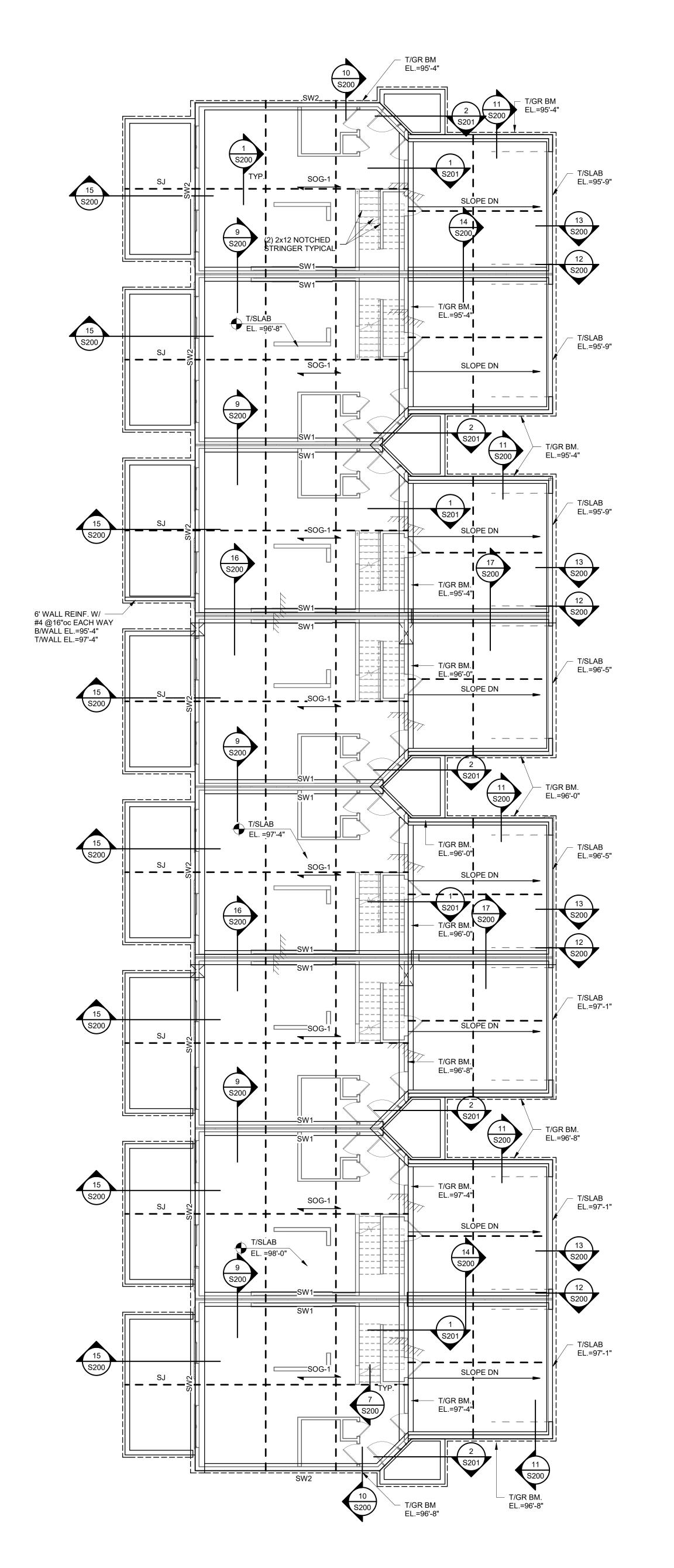




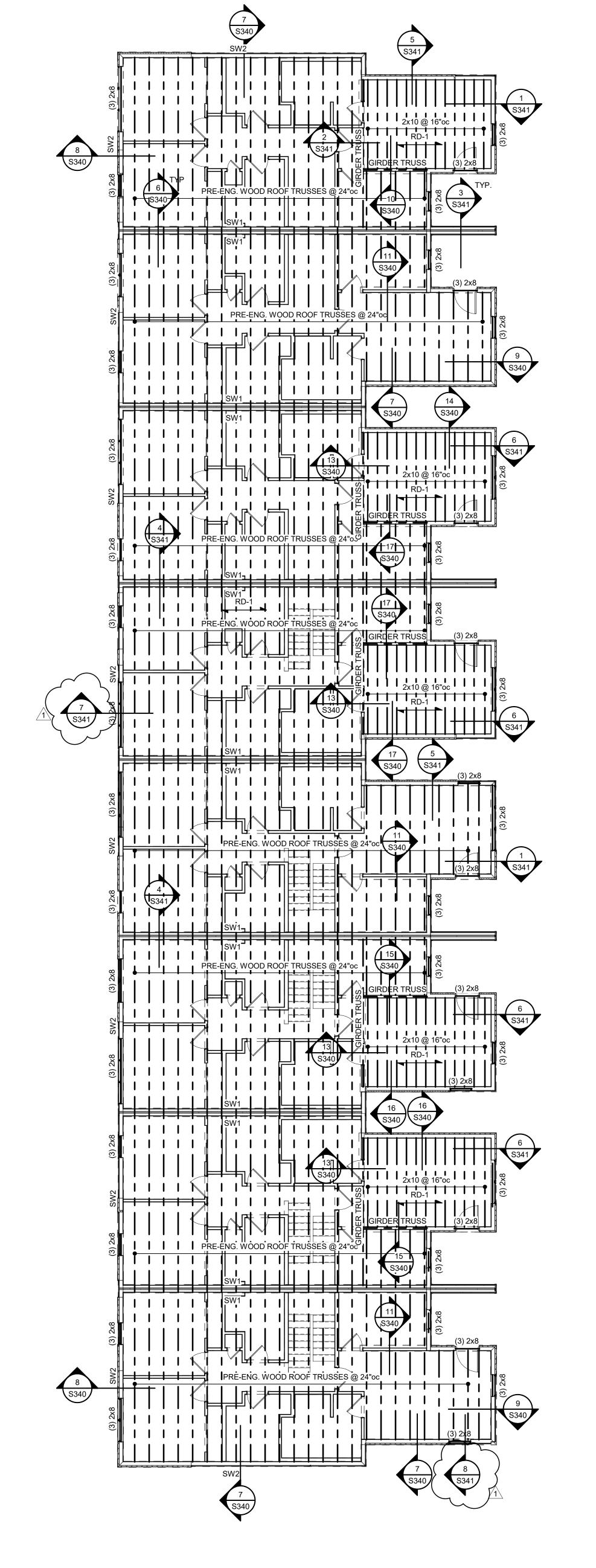
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(2)2x12 EA. END, (1)2x12 INTERMEDIATE STAIR STRINGERS (TYP.)



3 GROUP 2 - ROOF FRAMING PLAN



ee's Summit, Missouri

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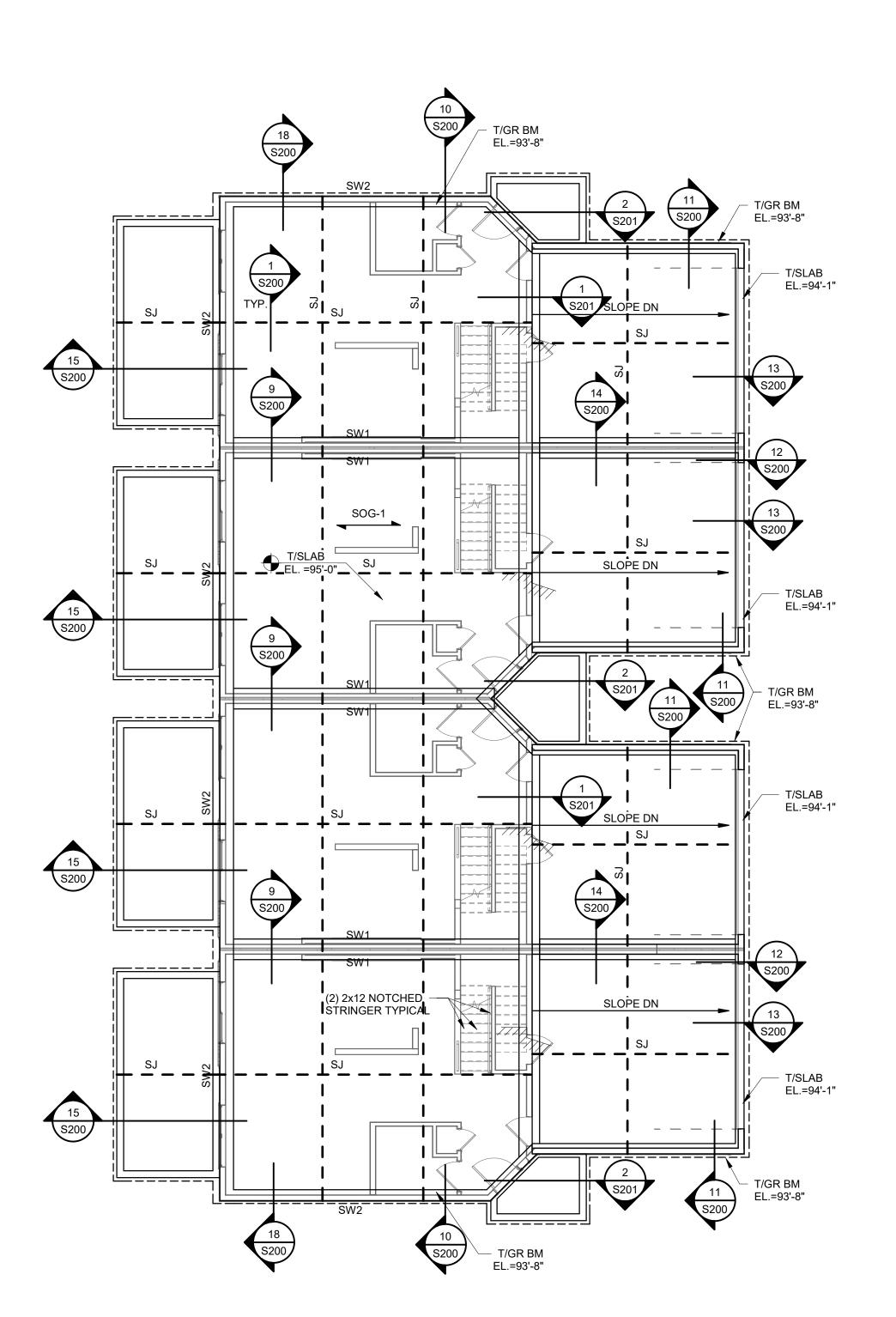
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1 GROUP 2 - FOUNDATION PLAN

2 GROUP
1/8" = 1'-0"

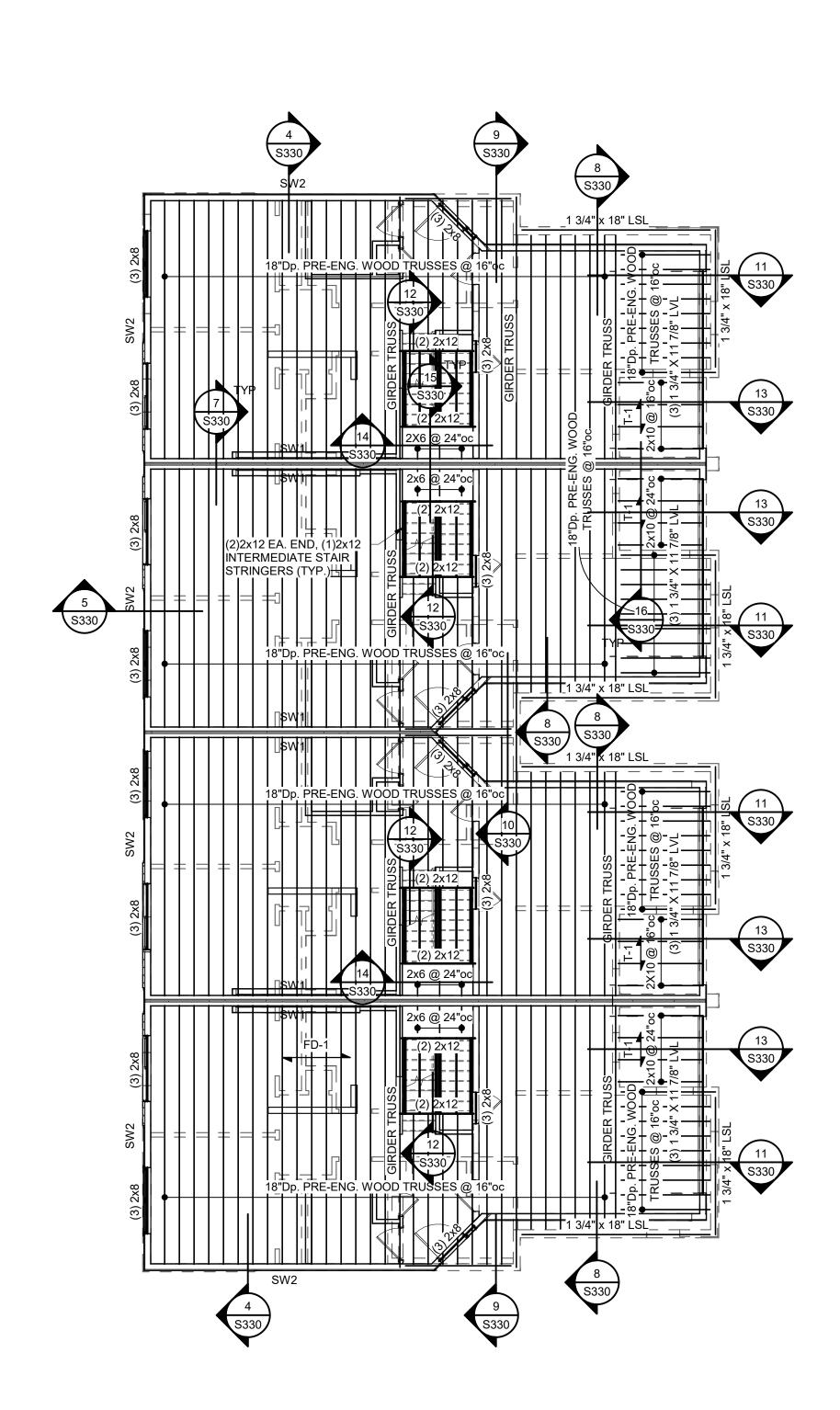
2 GROUP 2 - SECOND FLOOR FRAMING PLAN

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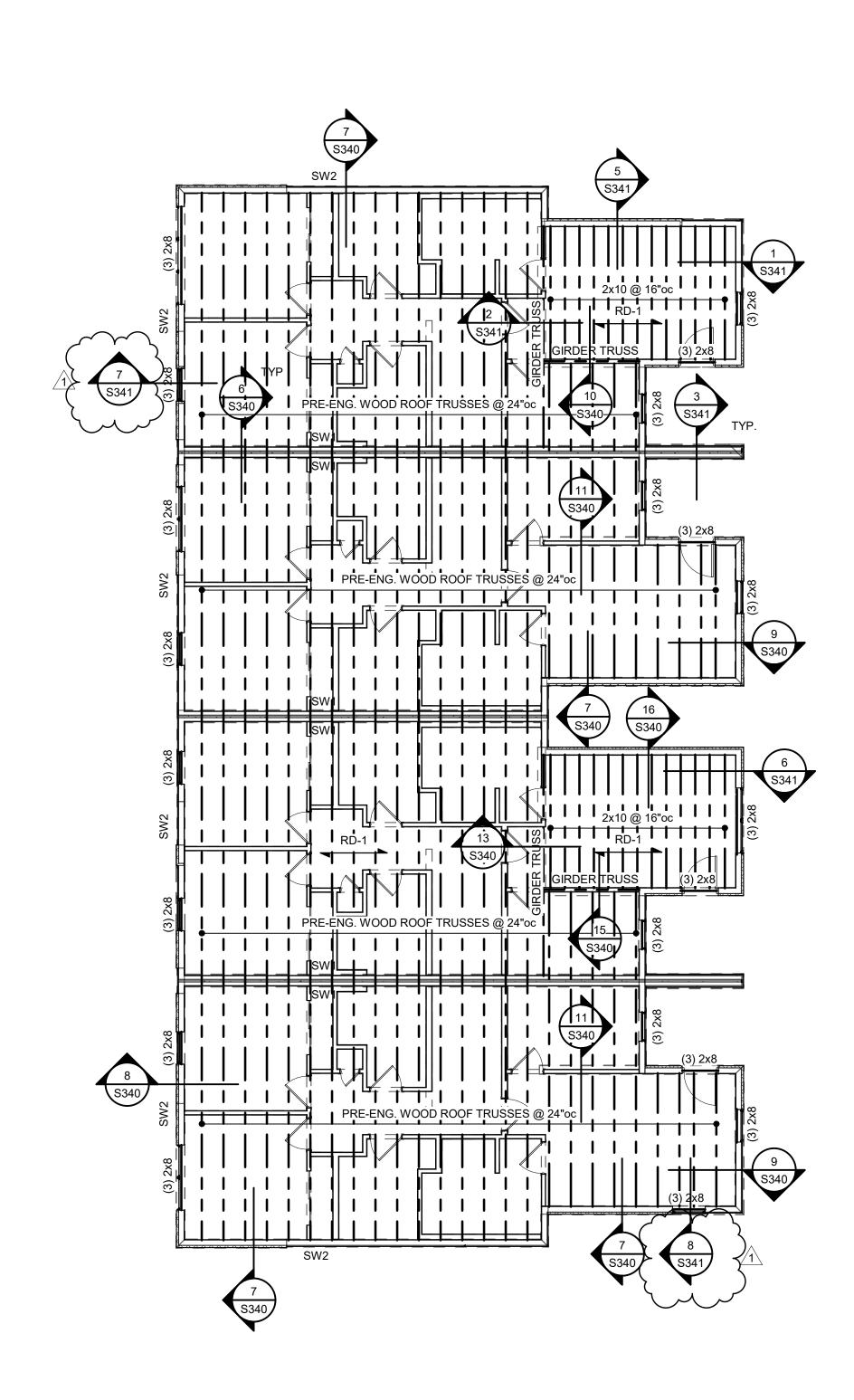
1 GROUP 3 - FOUNDATION PLAN

1/8" = 1'-0"

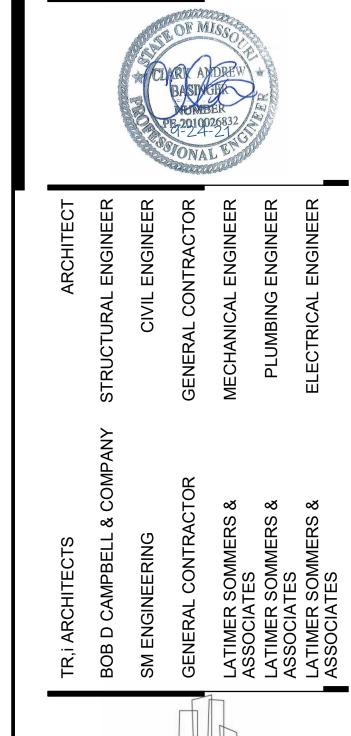


2 GROUP 3 - SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"



3 GROUP 3 - ROOF FRAMING PLAN



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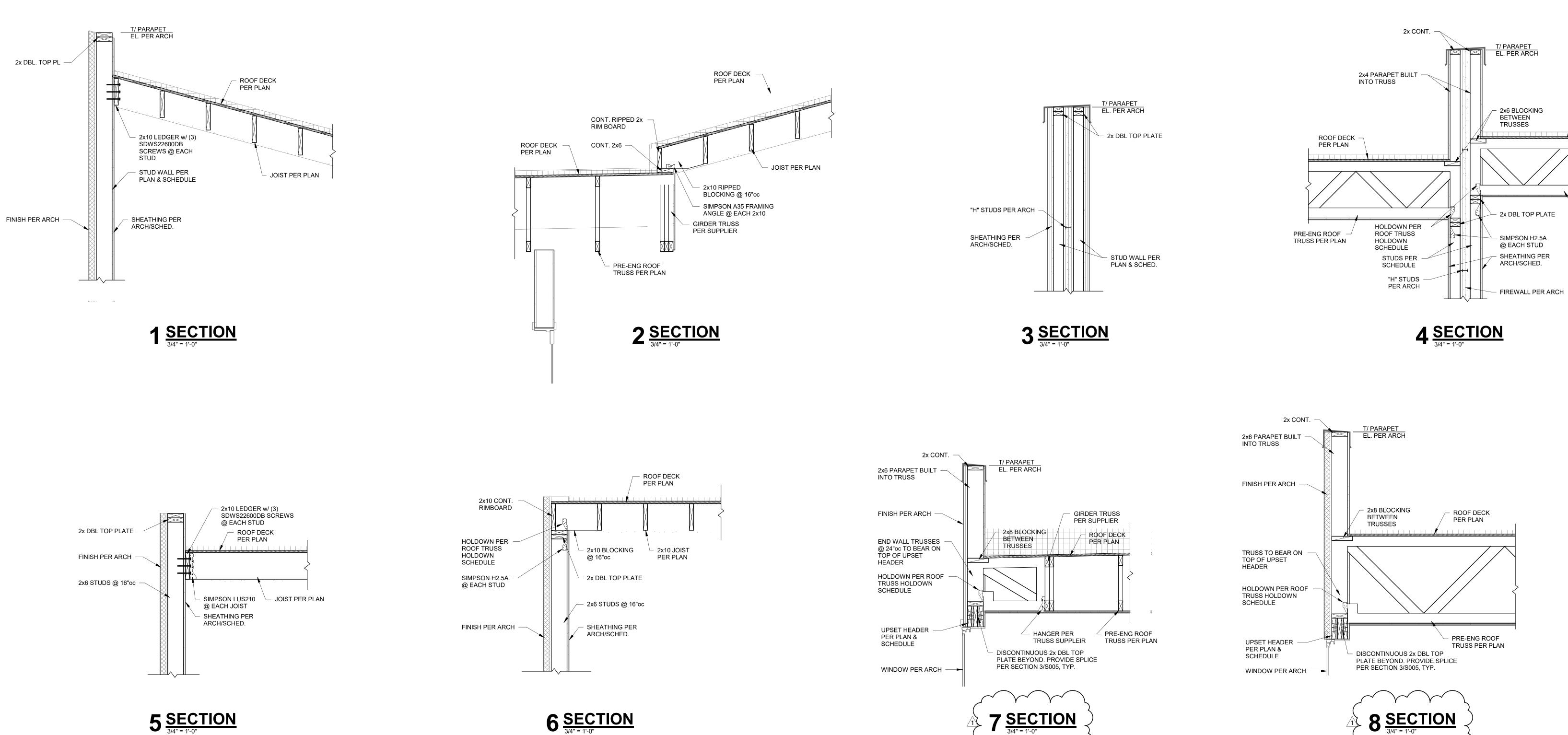
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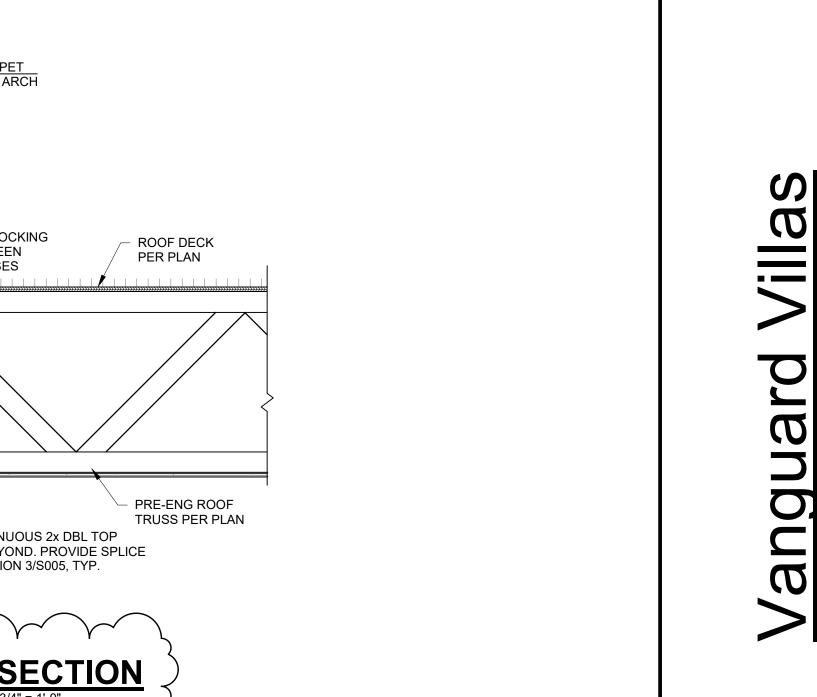
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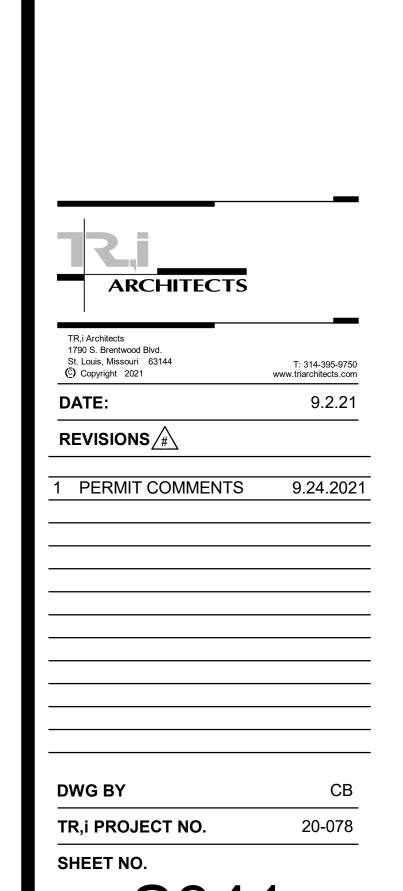
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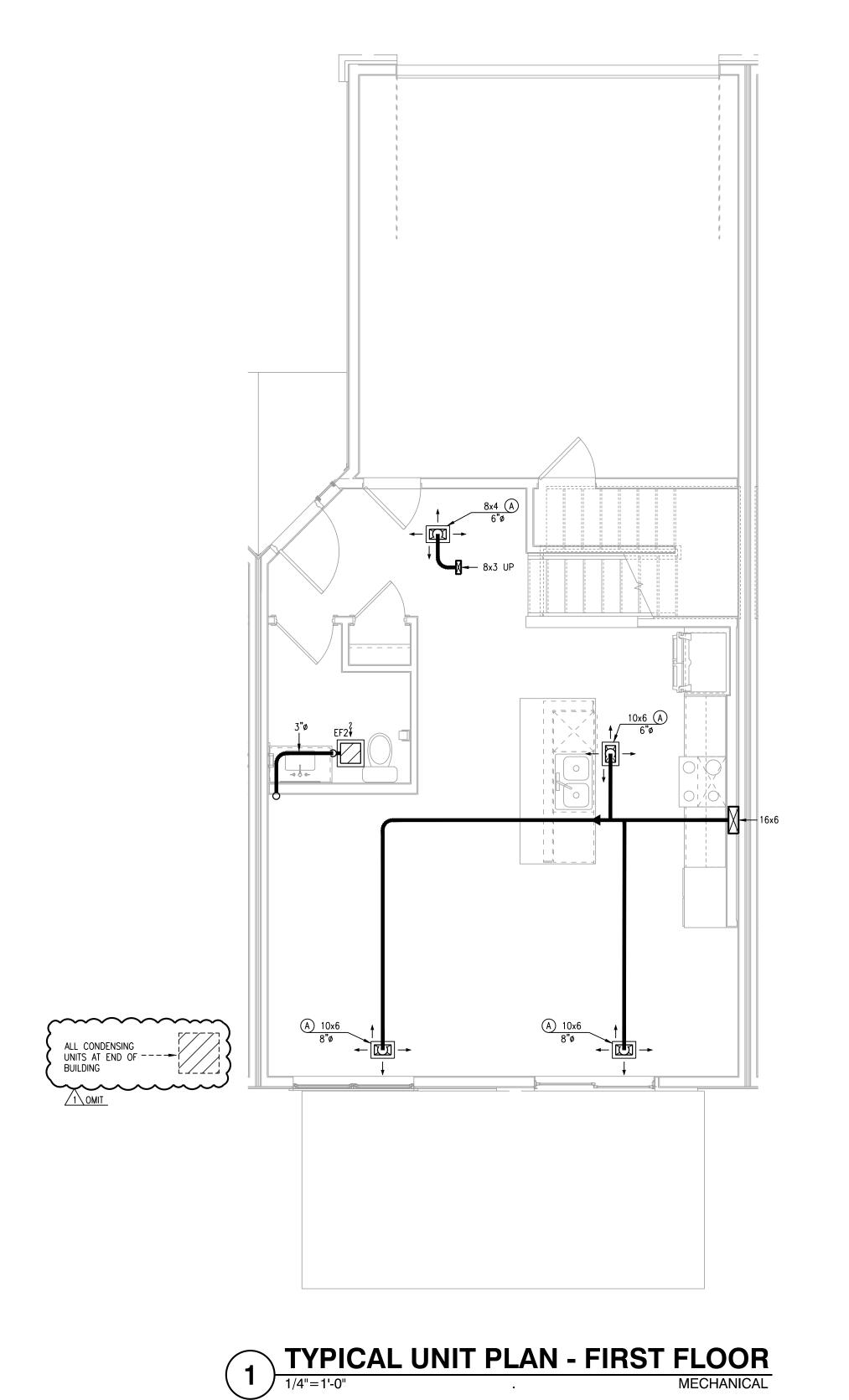


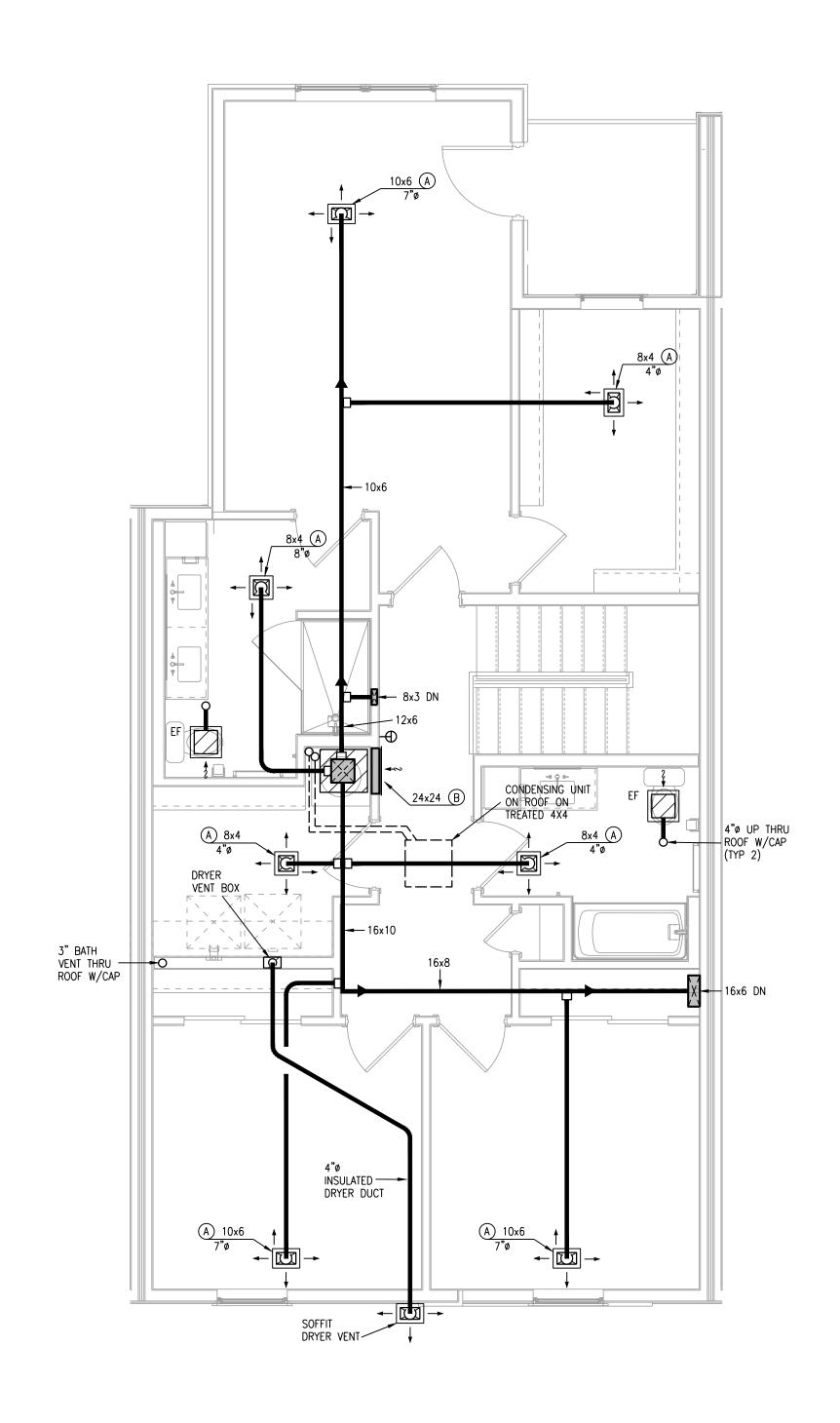
- ROOF DECK PER PLAN

PRE-ENG ROOF TRUSS PER PLAN



WOOD ROOF FRAMING SECTIONS





TYPICAL UNIT PLAN - SECOND FLOOR

1/4"=1'-0"

MECHANICAL



PROVIDE MANUFACTURER REQUIRED CLEARANCES FOR

. ALL CONDENSING UNITS ARE GROUND MOUNTED.
MANUFACTURER SHALL PROVIDE ANY ACCESSORIES
REQUIRED FOR PROPER OPERATION INCLUDING LONG
LINE SETS.

3. PROVIDE GUY GRAY MODEL DB350/DB3D DRYER VENT BOX AT ALL DRYER LOCATIONS. NOTE TOP FLOOR SHALL ROUTE THRU FLOOR BELOW TO EXTERIOR WALL.

. GENERALLY CENTER GRILLES/REGISTERS IN WALLS, OVER DOORS, ALIGN WITH WINDOWS, ETC.

MAINTAIN 3 FT. FROM EXHAUST/VENTS TO BUILDING OPENINGS. DRYER VENT CAPS SHALL HAVE 4" DEEP

. ROUTE AHU CONDENSATE INDIRECT TO FLOOR DRAINS IN AHU CLOSETS.

. EXHAUST FANS AT TOP FLOOR VENT TO ROOF.

8. EXHAUST FANS TO BE HUMIDITY-SENSING TYPE.

. TOP FLOOR DUCTS SHALL BE R-8 INSULATED AND SEALED TO PREVENT CONDENSATION.

BY 4" WIDE OPENING FOR AIR FLOW.

AHU'S AND WATER HEATERS.

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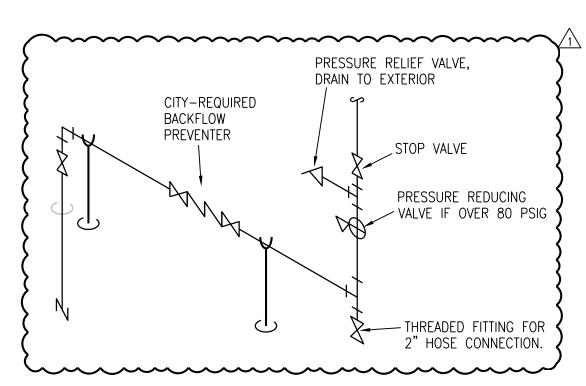
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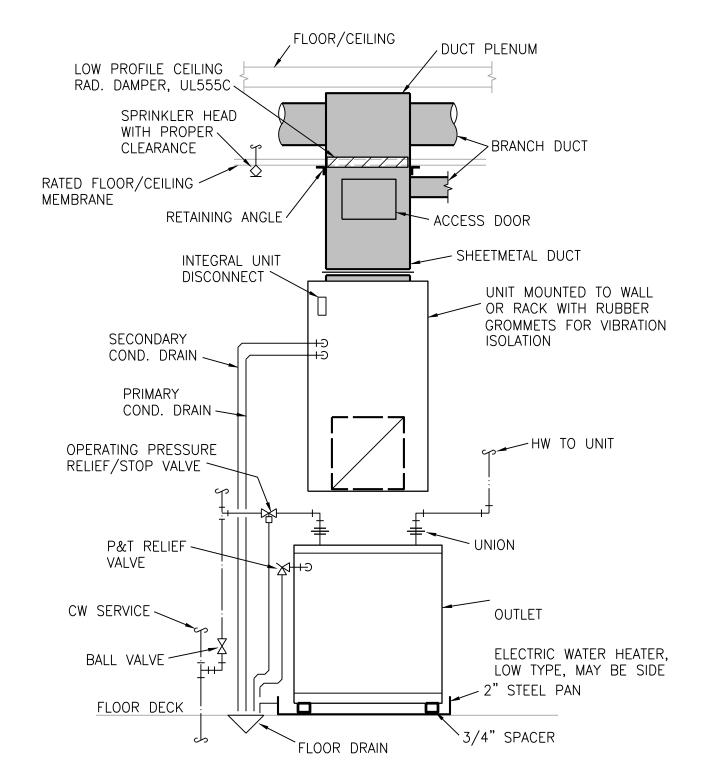
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M101

TYPICAL UNIT PLAN - MECHANICA

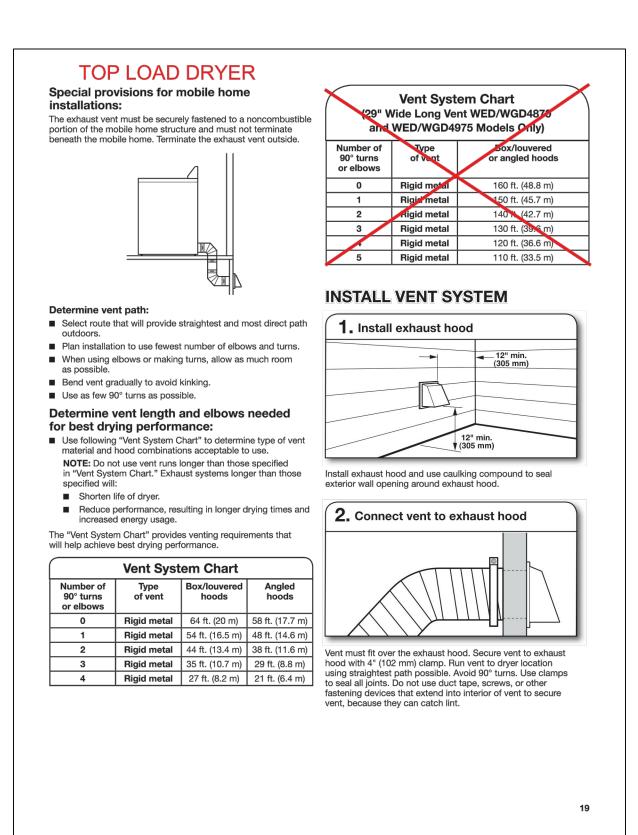




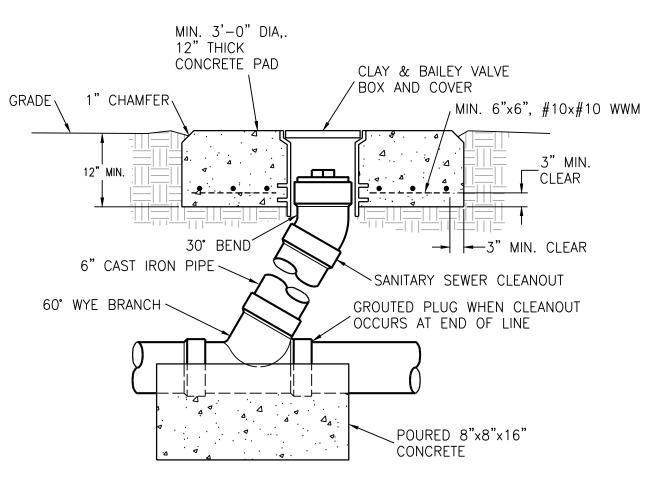


MECHANICAL CLOSET DETAIL

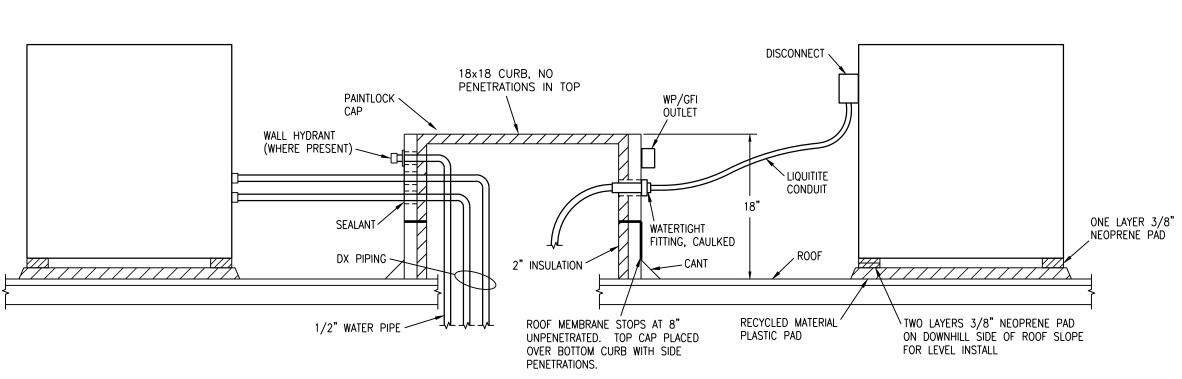
NO SCALE



6 DRYER VENT DETAIL
NO SCALE

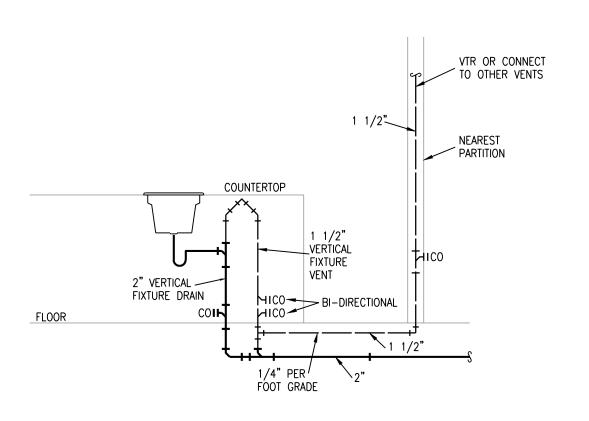


FLUSH GRADE CLEANOUT DETAIL
NO SCALE



SEALANT DX PIPING	WATERTIGHT FITTING, CAULK 2" INSULATION	l ROOF L	ONE LAYER NEOPRENE
1/2" WATER PIPE	ROOF MEMBRANE STOPS AT 8" UNPENETRATED. TOP CAP PLACED OVER BOTTOM CURB WITH SIDE PENETRATIONS.	RECYCLED MATERIAL PLASTIC PAD	TWO LAYERS 3/8" NEOPRENE PAD ON DOWNHILL SIDE OF ROOF SLOPE FOR LEVEL INSTALL
ROC	F CURB DETA	NIL	

P-1	WATER CLOSET & TYPE (TYP. FOR ALL PLUMBING FIXTURES)	7 7	MANUAL DAMPER
	WASTE LINE ABOVE EARTH (W.)	₹ #	BACKDRAFT DAMPER
++	WASTE LINE IN EARTH (W.)	Z III Z AD	AUTOMATIC DAMPER
— 1 CO	CLEAN OUT	₹ <u></u>	FIRE DAMPER
FFCO O	FLUSH FLOOR CLEAN OUT	₹ <u></u>	FIRE/SMOKE DAMPER
FGCO O	FLUSH GRADE CLEAN OUT	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	SMOKE DAMPER
2" (1) FD	FLOOR DRAIN AND TYPE	6×6 (A) 80 €	GRILLE, REGISTER OR DIFFUSER, SIZE, TYPE & CFM
—RD —	ROOF DRAIN		VOLUME EXTRACTOR AND TURNING VANES
2" (1) RD [©]	ROOF DRAIN AND TYPE		RETURN, EXHAUST OR FRESH AIR DUCT SECTION UP & DOW
	VENT LINE (V.)		SUPPLY AIR DUCT SECTION UP AND DOWN
	DOMESTIC COLD WATER SUPPLY (DCW)		FLEXIBLE DUCT CONNECTION
	DOMESTIC HOT WATER SUPPLY (DHW)		ROUND OR RECTANGULAR DUCT
	DOMESTIC HOT WATER RETURN (DHWR)		FLEXIBLE DUCT
—+ HB/36"	HOSE BIBB AND MOUNTING HEIGHT	φ	THERMOSTAT
— ₩H	WALL HYDRANT	— L —	REFRIGERANT LIQUID
— F —	FIRE LINE/STANDPIPE	—s—	REFRIGERANT SUCTION
— D —	DRAIN LINE	AD	ACCESS DOOR
— с —	NATURAL GAS LINE	AFF	ABOVE FINISHED FLOOR
-121-13	RISE & DROP IN PIPE WITH CUT-OFF VALVE	EA	EXHAUST AIR
	REDUCER	OA	OUTSIDE AIR
─ //	CHECK VALVE	RA	RETURN AIR
—₩—	STOP VALVE	SA	SUPPLY AIR
— ₩—	BALANCING VALVE	VBS	VENT BELOW SLAB
>	PLUG VALVE	VTR	VENT THRU ROOF
————	2-WAY CONTROL VALVE OR SOLENOID VALVE	•	CONNECT NEW TO EXISTING
────	3-WAY CONTROL VALVE OR SOLENOID VALVE		LOCKABLE GUARD
─ ₫─	PRESSURE REDUCING VALVE		
<u></u>	STRAINER		
	UNION		
	FLEXIBLE PIPE CONNECTION		



5 ISLAND VENT DETAIL
NO SCALE





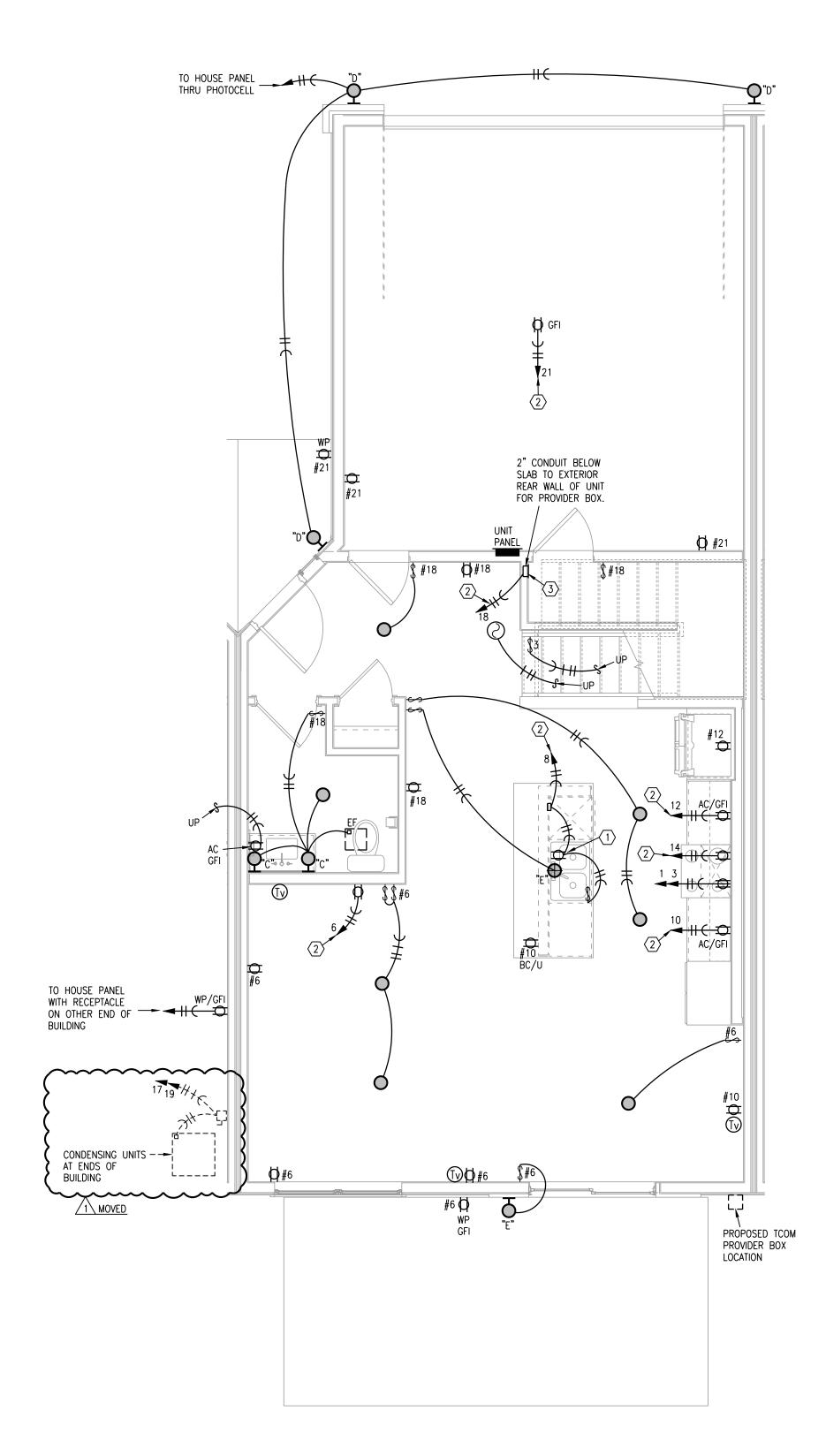
ARCHITECTS TR,i Architects T: 314-395-9750 9812 Manchester Road F: 314-395-9751 St. Louis, Missouri 63119 C Copyright 2018 www.triarchitects.com DATE: 9.2.2021 REVISIONS # PERMIT COMMENTS

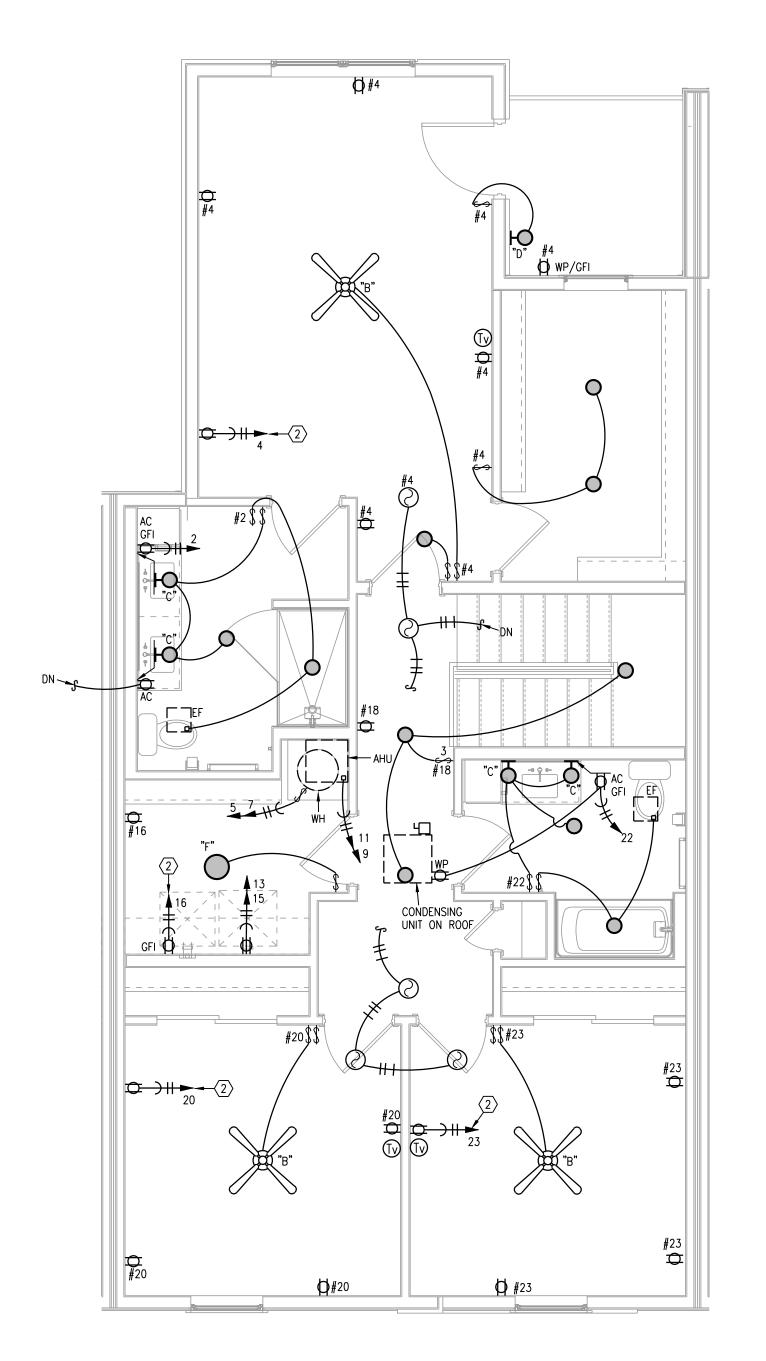
DWG BY TR,i PROJECT NO. SHEET NO.

MECHANICAL DETAILS

LIGHTING FIXTURE SCHEDULE

LABEL	MANUFACTURER	DESCRIPTION/MODEL	FINISH
Α	NORA LIGHTING	NELOCAC-8R30W ELO SURFACE MOUNT	WHITE TRIM
В	FANIMATION	FPD8534BL KUTE 52" LK8534 KUTE LIGHT KIT	BLACK
С	MATTEO	S03910MB	MATTE BLACK
D	ACCESS	20399LEDMG-BL	TEXTURED BLACK
E	ET - 2	E20366-92BK HALF MOON	BLACK
F	NORA LIGHTING	NELOCAC-11R30W ELO SURFACE MOUNT	WHITE TRIM





1 TYPICAL UNIT PLAN - FIRST FLOOR

1/4"=1'-0" ELECTRICAL

TYPICAL UNIT PLAN - SECOND FLOOR

1/4"=1'-0"

ELECTRICAL

CEILING FAN SWITCHES PROVIDED WITH FAN. CONTROL LIGHT AND FAN SEPARATELY. INTENDED FOR SINGLE GANG BOX.

2. CENTER ISLAND PENDANT LIGHTS OVER BASE BACK WALL AND CENTERED EQUALLY LEFT TO RIGHT OVER SINK. THESE ARE SEPARATELY SWITCHED.

3. GENERALLY CENTER LIGHT ON WINDOWS, DOOR, HALLWAYS, SINKS, OVER TUBS, ETC. VERIFY ALL LOCATIONS IN EACH UNIT DIMENSIONALLY WITH ARCHITECT, INTERIOR DESIGNER AND OWNER. MOUNT SWITCHES CLOSE TO DOORS OR WALL CORNERS.

THERMOSTATS HAVE LOW VOLTAGE WIRE BACK TO AHU. CONDENSING UNITS HAVE LOW VOLTAGE WIRE BACK TO

= 120V. SMOKE/CO ALARM WITH BATTERY
BACK-UP AND AUXILIARY CONTACT SO ALL SOUND
TOGETHER.

ALL ARC-FAULT CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH CEILING FANS, LED FIXTURES AND OTHER ELECTRONIC DEVICES.

3. FIXTURES ARE TYPE "A" UNLESS NOTED OTHERWISE.

FIRE ALARM HORN/STROBE CIRCUITS SHALL BE SIZED TO ACCEPT BEDROOM HORN/STROBES IN FUTURE INCLUDING WIRING AND PANÉL CAPACITY.

10. ALL RANGES SERVED BY (3) #8 AND (1) # 10 AND 50A. RECEPTACLE.

11. ALL WATER HEATERS SERVED BY (3) #10.

12. ALL WASHERS AND REFRIGERATORS HAVE RECEPTACLES AT 48". MW RECEPTACLES AT 66" (VERIFY).

13. SEE HVAC SCHEDULE AND SHOP DRAWINGS FOR AHU AND OUTDOOR UNIT CIRCUITS.

ALL DRYERS SERVED BY (4) #10 AND 30A. RECEPTACLE.

15. BELOW COUNTER RECEPTACLES AND PLATES SHALL MATCH THE BASE CABINETS WHERE THEY ARE MOUNTED (BROWN, WHITE, ETC.) VERIFY WITH ARCHITECT.

SWITCHED GFI RECEPTACLE FOR GARBAGE DISPOSER CONTINUE CIRCUIT TO DISHWASHER.

2) PROVIDE ARC-FAULT CIRCUIT BREAKER IN PANEL.

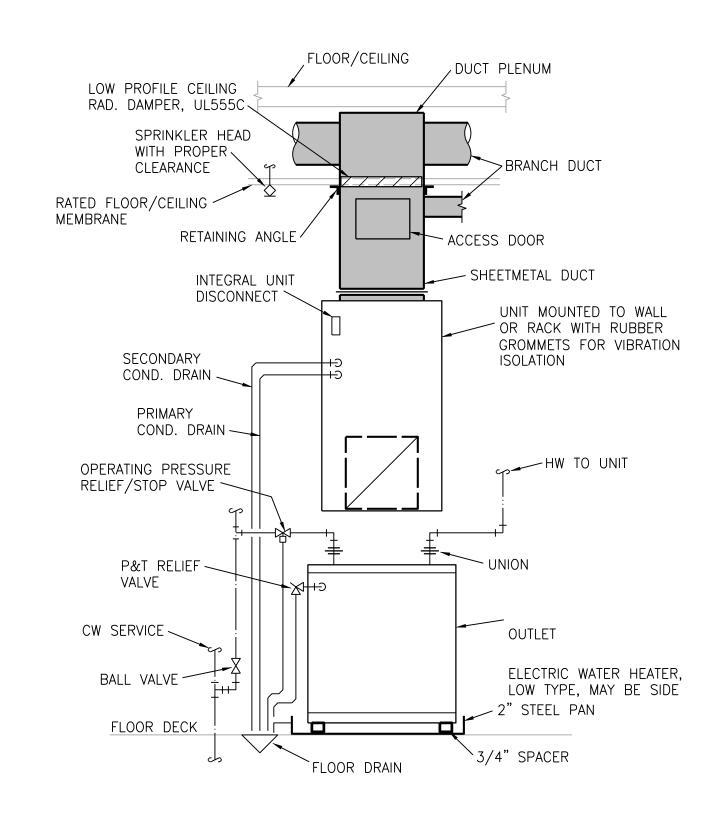
3) TELE/TV DEMARK FLUSH BOX. PROVIDE WITH DUPLEX OUTLET. PROVIDE 1" CONDUIT FROM BOX TO ABOVE CEILING AND OUT TO CEILING IN THE HALLWAY. SEE DETAILS.

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9 S	R,i Architects 812 Manchester Road tt. Louis, Missouri 63119) Copyright 2018	T: 314-395-975 F: 314-395-975 www.triarchitects.con
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TYPICAL UNIT PLAN - ELECTRICAL

3639 SW Summerfield Drive, Suite A Topeka, Kansas 66614-3974 Telephone: (785) 233-3232 FAX: (785) 233-0647 Email: lsapa@lsapa.com LSA PROJECT NO. 2104028



#	CONDUIT CONCEALED IN CEILING OR WALL	\$	SWITCH - SINGLE POLE
·#\	CONDUIT CONCEALED IN FLOOR SLAB	\$ 3, 4	3-WAY, 4-WAY
·-*	EXPOSED CONDUIT	"A"	LIGHT FIXTURE AND TYPE
#	HOMERUN – ARROW INDICATES CKT., LINES INDICATE WIRES		FLUORESCENT LIGHT FIXTURE
)	GROUND WIRE		EMERGENCY LIGHT FIXTURE WITH BATTERY PACK
— i-	GROUNDING ROD		FIXTURE ON LIFE SAFETY BRANCH OF EMERGENCY SYSTEM
ф	SINGLE RECEPTACLE	0 🗆	INCANDESCENT OR H.I.D. LIGHT FIXTURE
Ø	DUPLEX RECEPTACLE (20 AMP UNLESS NOTED)	어마	INCANDESCENT OR H.I.D. LIGHT FIXTURE (WALL MOUNTED)
#	FOURPLEX RECEPTACLE	⊗⊗н	EXIT LIGHT (CEILING OR WALL MOUNTED)
ф	208 OR 240 VOLT RECEPTACLE (20 AMP UNLESS NOTED)		FLUSH PANELBOARD (LIGHT & RECEPTACLES)
•	FLOOR DUPLEX RECEPTACLE (20 AMP UNLESS NOTED)		SURFACE PANELBOARD (LIGHT & RECEPTACLES)
▼	TELE/DATA OUTLET *		DISTRIBUTION PANEL OR SWITCHBOARD
\triangle	TELE/DATA OUTLET *	AC	DEVICE LOCATED ABOVE COUNTER
머	PUSHBUTTON	AFF	ABOVE FINISHED FLOOR
\odot	CEILING SPEAKER	D	DIMMER
Ц	BELL	E	INDICATES EXISTING DEVICE
Q	MOTOR	EDF	ELECTRIC DRINKING FOUNTAIN
\$	FUSIBLE SWITCH (BUSSMAN SSU)	GFI	GROUND FAULT INTERRUPTER
Ó	DISCONNECT SWITCH (D.S.)	NL	NIGHTLIGHT FIXTURE, WIRED HOT
⅓	COMBINATION MOTOR STARTER (CMS)	WP	WEATHERPROOF
R	RELAY	•	CONNECT NEW TO EXISTING
	JUNCTION BOX		LOCKABLE GUARD
φ	THERMOSTAT		

Luminaire Schedule - Units and Buildings							
MARK	DESCRIPTION	MFGR	MODEL	MOUNTING	FINISH	LAMPS	NOTES
Α	Disk Light	Halo	SLD612/8030/WH	jb/surface	white	1200 Lumen 3000K 15W LED	Wet Location
В	Counter pendant	Hudson Valley	Lambert #612-OB	pendant	old bronze	1-15W LED	
C	Tub/shower	Halo	SLD606/8030/WH	jb/surface	white	1200 Lumen 3000K 15W LED	Wet Location
D	Vanity Sconce	Custom	To match Stephan Outdoor Sconce	wall	aged iron	1 - 12W LED	
E	Entry/Patio Light	Avenue	54350ABZ	wall	bronze	2-8W LED	Wet Location
F	5-blade fan, 3-spd, rev. w/globe	Minka-Aire	Aviation #F852L-BN/CL with light	surface	coal	1-15W LED	Energy Star - dimmable
G	Glass globe - small	Nuvo/Rensen House	041203	surface	br. nickel	1-10W LED	
SL1	Pole Light	Cooper	GLEON-SA1-D-740-U-T3-BZ	pole	braonze	67W 8,125 Lumen 4000K	16 ft pole

LIGHTING POLE BASE DETAIL

HAND HOLE

_BOND LIGHT POLE TO GROUND

REINFORCING HOOP WITH #4

✓ AT 12" O.C. E.W. AND 2" MIN.,

PVC CONDUIT

3/4" SPARE (NOTE LOCATION ON

BACK OF HAND HOLE COVER PLATE)

CONDUCTOR IN EXTERIOR

LEVELING BOLTS

3" MAX COVER

STEEL CONDUIT

LIGHTING CIRCUIT

GROUNDING

30" WHERE IN PARKING AREA OR <3FT. FROM -

GRADE/

24" MIN.

CONCRETE BASE

BELOW GRADE

48" ANCHOR BOLTS '

CURBS. 4" WHERE

>3FT FROM CURBS.

TYPICAL PANELBOARD INSTALLATION DETAIL

AUDIO/VISUAL

HORN

AREA ALLOWED IF SIDE REACH IS POSSIBLE

PUBLIC WALL NURSE THERMOSTAT

AREA ALLOWED IF SIDE REACH IS POSSIBLE

+ FOR JUVENILE APPLICATIONS MOUNT TOP NO HIGHER THAN 40", NO LOWER

DRYER PHONE SWITCH CALL

RECEPTACLE PHONE JACK DATACOM JACK

THAN 18". VERIFY WITH ADAG FOR AGE CATEGORY.

NURSE CALL VISUAL HORN

DOME LAMP UNIT

DEVICE NOTED "AC"

4" OR NEAREST T

EXPOSED BLOCK—

COURSE

DO NOT PLACE DETECTOR IN THIS CORNER

REMOTE FIRE

ALARM ANNUNCIATOR

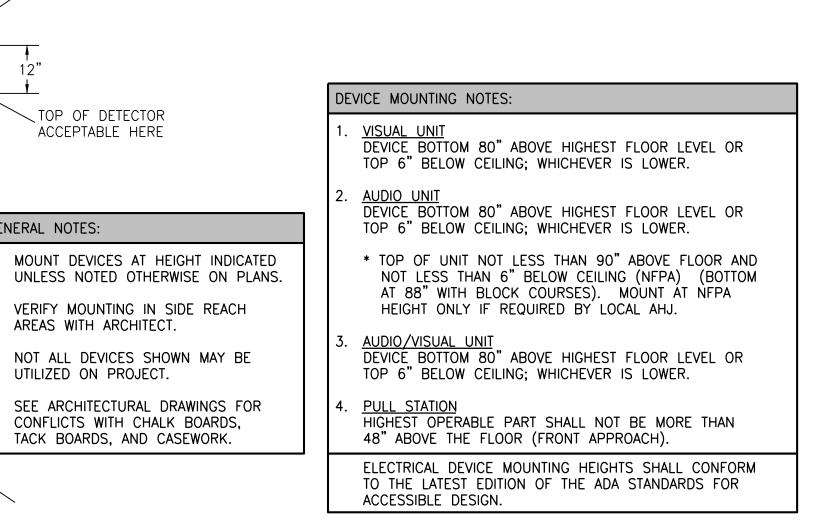
RESCUE

ASSISTANCE

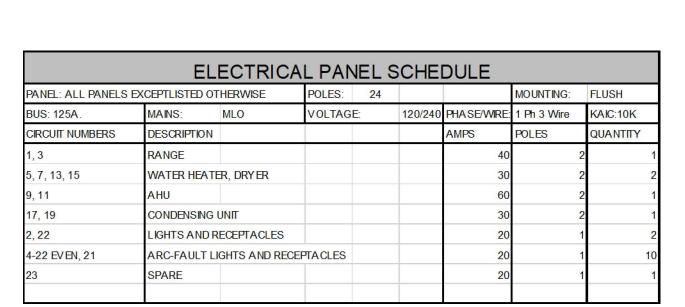
FIRE ALARM

COORDINATE ALL WORK WITH OTHER

TRADES. MAINTAIN ALL OTHER NEC CLEARANCES AND REQUIREMENTS.



MECHANICAL CLOSET DETAIL



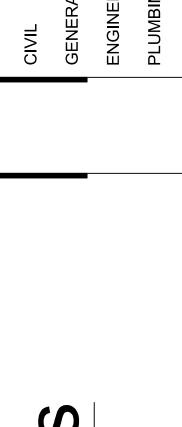
	Unit Load Calculation	
Unit: TH		VA
1635 square fee	et at 3 VA per sq. ft.	4905
2 small appliance cir	cuits	3000
Range		8000
MW		1000
Washer		1500
Dryer		5000
Water Heater		4500
Dishwasher		800
Disposer		850
Total general load		29555
NEC 220-84 Calculat	ion	
First 10 KVA at 100%	6	1000
Remainder at 40%		782
Heating Load	10000 65%	650
Total load		2432
Load for unit posice	Amp @ 240 volt/1	10
Load for unit service Connected Load	Amp @ 240 voit/1	3955
Connected Load		3933

Mult	i-Family	y Building Load Analy	/sis
Building:	4-UNIT		
Unit Quantity	Unit Type	Connected Load - VA	Total KVA
4	TH	39555	158.22
		Total Building KVA	158.22
		Total Units Per Entrance	4
		Diversity per NEC Table 220.84	0.45
		Diversified KVA	71.20
		Amps @ 240 V Single Phase	296.66
		House Load - Amps	10
		Total Transformer Demand - Amps	306.66

Multi-Family Building Load Analysis					
Building:	6-UNIT				
Unit Quantity	Unit Type	Connected Load - VA	Total KV		
6	TH	39555	237.3		
		Total Building KVA	237.3		
		Total Units Per Entrance			
		Diversity per NEC Table 220.84	0.4		
		Diversified KVA	104.4		
		Amps @ 240 V Single Phase	435.		
		House Load - Amps			
		Total Transformer Demand - Amps	445.1		

Multi-Family Building Load Analysis				
8-UNIT				
Unit Type TH	Connected Load - VA 39555	Total KV/ 316.4		
	Total Units Per Entrance Diversity per NEC Table 220.84 Diversified KVA Amps @ 240 V Single Phase House Load - Amps	316.4 0.4 136.0 566.9		
	8-UNIT Unit Type TH	8-UNIT Unit Type Connected Load - VA		





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	ARCHITE	стѕ		
St. Louis	hitects anchester Road s, Missouri 63119 rright 2018	T: 314-395-975 F: 314-395-975 www.triarchitects.cor		
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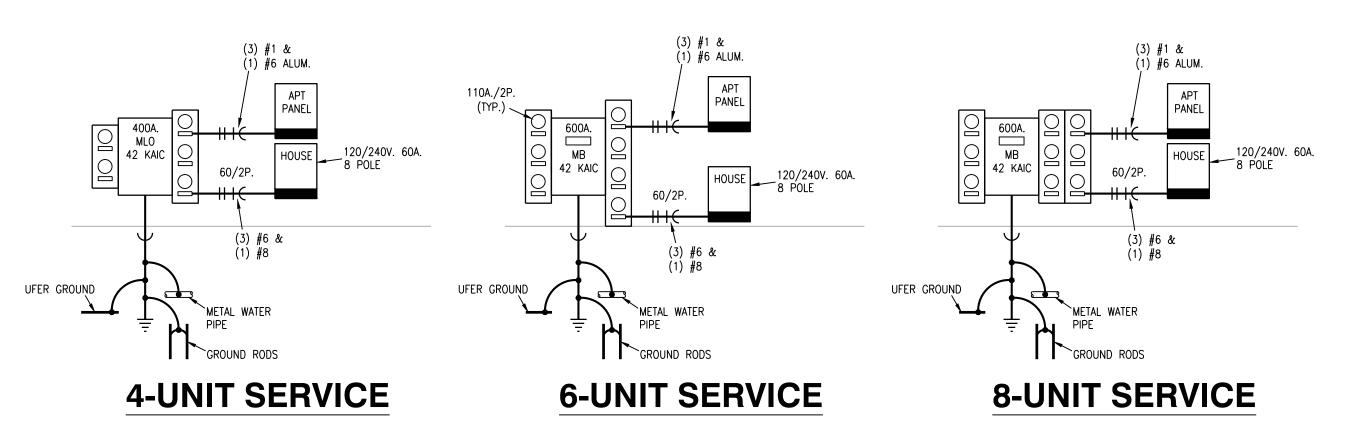
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ELECTRICAL DETAILS AND SCHEDULES



GENERAL NOTES:



5 ELECTRICAL DISTRIBUTION RISER DIAGRAM
NO SCALE

1. ROUTE TOP FLOOR SUPPLY PLUMBING IN CEILING BELOW. NO SUPPLY IN ATTIC. 2. PROVIDE AIR SHOCK SUPPRESSORS CONFORMING TO ASSE 1010 ON P-4, P-5. AND P-6. 3. CONNECT DISHWASHERS, DISPOSERS, ICE MAKERS, WASHERS.

4. PROVIDE 2" FLOOR DRAIN AT EACH AHU/WH LOCATION. 6. ROUTE 1/2" PEX TO EACH FIXTURE FROM MANIFOLD, 3/4" TO TWO OR MORE FIXTURES.

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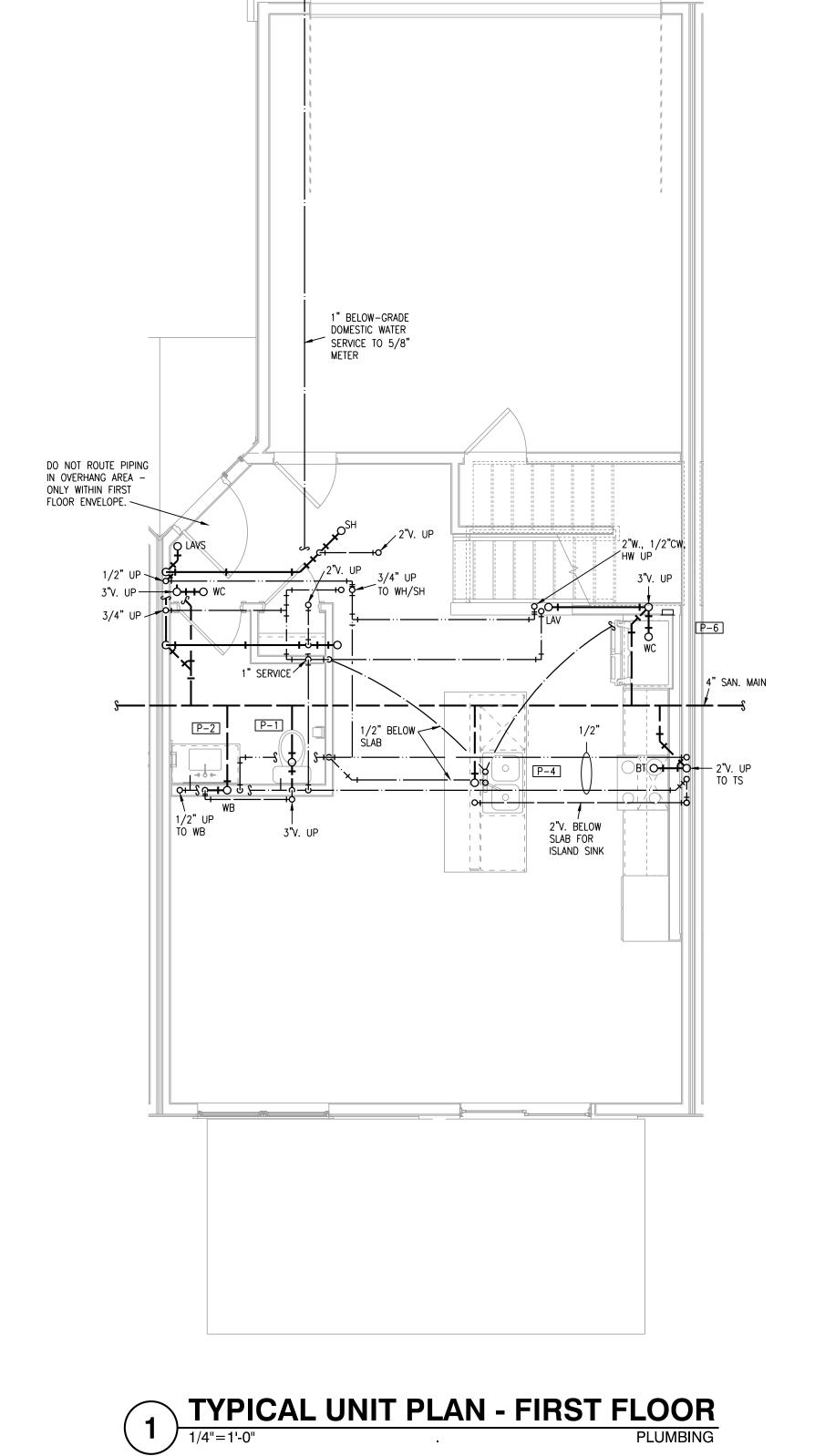
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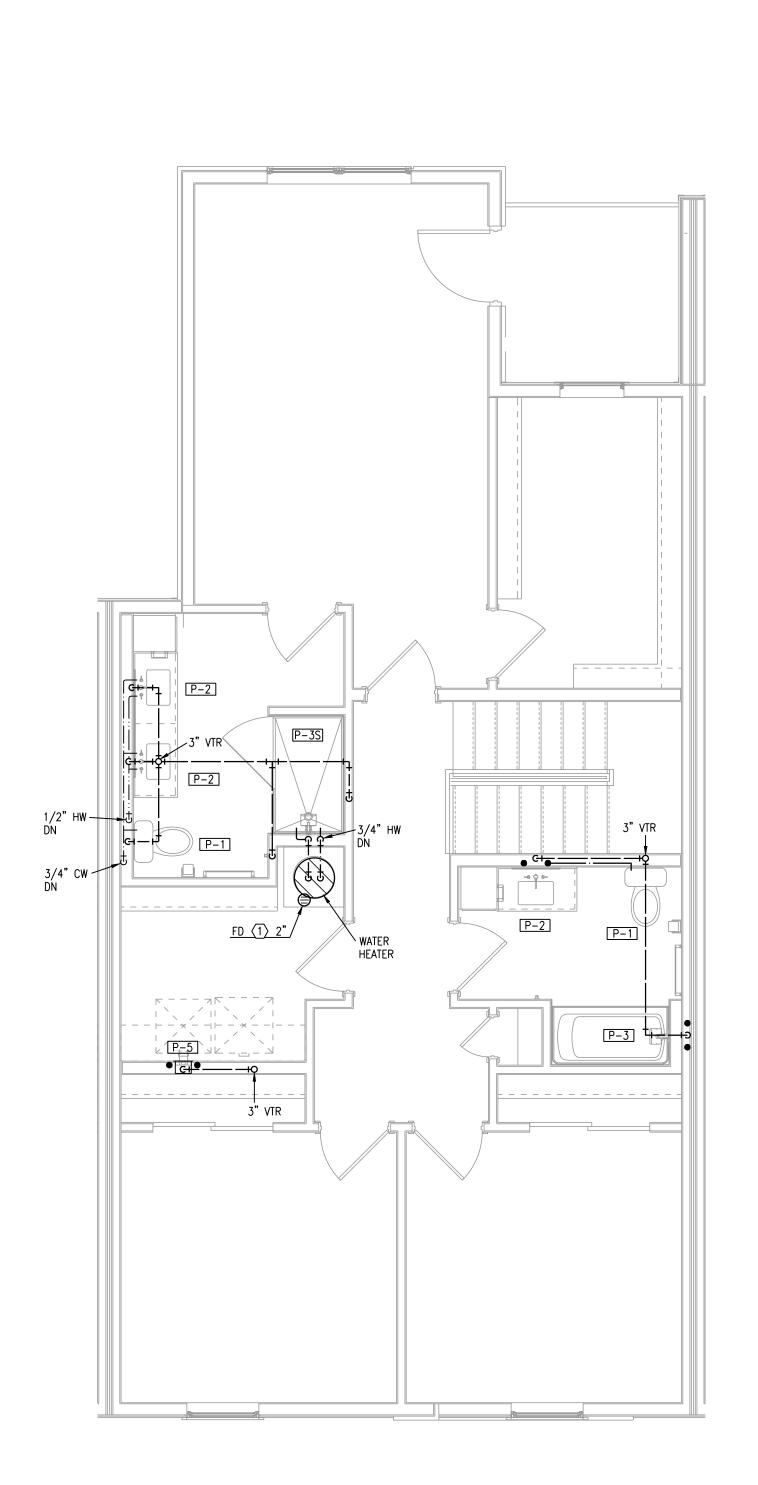
SHEET NO. TYPICAL UNIT PLAN - PLUMBING

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LSA PROJECT NO. 2104028





TYPICAL UNIT PLAN - SECOND FLOOR

1/4"=1'-0"
PLUMBING