GENERAL NOTES - STRUCTURAL

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 before proceeding.

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.) Specification for Structural Steel Buildings (AISC 360-**10**)
Member Design Basis is Allowable Stress Design (ASD)
Connection Design Basis is Allowable Stress Design (ASD)
4.) Structural Welding Code (AWS D1.3-98)
5.) Building Code Requirements for Structural Concrete (ACI 3**18**-**11**)
6.) Building Code Requirements for Masonry Structures (ACI 5**30**-**11**/TMS 402-**11**)
7.) North American Specification for the Design of Cold-Formed Steel Structural Members (AISI S100-07/S1-1)
8.) National Design Specification (NDS) for Wood Construction with 2012 Supplements (ANSI/AWC NDS-2012)
9.) Special Design Provisions for Wind and Seismic (AWC SDPWS-2012)

D. 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:
Pg = 20 psf, Ce = 1.0
Pf = 14 psf, Pm = 20 psf
Is = 1.0, Cs = 1.0, Ct = 1.0
Drift & unbalanced snow loads per ASCE/SEI 7-10

D. Lateral Loads:
1.) Wind V(ult) = 115 mph, exposure B. GCpi = +/- 0.18
Design wind pressures to be used for the design 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 7-10. 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, Ie = 1.0
Sds=0.086; Sd1=0.068; Site Classification C
Seismic Design Category B
Basic Seismic Force-Resisting System:
Above Podium:
A.17- Light-Framed Walls with Shear Panels of All Other Materials
R=2, Omega = 2 1/2, Cd = 2, V=0.043W
Podium:
A.2 - Ordinary Reinforced Concrete Shearwalls
R=4, Omega = 4, Cd = 2 1/2, V = 0.022W

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 5.5 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).

C. 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 yard 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.

E. The preceding minimum mix requirements may have water-reducing admixtures 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 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 free-draining 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.

I. 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.

J. 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"
4.) Beams or Columns:	1-1/2"
5.) Other	2"

All coverage shall be nominal bar diameter minimum.

C. All dowels shall be the same size and spacing as adjoining main bars (splice lap 48 bar diameters or 24" minimum unless noted otherwise.

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

E. Bars marked continuous and all vertical steel shall be lapped 48 bar diameters (2'-0" minimum) at splices and embedments, unless shown otherwise. Splice top bars near midspan and splice bottom bars over supports, unless noted otherwise.

F. At all holes in concrete walls and slabs, add 2 - #5 bars (opening dimension plus 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.

I. 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.

J. 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.

B. All welding shall conform to the recommendations of the AWS.

C. 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 0.4 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. Connection design and shop drawing preparation shall be completed under the direct supervision of a professional engineer licensed in the state the project is located and shop drawings and connection calculations shall bear his seal.

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. At braced frames washers shall be welded all around to the column base plate with 3/16" fillet weld.

F. Design, fabrication and erection of all open-web bar joists shall comply with the recommendations of the Steel Joist Institute (SJI). Joists shall be designed to support loads given in the standard load tables of SJI Specs and Tables plus an additional point load of 200 lbs. on the top or bottom chord at any location without additional web reinforcing.

G. All K-series joists shall bear 2-1/2" minimum on structural steel beams and be welded to the beams with 1 1/2" of 1/8" fillet weld each side (minimum).

H. All K-series joists bearing on masonry walls shall have 6" x 3/8" x 6" bearing plates set in bond beams. Bearing plates shall be located not more than 1'2" from the face of the wall on the bearing side. Joists shall bear 4" minimum on bearing plates and be welded to beams or bearing plates with 1-1/2" of 1/8" fillet weld each side (minimum).

I. All steel joists shall have horizontal bar or angle bridging per Steel Joist Institute Specifications. Provide rigid x-bridging in addition to and matching horizontal bridging where joists are discontinuous unless horizontal bridging is anchored to wall top and bottom. Joist sweep allowance shall comply with AISC Standard Practice.

J. Steel joists shall be designed for **20**psf net uplift resulting from wind loading as measured **12**ft. from a building corner, **15**psf net uplift as measured 8ft. from the building edge, and **10**psf otherwise.

K. All openings in steel joist roof to have 3x3x1/4 angle frame set between joists. Support mechanical equipment with 4x4x5/16 angles laid between joists framed to 4x4x5/16 angles (length equals mechanical unit dimension plus distance each end to next panel point) laid parallel to and welded to top and/or bottom cord of joists to distribute load to joist panel points.

L. All steel joists shall have a midspan camber approximately equal to that recommended by the Steel Joist Institute Specifications.

M. Design and installation of steel decking shall comply with the recommendations of the Steel Deck Institute (SDI). All decking shall be galvanized unless noted otherwise.

N. Allow **2.0** tons structural steel to be used as directed in field for special conditions by the engineer of record. Cost for shop drawings, fabrication, delivery, detailing, and erection to be included. 50% of structural steel allowance shall be bid as miscellaneous galvanized angle and plate.

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.

C. 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.

E. Adhesive anchors used in solid grouted masonry shall have been tested and 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 appropriate screen tubes used for adhesives.

7. Foundations

A. The soil investigation was prepared by CFS Engineer, the report number is 18-5125 and there telephone number is 913-627-9040.

B. Spread footings, grade beams, and retaining walls are designed to bear on shale bedrock capable of safely sustaining 10,000 psf.

C. Retaining walls are designed for an active lateral load of 45 pcf equivalent fluid pressure.

D. Basement walls are designed for an at rest lateral load of 60 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 seepage.

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, recompact materials to the density and water content specified for engineered fill. Do not place concrete on frozen ground.

8. Concrete Masonry Units

A. Concrete block used in exterior walls or load bearing walls shall meet the requirements of ASTM C90 and have a minimum net compressive strength of 1900 psi and laid up using type N mortar such that f'm equals 1500 psi. Mortar shall be volume proportion based cement lime mortar. Proportioning shall be completed by box measure. Any block in contact with earth shall be normal weight units, laid using type "S" mortar and grouted solid.

B. The contractor shall provide adequate temporary bracing for all masonry walls during construction.

C. All concrete block shall have 9 gage (or larger) horizontal joint reinforcing (ladder or truss) per architectural drawings and specifications (16" maximum vertical spacing).

D. Cavity wall construction shall be reinforced as designed for specific concrete block used. The horizontal joint reinforcing shall be of the ladder or truss style per specification and continuous between brick and block, as prescribed by the architectural drawings.

E. Concrete block shall be reinforced as follows in 6", 8", 10", and 12" walls:
1.) Vertical reinforcing shall be a minimum of 1 - #5 bar in 6" and 8" walls and 2 - #5 bars in 10" and 12" walls at 24" OC, at each corner, at each door and window jamb, each side of control joints and in the end void of each length of wall. Lap splices for masonry vertical reinforcing shall be 48 bar diameters or 24" minimum.
2.) Horizontal reinforcing:
A.) Horizontal joint reinforcing as noted above.
B.) Continuous horizontal bars shall be included per section or detail in bond beam or optional running bond beam where noted. Where bond beams are continuous at corners of walls, supply corner bars matching size of horizontal bars (minimum 2'-0" or 40 bar diameters in each direction).

F. Grout, where noted above, shall have a minimum design ultimate compressive strength of 2500 psi at 28 day test and 3/8" maximum aggregate size.

G. Non-load bearing concrete block walls shall be isolated from adjacent structural elements with vertical 3/8" control joints and at the top of the wall with 1" air space or compressible material and support per architectural detail.

H. Unless otherwise covered on architectural plans or specifications, vertical control joints in masonry construction shall be 3/8" wide, full height of wall. Joints shall be spaced at a maximum of 24'-0" on center and coordinated with the architect. All hovizontal joint reinforcing shall be discontinuous at control joints in masonry. All bond beam horizontal reinforcing shall be continuous through control joints.

I. Lintels over all openings up to 8'-0" wide in new and existing masonry walls not otherwise covered shall be one 6x3 1/2x5/16 angle for each 4" width of masonry. All exterior lintels to be galvanized.

J. Walls shall be anchored top and bottom by dowels matching wall vertical reinforcing(unless noted otherwise) from floor slab bottom and bracing angles at the top, per details on the drawings.

9. Light Gage Metal Structural Framing

A. All load bearing, light gage structural studs, track, and bridging shall be of the type, size, gage, and spacing as shown on the plans, minimum.

B. All materials shall be 33.000 psi minimum yield, except studs of 16 gage or heavier shall have a minimum yield of 50,000 psi.

C. All properties, fabrication, and erection shall be in accordance with latest editions of the AISI "Specifications for the Design of Cold-Formed Structural Members."

D. All framing components shall be cut squarely or at an angle to fit squarely against abutting members. Splicing of axially loaded members is not permitted. Members shall be held firmly in place until properly fastened. Attachments of similar components shall be by welding, screw attachment, or bolting. Wire tying of components is not permitted.

E. Tracks shall be securely anchored to floor and overhead members. Special anchorage requirements required for wind bracing shall be as shown on the plans.

F. Prior to fabrication and/or erection, the contractor shall submit shop drawings complete with detail of erection, fabrication, attachments, anchorages, lintels, etc., for review by the architect/engineer.

10. 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 International 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 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.

C. Blocking of stud bearing walls and shear walls shall be solid, matching sheathing joints.

D. Joist blocking and bridging shall be solid wood or cross bridging of either wood or metal straps. Spacing, in general, 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 Sturdi-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.

F. 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 wood-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 follows:

Top Chord Dead Load	= 20psf
Top Chord Live Load	= Per General Note 2A
Bottom Chord Dead Load	= 5psf
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	= 15psf
Top Chord Live Load	= 20psf
Bottom Chord Dead Load	= 10psf
Allowable Total Load Deflection	= L/300
Allowable Live Load Deflection	= L/360

Roof trusses shall be designed for wind uplift loads indicated in Building Components & Cladding Wind Loads Diagram.

11. 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 the GC.
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.) Elevations of all reinforced concrete masonry walls at a scale no smaller than 3/8" = 1'-0" showing all required reinforcing.
4.) Grout mix designs (for CMU).
5.) Construction and control joint plans and/or elevations.
6.) Structural steel shop drawings including erection drawings and piece details. Include joist, decking and connector submittals. Include miscellaneous framing specified on the structural drawings, but do not submit framing specified on non-structural drawings for Bob D. Campbell and Company, Inc. review.
7.) Structural steel connection design calculations submitted concurrently with structural steel shop drawings.
8.) Miscellaneous anchors shown on the structural drawings.
9.) Wood truss design calculations and detailed erection and fabrication drawings. Standard stick framing shop drawings need not be submitted.
10.) Standard details and bridging information for light gage metal framing. Erection plans and details for light gage metal joists and lintels spanning more than 6'-0" shall be submitted. Standard wall framing need not be submitted.

15. 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 inspections.
1. Shop Fabrication – structural steel and steel bar joist per Section 1704.2.5 unless AISC certified shop
2. Shop Fabrication – pre-engineered wood trusses per Section 1704.2.5 unless TPI certified shop
3. Steel Construction per Section 1705.2 and the quality assurance requirements of AISC 341 Chapter J (as referenced by AISC 360)
4. Cold-Formed Steel per Section 1705.2.2 and the quality assurance requirements of SDI QA/QC.
5. 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
6. Masonry Construction per Section 1705.4 and the quality assurance requirements of TMS 402/ACI530/ASCE5 and TMS802/ASO.1/ASCE6 **[Level B]**
7. Verification of Soils per Table 1705.6
8. 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
9. 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)

16. Copyright and Disclaimer

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 purposes 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	1.35"	40'	0.44"
5th FLOOR	1"	30'	0.33"
4th FLOOR	0.7"	20'	0.22"
3rd 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.

1. 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. Plumbing pipe and electrical conduit joints and connections shall be flexible and allow for expansion/contraction to prevent a rigid assembly.
c. Hangers and necessary rigid connections shall be adjusted prior to completion of construction or closing of wall/ceiling assembly.
d. Horizontal vent penetrations through exterior veneers shall be provided with double flashing.
e. All sheet metal vertical down spouts shall have intermediate slip joints.
f. 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.
d. Around rigid (concrete/CMU) stair and elevator towers and at fire separation walls provide adjustable thresholds or transitions.

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 expansion.
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 device pins shall be verified to have been pulled prior to sheathing the walls.
e. Delay placement of gyp topping around rigid (concrete/CMU) stair and elevator towers until completion of construction.

4. Material Storage and Protection
a. All stored material shall remain covered and elevated from 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 temporary pond.

5. Post Occupancy Consideration
a. Recommend a review of roof drains every 3 months for the first 24 months of occupancy and then annually and adjusted as needed.
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.
c. Remedial self-leveling work may be required around concrete or CMU stair and elevator towers as needed as shrinkage occurs.

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

No.	CONNECTION	ATTACHMENTS	(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.c.-FACE NAIL	16d BOX NAILS AT 24"o.c. MAX. FACE NAIL
7	DOUBLED TOP PLATES	3" x 0.131" NAILS AT 12"o.c.-FACE 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.c.-TOENAIL	8d NAILS AT 6"o.c. MAX.-TOENAIL
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 PARTIONS	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 AND PLATE	2- 3" x 0.131" NAILS-FACE NAIL	2-8d NAILS-FACE NAIL
19	BUILT-UP CORNER AND MULTIPLE STUDS	3" x 0.131" NAILS AT 16"o.c.	16d NAILS AT 24"o.c. MAX.
20	BUILT-UP GIRDER AND BEAMS	3" x 0.131" NAILS AT 24"o.c. FACE NAILED TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES 3- 3" x 0.131" NAILS AT ENDS AND EACH SPLICE	20d NAILS AT 32"o.c. MAX. TOP AND BOTTOM, STAGGERED ON 0PPSITE SIDES. 2-20d NAILS AT ENDS AND EACH SPLICE
21	BUILT-UP LAMINATED VENEER LUMBER BEAMS	3" x 0.131" NAILS AT 6"o.c. TOP AND BOTTOM ALONG EDGE	16d NAILS AT 12"o.c. TOP AND BOTTOM ALONG EDGE
22	2" PLANKING	4- 3" x 0.131" NAILS AT EACH SUPPORT	16d NAILS AT EACH SUPPORT
23	RIM BOARD TO TRUSS	2- 3" x 0.131" FACE NAILS (IT/IB @ EA. TRUSS)	2- 10d NAILS - FACE NAILS (IT/IB @ EA. TRUSS)
24	BUILD-UP STUD-PACK COLUMNS	REFER TO DETAIL 3/S003	REFER TO DETAIL 3/S003

NOTES:
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

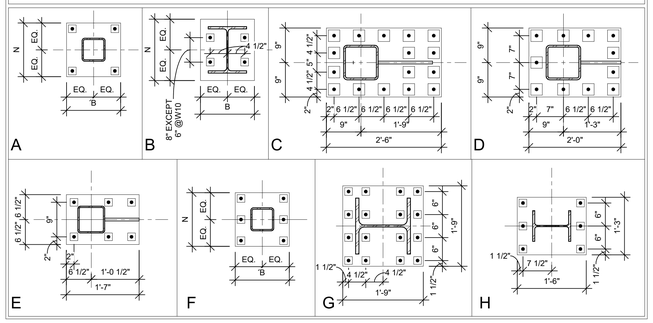
COLUMN BASE PLATE SCHEDULE

TYPE	COLUMN	BASE PLATE (NxBxT)	SHAPE	ANCHOR RODS	EMBEDMENT
1	PER PLAN	16"x16"x1 1/2" GRADE 50	F	6- 7/8" DIA. GRADE 105	2'-0"
2	PER PLAN	12"x12"x3/4"	A	4- 3/4" DIA.	1'-4"
3	PER PLAN	13"x13"x3/4"	A	4- 3/4" DIA.	1'-4"
4	PER PLAN	16"x16"x1"	B	4- 7/8" DIA. GRADE 105	2'-0"
5	PER PLAN	15"x15"x1 1/4"	B	4- 3/4" DIA.	1'-4"
6	PER PLAN	17"x17"x1 1/2"	B	4- 3/4" DIA.	1'-4"
7	PER PLAN	17"x17"x1 3/4"	B	4- 3/4" DIA.	1'-4"
8	PER PLAN	18"x18"x1 3/4"	B	4- 3/4" DIA.	1'-4"
9	PER PLAN	19"x19"x1 3/4"	B	4- 3/4" DIA.	1'-4"
10	PER PLAN	20"x20"x1 3/4"	B	4- 3/4" DIA.	1'-4"
11	PER PLAN	21"x21"x2"	B	4- 3/4" DIA.	1'-4"
12	PER PLAN	30"x18"x2" GRADE 50	C	16- 1" DIA. GRADE 105	2'-0"
13	PER PLAN	24"x18"x2" GRADE 50	D	11- 7/8" DIA. GRADE 105	2'-0"
14	PER PLAN	19"x13"x1 1/4" GRADE 50	E	6- 3/4" DIA. GRADE 105	2'-0"
15	PER PLAN	17"x17"x1 3/4"	B	4- 7/8" DIA. GRADE 105	1'-4"
16	PER PLAN	21"x21"x1" GRADE 50	G	16- 7/8" DIA. GRADE 105	1'-4"
17	PER PLAN	18"x15"x1" GRADE 50	H	6- 7/8" DIA. GRADE 105	1'-4"

NOTES:

1. SEE PLAN FOR ORIENTATION OF COLUMNS.
2. PROVIDE PLATE WASHED & EMBEDDED PLATE PER SCHEDULE @ ALL ANCHOR BOLTS.
3. U.N.O. ALL THREADED ROD A.B's SHALL BE F1554 (36ksi) MATERIAL.

BASE PLATE SHAPE (NOT TO SCALE)



COLUMN BASE PLATE AND ANCHOR-ROD CRITERIA

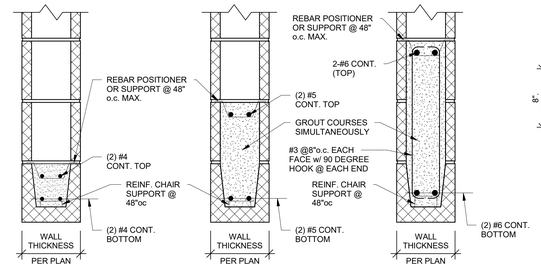
ANCHOR-ROD DIAMETER.	MAX. BASE PLATE HOLE DIAMETER.	MIN. PLATE WASHER SIZE.	MIN. PLATE WASHER THICKNESS	EMBEDDED ANCHOR PLATE SIZE
3/4"	1 5/16"	2"	1/4"	1/2"x2 1/2"x2 1/2"
7/8"	1 9/16"	2 1/2"	5/16"	1/2"x2 1/2"x2 1/2"
1"	1 7/8"	3"	3/8"	5/8"x3"x3"
1 1/4"	2 1/8"	3 1/2"	1/2"	5/8"x3 1/2"x3 1/2"
1 1/2"	2 3/8"	4"	1/2"	5/8"x3 1/2"x3 1/2"
1 3/4"	2 7/8"	4 1/2"	5/8"	3/4"x3 1/2"x3 1/2"
2"	3 1/4"	5"	3/4"	3/4"x3 1/2"x3 1/2"
2 1/2"	3 3/4"	5 1/2"	7/8"	3/4"x3 1/2"x3 1/2"

NOTES:

1. HOLE SIZES PROVIDED ARE BASE ON ANCHOR ROD SIZE AND CORRELEATE WITH ACI 117 (ACI, 2010)
2. CIRCULAR OR SQUARE WASHERS MEETING THE WASHER SIZE ARE ACCEPTIBLE.
3. HOLE IN PLATE WASHER SHALL BE 1/16" LARGER THAN ANCHOR DIAMETER.=

TYPICAL MASONRY REINFORCING NOTE:

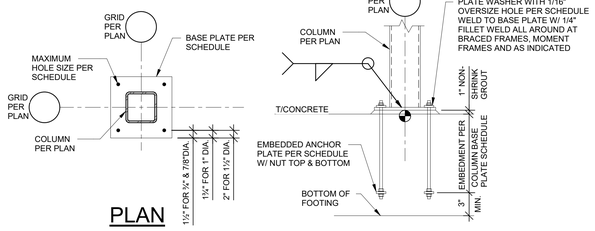
ALL INTERIOR & EXTERIOR MASONRY WALLS SHOWN ON ARCHITECTURAL AND STRUCTURAL DRAWINGS ARE TO BE REINFORCED HORIZONTALLY WITH BOND BEAMS (2 - #5 BOTTOM) AT BOTTOM COURSE, TOP COURSE, JOIST BEARING ELEVATION AND AT 8'-0" MAXIMUM O.C. AND VERTICALLY AS INDICATED ON DRAWINGS. THESE WALLS ARE TO BE ANCHORED TOP AND BOTTOM TO THE FOUNDATION, FLOOR, OR ROOF PER TYPICAL DETAILS. THE VERTICAL REINFORCING IS CONTINUOUS (IN 6'-6" MAXIMUM LENGTHS, LAPPED 2'-6" MINIMUM). FILL BLOCK CELLS AND BOND BEAMS WITH 2,500psi GROUT. RE: DETAILS "A" THROUGH "E" ON THIS SHEET.



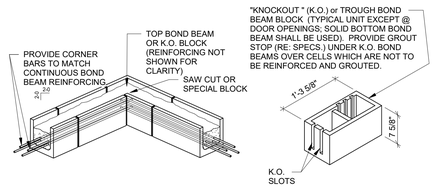
OPENINGS UP TO 4'-0" | OPENINGS 4'-0" TO 7'-4" | OPENINGS 7'-4" TO 12'-0"

TYPICAL LINTELS AT ALL CMU WALLS (U.N.O.)

C SECTION
1 1/2" = 1'-0"

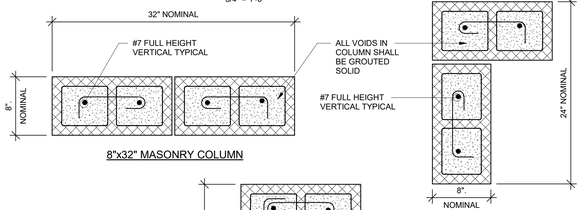


PLAN | ELEVATION

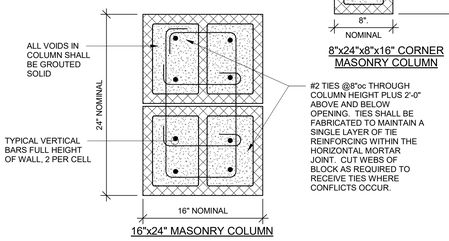


TYPICAL BOND BEAM DETAIL AT CORNER OF CMU WALL

D DETAIL
3/4" = 1'-0"

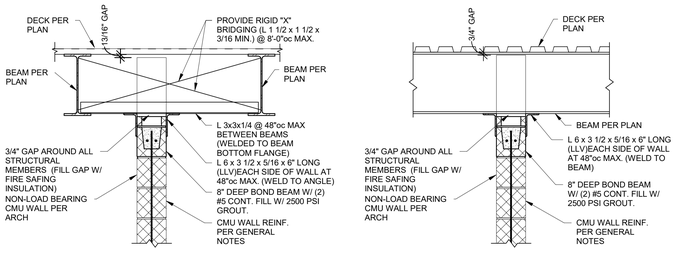


8"x32" MASONRY COLUMN | 8"x24"x8"x16" CORNER MASONRY COLUMN



16"x24" MASONRY COLUMN

E SECTION
1 1/2" = 1'-0"

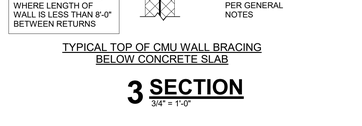


WALL PARALLEL TO JOIST | WALL PERPENDICULAR TO JOIST

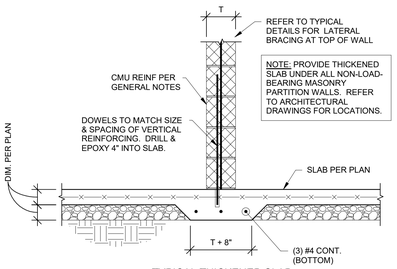
TYPICAL BRACING DETAILS FOR NON-LOAD-BEARING CMU WALLS THAT EXTEND TO DECK
(REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION)

2 SECTION
3/4" = 1'-0"

3 SECTION
3/4" = 1'-0"



TYPICAL TOP OF CMU WALL BRACING BELOW CONCRETE SLAB



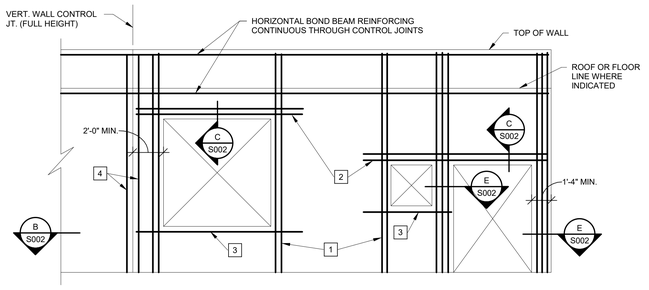
TYPICAL THICKENED SLAB
(UNDER NON-LOAD-BEARING MASONRY)

4 SECTION
3/4" = 1'-0"

Structural Foundation Schedule

NOTE:
1) EXTERIOR FOOTINGS OR FOOTING AT GRADE BEAM SHALL MATCH GRADE BEAM DEPTH AND BE PLACED WITH GRADE BEAM. PROVIDE SPECIFIED REBAR TOP AND BOTTOM WITH 4 STANDEES TO SUPPORT MATS.
2.) PROVIDE REINFORCING PER SCHEDULE EACH WAY IN TOP OF FTG. AT ALL MOMENT FRAME AND BRACED BAY COLUMNS.
3.) CENTER FOOTINGS ON COLUMNS AND/OR WALL CENTER LINES PER PLAN UNLESS NOTED OTHERWISE (U.N.O.).

Type Mark	Length	Width	Footing Thickness	Bottom Bars	Quantity (E.W. Bott)	
3.0	3'-0"	3'-0"	1'-4"	Rebar : # 4	4	
3.0A	3'-0"	3'-0"	2'-8"	Rebar : # 4	4	
3.5	3'-6"	3'-6"	1'-4"	Rebar : # 4	5	
4.0	4'-0"	4'-0"	1'-4"	Rebar : # 4	5	
4.5	4'-6"	4'-6"	1'-4"	Rebar : # 4	6	
5.0	5'-0"	5'-0"	1'-6"	Rebar : # 5	6	
5.5	5'-6"	5'-6"	1'-8"	Rebar : # 5	7	
5.5A	5'-6"	5'-6"	2'-8"	Rebar : # 5	8	
6.0	6'-0"	6'-0"	1'-10"	Rebar : # 5	8	
6.5	6'-6"	6'-6"	2'-0"	Rebar : # 5	9	
7.0	7'-0"	7'-0"	2'-2"	Rebar : # 5	11	
7.5	7'-6"	7'-6"	2'-4"	Rebar : # 5	11	
8.0	8'-0"	8'-0"	2'-6"	Rebar : # 5	13	
8.5	8'-6"	8'-6"	2'-8"	Rebar : # 5	14	
9.0	9'-0"	9'-0"	2'-10"	Rebar : # 6	12	
9.5	9'-6"	9'-6"	3'-0"	Rebar : # 6	14	
10.0	10'-0"	10'-0"	1'-10"	Rebar : # 6	17	
10.5	10'-6"	10'-6"	3'-0"	Rebar : # 6	16	
11.5	11'-6"	11'-6"	3'-0"	Rebar : # 6	8	each way top & bottom
14.0	14'-0"	14'-0"	3'-0"	Rebar : # 6	22	each way top & bottom



TYPICAL CMU WALL REINFORCING AT OPENINGS

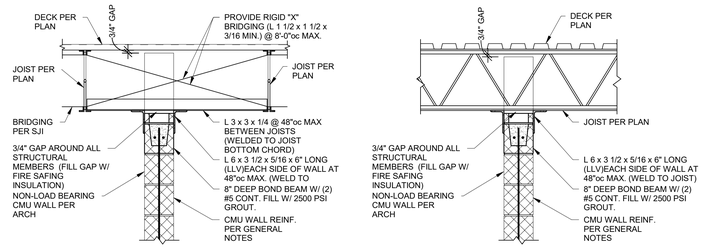
LEGEND:

1. FULL HEIGHT VERTICAL BARS AS JAMB REINFORCING IN FIRST 2 CELLS ADJACENT TO OPENING. REINFORCE EACH CELL WITH SIZE & QUANTITY OF BAR TO MATCH WALL REINFORCING (1 BAR TYPICAL IN 8" WALLS AND 2 BARS TYPICAL IN 12" WALLS).
2. LINTEL REINFORCING PER SECTION C. EXTEND 2'-0" PAST EDGE OF OPENING ON EACH SIDE (TYPICAL).
3. 2-#5 CONTINUOUS HORIZONTAL BARS AS SILL REINFORCING IN 8" COURSE BELOW OPENING (U.N.O.). EXTEND 2'-0" PAST EDGE OF OPENING ON EACH SIDE (TYPICAL).
4. FULL HEIGHT VERTICAL BARS PER MASONRY VERTICAL REINFORCING SCHEDULE LOCATED IN END CELL AT EACH SIDE OF VERTICAL WALL CONTROL JOINTS.

GENERAL CRITERIA: (SECTION A CONTINUED):

1. VERTICAL REINFORCING BARS SHALL BE DOWELED TO FOUNDATION WITH A DOWEL OF MATCHING SIZE AND SPACING.
2. CONTRACTOR SHALL COORDINATE AND VERIFY OPENINGS IN MASONRY WALLS. OPENINGS SHALL BE DETAILED ON REINFORCING STEEL SHOPE DRAWING ELEVATIONS.
3. VERTICAL CONTROL JOINTS IN MASONRY WALLS SHALL BE 3/8" WIDE, FULL HEIGHT OF WALL. JOINTS SHALL BE SPACED AT A MAXIMUM OF 24'-0" ON CENTER AND NOT LESS THAN 2'-0" FROM THE EDGE OF ANY OPENING. ALL HORIZONTAL JOINT REINFORCING SHALL BE DISCONTINUOUS AT CONTROL JOINTS. ALL BOND BEAM HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS. CONTRACTOR SHALL COORDINATE AND VERIFY ALL CONTROL JOINT LOCATIONS.

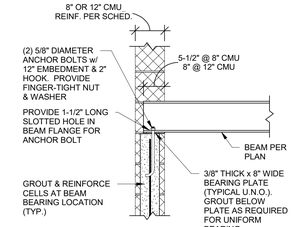
A CMU WALL ELEVATION
1 1/2" = 1'-0"



WALL PARALLEL TO JOIST | WALL PERPENDICULAR TO JOIST

TYPICAL BRACING DETAILS FOR NON-LOAD-BEARING CMU WALLS THAT EXTEND TO DECK
(REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION)

1 SECTION
3/4" = 1'-0"



TYPICAL WIDE FLANGE BEAM BEARING ON CMU (U.N.O.)

5 SECTION
3/4" = 1'-0"

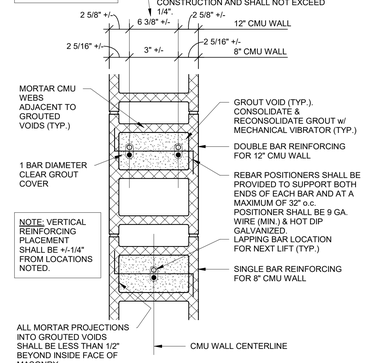
CONCRETE PILASTER SCHEDULE

CONCRETE (PSI): 3500			REBAR (KSI): 60		
MARK	SIZE	VERT. REINF.	TIES	TIE SPACING	SHAPE
P1	24"x24"	(8) #8	(2) #3	(3) @ 1 1/2"o.c. TOP REMAINDER @ 12"o.c.	
P2	36"x24"	(10) #8	(3) #3	(3) @ 1 1/2"o.c. TOP REMAINDER @ 12"o.c.	
P3	28"x24"	(8) #8	(2) #3	(3) @ 1 1/2"o.c. TOP REMAINDER @ 12"o.c.	
P4	32"DIA.	(10) #6	#3	(3) @ 1 1/2"o.c. TOP REMAINDER @ 12"o.c.	
P5	24"DIA.	(8) #6	#3	(3) @ 1 1/2"o.c. TOP REMAINDER @ 12"o.c.	

NOTE:
1.) ALL PILASTER SHALL HAVE (3) ADDITIONAL TIES @ TOP 5".
2.) PILASTER ARE TO BE CENTERED ON STEEL COLUMN U.N.O.

NOTE: REINFORCING SHALL BE PLACED IN POSITIONEERS PRIOR TO GROUTING.

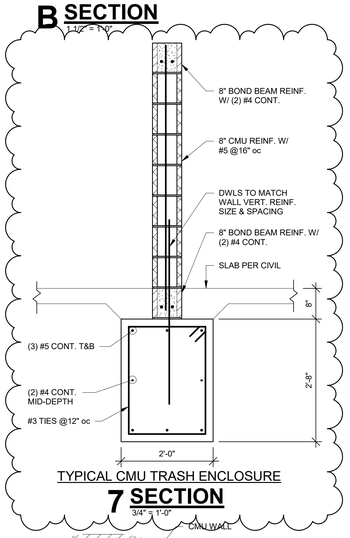
ADJUSTMENTS TO DIMENSIONS TO PROVIDE DEFINED CLEAR GROUT COVER ARE ACCEPTABLE, BUT ALL ADJUSTMENTS SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION AND SHALL NOT EXCEED 1/4".



NOTE: ALL MASONRY VOIDS AND BOND BEAMS TO BE GROUTED SHALL BE FREE OF DEBRIS AND MORTAR DROPPINGS PRIOR TO GROUTING. ANY MASONRY w/ DROPPINGS OR DEBRIS OBSERVED IN VOIDS SHALL BE REJECTED.

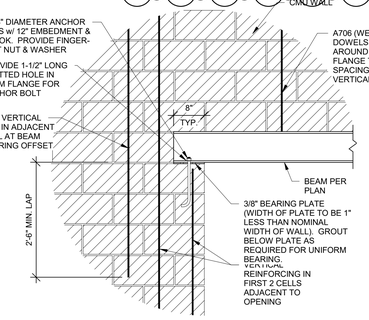
TYPICAL REBAR POSITIONING DETAIL

B SECTION
1 1/2" = 1'-0"



TYPICAL CMU TRASH ENCLOSURE

7 SECTION
3/4" = 1'-0"



TYPICAL STEEL LINTEL DETAIL AT CMU WALL

6 SECTION
3/4" = 1'-0"

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
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Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119

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T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS 2

8	REVISION 3	04.03.20

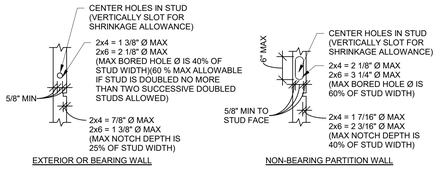
DWG BY Author

TR.i PROJECT NO. 18-046

SHEET NO.

S002

SCHEDULES & CMU DETAILS

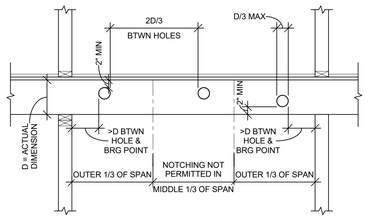


EXTERIOR OR BEARING WALL NON-BEARING PARTITION WALL

TYPICAL NOTES FOR BEARING WALLS
1. HOLES SHALL NOT BE LOCATED IN THE SAME STUD AS A CUT OR NOTCH
2. CONTACT ARCHITECT PRIOR TO CUTTING OR NOTCHING TO VERIFY SIZE AND LOCATION IF HOLE IS GREATER THAN 20% STUD WIDTH OR NOTCHES GREATER THAN 10% STUD WIDTH ARE REQUIRED IN TWO OR MORE CONSECUTIVE STUDS
3. NOTCHES OR HOLES NOT PERMITTED IN JAMBS, STUD PACKS AND AT ENDS OF SHEARWALLS
4. STUD SHOES ARE NOTE AN ACCEPTABLE REMEDIATION OF OVER-NOTCHED OR OVER-CUT STUDS WITHOUT PRIOR APPROVAL BY EOR
5. SLOT HOLES VERTICALLY FOR SHRINKAGE ALLOWANCE.

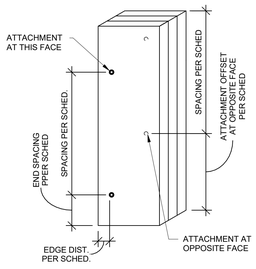
ALLOWABLE HOLES/NOTCHES IN WALL STUDS

1 DETAIL
3/4" = 1'-0"



NOTE:
1. CONTACT ARCHITECT PRIOR TO CUTTING JOISTS TO VERIFY SIZE & LOCATION.
2. DETAIL APPLIES TO 2x FRAMING ONLY. REFER TO ENGINEERED OR COMPOSITE LUMBER MANUFACTURER'S RECOMMENDATIONS AT PSLs, LVLS, LSLs & GLULAM.

2 DETAIL
3/4" = 1'-0"

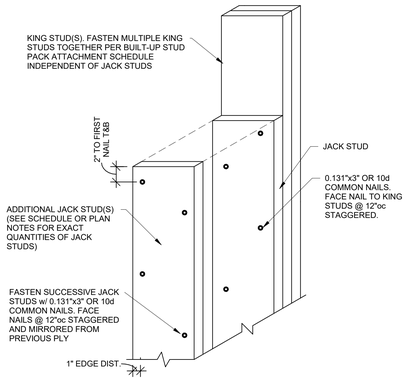


TYPICAL MULTI-PLY STUD CONNECTION

3 DETAIL
1 1/2" = 1'-0"

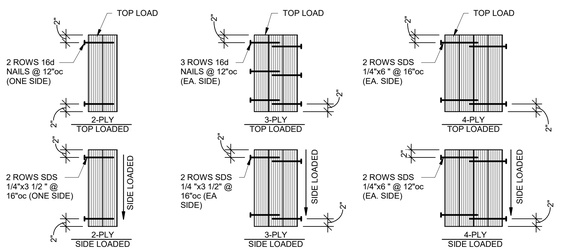
BUILT-UP STUD PACK COLUMN ATTACHMENT SCHEDULE		
NUMBER OF PLIES	ATTACHMENT AT COLUMN STUD PACKS SUPPORTING BEAMS	ATTACHMENT AT COLUMN STUD PACKS SUPPORTING TRUSSES
2-PLY MEMBERS	8d NAILS AT 12"oc, 1" FROM EDGE, w/ OPPOSITE EDGE NAILED FROM OPPOSITE SIDE OFFSET 6", @ 12"oc w/ FIRST NAIL 2" FROM EA. END	8d NAILS AT 12"oc, 1" FROM EDGE, w/ OPPOSITE EDGE NAILED FROM OPPOSITE SIDE OFFSET 6", @ 12"oc w/ FIRST NAIL 2" FROM EA. END
3-PLY MEMBERS	20d NAILS AT 16"oc, 1 1/2" FROM EDGE w/ OPPOSITE EDGE NAILED FROM OPPOSITE SIDE OFFSET 8", @ 16"oc w/ FIRST NAIL 4" FROM EA. END	8d NAILS AT 12"oc, 1" FROM EDGE, w/ OPPOSITE EDGE NAILED FROM OPPOSITE SIDE OFFSET 6", @ 12"oc w/ FIRST NAIL 2" FROM EA. END
4-PLY MEMBERS	1/4"Ø x5" SIMPSON SDS SCREWS AT 16"oc, 1 1/2" FROM EDGE w/ OPPOSITE EDGE SCREWED FROM OPPOSITE SIDE OFFSET 8", @ 16"oc w/ FIRST SCREW 4" FROM EA. END	3 PLIES ATTACHED PER 3-PLY ATTACHMENT w/ 4th PLY ATTACHED w/ 8d NAILS AT 12"oc IN 2 ROWS, 1 1/2" FROM EDGE, OFFSET ROW 6"
5-PLY MEMBERS	1/4"Ø x6" SIMPSON SDS SCREWS AT 12"oc, 1 1/2" FROM EDGE w/ OPPOSITE EDGE SCREWED FROM OPPOSITE SIDE OFFSET 6", @ 12"oc w/ FIRST SCREW 4" FROM EA. END	3 PLIES ATTACHED PER 3-PLY ATTACHMENT w/ 4th & 5th PLY ATTACHED w/ 8d NAILS AT 12"oc IN 2 ROWS, 1 1/2" FROM EDGE, OFFSET ROW 6"
6-PLY MEMBERS	1/4"Ø x8" SIMPSON SDS SCREWS AT 12"oc, 1 1/2" FROM EDGE w/ OPPOSITE EDGE SCREWED FROM OPPOSITE SIDE OFFSET 6", @ 12"oc w/ FIRST SCREW 4" FROM EA. END	3 PLIES ATTACHED PER 3-PLY ATTACHMENT w/ 4th PLY ATTACHED w/ 8d NAILS AT 12"oc IN 2 ROWS, 1 1/2" FROM EDGE, OFFSET ROW 6" AND 5th AND 6th PLIES ATTACHED w/ 1/4"Ø x5" SIMPSON SDS SCREWS @ 12"oc IN 2 ROWS, 1 1/2" FROM EDGE, OFFSET ROSS 6"oc w/ FIRST SCREW 4" FROM EA. END

NOTES:
1. ALL BUILT-UP STUD PACKS MUST ALIGN FLOOR-TO-FLOOR WITH SOLID BLOCKING (SQUASH BLOCKS) AT FLOOR CAVATIES.
2. EXTEND ALL STUD PACKS TO COLUMNS UNLESS NOTED OTHERWISE.
3. ALL NAILS ARE COMMON NAILS UNLESS NOTED OTHERWISE.



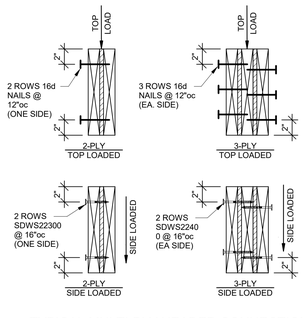
TYPICAL JACK STUD ATTACHMENT

4 DETAIL
1 1/2" = 1'-0"



TYPICAL MULTI-PLY BEAM CONNECTION

5A DETAIL
3/4" = 1'-0"



TYPICAL MULTI-PLY HEADER CONNECTION

5B DETAIL
1 1/2" = 1'-0"

WOOD FLOOR/ROOF FRAMING HEADERS/BEAMS & JAMBS SCHEDULE

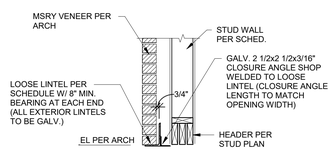
MARK	HEADER	JAMB TYPE # (U.N.O. W/ COLUMN SCHEDULE) " 4 " (2nd FLOOR FRAMING, TYP U.N.O.)	" 3 " (3rd FLOOR FRAMING, TYP U.N.O.)	" 2 " (4th FLOOR FRAMING, TYP U.N.O.)	" 1 " (ROOF FRAMING, TYP U.N.O.)	NOTES
B1-#	(2) 2x10	HUC28-2 & 2 KING	HUC28-2 & 2 KING	HUC28-2 & 2 KING		REFER TO DETAILS 8 & 8A ON S330
D1-#	(3) 2x8	1 JACK / 1 KING	1 JACK / 1 KING	1 JACK / 1 KING	1 JACK / 1 KING	BALC BMS TO BE TREATED PER GEN. NOTE '12B'
D2-#	(3) 2x8	1 JACK / 2 KING	1 JACK / 2 KING	1 JACK / 1 KING	1 JACK / 1 KING	
E1-#	(3) 2x10	2 KING	2 KING	2 KING	1 JACK / 2 KING	BALC BMS TO BE TREATED PER GEN. NOTE '12B'
E2-#	(3) 2x10	HUC210 (MAX) & 3 KING	HUC210 (MAX) & 3 KING	HUC210 (MAX) & 3 KING		REFER TO DETAILS 8 & 8A ON S330
F1-#	(3) 2x12	1 JACK / 2 KING	1 JACK / 2 KING	1 JACK / 1 KING	2 KING	BALC BMS TO BE TREATED PER GEN. NOTE '12B'
G1-#	**AT FLOOR:** 1 1/4" x 18" LSL RIM BOARD w/ 18"Dp PRE-ENG TRUSS **AT ROOF:** GIRDER TRUSS	@2x4 WALL: 5 KING @2x6 WALL: 2 KING	@2x4 WALL: 4 KING @2x6 WALL: 2 KING	@2x4 WALL: 3 KING @2x6 WALL: 2 KING	@2x4 WALL: 2 KING @2x6 WALL: 2 KING	DESIGN TRUSS TO SPAN OPENINGS FOR DL = 175plf, LL = 200plf (UNFACTORED) RE: DETAIL 7B/S330
G2-#	**AT FLOOR:** 1 1/4" x 18" LSL RIM BOARD w/ 18"Dp PRE-ENG TRUSS **AT ROOF:** GIRDER TRUSS	@2x4 WALL: 6 KING @2x6 WALL: 3 KING	@2x4 WALL: 5 KING @2x6 WALL: 2 KING	@2x4 WALL: 4 KING @2x6 WALL: 2 KING	@2x4 WALL: 3 KING @2x6 WALL: 2 KING	DESIGN TRUSS TO SPAN OPENINGS FOR DL = 175plf, LL = 200plf (UNFACTORED) RE: DETAIL 7B/S330
H1-#	5 1/2" x 9 1/2" GLULAM	3 KING	2 KING	2 KING		BALC BMS TO BE TREATED PER GEN. NOTE '12B'
H2-#	8 3/4" x 13 1/2" GLULAM	HGU9.00-SDS (ONE FLANGE CONCEALED)	HGU9.00-SDS (ONE FLANGE CONCEALED)	HGU9.00-SDS (ONE FLANGE CONCEALED)		BALC BMS TO BE TREATED PER GEN. NOTE '12B'
L1-#	(3) 1 3/4" x 7 1/4" LVL	2 JACK / 1 KING				
N1-#	(3) 1 3/4" x 9 1/4" LVL	2 JACK / 2 KING			2 KING	
Q1-#	(3) 1 3/4" x 14" LVL	2 JACK / 2 KING		3 KING		
S1-#	(3) 1 3/4" x 14" LVL	4 KING	3 KING			
W1-#	(3) 1 3/4" x 18" LVL	3 KING	3 KING	2 KING	2 KING	

NOTES:
1. JAMB STUDS SHALL MATCH SIZE & GRADE OF WALL STUDS U.N.O.
2. WHERE BEAM IS NOTED "UPSET", ALL JAMB STUDS NOTED WILL EXTEND TO DOUBLE TOP PLATE.
3. ALL EXTERIOR LUMBER TO BE TREATED AGAINST MOISTURE. REFER TO NOTE 11B ON SHEET S001 FOR FIRE RETARDANT TREATED HEADER AND STUD REQUIREMENTS.
4. PROVIDE SQUASH BLOCKS AT TRUSSES & BLOCKING FRAMING WHERE JAMBS OR STUD PACKS ARE DISCONT AND IN TRUSS CAVITY. QUANTITY TO MATCH JAMB OR STUD PACK ABOVE.
5. PROVIDE ½" PLYWOOD SPACER PLATES AT INTERIOR HEADERS CONSTRUCTED WITH 2x LUMBER.
6. AT CONTRACTOR'S OPTION, PROVIDE GLULAM IN LIEU OF PSL OF EQUAL OR GREATER STRENGTH.
7. REFER TO DETAIL 3/S003 FOR MULTI-PLY MEMBER CONNECTION REQUIREMENTS.
8. ATTACH JAMB & KING STUDS TOGETHER PER CONNECTION TYPE 24 ON NAILING SCHEDULE ON S001.

WOOD STUD BEARING WALL SCHEDULE

MARK	1st FLOOR WALLS (2nd FLOOR FRAMING)	2nd FLOOR WALLS (3rd FLOOR FRAMING)	3rd FLOOR WALLS (4th FLOOR FRAMING)	4th FLOOR WALLS (ROOF FRAMING)	NOTES
1	2x6 @ 16"oc	2x6 @ 16"oc	2x6 @ 16"oc	2x6 @ 16"oc	@2x4 CORRIDOR WALL: REFER TO WALL TYPE "4"
2	2x6 @ 16"oc w/ ADDT'L 2x6 @ 32"oc	2x6 @ 16"oc	2x6 @ 16"oc	2x6 @ 16"oc	
3	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc	2x4 @ 16"oc	
4	(2) 2x4 @ 16"oc	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc	2x4 @ 16"oc	
5	(2) 2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	(2) 2x4 @ 16"oc	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc	
6	2x10 @ 16"oc	2x10 @ 16"oc	2x10 @ 16"oc	2x10 @ 16"oc	PROVIDE 2x BLOCKING AT MID HEIGHT BTWN EA. STUD
SEE NOTES	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc w/ ADDT'L 2x4 @ 32"oc	2x4 @ 16"oc	@ ALL EXTERIOR 2x4 WALLS

NOTES:
1. PROVIDE 2x BLOCKING AT MID HEIGHT (5'-0" MAX) AT ALL LOAD BEARING WALLS NOT SHEATHED ON BOTH SIDES.
2. ALL STUDS TO BE No. 2 GRADE U.N.O.
3. RE: 3/S003 FOR NAILING OF MULTIPLE STUDS.
4. REFER TO ARCH/MEP DRAWING FOR LOCATIONS OF FURRED OUT WALLS TO ACCOMODATE PLUMBING OR MEP ITEMS.
5. REFER TO FRAMING PLANS AND ARCH PLANS FOR LEVEL(S) AT WHICH WALLS OCCUR.
6. STACK/ALIGN WALL STUDS FROM FLOOR TO FLOOR AT ALL EXTERIOR WALLS.



TYPICAL LOOSE LINTEL DETAIL

6 TYPICAL LOOSE LINTEL DETAIL
3/4" = 1'-0"

LOOSE LINTEL SCHEDULE	
FOR OPENINGS:	GALV. ANGLE
OPENING < 9'-0"	6"x4"x5/16" (LLV)

PLAN NOTES

A	18" Dp PRE-ENG FLOOR TRUSSES @24"oc
B	PRE-ENG ROOF TRUSSES @24"oc
C	STEEL SADDLE PER 7/S307
D	UPSET (4) 1 3/4"x18" LVL BM. INTERRUPT CONT. LSL RIMBOARD TO ALLOW FULL BRG ON TOP PL
E	UPSET 5 1/2"x13 1/2"x15'-0" LG GLULAM OUTRIGGER
F1	HGUS5.50/10 HANGER
F2	
G	UPSET 3 1/2"x14" PSL BEAM
H	UPSET 7"x14" PSL BEAM (INSTALL TIGHT TO BOTTOM OF DECK PER 8/S330)
J	UPSET (2) 1 3/4"x18" LVL w/ (2) KING STUDS EA. END. ALIGN EDGE OF BEAM w/ CORRIDOR SIDE FACE OF STUD.
K	UPSET (2) 1 3/4"x18" LVL BEAM. BEAM TO CANTILVEVER OUT TO EXTERIOR WALL.
L	UPSET 3 1/2" x 9 1/2" GLULAM BEAM w/ (2) KING STUDS @ BRG WALL OR HU410 HANGER @ BEAM CONNECTION.
M	UPSET (3) 1 3/4"x14" LVL BEAM. REFER TO DETAIL 12/S307 FOR FRAMING AT EA. END
N1	UPSET (3) 1 3/4"x11 1/4" LVL BEAM w/ HGU5.50-SDS HANGER (H=11) EA. END
N2	UPSET (3) 1 3/4"x14" LVL BEAM w/ HGU5.50-SDS HANGER (H=11) EA. END
P1	UPSET 5 1/4"x18" PSL BEAM w/ (4) 2x6 KING STUDS EA. END
P2	UPSET 7"x18" PSL BEAM w/ (5) 2x6 KING STUDS EA. END

JOIST/BEAM/TRUSS HANGER SCHEDULE

JOIST/BEAM/TRUSS SIZE	HANGER SIZE	NOTES
2x10	LUS28 HU210	AT CORRIDOR & BALCONY * AT SKEWED CONDITIONS
2x12	LUS210	AT CORRIDOR
(2) 2x12	LUS210-2	AT CORRIDOR
18" TRUSS FACE MOUNT TO UPSET BEAM	LUS410 *HHUS419	* AT SKEWED CONDITIONS

NOTES:
1. HANGERS APPLY TO ALL LOCATIONS WHERE NOT OTHERWISE SPECIFIED IN DETAIL OR PLAN NOTE

ROOF TRUSS HOLDOWN SCHEDULE

TRUSS TYPE	SIMPSON STRONG TIE CONNECTION
COMMON/HIP/JACK AND 1-PLY TRUSSES	H2.5A
1-PLY TRUSS PER TRUSS SHOP DWGS GIRDER TRUSS AS NOTED PER PLAN	(2) H2.5A (ONE EACH SIDE)
2-PLY TRUSS PER TRUSS SHOP DWGS GIRDER TRUSS AS NOTED PER PLAN	LGT2
3-PLY TRUSS PER TRUSS SHOP DWGS OR GIRDER TRUSS AS NOTED PER PLAN	LGT3

NOTES:
1. GC COORDINATE HOLDOWN CONNECTION TYPE, QUANTITY & LOCATION WITH FINAL ROOF TRUSS SHOP DRAWINGS.

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TR.i Architects
Architects of the Possible®

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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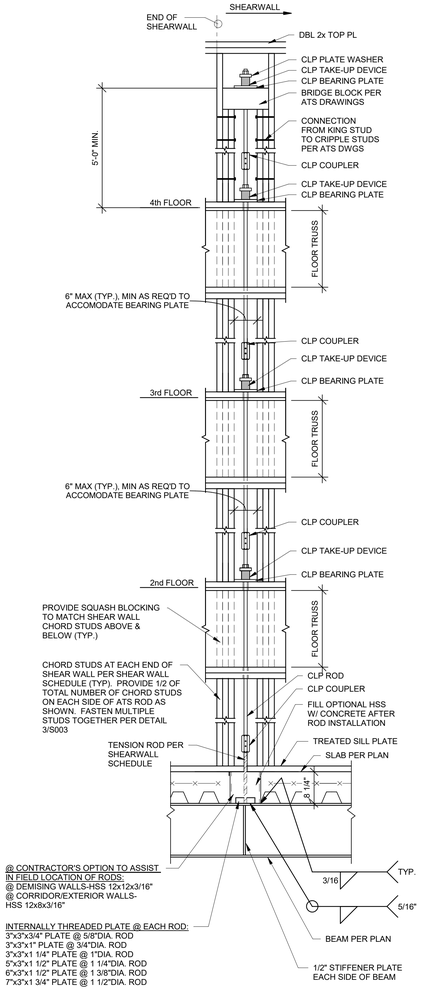
TR.i PROJECT NO. 18-046

SHEET NO.

S003

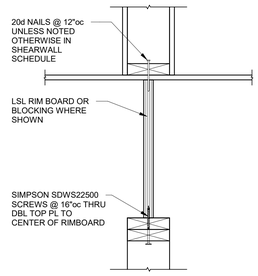
TYPICAL WOOD GRAVITY SCHEDULES & DETAILS



TYPICAL ANCHOR TIEDOWN SYSTEM DETAIL AT EACH END OF SHEAR WALLS

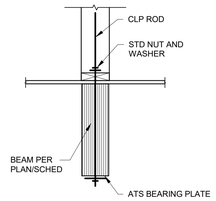
REFER TO PLANS FOR SHEAR WALL LOCATIONS AND TO SHEAR WALL SCHEDULE ON THIS SHEET FOR ADDITIONAL INFORMATION.

1 DETAIL 3/4" = 1'-0"



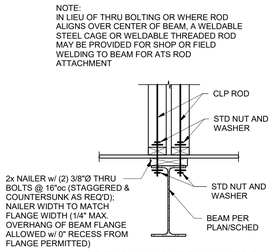
TYPICAL SHEARWALL SILL PL ATTACHMENT AT 2x SILL

2 SECTION 1 1/2" = 1'-0"



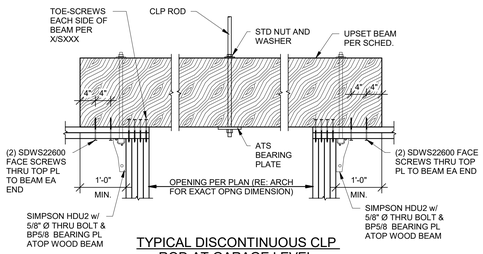
TYPICAL HOLDOWN ATOP WOOD BM

3 SECTION 1" = 1'-0"



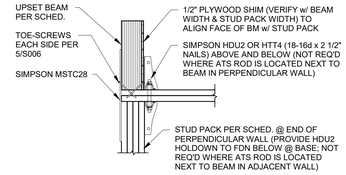
TYPICAL HOLDOWN ATOP STEEL BEAM ABOVE PODIUM

4 SECTION 1" = 1'-0"



TYPICAL DISCONTINUOUS CLP ROD AT GARAGE LEVEL

5 SECTION 3/4" = 1'-0"



TYPICAL END BEARING AT PERPENDICULAR WALL OF UPSET BEAM SUPPORTING DISCONTINUOUS ATS ROD

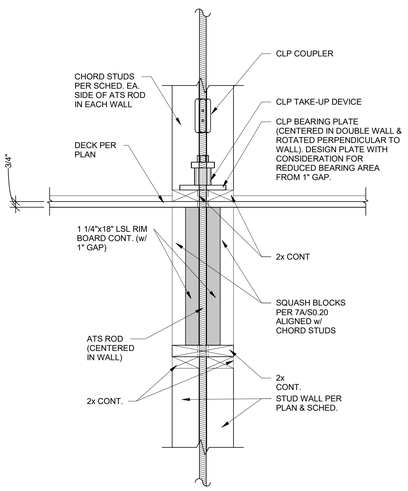
6 SECTION 3/4" = 1'-0"

TYPICAL UPSET BEAM NEAR END OF SHEARWALL

7 SECTION 3/4" = 1'-0"

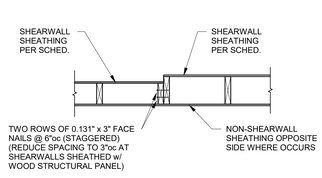
TYPICAL HDU FLOOR TO FLOOR HOLDOWN

8 SECTION 3/4" = 1'-0"



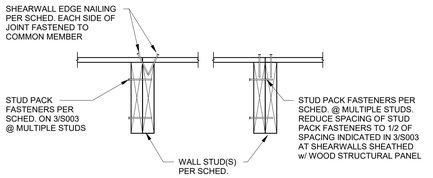
TYPICAL SINGLE ATS ROD AT DOUBLE SHEARWALLS

9 SECTION 1 1/2" = 1'-0"



TYPICAL SHEARWALL DETAIL AT WALL STUD SIZE TRANSITION

10 SECTION 3/4" = 1'-0"



TYPICAL SHEARWALL SHEATHING JOINT

11 SECTION 1 1/2" = 1'-0"

SHEARWALL SCHEDULE

SHEARWALL TYPE		FLOOR 1st FLOOR WALLS	FLOOR 2nd FLOOR WALLS	FLOOR 3rd FLOOR WALLS	FLOOR 4th FLOOR WALLS	PLATE CONNECTION (SILL TO RIM BOARD & RIM BOARD TO TOP PLATE) (RE: NOTES 6 & 7)
SW1	MATERIAL & THICKNESS	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	
	NAIL SIZE & SPACING	6d NAILS @ 4/4	6d NAILS @ 7/7	6d NAILS @ 7/7	6d NAILS @ 7/7	
	SHEAR FORCE	175 plf	115 plf	115 plf	115 plf	
SW2	MATERIAL & THICKNESS	(2)5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	1st FLR - 20d NAILS @ 8"oc
	NAIL SIZE & SPACING	BASE PLY: 6d COOLER NAILS @ 9/9 FACE PLY: 8d COOLER NAILS @ 7/7	6d NAILS @ 4/4	6d NAILS @ 7/7	6d NAILS @ 7/7	
	SHEAR FORCE	250 plf	175 plf	115 plf	115 plf	
SW3	MATERIAL & THICKNESS	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	(2)5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES UNBLOCKED	2nd FLR - 20d NAILS @ 8"oc 1st FLR - 20d NAILS @ 6"oc
	NAIL SIZE & SPACING	8d NAILS 4/12	BASE PLY: 6d COOLER NAILS @ 9/9 FACE PLY: 8d COOLER NAILS @ 7/7	6d NAILS @ 4/4	6d NAILS @ 7/7	
	SHEAR FORCE	380 plf	250 plf	175 plf	115 plf	
SW4	MATERIAL & THICKNESS	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	5/8" GYPSUM SHEATHING ONE SIDE, w/ EDGES BLOCKED	3rd FLR - 20d NAILS @ 8"oc 2nd FLR - 20d NAILS @ 6"oc 1st FLR - 20d NAILS @ 6"oc
	NAIL SIZE & SPACING	8d NAILS 4/12	8d NAILS 4/12	8d NAILS 6/12	6d NAILS @ 4/4	
	SHEAR FORCE	380 plf	380 plf	260 plf	175 plf	
SW5	MATERIAL & THICKNESS	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	7/16" OSB SHEATHING ONE SIDE, w/ EDGES BLOCKED	4th FLR - 20d NAILS @ 8"oc 3rd FLR - 20d NAILS @ 8"oc 2nd FLR - 20d NAILS @ 6"oc 1st FLR - 20d NAILS @ 6"oc
	NAIL SIZE & SPACING	8d NAILS 4/12	8d NAILS 4/12	8d NAILS 6/12	8d NAILS 6/12	
	SHEAR FORCE	380 plf	380 plf	260 plf	260 plf	

NOTES:
1. NAILING SHALL BE TO ALL STUDS, TOP & BOTTOM PLATES, AND BLOCKING WHERE INDICATED. NAILS FOR GYPSUM SHEATHING ARE COOLER NAILS AND NAILS FOR OSB SHEATHING ARE COMMON NAILS. GYPSUM CAN BE ATTACHED WITH DRYWALL SCREWS AT SAME SPACING INDICATED FOR NAILS.
2. HOLDOWNS PER PLAN & SCHEDULE.
3. WHERE THE ENDS OF PERPENDICULAR SHEAR WALLS INTERSECT AND ONLY ON HOLDOWN SHOWN ON PLAN, FASTEN ALL STUDS TOGETHER PER SCHEDULE AND USE LARGER OF THE TWO HOLDOWNS SHOWN IN THE SHEARWALL SCHEDULE.
4. REFER TO HOLDOWN SCHEDULE FOR NUMBER OF STUDS REQ'D AT EA END OF THE SHEARWALL
5. NAIL AND STAPLE SPACING SHOWN AS (#/#) INDICATES FASTENERS SPACING IN INCHES AT THE EDGES/FIELD WHERE FIELD IS THE INTERMEDIATE MEMBERS.
6. TYPICAL SILL PLATE TO WOOD (RIM BOARD) SHALL BE 20d NAILS AT 12"oc UNLESS NOTED OTHERWISE IN SCHEDULE. TYPICAL WOOD (RIM BOARD) TO TOP PLATES SHALL BE SDWS22500 SCREWS @ 16"oc.
7. TYPICAL SILL PLATE TO CONCRETE SHALL BE 1/2"Øx6" Lg SIMPSON TITEN HD ANCHOR:
   AT 2x4 WALLS SPACE AT 24"oc MAX WITH 1/4"x2 1/2"x2 1/2" PLATE WASHER OR SIMPSON BPS1/2-3 @ CONTRACTORS OPTION
   AT 2x6 WALLS SPACE AT 24"oc MAX WITH 1/4"x2 1/2"x4 1/2" PLATE WASHER OR SIMPSON BPS1/2-6 @ CONTRACTORS OPTION
   AT 2x8 WALLS STAGGER AT 18"oc MAX WITH 1/4"x2 1/4"x2 1/2" PLATE WASHER OR SIMPSON BPS1/2-3 @ CONTRACTORS OPTION
8. PLATE WASHERS TO MAINTAIN MAX OF 1/2" BETWEEN EDGE OF SILL PLATE AND EDGE OF PLATE WASHER.
9. OSB @ INTERIOR WALL SHALL BE IN ADDITION TO 5/8" GYP SHEATHING.
10. SHEARWALL SHEATHING CALLED OUT AT CORRIDOR WALLS SHALL BE LOCATED AT UNIT SIDE OF WALL.
11. REFER TO NOTE 11.B ON S0.01 FOR FIRE RETARDANT TREATED SHEATHING REQUIREMENTS.

HOLDOWN SCHEDULE

MARK	FLOOR LEVEL (w/ ROD SIZE PER FLOOR& # OF REQ'D CHORD STUDS) 1st FLOOR	2nd FLOOR	3rd FLOOR	4th FLOOR
A	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6
B	3/4"Ø STANDARD THREADED ROD w/ (6)2x4 OR (4)2x6	5/8"Ø STANDARD THREADED ROD w/ (6)2x4 OR (4)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6
C		3/4"Ø STANDARD THREADED ROD w/ (6)2x4 OR (4)2x6	1/2"Ø STANDARD THREADED ROD w/ (4)2x4 OR (2)2x6	3/8"Ø STANDARD THREADED ROD w/ (2)2x4 OR (2)2x6

NOTES:
1. HOLDOWN TYPES ARE BASED UPON CONTINUOUS THREADED RODS UTILIZING CLP SYSTEMS.
2. RODS SHALL HAVE THE FOLLOWING MINIMUM TENSILE CAPACITY:
   A. 3/8"Ø = 2,900 LBS
   B. 1/2"Ø = 4,270 LBS
   C. 5/8"Ø = 6,675 LBS
   D. 3/4"Ø = 9,610 LBS
3. REFER TO SECTION DETAILS ON S0.03 FOR TYPICAL HOLDOWN DETAILS.
4. ALL RODS TO HAVE HALF OF THE LISTED REQ'D STUDS EA SIDE OF THREADED ROD TO MATCH STUD SIZE & GRADE NOTED IN WALL SCHEDULE. CHORD STUDS ARE IN ADDITION TO BEARING WALL OR HEADER JAMB STUDS - PROVIDE ADDITIONAL STUDS AS REQ'D TO MEET QUANTITY NOTED IN SCHED. OFFSET STUD PACK 3" TYPICAL FROM CENTERLINE OF THREADED ROD. PROVIDE SQUASH BLOCKS WITHING FLOOR PLATE DEPTH (TRUSS DEPTH) ALIGNED WITH STUD PACKS. QUANITY OF SQUASH BLOCK TO MATCH QUANITY OF STUDS BELOW.
5. PROVIDE SIMPSON ATS-SBC WELDED TO STEEL WIDE-FLANGE (PRIOR TO POURING CONCRETE).
6. PROVIDE PLATE WASHER AND NUT CAPABLE OF DEVELOPING CAPACITY OF ROD AT EACH FLOOR.
7. PROVIDE TAKE-UP DEVICE AT EACH FLOOR CAPABLE OF ACCOMODATING THE SHRINKAGE INDICATED IN DETAIL 1/S0.06.
8. PROVIDE COUPLING TAKE-UP DEVICE AS REQUIRED.
9. PROVIDE SHOP DRAWINGS SHOWING LOCATIONS OF ALL HOLD-DOWNS AND HARDWARE FOR REVIEW BY THE EOR PRIOR TO INSTALLATION.
10. THE HOLE THRU THE TOP AND SILL PLATES SHALL BE EQUAL TO THE ROD DIAMETER PLUS 1/4".

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MECHANICAL ENGINEER
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CLIENT NAME
TR.i Architects
STRUCTURAL
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ENGINEER
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Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS 1

8	REVISION 3	04.03.20

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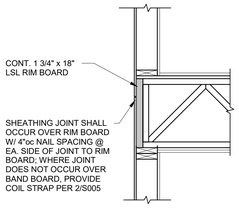
TR.i PROJECT NO. 18-046

SHEET NO.

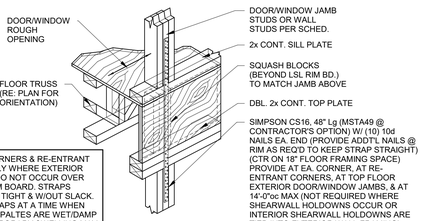
S004

TYPICAL WOOD LATERAL SCHEDULES & DETAILS



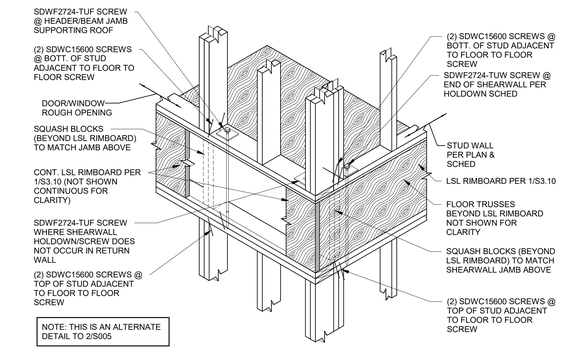
TYPICAL EXTERIOR SHEATHING JOINT

1 SECTION 3/4" = 1'-0"



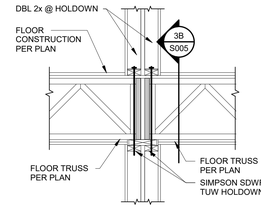
TYPICAL COIL STRAP @ EXTERIOR JAMBS SUPPORTING ROOF FRAMING AT FLOOR DIRECTLY BELOW ROOF AND FLOOR TO FLOOR TIES WHERE DETAIL 1/S005 IS NOT FOLLOWED

2 SECTION 3/4" = 1'-0"



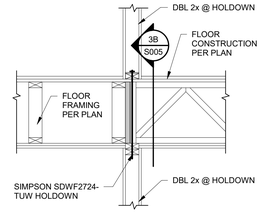
TYPICAL FLOOR-TO-FLOOR SCREW @ EXTERIOR JAMBS SUPPORTING ROOF FRAMING AT FLOOR DIRECTLY BELOW ROOF AND FLOOR TO FLOOR TIES WHERE DETAIL 1/S005 IS NOT FOLLOWED

2A SECTION 3/4" = 1'-0"



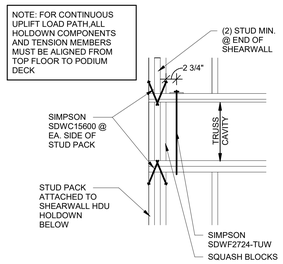
TYPICAL UNIT UPLIFT HOLDOWN DETAIL @ TOP FLOOR ROOF TRUSS BEARING WALLS

3 SECTION 3/4" = 1'-0"



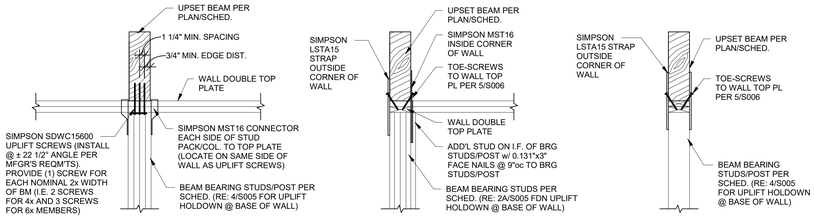
TYPICAL UNIT UPLIFT HOLDOWN DETAIL @ TOP FLOOR ROOF TRUSS BEARING WALLS

3A SECTION 3/4" = 1'-0"



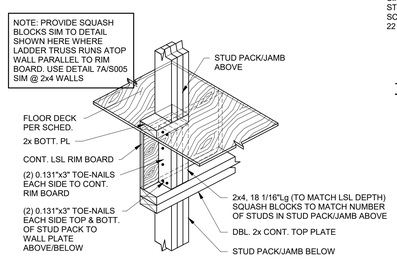
ALTERNATE FLOOR TO FLOOR TIE-DOWN AT END OF WALL

5 SECTION 3/4" = 1'-0"



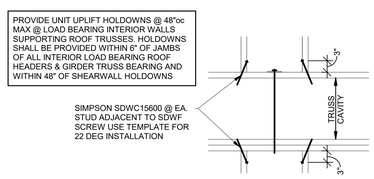
TYPICAL UPSET WOOD BEAM UPLIFT HOLDOWN AT BEAMS SUPPORTING ROOF TRUSS BEARING WALLS OR WHERE INDICATED

6 SECTION 3/4" = 1'-0"



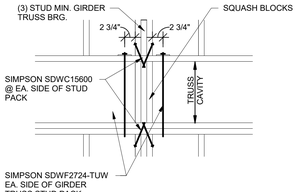
TYPICAL SQUASH BLOCK DETAIL AT CONTINUOUS RIM BOARD

7 SECTION 3/4" = 1'-0"



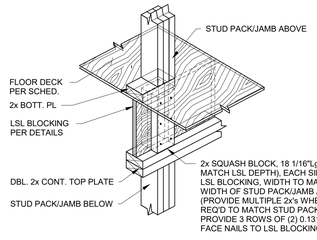
TYP SIDE VIEW AT DBL STUD SCREWS AT HOLDOWN

3B DETAIL 3/4" = 1'-0"



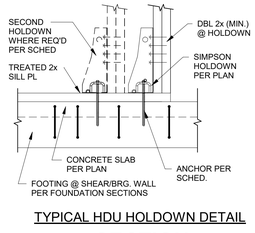
TYPICAL GIRDER TRUSS UPLIFT HOLDOWN DETAIL @ TOP FLOOR

4 SECTION 3/4" = 1'-0"



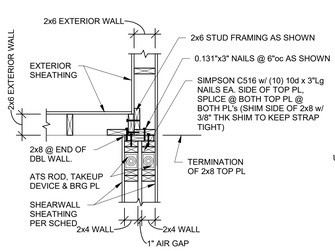
TYPICAL SQUASH BLOCK DETAIL AT LSL BLOCKING

7A SECTION 3/4" = 1'-0"



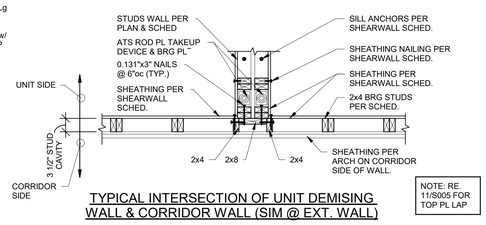
TYPICAL HDU HOLDOWN DETAIL

8 SECTION 3/4" = 1'-0"



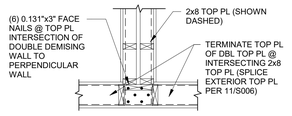
TYPICAL @ UNIT PARTY WALL TRANSITION TO 2x6 EXT. WALL

9 SECTION 3/4" = 1'-0"



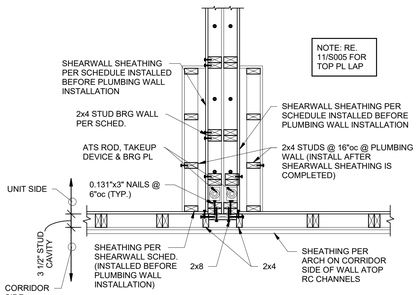
TYPICAL INTERSECTION OF UNIT DEMISING WALL & CORRIDOR WALL (SIM @ EXT. WALL)

10 SECTION 3/4" = 1'-0"



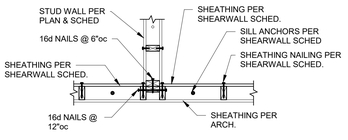
TYPICAL TOP PL LAP @ UNIT DEMISING WALL AT DISCONT. END

11 SECTION 3/4" = 1'-0"



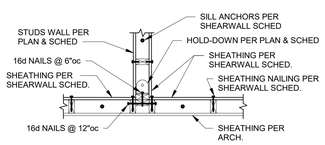
TYPICAL INTERSECTION OF CORRIDOR WALL AND UNIT DEMISING WALL w/ PLUMBING WALL

12 SECTION 3/4" = 1'-0"

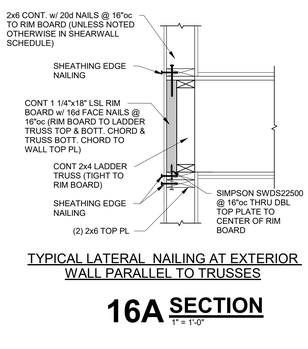


TYPICAL @ DISCONTINUOUS SHEARWALL SHEATHING

13 SECTION 3/4" = 1'-0"

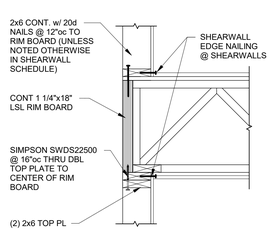


15 SECTION 3/4" = 1'-0"



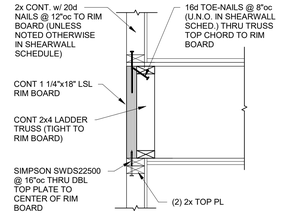
TYPICAL LATERAL NAILING AT EXTERIOR WALL PARALLEL TO TRUSSES

16A SECTION 1" = 1'-0"



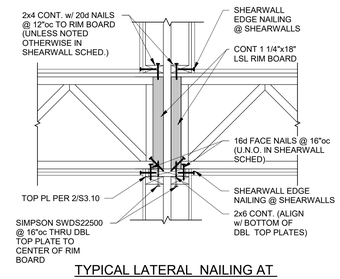
TYPICAL LATERAL NAILING AT ONE SIDED WALL WITH TRUSS BEARING

16B SECTION 1" = 1'-0"



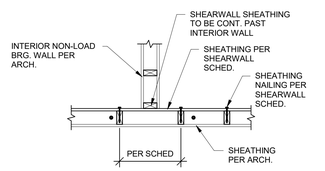
TYPICAL LATERAL NAILING AT UNIT DEMISING WALL OR ONE SIDED WALL PARALLEL TO TRUSSES

16C SECTION 1" = 1'-0"



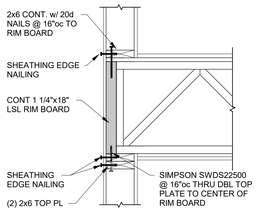
TYPICAL LATERAL NAILING AT DOUBLE UNIT DEMISING WALLS WITH TRUSS BEARING

16D SECTION 1" = 1'-0"



TYPICAL @ SHEARWALL SHEATHING CONTINUOUS PAST NON-LOAD BRG WALL

14 SECTION 3/4" = 1'-0"



TYPICAL LATERAL NAILING AT EXTERIOR WALL WITH TRUSS BEARING

16 SECTION 1" = 1'-0"

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CIVIL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
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CLIENT NAME
TR¡ Architects
STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

Summit at Westport

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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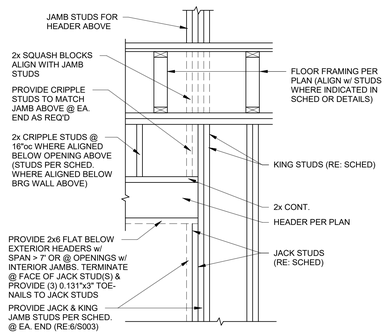
TR¡ PROJECT NO. 18-046

SHEET NO.

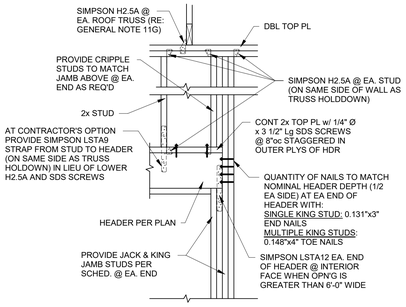
S005

TYPICAL WOOD DETAILS



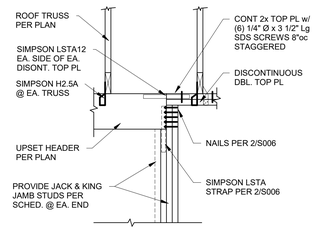
TYPICAL HEADER DETAIL

1 SECTION 3/4" = 1'-0"



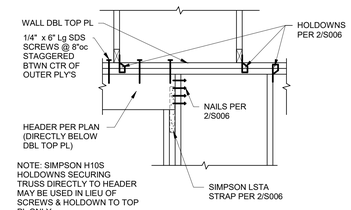
TYPICAL HEADER DETAIL @ ROOF TRUSS BRG LOCATIONS

2 SECTION 3/4" = 1'-0"



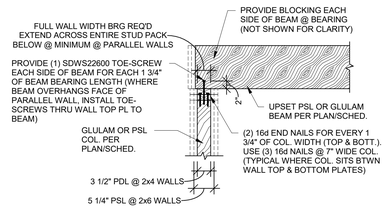
TYPICAL HEADER DETAIL AT DISCONTINUOUS TOP PLATE AT ROOF

3 SECTION 3/4" = 1'-0"



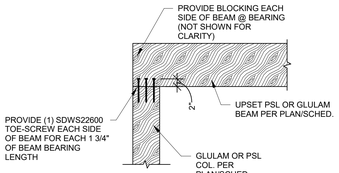
TYPICAL HEADER DETAIL AT ROOF TRUSS BRG LOCATIONS w/HEADER DIRECTLY BELOW DBL TOP PL

4 SECTION 3/4" = 1'-0"



TYPICAL PSL OR GLULAM BEAM AND/OR COLUMN DETAIL

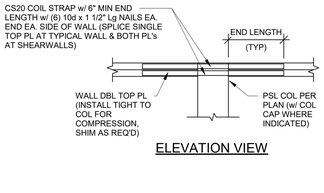
5 SECTION 3/4" = 1'-0"



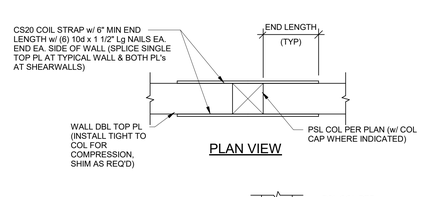
TYPICAL PSL OR GLULAM BEAM BEARING DIRECTLY ON GLULAM OR PSL COLUMN DETAIL

NOTES:
1. REFER TO 5/S006 WHERE COL IS SET BTWN WALL TOP & BOTTOM PLATES
2. PROVIDE STRAPS PER 6/S0.06 AT DISCONTINUOUS WALL TOP PLATES.

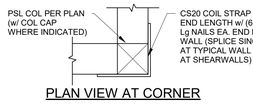
5A SECTION 3/4" = 1'-0"



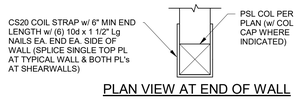
ELEVATION VIEW



PLAN VIEW



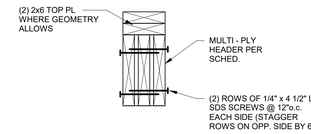
PLAN VIEW AT CORNER



PLAN VIEW AT END OF WALL

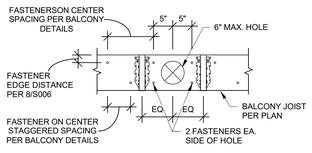
TYPICAL STRAPS @ DISCONTINUOUS TOP PL @ COL

6 SECTION 3/4" = 1'-0"



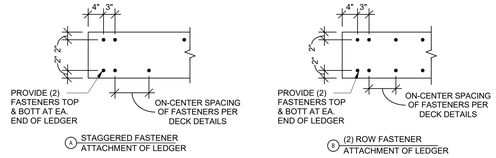
TYPICAL MULTI-PLY EXTERIOR ROOF HEADER WHERE GEOMETRY DOES NOT ALLOW 2x PL BELOW HEADER

7 SECTION 1 1/2" = 1'-0"



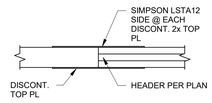
TYPICAL HOLE THRU LEDGER DETAIL

9 SECTION 3/4" = 1'-0"



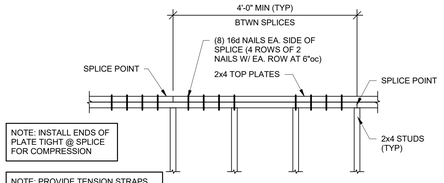
TYPICAL LEDGER CONNECTION

8 SECTION 3/4" = 1'-0"



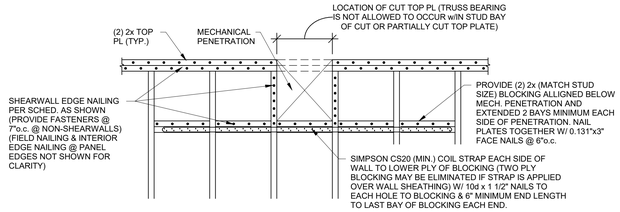
TYPICAL SPLICE AT DISCONTINUOUS TOP PL

10 SECTION 3/4" = 1'-0"



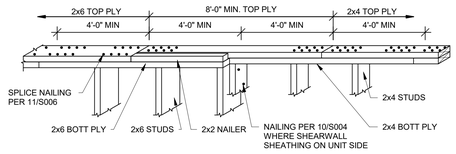
TYPICAL TOP PLATE SPLICE

11 SECTION 3/4" = 1'-0"



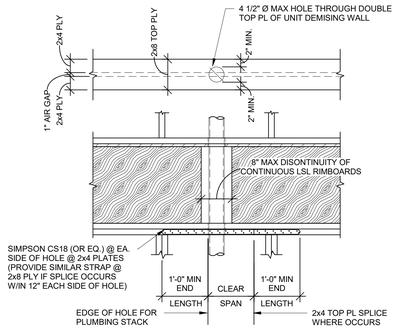
TYPICAL TOP PLATE SPLICE AT SHEARWALL OR BEARING WALL DUE TO MECH. PENETRATION

11A SECTION 3/4" = 1'-0"



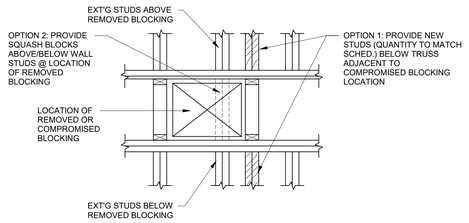
TYPICAL TOP PLATE SPLICE AT WALL SIZE TRANSITION

12 SECTION 3/4" = 1'-0"



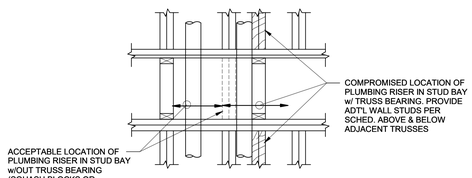
TYPICAL DETAIL AT PLUMBING STACK IN DOUBLE UNIT DEMISING WALLS

13 SECTION 3/4" = 1'-0"



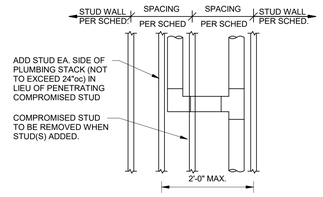
TYPICAL WHERE MECHANICAL DUCT INTERRUPTS LSL

14 SECTION 3/4" = 1'-0"



TYPICAL WHERE PLUMBING INTERRUPTS TOP PL

15 SECTION 3/4" = 1'-0"



TYPICAL WHERE PLUMBING STACK HAS HORIZONTAL JOG

16 SECTION 3/4" = 1'-0"

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STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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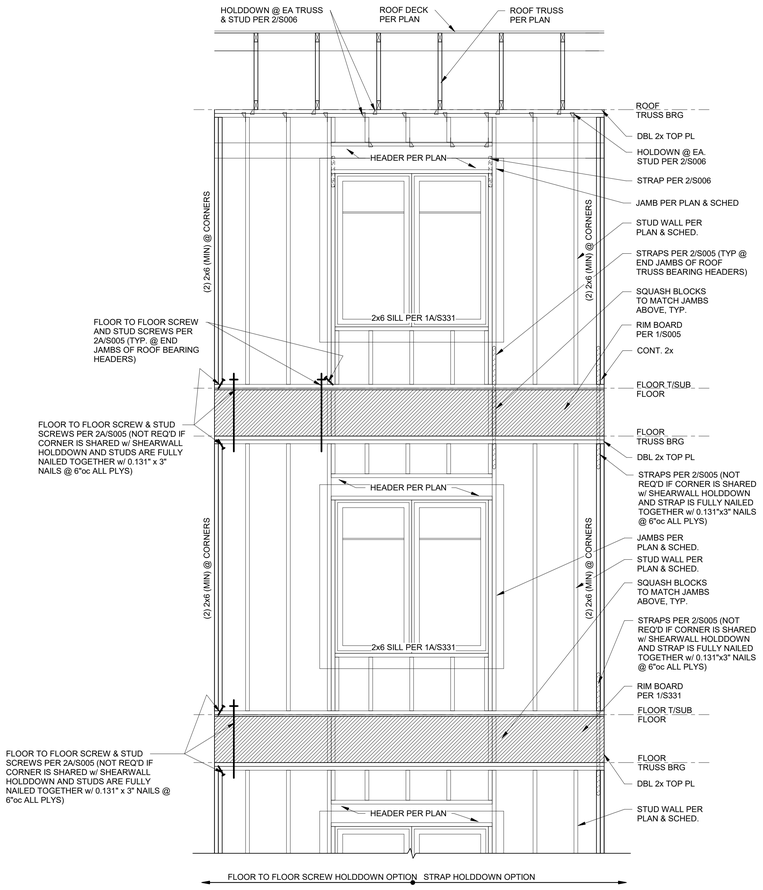
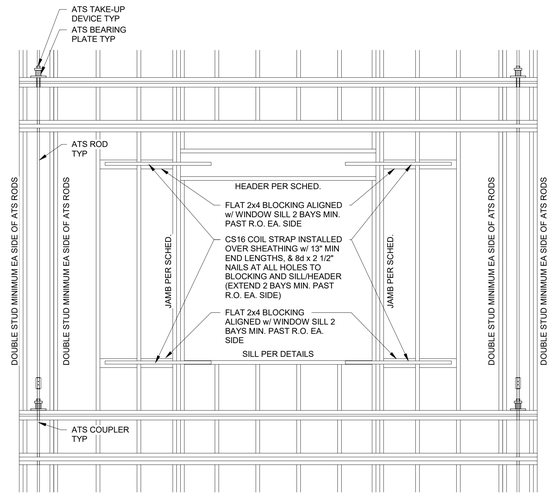
TYPICAL WOOD DETAILS



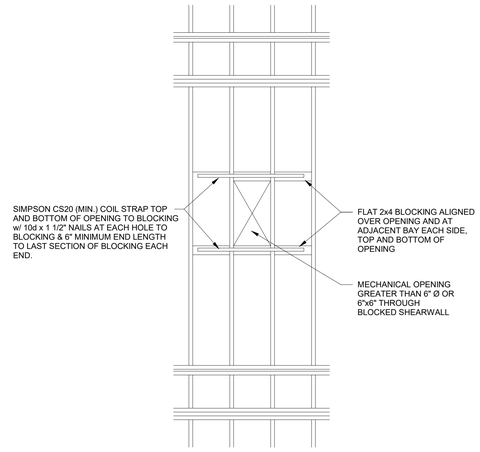
TYPICAL EXTERIOR ELEVATION OF STRUCTURAL BAY @ TYPE V CONSTRUCTION

1 ELEVATION
1/2" = 1'-0"



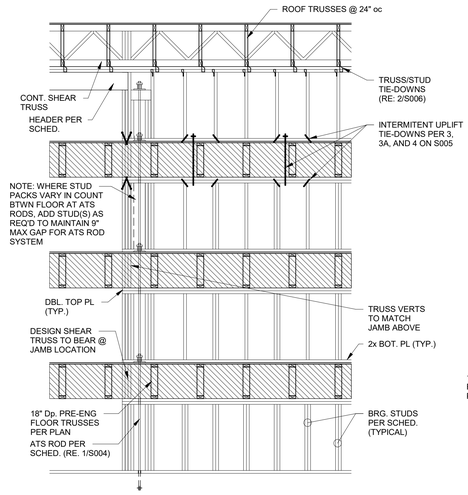
TYPICAL FORCE TRANSFER SHEARWALL ELEVATION @ WINDOW OPENINGS

2 ELEVATION
1/2" = 1'-0"



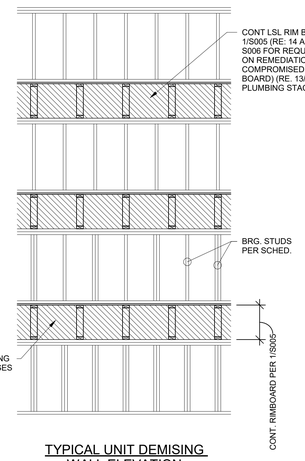
TYPICAL OPENING THROUGH BLOCKED SHEARWALL

3 ELEVATION
1/2" = 1'-0"



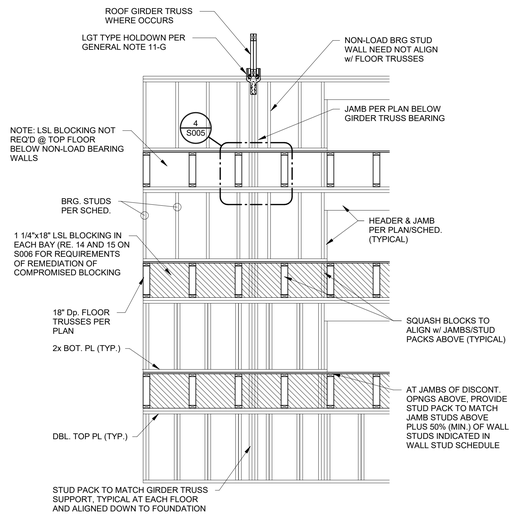
TYPICAL CORRIDOR BEARING WALL ELEVATION

A ELEVATION
3/8" = 1'-0"



TYPICAL UNIT DEMISING WALL ELEVATION

B ELEVATION
3/8" = 1'-0"



TYPICAL INTERIOR BEARING WALL ELEVATION

C ELEVATION
3/8" = 1'-0"

STATE OF MISSOURI
JOHN A. SPARKS
ENGINEER
PE-2010026832
7-28-19

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ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
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CLIENT NAME
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STRUCTURAL
CIVIL
ENGINEER
PLUMBING
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Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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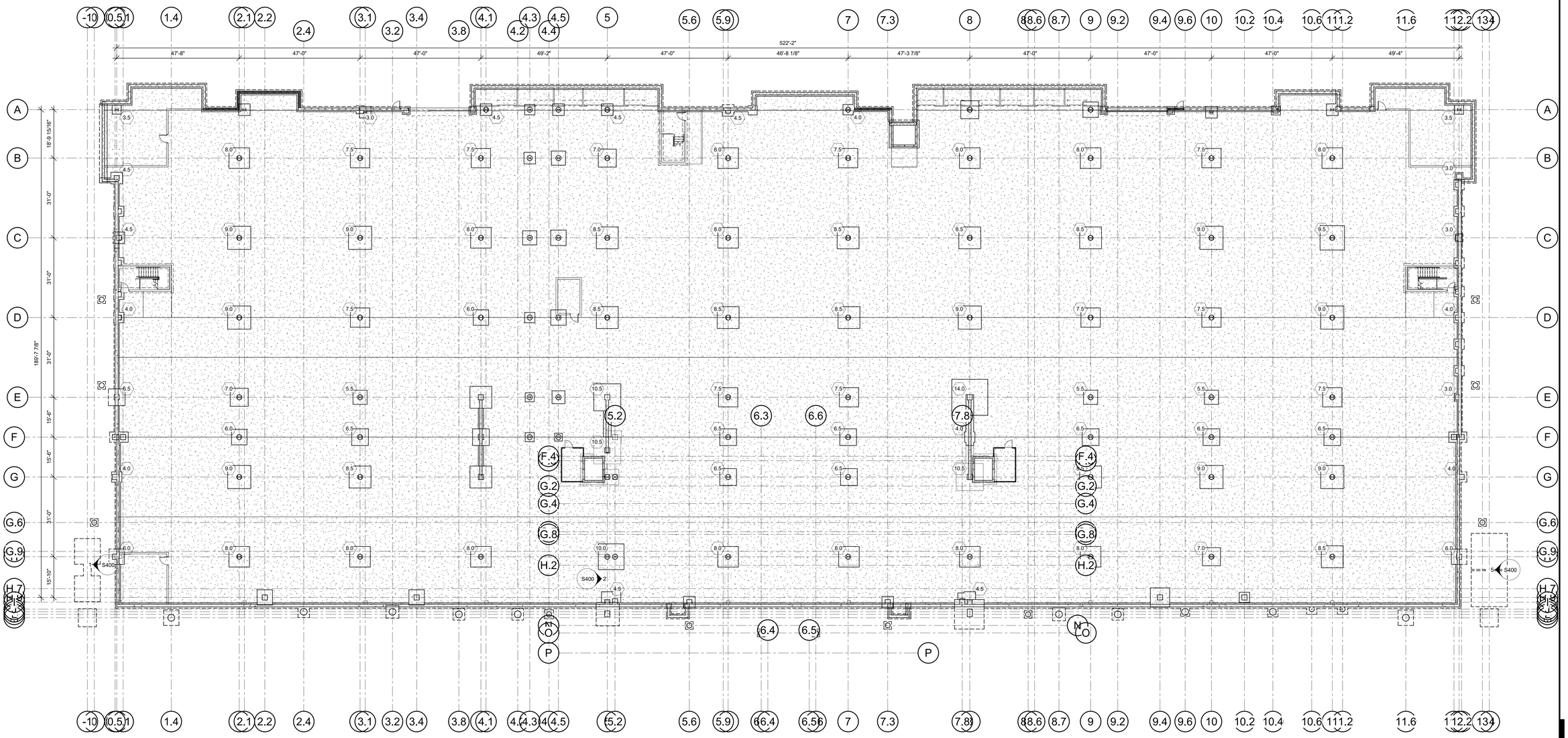
TYPICAL WOOD DETAILS



1 **FOUNDATION PLAN**
1/16" = 1'-0"

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STRUCTURAL ENGINEER
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TR.i Architects
STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

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TR.i Architects
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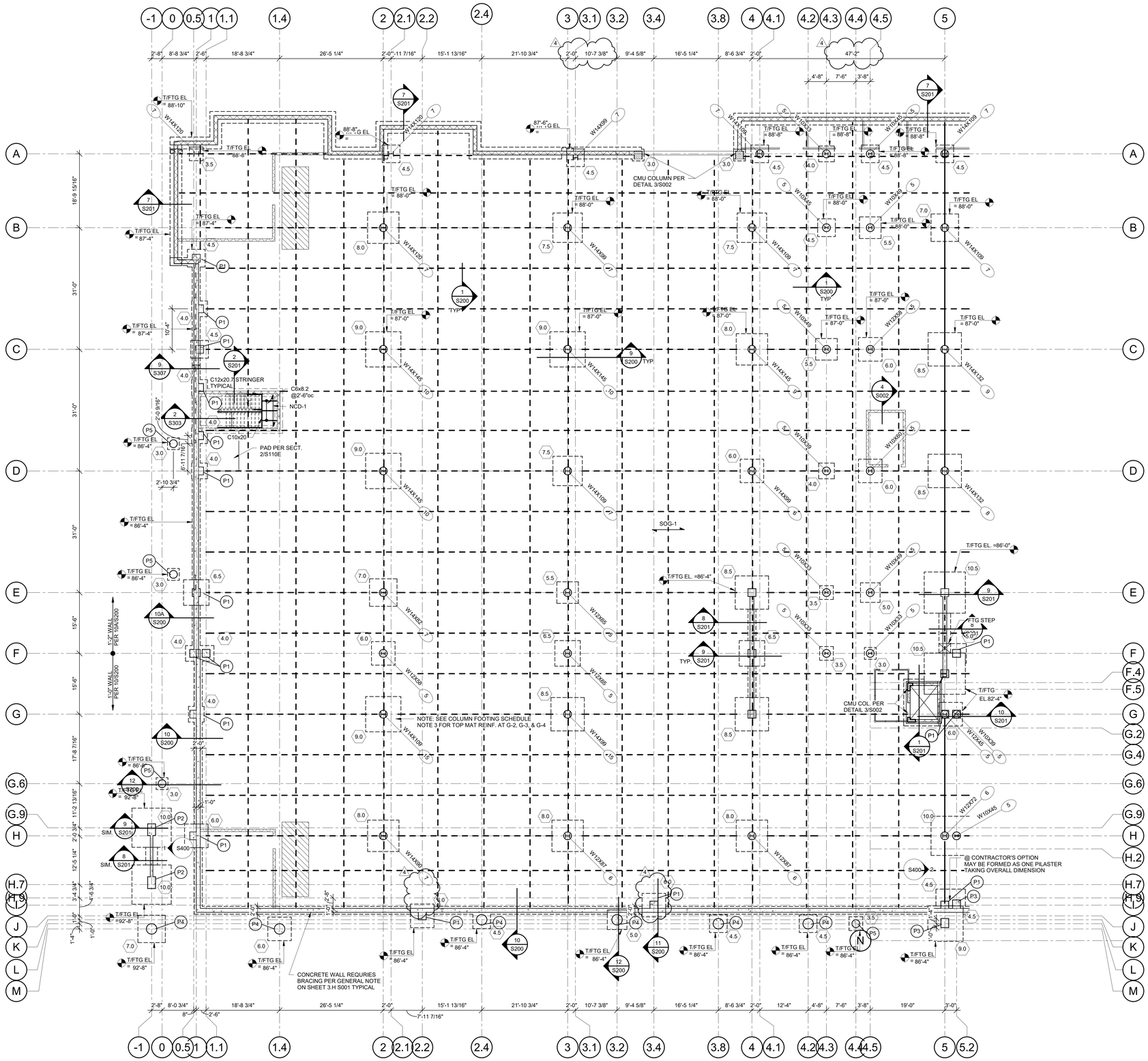
FOUNDATION PLAN



1 FOUNDATION PLAN- AREA B

3/32" = 1'-0"

N

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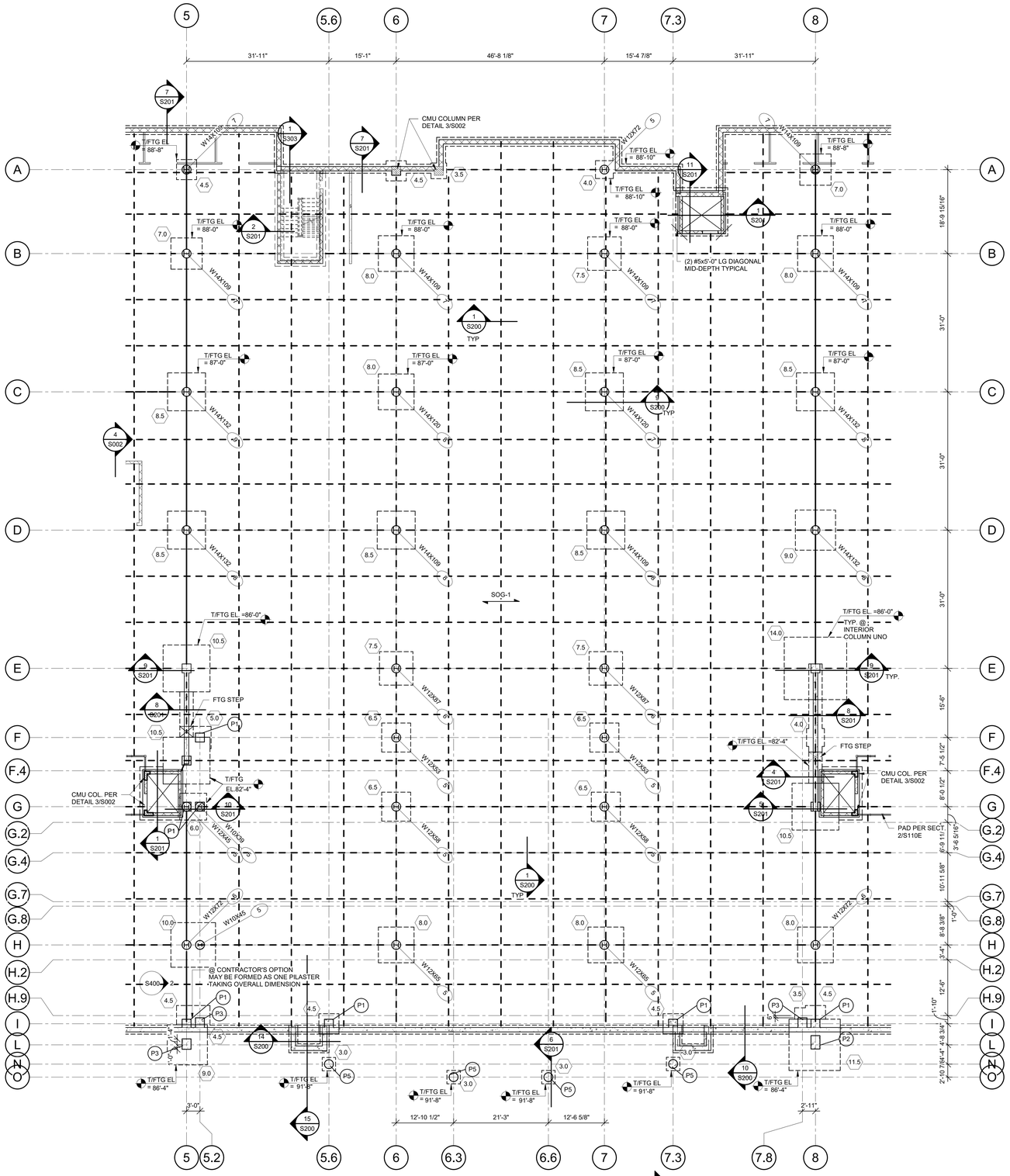
FOUNDATION PLAN - AREA B



1 FOUNDATION PLAN - AREA C/D

3/32" = 1'-0"

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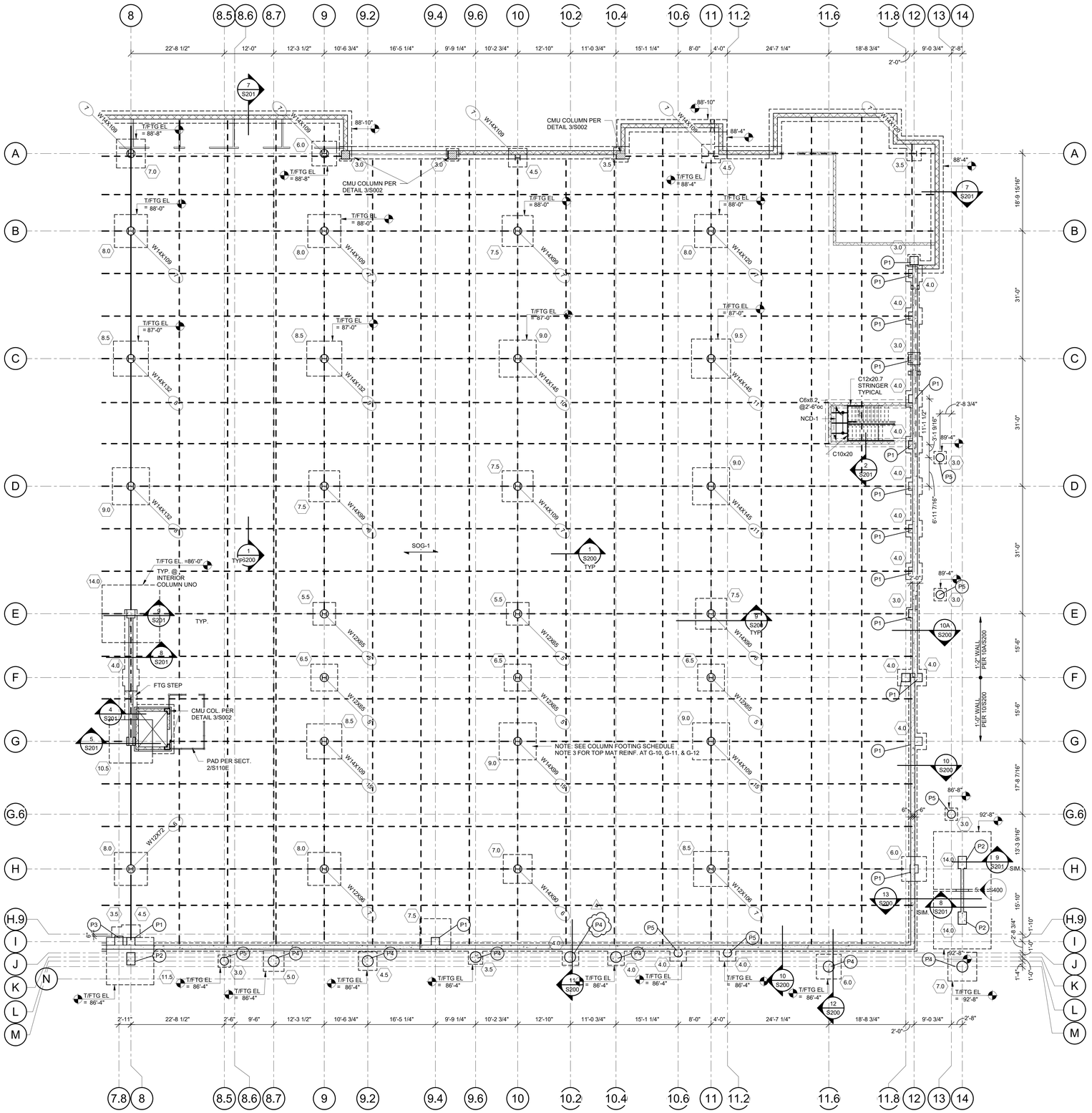
FOUNDATION PLAN - AREA C/D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8.5
8.6
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9
9.2
9.4
9.6
10
10.2
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11
11.2
11.6
11.8
12
13
14
22'-8 1/2"
12'-0"
12'-3 1/2"
10'-6 3/4"
16'-5 1/4"
9'-9 1/4"
10'-2 3/4"
12'-10"
11'-0 3/4"
15'-1 1/4"
8'-0"
4'-0"
24'-7 1/4"
18'-8 3/4"
9'-0 3/4"
2'-8"
2'-0"
A
B
C
D
E
F
G
G.6
H
H.9
I
J
K
L
M
N
CMU COLUMN PER DETAIL 3/S002
CMU COL. PER DETAIL 3/S002
T/FTG EL = 88'-8"
T/FTG EL = 88'-0"
T/FTG EL = 87'-0"
T/FTG EL = 86'-4"
T/FTG EL. =86'-0"
88'-10"
88'-4"
89'-4"
92'-8"
86'-8"
SOG-1
TYP. @ INTERIOR COLUMN UNO
TYP.
FTG STEP
PAD PER SECT. 2/S110E
NOTE: SEE COLUMN FOOTING SCHEDULE
NOTE 3 FOR TOP MAT REINF. AT G-10, G-11, & G-12
C12x20.7 STRINGER TYPICAL
C6x8.2 @2'-6"oc
NCD-1
C10x20
1'-0" WALL PER 18/S200
18'-9 15/16"
31'-0"
31'-0"
31'-0"
17'-8 7/16"
18'-3 9/16"
15'-10"
15'-6"
15'-6"
2'-8 3/4"
1'-10"
1'-0"
1'-0"
1'-4"
6'-11 7/16"
2'-9 9/16"
10'-1 1/2"
W14X109
W14X132
W14X145
W14X120
W14X90
W12X65
W14X99
W12X72
W12X106
W14X68
W14X61
W14X53
W14X48
W14X43
W14X38
W14X30
W14X26
W12X26
W12X22
W10X22
W8X18
W8X15
W8X10
W6X9
W6X8.5
W6X8
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W6X3
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W6X2
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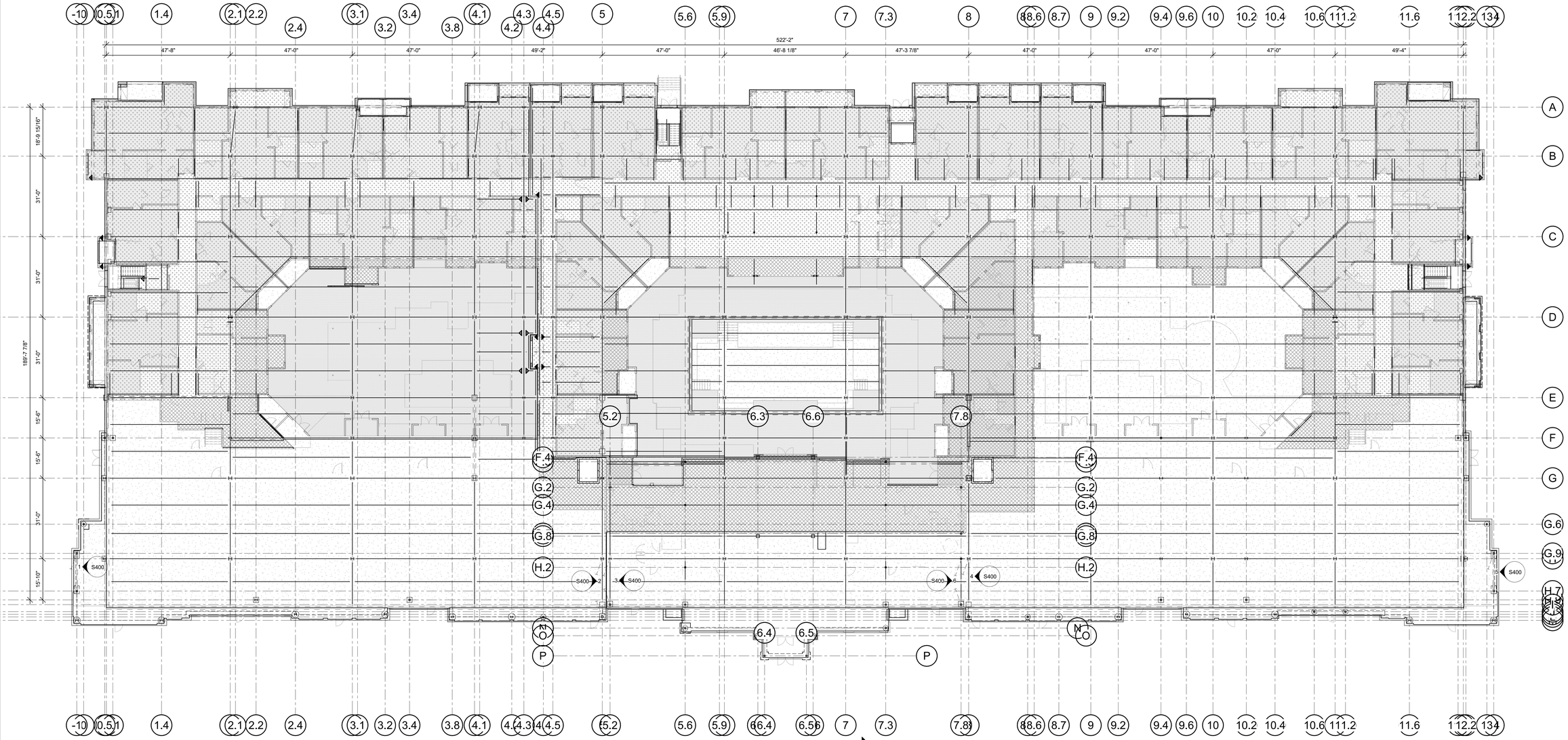

1 **FIRST FLOOR FRAMING PLAN**
1/16" = 1'-0"

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REVISIONS 1

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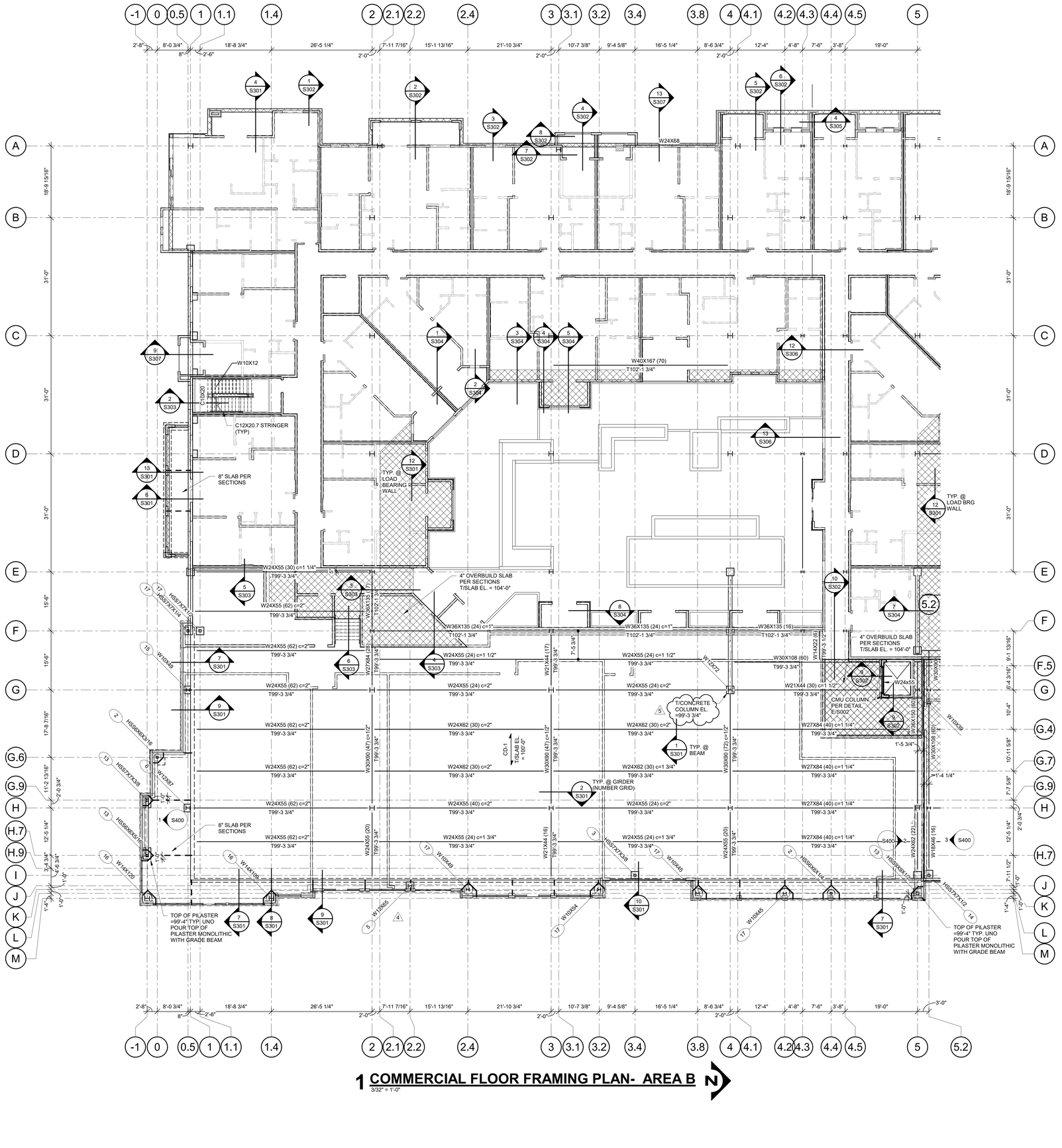
TR.i PROJECT NO. 18-046

SHEET NO.

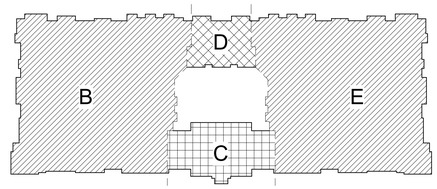
S111

COMMERCIAL FLOOR FRAMING PLAN



1 COMMERCIAL FLOOR FRAMING PLAN- AREA B

3/32" = 1'-0"



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REVISIONS (4)

4	STRUCTURAL REVISION	10.16.19
5	STRUCTURAL REVISION 2	11.7.19

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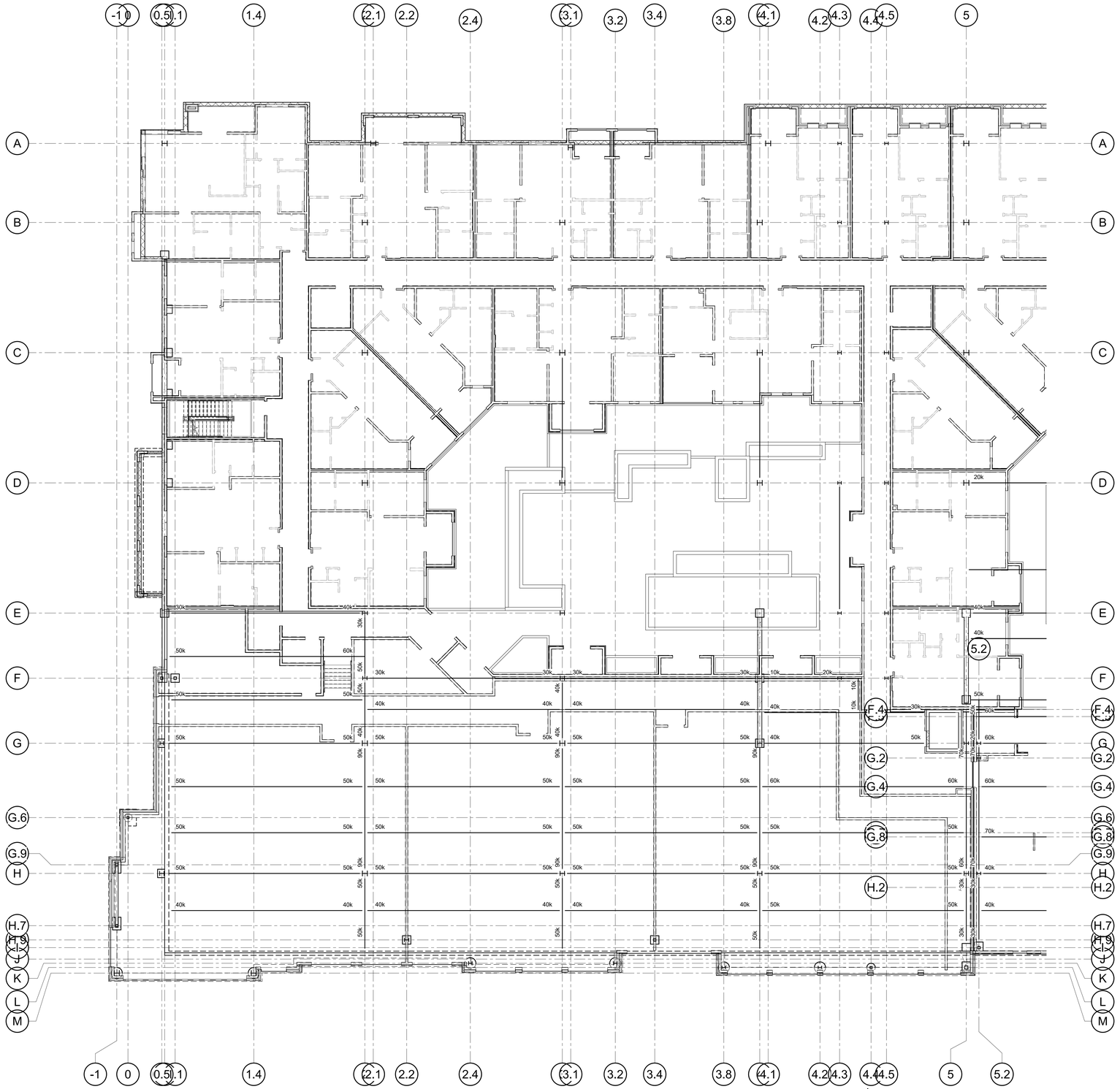
TR.i PROJECT NO. 18-046

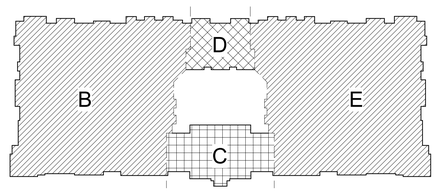
SHEET NO.

S111B

COMMERCIAL FLOOR FRAMING PLAN- AREA B



1 **COMMERCIAL FLOOR TENSION ROD & REACTIONS PLAN - AREA B**
3/32" = 1'-0"



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REVISIONS 2

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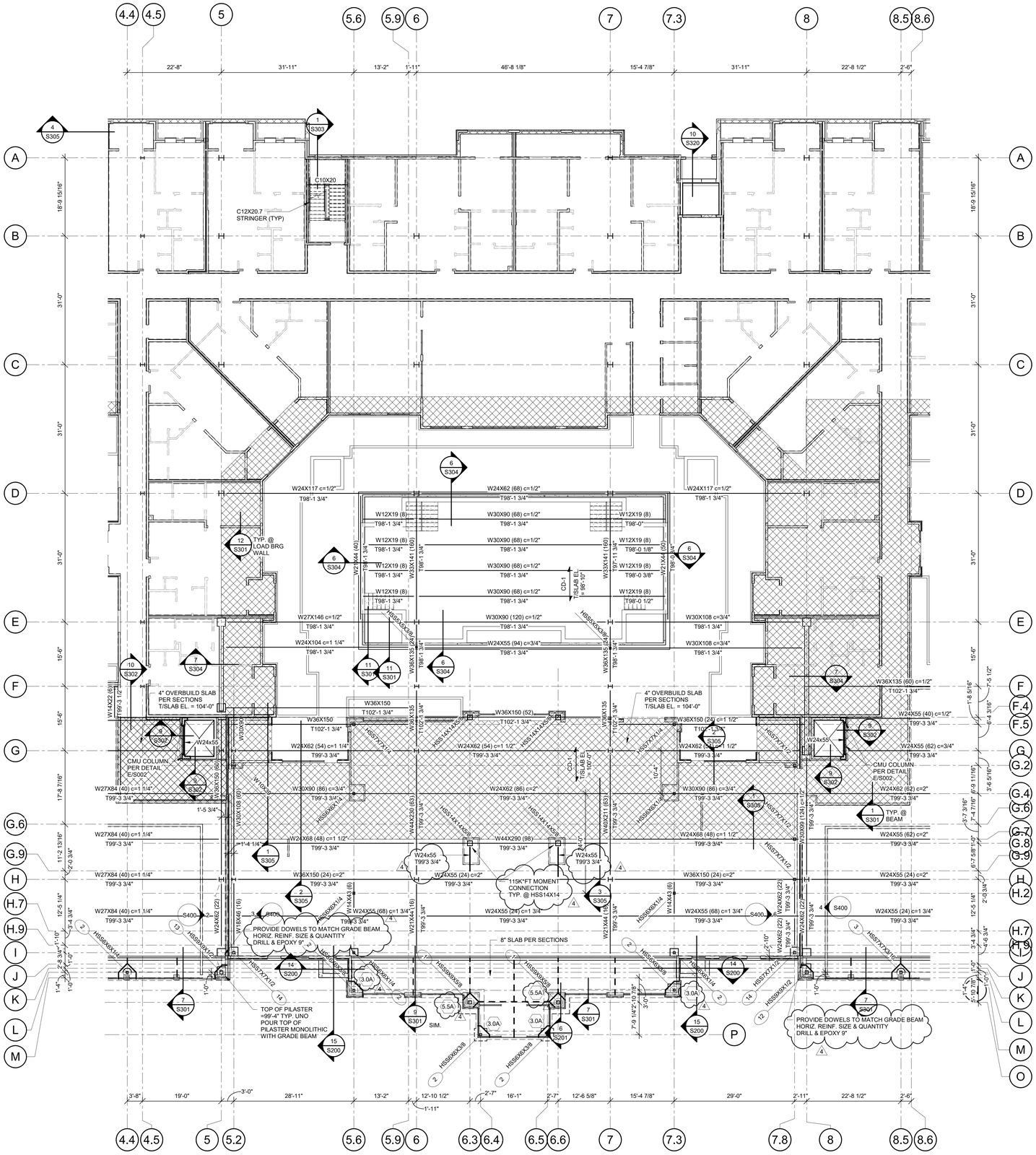
TR.i PROJECT NO. 18-046

SHEET NO.

S111B-R

COMMERCIAL FLOOR REACTIONS PLAN - AREA B


4.4
4.5
5
5.6
5.9
6
7
7.3
8
8.5
8.6
22'-8"
31'-11"
13'-2"
1'-11"
46'-8 1/8"
15'-4 7/8"
31'-11"
22'-8 1/2"
2'-6"
A
B
C
D
E
F
G
G.6
G.9
H
H.7
H.9
I
J
K
L
M
18'-9 15/16"
31'-0"
31'-0"
31'-0"
31'-0"
15'-6"
15'-6"
17'-8 7/16"
11'-2 13/16"
2'-0 3/4"
12'-5 1/4"
3'-3 3/4"
1'-1 0"
2'-8 3/4"
1'-1 0"
1'-4"
1'-0"
4 S305
1 S303
10 S320
C10X20
C12X20.7 STRINGER (TYP)
6 S304
W24X117 c=1/2" T98'-1 3/4"
W24X62 (68) c=1/2" T98'-1 3/4"
W24X117 c=1/2" T98'-1 3/4"
12 S301 TYP. @ LOAD BRG WALL
W12X19 (8) T98'-1 3/4"
W30X90 (68) c=1/2" T98'-1 3/4"
W12X19 (8) T98'-0"
W12X19 (8) T98'-0 1/8"
W12X19 (8) T98'-0 3/8"
W12X19 (8) T98'-0 1/2"
W30X90 (120) c=1/2" T98'-1 3/4"
W27X146 c=1/2" T98'-1 3/4"
W30X108 c=3/4" T98'-1 3/4"
W24X104 c=1 1/4" T98'-1 3/4"
W24X55 (94) c=3/4" T98'-1 3/4"
W24X55 (62) c=3/4" T99'-3 3/4"
W24X55 (40) c=1/2" T99'-3 3/4"
W24X62 (54) c=1 1/2" T99'-3 3/4"
W24X62 (62) c=2" T99'-3 3/4"
W27X84 (40) c=1 1/4" T99'-3 3/4"
W24X68 (48) c=1 1/2" T99'-3 3/4"
W24X55 (62) c=2" T99'-3 3/4"
W24X55 (24) c=2" T99'-3 3/4"
W24X55 (24) c=1 3/4" T99'-3 3/4"
W36X135 (60) c=1/2" T102'-1 3/4"
W36X150 T102'-1 3/4"
W36X150 (52) T102'-1 3/4"
W36X150 (24) c=1 1/2" T102'-1 3/4"
W24X55 (40) c=1/2" T99'-3 3/4"
W36X150 (24) c=2" T99'-3 3/4"
W44X290 (98) T99'-3 3/4"
W44X230 (65) T99'-3 3/4"
W44X211 (65) T99'-3 3/4"
W30X99 (124) c=1/2" T99'-3 3/4"
W24X55 (68) c=1 3/4" T99'-3 3/4"
W24X62 (22) T99'-3 3/4"
W18X46 (16) T99'-3 3/4"
W21X44 (16) T99'-3 3/4"
W21X44 (50) T98'-0 3/4"
W36X141 (160) T98'-1 3/4"
W36X135 T102'-1 3/4"
W30X90 T99'-3 3/4"
W30X108 (68) T99'-3 3/4"
W30X99 (68) T99'-3 3/4"
W30X90 (86) c=3/4" T99'-3 3/4"
W30X90 (68) c=3/4" T99'-3 3/4"
W30X90 (124) c=1/2" T99'-3 3/4"
W14X22 (61) T99'-3 1/2"
W14X43 (6)
W14X43 (10)
W14X61 (6)
W14X74 (10)
W14X82 (16)
W14X90 (16)
W14X99 (16)
W14X109 (16)
W14X132 (16)
W14X145 (16)
W14X159 (16)
W14X176 (16)
W14X193 (16)
W14X211 (16)
W14X233 (16)
W14X257 (16)
W14X283 (16)
W14X311 (16)
W14X342 (16)
W14X370 (16)
W14X398 (16)
W14X426 (16)
W14X455 (16)
W14X500 (16)
W14X550 (16)
W14X605 (16)
W14X665 (16)
W14X730 (16)
W14X808 (16)
W14X873 (16)
W14X932 (16)
W14X1000 (16)
W14X1082 (16)
W14X1176 (16)
W14X1269 (16)
W14X1370 (16)
W14X1455 (16)
W14X1500 (16)
W14X1584 (16)
W14X1730 (16)
W14X1850 (16)
W14X1963 (16)
W14X2053 (16)
W14X2257 (16)
W14X2398 (16)
W14X2500 (16)
W14X2676 (16)
W14X2809 (16)
W14X2932 (16)
W14X3000 (16)
W14X3109 (16)
W14X3233 (16)
W14X3370 (16)
W14X3500 (16)
W14X3676 (16)
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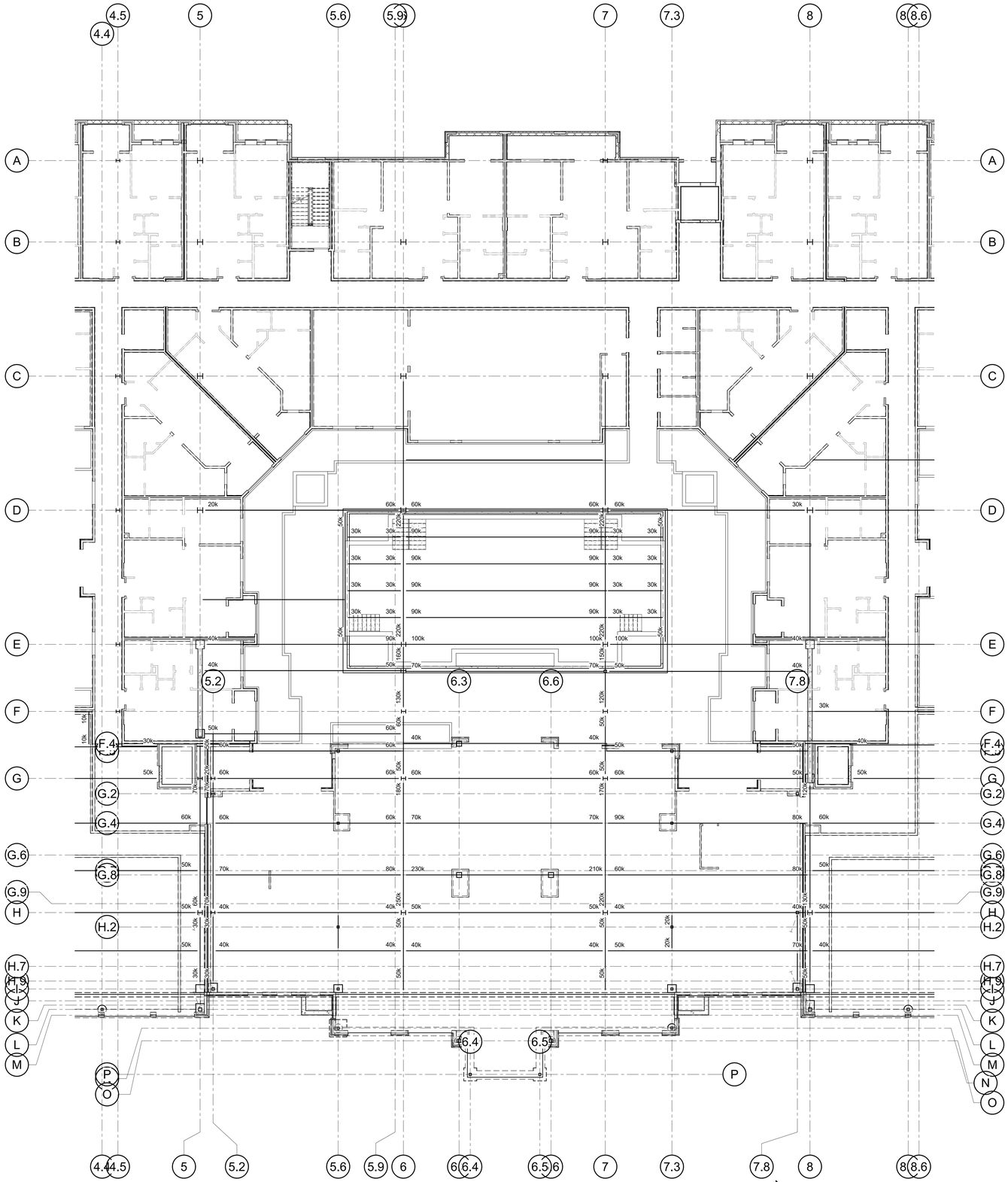
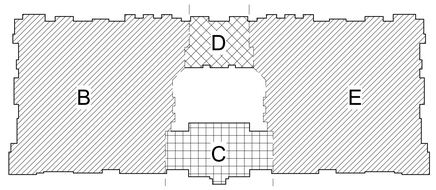


1 **COMMERCIAL FLOOR TENSION ROD & REACTIONS PLAN - AREA C/D**
3/32" = 1'-0"



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REVISIONS 2

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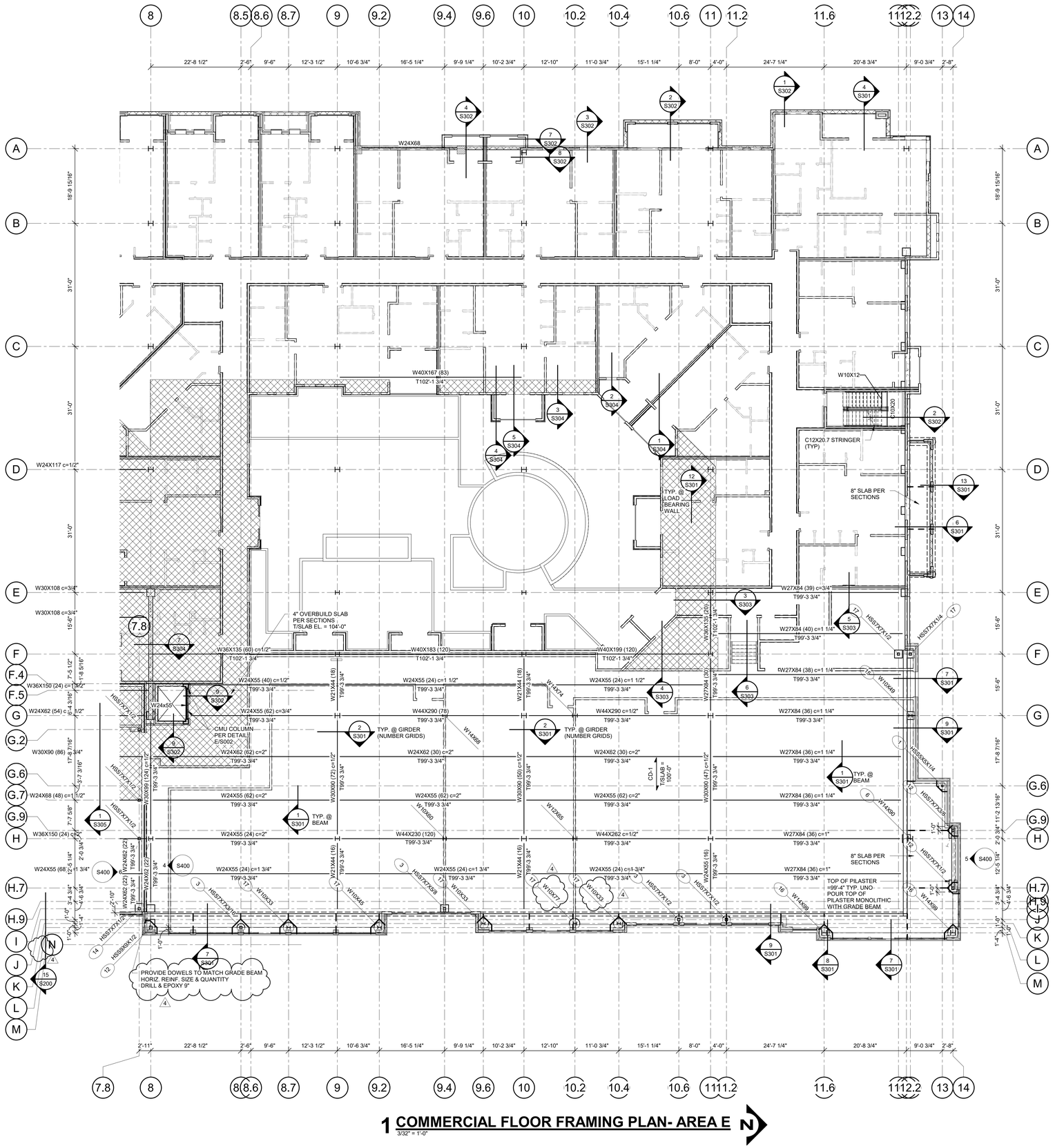
TR.i PROJECT NO. 18-046

SHEET NO.

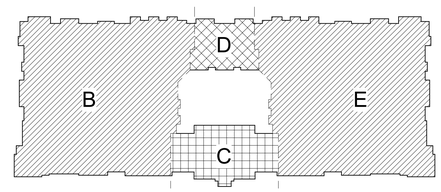
S111C/D-R

COMMERCIAL FLOOR REACTIONS PLAN - AREA C/D



1 COMMERCIAL FLOOR FRAMING PLAN- AREA E

3/32" = 1'-0"



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REVISIONS

2	BIDDER QUESTIONS	08.12.19
4	STRUCTURAL REVISION	10.16.19

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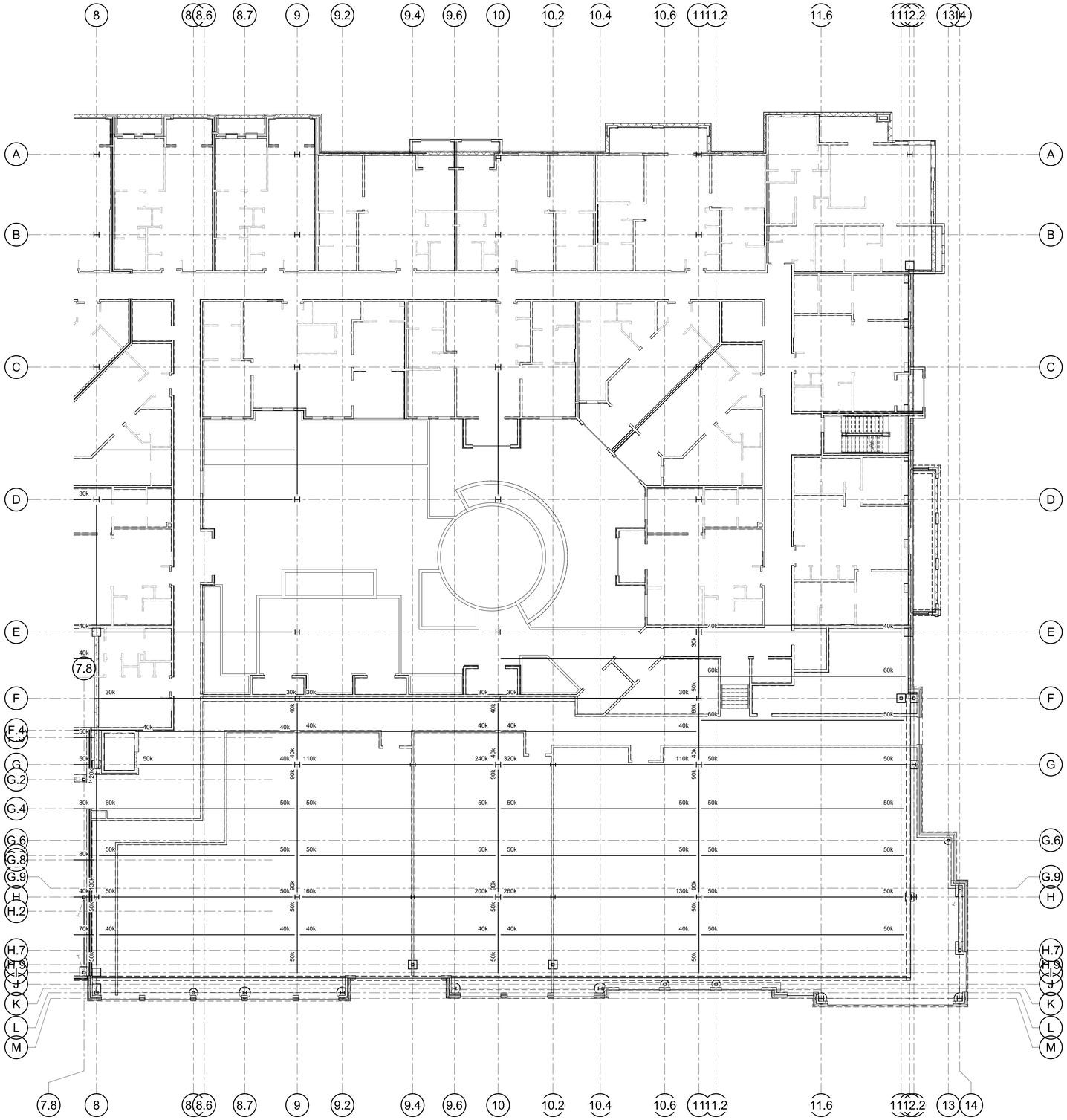
TR.i PROJECT NO. 18-046

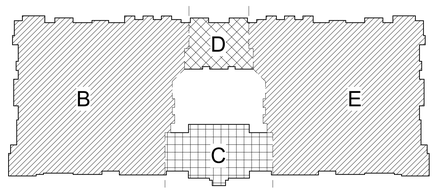
SHEET NO.

S111E

COMMERCIAL FLOOR FRAMING PLAN- AREA E



1 **COMMERCIAL FLOOR TENSION ROD & REACTIONS PLAN - AREA E**
3/32" = 1'-0"



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REVISIONS 2

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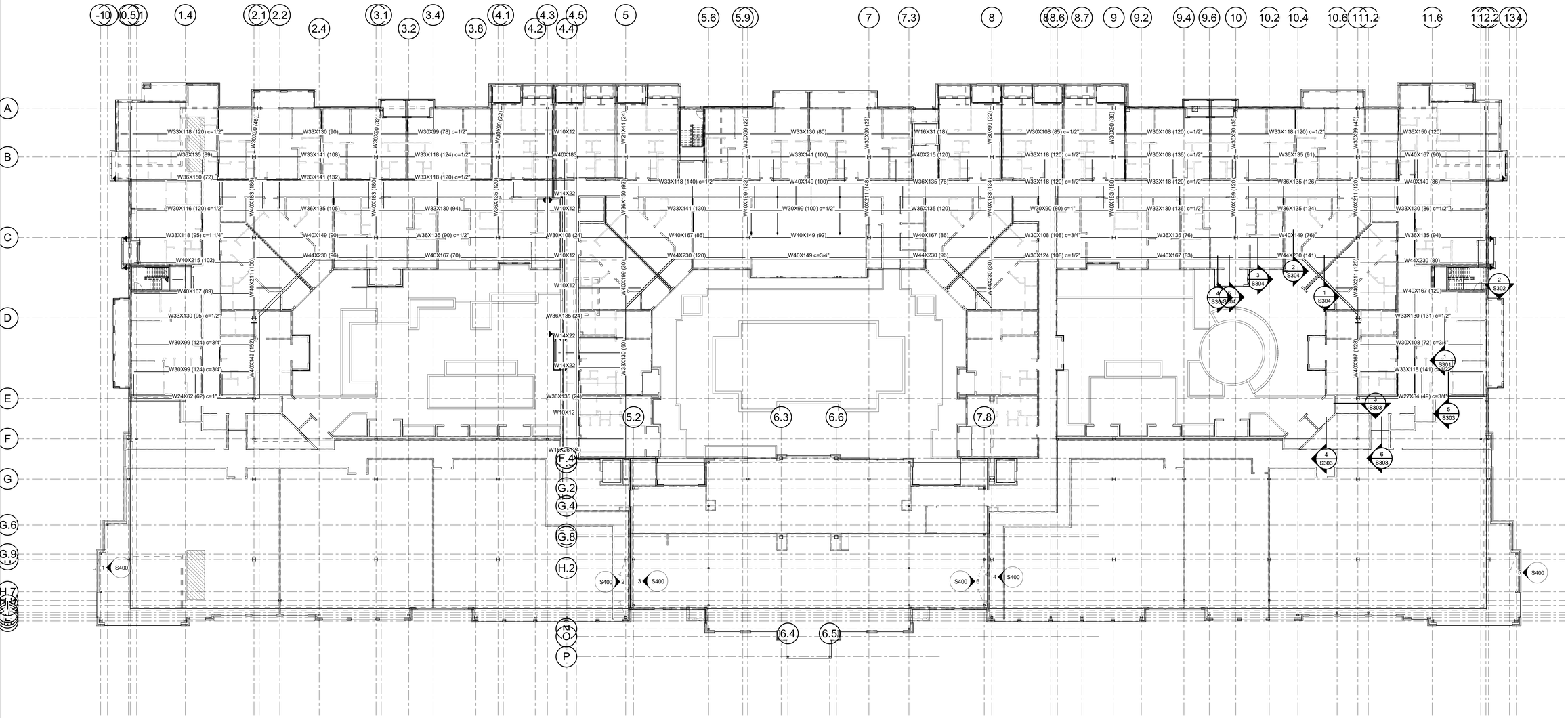
SHEET NO.

S111E-R

COMMERCIAL FLOOR REACTIONS PLAN - AREA E



1 FIRST FLOOR FRAMING PLAN

1/16" = 1'-0"

N

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REVISIONS 4

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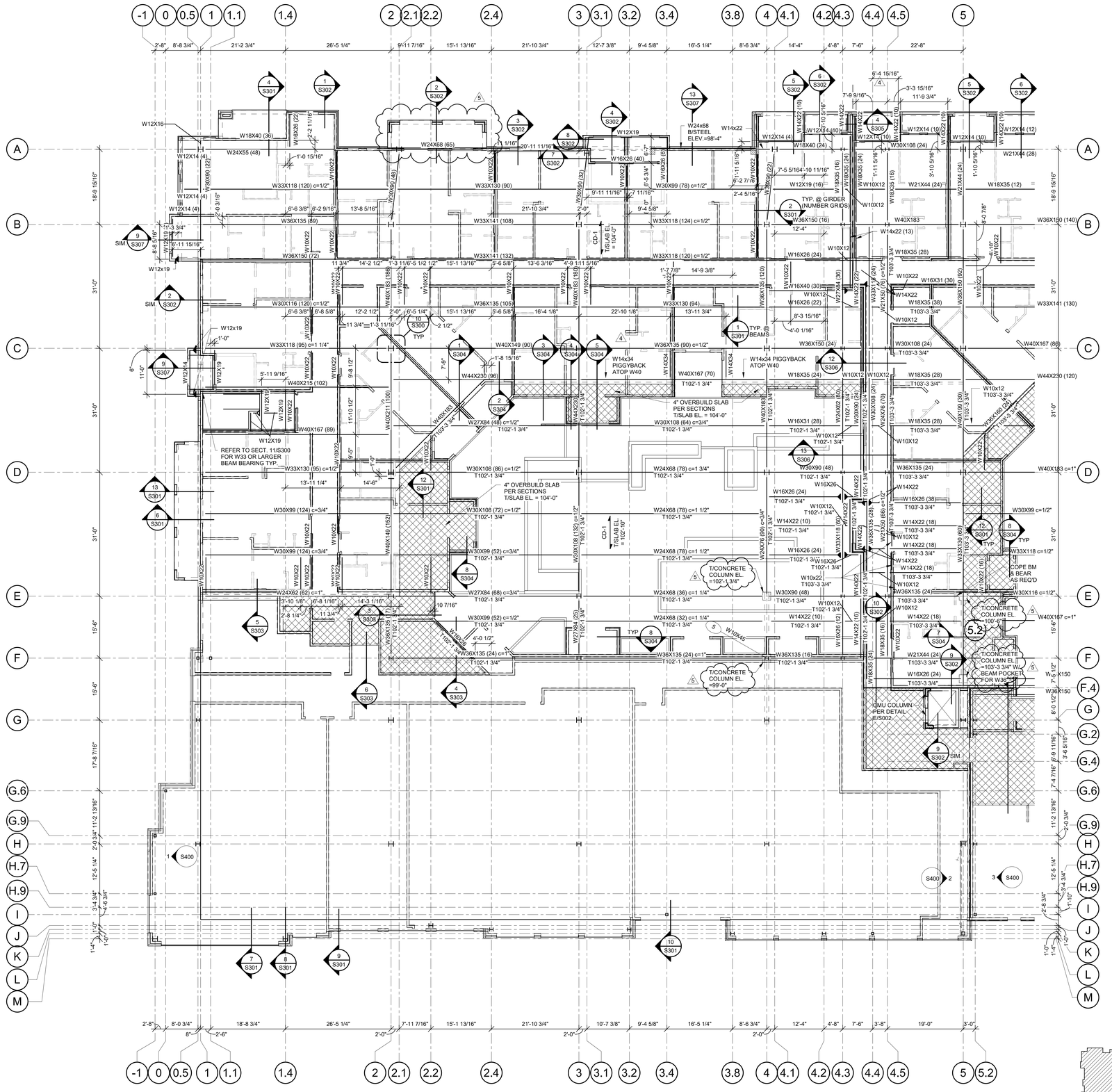
TR.i PROJECT NO. 18-046

SHEET NO.

S112

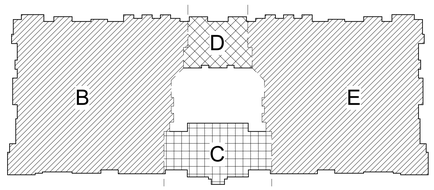
FIRST FLOOR FRAMING PLAN



1 FIRST FLOOR FRAMING PLAN- AREA B

3/32" = 1'-0"

NOTES:
1.) TOP OF STEEL ELEVATION=103'-3 3/4" UNLESS NOTED OTHERWISE.
2.) REFER TO A401 FOR COURTYARD CONCRETE. SHEM WALL LOCATIONS AND WIDTHS REINFORCE W/ #4 @ 12"oc EACH WAY, DRILL & EPOXY VERTICAL REINF. 3" INTO SLAB BELOW



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REVISIONS

4	STRUCTURAL REVISION	10.16.19
5	STRUCTURAL REVISION 2	11.7.19

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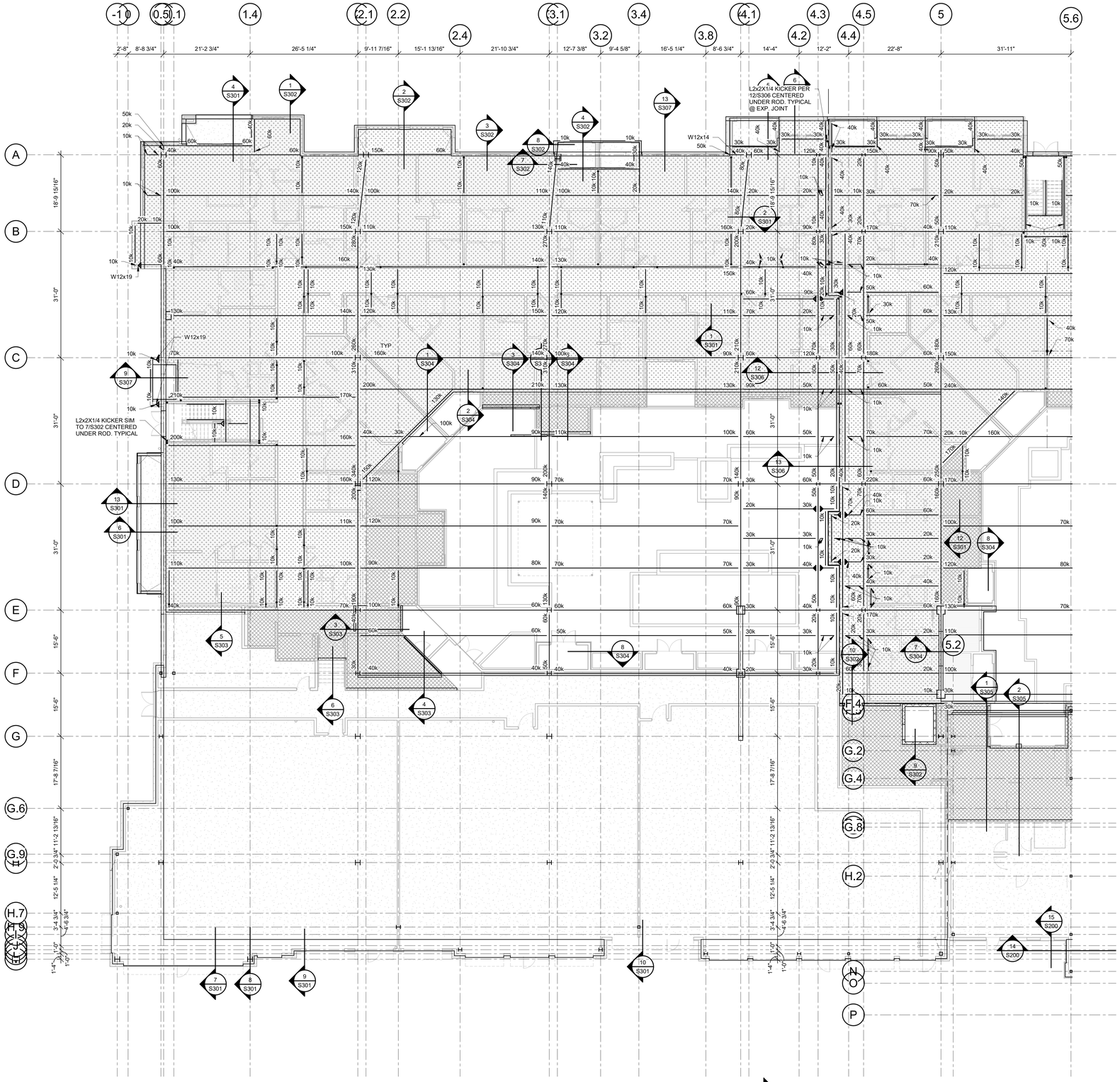
TR.i PROJECT NO. 18-046

SHEET NO.

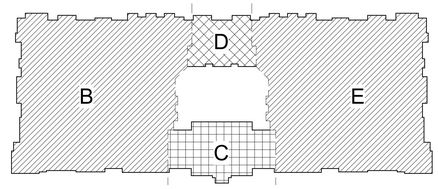
S112B

FIRST FLOOR 1 FRAMING PLAN- AREA B



1 FIRST FLOOR TENSION ROD & REACTIONS PLAN - AREA B

3/32" = 1'-0"



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REVISIONS 4

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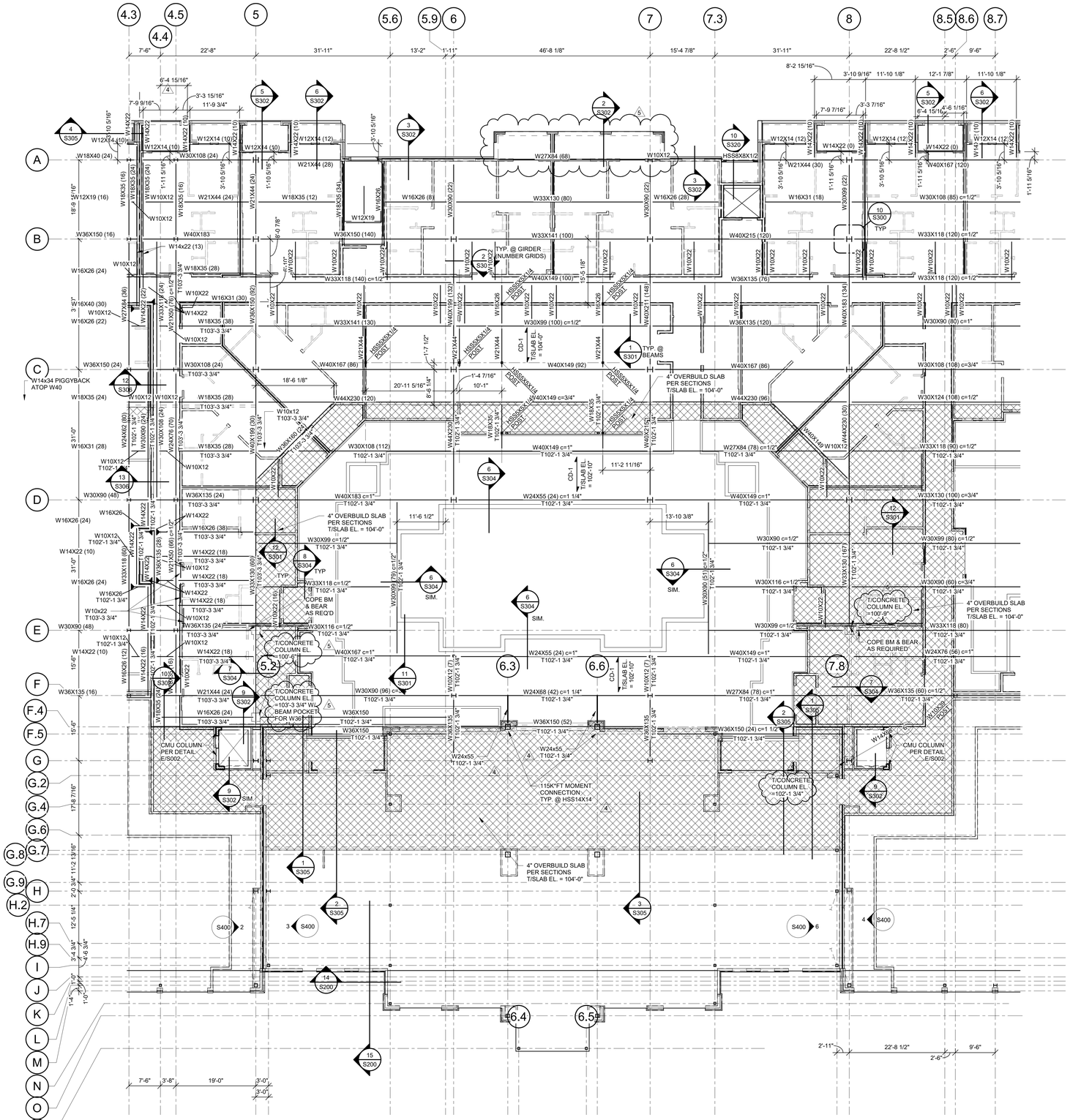
SHEET NO.

S112B-TR

FIRST FLOOR 1 TENSION ROD & REACTIONS PLAN - AREA B


4.3
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G.6
G.7
G.8
G.9
H
H.2
H.7
H.9
I
J
K
L
M
N
O
P
5.2
6.3
6.4
6.5
6.6
7.8
W36X150 (16)
W40X183
W36X150 (140)
W33X141 (100)
W40X215 (120)
W33X118 (120) c=1/2"
W27X94 (68)
W10X12
W33X130 (80)
W16X26 (8)
W16X26 (28)
W16X31 (18)
W30X108 (85) c=1/2"
W21X44 (28)
W21X44 (30)
W40X167 (120)
W12X14 (12)
W14X22 (10)
W14X22 (0)
W30X90 (22)
W30X99 (22)
W18X35 (34)
W18X35 (16)
W12X19
W12X19 (16)
W21X44 (24)
W18X35 (12)
W33X118 (140) c=1/2"
W40X149 (100)
W36X135 (76)
W33X118 (120) c=1/2"
W40X167 (86)
W40X149 (92)
W30X108 (108) c=3/4"
W44X230 (120)
W44X230 (96)
W30X124 (108) c=1/2"
W33X141 (130)
W30X99 (100) c=1/2"
W36X135 (120)
W30X90 (80) c=1"
W40X211 (148)
W40X183 (134)
W40X199 (132)
W40X149 c=3/4"
W30X108 (112)
W40X149 c=1"
W27X84 (78) c=1/2"
W33X118 (90) c=1/2"
W40X183 c=1"
W24X55 (24) c=1 1/4"
W40X149 c=1"
W33X130 (100) c=3/4"
W30X99 c=1/2"
W30X90 c=1/2"
W30X99 (80) c=1/2"
W30X116 c=1/2"
W30X90 (60) c=3/4"
W33X118 (80)
W40X167 c=1"
W24X55 (24) c=1"
W24X68 (42) c=1 1/4"
W27X84 (78) c=1"
W36X135 (60) c=1/2"
W24X76 (56) c=1"
W30X90 (48)
W30X90 (96) c=1"
W36X150 (52)
W36X150 (24) c=1 1/2"
W14X22 (16)
W14X22 (18)
W14X22 (10)
W14X22 (13)
W10X22
W10X22 (16)
W10X12 (7)
W16X26 (16)
W16X35 (24)
W16X35 (26)
W21X50 (26)
W24X62 (80)
W24X76 (78)
W24X76 (86) c=1/2"
W30X108 (24)
W30X90 (24)
W33X118 (69)
W33X130 (69)
W33X130 (167)
W36X135 (24)
W36X150 (92)
W40X199 (30)
W40X215 (76)
W40X249 (76) c=1/2"
W18X40 (24)
W18X35 (24)
W18X35 (28)
W18X35 (38)
W16X40 (30)
W27X94 (86)
W33X141 (76) c=1/2"
W12X14 (10)
W12X14 (12)
W30X108 (24)
W21X44 (26)
W14X22 (22)
W14X22 (24)
W10X12
W16X26 (24)
W16X26 (22)
W16X31 (30)
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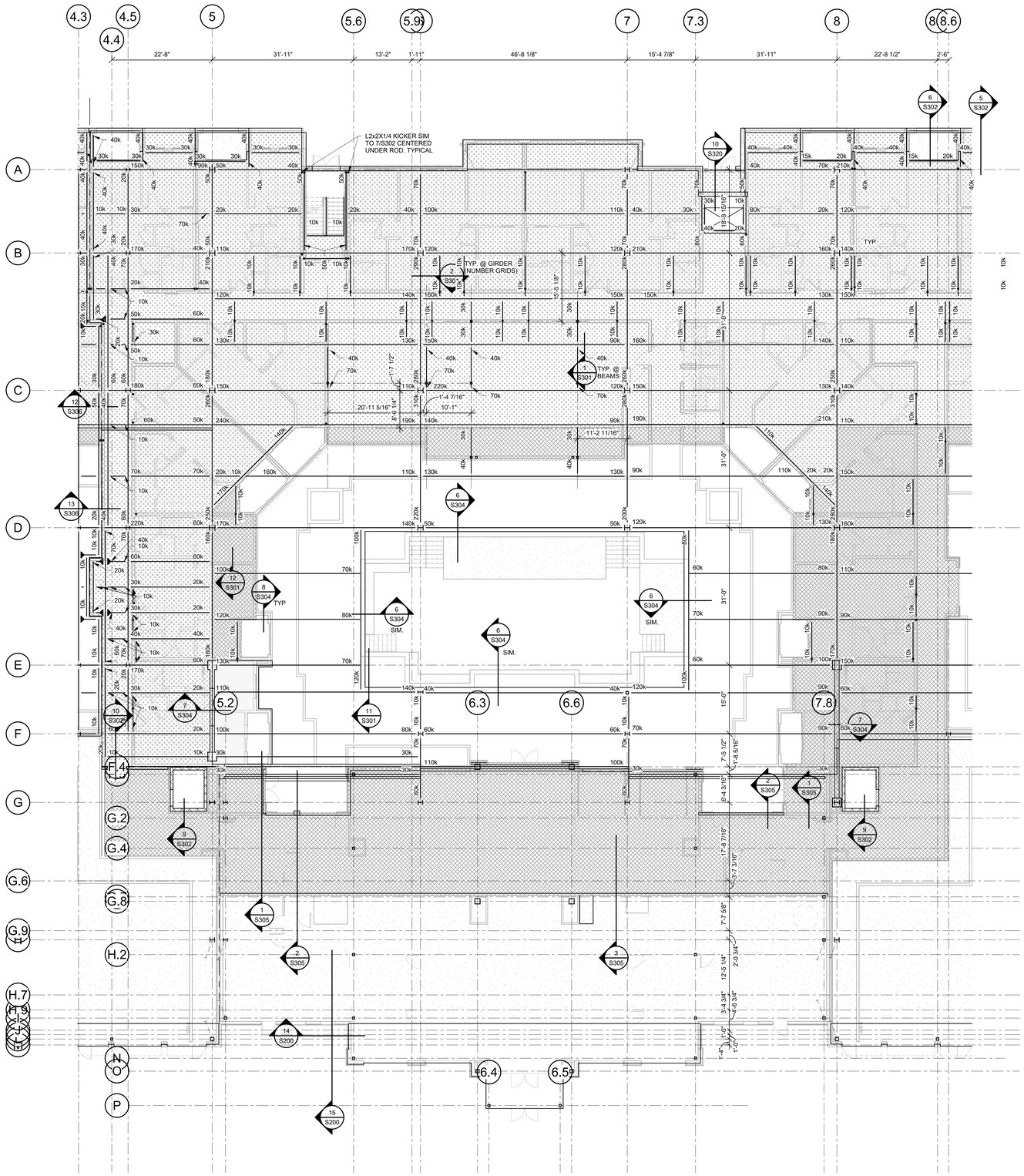
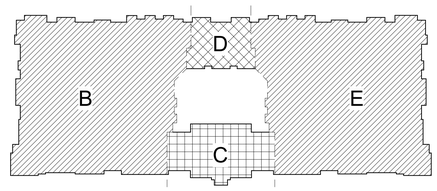


1 FIRST FLOOR TENSION ROD & REACTIONS PLAN - AREA C/D

3/32" = 1'-0"



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ENGINEER
Number
PE-2010026832
7-28-19

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REVISIONS 4

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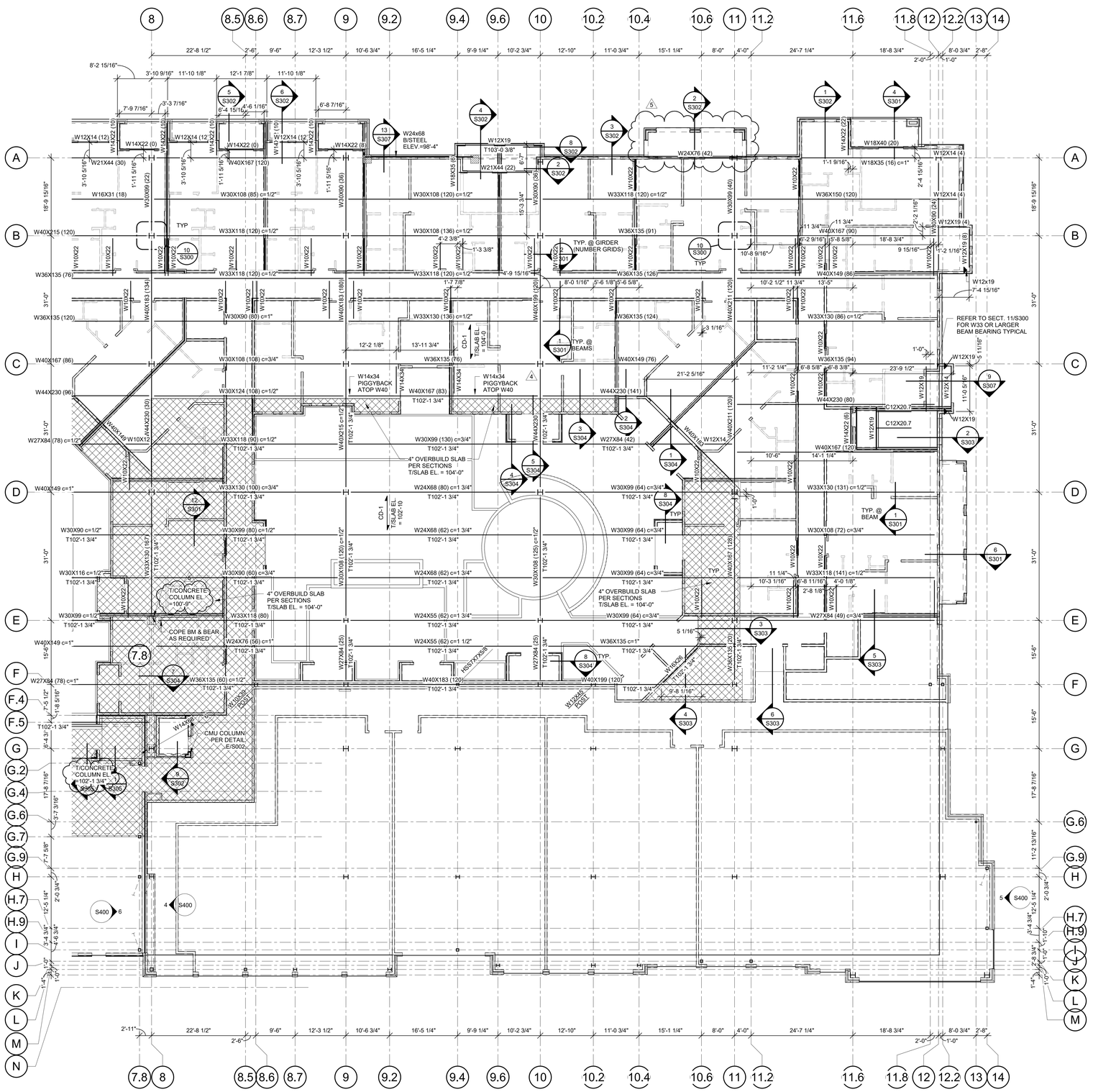
SHEET NO.

S112C/D-TR

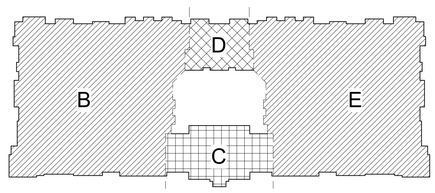
FIRST FLOOR 1 TENSION ROD & REACTIONS PLAN - AREA C/D



1 FIRST FLOOR FRAMING PLAN- AREA E

3/32" = 1'-0"

NOTES:
1.) TOP OF STEEL ELEVATION=103'-3 3/4" UNLESS NOTED OTHERWISE.
2.) REFER TO A401 FOR COURTYARD CONCRETE. SHEM WALL LOCATIONS AND WIDTHS REINFORCE W/ #4 @ 12"oc EACH WAY, DRILL & EPOXY VERTICAL REINF. 3" INTO SLAB BELOW



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REVISIONS

2	BIDDER QUESTIONS	08.12.19
4	STRUCTURAL REVISION	10.16.19
5	STRUCTURAL REVISION 2	11.7.19

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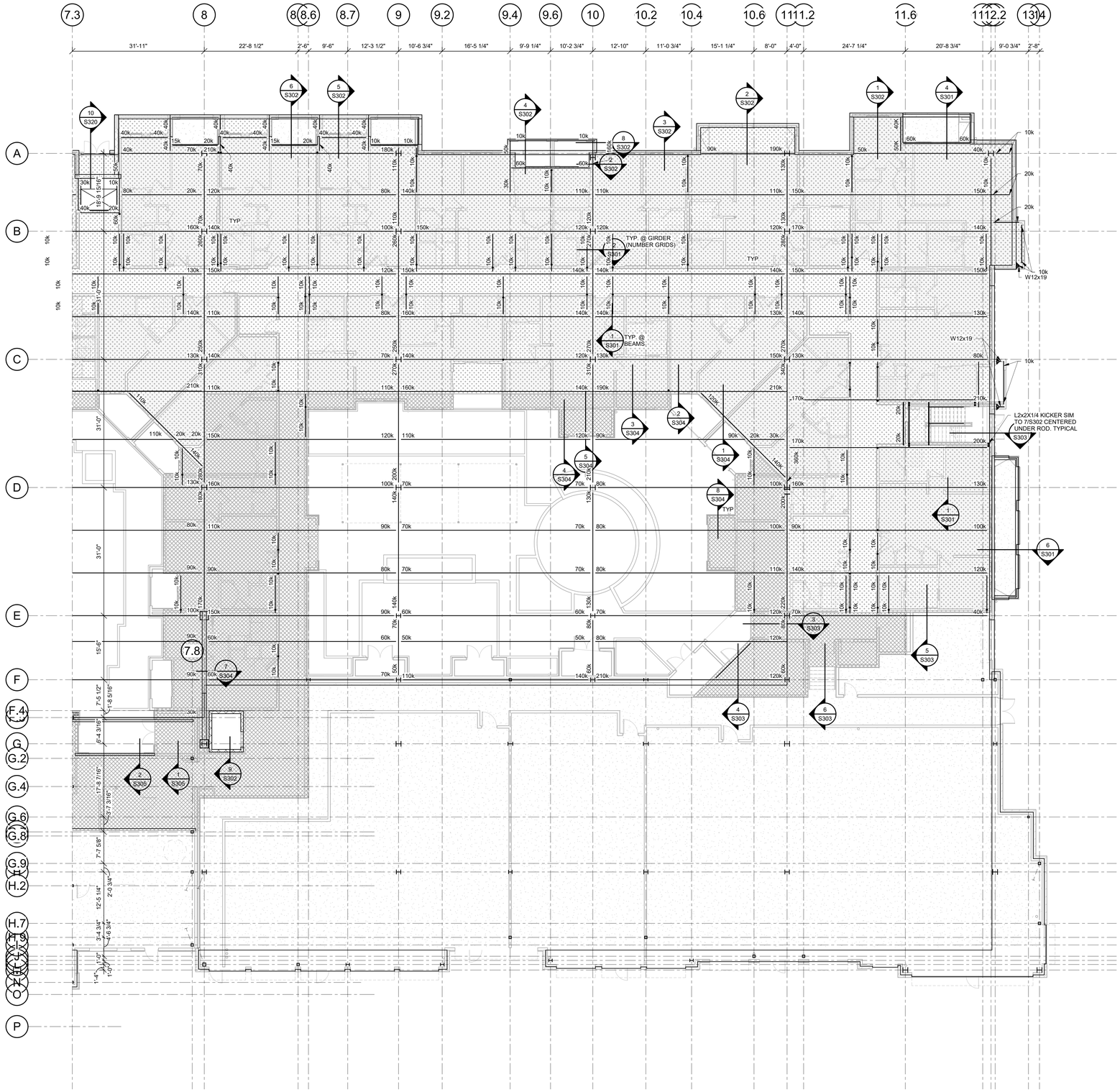
SHEET NO.

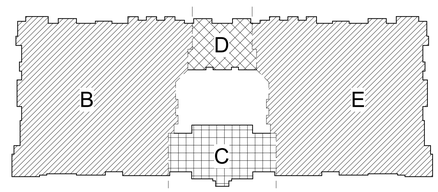
S112E

FIRST FLOOR 1 FRAMING PLAN- AREA E



1 FIRST FLOOR TENSION ROD & REACTIONS PLAN - AREA E

3/32" = 1'-0"



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E-28019
PE-2010026832
7-28-19

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REVISIONS 6

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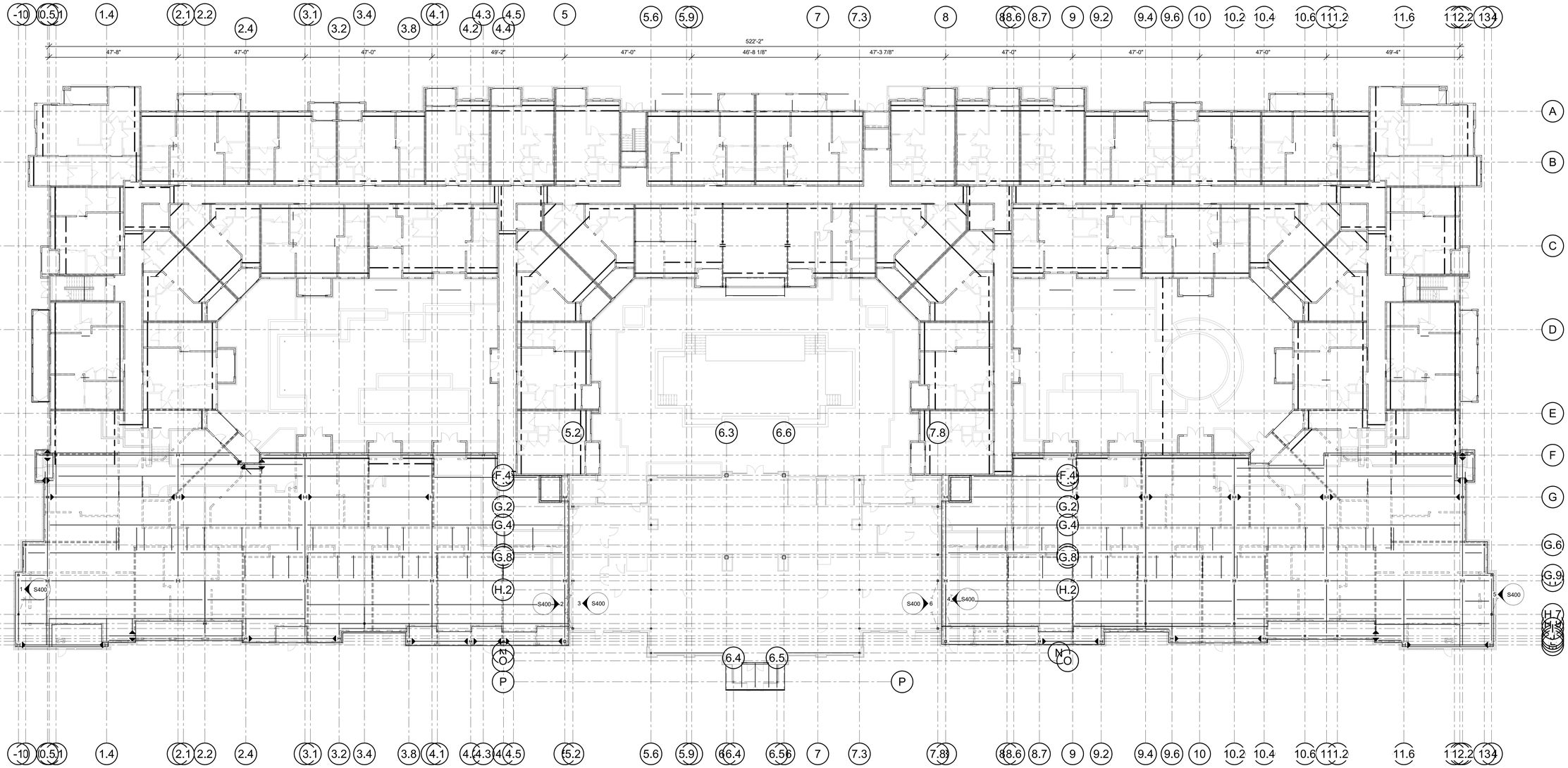
SHEET NO.

S112E-TR

FIRST FLOOR 1 TENSION ROD & REACTIONS PLAN - AREA E



1 **SECOND FLOOR FRAMING PLAN**
1/16" = 1'-0"

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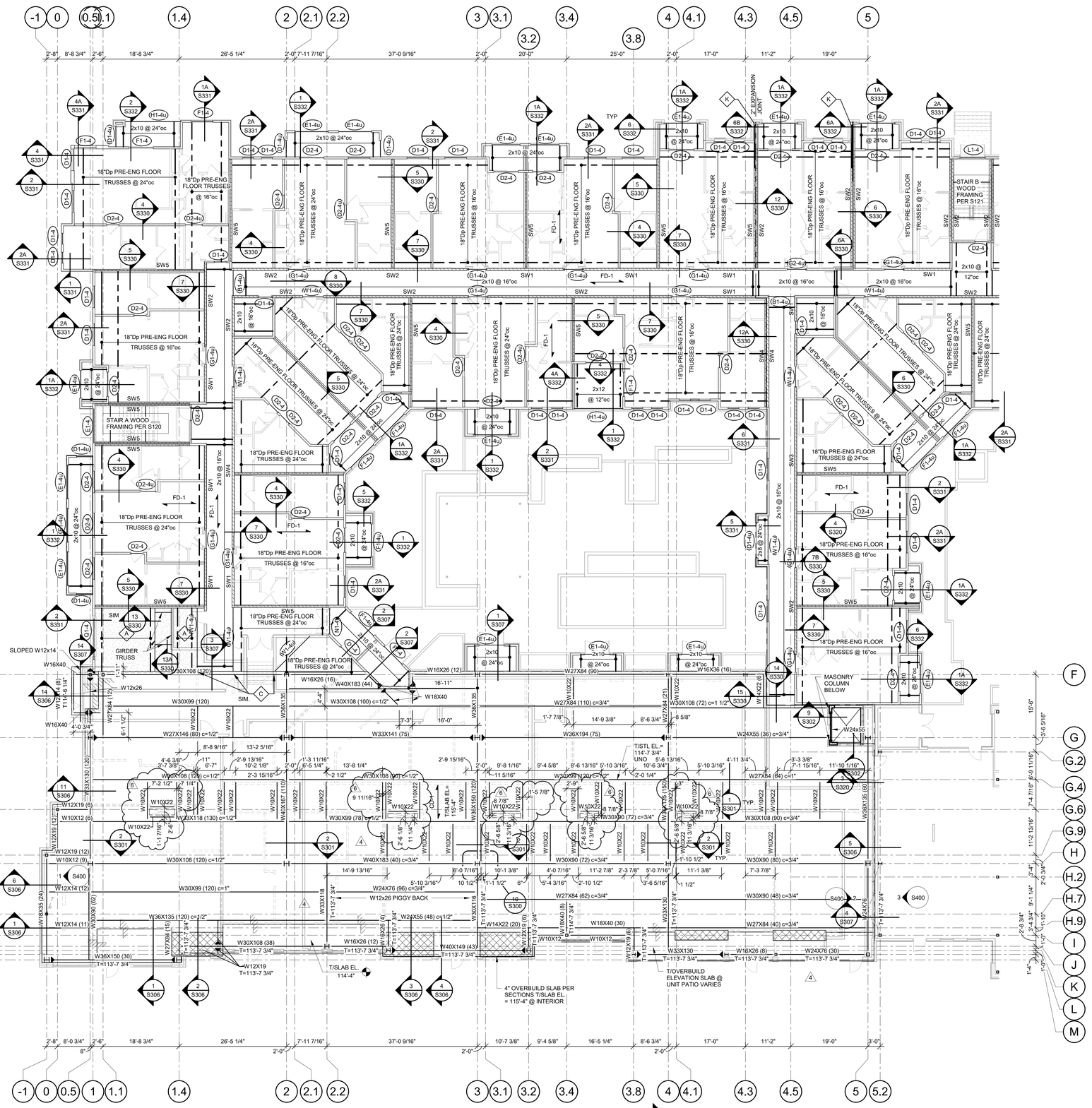
S113

SECOND FLOOR FRAMING PLAN



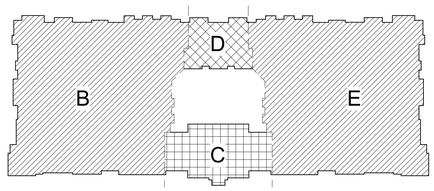
1 SECOND FLOOR FRAMING PLAN- AREA B

3/32" = 1'-0"

NOTES:
1. PROVIDE BENT PLATE AND DOWELS PER SECTION 14/S330 TYP. @ SHAFT OPENINGS. SLAB EDGE TO BE 6" FROM CENTERLINE OF BEAM U.N.O.

WOOD FLOOR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S330 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE TRUSS SPACE DIRECTLY ABOVE AND CENTERED OVER HVAC CLOSET; REFER TO ARCH AND MEP DRAWINGS FOR LOCATIONS.
8. REFER TO S001 FOR SLAB AND DECK SCHEDULE
   A. WOOD FLOOR DECK TO BE DECK TYPE "FD-1" U.N.O.
   B. BALCONY FLOOR DECK TO BE DECK TYPE "CD-2" U.N.O.
9. ADD 1 1/4" SILL PL BETWEEN 2nd FLOOR DECK & BOTTOM PLATE @ ALL LOAD BEARING 4 STORY WOOD STUD WALLS.
10. PUBLIC AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001
    STORAGE AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001



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REVISIONS 6

4	STRUCTURAL REVISION	10.16.19
6	REVISION 1	12.20.19

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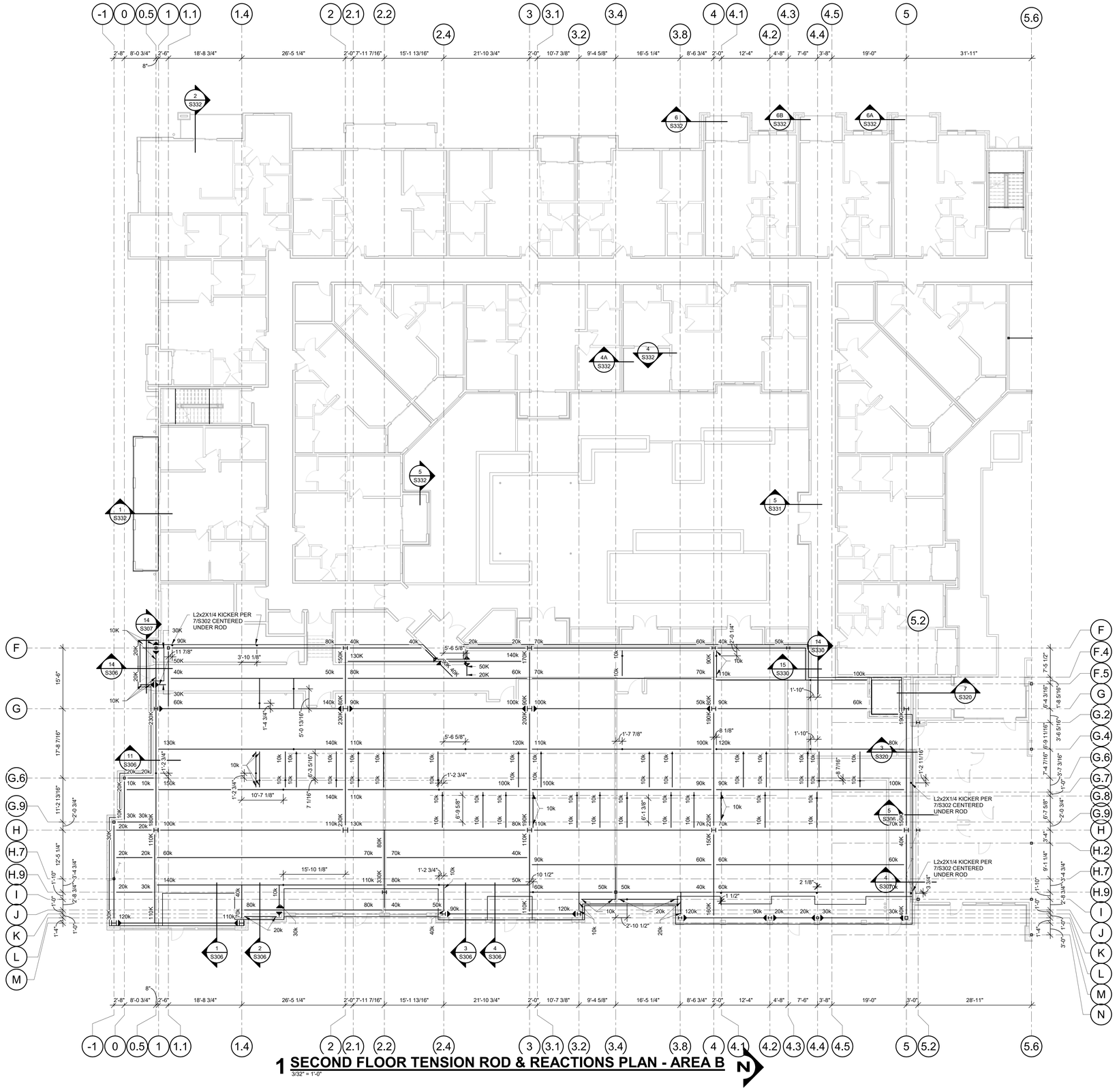
SHEET NO.

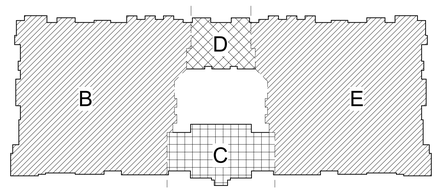
S113B

SECOND FLOOR FRAMING PLAN- AREA B



1 SECOND FLOOR TENSION ROD & REACTIONS PLAN - AREA B

3/32" = 1'-0"



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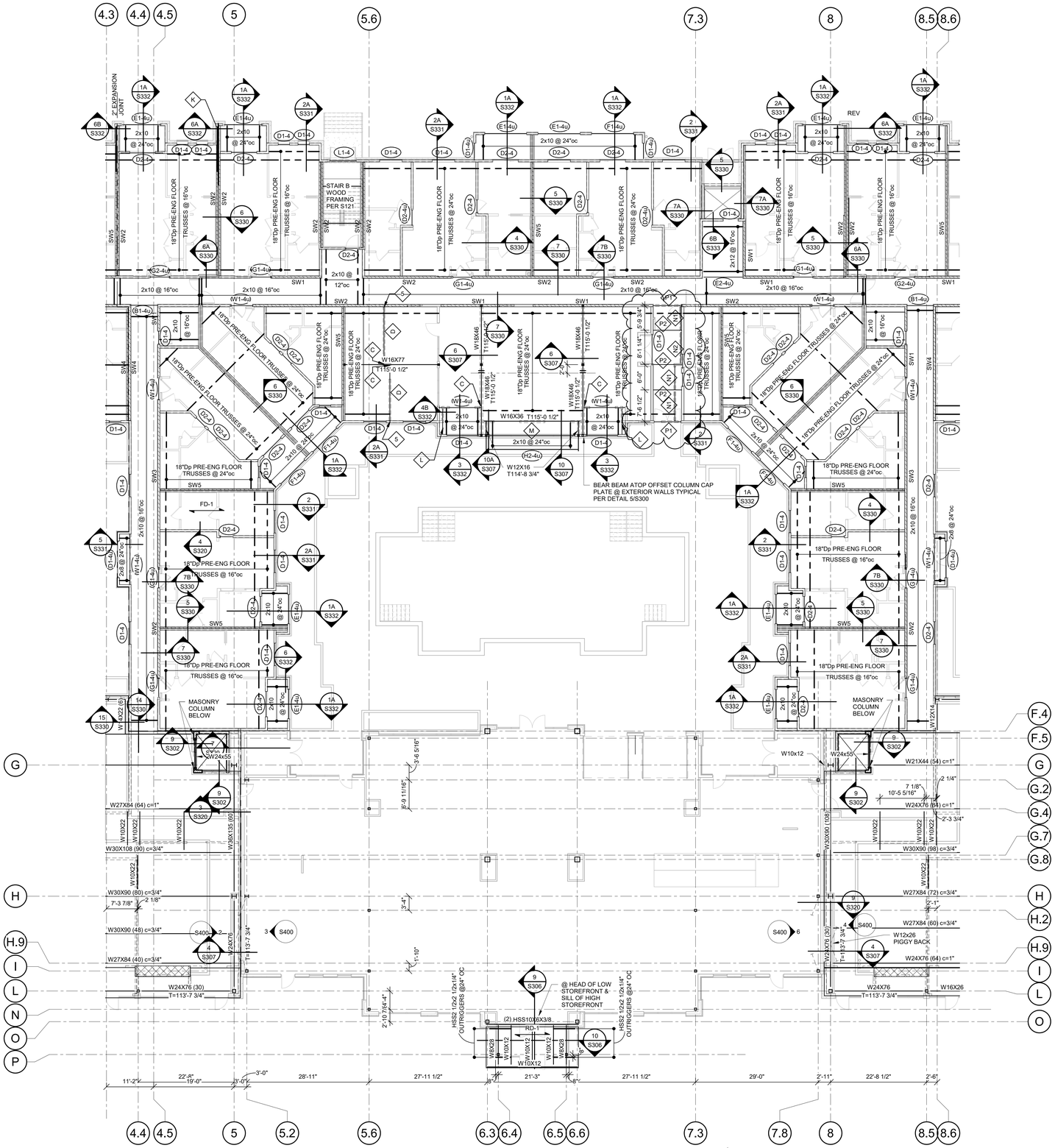
S113B-TR

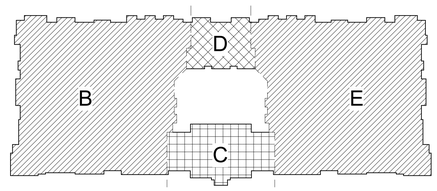
SECOND FLOOR TENSION ROD PLAN - AREA B



1 **SECOND FLOOR FRAMING PLAN- AREA C/D**
3/32" = 1'-0"

WOOD FLOOR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S330 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE.
7. PROVIDE TRUSS SPACE DIRECTLY ABOVE AND CENTERED OVER HVAC CLOSET; REFER TO ARCH AND MEP DRAWINGS FOR LOCATIONS.
8. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
   A. WOOD FLOOR DECK TO BE DECK TYPE "FD-1" U.N.O.
   B. BALCONY FLOOR DECK TO BE DECK TYPE "CD-2" U.N.O.
9. ADD 1 1/4" SILL PL BETWEEN 2nd FLOOR DECK & BOTTOM PLATE @ ALL LOAD BEARING 4 STORY WOOD STUD WALLS.
10. PUBLIC AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001
    STORAGE AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001



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BUSINESS
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REVISIONS

8	REVISION 3	04.03.20

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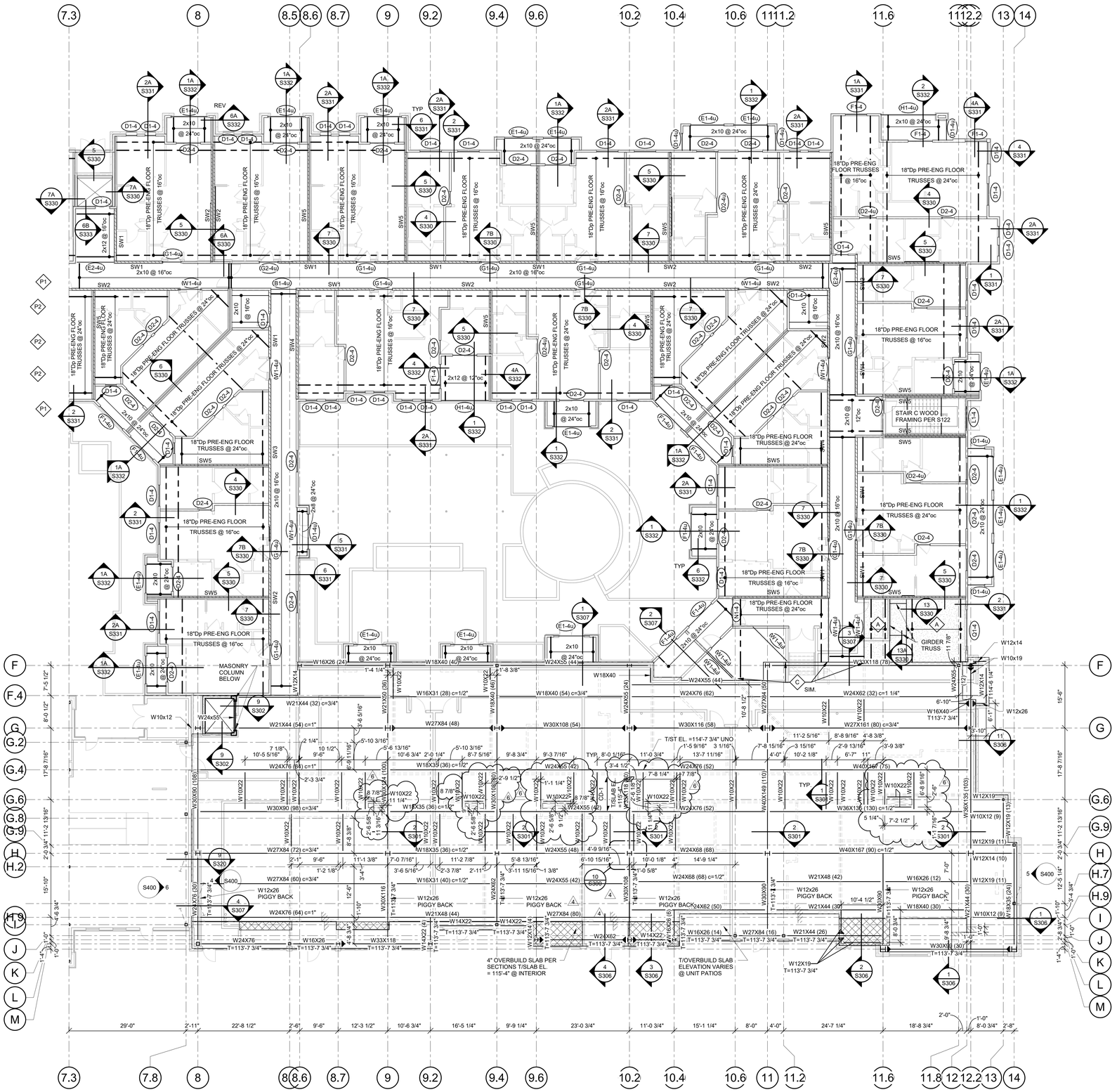
SHEET NO.

S113C/D

SECOND FLOOR FRAMING PLAN- AREA C/D



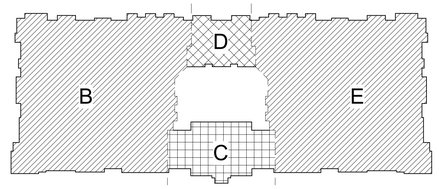
1 SECOND FLOOR FRAMING PLAN- AREA E

3/32" = 1'-0"

6 NOTES:
1. PROVIDE BENT PLATE AND DOWELS PER SECTION 14/S330 TYP. @ SHAFT OPENINGS. SLAB EDGE TO BE 6" FROM CENTERLINE OF BEAM U.N.O.

WOOD FLOOR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S330 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE TRUSS SPACE DIRECTLY ABOVE AND CENTERED OVER HVAC CLOSET; REFER TO ARCH AND MEP DRAWINGS FOR LOCATIONS.
8. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
   A. WOOD FLOOR DECK TO BE DECK TYPE "FD-1" U.N.O.
   B. BALCONY FLOOR DECK TO BE DECK TYPE "CD-2" U.N.O.
9. ADD 1 1/4" SILL PL BETWEEN 2nd FLOOR DECK & BOTTOM PLATE @ ALL LOAD BEARING 4 STORY WOOD STUD WALLS.
10. PUBLIC AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001
    STORAGE AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001



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REVISIONS 4

4	STRUCTURAL REVISION	10.16.19
6	REVISION 1	12.20.19

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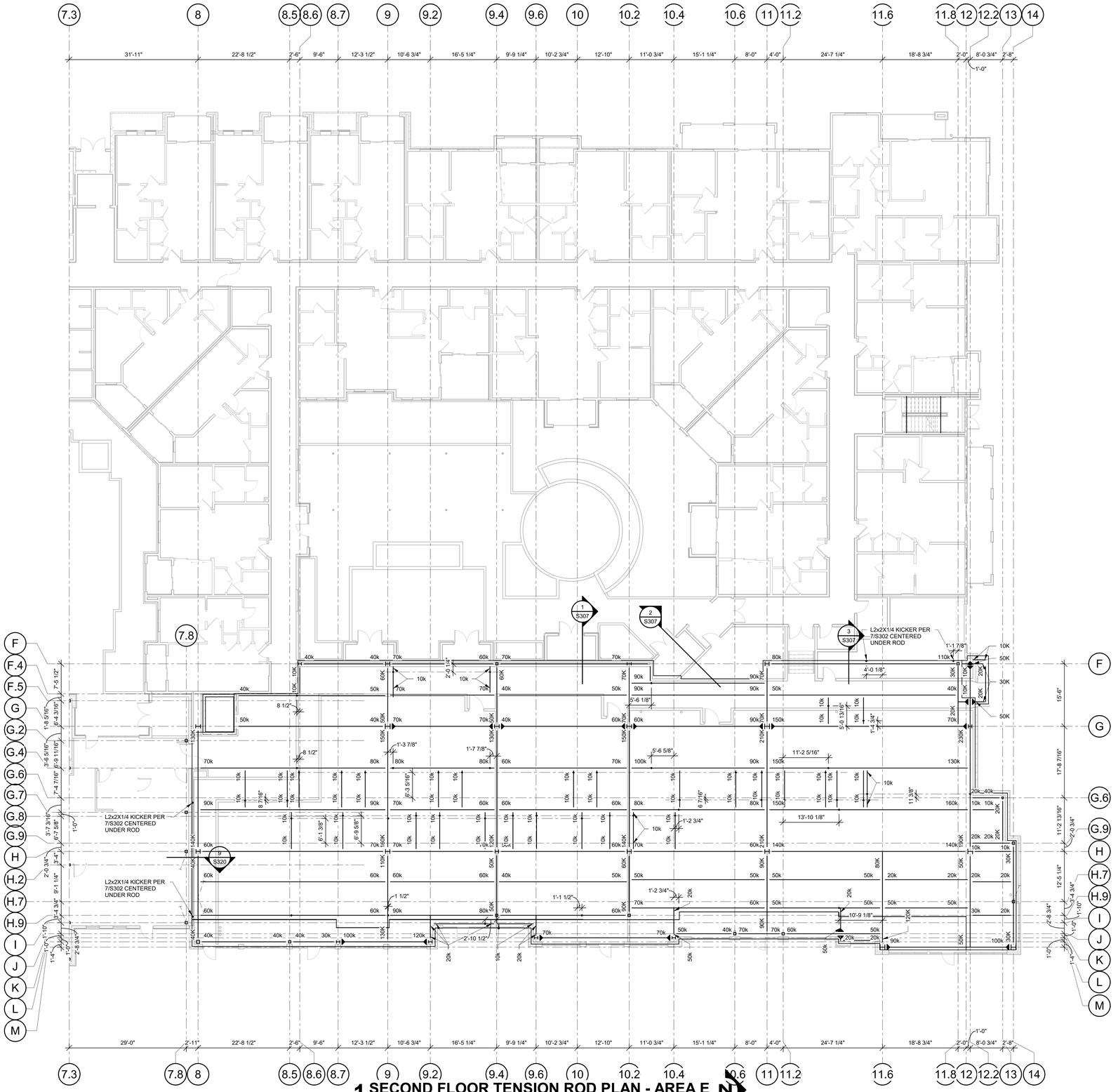
SHEET NO.

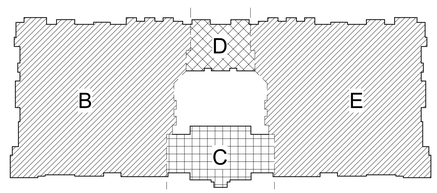
S113E

SECOND FLOOR FRAMING PLAN- AREA E



1 SECOND FLOOR TENSION ROD PLAN - AREA E

3/32" = 1'-0"



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REVISIONS 1

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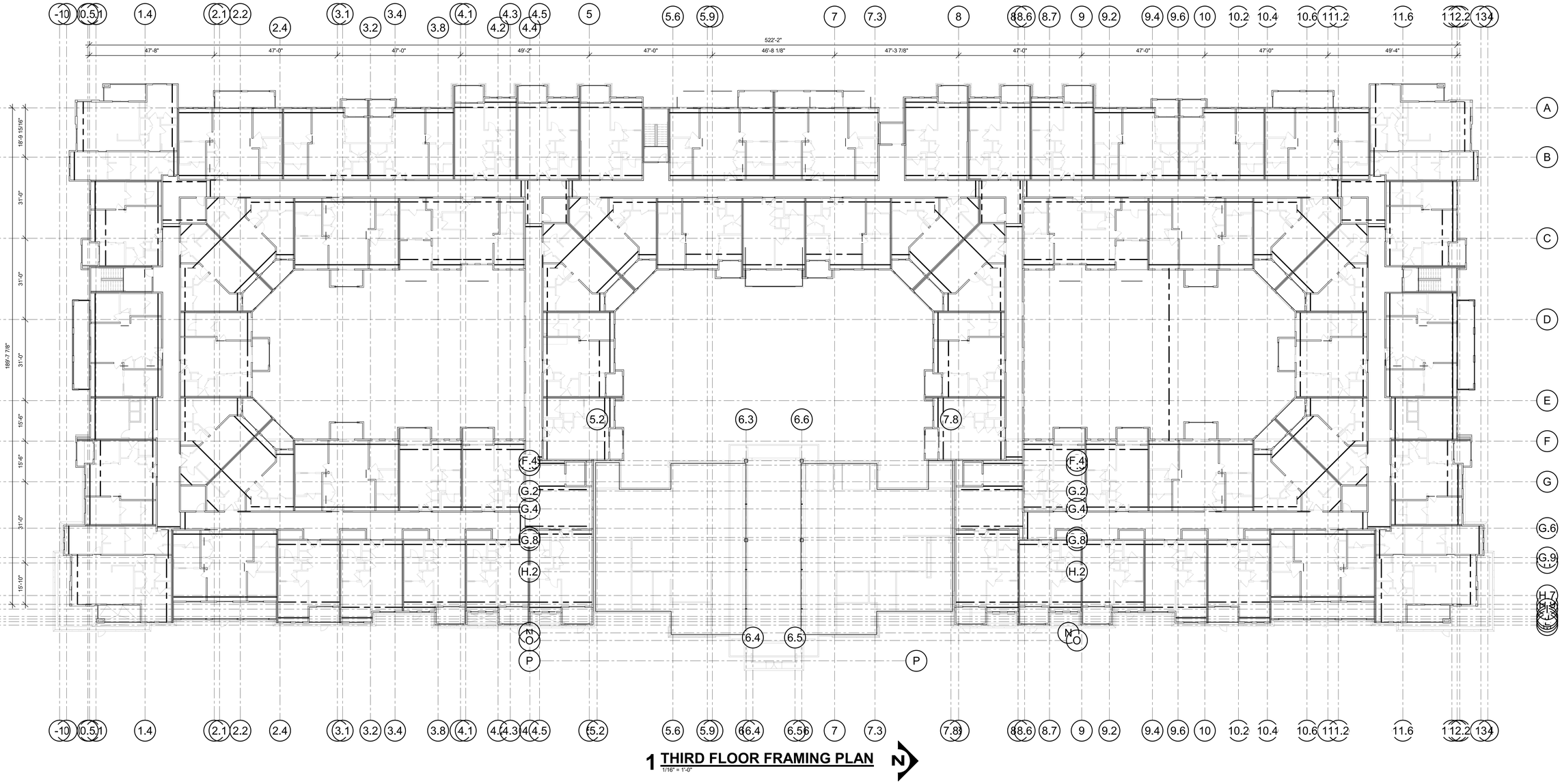
TR.i PROJECT NO. 18-046

SHEET NO.

S113E-TR

SECOND FLOOR TENSION ROD PLAN - AREA E



1 **THIRD FLOOR FRAMING PLAN**
1/16" = 1'-0"

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REVISIONS 4

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SHEET NO.

S114

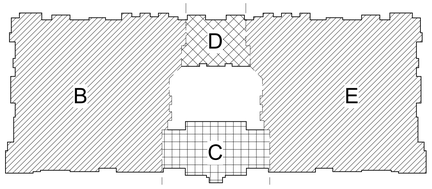
THIRD FLOOR FRAMING PLAN

1 THIRD FLOOR FRAMING PLAN- AREA B

3/32" = 1'-0"

WOOD FLOOR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S330 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE TRUSS SPACE DIRECTLY ABOVE AND CENTERED OVER HVAC CLOSET; REFER TO ARCH AND MEP DRAWINGS FOR LOCATIONS.
8. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
   A. WOOD FLOOR DECK TO BE DECK TYPE "FD-1" U.N.O.
   B. BALCONY FLOOR DECK TO BE DECK TYPE "CD-2" U.N.O.
9. ADD 1 1/4" SILL PL BETWEEN 2nd FLOOR DECK & BOTTOM PLATE @ ALL LOAD BEARING 4 STORY WOOD STUD WALLS.
10. PUBLIC AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001
    STORAGE AREA: DESIGN FOR LIVE LOAD PER GENERAL NOTE 2.B ON S001



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REVISIONS

4	STRUCTURAL REVISION	10.16.19
7	REVISION 2	01.24.20

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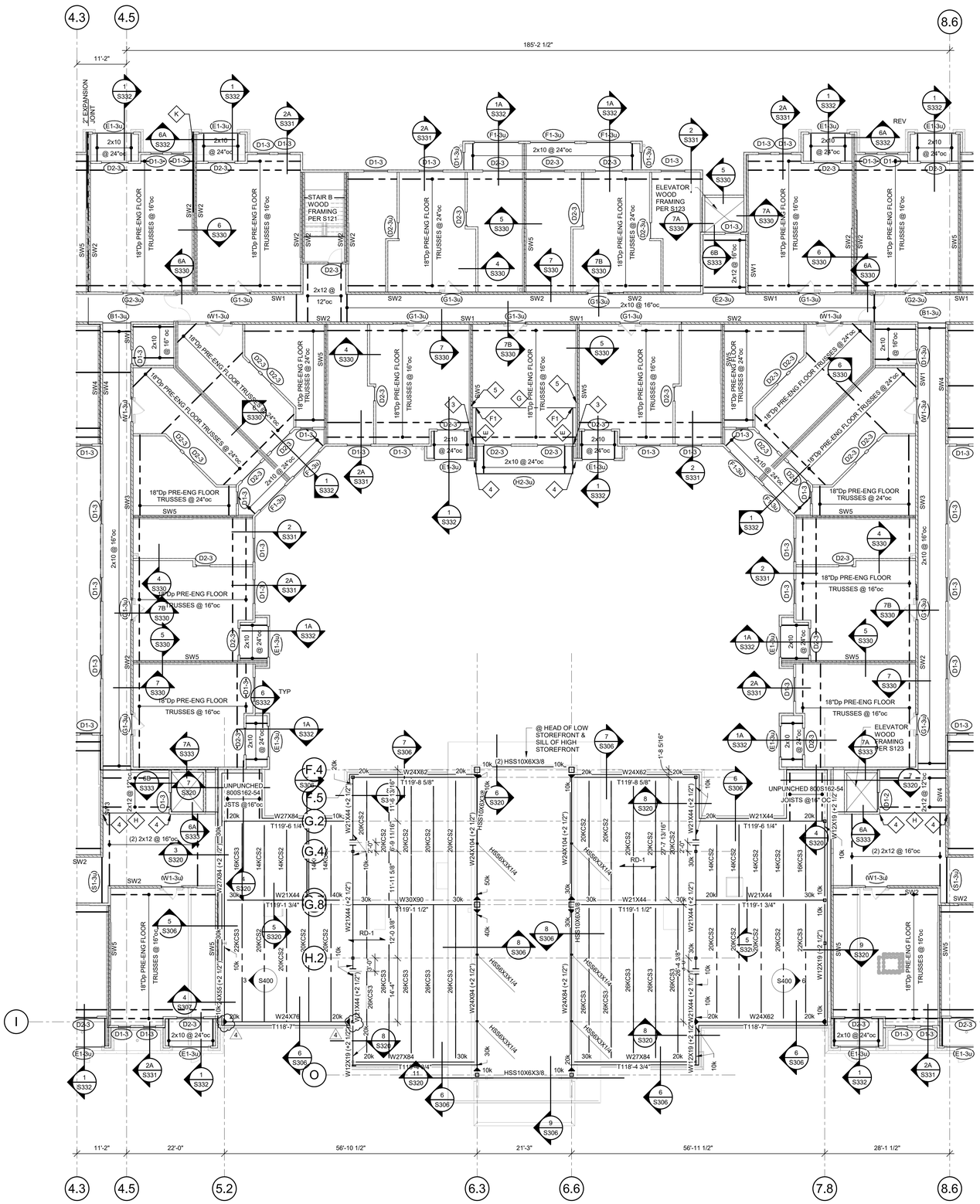
SHEET NO.

S114B

THIRD FLOOR FRAMING PLAN- AREA



1 THIRD FLOOR FRAMING PLAN- AREA C/D
3/32" = 1'-0"

WOOD FLOOR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
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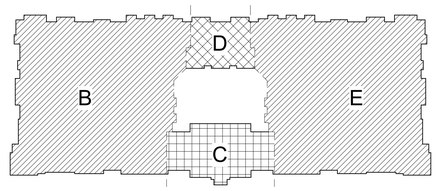

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REVISIONS 4

4	STRUCTURAL REVISION 10.16.19

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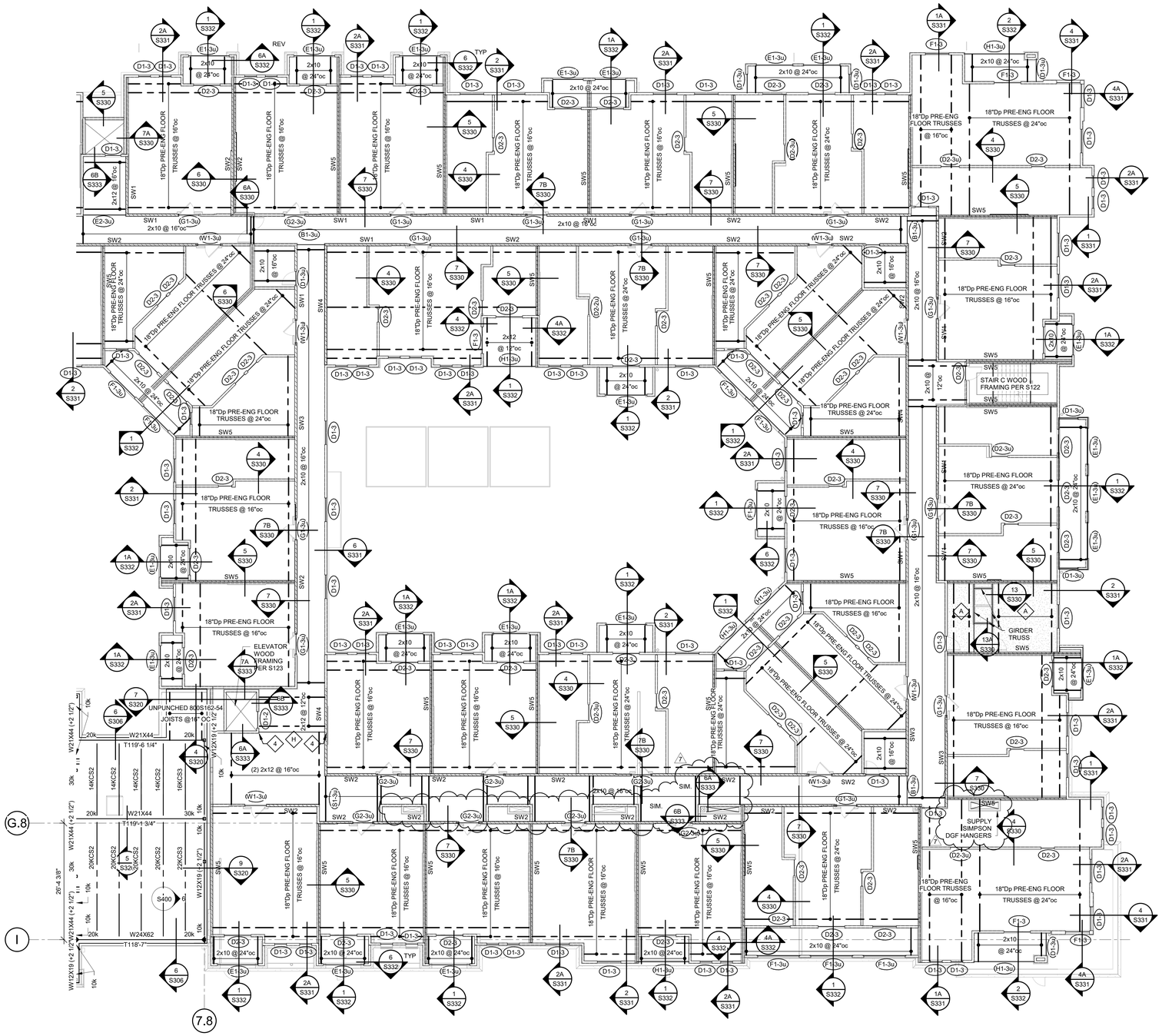
SHEET NO.

S114C/D

THIRD FLOOR FRAMING PLAN- AREA C/D



1 THIRD FLOOR FRAMING PLAN- AREA E

3/32" = 1'-0"

N

WOOD FLOOR FRAMING

NOTES:

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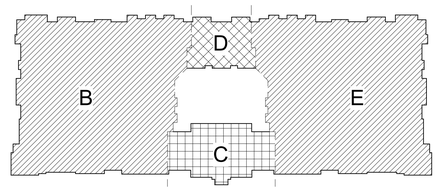

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REVISIONS 2

7	REVISION 2	01.24.20

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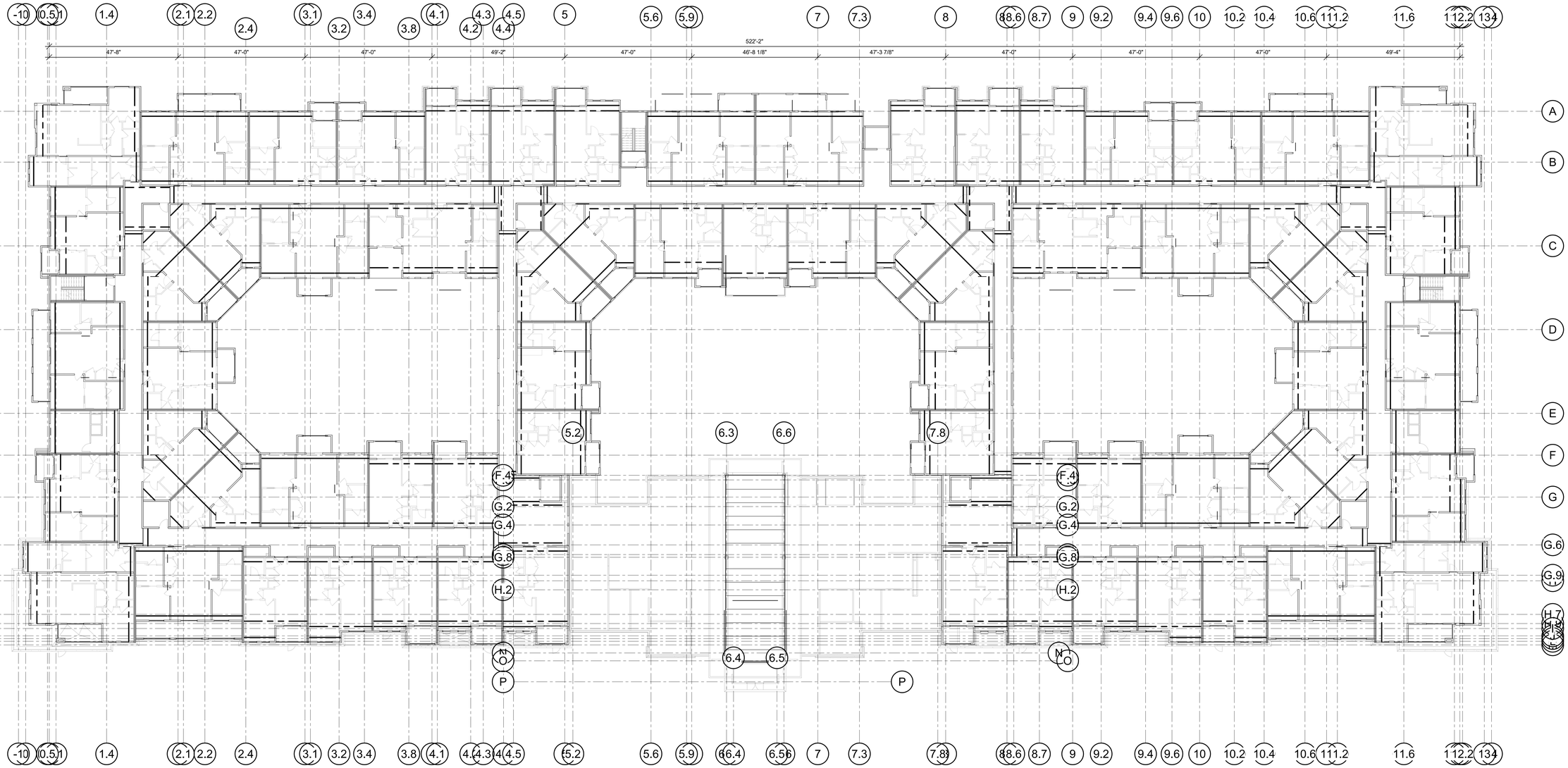
SHEET NO.

S114E

THIRD FLOOR FRAMING PLAN- AREA E



1 FOURTH FLOOR FRAMING PLAN

1/16" = 1'-0"

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REVISIONS 4

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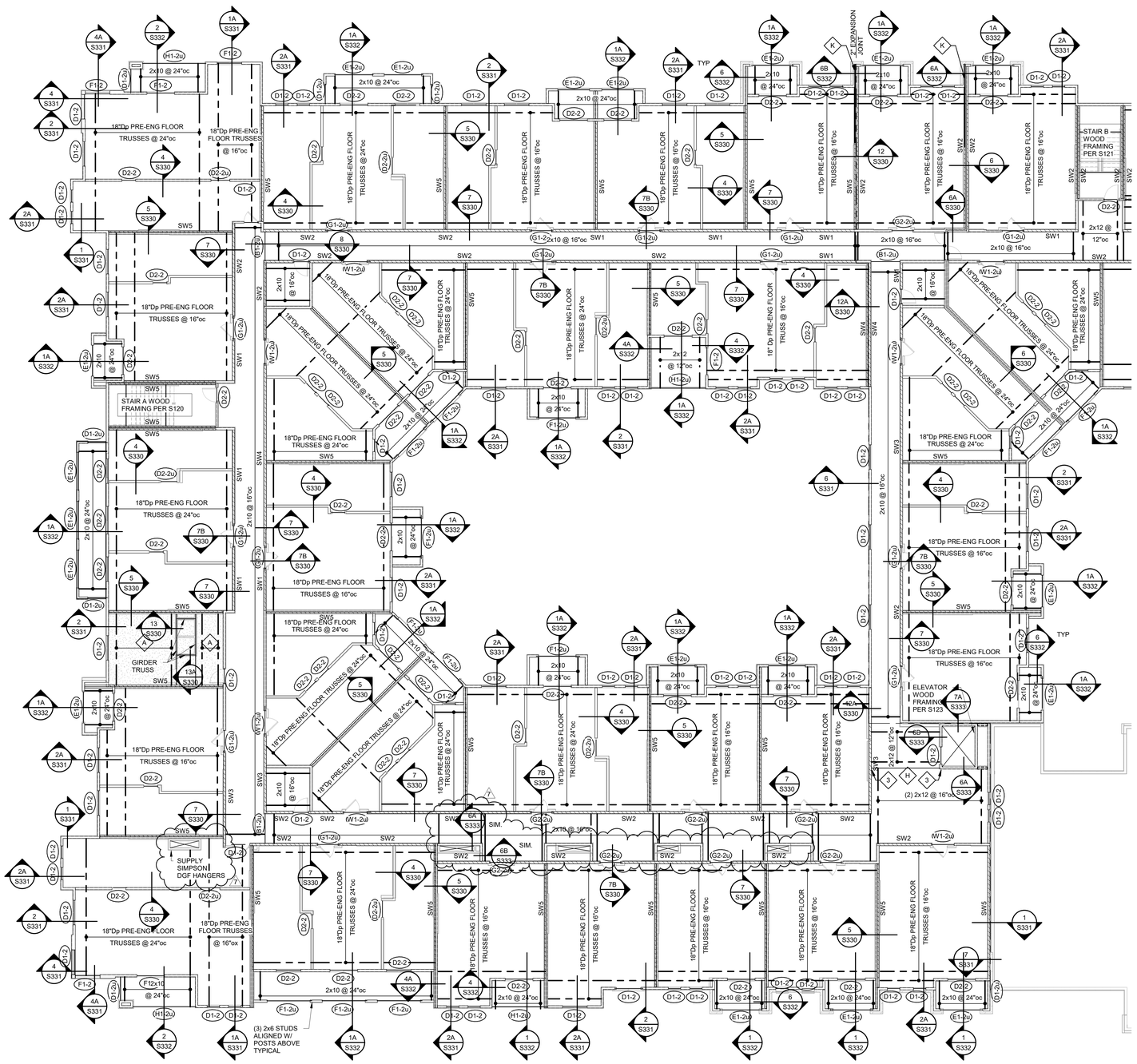
SHEET NO.

S115

FOURTH FLOOR FRAMING PLAN



1 FOURTH FLOOR FRAMING PLAN- AREA B

3/32" = 1'-0"

N

WOOD FLOOR FRAMING

NOTES:

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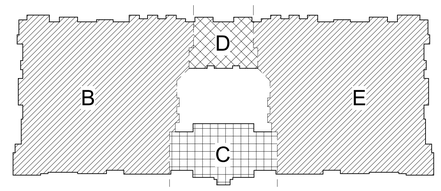

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REVISIONS 2

7	REVISION 2	01.24.20

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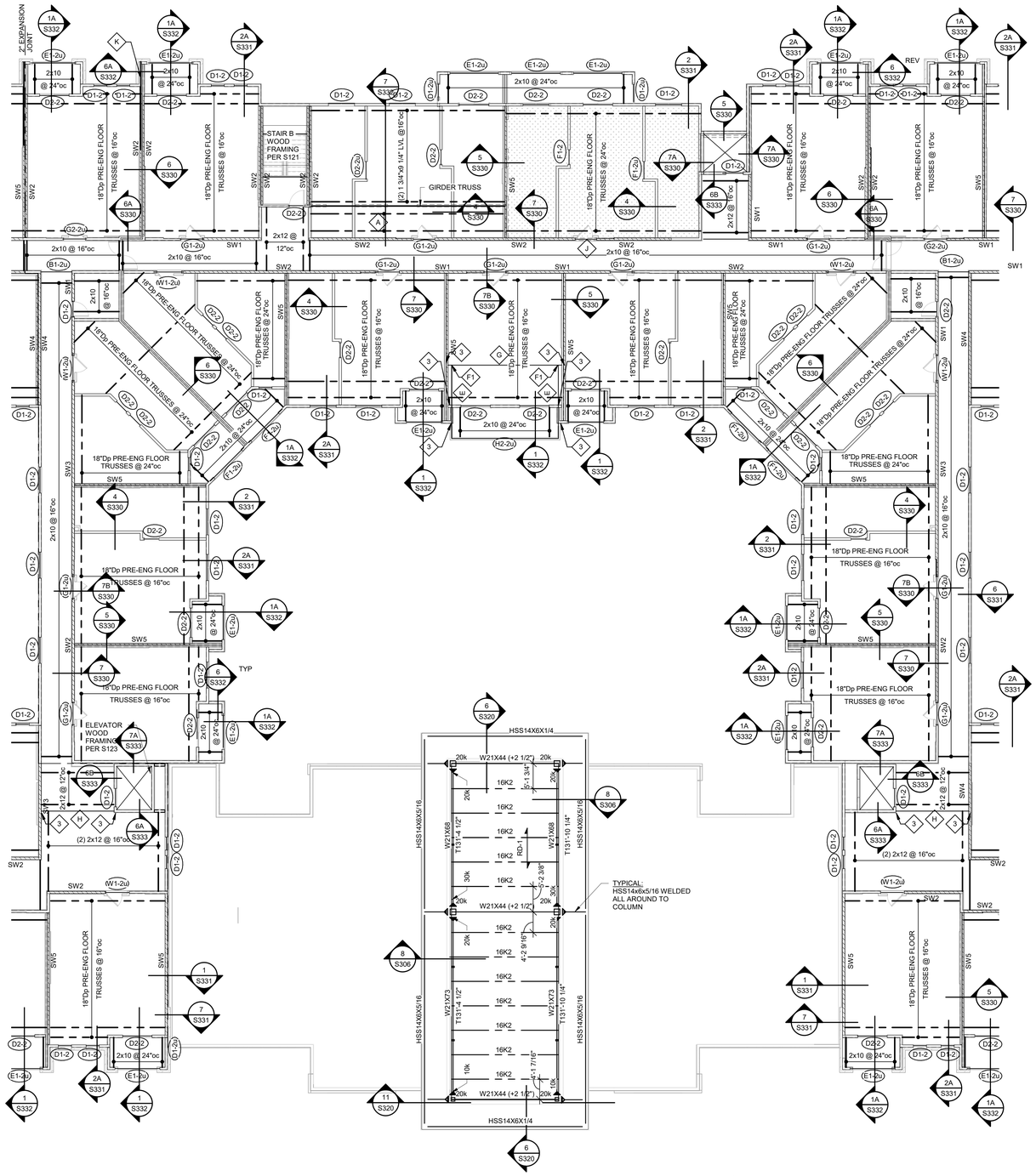
SHEET NO.

S115B

FOURTH FLOOR FRAMING PLAN- AREA B



1 FOURTH FLOOR FRAMING PLAN- AREA C/D

3/32" = 1'-0"

WOOD FLOOR FRAMING

NOTES:

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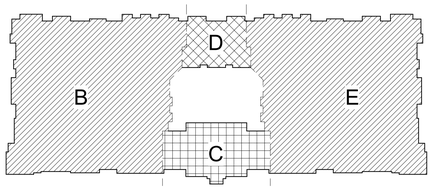

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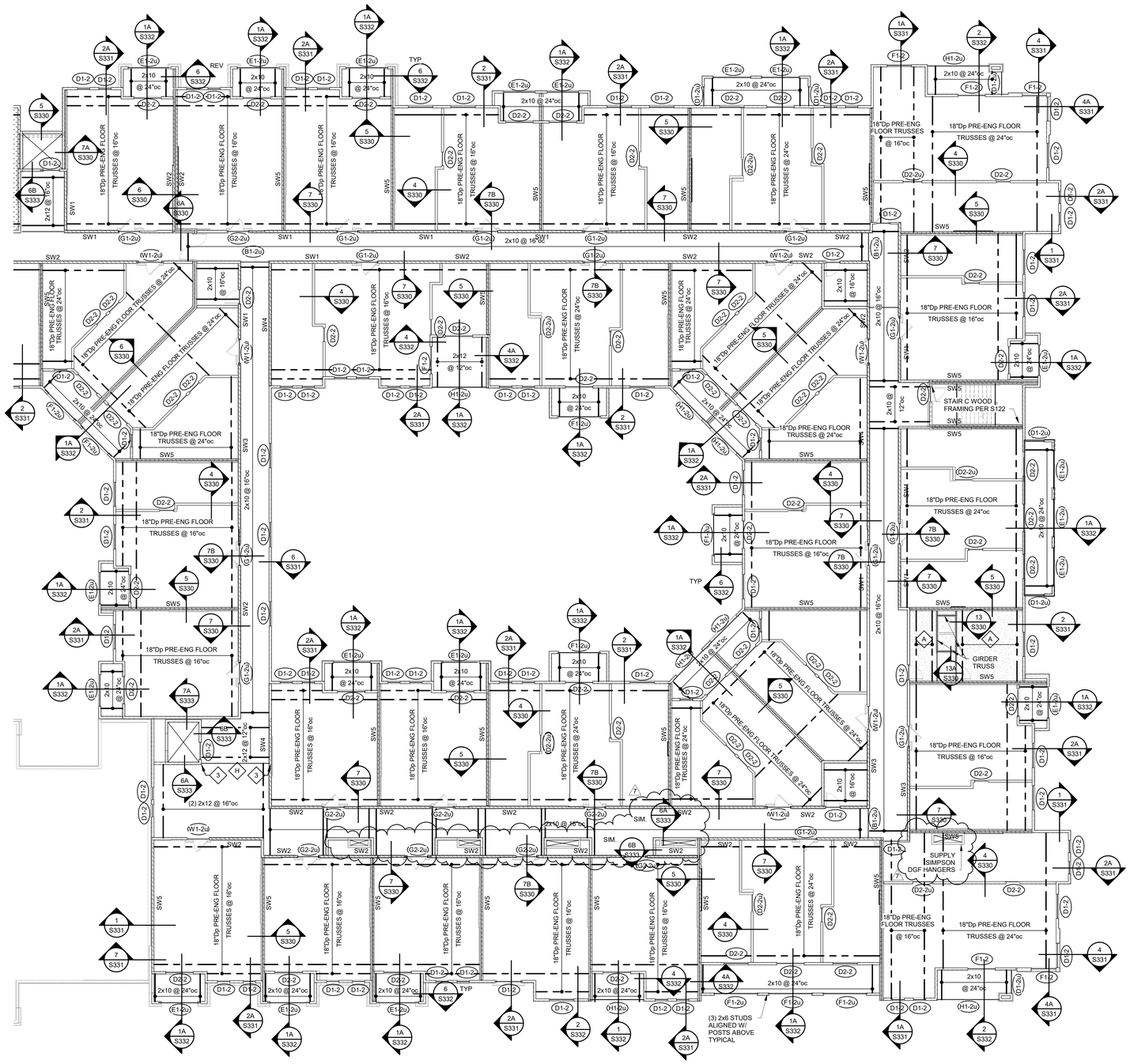
S115C/D

FOURTH FLOOR FRAMING PLAN- AREA C/D



1 FOURTH FLOOR FRAMING PLAN- AREA E

3/32" = 1'-0"

N

WOOD FLOOR FRAMING

NOTES:

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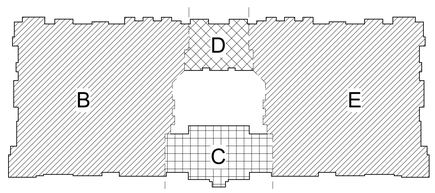

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REVISIONS

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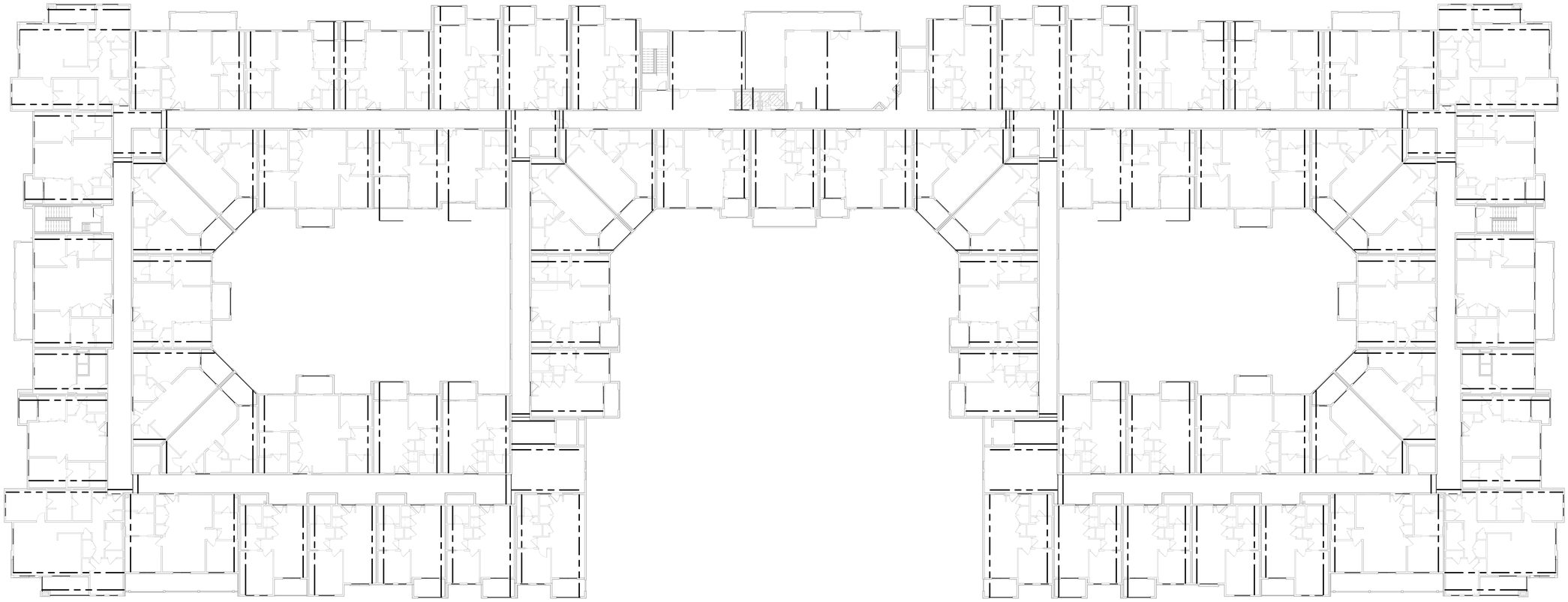
FOURTH FLOOR FRAMING PLAN- AREA E



1 ROOF FRAMING PLAN
1/16" = 1'-0"

N

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Architect
PE-2010026832
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REVISIONS 1

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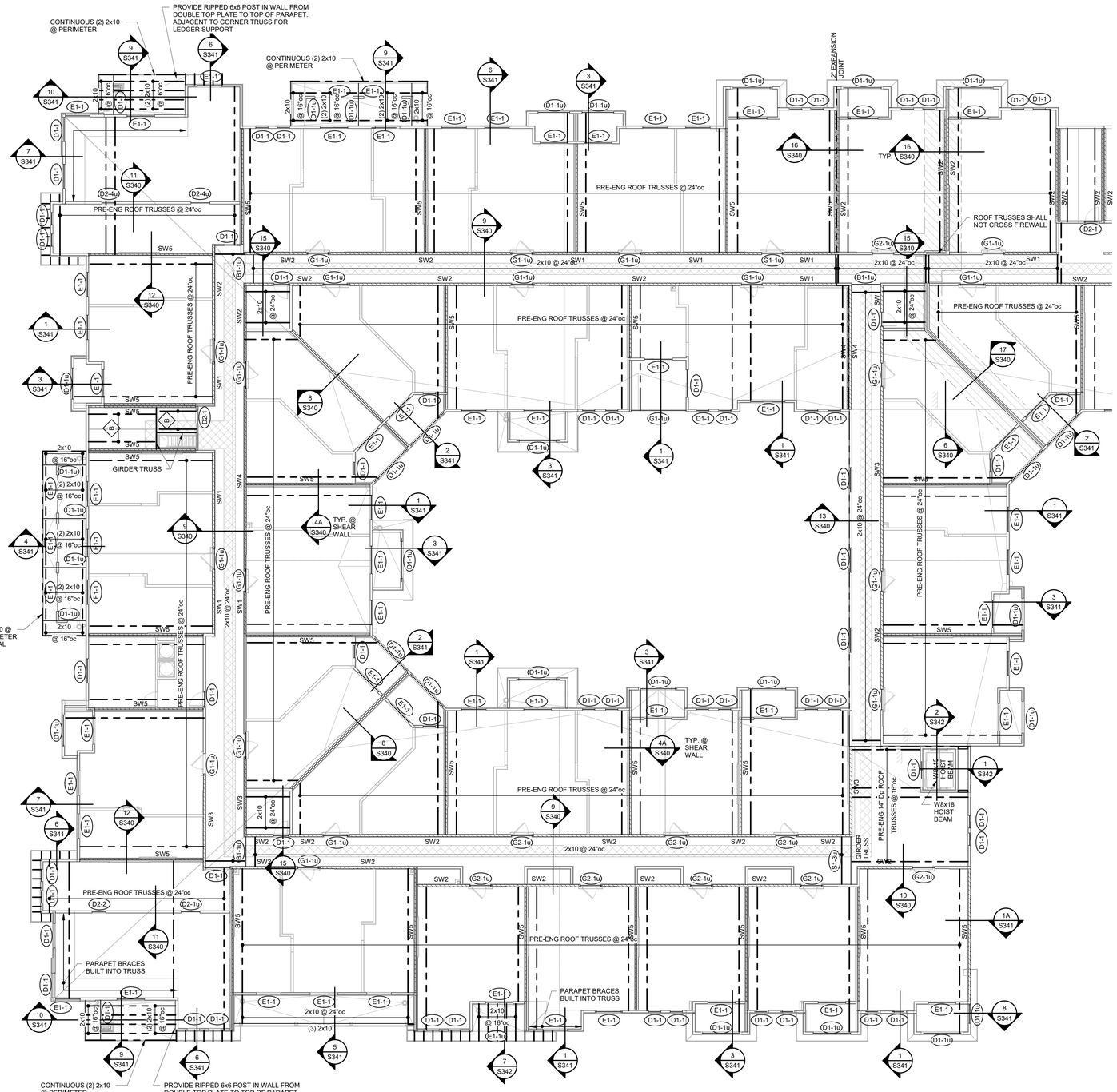
SHEET NO.

S116

ROOF FRAMING PLAN



1 ROOF FRAMING PLAN- AREA B

3/32" = 1'-0"

WOOD ROOF FRAMING

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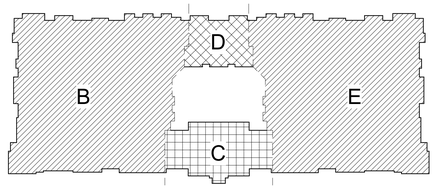
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S340 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE (3) STUDS MINIMUM ALIGNED UNDER EACH END OF EACH GIRDER TRUSS. PROVIDE SQUASH BLOCKS AND JAMBS AT EA. FLOOR BELOW DOWN TO FOUNDATION. (TOTAL STUDS TO MATCH NUMBER OF GIRDER TRUSS PLIES (3 MIN.) REFER TO DETAIL 8/S340.
8. PROVIDE UNIFORM UPLIFT SCREWS @ UPPER FLOOR PER DETAILS 3, 3A, 3B, 4 AND 5 ON S005.
9. PRE-ENG TRUSSES TO HAVE A MINIMUM DEPTH OF 24". SLOPE TOP CHORD PER ARCHITECTUAL DRAWINGS.
10. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
    A. WOOD ROOF DECK TO BE DECK TYPE "RD-1" U.N.O.



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Timothy A. Maurer
ENGINEER
PE-2010026832
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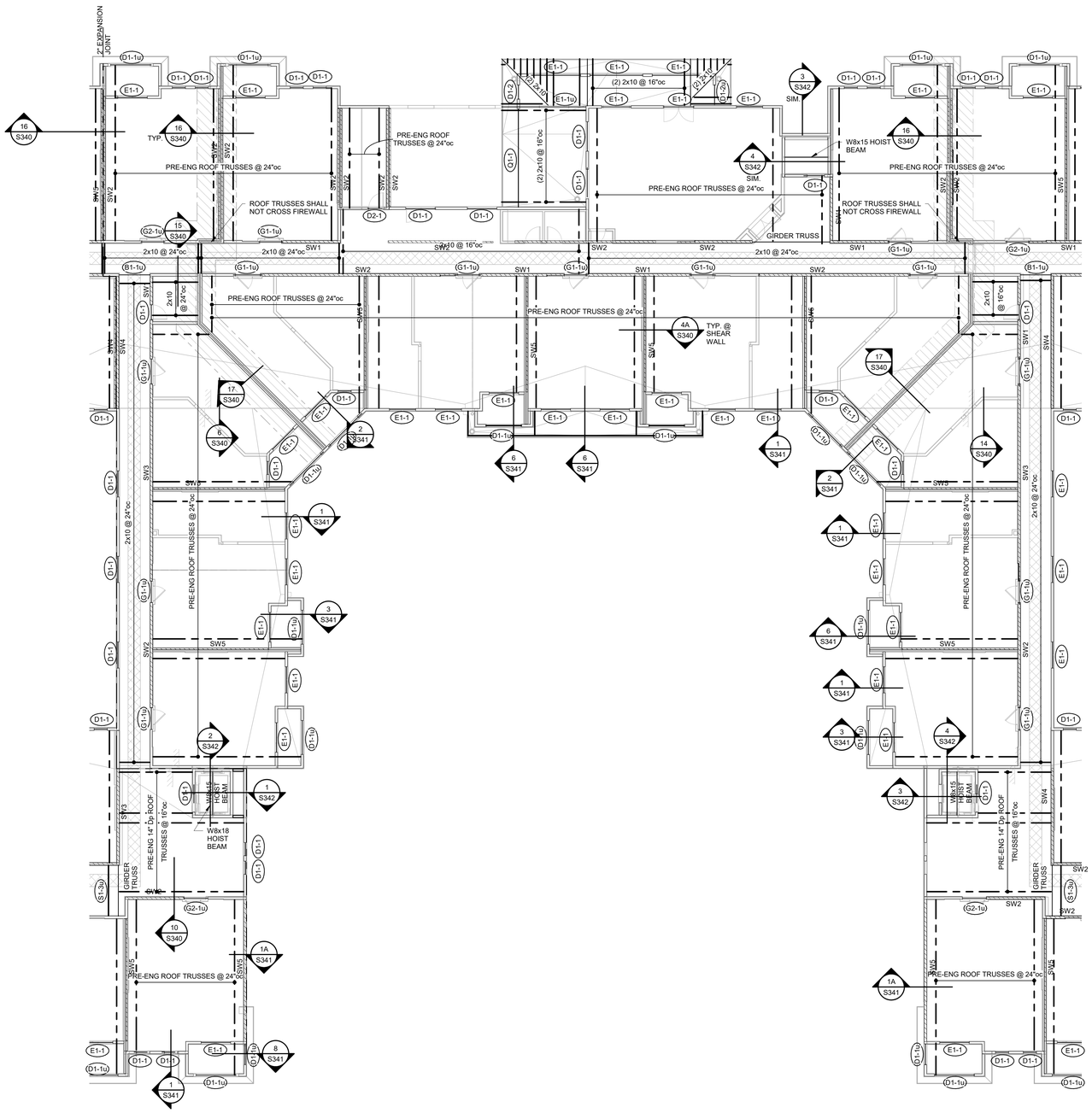
SHEET NO.

S116B

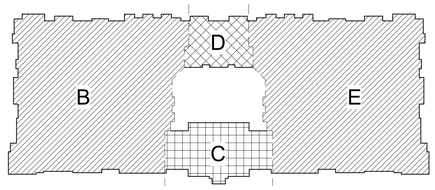
ROOF FRAMING PLAN- AREA B



1 **ROOF FRAMING PLAN- C/D**
3/32" = 1'-0"

WOOD ROOF FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S340 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE (3) STUDS MINIMUM ALIGNED UNDER EACH END OF EACH GIRDER TRUSS. PROVIDE SQUASH BLOCKS AND JAMBS AT EA. FLOOR BELOW DOWN TO FOUNDATION. (TOTAL STUDS TO MATCH NUMBER OF GIRDER TRUSS PLIES (3 MIN.) REFER TO DETAIL 8/S340.
8. PROVIDE UNIFORM UPLIFT SCREWS @ UPPER FLOOR PER DETAILS 3, 3A, 3B, 4 AND 5 ON S005.
9. PRE-ENG TRUSSES TO HAVE A MINIMUM DEPTH OF 24". SLOPE TOP CHORD PER ARCHITECTUAL DRAWINGS.
10. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
    A. WOOD ROOF DECK TO BE DECK TYPE "RD-1" U.N.O.



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F: 314-395-9751
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REVISIONS A

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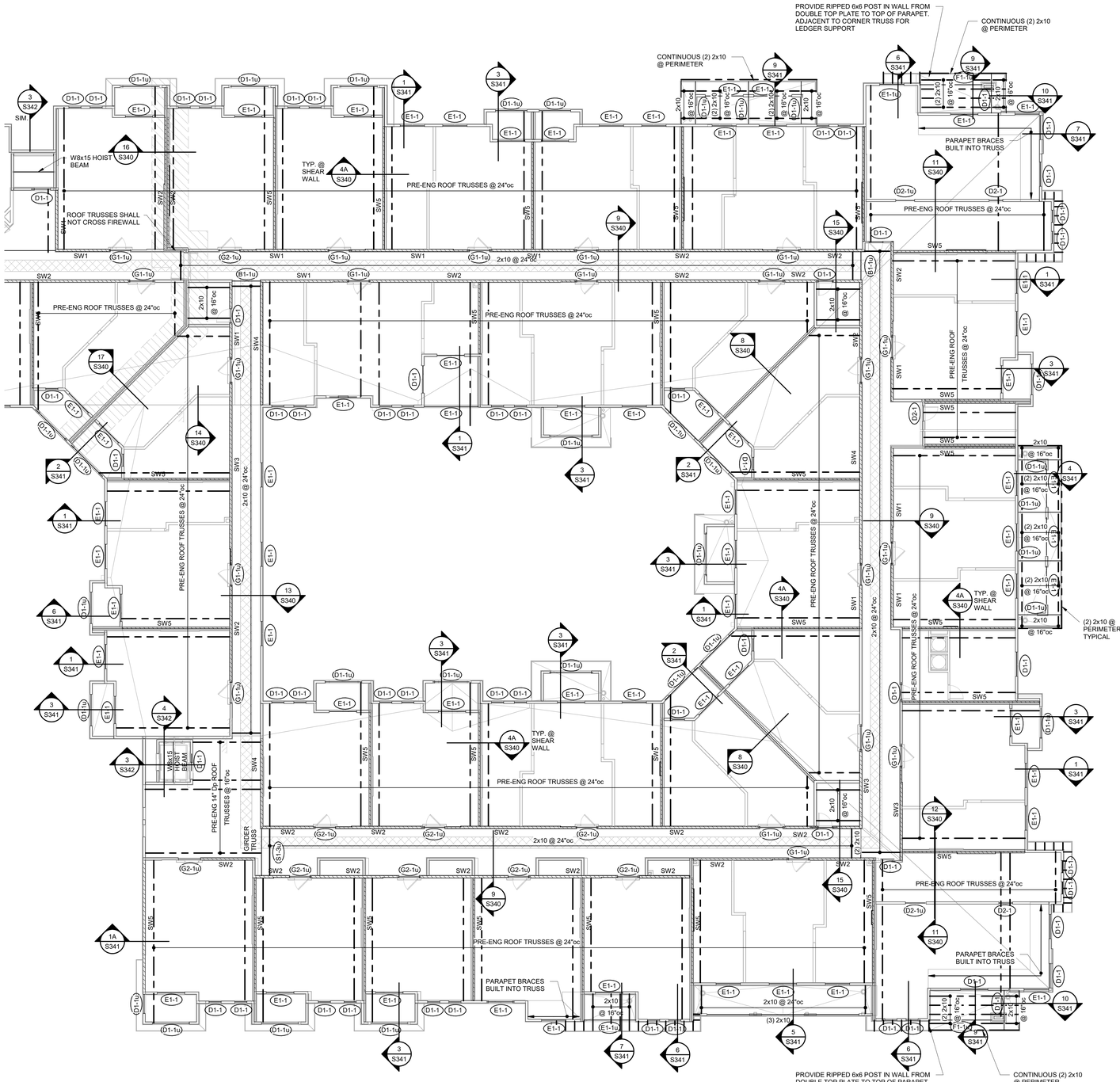
TR.i PROJECT NO. 18-046

SHEET NO.

S116C/D

ROOF FRAMING PLAN- AREA C/D



1 ROOF FRAMING PLAN- AREA E

3/32" = 1'-0"

WOOD ROOF FRAMING

NOTES:

1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO STAIR FRAMING PLANS ON SHEET S120.
6. REFER TO S340 SERIES OF SHEETS FOR ADDITIONAL FLOOR FRAMING DETAILS NOT INDICATED HERE
7. PROVIDE (3) STUDS MINIMUM ALIGNED UNDER EACH END OF EACH GIRDER TRUSS. PROVIDE SQUASH BLOCKS AND JAMBS AT EA. FLOOR BELOW DOWN TO FOUNDATION. (TOTAL STUDS TO MATCH NUMBER OF GIRDER TRUSS PLIES (3 MIN.) REFER TO DETAIL 8/S340.
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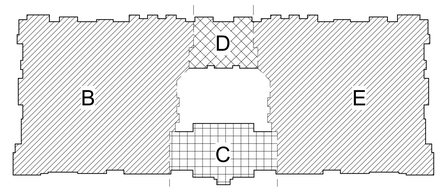
10. REFER TO S001 FOR SLAB AND DECK SCHEDULE.
    A. WOOD ROOF DECK TO BE DECK TYPE "RD-1" U.N.O.



STATE OF MISSOURI
JOHN A. SPARKS
ENGINEER
2010006832
PROFESSIONAL ENGINEER
7-28-19

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STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
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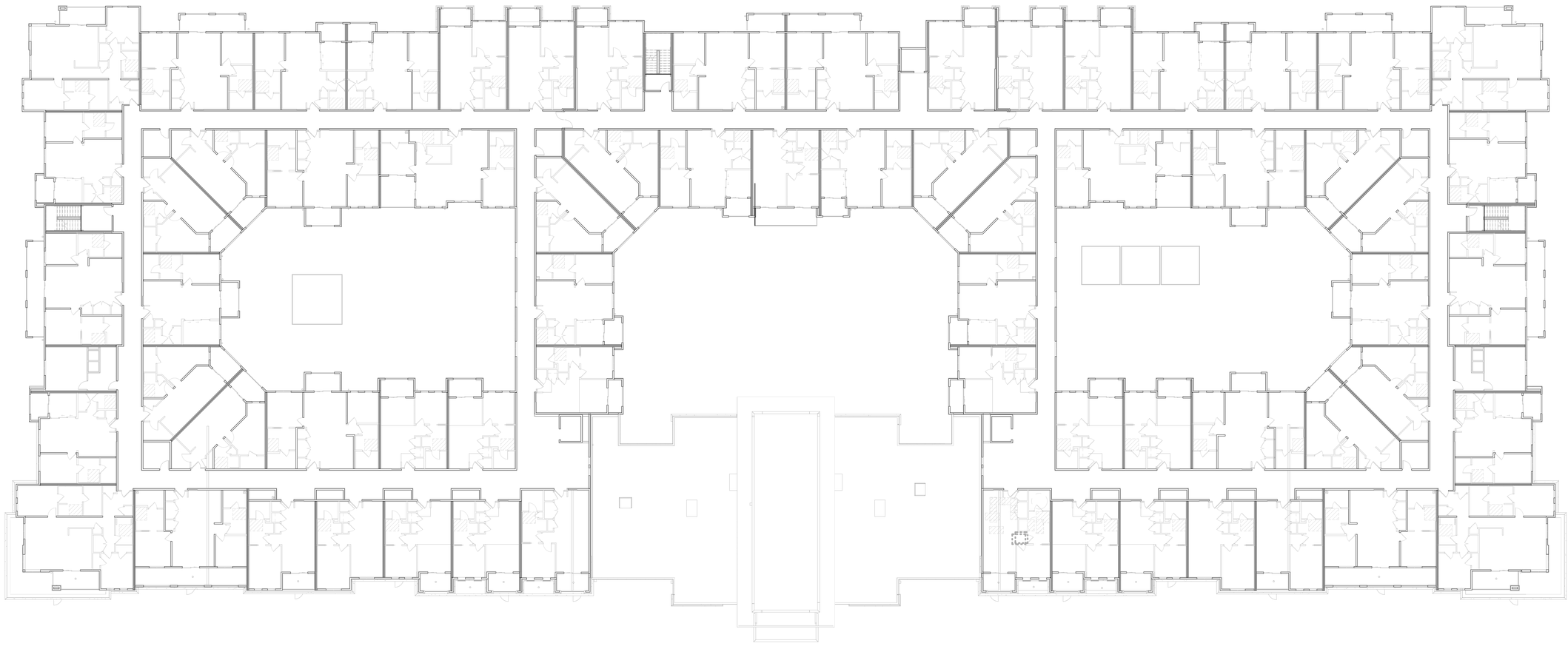
S116E

ROOF FRAMING PLAN- AREA E



1 SHEARWALL AND BEARING WALL TYPE PLAN
1/16" = 1'-0"

N

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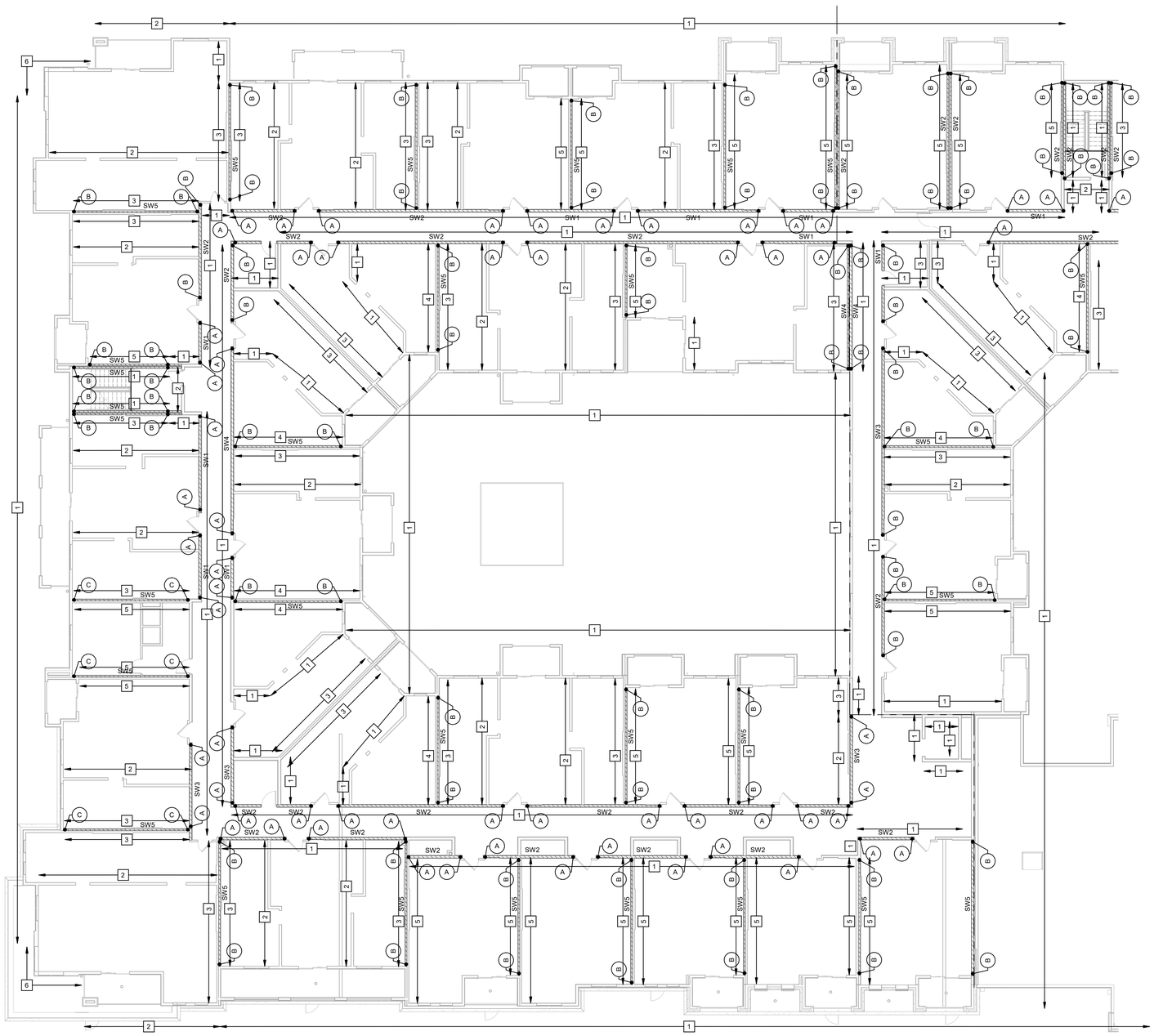
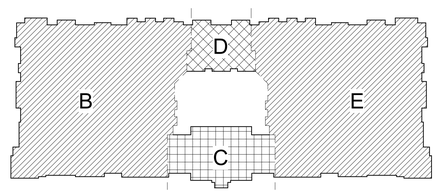
S117

SHEARWALL AND BEARING WALL TYPE PLAN



1 SHEARWALL AND BEARING WALL TYPE PLAN - B

3/32" = 1'-0"



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PROFESSIONAL ENGINEER
Clint A. Stark
ENGINEER
PE-2010026832
7-28-19

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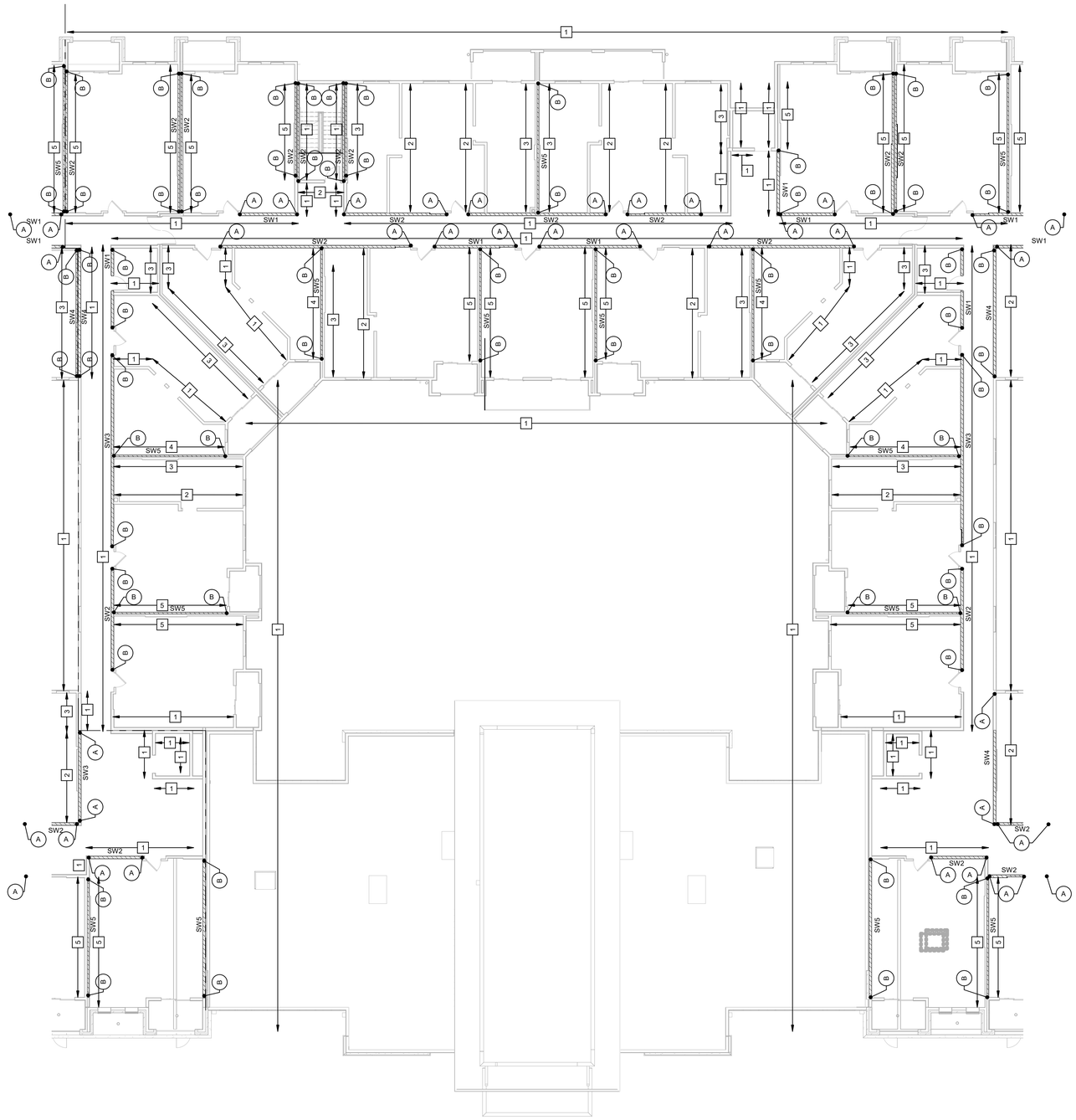
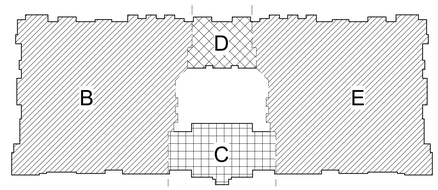
SHEARWALL AND BEARING WALL TYPE PLAN -B



1 **SHEARWALL AND BEARING WALL TYPE PLAN - C/D**
3/32" = 1'-0"



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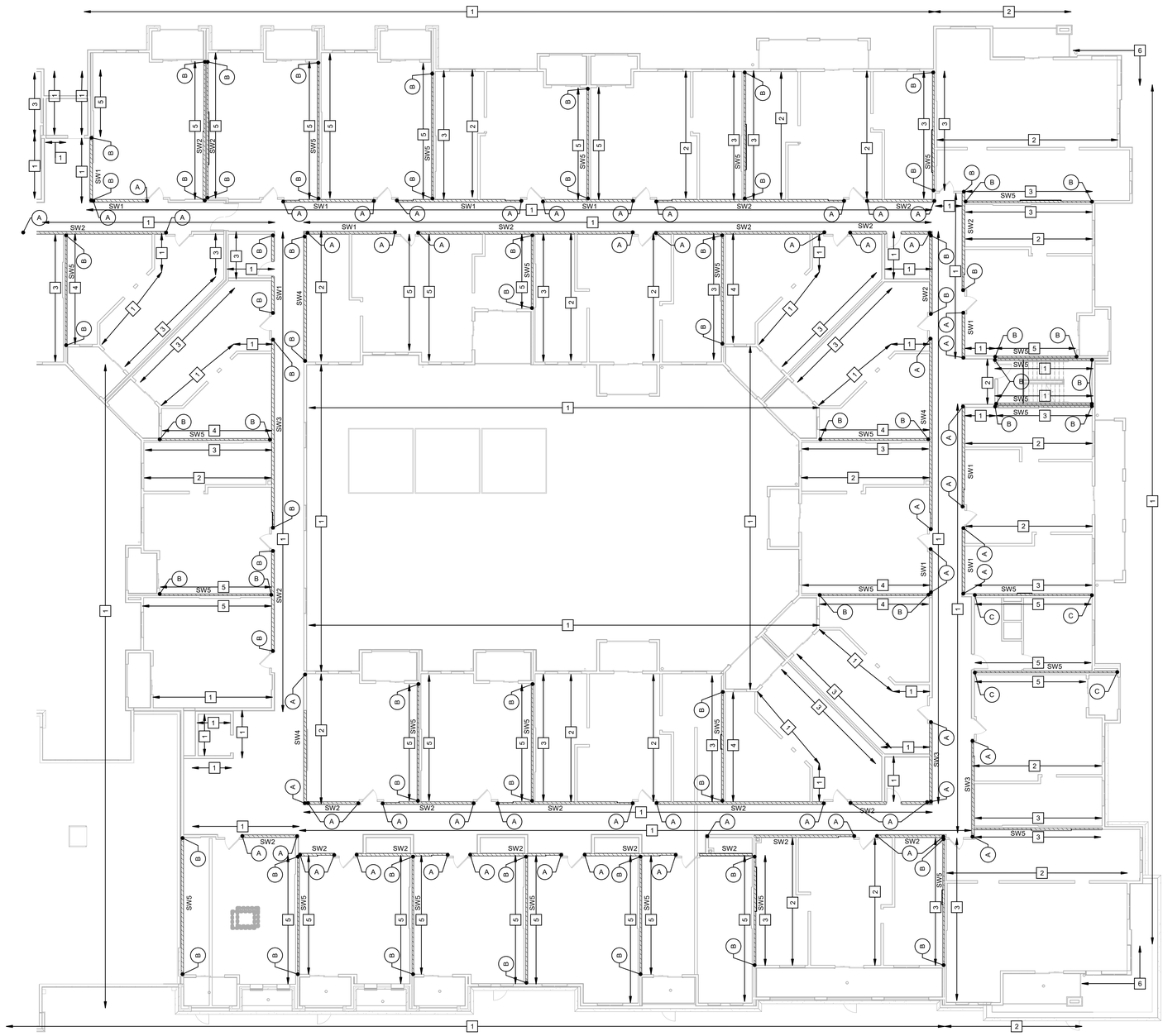
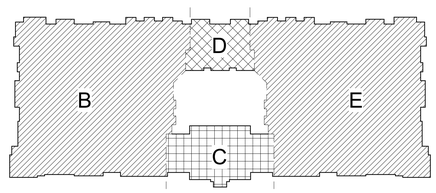
SHEET NO.

S117C/D

SHEARWALL AND BEARING WALL TYPE PLAN -C/D



1 **SHEARWALL AND BEARING WALL TYPE PLAN - E**
3/32" = 1'-0"



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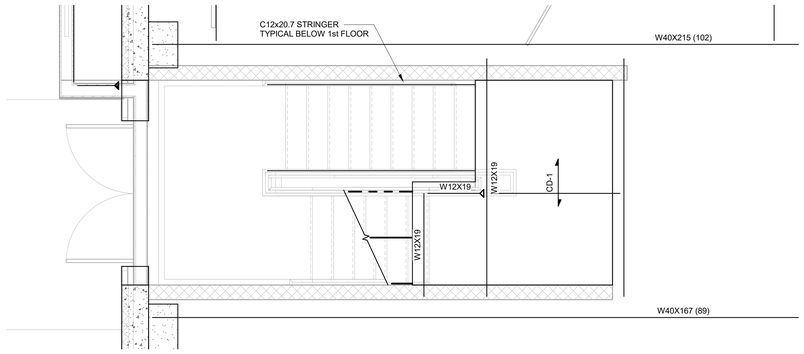
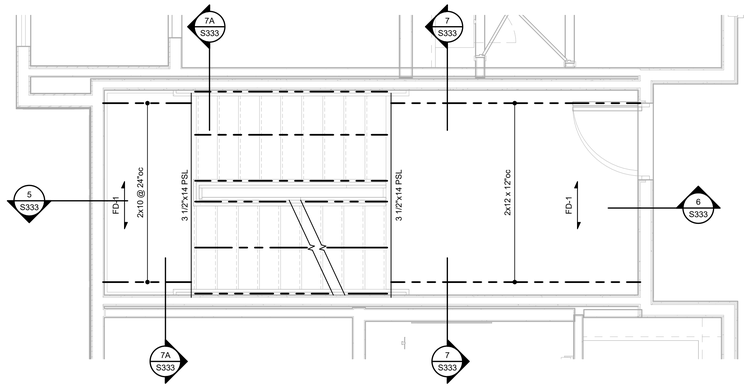
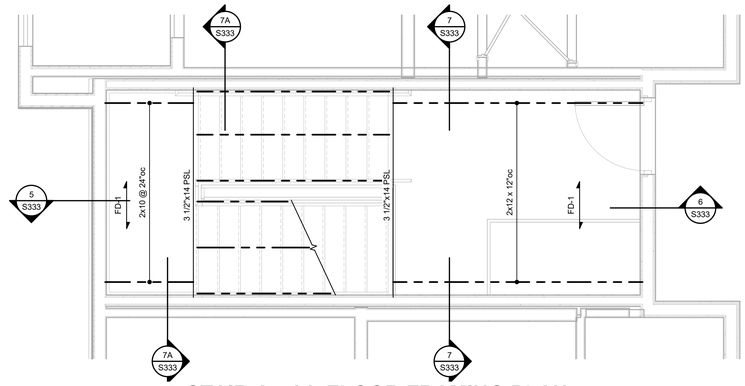
SHEARWALL AND BEARING WALL TYPE PLAN - E



1 STAIR A - 1st FLOOR FRAMING PLAN
3/8" = 1'-0"



2 STAIR A - 2nd/3rd FLOOR FRAMING PLAN
3/8" = 1'-0"



3 STAIR A - 4th FLOOR FRAMING PLAN
3/8" = 1'-0"

STAIR BEAM JAMB SCHEDULE				
BEAM SIZE	JAMB TYPE			
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
3 1/2" x 14" PSL	(5) 2x6	(4) 2x6	(3) 2x6	

NOTES:
1. MID-HEIGHT BEAMS TO HAVE (1) KING STUD MINIMUM EACH SIDE OF BEAM

WOOD STAIR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
3. REFER TO HEADER/BEAM/JAMB SCHEDULE ON SHEET S003.
4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO DETAILS 1 & 2 ON S333 FOR STAIR STRINGER SIZES AND CONNECTIONS.
6. REFER TO SHEET S333 FOR STAIR FRAMING DETAILS NOT INDICATED HERE.

STATE OF MISSOURI
PROFESSIONAL ENGINEER
Author
ENGINEER
Number
PE-2010026832
7-28-19

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
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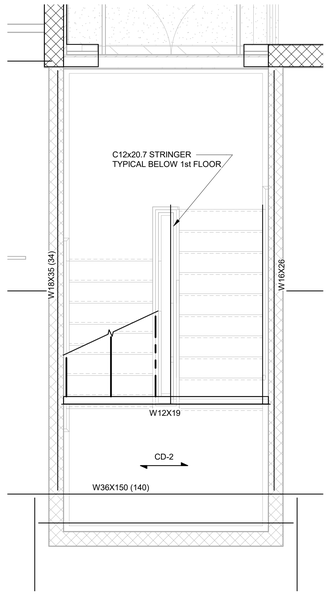
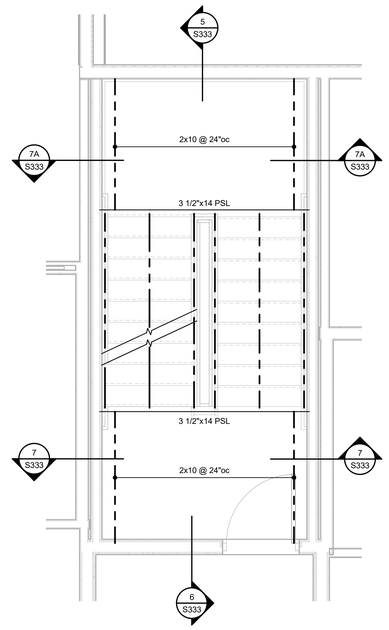
SHEET NO.

S120

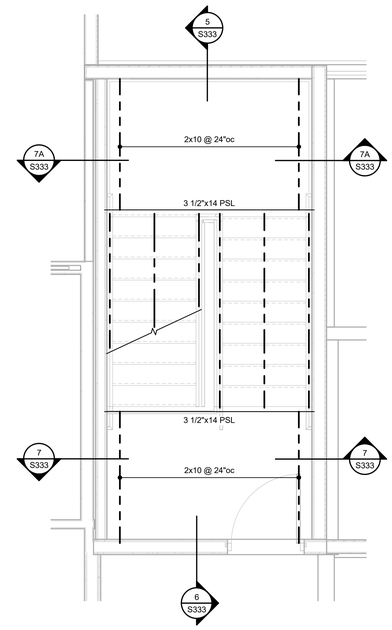
STAIR FRAMING PLANS



1 STAIR B - 1st FLOOR FRAMING PLAN
3/8" = 1'-0"



2 STAIR B - 2nd/3rd FLOOR FRAMING PLAN
3/8" = 1'-0"



3 STAIR B - 4th FLOOR FRAMING PLAN
3/8" = 1'-0"

STAIR BEAM JAMB SCHEDULE				
BEAM SIZE	JAMB TYPE			
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
3 1/2" x 14" PSL	(5) 2x6	(4) 2x6	(3) 2x6	

NOTES:
1. MID-HEIGHT BEAMS TO HAVE (1) KING STUD MINIMUM EACH SIDE OF BEAM

WOOD STAIR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
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4. REFER TO SHEARWALL AND HOLDOWN SCHEDULE ON S004.
5. REFER TO DETAILS 1 & 2 ON S333 FOR STAIR STRINGER SIZES AND CONNECTIONS.
6. REFER TO SHEET S333 FOR STAIR FRAMING DETAILS NOT INDICATED HERE.

STATE OF MISSOURI
Author
Author
PE-2010026832
7-29-19
PROFESSIONAL ENGINEER

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
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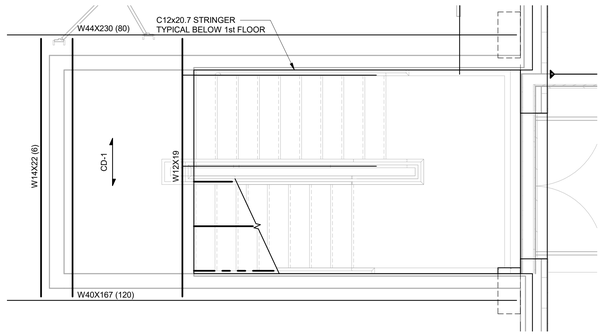
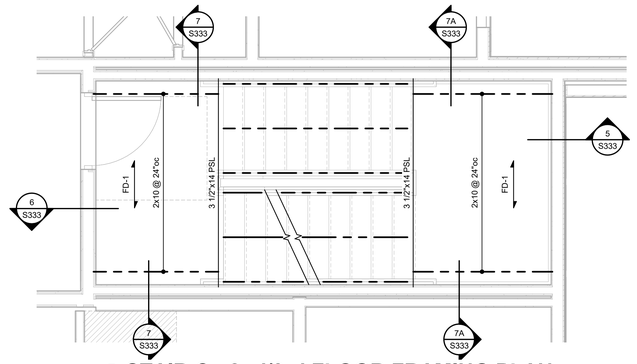
SHEET NO.

S121

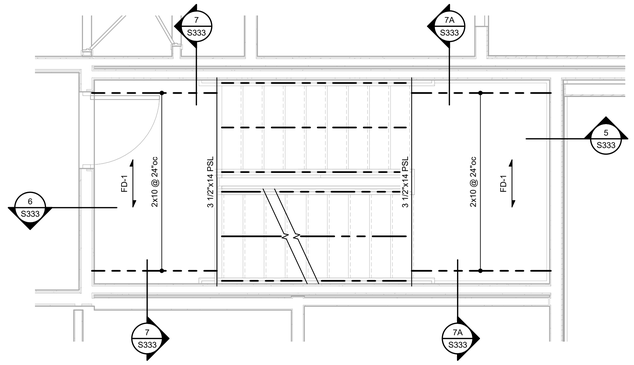
STAIR FRAMING PLANS



1 STAIR C - 1st FLOOR FRAMING PLAN
3/8" = 1'-0"



2 STAIR C - 2nd/3rd FLOOR FRAMING PLAN
3/8" = 1'-0"



3 STAIR C - 4th FLOOR FRAMING PLAN
3/8" = 1'-0"

STAIR BEAM JAMB SCHEDULE				
BEAM SIZE	JAMB TYPE			
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
3 1/2" x 14" PSL	(5) 2x6	(4) 2x6	(3) 2x6	

NOTES:
1. MID-HEIGHT BEAMS TO HAVE (1) KING STUD MINIMUM EACH SIDE OF BEAM

WOOD STAIR FRAMING

NOTES:
1. REFER TO GENERAL NOTES ON SHEET S001.
2. REFER TO STUD BEARING WALL SCHEDULE ON SHEET S003.
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STATE OF MISSOURI
CHRISTOPHER A. BARTLETT
ENGINEER
PE-2010026832
7-28-19
PROFESSIONAL ENGINEER

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
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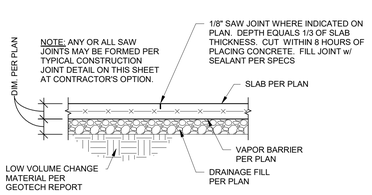
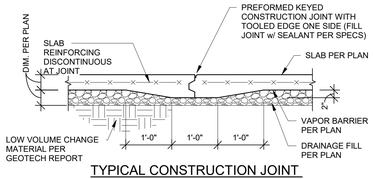
S122

STAIR FRAMING PLANS



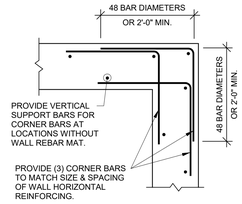
TYPICAL SAW JOINT
NOTED "SJ" ON PLAN

1 SECTION
3/4" = 1'-0"

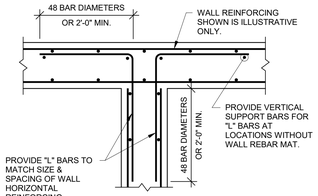


TYPICAL CONSTRUCTION JOINT
NOTED "CJ" ON PLAN

2 SECTION
3/4" = 1'-0"

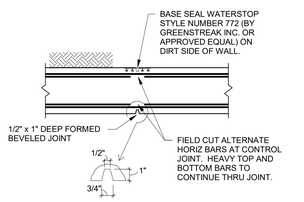


TYPICAL CORNER BARS AT
CONCRETE WALLS & FOUNDATIONS



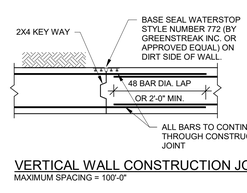
TYPICAL T-INTERSECTION REINFORCING
AT CONCRETE WALLS & FOUNDATIONS

3 TYPICAL INTERSECTING CONCRETE WALL REINFORCING
3/4" = 1'-0"

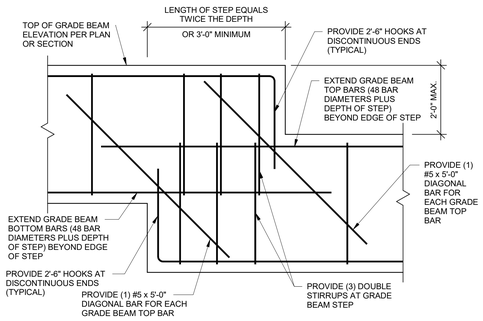


VERTICAL WALL CONTROL JOINT
MAXIMUM SPACING = 25'-0"
(COORDINATE LOCATIONS WITH ARCHITECT/ALIGN WITH MASONRY CONTROL/EXPANSION JOINTS ABOVE)

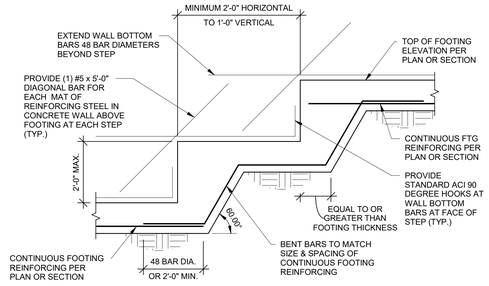
4 VERTICAL WALL CONTROL JOINT
3/4" = 1'-0"



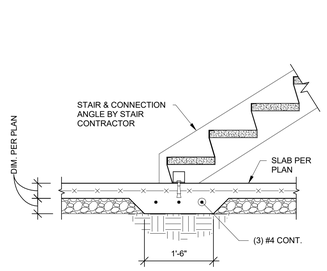
VERTICAL WALL CONSTRUCTION JOINT
MAXIMUM SPACING = 100'-0"



5 TYPICAL GRADE BEAM STEP
3/4" = 1'-0"

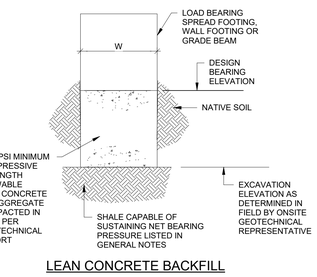


6 TYPICAL FOOTING STEP
1/2" = 1'-0"



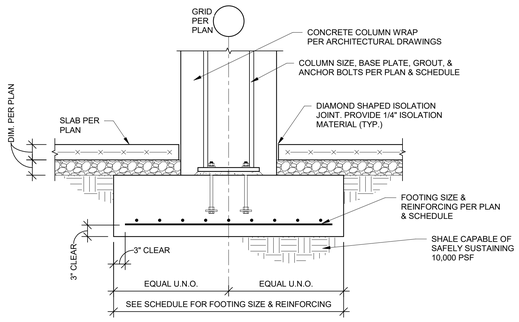
TYPICAL THICKENED SLAB AT BASE OF STAIR

7 SECTION
3/4" = 1'-0"



LEAN CONCRETE BACKFILL

8 OVEREXCAVATION DETAIL
3/4" = 1'-0"



TYPICAL INTERIOR COLUMN FOOTING

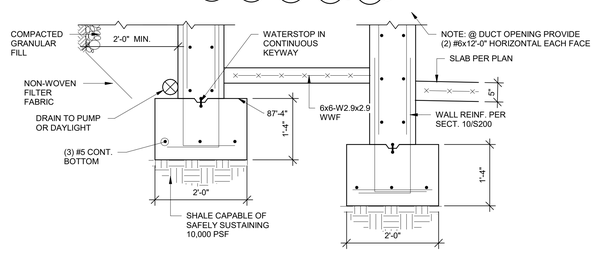
9 SECTION
3/4" = 1'-0"

10 SECTION
3/4" = 1'-0"

11 SECTION
3/4" = 1'-0"

12 SECTION
3/4" = 1'-0"

15 SECTION
3/4" = 1'-0"



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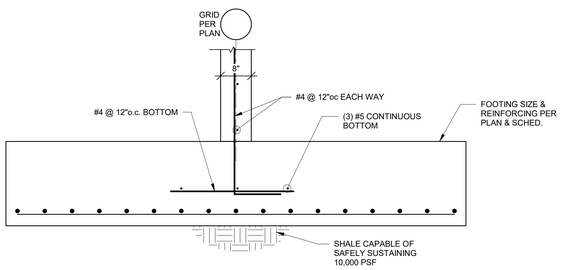
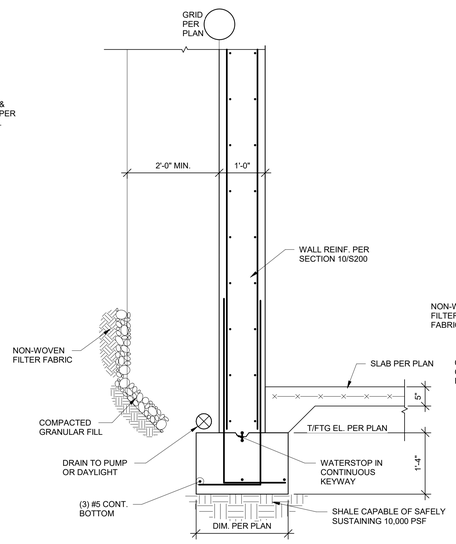
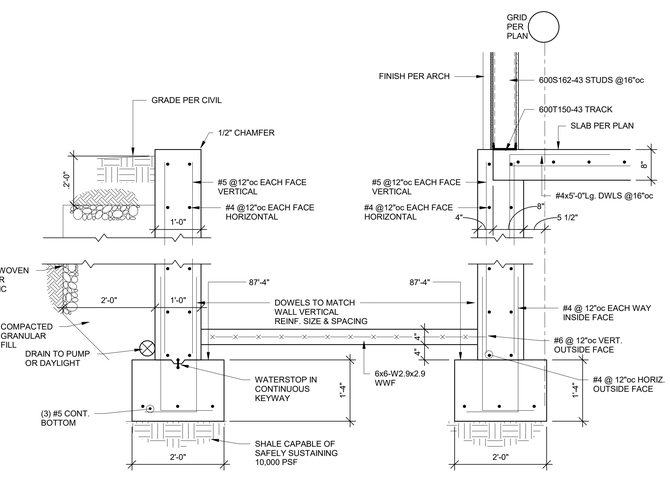
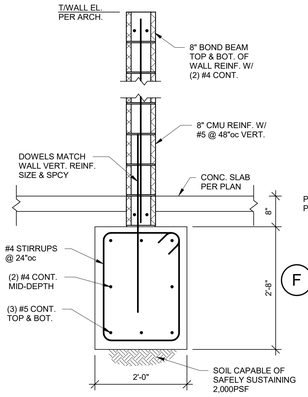




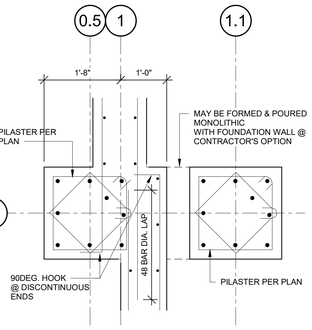
13 SECTION
3/4" = 1'-0"



14 SECTION
3/4" = 1'-0"



16 SECTION
3/4" = 1'-0"



17 DETAIL
3/4" = 1'-0"

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
ELECTRICAL ENGINEER

CLIENT NAME
TR.i Architects
STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

Summit at West Pryor

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119

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T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

8	REVISION 3	04.03.20

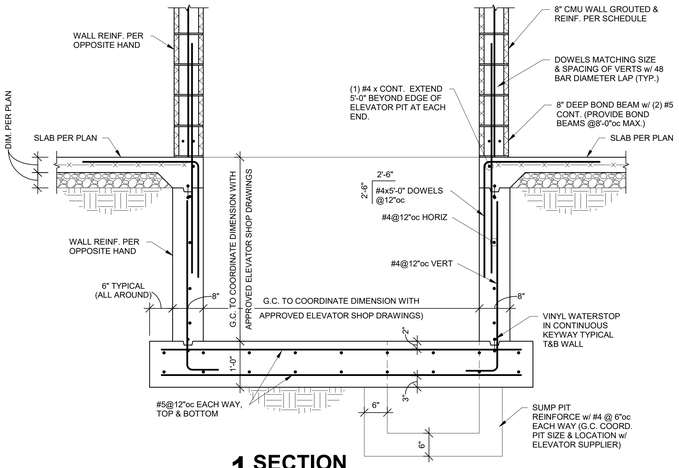
DWG BY Author

TR.i PROJECT NO. 18-046

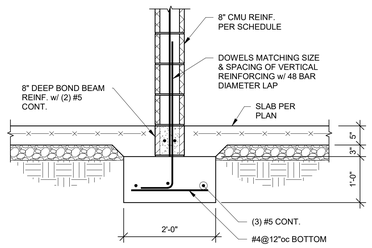
SHEET NO.

S200

FOUNDATION SECTIONS



1 SECTION
3/4" = 1'-0"



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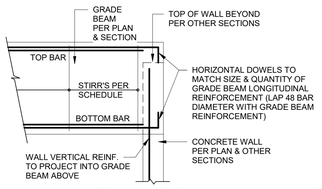
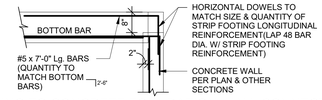
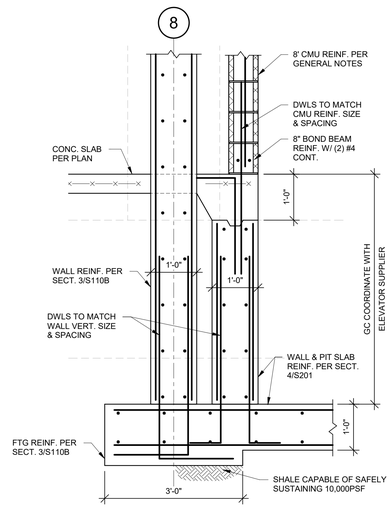


GRADE BEAM TO CONCRETE FOUNDATION WALL CONNECTION

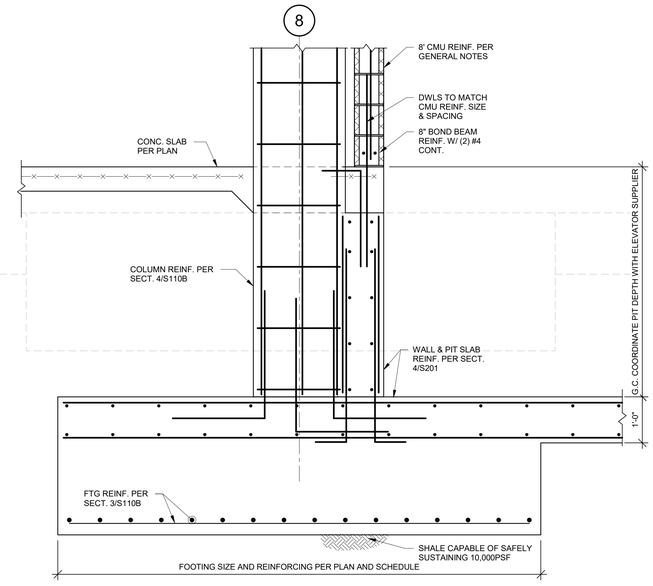


STRIP FOOTING TO CONCRETE FOUNDATION WALL CONNECTION

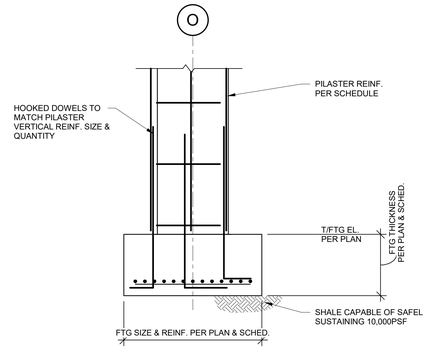
3 SECTION
1/2" = 1'-0"



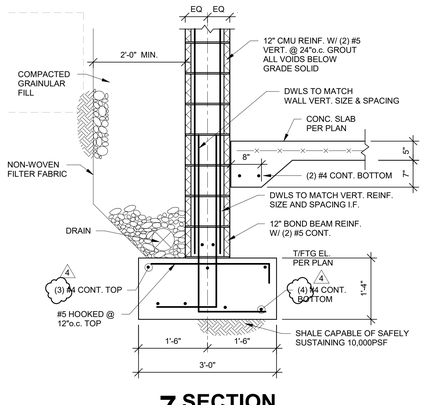
4 SECTION
3/4" = 1'-0"



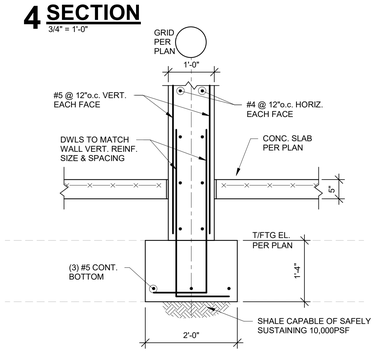
5 SECTION
3/4" = 1'-0"



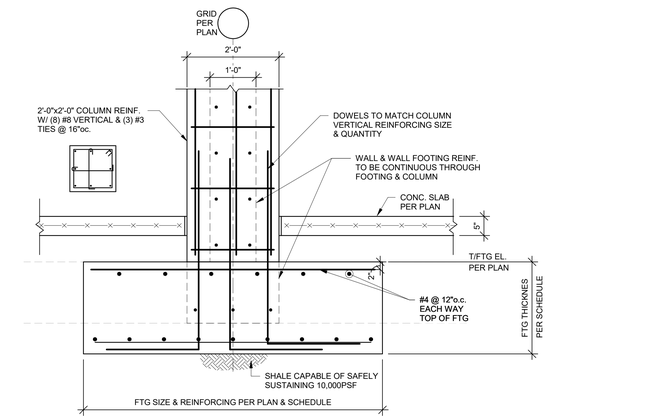
6 SECTION
3/4" = 1'-0"



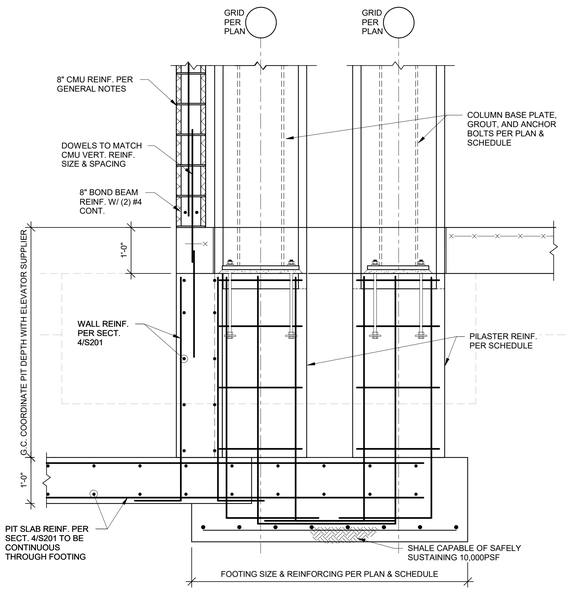
7 SECTION
3/4" = 1'-0"



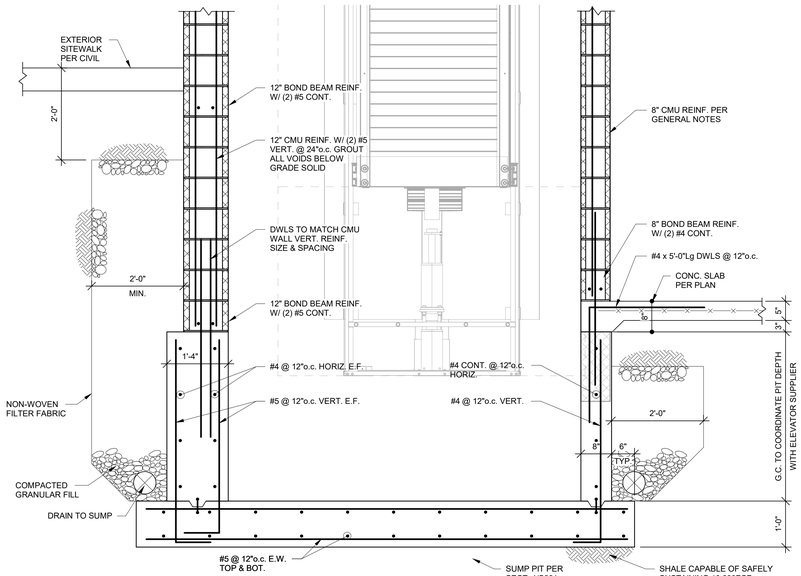
8 SECTION
3/4" = 1'-0"



9 SECTION
3/4" = 1'-0"



10 SECTION
3/4" = 1'-0"



11 SECTION
3/4" = 1'-0"

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CIVIL ENGINEER
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CLIENT NAME
TR.i Architects
STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

4	STRUCTURAL REVISION	10.16.19

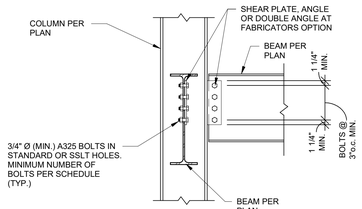
DWG BY Author

TR.i PROJECT NO. 18-046

SHEET NO.

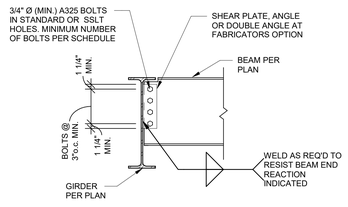
S201

FOUNDATION SECTIONS



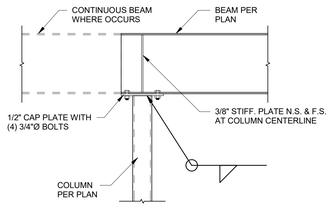
TYPICAL BEAM TO COLUMN SHEAR CONNECTION

1 DETAIL
3/4" = 1'-0"



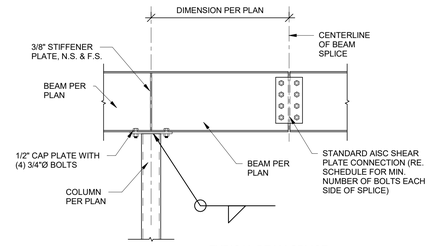
TYPICAL BEAM TO GIRDER CONNECTION

2 DETAIL
3/4" = 1'-0"



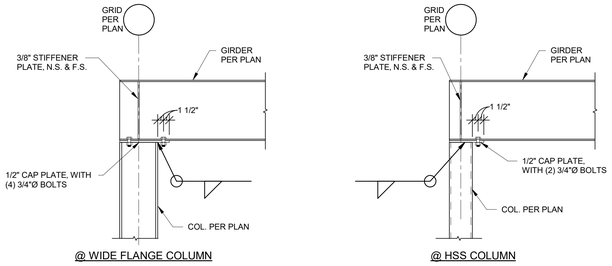
TYPICAL BEAM TO COLUMN CONNECTION

3 DETAIL
3/4" = 1'-0"



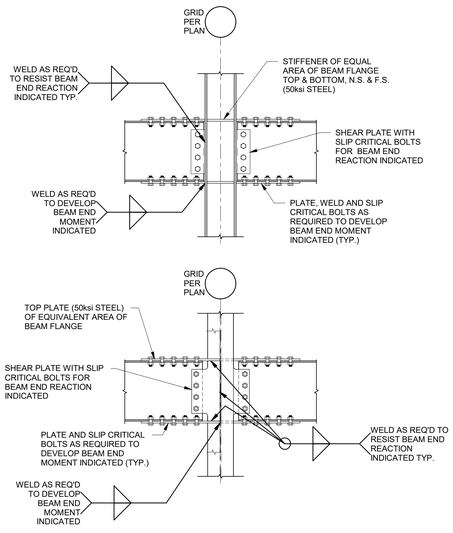
TYPICAL BEAM SPLICE

4 DETAIL
3/4" = 1'-0"



TYPICAL ROOF BEAM TO COLUMN CONNECTION AT EXTERIOR WALL

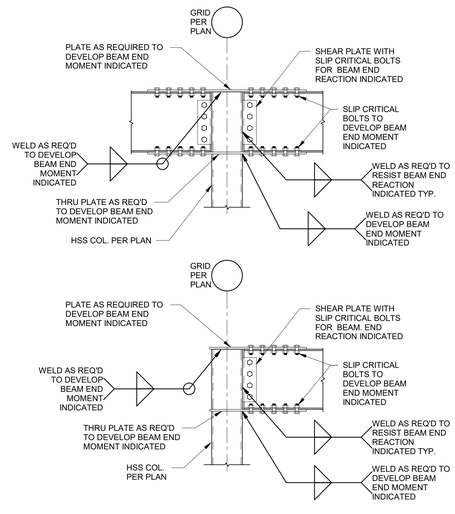
5 SECTION
3/4" = 1'-0"



TYP. BEAM TO WIDE FLANGE COL. MOMENT CONNECTIONS

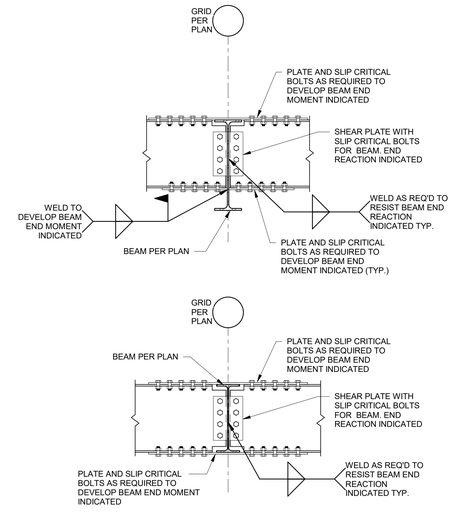
NOTE: FLANGE PLATES MAY BE FULL PENETRATION WELDED TO COLUMN AT CONTRACTORS OPTION

6 SECTION
3/4" = 1'-0"



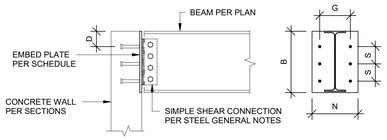
TYPICAL BEAM TO HSS COLUMN MOMENT CONNECTIONS

7 SECTION
3/4" = 1'-0"



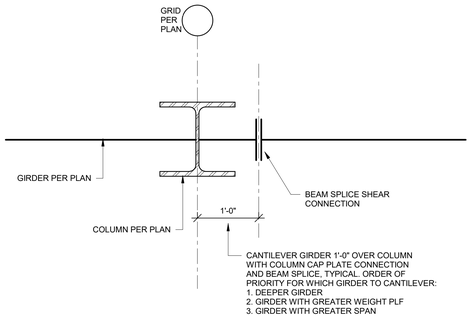
TYP. BEAM TO BEAM MOMENT CONNECTIONS

8 SECTION
3/4" = 1'-0"



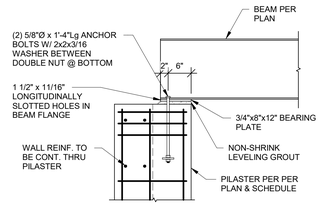
EMBED PLATE SCHEDULE					
BEAM SIZE	PLATE SIZE (txBxN)	HEADED STUDS	STUD GAGE (G)	ROW SPACING (S)	EDGE DISTANCE (D)
W8, W10, W12	3/4"x12"x9"	(4) 3/4"Øx6"	6"	6"	3"
W14	3/4"x16"x10"	(6) 3/4"Øx6"	7"	5"	4"
W16, W18, W21x44	3/4"x22"x15"	(8) 3/4"Øx6"	12"	5½"	4"
W21 (U.N.O.), W24, W27	3/4"x31½"x21"	(10) 3/4"Øx6"	18"	6½"	4"
W30	3/4"x33½"x21"	(10) 3/4"Øx6"	18"	6½"	6"
W33 or LARGER	REFER TO SECTION 11/S300				

9 TYPICAL BEAM TO EMBED PLATE CONNECTION DETAIL
3/4" = 1'-0"



10 TYPICAL FRAMING DETAIL AT TOP OF PODIUM COLUMN
1" = 1'-0"

4



11 SECTION
3/4" = 1'-0"

SHEAR CONNECTION MINIMUM ROWS OF BOLTS SCHEDULE

BEAM SIZE	MINIMUM ROWS OF BOLTS
W8,C8	2
W10,C10	2
W12,C12	2
W14	3
W16, C15	3
W18	4
W21	5
W24	5
W27	6
W30	7
W33	8
W36	8

SCHEDULE NOTES:
1. ALL BOLTS SHALL BE 3/4" Ø ASTM A325 MINIMUM.
2. ALL BOLTS SHALL BE SPACED AT 3"o.c. MINIMUM.
3. ALL BOLTS SHALL HAVE HEAVY HEX NUTS.
4. ALL BOLTS SHALL BE FULLY PRE-TENSIONED.
5. CLIP ANGLES MAY BE SHOP WELDED TO BEAM WEB PER AISC.
6. FOR BEAMS WITH AXIAL LOADS PER DRAWINGS, BOLTS AND CONNECTIONS SHALL BE SLIP-CRITICAL PER AISC GUIDELINES. INCREASE NUMBER OF BOLTS AND/OR PROVIDE EXTENDED SHEAR PLATE CONNECTION w/ AN ADDITIONAL COLUMN OF BOLTS TO ACCOMODATE COMBINED FORCES.
7. PROVIDE ASTM A490 BOLTS IF REQUIRED TO MEET END REACTION LOAD REQUIREMENTS

STEEL CONNECTION NOTES:

1. CONNECTIONS SHOWN IN THESE DETAILS ARE MINIMUM REQUIREMENTS.
2. FABRICATOR SHALL BE RESPONSIBLE FOR THE DESIGNING AND DETAILING OF EACH CONNECTION FOR LOADS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE SPECIFICATIONS AND THE STRUCTURAL GENERAL NOTES.
3. SUGGESTED CONNECTION DETAILS ARE SHOWN.
4. FABRICATOR MAY OPT TO USE OTHER AISC APPROVED CONNECTIONS IN LIEU OF THESE SHOWN HEREIN.
5. CONNECTION DETAILING SHALL COMPLY WITH THE STANDARD DETAILS SHOWN IN THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.
6. BOLT SPACING AND EDGE DISTANCES SHALL BE ADJUSTED PER AISC MANUAL FOR BOLTS LARGER THAN 3/4" DIAMETER.

STATE OF MISSOURI
CLINT ANSPAUGH
ENGINEER
NUMBER
PE-2010036837
10-16-19

CLIENT
ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
MECHANICAL ENGINEER
PLUMBING ENGINEER
ELECTRICAL ENGINEER

CLIENT NAME
TR.i Architects
STRUCTURAL
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Summit at West Pryor

TR.i Architects
Architects of the Possible

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com
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REVISIONS 4

4	STRUCTURAL REVISION 10.16.19

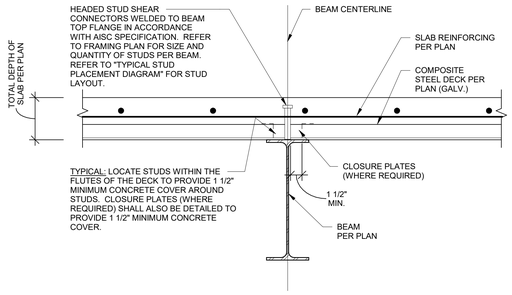
DWG BY Author

TR.i PROJECT NO. 18-046

SHEET NO.

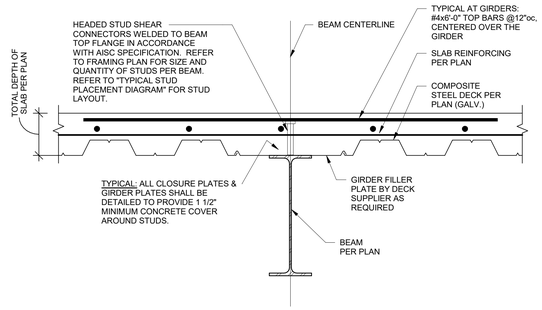
S300

STEEL FRAMING SECTIONS



TYPICAL COMPOSITE BEAM DETAIL
(DECK SPAN PERPENDICULAR TO BEAM)

1 SECTION
1 1/2" = 1'-0"



TYPICAL COMPOSITE BEAM/GIRDER DETAIL
(DECK SPAN PARALLEL TO BEAM)

2 SECTION
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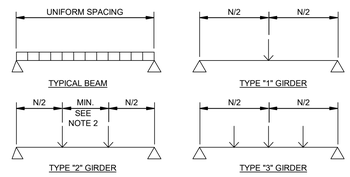
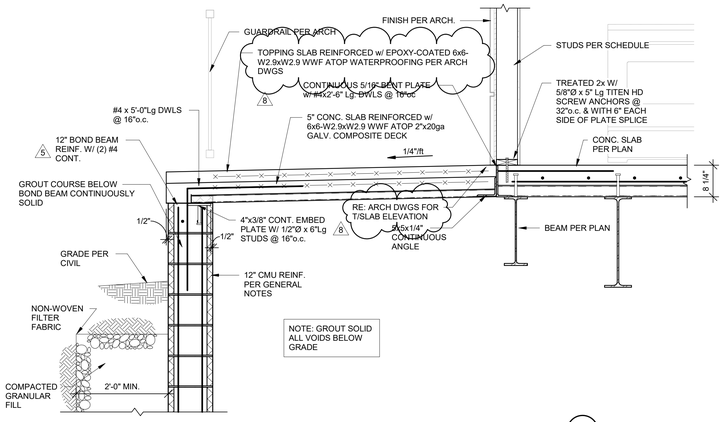


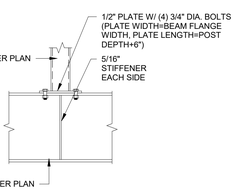
TYPICAL STUD PLACEMENT DIAGRAM

1. ALL DIAGRAMS REPRESENT IDEALIZED CONDITIONS. ACTUAL FRAMING CONFIGURATIONS MAY REQUIRE ADDITIONAL INTERPRETATION.
2. MAXIMUM SPACING OF STUDS SHALL BE 36"o.c. IF STUD SPACING EXCEEDS 12" o.c. PROVIDE 5/8" DIA. PUDDLE WELD ATTACHMENT SUCH THAT THE MAXIMUM AVERAGE SPACING OF STUD/WELD ATTACHMENT IS 12"o.c., AND MAXIMUM SPACING BETWEEN ATTACHMENTS IS 18".
3. SHEAR CONNECTOR PLACEMENT SHALL BE FULLY DETAILED ON THE METAL DECK SHOP DRAWINGS.

3 TYPICAL STUD PLACEMENT
3/4" = 1'-0"

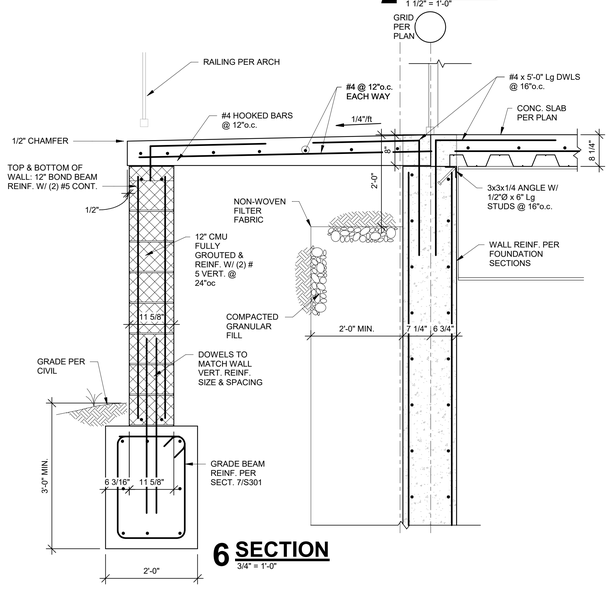


4 SECTION
3/4" = 1'-0"

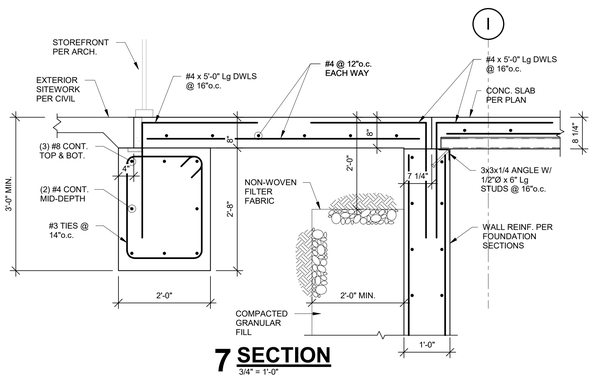


TYPICAL POST BASE CONNECTION

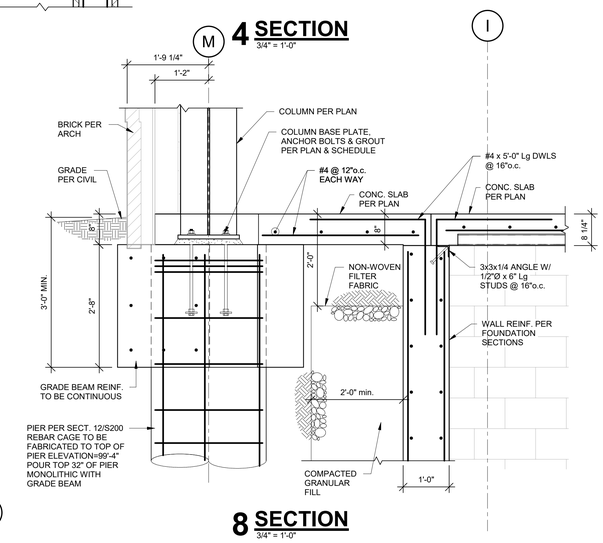
5 SECTION
3/4" = 1'-0"



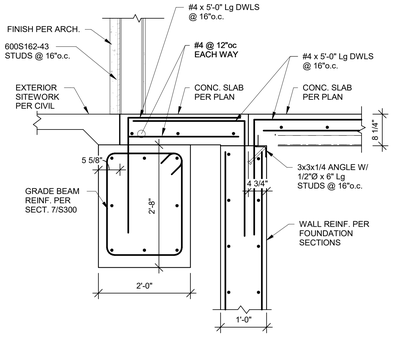
6 SECTION
3/4" = 1'-0"



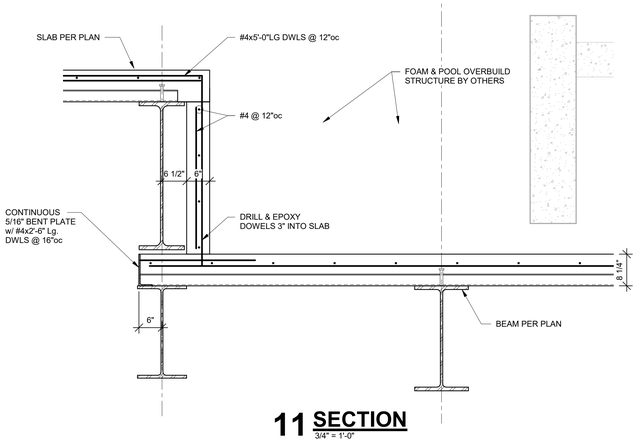
7 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"



9 SECTION
3/4" = 1'-0"



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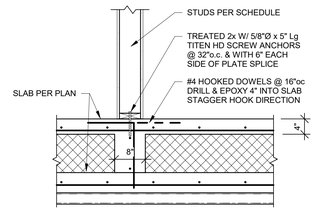
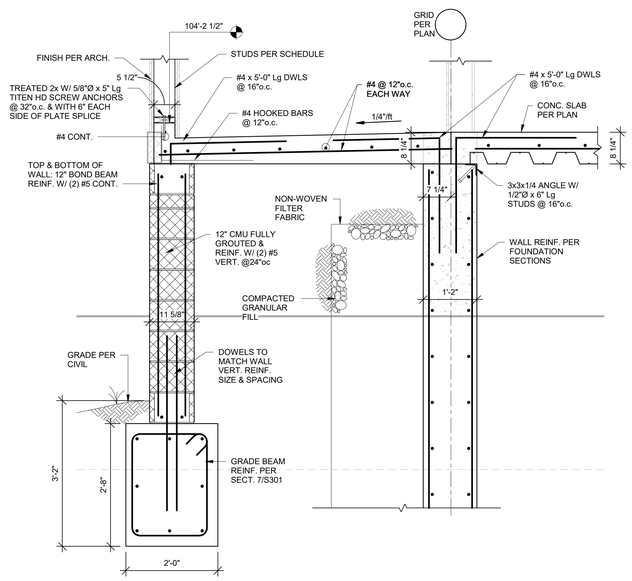
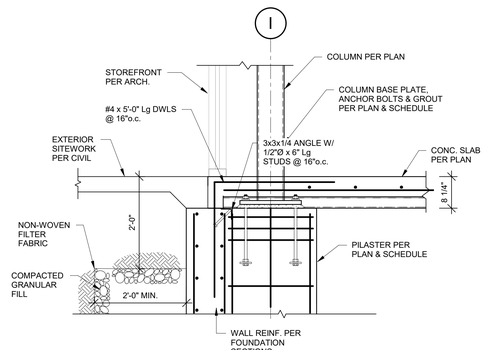
3/4" = 1'-0"



12 SECTION
3/4" = 1'-0"



13 SECTION
3/4" = 1'-0"



10 SECTION
3/4" = 1'-0"

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REVISIONS

5	STRUCTURAL REVISION 2	
8	REVISION 3	04.03.20

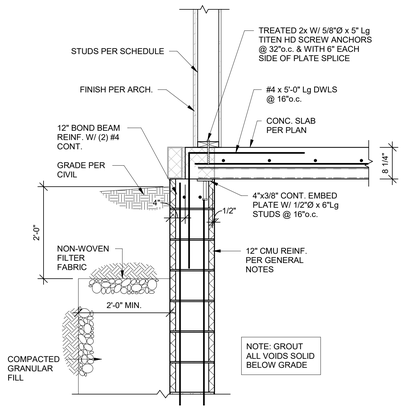
DWG BY Author

TR.i PROJECT NO. 18-046

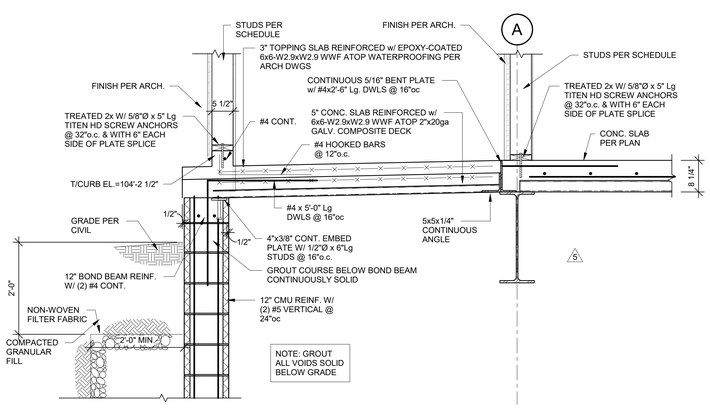
SHEET NO.

S301

STEEL FRAMING SECTIONS



1 SECTION
3/4" = 1'-0"



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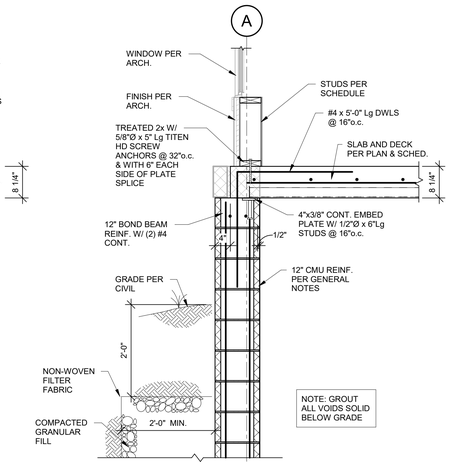
3/4" = 1'-0"



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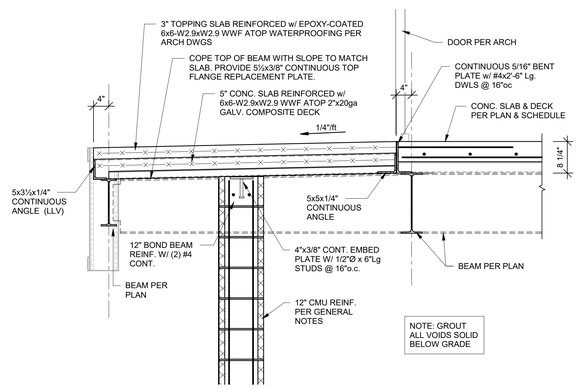
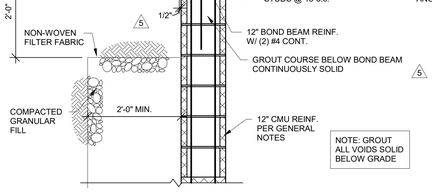
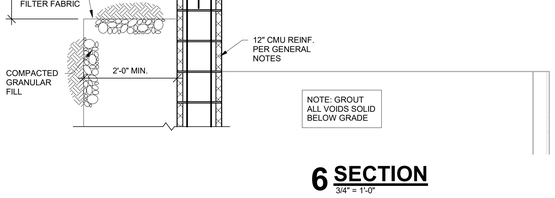


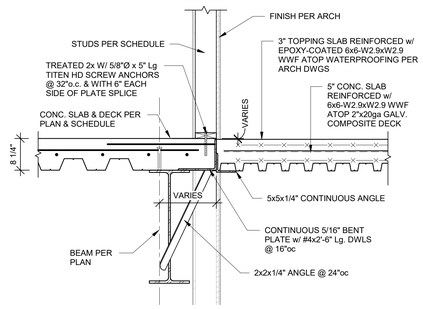
4 SECTION
3/4" = 1'-0"



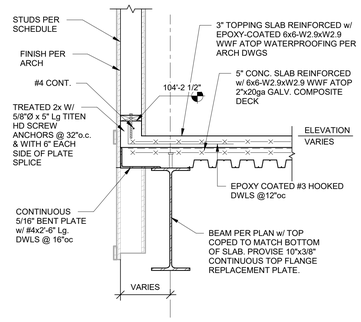
5 SECTION
3/4" = 1'-0"



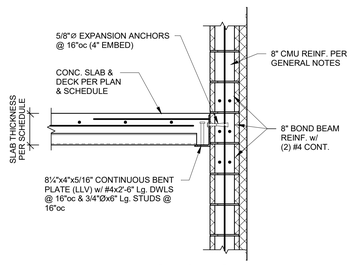
6 SECTION
3/4" = 1'-0"



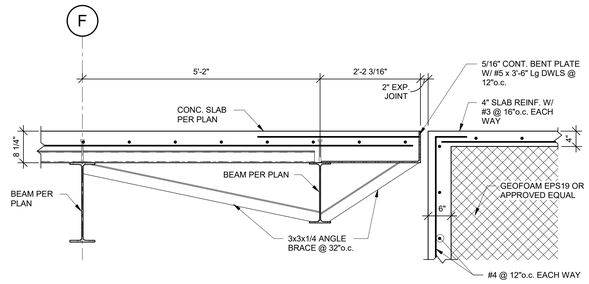
7 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"



9 SECTION
3/4" = 1'-0"



10 SECTION
3/4" = 1'-0"

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REVISIONS 5

5	STRUCTURAL REVISION 2	
8	REVISION 3	04.03.20

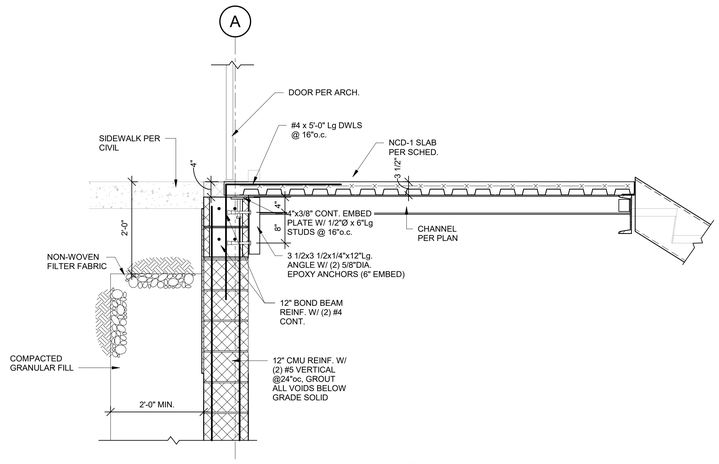
DWG BY Author

TR.i PROJECT NO. 18-046

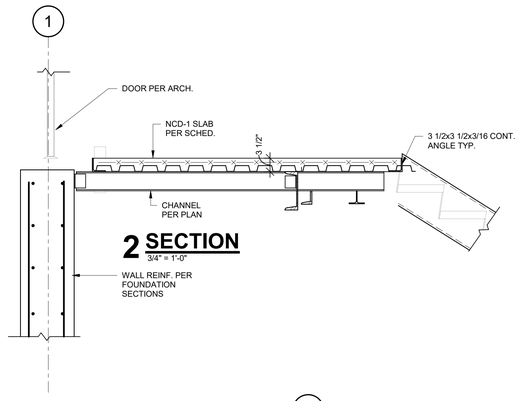
SHEET NO.

S302

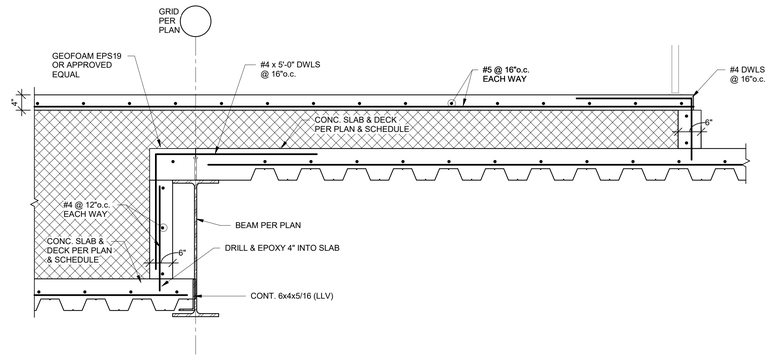
STEEL FRAMING SECTIONS



1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
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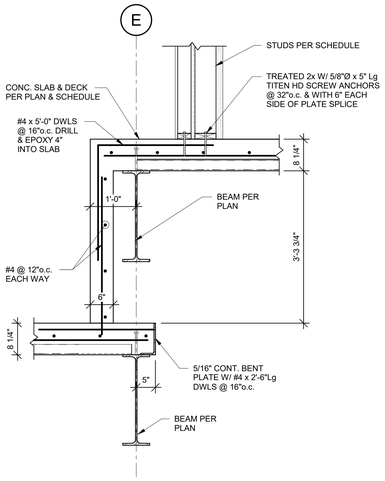
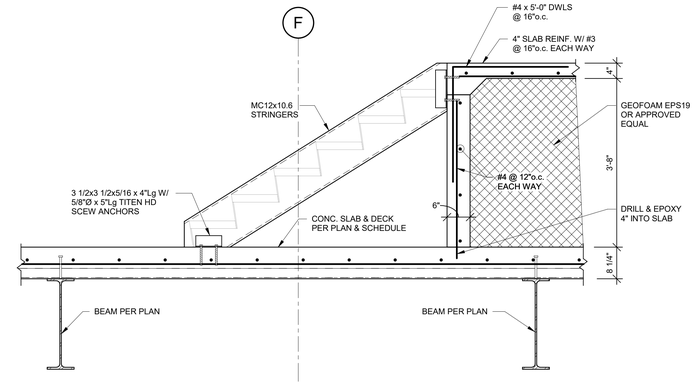
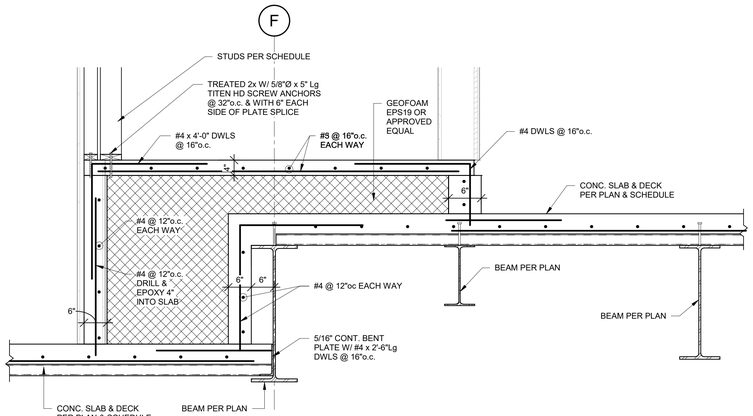


5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

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REVISIONS

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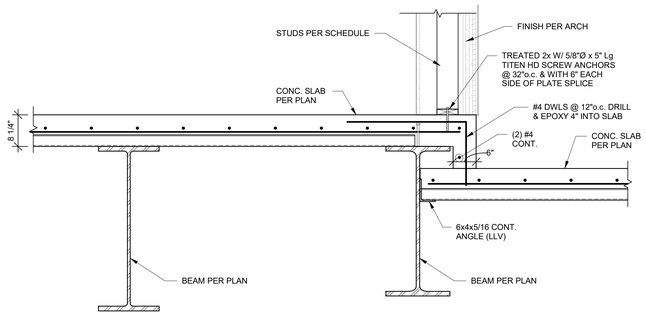
TR.i PROJECT NO. 18-046

SHEET NO.

S303

STEEL FRAMING SECTIONS



1 SECTION
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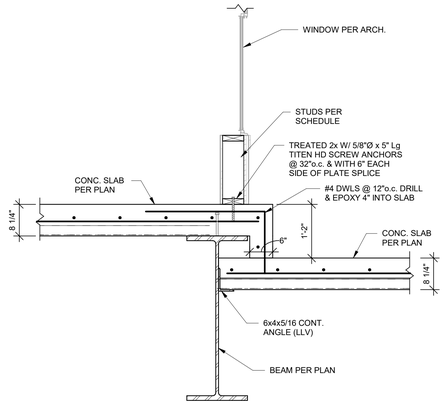

2 SECTION
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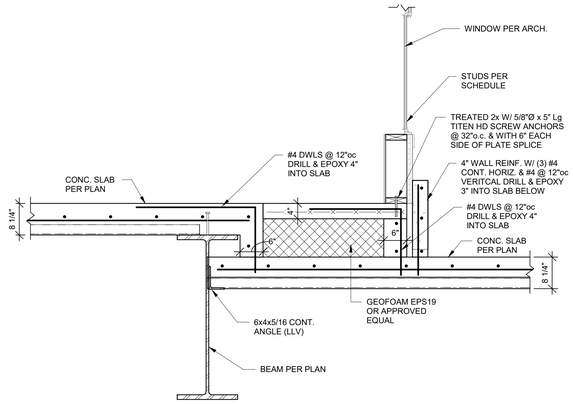
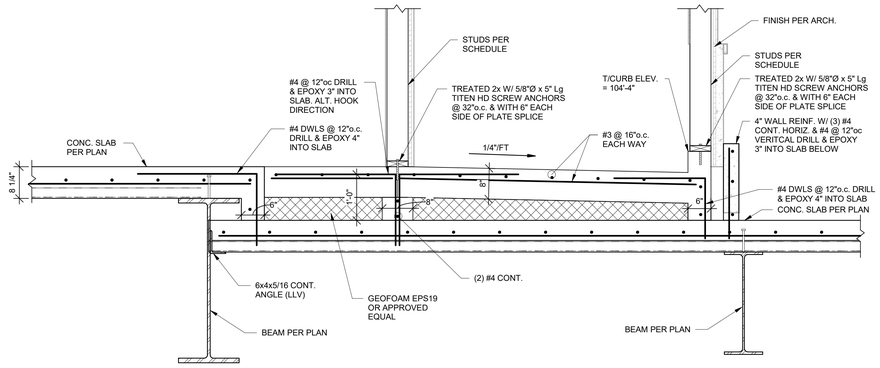


3 SECTION
3/4" = 1'-0"



4 SECTION
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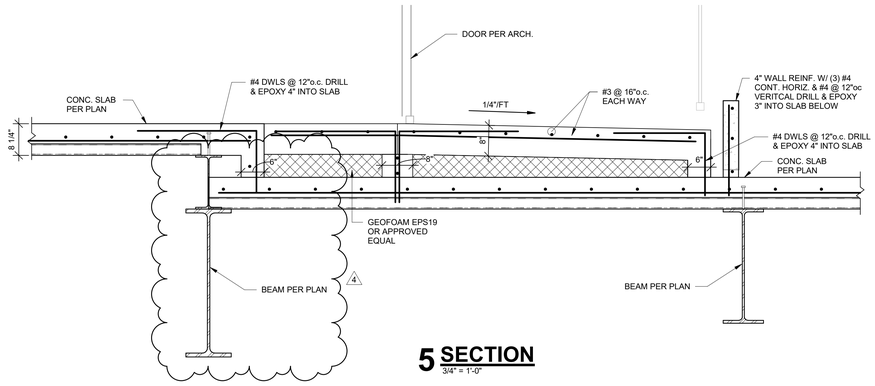

5 SECTION
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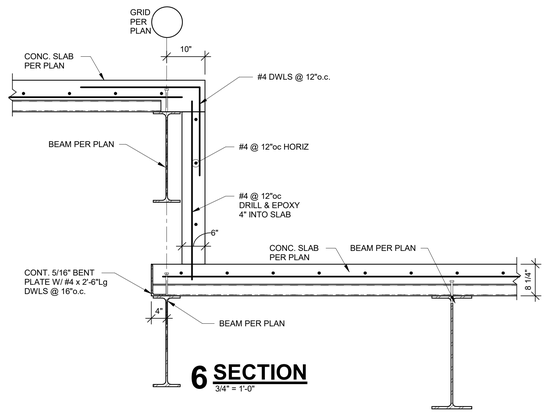
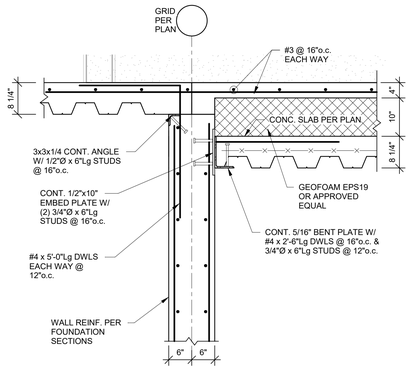
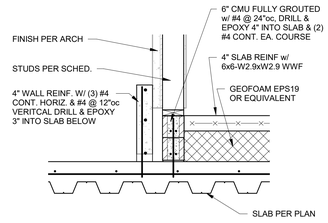


6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"

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REVISIONS 4

4	STRUCTURAL REVISION	10.16.19

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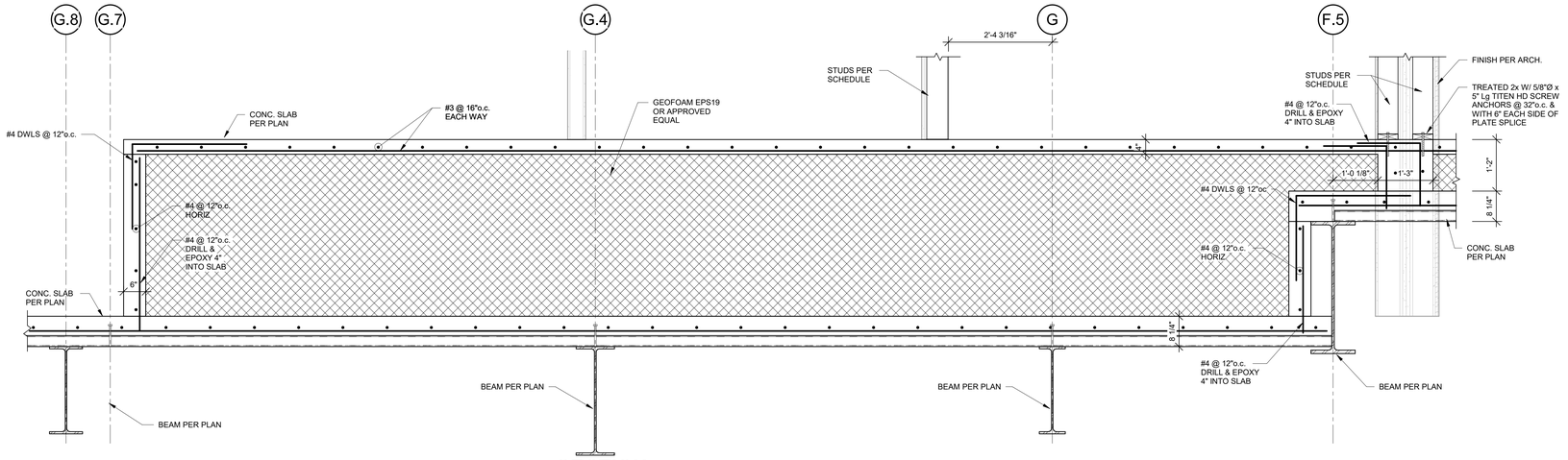
TR.i PROJECT NO. 18-046

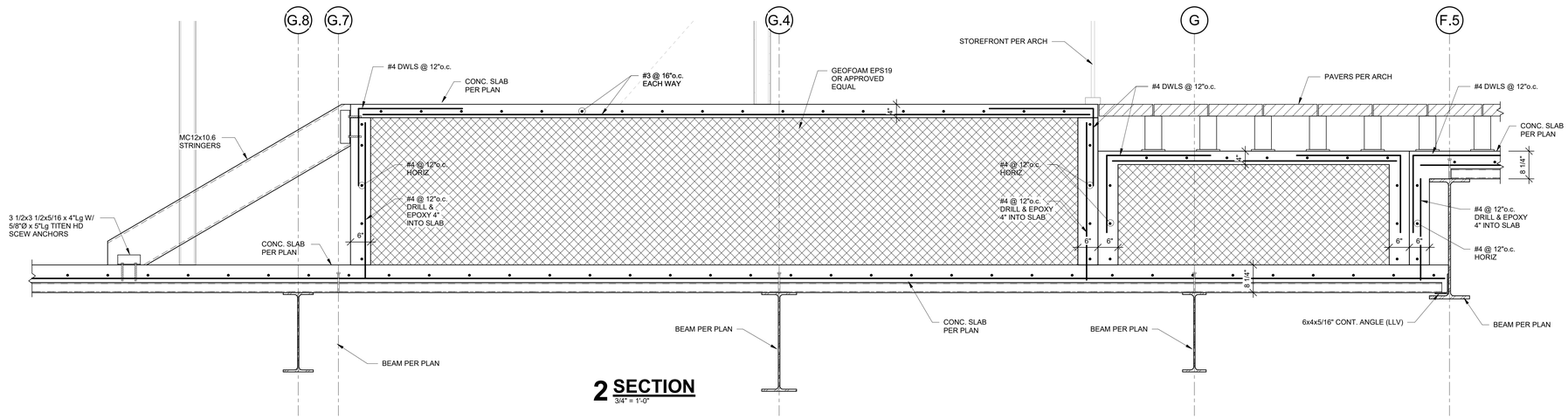
SHEET NO.

S304

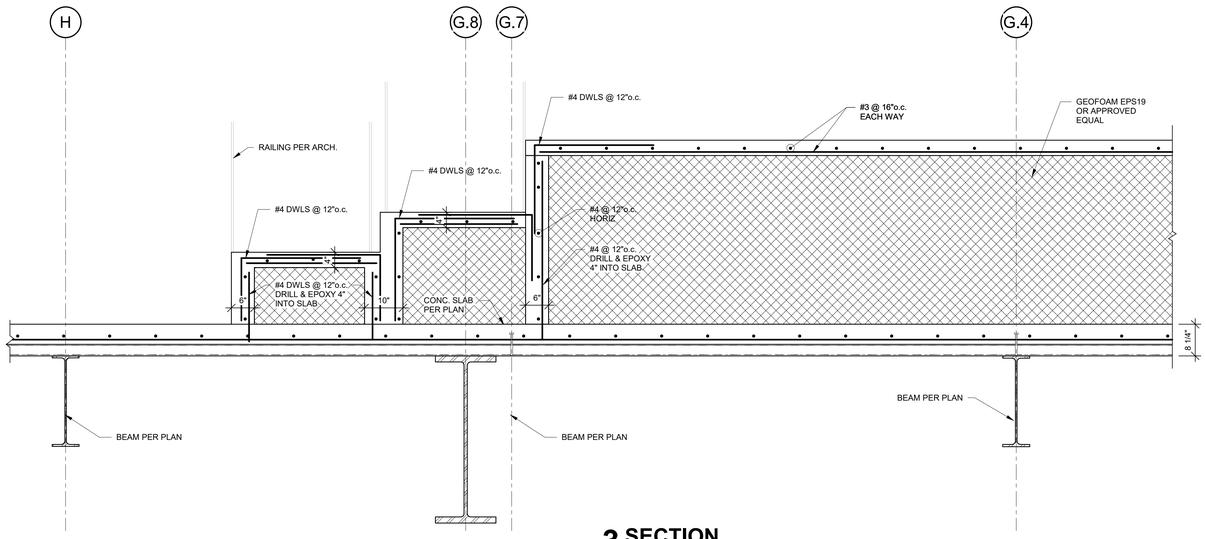
STEEL FRAMING SECTIONS



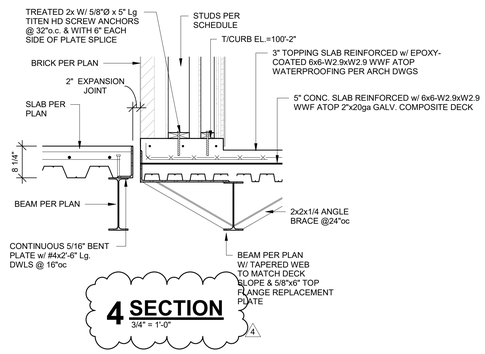
1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"

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REVISIONS 4

4	STRUCTURAL REVISION 10.16.19

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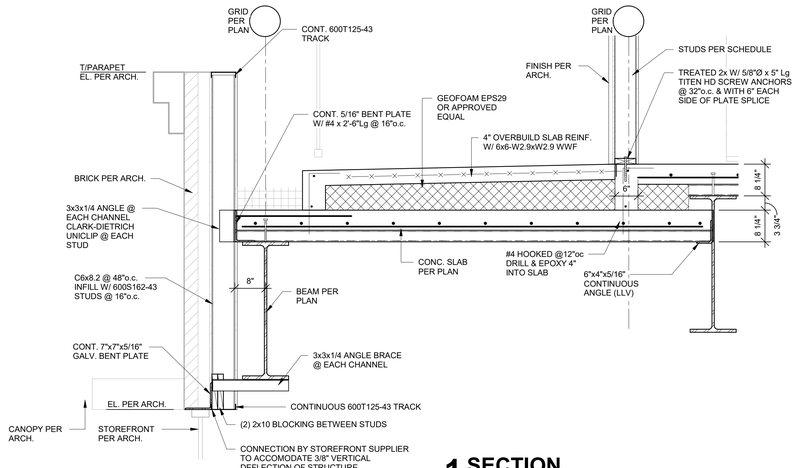
TR.i PROJECT NO. 18-046

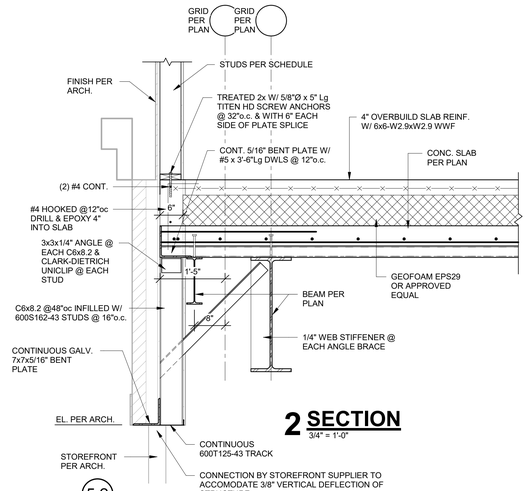
SHEET NO.

S305

STEEL FRAMING SECTIONS



1 SECTION
3/4" = 1'-0"



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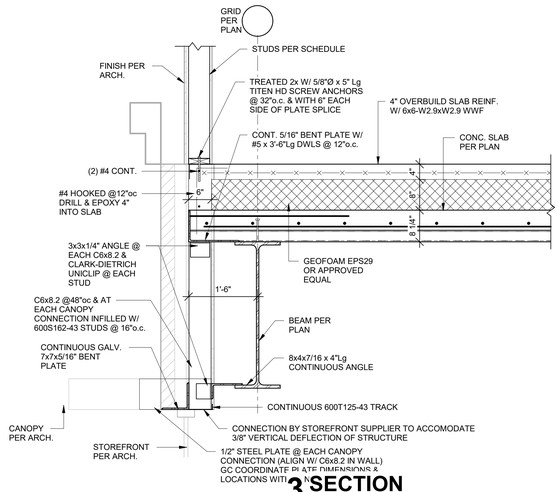
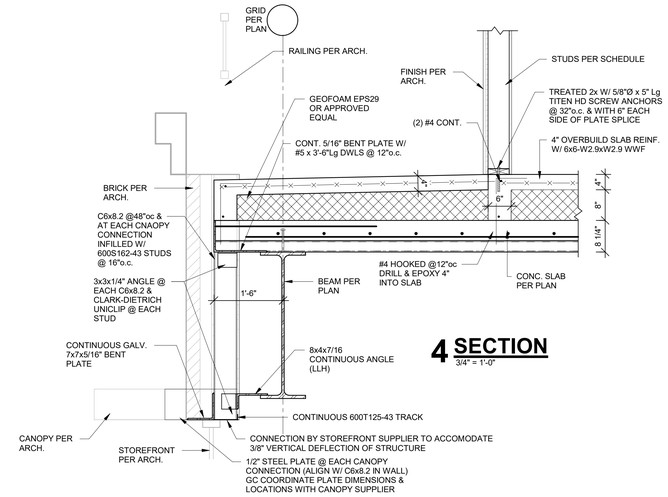
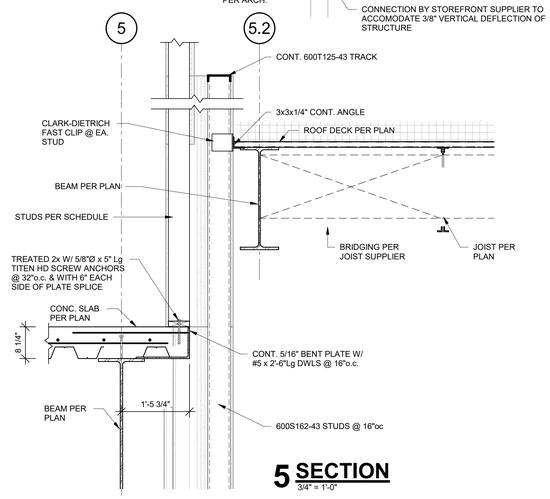


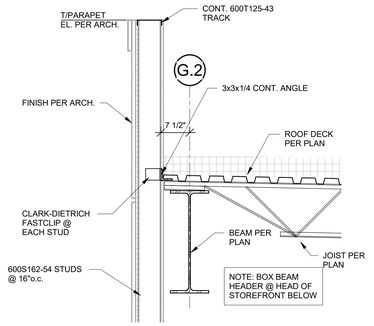
3 SECTION
3/4" = 1'-0"



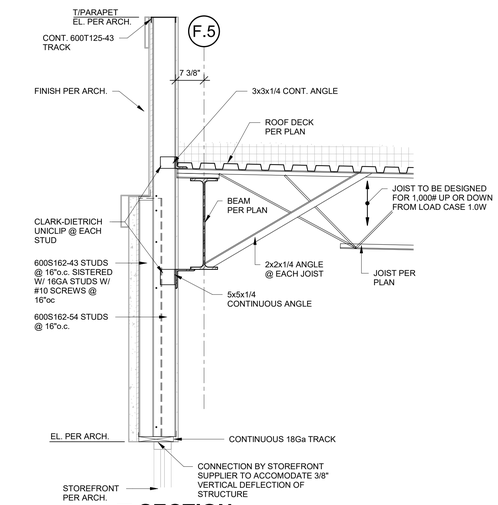
4 SECTION
3/4" = 1'-0"



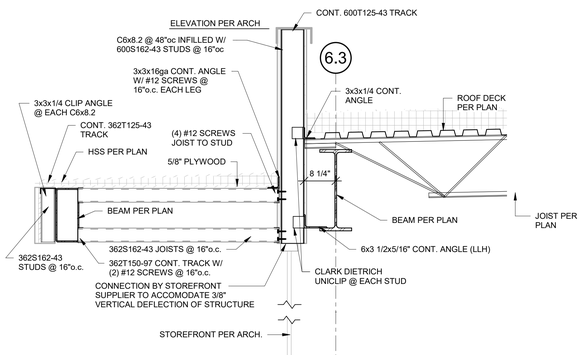
5 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"



8 SECTION
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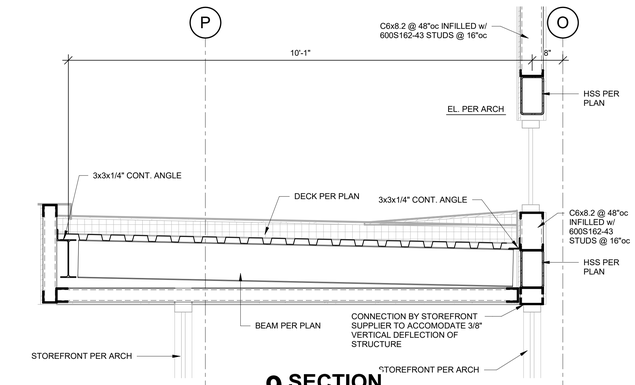

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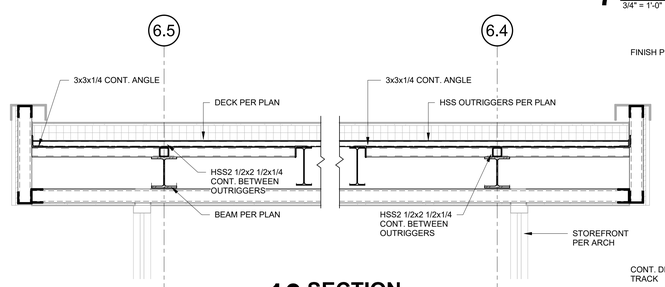
3/4" = 1'-0"



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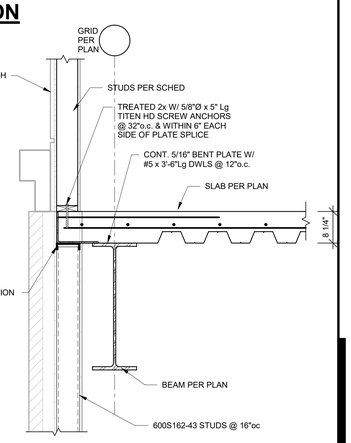
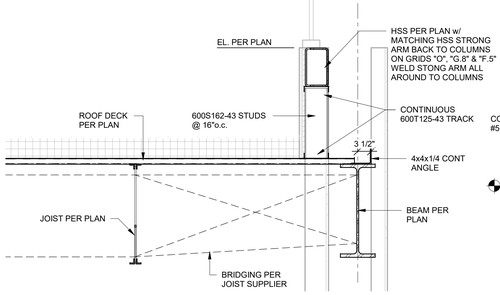
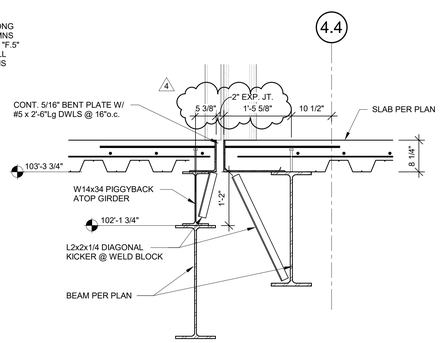


11 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"



12 SECTION
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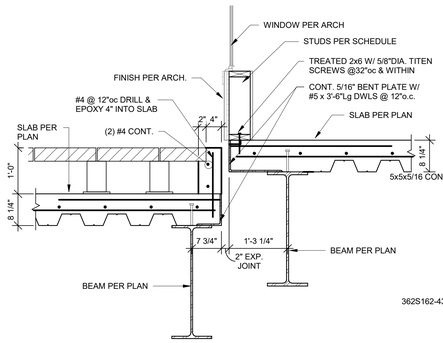
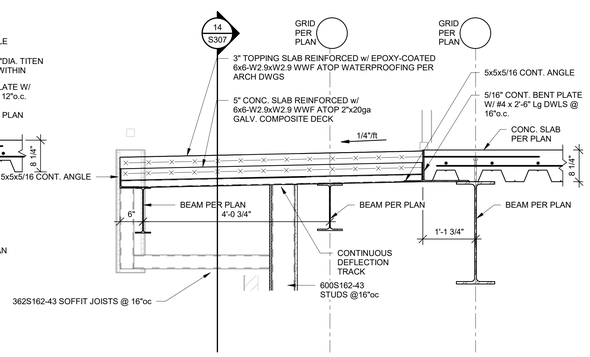


13 SECTION
3/4" = 1'-0"



14 SECTION
3/4" = 1'-0"

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STRUCTURAL
CIVIL
ENGINEER
PLUMBING
ELECTRICAL

Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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REVISIONS A

4	STRUCTURAL REVISION	10.16.19

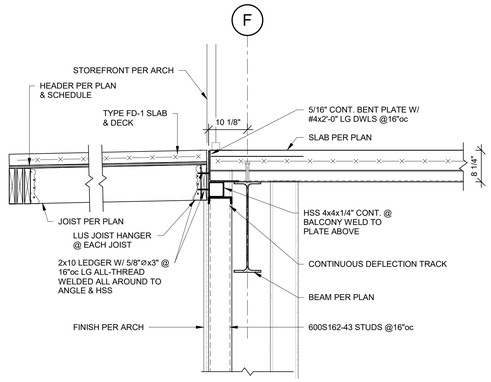
DWG BY Author

TR.i PROJECT NO. 18-046

SHEET NO.

S306

STEEL FRAMING SECTIONS



1 SECTION
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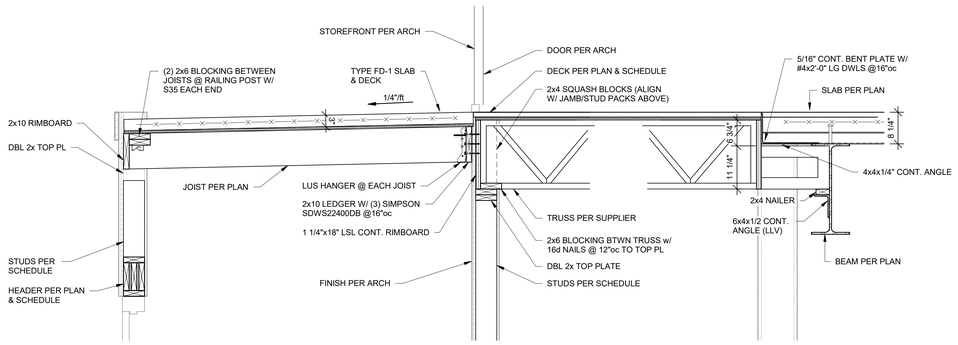

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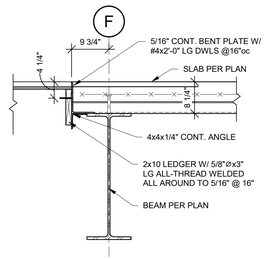

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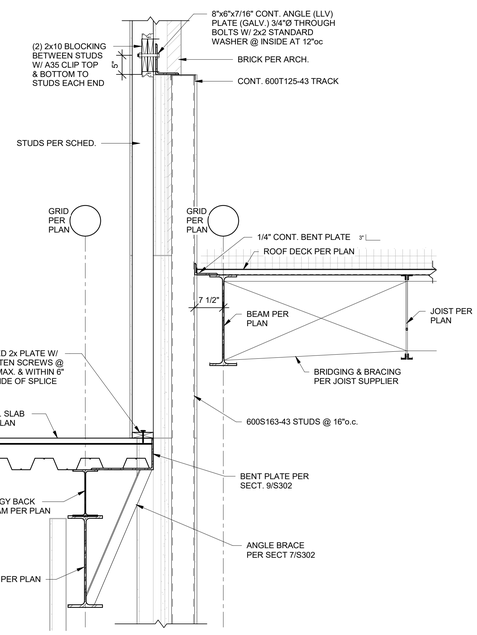

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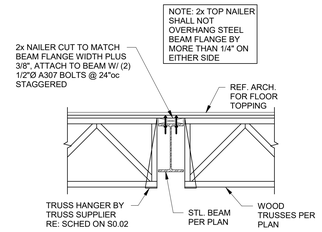
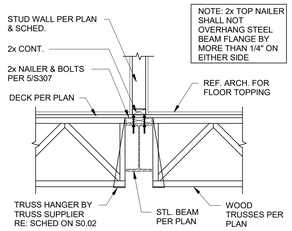
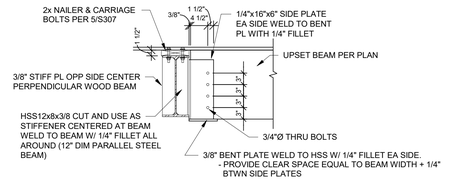
3/4" = 1'-0"



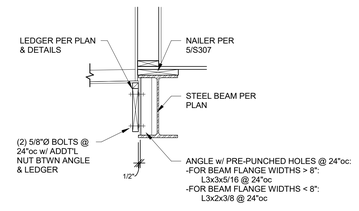
5 SECTION
3/4" = 1'-0"



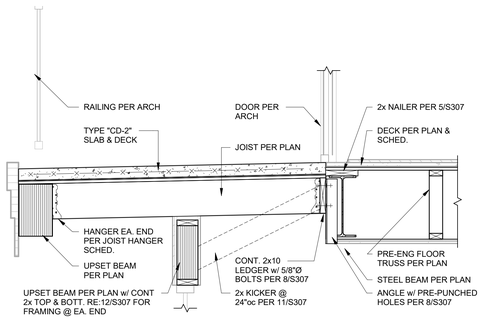
6 SECTION
3/4" = 1'-0"



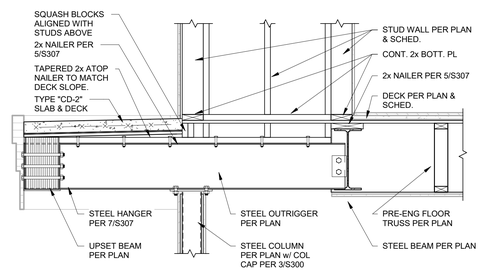
7 SECTION
3/4" = 1'-0"



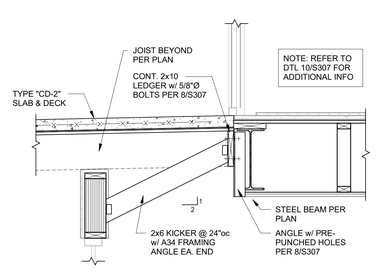
8 SECTION
3/4" = 1'-0"



10 SECTION
3/4" = 1'-0"



10A SECTION
3/4" = 1'-0"



11 SECTION
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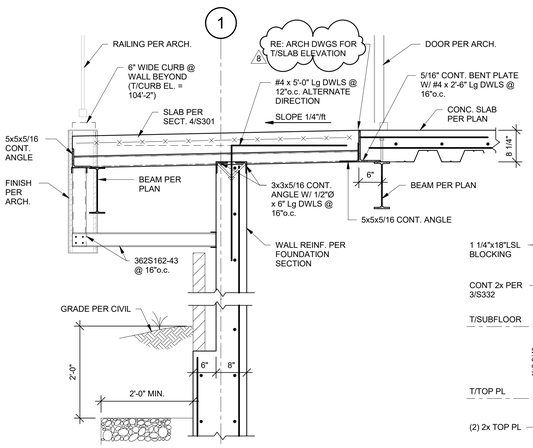
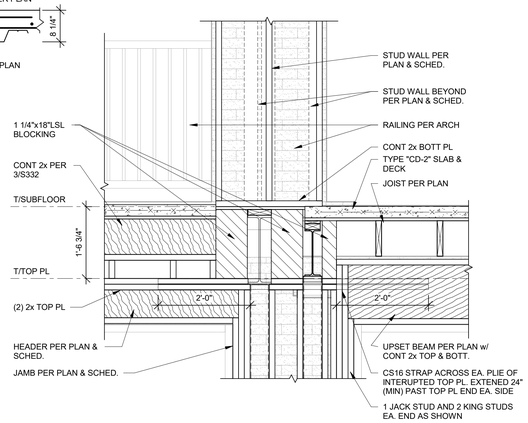
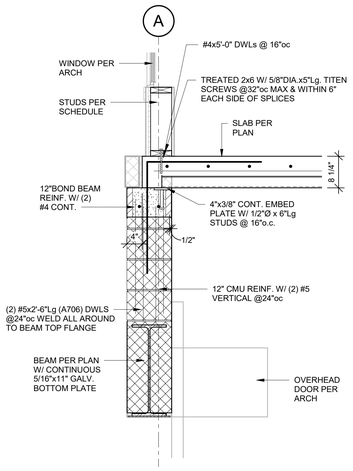


9 SECTION
3/4" = 1'-0"



12 SECTION
3/4" = 1'-0"



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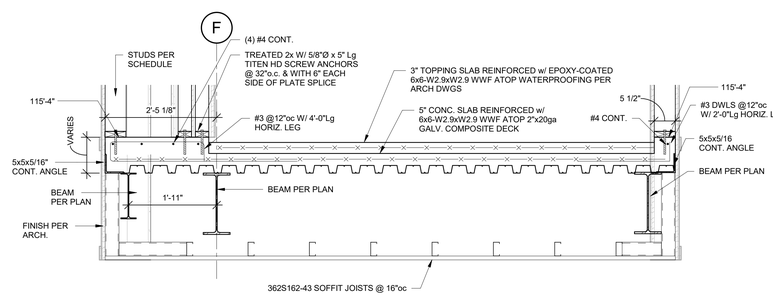

14 SECTION
3/4" = 1'-0"

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Summit at West Pryor

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751

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REVISIONS

8	REVISION 3	04.03.20

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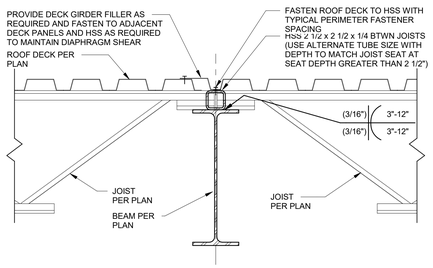
TR.i PROJECT NO. 18-046

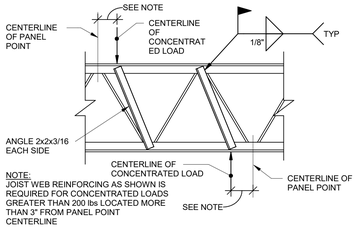
SHEET NO. S307

STEEL FRAMING SECTIONS



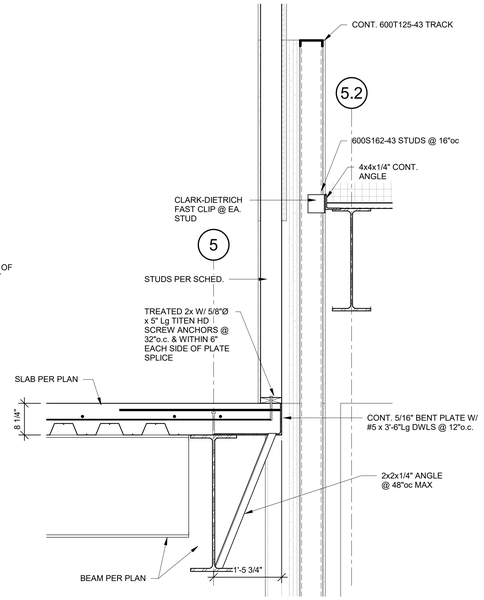
TYPICAL COLLECTOR ELEMENT ATOP BEAMS ALIGNED WITH BRACED FRAMES OR MOMENT FRAMES

1 SECTION
1 1/2" = 1'-0"

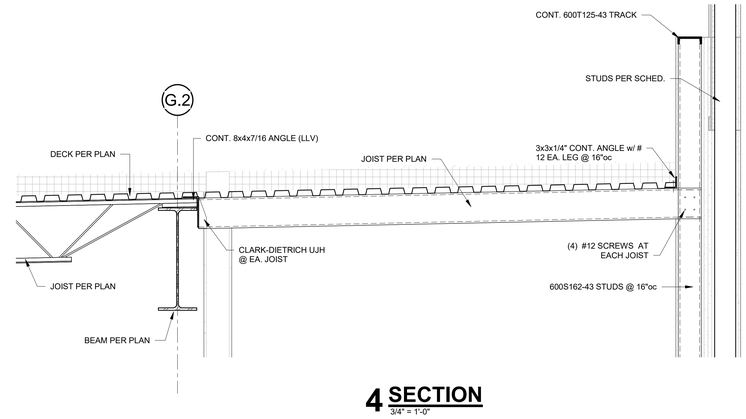


TYPICAL JOIST REINFORCING DETAIL

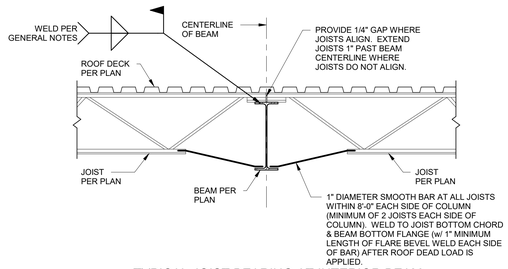
2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



TYPICAL JOIST BEARING AT INTERIOR BEAM

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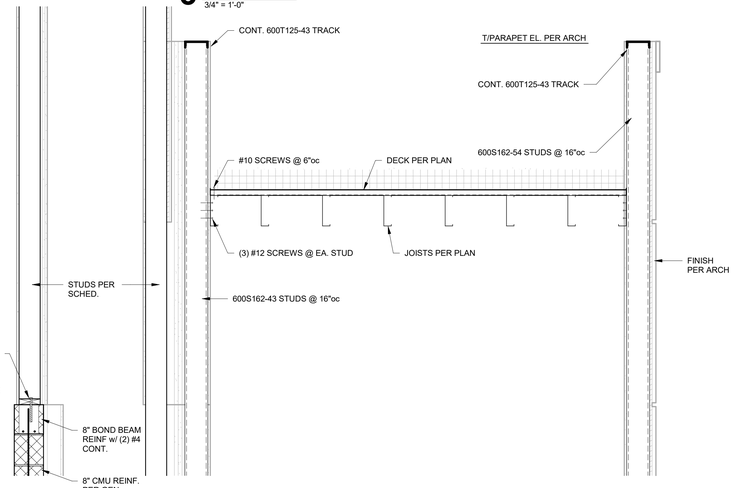

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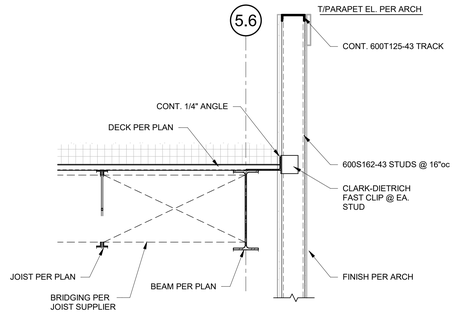
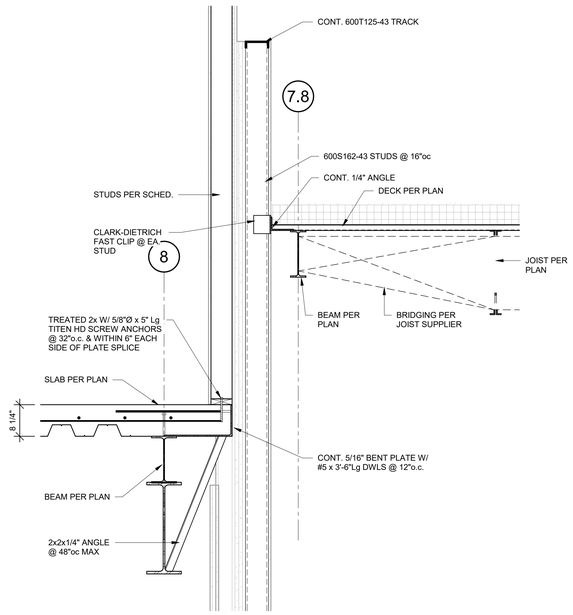


8 SECTION
3/4" = 1'-0"

6 SECTION
3/4" = 1'-0"



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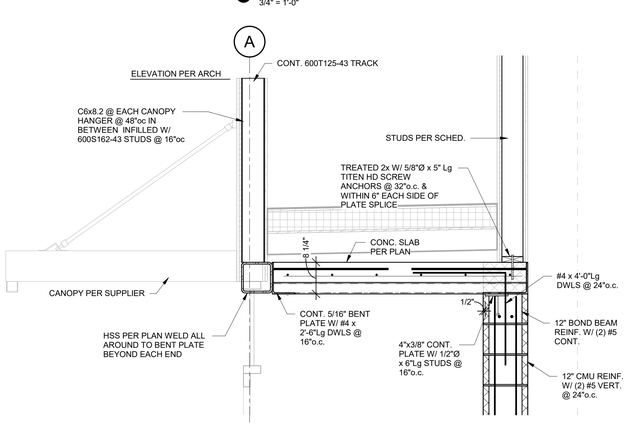

10 SECTION
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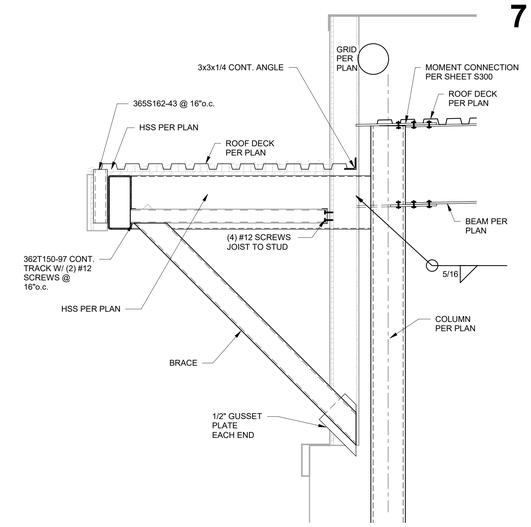

11 SECTION
3/4" = 1'-0"

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Summit at West Pryor

TR.i Architects
Architects of the Possible
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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REVISIONS 2

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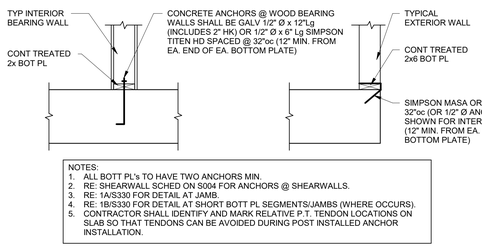
TR.i PROJECT NO. 18-046

SHEET NO.

S320

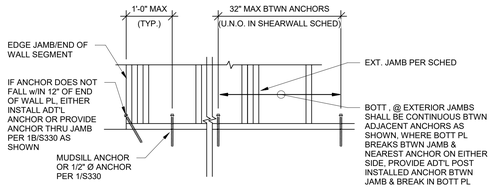
STEEL ROOF FRAMING SECTIONS



NOTES:
1. ALL BOTT PL's TO HAVE TWO ANCHORS MIN.
2. RE: SHEARWALL SCHED ON S004 FOR ANCHORS @ SHEARWALLS.
3. RE: 1A/S330 FOR DETAIL AT JAMB.
4. RE: 1B/S330 FOR DETAIL AT SHORT BOTT PL SEGMENTS/JAMBS (WHERE OCCURS).
5. CONTRACTOR SHALL IDENTIFY AND MARK RELATIVE P.T. TENDON LOCATIONS ON SLAB SO THAT TENDONS CAN BE AVOIDED DURING POST INSTALLED ANCHOR INSTALLATION.

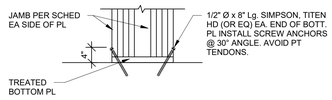
TYPICAL BOTT. PL CONNECTION TO CONCRETE

1 SECTION 3/4" = 1'-0"



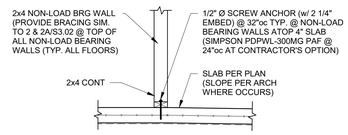
TYPICAL BOTT. PL CONNECTION TO CONCRETE AT EXTERIOR JAMBS & ENDS OF WALL

1A SECTION 3/4" = 1'-0"



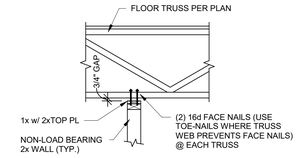
TYPICAL BOTT. PL CONNECTION TO CONCRETE AT SHORT PL SEGMENTS & JAMBS

1B SECTION 3/4" = 1'-0"



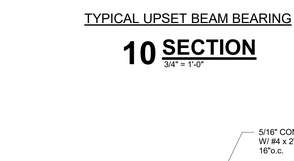
TYPICAL BOTT PL CONNECTION NON-LOAD BEARING WALLS

2 SECTION 3/4" = 1'-0"



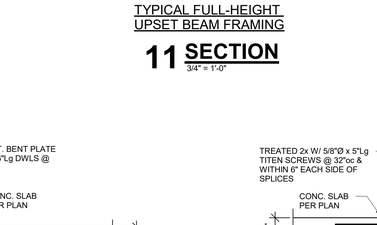
TYPICAL NON-LOAD BEARING WALL @ FLOOR TRUSS

3 SECTION 3/4" = 1'-0"

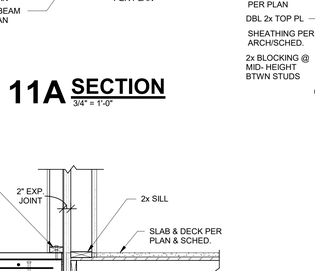


TYPICAL NON-LOAD BEARING WALL @ FLOOR TRUSS

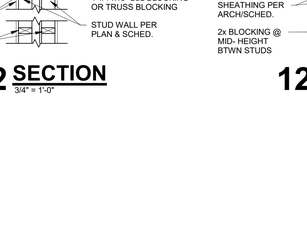
3A SECTION 3/4" = 1'-0"



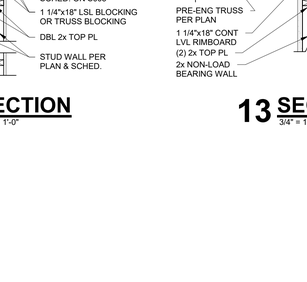
4 SECTION 3/4" = 1'-0"



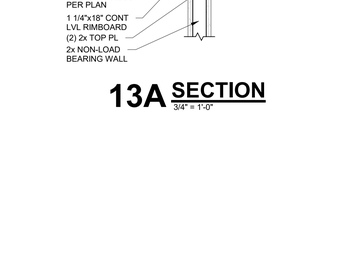
4A SECTION 3/4" = 1'-0"



5 SECTION 3/4" = 1'-0"



6 SECTION 3/4" = 1'-0"



6A SECTION 3/4" = 1'-0"

7 SECTION 3/4" = 1'-0"

7A SECTION 3/4" = 1'-0"

7B SECTION 3/4" = 1'-0"

TYPICAL UPSET CORRIDOR BEAM

8 SECTION 3/4" = 1'-0"

NOTE: REFER TO 8A/S330 FOR END CONNECTION DETAIL.

8A SECTION 1 1/2" = 1'-0"

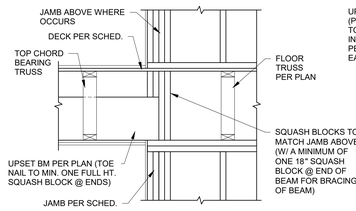
NOTE: RE: 11/S330 WHERE UPSET BM IS FULL HEIGHT OF FLR TRUSS OR TOP CHORD BEARING TRUSS IS NOT USED.

TYPICAL SHALLOW UPSET BEAM

9 SECTION 3/4" = 1'-0"

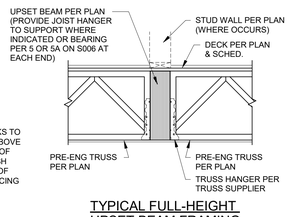
TYPICAL SHALLOW UPSET BEAM SUPPORTING BEARING WALL

9A SECTION 3/4" = 1'-0"



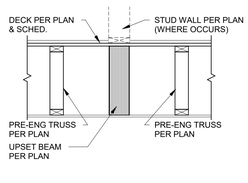
TYPICAL UPSET BEAM BEARING

10 SECTION 3/4" = 1'-0"

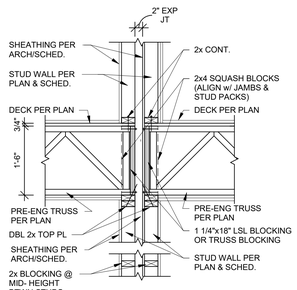


TYPICAL FULL-HEIGHT UPSET BEAM FRAMING

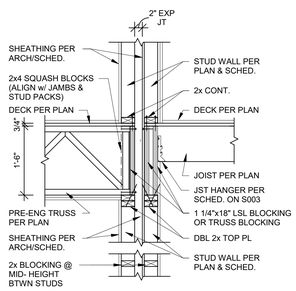
11 SECTION 3/4" = 1'-0"



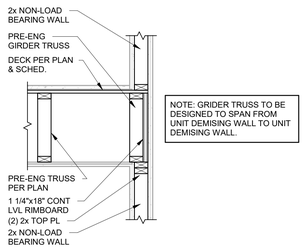
11A SECTION 3/4" = 1'-0"



12 SECTION 3/4" = 1'-0"

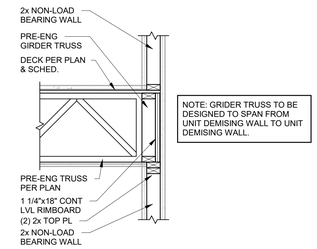


12A SECTION 3/4" = 1'-0"



NOTE: GRIDER TRUSS TO BE DESIGNED TO SPAN FROM UNIT DEMISING WALL TO UNIT DEMISING WALL.

13 SECTION 3/4" = 1'-0"



NOTE: GRIDER TRUSS TO BE DESIGNED TO SPAN FROM UNIT DEMISING WALL TO UNIT DEMISING WALL.

13A SECTION 3/4" = 1'-0"

14 SECTION 3/4" = 1'-0"

15 SECTION 3/4" = 1'-0"

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STATE OF MISSOURI — JOHN C. MAHER — NUMBER PE-2010006832 — PROFESSIONAL ENGINEER — 7-28-19

Summit at West Pryor

TRi Architects
Architects of the Possible
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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REVISIONS 4

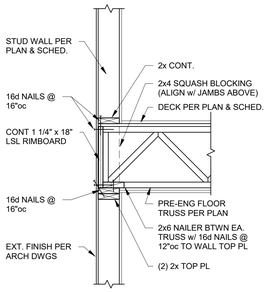
DWG BY Author

TR.i PROJECT NO. 18-046

SHEET NO.

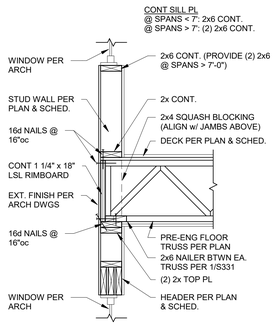
S330

WOOD FLOOR FRAMING SECTIONS

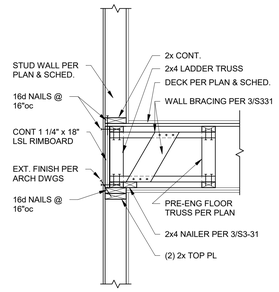


TYPICAL EXTERIOR WALL AT TRUSS BEARING

1 SECTION
3/4" = 1'-0"

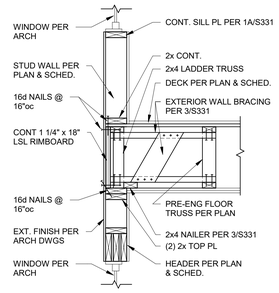


1A SECTION
3/4" = 1'-0"

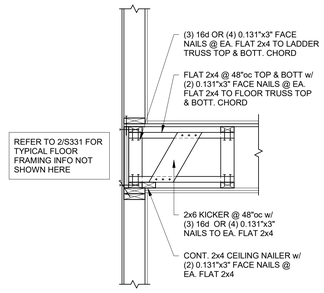


TYPICAL EXTERIOR WALL PARALLEL TO FLOOR TRUSSES

2 SECTION
3/4" = 1'-0"

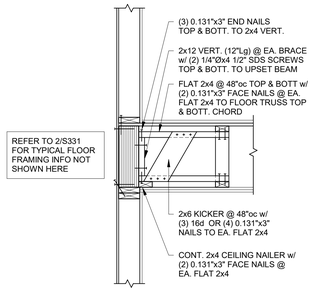


2A SECTION
3/4" = 1'-0"



TYPICAL EXTERIOR WALL BRACING

3 SECTION
3/4" = 1'-0"



3A SECTION
3/4" = 1'-0"

4 SECTION
3/4" = 1'-0"

4A SECTION
3/4" = 1'-0"

4B SECTION
1 1/2" = 1'-0"

5 SECTION
3/4" = 1'-0"

6 SECTION
3/4" = 1'-0"

7 SECTION
3/4" = 1'-0"

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TR,i Architects
9812 Manchester Road
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REVISIONS 1

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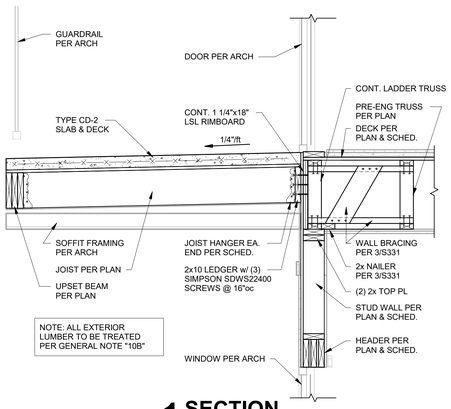
TR,i PROJECT NO. 18-046

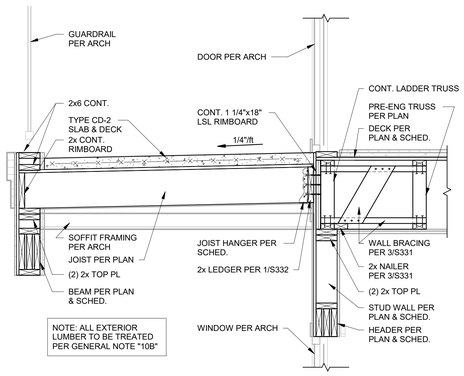
SHEET NO.

S331

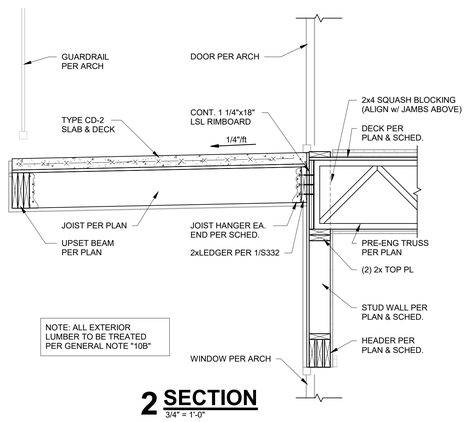
WOOD FLOOR FRAMING SECTIONS



1 SECTION
3/4" = 1'-0"



1A SECTION
3/4" = 1'-0"



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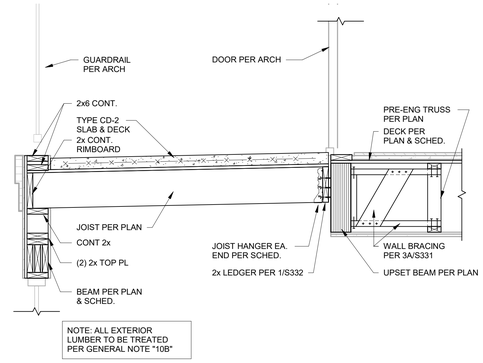
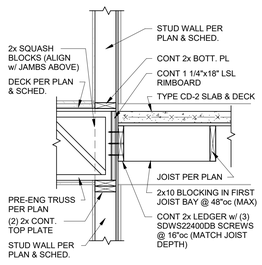
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"



4 SECTION
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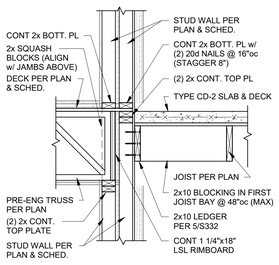
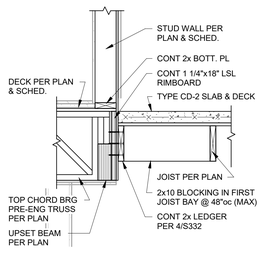
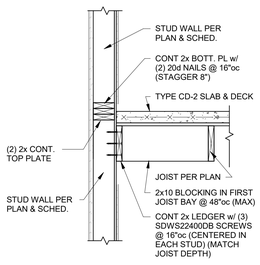


4A SECTION
3/4" = 1'-0"



4B SECTION
3/4" = 1'-0"



5 SECTION
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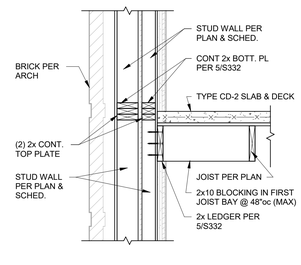
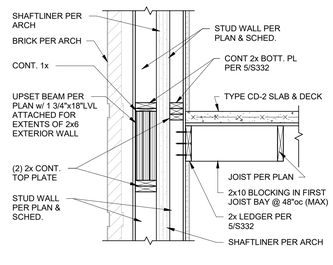
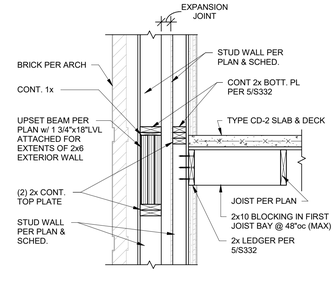


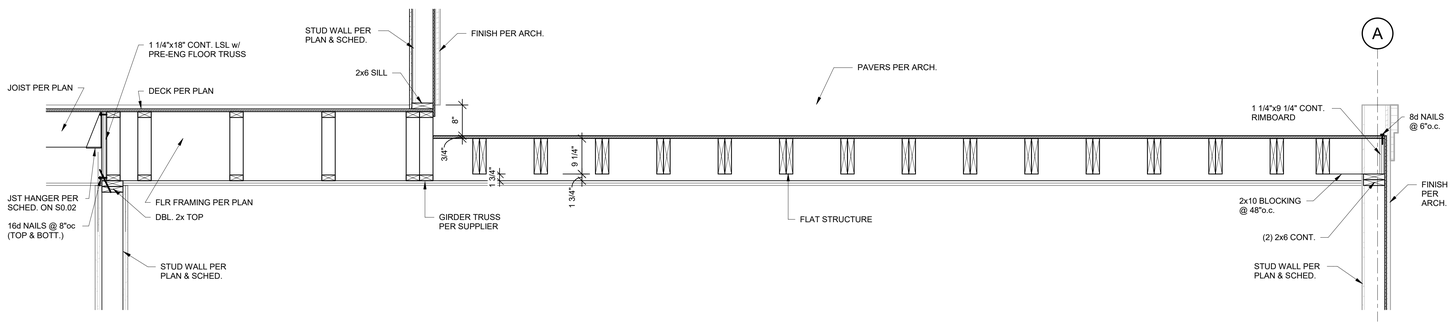
6 SECTION
3/4" = 1'-0"



6A SECTION
3/4" = 1'-0"



6B SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

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CIVIL
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TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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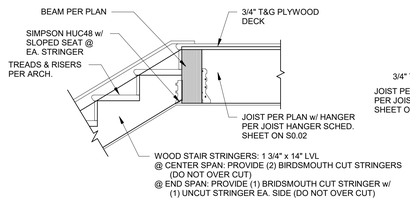
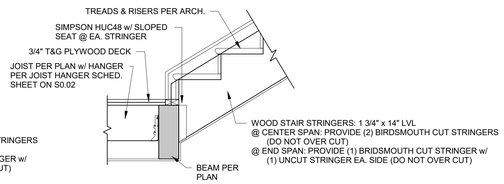
TR.i PROJECT NO. 18-046

SHEET NO.

S332

WOOD FLOOR FRAMING SECTIONS





TYPICAL STAIR AND STRINGER CONNECTION DETAIL

1 SECTION
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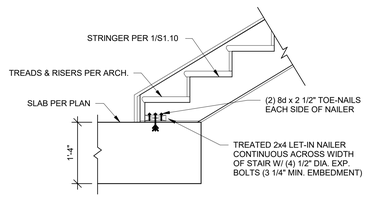

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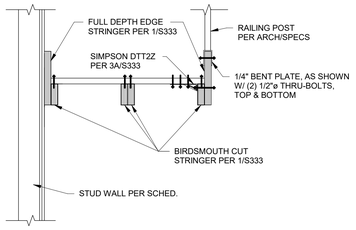
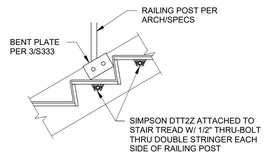
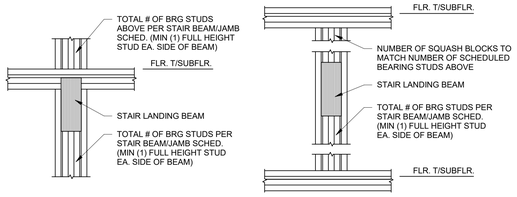


TYPICAL STAIR RUN TYPICAL THRU SECTION

3 SECTION
3/4" = 1'-0"

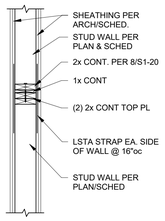


3A SECTION
3/4" = 1'-0"



TYPICAL STAIR BEAM JAMBS

4 SECTION
3/4" = 1'-0"



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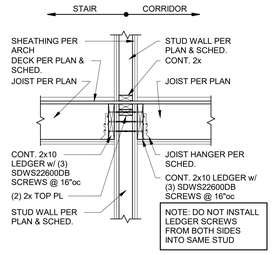
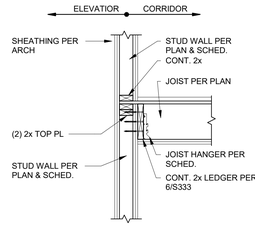
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



6A SECTION
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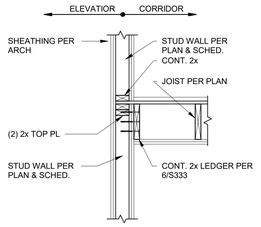

6B SECTION
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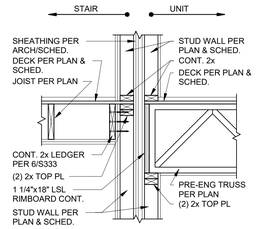

7 SECTION
3/4" = 1'-0"

7A SECTION
3/4" = 1'-0"

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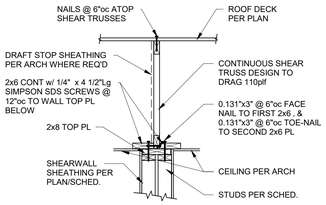
TR.i PROJECT NO. 18-046

SHEET NO.

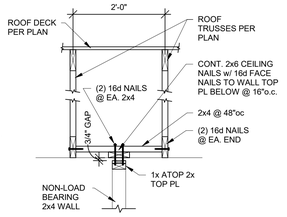
S333

WOOD FLOOR FRAMING SECTIONS



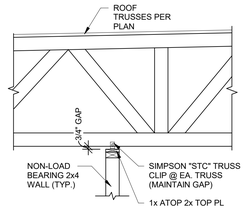
TYPICAL SHEAR TRUSS ATOP SHEARWALL

1 SECTION 3/4" = 1'-0"



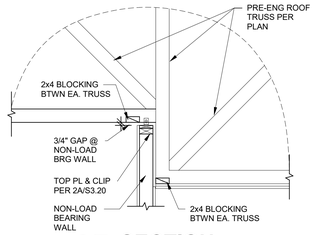
TYPICAL NON-LOAD BEARING WALL/TRUSS AT ROOF

2 SECTION 3/4" = 1'-0"

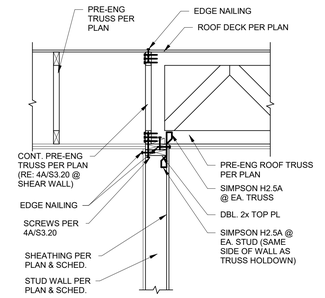


TYPICAL NON-LOAD BEARING WALL/TRUSS AT ROOF

2A SECTION 3/4" = 1'-0"

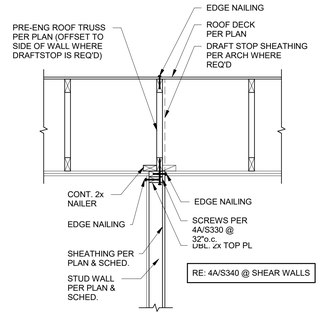


2B SECTION 3/4" = 1'-0"



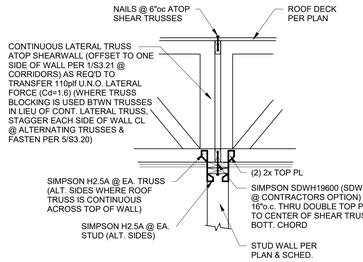
TYP. INTERSECTING ROOF TRUSSES @ BRG. WALL

3 SECTION 3/4" = 1'-0"



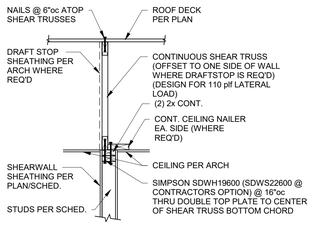
TYP. ROOF TRUSS PARALLEL W/ WALL

3A SECTION 3/4" = 1'-0"



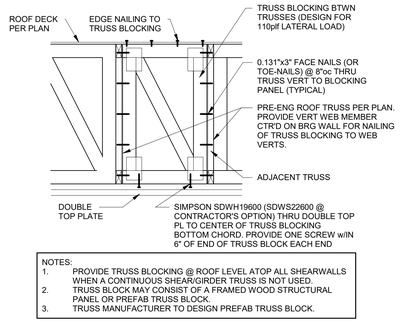
TYPICAL LATERAL TRUSS ATOP SHEARWALL PERPENDICULAR TO TRUSS SPAN

4 SECTION 3/4" = 1'-0"



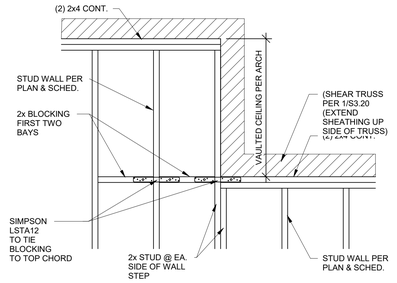
TYPICAL LATERAL TRUSS ATOP PARALLEL SHEARWALL

4A SECTION 3/4" = 1'-0"



TYPICAL ROOF TRUSS BLOCKING AT SHEARWALLS

5 SECTION 3/4" = 1'-0"



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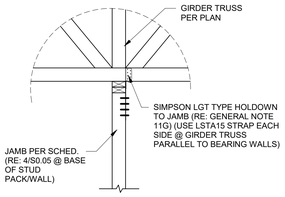
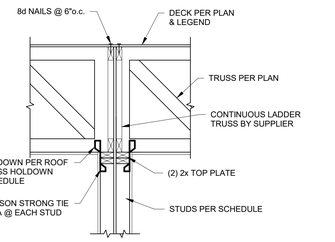


TYPICAL DETAIL AT ROOF GIRDER TRUSS BEARING

7 SECTION 3/4" = 1'-0"



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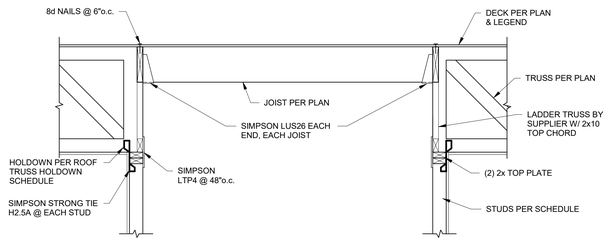

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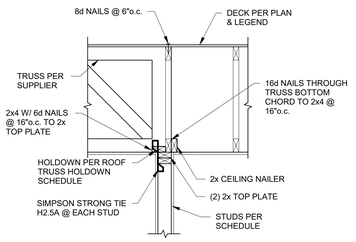

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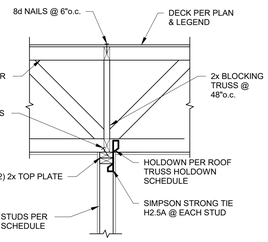
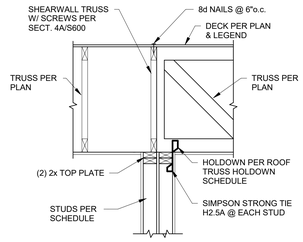


11 SECTION 3/4" = 1'-0"



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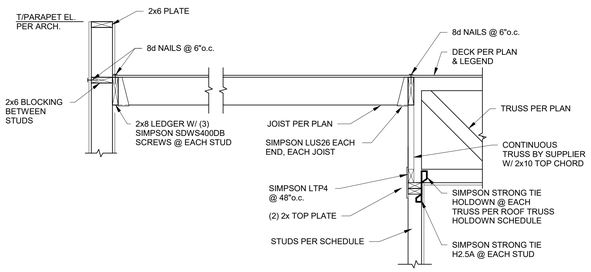

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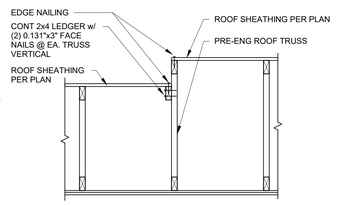

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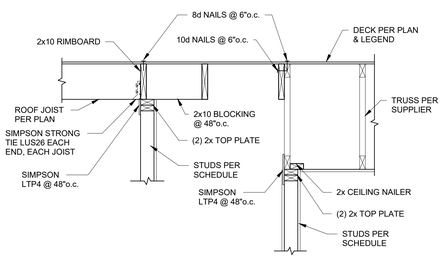
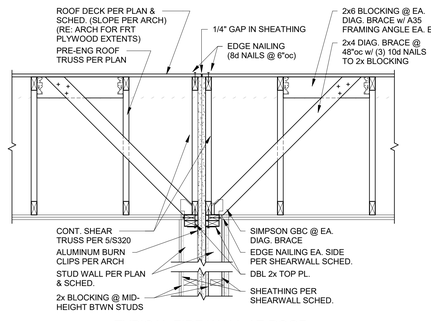
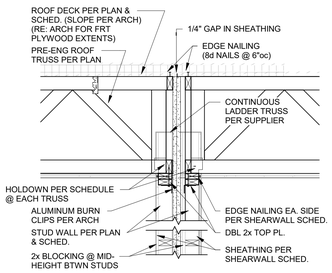


15 SECTION 3/4" = 1'-0"



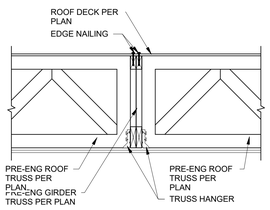
TYPICAL FIRE WALL AT ROOF

16 SECTION 3/4" = 1'-0"

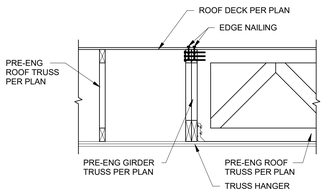


TYPICAL FIRE WALL AT ROOF

17 SECTION 3/4" = 1'-0"



18 SECTION 3/4" = 1'-0"



19 SECTION 3/4" = 1'-0"

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TR.i Architects
9812 Manchester Road
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REVISIONS 2

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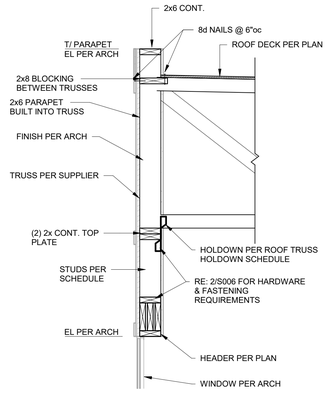
TR.i PROJECT NO. 18-046

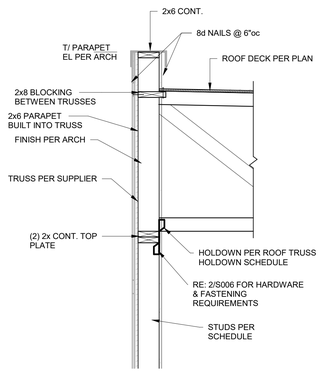
SHEET NO.

S340

WOOD ROOF FRAMING SECTIONS



1 SECTION
3/4" = 1'-0"



1A SECTION
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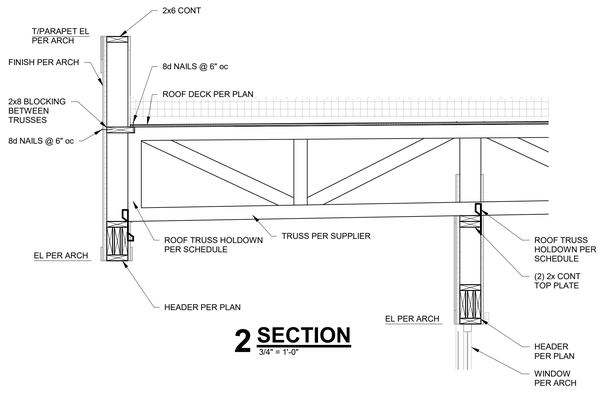

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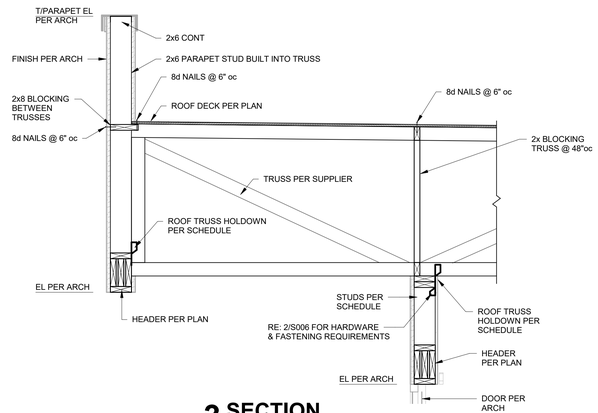

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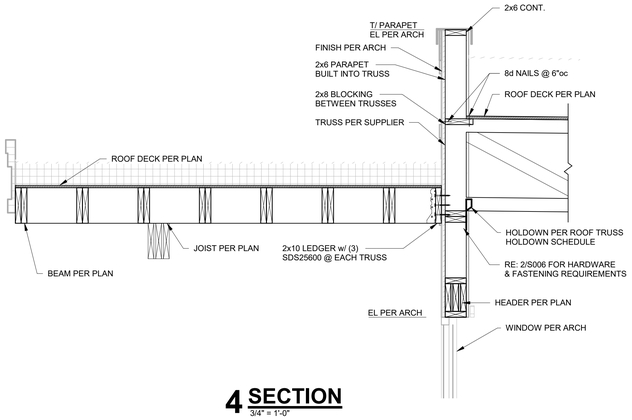

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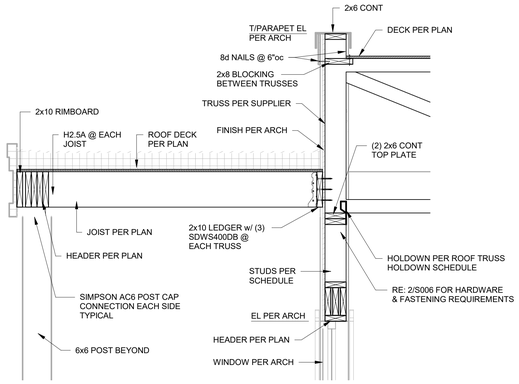

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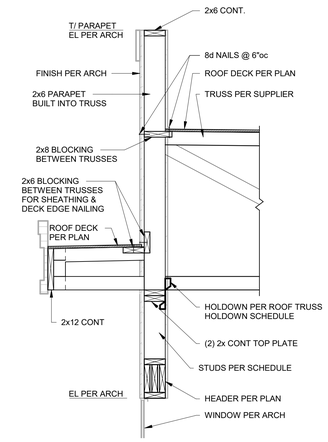

6 SECTION
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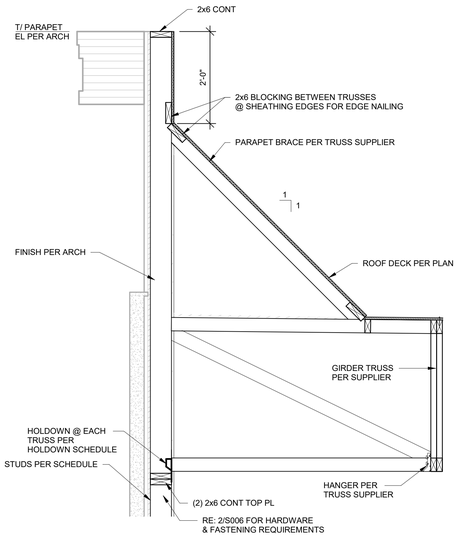
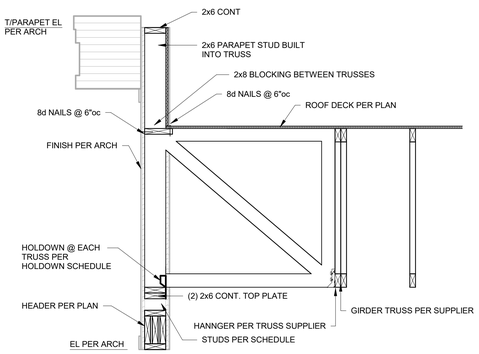
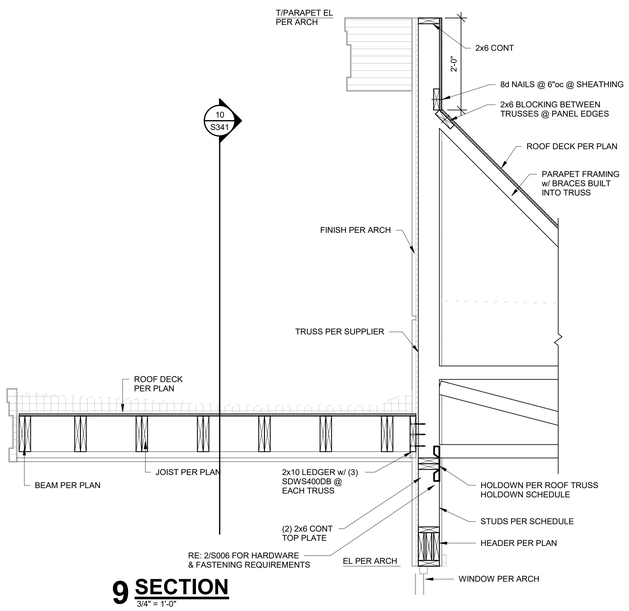


7 SECTION
3/4" = 1'-0"



8 SECTION
3/4" = 1'-0"



9 SECTION
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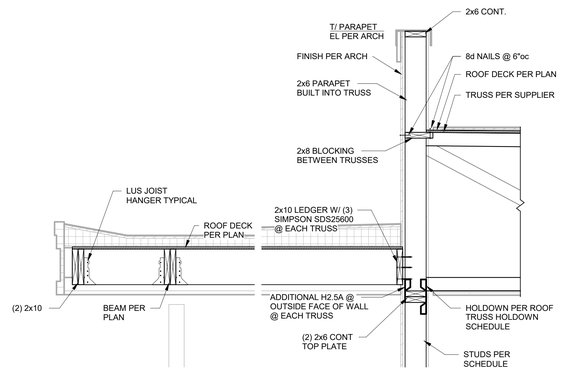

10 SECTION
3/4" = 1'-0"

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9812 Manchester Road
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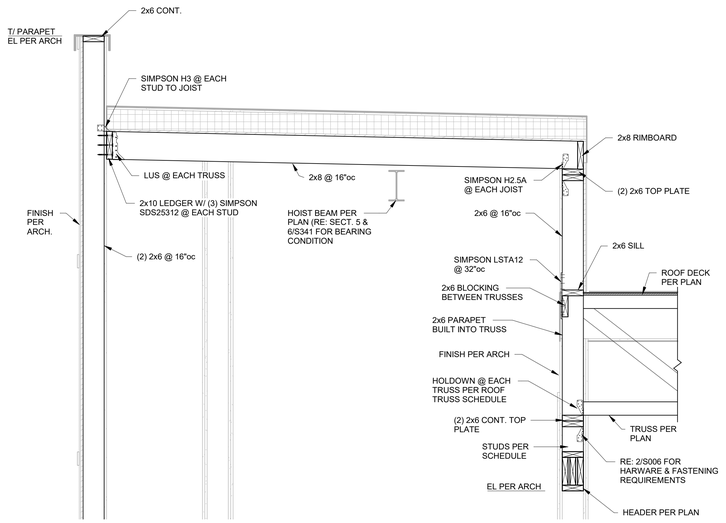
S341

WOOD ROOF FRAMING SECTIONS



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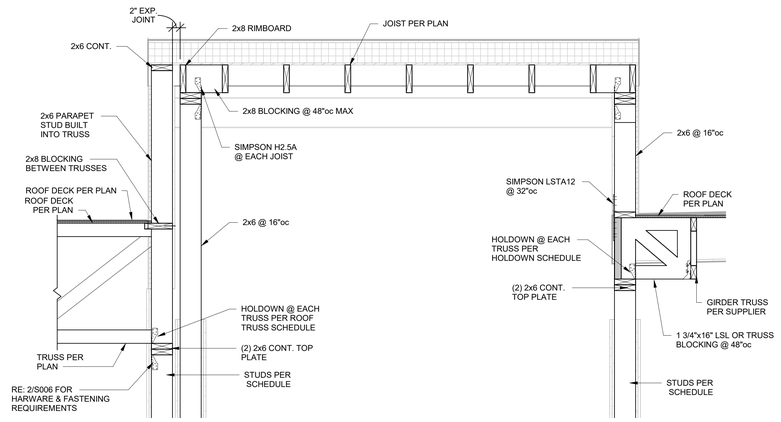

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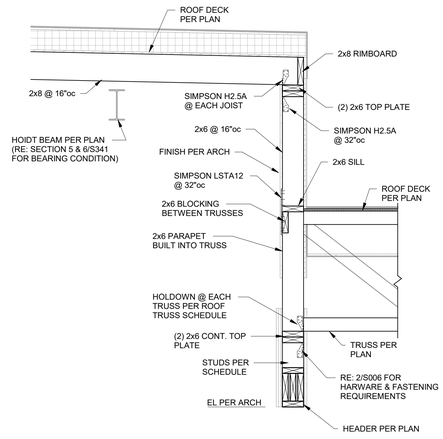

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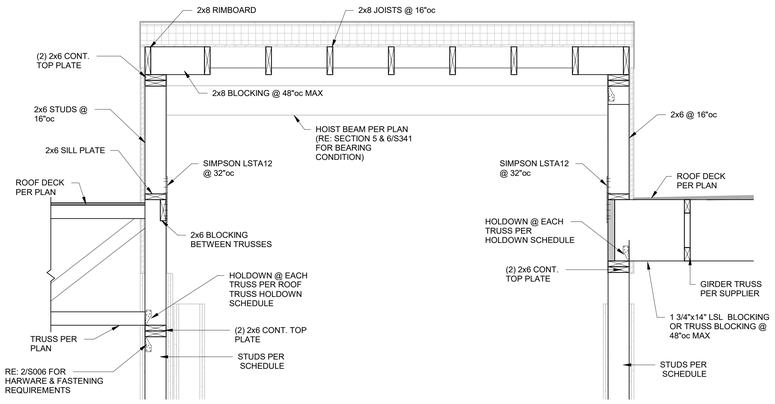

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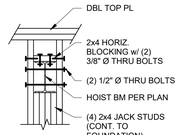

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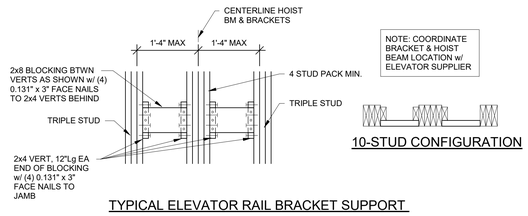
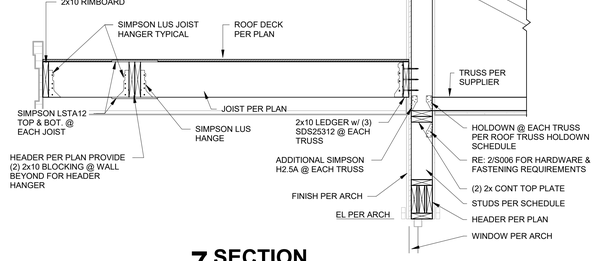


TYPICAL ELEVATOR RAIL BRACKET SUPPORT

6 SECTION
3/4" = 1'-0"



7 SECTION
3/4" = 1'-0"

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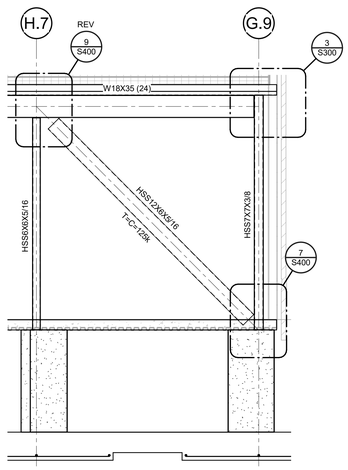
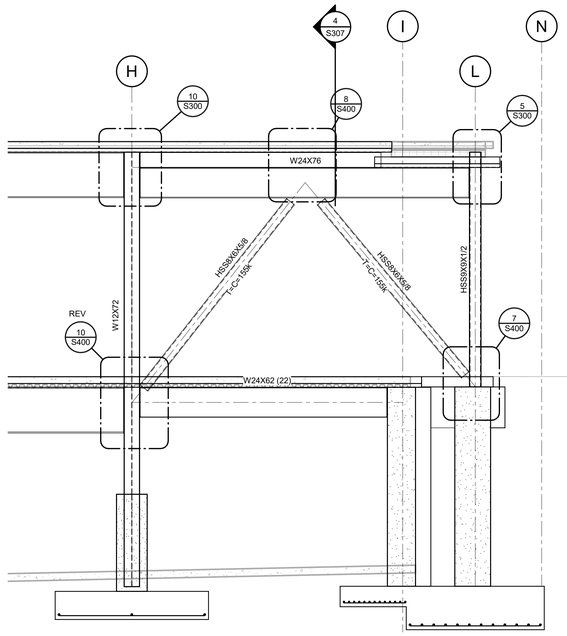
WOOD ROOF FRAMING SECTIONS



1 ELEVATION
1/4" = 1'-0"



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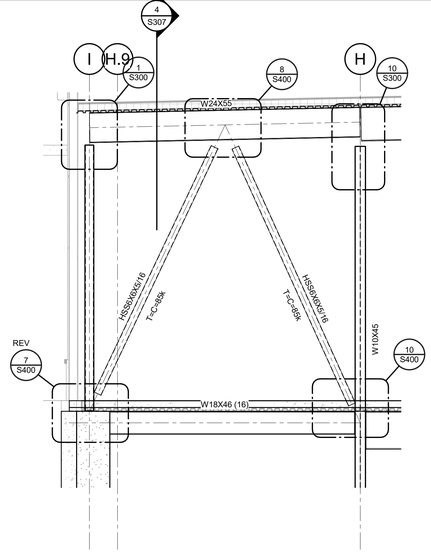

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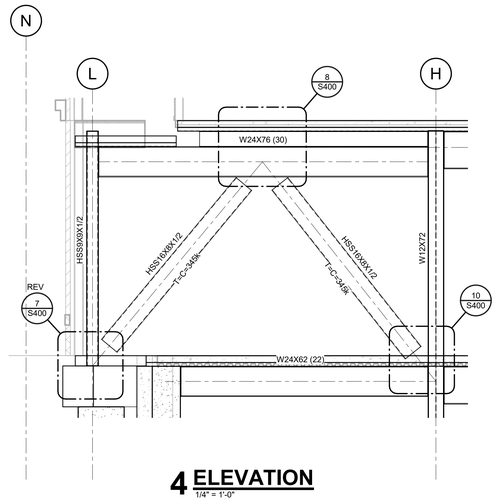
1/4" = 1'-0"



4 ELEVATION
1/4" = 1'-0"

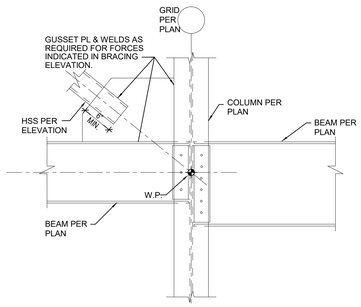
5 ELEVATION
1/4" = 1'-0"

6 SECTION
1/4" = 1'-0"

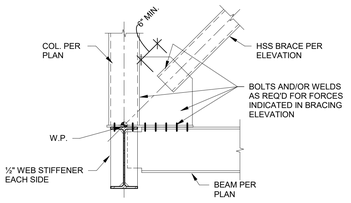
7 DETAIL
3/4" = 1'-0"

8 SECTION
3/4" = 1'-0"

9 DETAIL
3/4" = 1'-0"



10 DETAIL
3/4" = 1'-0"



11 DETAIL
3/4" = 1'-0"

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TR.i Architects
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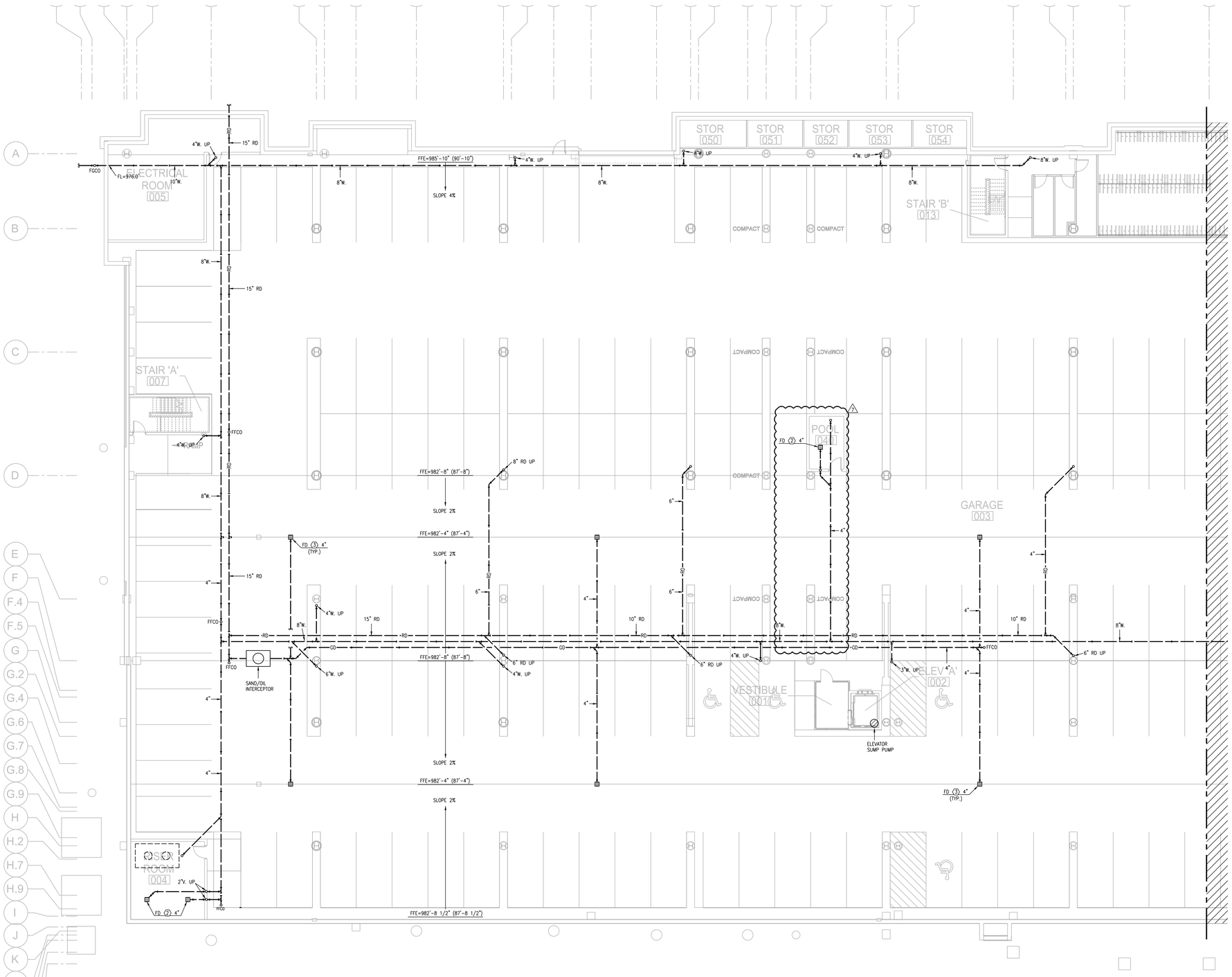
ELEVATIONS



1 **PARTIAL GARAGE PLAN**
3/32"=1'-0" BELOW-GRADE PLUMBING

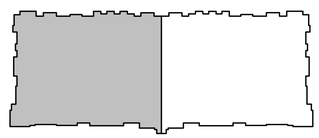
NORTH

NOTES:

1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
(4) PENETRATE BEAM PER STRUCTURAL DETAIL.



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER
1-24-20

ARCHITECT	TR¡ ARCHITECTS
STRUCTURAL ENGINEER	BOB D CAMPBELL & COMPANY
CIVIL ENGINEER	RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR	BRINKMANN CONSTRUCTORS
MECHANICAL ENGINEER	LATIMER SOMMERS & ASSOCIATES
PLUMBING ENGINEER	LATIMER SOMMERS & ASSOCIATES
ELECTRICAL ENGINEER	LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119

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T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

DATE: 09.12.19

REVISIONS (A)

1	PERMIT COMMENTS	09.06.19
2	REVISION 2	1.24.2020

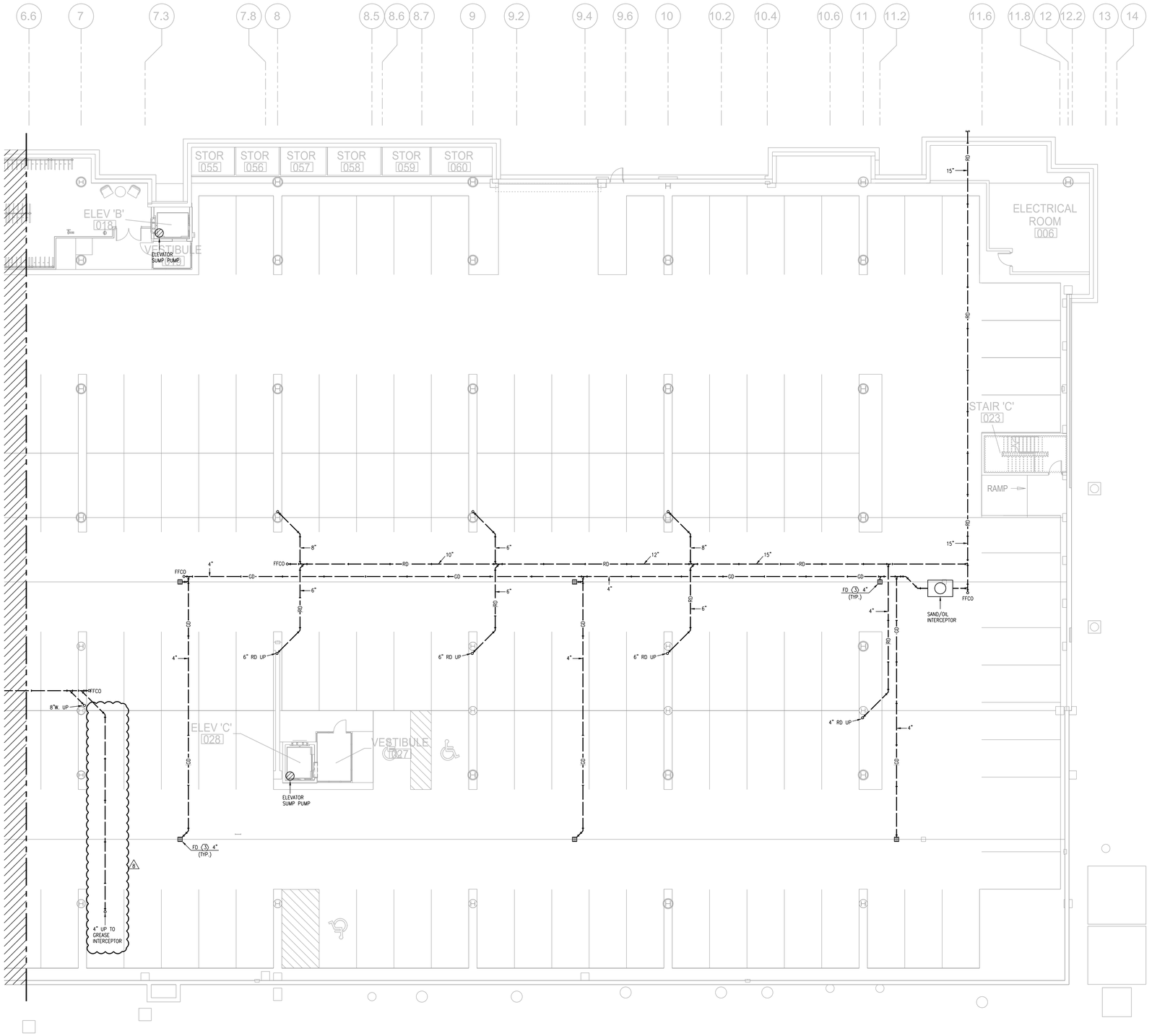
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

P101

PARTIAL GARAGE PLAN - BELOW-GRADE PLUMBING



NOTES:

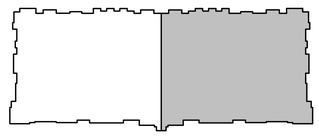
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

1. 3"V. UP TO RISER FOR FUTURE CONNECTION.
2. 6" UP TO DOWNSPOUT CONNECTION.
3. DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
4. PENETRATE BEAM PER STRUCTURAL DETAIL.

1 **PARTIAL GARAGE PLAN** — BELOW-GRADE PLUMBING
3/32"=1'-0"

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS (#)

1	PERMIT COMMENTS	09.06.19
2	REVISION 3	04.03.20

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TR¡ PROJECT NO. 18-046

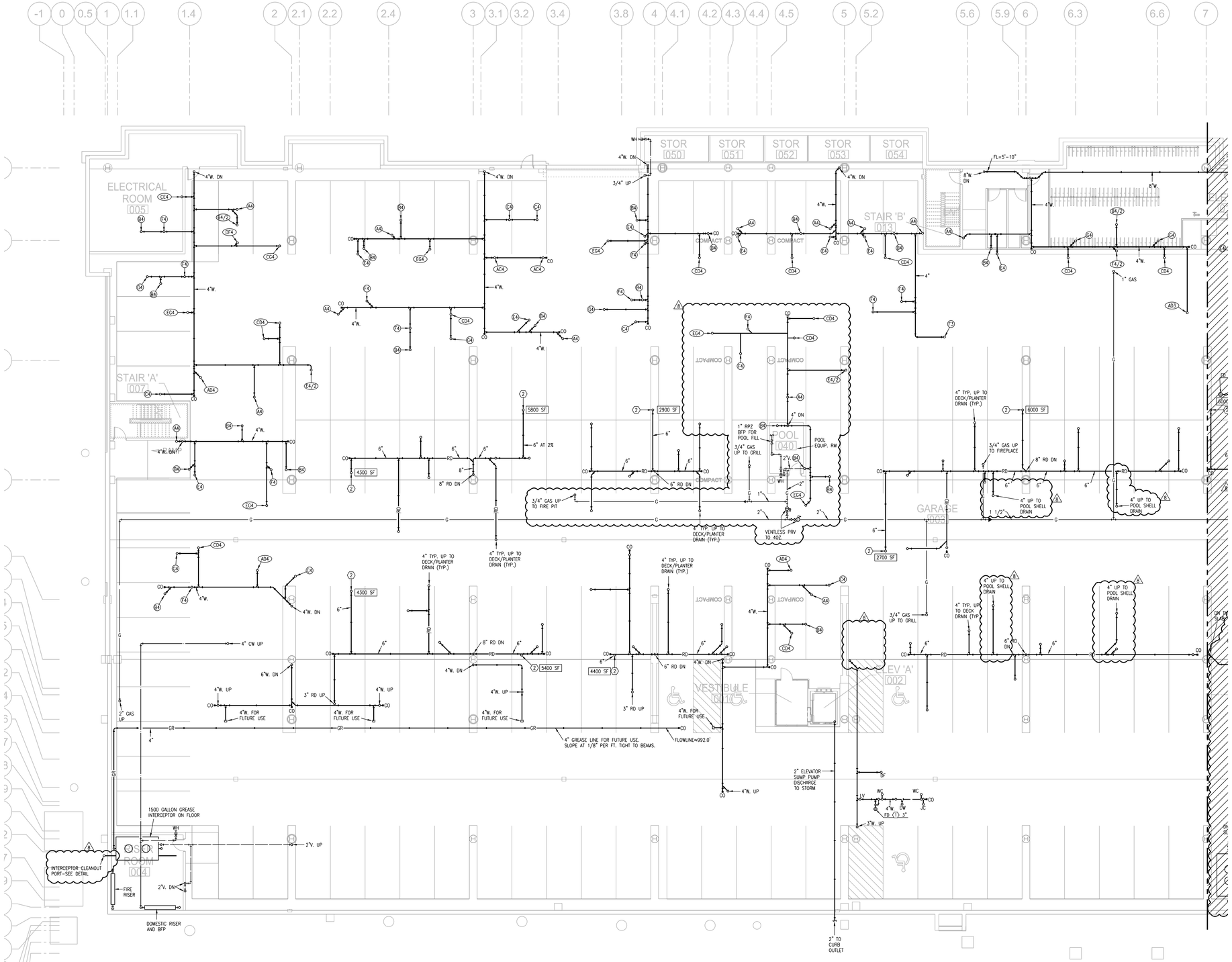
SHEET NO.

P102

PARTIAL GARAGE PLAN - BELOW-GRADE PLUMBING

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



NOTES:

1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

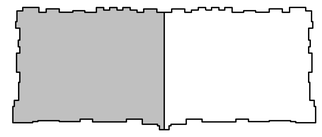
LEGEND:

1. 3"V. UP TO RISER FOR FUTURE CONNECTION.
2. 6" UP TO DOWNSPOUT CONNECTION.
3. DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
4. PENETRATE BEAM PER STRUCTURAL DETAIL.

1 PARTIAL GARAGE PLAN

3/32"=1'-0" PLUMBING

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
PROFESSIONAL ENGINEER
4-3-20

ARCHITECT	TR¡ ARCHITECTS
STRUCTURAL ENGINEER	BOB D CAMPBELL & COMPANY
CIVIL ENGINEER	RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR	BRINKMANN CONSTRUCTORS
MECHANICAL ENGINEER	LATIMER SOMMERS & ASSOCIATES
PLUMBING ENGINEER	LATIMER SOMMERS & ASSOCIATES
ELECTRICAL ENGINEER	LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63110
T: 314-395-9750
F: 314-395-9751
www.trjarchitects.com

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REVISIONS

1	PERMIT COMMENTS	09.06.19
6	REVISION 1	12.20.19
7	REVISION 2	1.24.20
8	REVISION 3	04.03.20

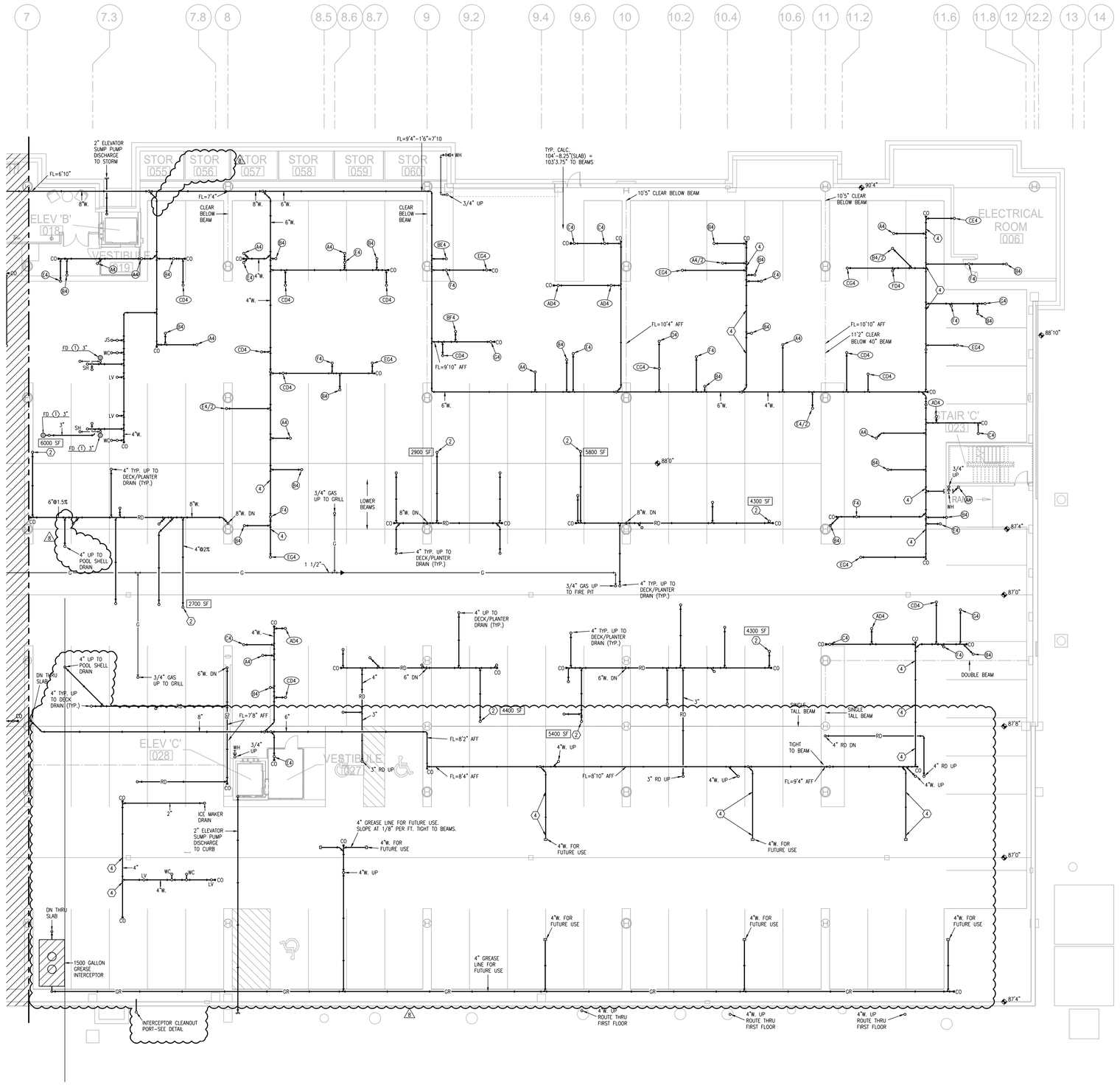
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

P103

PARTIAL GARAGE PLAN - PLUMBING



1 PARTIAL GARAGE PLAN

3/32"=1'-0" PLUMBING

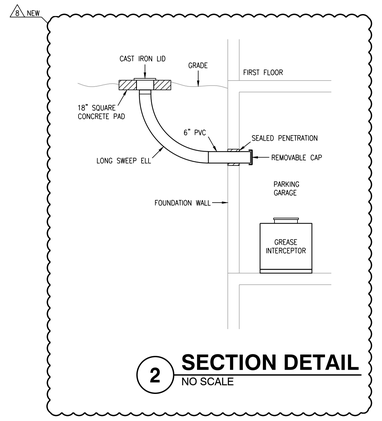
NORTH

NOTES:

1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

1. 3"V. UP TO RISER FOR FUTURE CONNECTION.
2. 6" UP TO DOWNSPOUT CONNECTION.
3. DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
4. PENETRATE BEAM PER STRUCTURAL DETAIL.



2 SECTION DETAIL

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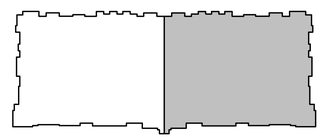

KEY PLAN

NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
PROFESSIONAL ENGINEER
4-3-20

TR.i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS 8

1	PERMIT COMMENTS	09.06.19
6	REVISION 1	12.20.19
7	REVISION 2	1.24.20
8	REVISION 3	04.03.20

DWG BY RRB

TR.i PROJECT NO. 18-046

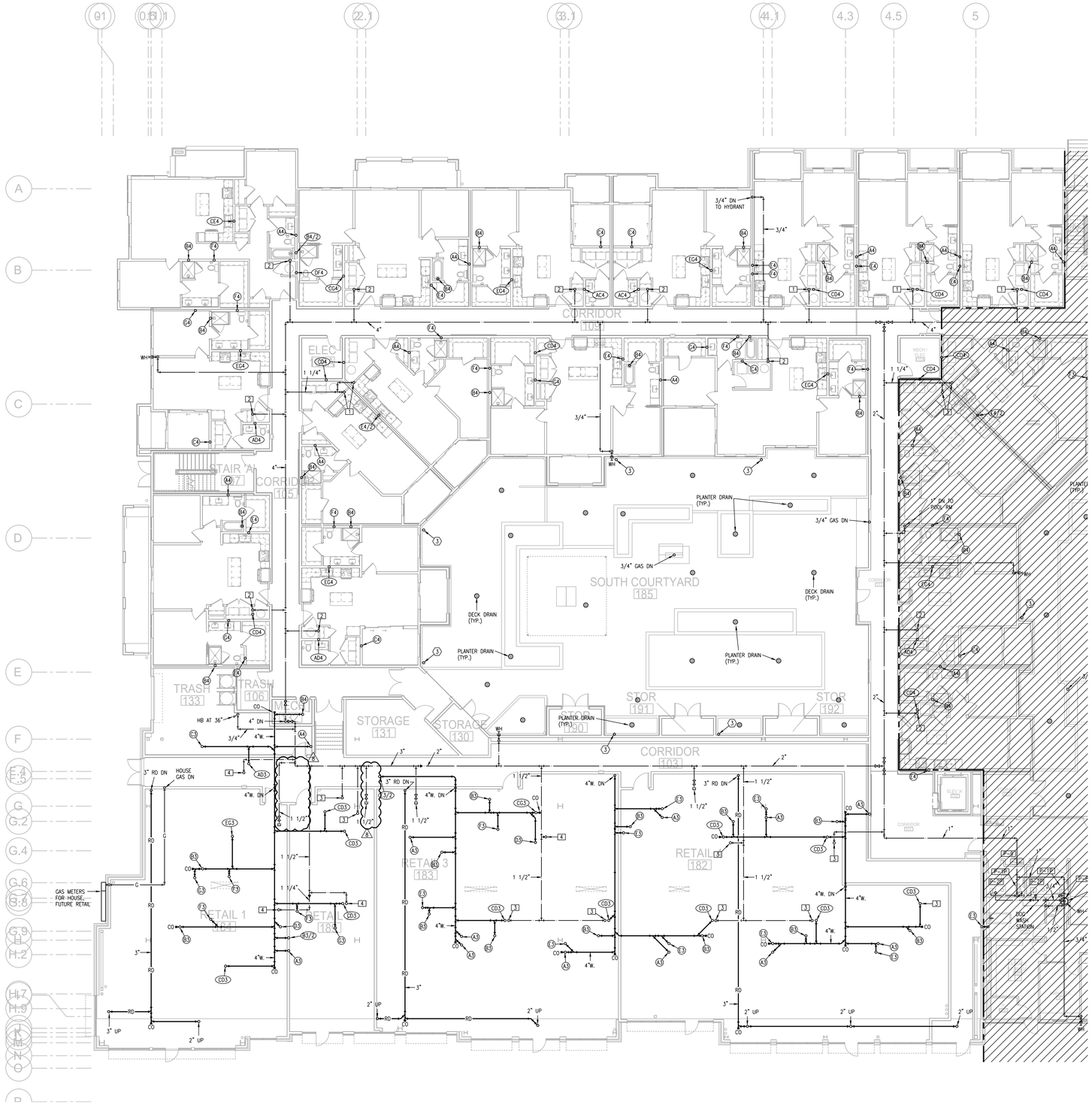
SHEET NO.

P104

PARTIAL GARAGE PLAN - PLUMBING

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

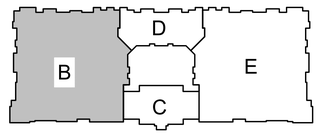


1 **FIRST FLOOR PLAN - AREA B**
3/32"=1'-0" PLUMBING

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
(4) PENETRATE BEAM PER STRUCTURAL DETAIL.



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 2	1.24.20
3	REVISION 3	04.03.20

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TR¡ PROJECT NO. 18-046

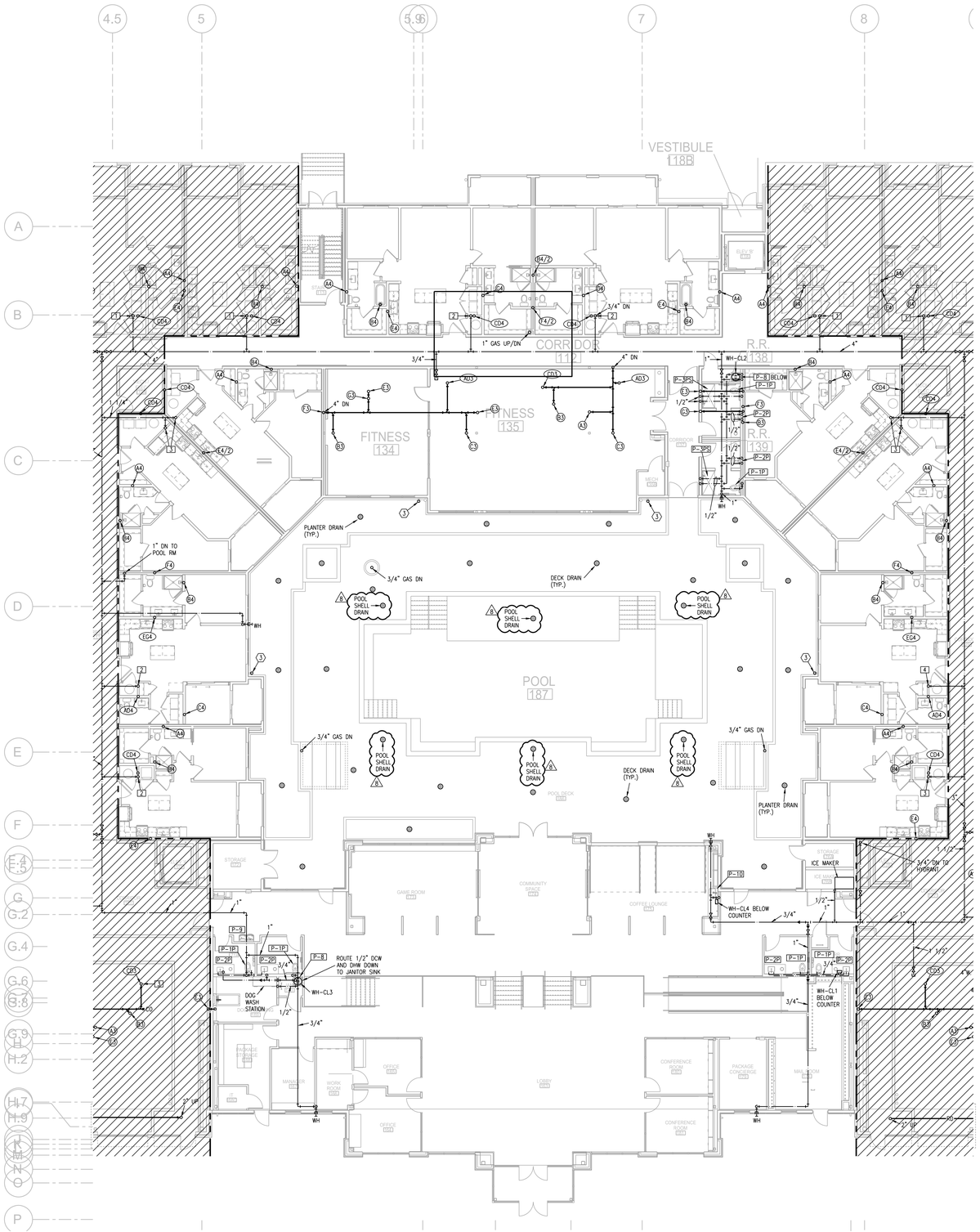
SHEET NO.

P105

FIRST FLOOR PLAN - AREA B - PLUMBING

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



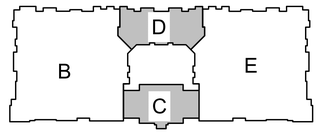
1 **FIRST FLOOR PLAN - AREA C/D**
3/32" = 1'-0"
PLUMBING
NORTH

NOTES:

1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

1. 3"V. UP TO RISER FOR FUTURE CONNECTION.
2. 6" UP TO DOWNSPOUT CONNECTION.
3. DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
4. PENETRATE BEAM PER STRUCTURAL DETAIL.



KEY PLAN
NO SCALE
NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDSLEE
PROFESSIONAL ENGINEER
4-3-20

TR.i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR.i ARCHITECTS

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

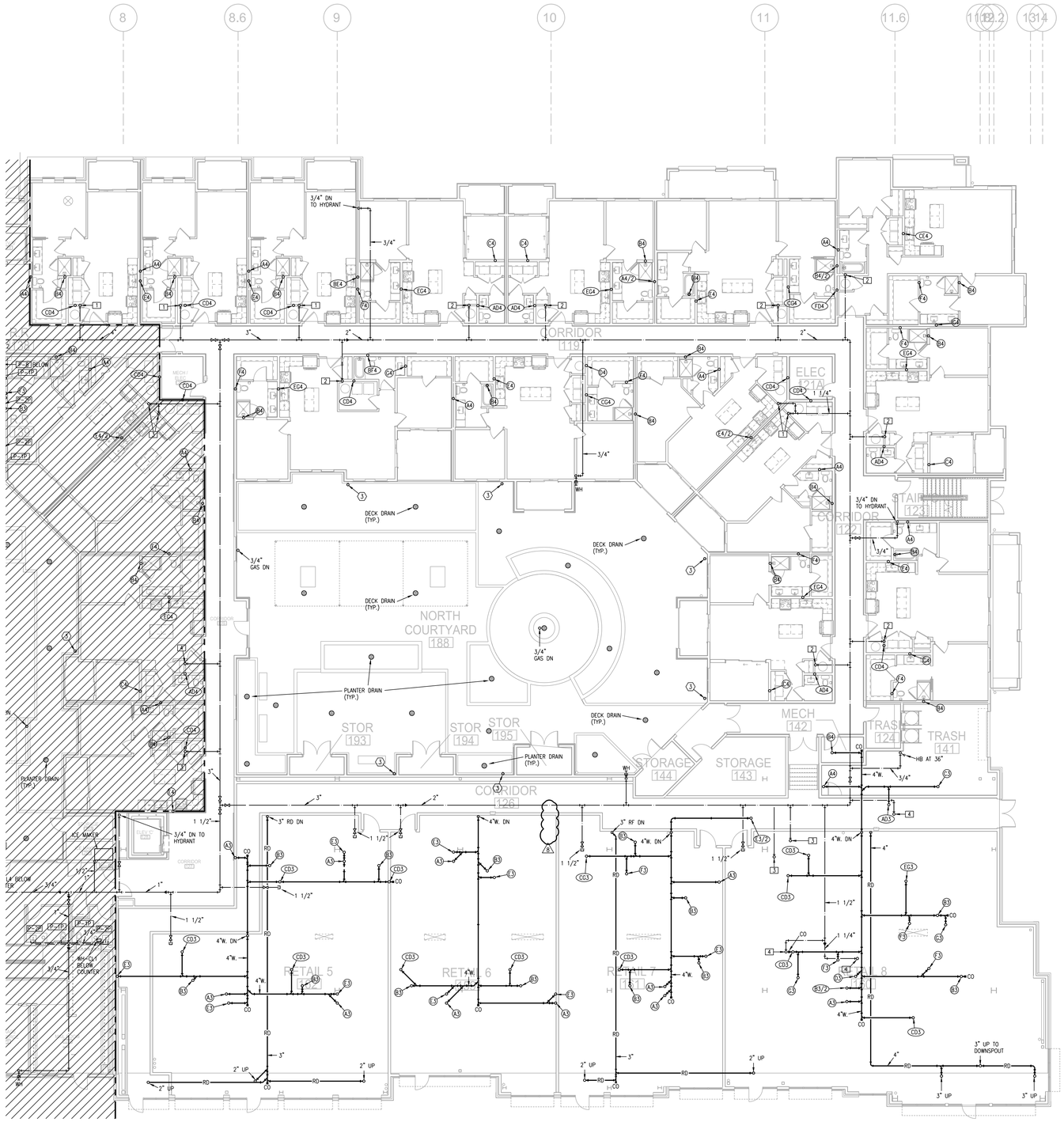
1	PERMIT COMMENTS	09.06.19
2	REVISION 1	12.20.19
3	REVISION 2	1.24.20
4	REVISION 3	04.03.20

DWG BY RRB

TR.i PROJECT NO. 18-046

SHEET NO.
P106

FIRST FLOOR PLAN - AREA C/D - PLUMBING

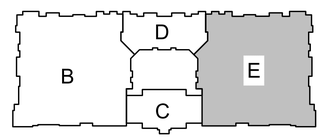


1 **FIRST FLOOR PLAN - AREA E**
3/32"=1'-0" PLUMBING

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
(4) PENETRATE BEAM PER STRUCTURAL DETAIL.



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
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LSA PROJECT NO. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
PROFESSIONAL ENGINEER
4-3-20

TRi ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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Pearl COMPANIES

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DATE: 09.12.19

REVISIONS (#)

1	PERMIT COMMENTS	09.06.19
2	BUILDING PERMIT COMMENTS	09.12.19
3	REVISION 3	04.03.20

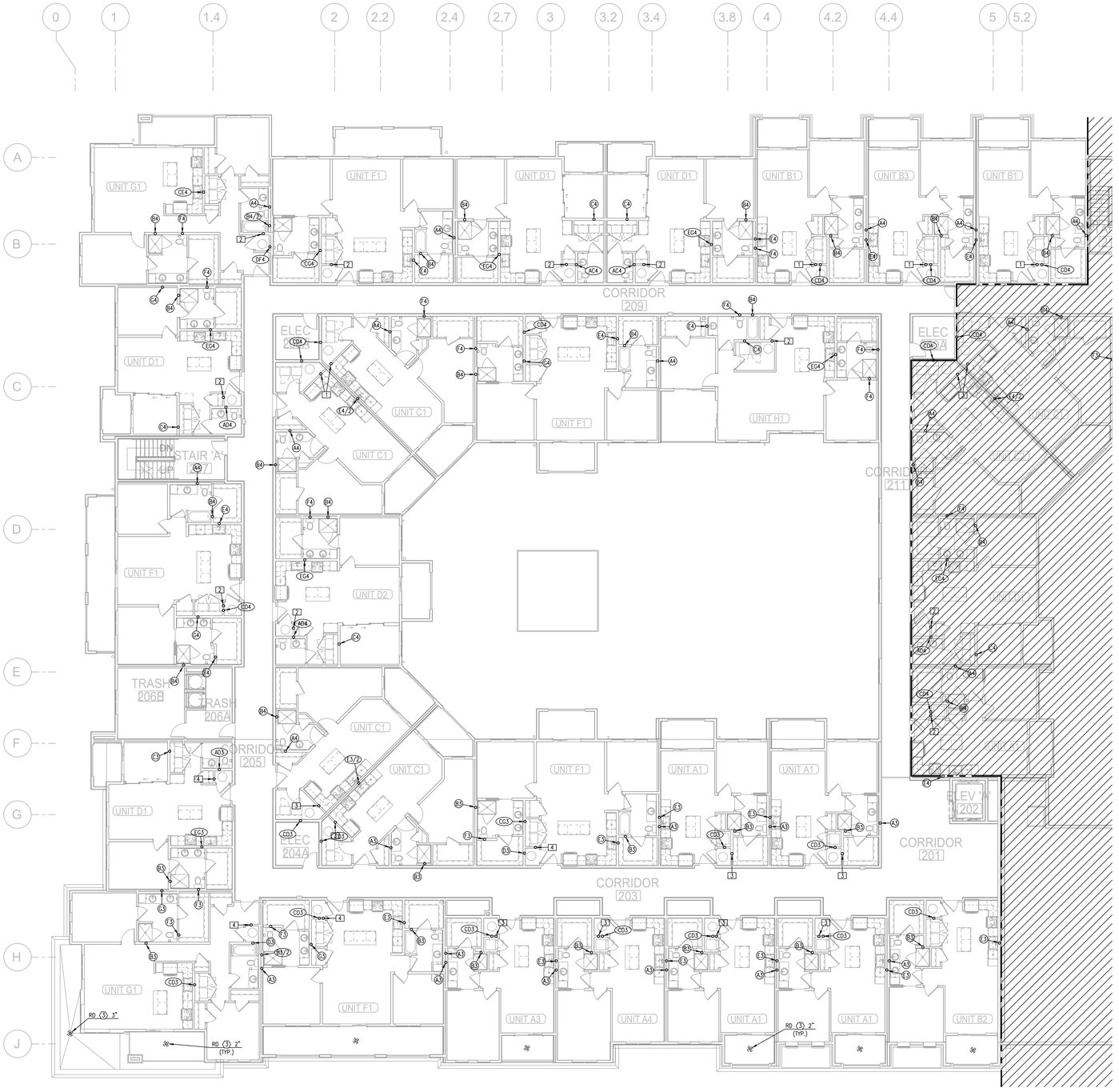
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

P107

FIRST FLOOR PLAN - AREA E - PLUMBING

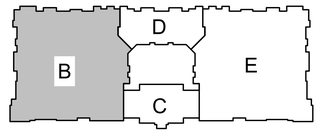


1 **SECOND FLOOR PLAN - AREA B**
3/32"=1'-0" (THIRD FLOOR SIMILAR) PLUMBING

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES SHALL HAVE AIR CHAMBERS OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. RAMSEY
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

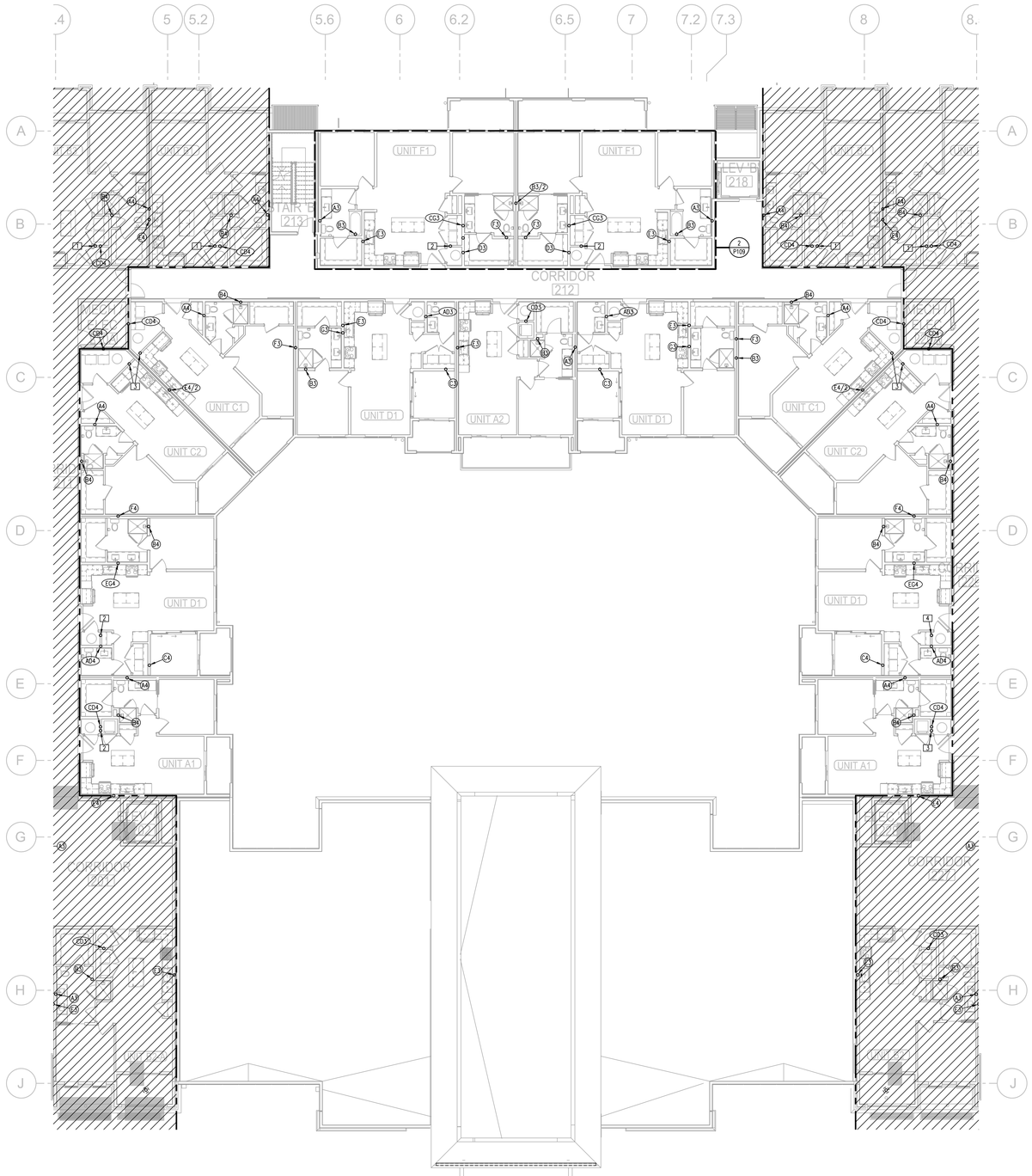
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

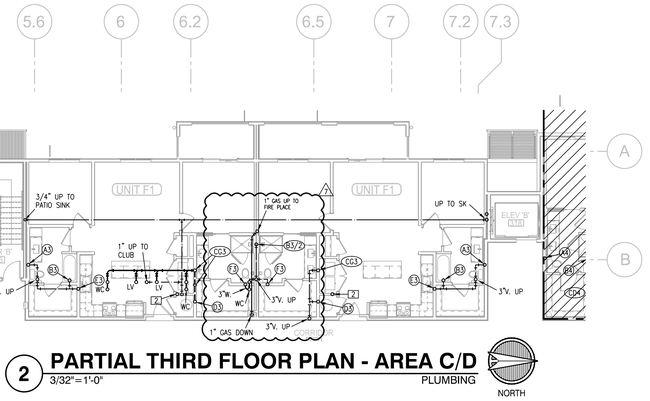
P108

SECOND FLOOR PLAN - AREA B - PLUMBING



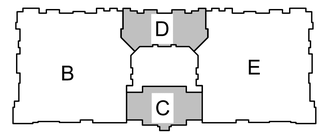
1 **SECOND FLOOR PLAN - AREA C/D**
3/32"=1'-0" (THIRD FLOOR SIMILAR) PLUMBING

NORTH



2 **PARTIAL THIRD FLOOR PLAN - AREA C/D**
3/32"=1'-0" PLUMBING

NORTH



KEY PLAN
NO SCALE

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES WITH QUICK CLOSING VALVES SHALL HAVE FIXTURE OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
(4) PENETRATE BEAM PER STRUCTURAL DETAIL.

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER PE-2010018744
PROFESSIONAL ENGINEER
1-24-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9612 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 09.12.19

REVISIONS (A)

(A)	REVISION 1	12.20.19
(B)	REVISION 2	1.24.2020

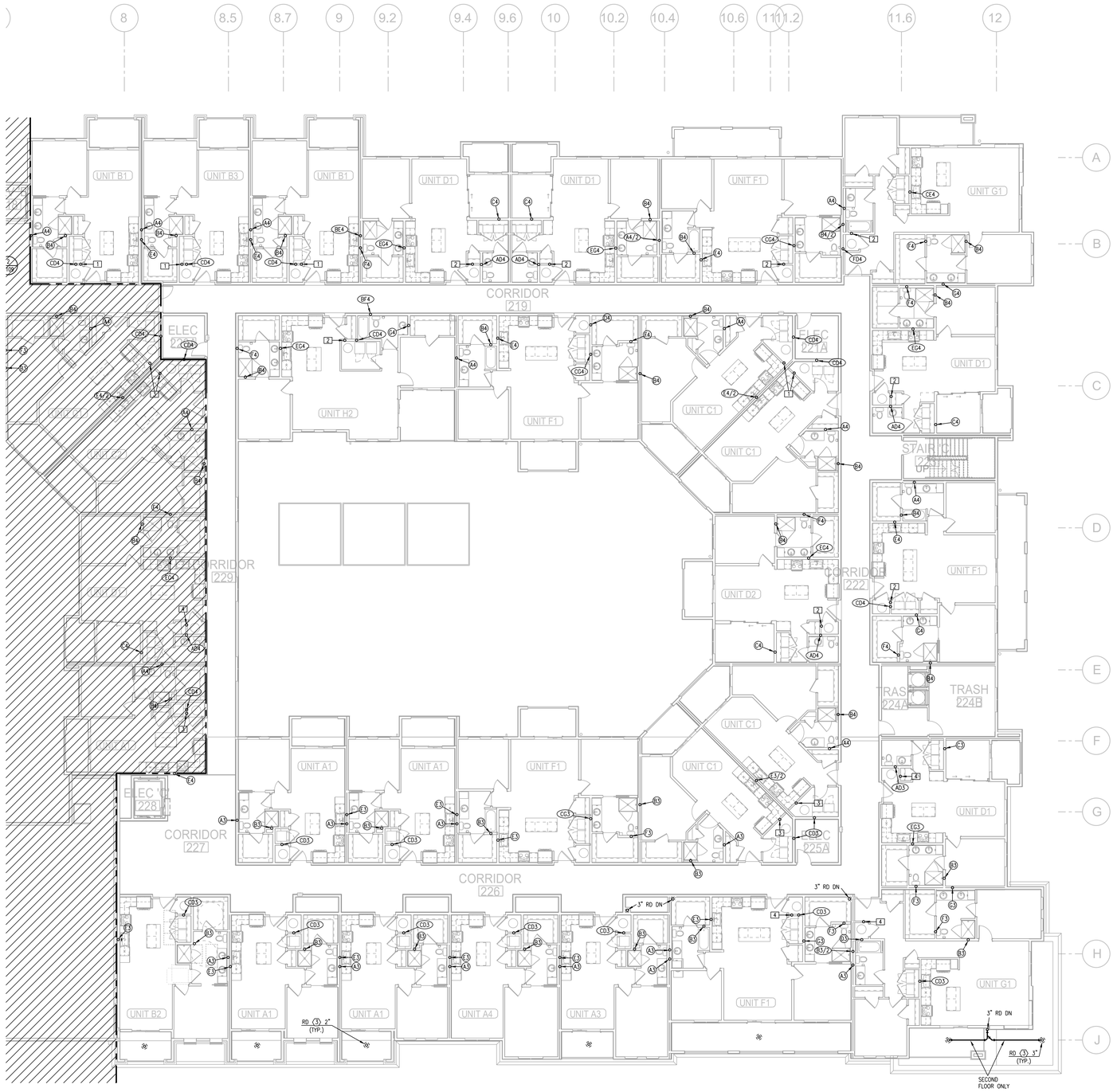
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

P109

SECOND FLOOR PLAN - AREA C/D - PLUMBING



1 **SECOND FLOOR PLAN - AREA E**
3/32"=1'-0" (THIRD FLOOR SIMILAR) PLUMBING

NORTH

NOTES:

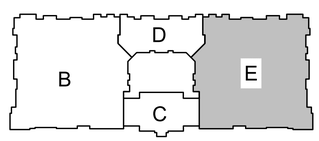
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
4. ALL SUPPLY PIPING IS 1/2" UNLESS NOTED OTHERWISE.
5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
6. ALL PLUMBING VENTS SHALL BE 10 FEET FROM OPENINGS OR INTAKE.
7. THERE SHALL BE NO PVC WITHIN RETURN AIR PLENUMS.
8. ALL FIXTURES SHALL HAVE AIR CHAMBERS OR BLADDER TYPE SHOCK SUPPRESSORS FOR EACH CHASE.
9. SEE ARCHITECTURAL DRAWINGS FOR ALL MOUNTING HEIGHTS.
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.

(2) 6" UP TO DOWNSPOUT CONNECTION.

(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BRADEMEYER
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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TR¡ PROJECT NO. 18-046

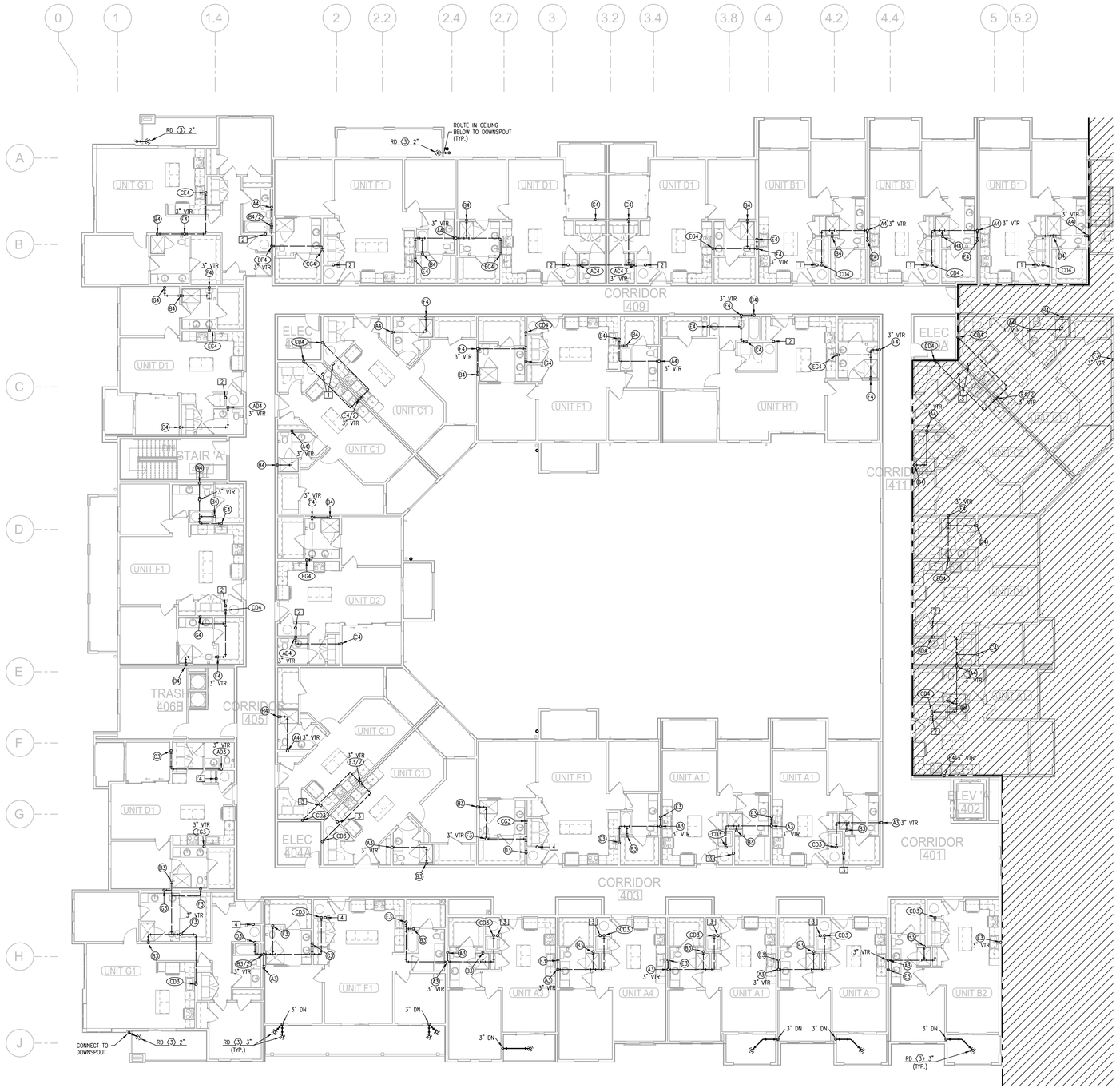
SHEET NO.

P110

SECOND FLOOR PLAN - AREA E - PLUMBING

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



1 **FOURTH FLOOR PLAN - AREA B** — PLUMBING
3/32"=1'-0"

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
3. DHW PIPING 3/4" AND LARGER TO BE INSULATED TO R-3 MINIMUM
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5. CONNECT ALL APPLIANCES OR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
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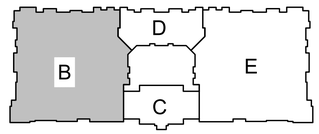
10. REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR DRAIN LOCATIONS AND FLOOR SLOPES IF PRESENT.
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. RAMSEY
NUMBER PE-2009030856
PROFESSIONAL ENGINEER
07.29.19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.traarchitects.com

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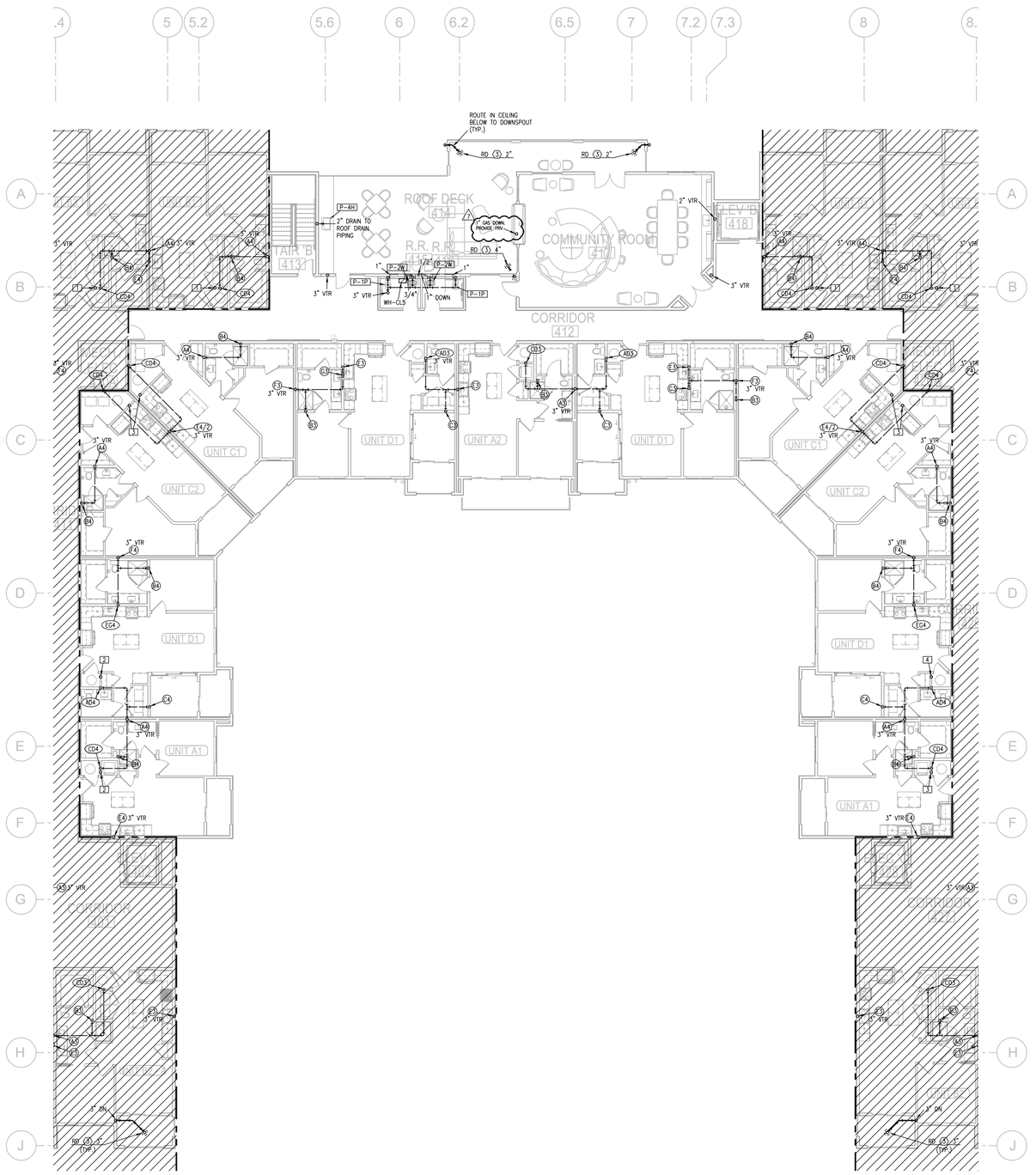
TR¡ PROJECT NO. 18-046

SHEET NO.

P111

FOURTH FLOOR PLAN - AREA B - PLUMBING



1 **FOURTH FLOOR PLAN - AREA C/D**
3/32"=1'-0"
PLUMBING
NORTH

NOTES:

1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
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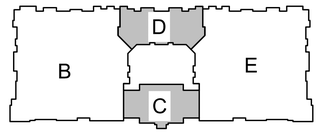
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:

(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.
(4) PENETRATE BEAM PER STRUCTURAL DETAIL.



KEY PLAN
NO SCALE
NORTH

STATE OF MISSOURI
RICHARD H. BEARDMORE
NUMBER PE-2009018755
PROFESSIONAL ENGINEER
1-24-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS

1	REVISION 1	12.20.19
2	REVISION 2	1.24.2020

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TR¡ PROJECT NO. 18-046

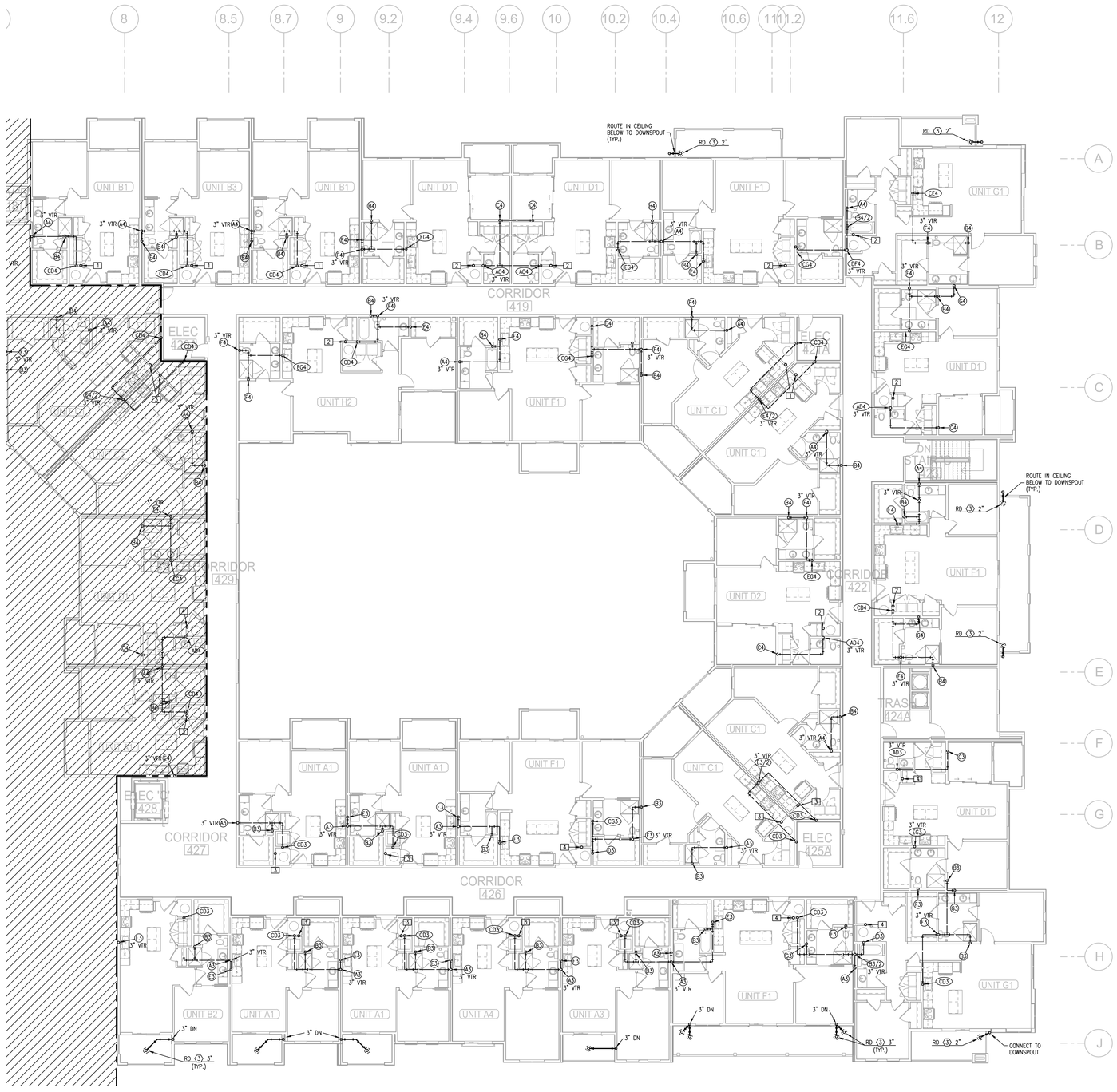
SHEET NO.

P112

FOURTH FLOOR PLAN - AREA C/D - PLUMBING

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



1 **FOURTH FLOOR PLAN - AREA E** — PLUMBING
3/32"=1'-0"

NORTH

NOTES:
1. ALL DRAIN, WASTE AND VENT PIPING IS 2" UNLESS NOTED OTHERWISE.
2. ALL BELOW SLAB SUPPLY PIPING SHALL BE PEX WITH NO JOINTS. DHW BELOW SLAB TO BE INSULATED TO R-3.
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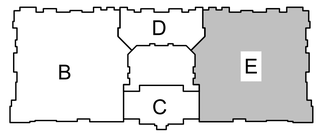
11. ROUTE DRAIN PIPING FROM WATER HEATERS, AIR HANDLERS OR EQUIPMENT TO FLOOR DRAINS. PROVIDE PROPER TRAPS.
12. ROUTE NO PIPING OVER ELECTRICAL EQUIPMENT.
13. ALL WASTE AND ROOF DRAIN STACKS SHALL HAVE CLEANOUTS AT THE BASE.

LEGEND:
(1) 3"V. UP TO RISER FOR FUTURE CONNECTION.
(2) 6" UP TO DOWNSPOUT CONNECTION.
(3) DOWNSPOUT CONNECTION. 6" DOWN TO GARAGE.



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. RAVENKAMP
NUMBER PE-2009020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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TR¡ PROJECT NO. 18-046

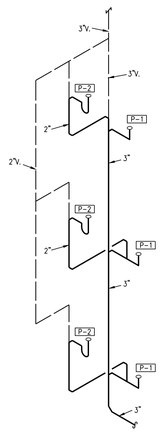
SHEET NO.

P113

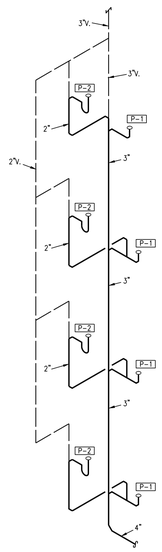
FOURTH FLOOR PLAN - AREA E - PLUMBING

NOTES:

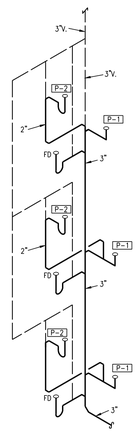
1. PROVIDE CLEANOUTS AT BASE OF ALL STACKS.



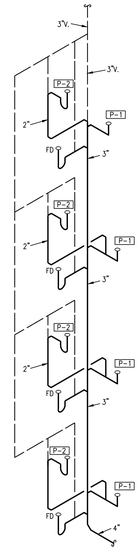
A3 **PLUMBING RISER**
NO SCALE



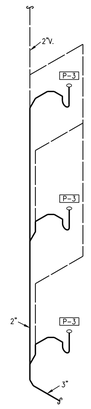
A4 **PLUMBING RISER**
NO SCALE



AD3 **PLUMBING RISER**
NO SCALE



AD4 **PLUMBING RISER**
NO SCALE



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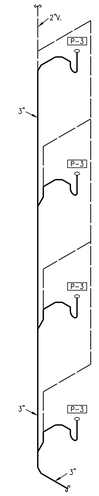
NO SCALE



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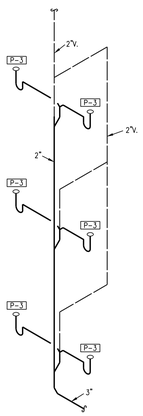
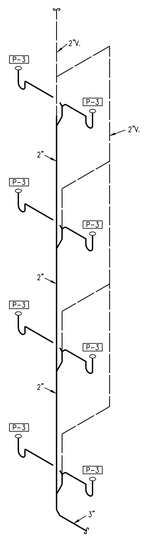


B3/2 **PLUMBING RISER**
NO SCALE



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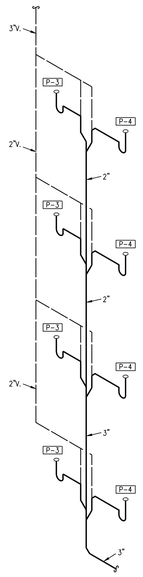

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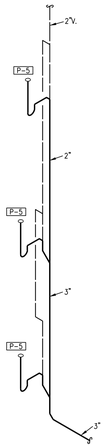
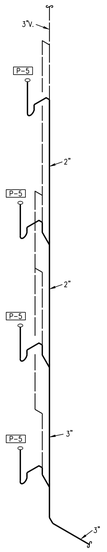


C3 **PLUMBING RISER**
NO SCALE



C4 **PLUMBING RISER**
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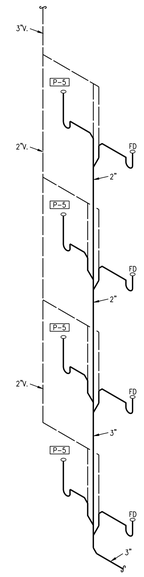

CD4 **PLUMBING RISER**
NO SCALE

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARCMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER

09-12-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TRJ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.trjarchitects.com

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REVISIONS 4

3	BUILDING PERMIT COMMENTS	09.12.19

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

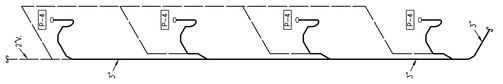
NEW SHEET 1

P114

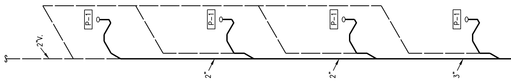
PLUMBING RISERS

NOTES:

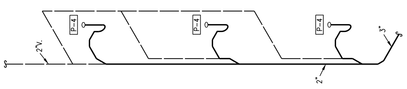
1. PROVIDE CLEANOUTS AT BASE OF ALL STACKS.



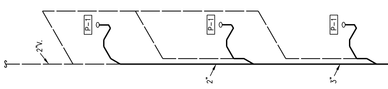
E4 PLUMBING RISER
NO SCALE



F4 PLUMBING RISER
NO SCALE

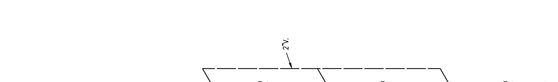


E3 PLUMBING RISER
NO SCALE



F3 PLUMBING RISER
NO SCALE

CE4 PLUMBING RISER
NO SCALE



CG4 PLUMBING RISER
NO SCALE

SOME RISERS MAY HAVE DUAL LAVATORIES.

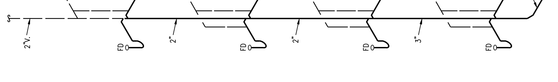
EG3 PLUMBING RISER
NO SCALE

SOME RISERS MAY HAVE DUAL LAVATORIES.

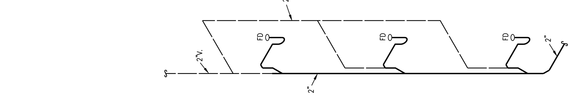
EG4 PLUMBING RISER
NO SCALE

SOME RISERS MAY HAVE DUAL LAVATORIES.

E3/2 PLUMBING RISER
NO SCALE



E4/2 PLUMBING RISER
NO SCALE



D3 PLUMBING RISER
NO SCALE

DF4 PLUMBING RISER
NO SCALE

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TR.i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATTIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATTIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATTIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

09-12-19

TRi ARCHITECTS
3612 Manchester Road
Kansas City, Missouri 64119
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T. 314-966-9750
F. 314-966-9751
www.trarchitects.com

DATE: 09.12.19

REVISIONS

1	BUILDING PERMIT COMMENTS 09.12.19

DWG BY RRB

TR.i PROJECT NO. 18-046

SHEET NO.

NEW SHEET P115

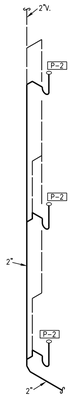
PLUMBING RISERS

LS&A
Lattimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3809 SW Summerfield Drive, Suite A
Topeka, Kansas 66610-1303
Telephone: (785) 233-3232
FAX: (785) 233-3237
Email: lsapa@lsapa.com

LSA PROJECT NO. 1904003

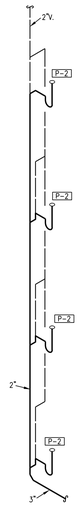
NOTES:

1. PROVIDE CLEANOUTS AT BASE OF ALL STACKS.



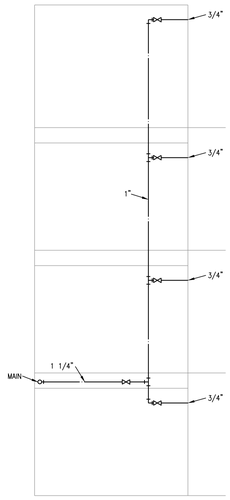
G3 PLUMBING RISER
NO SCALE

SOME RISERS MAY HAVE DUAL LAVATORIES.

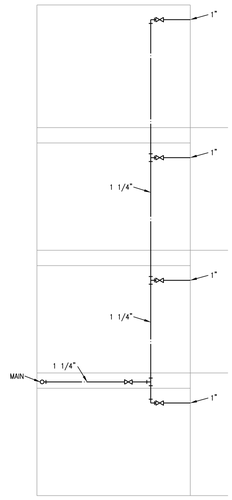


G4 PLUMBING RISER
NO SCALE

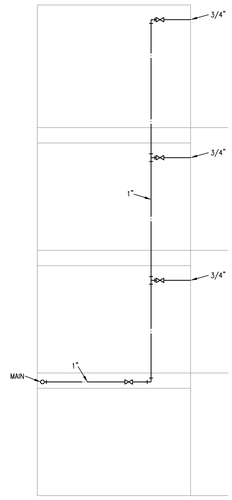
SOME RISERS MAY HAVE DUAL LAVATORIES.



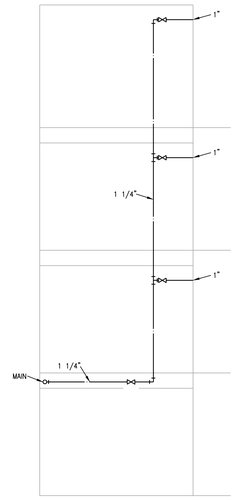
1 SUPPLY RISER
NO SCALE (ONE BATH)



2 SUPPLY RISER
NO SCALE (TWO BATH)



3 SUPPLY RISER
NO SCALE (ONE BATH)



4 SUPPLY RISER
NO SCALE (TWO BATH)

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER

09-12-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS 4

1	BUILDING PERMIT COMMENTS	09.12.19

DWG BY RRB

TR¡ PROJECT NO. 18-046

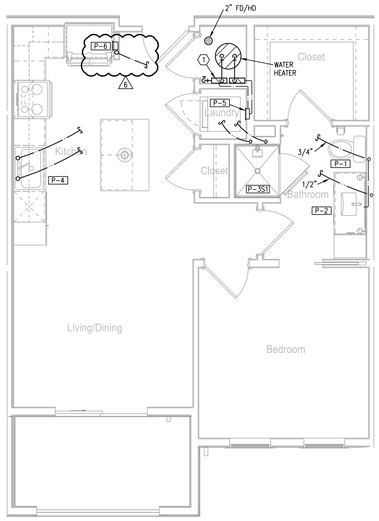
SHEET NO.

NEW SHEET 1

P116

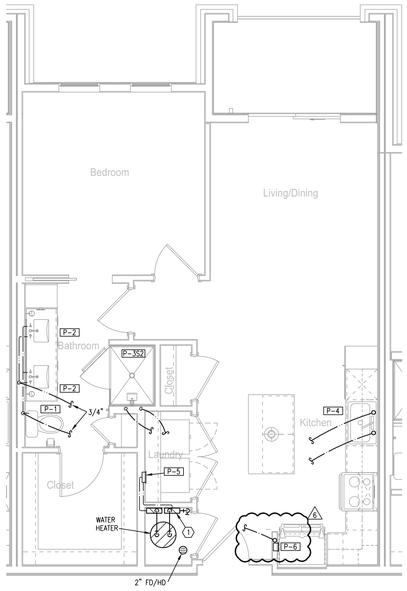
PLUMBING RISERS

LEGEND:
(1) 3/4" CW MANIFOLD WITH SHUT-OFF.
(2) 1" CW MANIFOLD WITH SHUT-OFF.



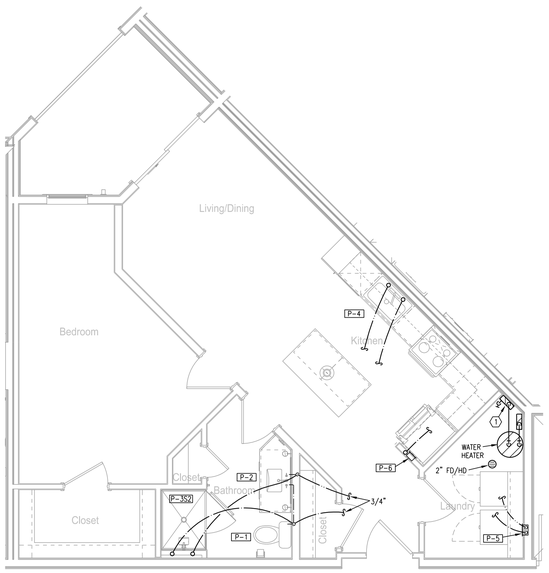
1 TYPICAL UNIT PLAN - A1

1/4"=1'-0" (UNITS A2, A3, AND A4 SIMILAR) PLUMBING



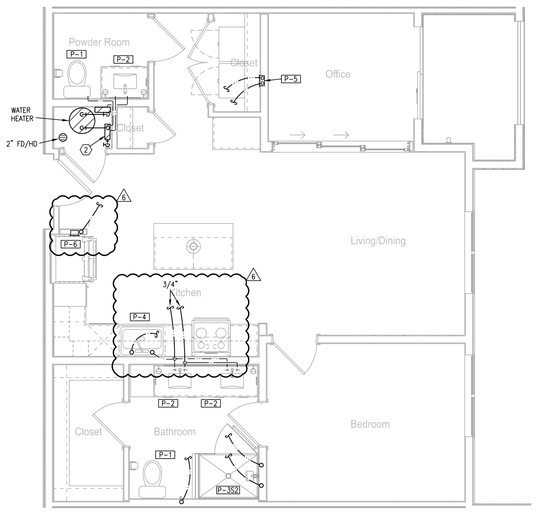
2 TYPICAL UNIT PLAN - B1

1/4"=1'-0" (UNIT B2 SIMILAR) PLUMBING



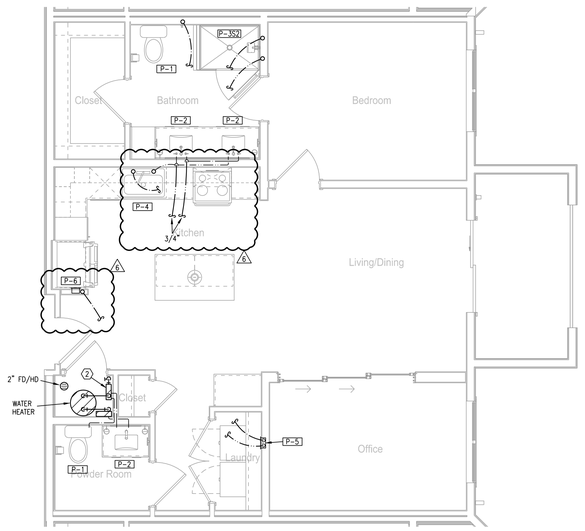
3 TYPICAL UNIT PLAN - C

1/4"=1'-0" PLUMBING



4 TYPICAL UNIT PLAN - D1

1/4"=1'-0" PLUMBING



5 TYPICAL UNIT PLAN - D2

1/4"=1'-0" PLUMBING

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
PROFESSIONAL ENGINEER
12-20-2019

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

6	REVISION 1	12.20.19

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TR¡ PROJECT NO. 18-046

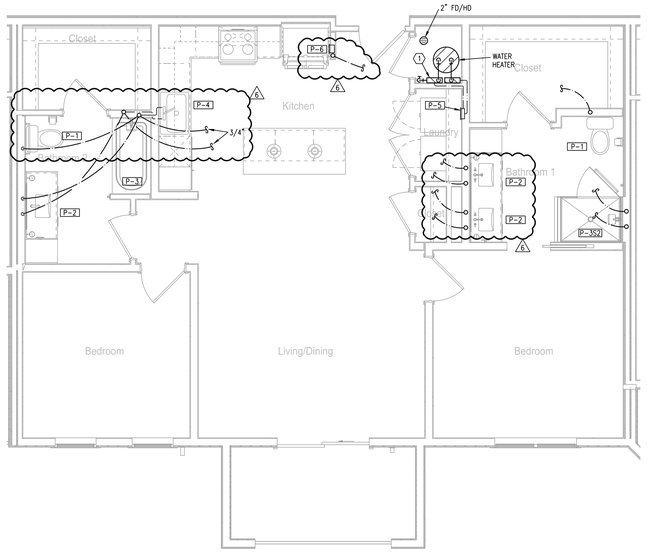
SHEET NO.

P201

TYPICAL UNIT PLANS - PLUMBING

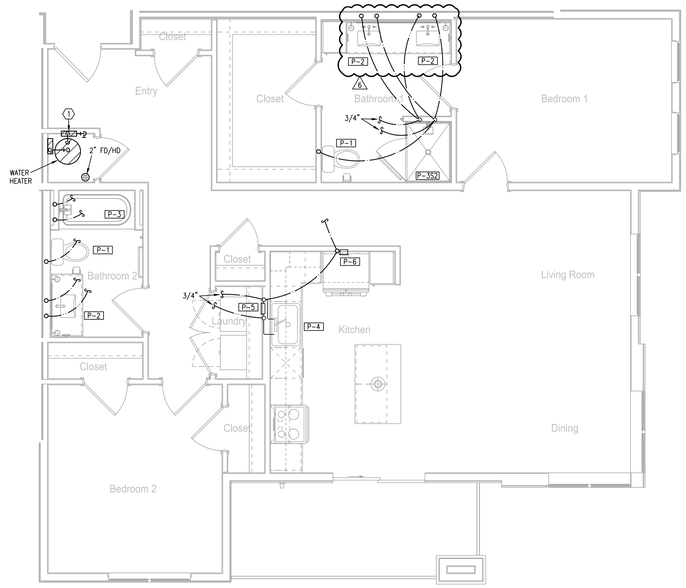
LEGEND:

1. 3/4" CW MANIFOLD WITH SHUT-OFF.
2. 1" CW MANIFOLD WITH SHUT-OFF.



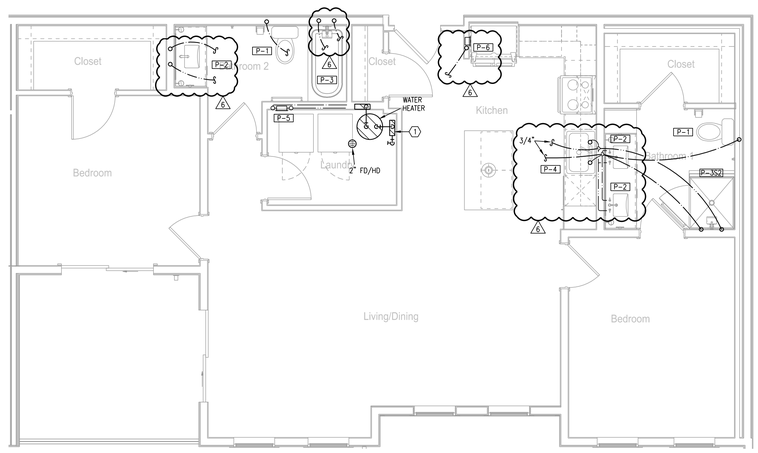
1 TYPICAL UNIT PLAN - F

1/4"=1'-0" PLUMBING



2 TYPICAL UNIT PLAN - G

1/4"=1'-0" PLUMBING



3 TYPICAL UNIT PLAN - H

1/4"=1'-0" PLUMBING

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER

12-20-2019

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS 1 2

1 REVISION 1	12.20.19

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TR¡ PROJECT NO. 18-046

SHEET NO.

P202

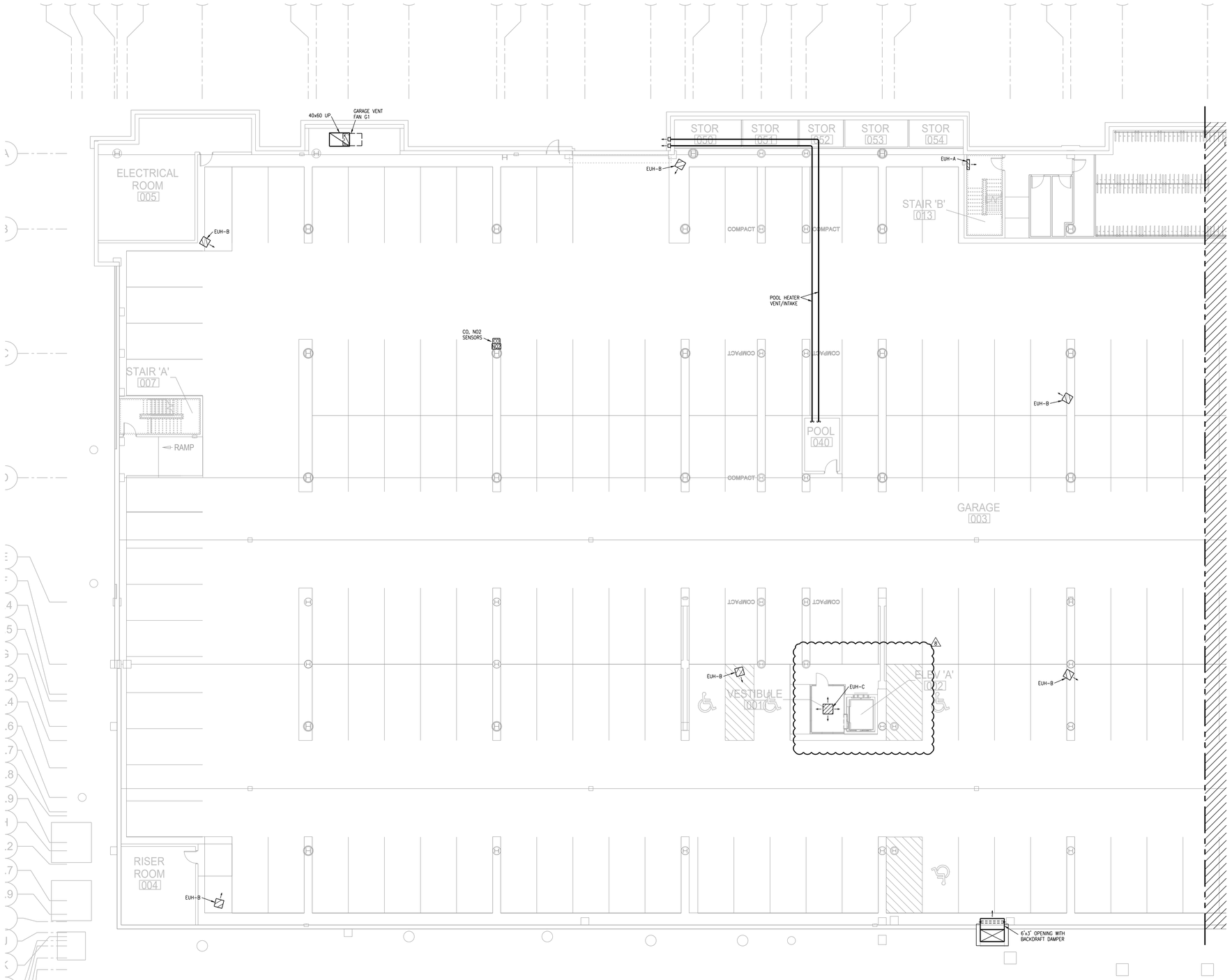
TYPICAL UNIT PLANS - PLUMBING

NOTES:

1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

LEGEND:

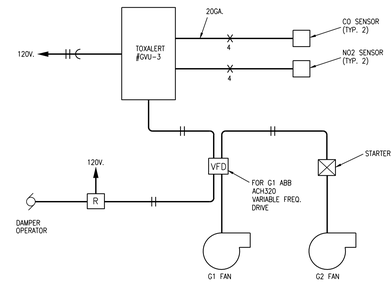
(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 PARTIAL GARAGE PLAN - HVAC
3/32"=1'-0"

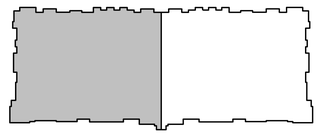
NORTH

SEQUENCE OF OPERATION - EF-G1 OPERATES AT MINIMUM SPEED FOR 1000 CFM CONTINUOUS OPERATION. CO AND NO2 SENSORS IN GARAGE WILL BRING G/1 AND G/2 TO FULL SPEED UNTIL SETPOINT MET.



2 PARKING GARAGE FAN CONTROL
NO SCALE

EQUIPMENT (INCLUDING VFD) BY M/C, WIRING BY E/C. SEE DRAWING FOR QUANTITY.



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER
4-3-20

TR,i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR,i ARCHITECTS

TR,i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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DATE: 09.12.19

REVISIONS

1	REVISION 1	12.20.19
3	REVISION 3	04.03.20

DWG BY RRB

TR,i PROJECT NO. 18-046

SHEET NO.

M101

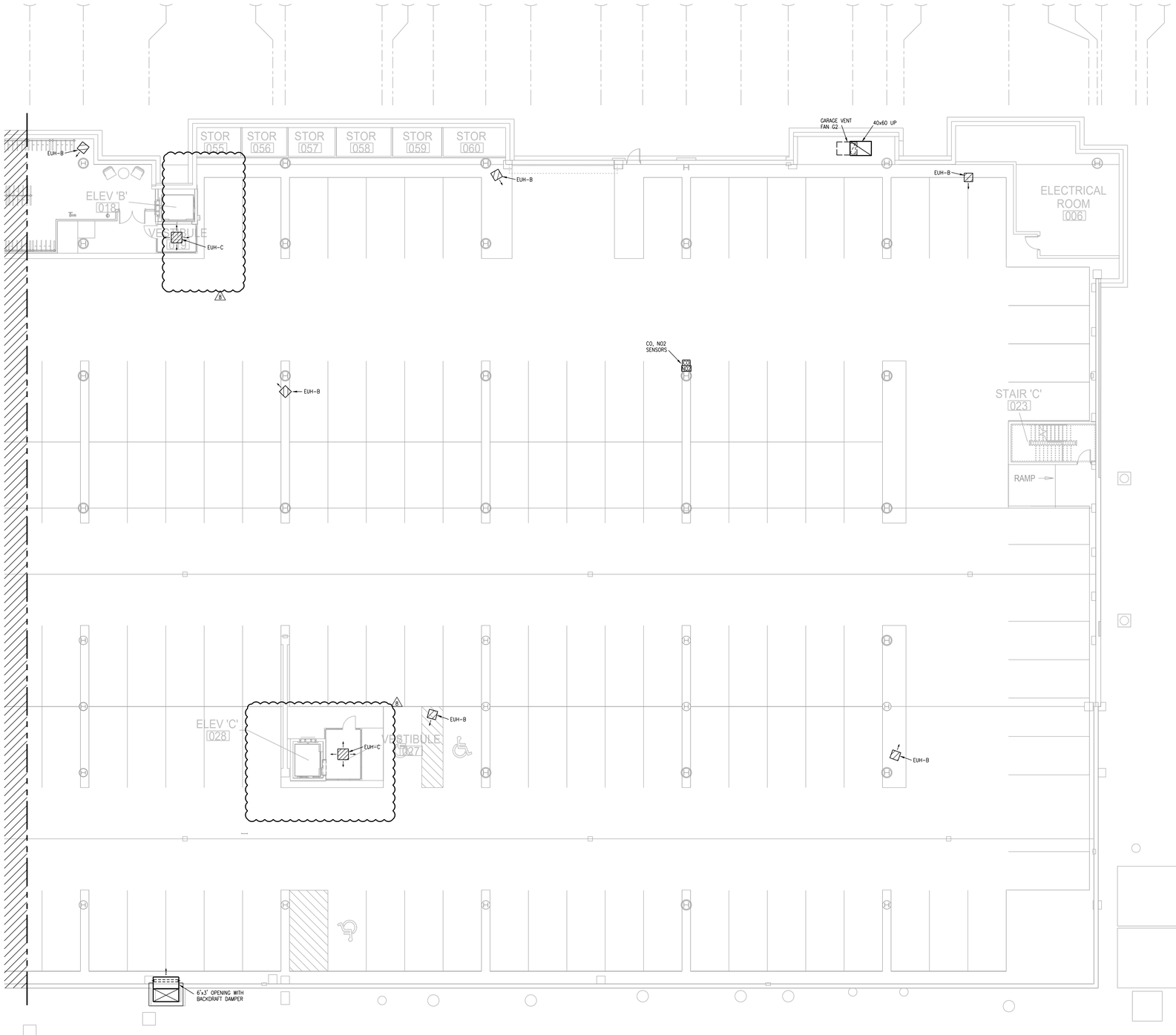
PARTIAL GARAGE PLAN - HVAC

NOTES:

1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

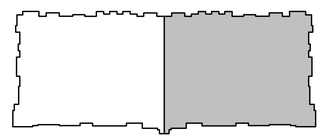
LEGEND:

(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 **PARTIAL GARAGE PLAN** — HVAC
3/32" = 1'-0"

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS 6

6	REVISION 1	12.20.19
7	REVISION 2	1.24.20
8	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

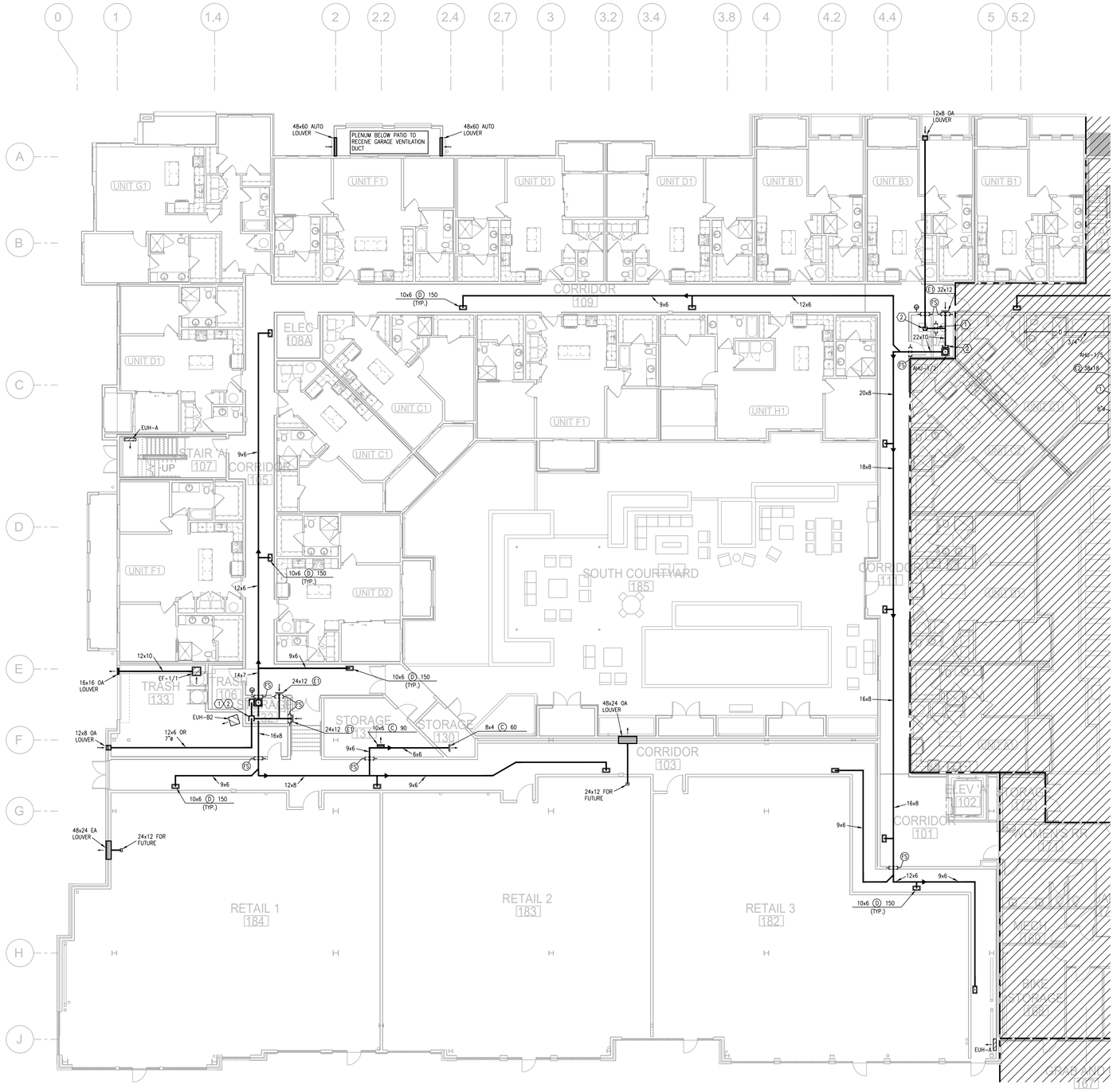
SHEET NO.

M102

PARTIAL GARAGE PLAN - HVAC

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023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5.2
A
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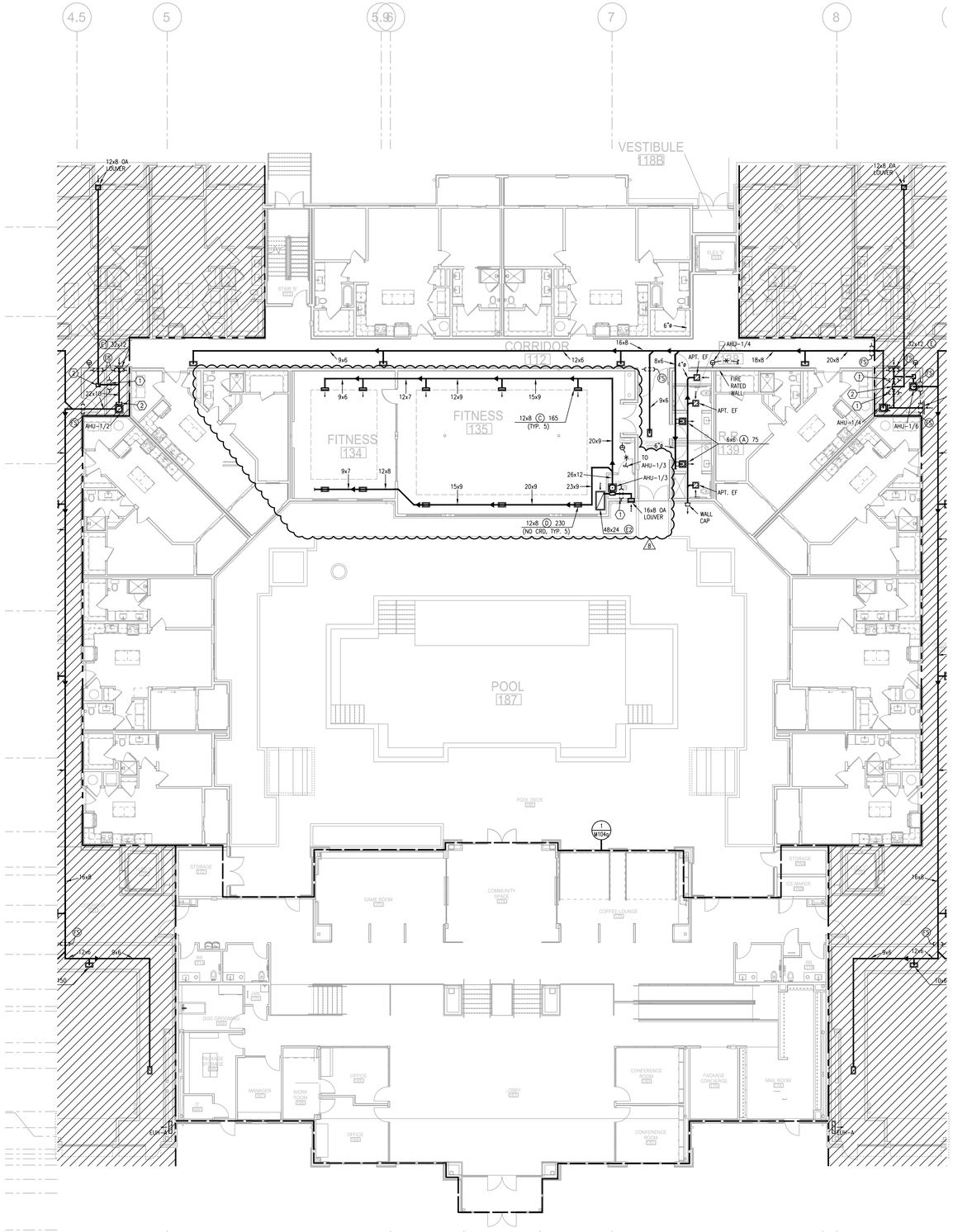
D
E
F
G
H
J
48x60 AUTO LOUVER
PLENUM BELOW PATIO TO RECEIVE GARAGE VENTILATION DUCT
48x60 AUTO LOUVER
12x8 OA LOUVER
UNIT G1
UNIT F1
UNIT D1
UNIT D1
UNIT B1
UNIT B3
UNIT B1
CORRIDOR 109
10x6 D 150 (TYP.)
9x6
12x6
ELEC 108A
UNIT D1
UNIT C1
UNIT F1
UNIT H1
E1 32x12
22x10
4x4 1/2
4x4 1/5
E2 38x18
20x8
18x8
EUH-A
STAIR A UP 107
CORRIDOR 105
UNIT F1
UNIT C1
UNIT D2
SOUTH COURTYARD 185
CORRIDOR 111
UNIT D1
UNIT F1
UNIT J1
UNIT B1
UNIT B1
UNIT B



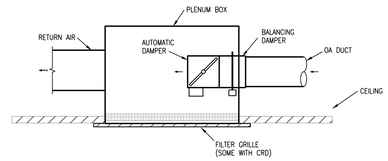
1 FIRST FLOOR PLAN - AREA C/D

3/32" = 1'-0" HVAC

NORTH

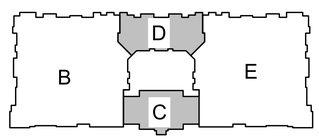
NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

LEGEND:
(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



2 RETURN PLENUM DAMPER CONTROL

NO SCALE



KEY PLAN

NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR;i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR;i ARCHITECTS
TR;i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS (A)

(A) REVISION 1	12.20.19
(B) REVISION 3	04.03.20

DWG BY RRB

TR;i PROJECT NO. 18-046

SHEET NO.

M104

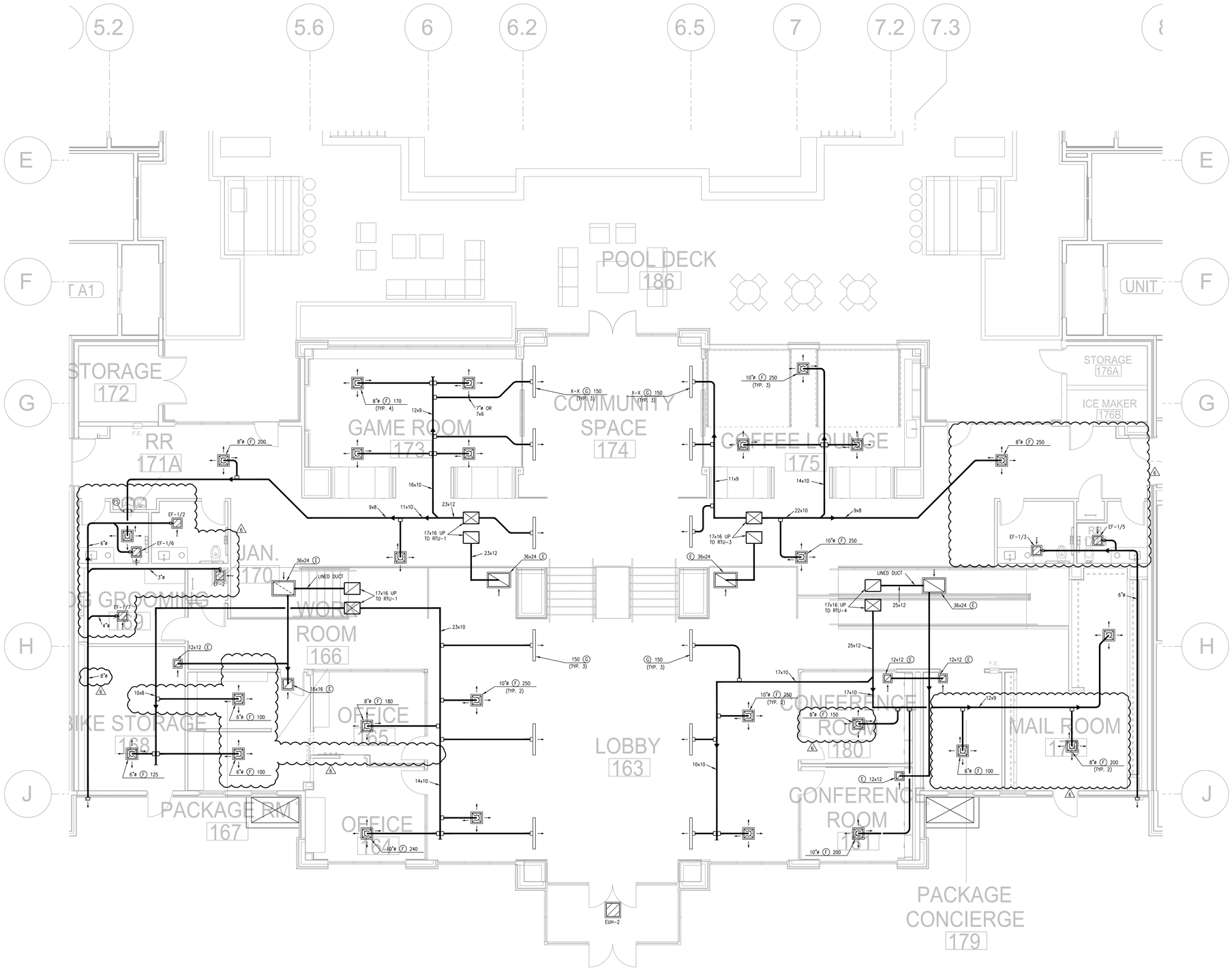
FIRST FLOOR PLAN - AREA C/D - HVAC

NOTES:

1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

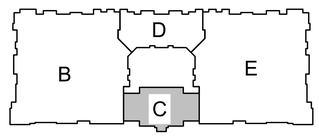
LEGEND:

(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 **PARTIAL FIRST FLOOR PLAN - AREA C**
3/16" = 1'-0" HVAC

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2006018
PROFESSIONAL ENGINEER
12-20-2019

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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DATE: 09.12.19

REVISIONS (6)

(6)	REVISION 1	12.20.19

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

M104a

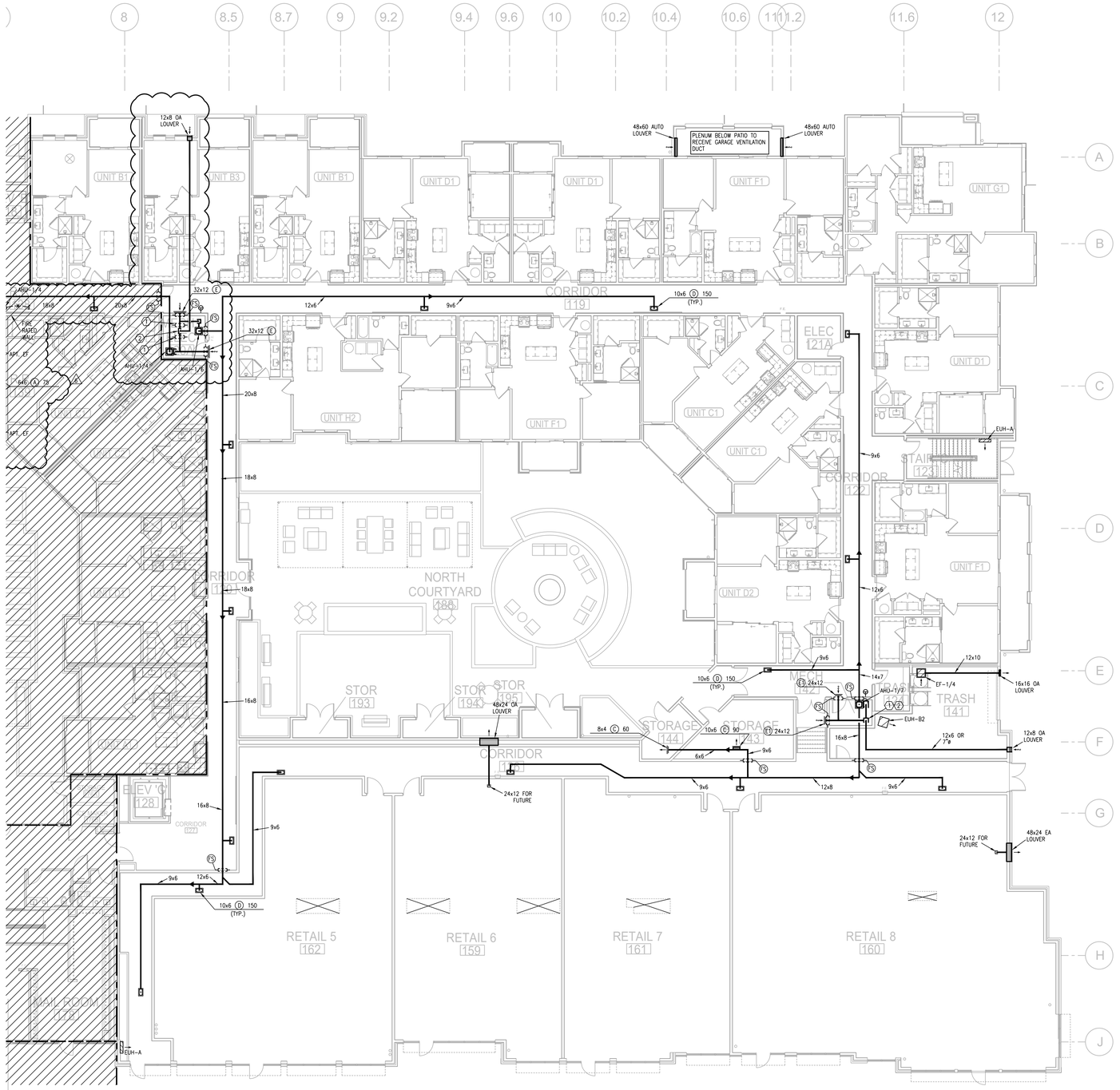
FIRST FLOOR PLAN - AREA C - HVAC

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

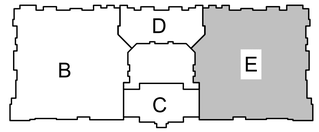
LEGEND:
(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 FIRST FLOOR PLAN - AREA E - HVAC

3/32"=1'-0"

NORTH



KEY PLAN

NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2006018
PROFESSIONAL ENGINEER

12-20-2019

TRi ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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DATE: 09.12.19

REVISIONS 2

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

M105

FIRST FLOOR PLAN - AREA E - HVAC

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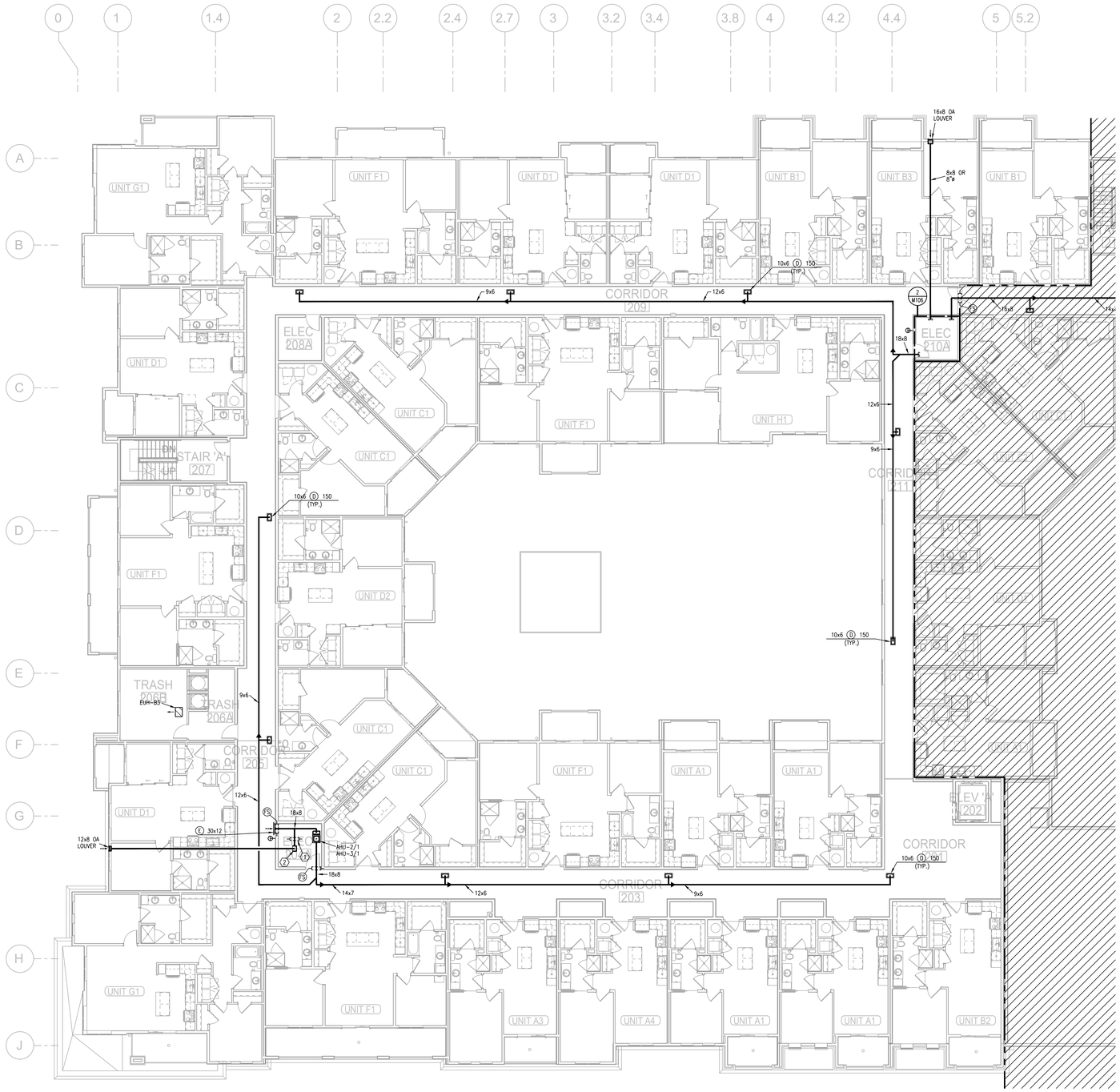
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com
LSA PROJECT NO. 1904023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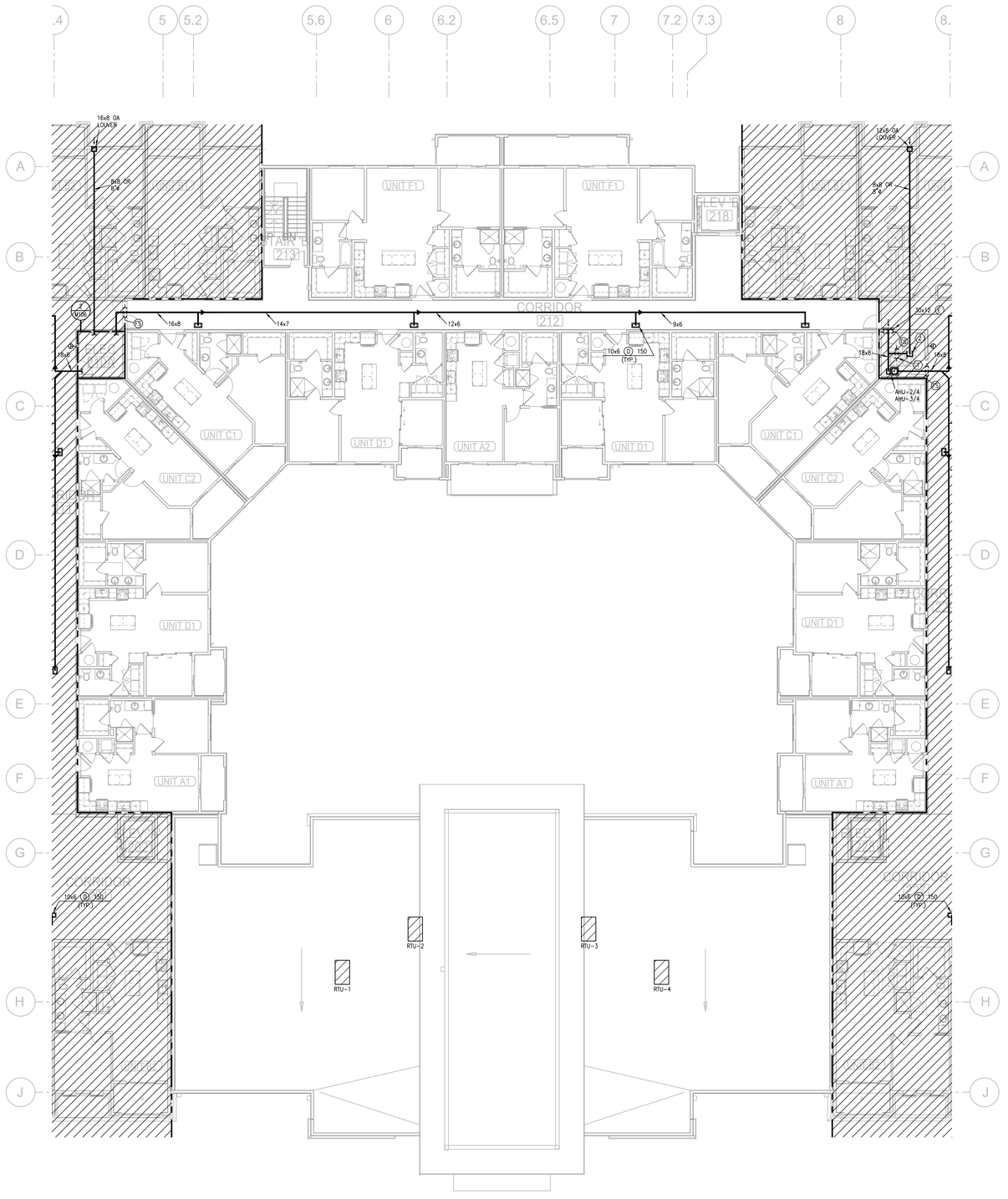
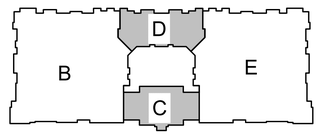
J
UNIT G1
UNIT F1
UNIT D1
UNIT D1
UNIT D1
UNIT B1
UNIT B3
UNIT B1
16x8 OA LOUVER
8x8 OR 8"ø
10x6 (D) 150 (TYP.)
9x6
CORRIDOR 209
12x6
2 M106
16x8
16x8
18x8
ELEC 208A
ELEC 210A
UNIT C1
UNIT F1
UNIT H1
12x6
9x6
CORRIDOR 211
UNIT A1
UNIT A1
UNIT A1



1 **SECOND FLOOR PLAN - AREA C/D**
3/32"=1'-0" (THIRD FLOOR SIMILAR) HVAC
NORTH

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

LEGEND:
(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



KEY PLAN
NO SCALE
NORTH

STATE OF MISSOURI
RICHARD R. BRADEN
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.traarchitects.com

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DATE: 07.29.19

REVISIONS

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.
M107

SECOND FLOOR PLAN - AREA C/D - HVAC

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
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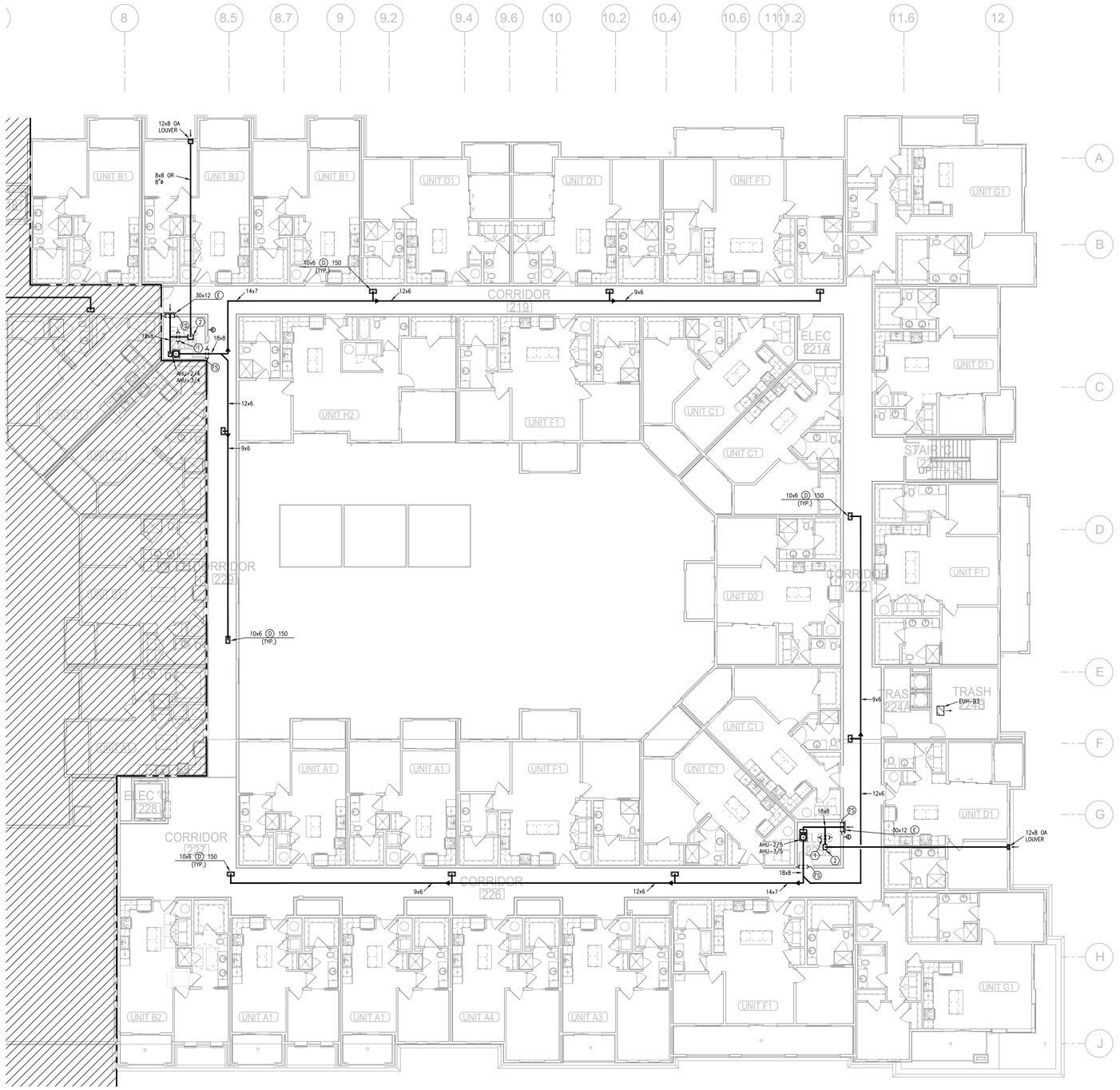
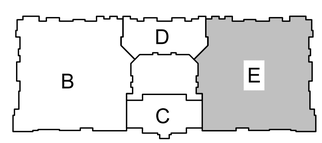
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 **SECOND FLOOR PLAN - AREA E**
3/32"=1'-0" (THIRD FLOOR SIMILAR) HVAC

NORTH



KEY PLAN
NO SCALE

NORTH

LS&A
Lastmer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRANDENBURG
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR.i ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR.i ARCHITECTS

TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 07.29.19

REVISIONS ___

DWG BY RRB

TR.i PROJECT NO. 18-046

SHEET NO.

M108

SECOND FLOOR PLAN - AREA E - HVAC

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
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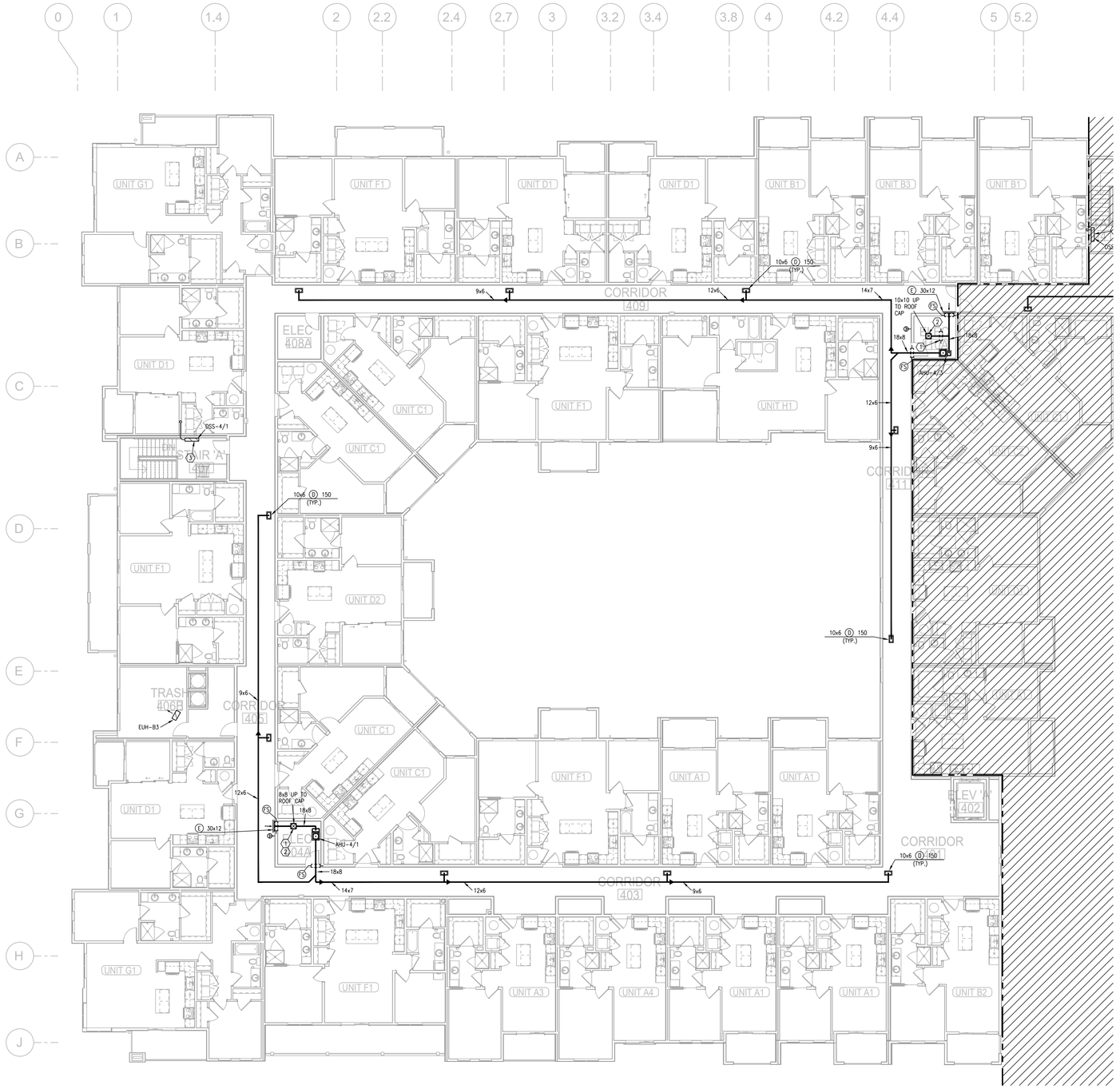
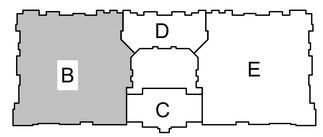
LEGEND:
(1) OUTSIDE AIR CONTROL AND BALANCING DAMPER.
(2) DUCT WITH CRD AT RATED MEMBRANE.
(3) ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



1 FOURTH FLOOR PLAN - AREA B

3/32"=1'-0" HVAC

NORTH



KEY PLAN

NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRANDENBURG
NUMBER PE-2009020856
PROFESSIONAL ENGINEER
07-29-19

TRi ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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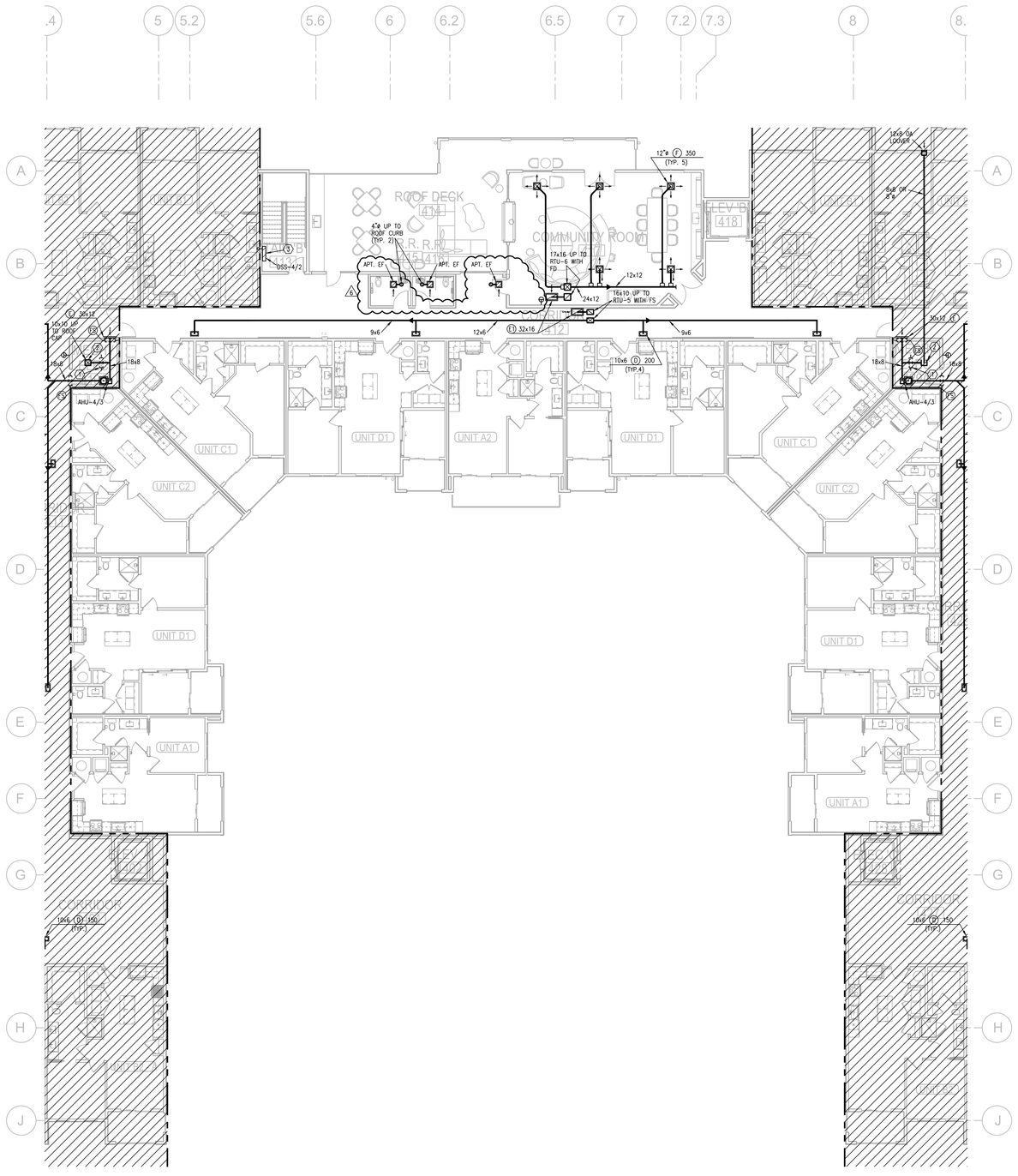
TR.i PROJECT NO. 18-046

SHEET NO.

M109

FOURTH FLOOR PLAN - AREA B - HVAC



1 **FOURTH FLOOR PLAN - AREA C/D - HVAC**
3/32"=1'-0"

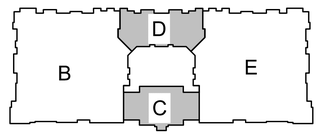
NORTH

NOTES:

1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
2. SEE THE ARCHITECTURAL, LIGHTING AND STRUCTURAL DRAWINGS FOR CLEARANCES.
3. MAINTAIN 3 FEET CLEARANCE FROM EXHAUST DUCTS TO BUILDING OPENINGS AND 10 FEET TO AIR INTAKES.
4. ROUTE NO DUCTS OVER ELECTRICAL EQUIPMENT.
5. FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 8 FEET AND SHALL BE AS STRAIGHT AS POSSIBLE AND NOT KINKED AT DIFFUSER OR TAKE-OFF.

LEGEND:

1. OUTSIDE AIR CONTROL AND BALANCING DAMPER.
2. DUCT WITH CRD AT RATED MEMBRANE.
3. ROUTE COND. TO LAV TAILPIECE OR WASHER BOX.



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER
12-20-2019

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

6	REVISION 1	12.20.19

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TR¡ PROJECT NO. 18-046

SHEET NO.

M110

FOURTH FLOOR PLAN - AREA C/D - HVAC

NOTES:
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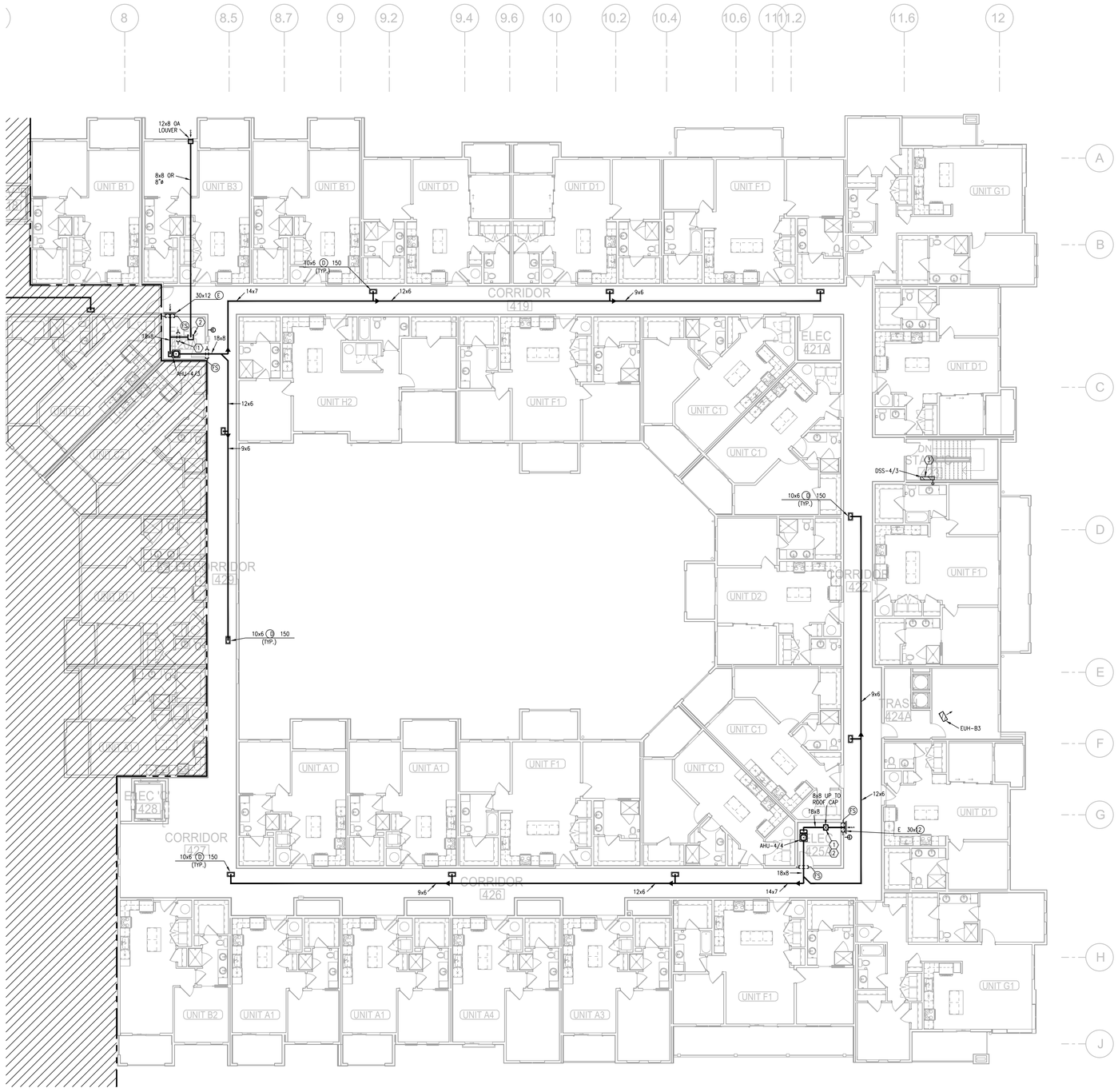
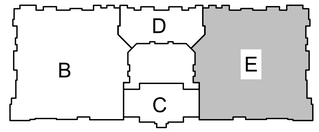


1 **FOURTH FLOOR PLAN - AREA E**
3/32"=1'-0" HVAC

NORTH



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRADSHAW
NUMBER PE-2009020856
PROFESSIONAL ENGINEER
07-29-19

TRi ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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TR;i PROJECT NO. 18-046

SHEET NO.

M111

FOURTH FLOOR PLAN - AREA E - HVAC

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
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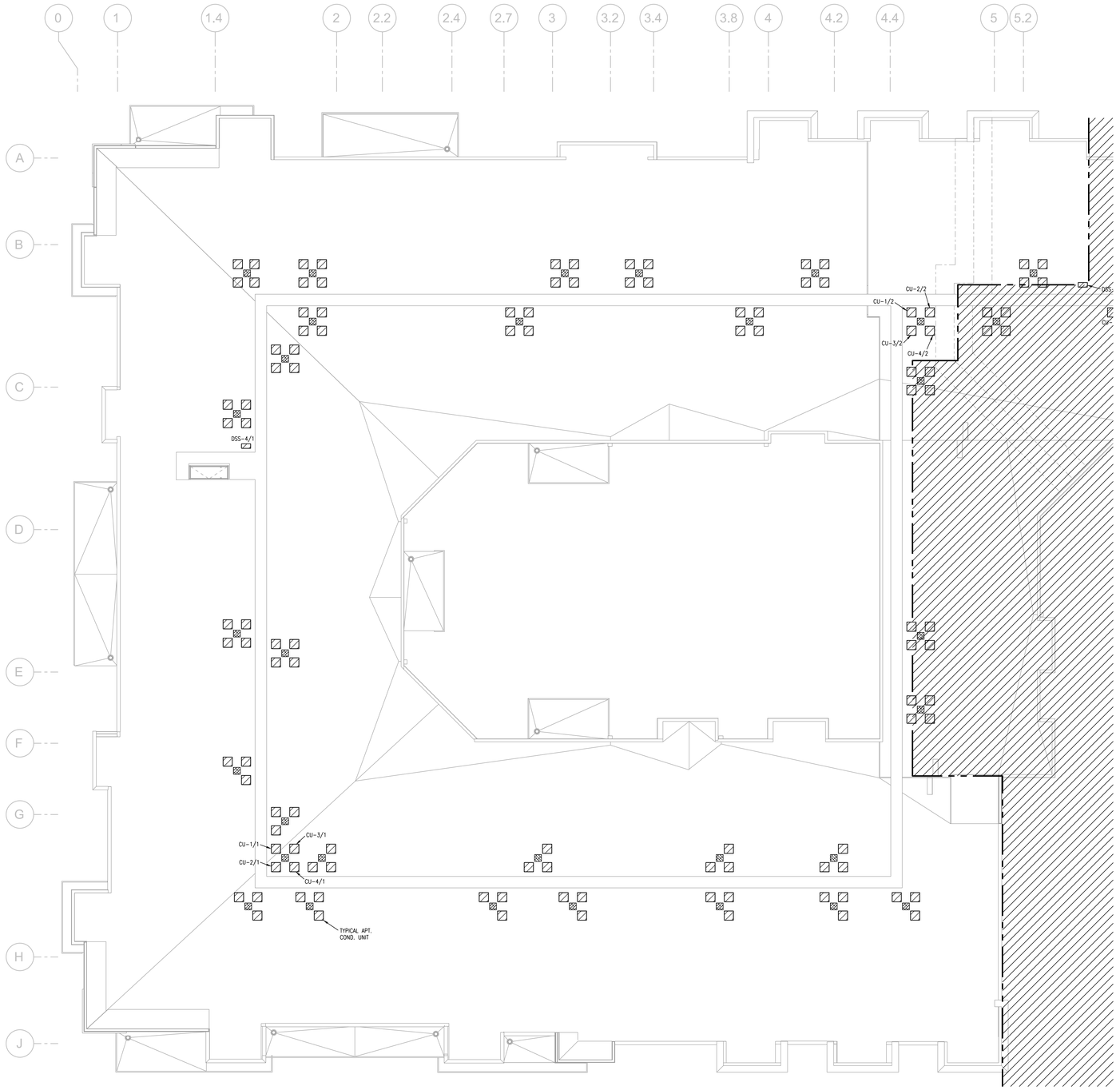
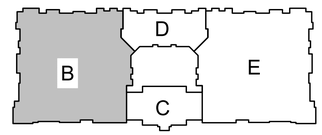


1 **ROOF PLAN - AREA B**
3/32" = 1'-0" HVAC

NORTH



KEY PLAN
NO SCALE

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRADEN
NUMBER PE-2009020056
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9612 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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SHEET NO.

M112

ROOF PLAN - AREA B - HVAC

NOTES:
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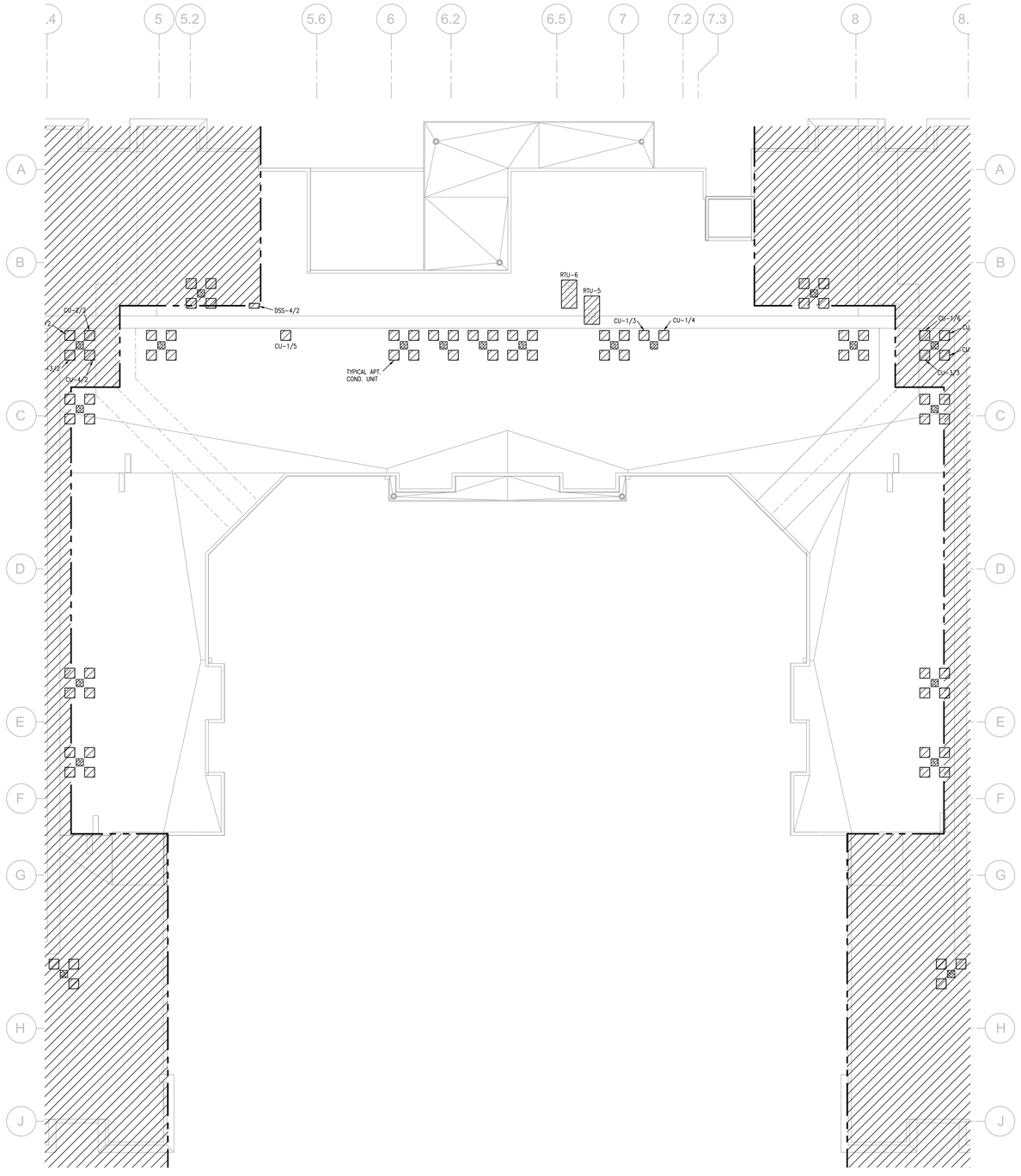
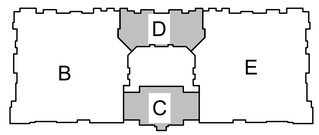


1 **ROOF PLAN - AREA C/D**
3/32" = 1'-0" HVAC
NORTH



KEY PLAN
NO SCALE
NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRADSHAW
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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TR¡ PROJECT NO. 18-046

SHEET NO.

M113

ROOF PLAN - AREA C/D - HVAC

NOTES:
1. ALL INDIVIDUAL BRANCH DUCTS ARE THE SIZE OF THE DIFFUSER NECK LISTED AND HAVE A MANUAL BALANCING DAMPER WHERE NOT INTEGRAL WITH THE DIFFUSER.
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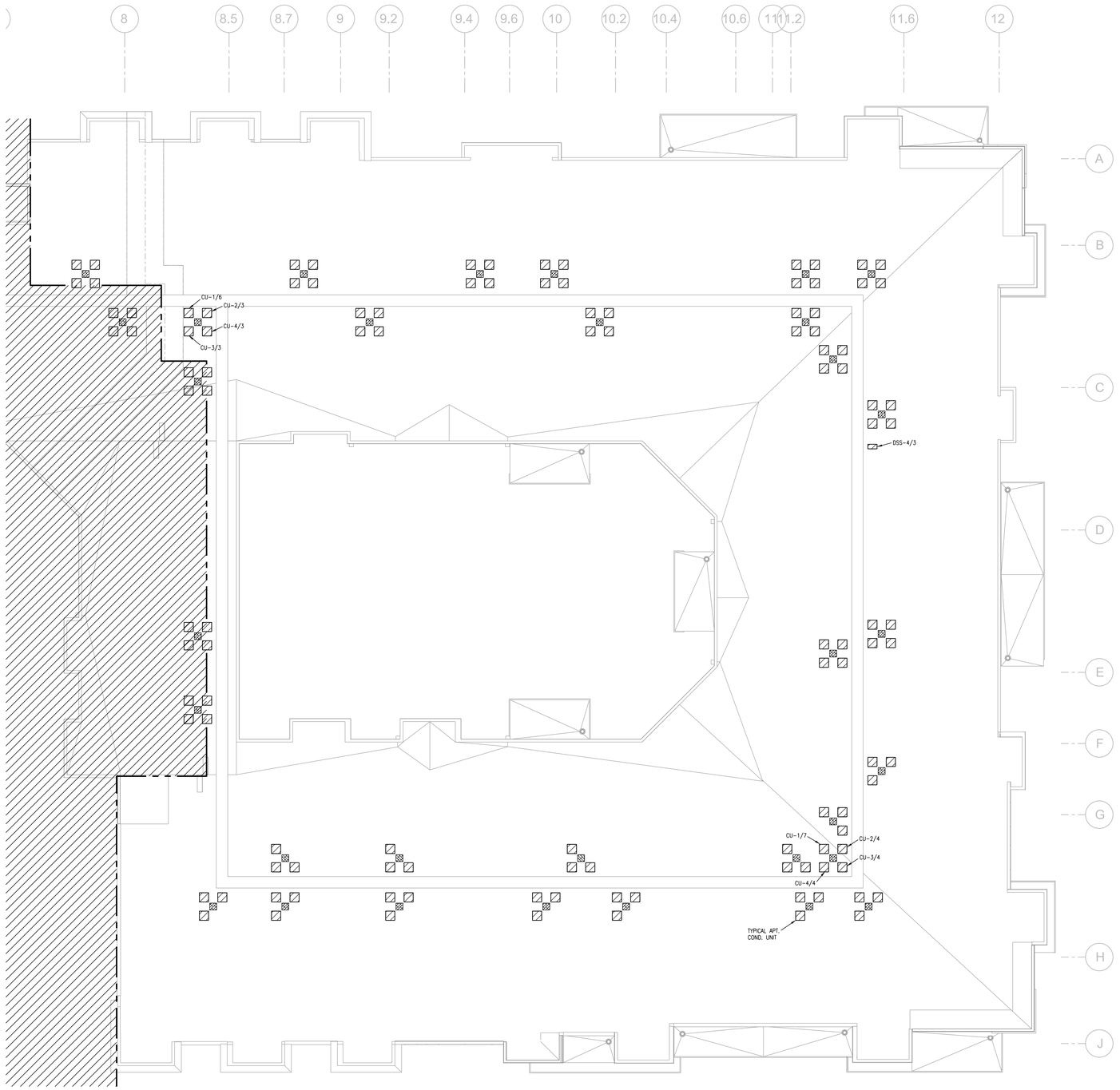
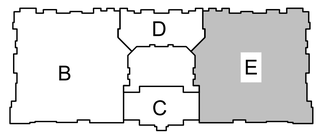


1 **ROOF PLAN - AREA E**
3/32"=1'-0" HVAC

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BRADEN
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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M114

ROOF PLAN - AREA E - HVAC

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com

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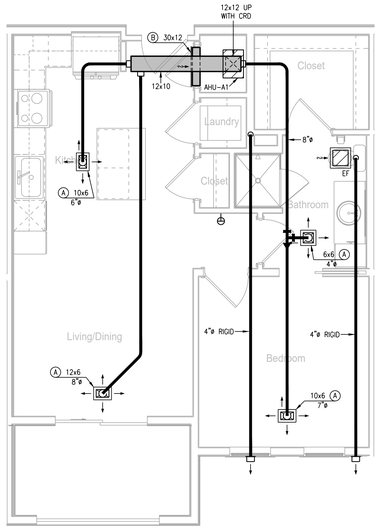
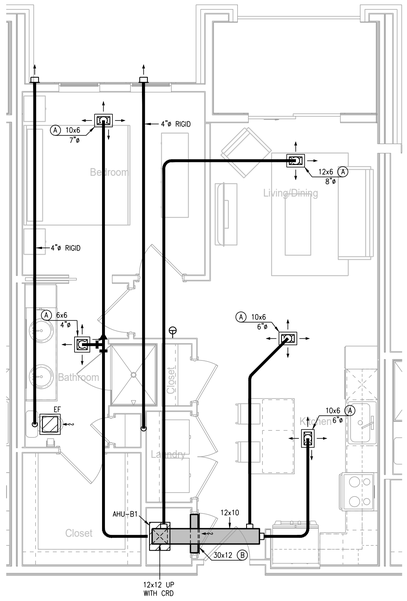


1 TYPICAL UNIT PLAN - A1

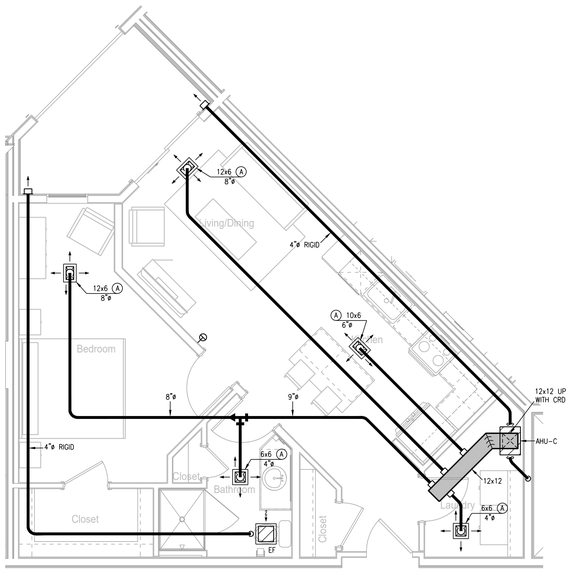
1/4"=1'-0" (UNITS A2, A3, AND A4 SIMILAR) HVAC



2 TYPICAL UNIT PLAN - B1

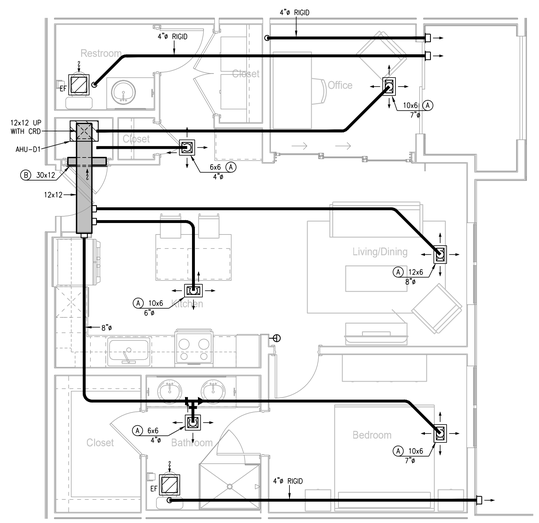
1/4"=1'-0" (UNIT B2 SIMILAR) HVAC

NOTES:
1. ALL TYPE "A" SUPPLY REGISTERS HAVE A UL555C CEILING RADIATION DAMPER UNLESS NOTED OTHERWISE. PROVIDE CRD UNLESS NOTED OTHERWISE AT AHU DISCHARGE AND RATED MEMBRANE.
2. PROVIDE MANUFACTURER REQUIRED CLEARANCES FOR AHU'S AND WATER HEATERS.
3. ALL CONDENSING UNITS ARE ROOF MOUNTED. MANUFACTURER SHALL PROVIDE ANY ACCESSORIES REQUIRED FOR PROPER OPERATION.
4. PROVIDE GUY GRAY MODEL DB350/DB3D DRYER VENT BOX AT ALL DRYER LOCATIONS. NOTE TOP FLOOR SHALL ROUTE THRU FLOOR BELOW.
5. GENERALLY CENTER GRILLES/REGISTERS IN WALLS, OVER DOORS, ALIGN WITH WINDOWS, ETC.
6. MAINTAIN 3 FT. FROM EXHAUST/VENTS TO BUILDING OPENINGS. DRYER VENT CAPS SHALL HAVE 4" DEEP BY 4" WIDE OPENING FOR AIR FLOW.
7. ROUTE AHU CONDENSATE INDIRECT TO FLOOR DRAINS IN AHU CLOSETS.
8. EXHAUST FANS AT TOP FLOOR MAY VENT TO ROOF.
9. EXHAUST FANS TO BE FIRE-RATED, HUMIDITY-SENSING TYPE, 80 CFM AT 0.1 ESP. HALF BATH FANS ARE 50 CFM AT 0.1 ESP.
10. USE RA GRILLE AT HVAC CLOSET AS CRD ACCESS, POSITION CORRECTLY. SIZE MAY VARY WITH SAME AREA.
11. TOP FLOOR DUCTS SHALL BE BELOW THE ATTIC INSULATION SHALL BE R-8 INSULATED AND SEALED TO PREVENT CONDENSATION.



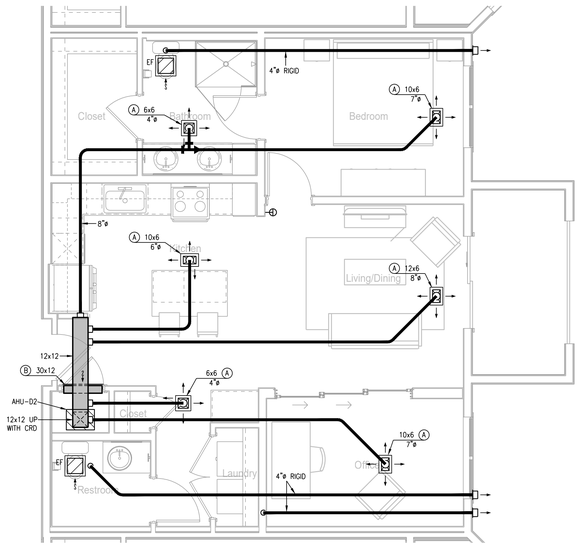
3 TYPICAL UNIT PLAN - C

1/4"=1'-0" HVAC



4 TYPICAL UNIT PLAN - D1

1/4"=1'-0" HVAC



5 TYPICAL UNIT PLAN - D2

1/4"=1'-0" HVAC

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
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LSA PROJECT NO. 1904023

STATE OF MISSOURI
RICHARD R. BRADEN
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
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TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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TR¡ PROJECT NO. 18-046

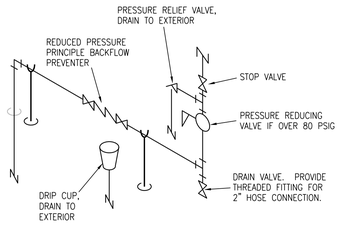
SHEET NO.

M201

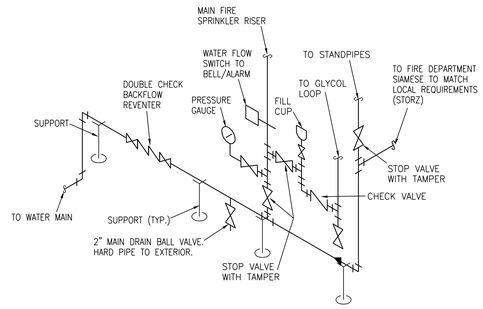
TYPICAL UNIT PLANS - HVAC

NOTES:

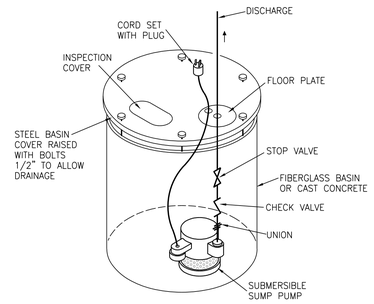
1. DRAWING IS SCHEMATIC ONLY. INSTALLATION SHALL CONFORM TO NFPA 13R AND ALL APPLICABLE LOCAL CODES.



1 DOMESTIC WATER RISER
NO SCALE



2 FIRE SUPPRESSION ENTRANCE RISER
NO SCALE

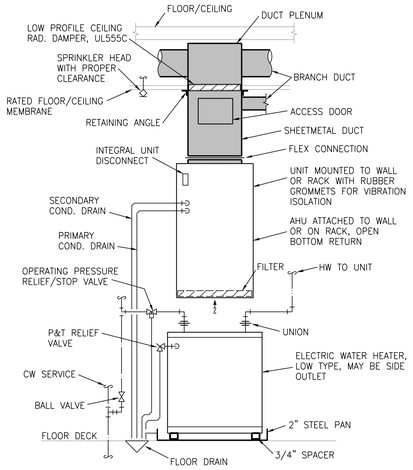


3 ELEVATOR SUMP PUMP DETAIL
NO SCALE

MECHANICAL SYMBOLS LEGEND

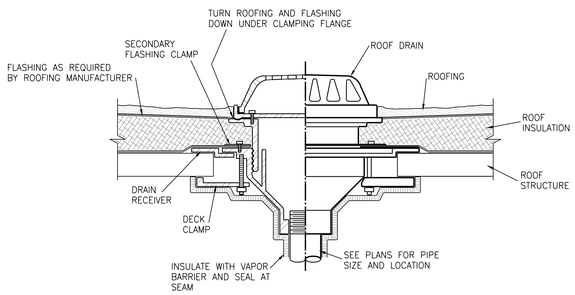
P-1	WATER CLOSET & TYPE (TYP. FOR ALL PLUMBING FIXTURES)		MANUAL DAMPER
	WASTE LINE ABOVE EARTH (W.)	AD	AUTOMATIC DAMPER
	WASTE LINE IN EARTH (W.)	FD	FIRE DAMPER
CO	CLEAN OUT	FS	FIRE/SMOKE DAMPER
FFCO	FLUSH FLOOR CLEAN OUT	6x6 A 80	GRILLE, REGISTER OR DIFFUSER, SIZE, TYPE & CFM
FGCO	FLUSH GRADE CLEAN OUT		VOLUME EXTRACTOR AND TURNING VANES
2" (1) FD	FLOOR DRAIN AND TYPE	RAG	RETURN, EXHAUST OR FRESH AIR DUCT SECTION UP & DOWN
RD	ROOF DRAIN	SAG	SUPPLY AIR DUCT SECTION UP AND DOWN
ORD	OVERFLOW ROOF DRAIN		FLEXIBLE DUCT CONNECTION
2" (1) RD	ROOF DRAIN AND TYPE		ROUND OR RECTANGULAR DUCT
	VENT LINE (V.)		FLEXIBLE DUCT
	DOMESTIC COLD WATER SUPPLY (DCW)	T	THERMOSTAT
	DOMESTIC HOT WATER SUPPLY (DHW)	L	REFRIGERANT LIQUID
	DOMESTIC HOT WATER RETURN (DHWR)	S	REFRIGERANT SUCTION
HB/36"	HOSE BIBB AND MOUNTING HEIGHT	AD	ACCESS DOOR
WH	WALL HYDRANT	AFF	ABOVE FINISHED FLOOR
F	FIRE LINE/STANDPIPE	EA	EXHAUST AIR
D	DRAIN LINE	OA	OUTSIDE AIR
G	NATURAL GAS LINE	RA	RETURN AIR
	RISE & DROP IN PIPE WITH CUT-OFF VALVE	SA	SUPPLY AIR
	REDUCER	VTR	VENT THRU ROOF
	CHECK VALVE		LOCKABLE GUARD
	STOP VALVE	CRD	CEILING RADIATION DAMPER
	BALANCING VALVE	ORD	OVERFLOW ROOF DRAIN
	PLUG VALVE		
	UNION		

NOTES: ALL SYMBOLS SHOWN ABOVE MAY NOT APPEAR ON PLANS. REFER TO ELECTRICAL SYMBOLS LEGEND FOR ELECTRICAL SYMBOLS THAT MAY BE SHOWN ON MECHANICAL PLANS.

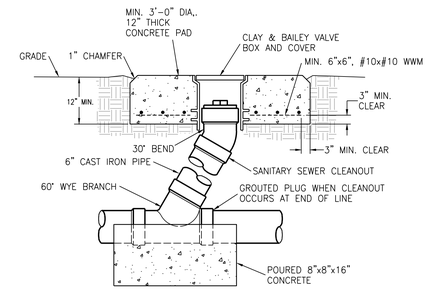


4 MECHANICAL CLOSET DETAIL
NO SCALE

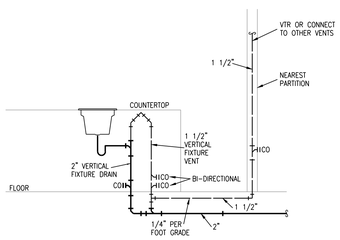
5 ELECTRIC WATER HEATER DETAIL
NO SCALE



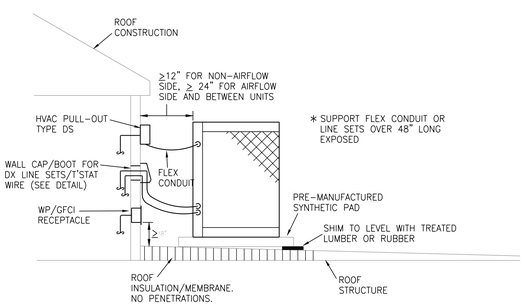
6 ROOF DRAIN DETAIL
NO SCALE



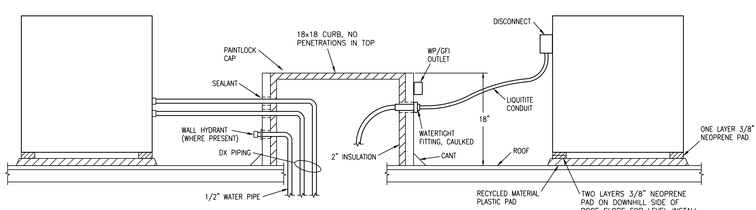
7 FLUSH GRADE CLEANOUT DETAIL
NO SCALE



8 ISLAND VENT DETAIL
NO SCALE



9 ROOF-MOUNTED CONDENSING UNIT DETAIL
NO SCALE



10 ROOF CURB DETAIL
NO SCALE

STATE OF MISSOURI
RICHARD R. HEADRICK
NUMBER PE-2005020854
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 07.29.19

REVISIONS ___

DWG BY RRB

TR¡ PROJECT NO. 18-046

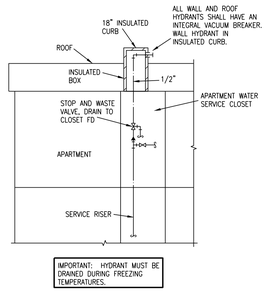
SHEET NO.

MP101

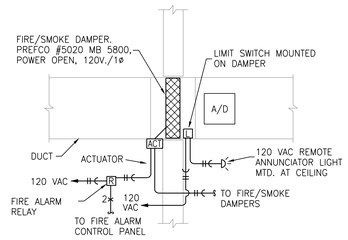
MECHANICAL DETAILS

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com

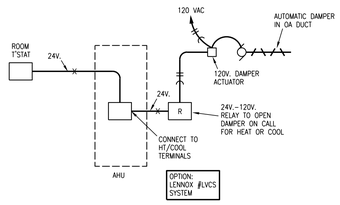
LSA PROJECT NO. 1904023



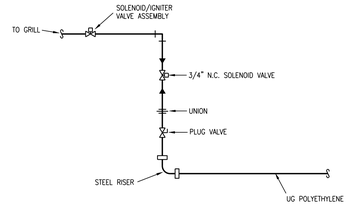
1 ROOF HYDRANT DETAIL
NO SCALE



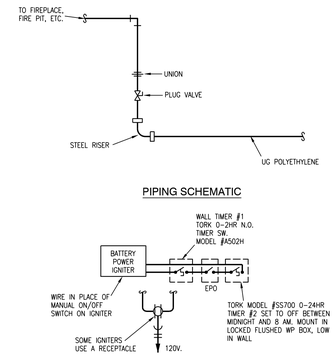
2 FIRE/SMOKE DAMPER DETAIL
NO SCALE



3 OUTSIDE AIR DAMPER CONTROL SCHEMATIC
NO SCALE (TYP. FOR CORRIDOR UNITS)



4 GAS CONTROL DETAIL
NO SCALE (GRILL)



5 GAS CONTROL DETAIL
NO SCALE (FIRE PIT)

SPECIFICATIONS
1. 4" Inlet/Outlet Sch. 40, Plain End (No-Hub)
2. Max Flow rate: 75 GPM
3. Liquid capacity: 125 gallons (16.7 cu. ft.)
4. Max oil capacity: 84.4 gallons
5. Sand capacity: 192 gallons
6. Unit weight w/std. covers: 130 lbs.
7. Highway rated (16,000 lb. load) or pedestrian rated (7,000 lb. load) bolted, gasketed, tight composite cover (choose one).
8. Maximum operating temperature 190 °F continuous.
9. Seamless molded polyethylene tank.

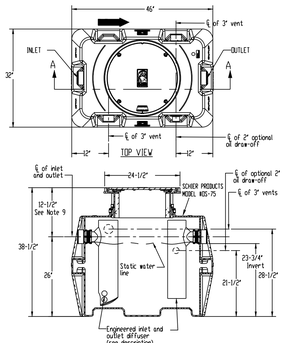
NOTES:
1. Factory installed Built-in Flow control.
2. For gravity drainage applications only. Do not use for pressure applications.
3. Seamless high density polyethylene tank.
4. Unit supplied with built-in adapter for up to 6' of adjustability. Additional riser available for deeper burial depth.
5. Cover placement allows full access to tank for proper maintenance.
6. Narrow footprint allows clearance through doorways and down stairwells.
7. Engineered inlet and outlet diffusers are removable to inspect/clean piping.
8. For on-the-floor or buried applications.
9. Trimming of adaptor required between 12-1/2" to 16", not required for 16" to 18-1/2".

DIFFUSION FLOW TECHNOLOGY
The inlet diffuser spirits incoming effluent into two paths that utilize the entire liquid volume of the tank for efficient oil separation. The calibrated openings greatly reduce effluent turbulence. The effluent enters the main chamber without disturbing the existing oil or sediment layers.

The bottom of the outlet diffuser allows only effluent which is free of oil to exit the tank.

ENGINEER SPECIFICATION GUIDE
Schier CB Reserve-oil/sand separator model# OS-75 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded High Density Polyethylene. Separator shall be furnished for above or below grade installation, with field adjustable riser system, built-in Flow control, vent connections and optional oil drain-off for connection to independent collection tank. Separator flow rate shall be 75 GPM. Separator capacity shall be 84.4 gallons of oil and 192 gallons of sediment. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs load capacity.

OPTIONS:
- Highway Rated Cover: 16,000 lb capacity
- Pedestrian Rated Cover: 2,000 lb. capacity
- Telescopic field adjustable risers for extending covers to grade
- Male pipe thread connections
- 6" Plain end pipe connections (Inlet/Outlet only)
- High water Anchor Kit
- 2" Plain end oil drain-off connection
- Clean Sweep coalescing media
- Clamping Collar Kit



PROVIDE 4'x4' CONCRETE PAD AT GRADE

6 SAND/OIL SEPARATOR DETAIL
NO SCALE

PREFCO
JOHNSONTECH AIR CONTROL INC.

Ceiling Radiation Damper
3 Hour Rated
For Use in Static Systems
Models 5680 Submittal

Filename: Prefco Submittal 5680 Rev 27?2?14

Application

The Model 5680 provides fire and heat radiation protection of HVAC penetrations in any floor/ceiling and roof/ceiling assemblies with restrained or unrestrained ratings of 3 hours or less. Standard fire dampers (1 1/2 & 3 hr.) do not provide the required protection.

Standard Construction

- **Frame**
  21 GA Galvanized Steel
- **Blades - Full Length Hinge**
  21 GA Galvanized Steel
- **Closure Springs**
  Stainless Steel
- **Fusible Link - UL-33**
  UL Listed 212F (standard) 165 F (optional)
  McCabe Link (optional)
- **Insulation (blade)**
  Ceramic Fiber

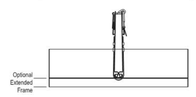
Model 5680 meets or complies with the following as a ceiling radiation damper.

- **NFPA Standards**
- **All major building codes, including BOCA, ICBO/UBC, SBCCI & ICC International Code**

- UL 555C Listing 3 Hour - File #R7365
- CA State Fire Marshall - #3225-1518-103

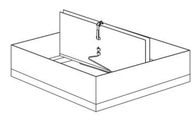
High Free Area Design

Optional Volume Control Device (5965)



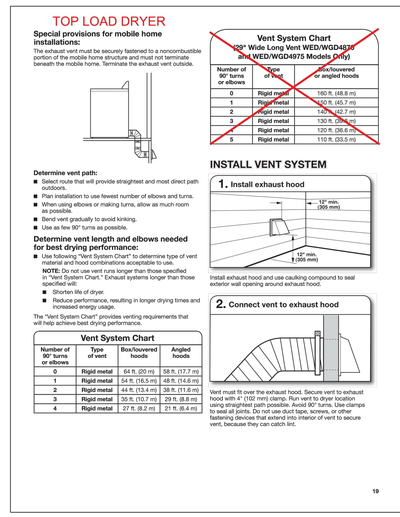
Standard Sizes (duct)	
Minimum	*4 5/2" x 4 1/2"*
Maximum	*24" wide or 30" long - 576 sq. in. total max.*

A dim. is always width of blades

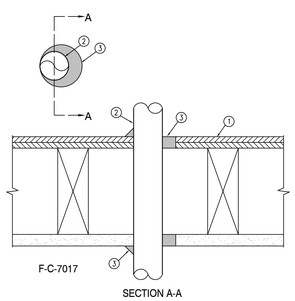


NOTES:
- Dampers are fabricated 3/16" under ordered diameter for clearance
- Approved for use in any UL Fire Resistance Directory Series Designs
- For 2 hour rating, refer to Model 5660

7 CEILING RADIATION DAMPER DETAIL
NO SCALE



8 DRYER VENT DETAIL
NO SCALE



LEGEND:

1. FLOOR-CEILING ASSEMBLY – THE 1HR FIRE RATED SOLID OR TRUSSED LUMBER JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL L500 SERIES FLOOR-CEILING DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY. THE GENERAL CONSTRUCTION DETAILS OF THE FLOOR-CEILING ASSEMBLY ARE SUMMARIZED BELOW:
   A. FLOORING SYSTEM – LUMBER OR PLYWOOD SUBFLOOR WITH FINISH FLOOR OF LUMBER, PLYWOOD OR FLOOR TOPPING MIXTURE AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAX. DIAMETER OF OPENING IS 5" (127mm).
   B. WOOD JOISTS – NOM 10" (254mm) DEEP (OR DEEPER) LUMBER, STEEL OR COMBINATION LUMBER AND STEEL JOISTS, TRUSSES OR STRUCTURAL WOOD MEMBERS* WITH BRIDGING AS REQUIRED AND WITH ENDS FIRESTOPPED.
   C. GYPSUM BOARD* – NOM 4" (122cm) WIDE BY 5/8" (16mm) THICK AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. GYPSUM BOARD SECURED TO WOOD JOISTS OR FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL FLOOR-CEILING DESIGN. MAX OF OPENING IS 6" BY 5 1/2" (152mm BY 140mm).

1,3. CHASE WALL (OPTIONAL, NOT SHOWN) – THE DUCT (ITEM 2) MAY BE ROUTED THROUGH A FIRE-RATED SINGLE, DOUBLE OR STAGGERED WOOD STUD/GYPSUM BOARD CHASE WALL HAVING A FIRE RATING CONSISTENT WITH THAT OF THE FLOOR-CEILING ASSEMBLY. THE CHASE WALL SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS – NOM 2" BY 6" (51mm BY 152mm) OR DOUBLE NOM 2" BY 4" (51mm BY 102mm) LUMBER STUDS.
   B. SOLE PLATE – NOM 2" BY 6" (51mm BY 152mm) OR PARALLEL 2" BY 4" (51mm BY 102mm) LUMBER PLATES, TIGHTLY BUTTED.
   C. TOP PLATE – THE DOUBLE TOP PLATE SHALL CONSIST OF TWO NOM 2" BY 6" (51mm BY 152mm) OR TWO SETS OF PARALLEL 2" BY 4" (51mm BY 102mm) LUMBER PLATES, TIGHTLY BUTTED. MAX OF OPENING IS 6" BY 5 1/2" (152mm BY 140mm).
   D. GYPSUM BOARD* – THICKNESS TYPE, NUMBER OR LAYERS AND FASTENERS SHALL BE AS SPECIFIED IN INDIVIDUAL WALL AND PARTITION DESIGN.

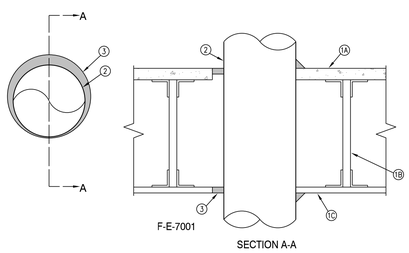
2. STEEL DUCT – NOM 4" (102mm) DIAMETER (OR SMALLER) NO. 30 GAUGE (OR HEAVIER) GALVANIZED STEEL DUCT TO BE INSTALLED ECCENTRICALLY OR CONCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN THE DUCT AND THE PERIPHERY OF OPENING SHALL BE MIN. 0" (0mm) (POINT CONTACT) TO MAX 2" (51mm) DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR-CEILING ASSEMBLY.

3. FILL, VOID OR CAVITY MATERIALS* – CAULK OR SEALANT – MIN 3/4" (19mm) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR SOLE PLATE. MIN. 5/8" (16mm) THICKNESS OF CAULK APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING OR TOP PLATE. MIN 1/2" (13mm) DIAMETER BEAD OF CAULK APPLIED AT THE DUCT/FLOOR OR SOLE PLATE INTERFACE AT POINT CONTACT LOCATION ON THE TOP SIDE OF ASSEMBLY AND AT THE DUCT/CEILING OR TOP PLATE INTERFACE AT POINT CONTACT LOCATION ON BOTTOM SIDE OF ASSEMBLY.

   3M COMPANY – FIREDAM 150+, CP 25WB+CAULK OR FB-3000 WT SEALANT.

* BEARING THE UL CLASSIFICATION MARK.

9 FIRE STOP SYSTEM F-C-7017 DETAIL
NO SCALE



LEGEND:

1. FLOOR-CEILING ASSEMBLY – THE 1HR FIRE RATED CONCRETE AND STEEL JOIST FLOOR-CEILING ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL G500 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY, AS SUMMARIZED BELOW:
   A. FLOORING – NORMAL OR LIGHTWEIGHT CONCRETE AS SPECIFIED IN THE INDIVIDUAL G500 SERIES DESIGN. MAX. DIAMETER OF OPENING IS 11" (279mm).
   B. JOISTS – STEEL JOISTS OR STRUCTURAL STEEL MEMBERS* AS SPECIFIED IN THE INDIVIDUAL G500 SERIES DESIGN.
   C. GYPSUM BOARD* – MIN. 5/8" (16mm) THICK, SCREW-ATTACHED TO FURRING CHANNELS AS SPECIFIED IN THE INDIVIDUAL G500 SERIES DESIGN. MAX. DIAMETER OF OPENING IS 11" (279mm).

2. STEEL VENT DUCT – NOM 4" (102mm) DIAMETER (OR SMALLER) NO. 30 GAUGE (OR HEAVIER) GALVANIZED STEEL VENT DUCT. DIAMETER OF OPENINGS TO BE MAX. 1" (25mm) LARGER THAN OUTSIDE DIAMETER OF DUCT. DUCT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY IN OPENING. THE ANNULAR SPACE BETWEEN THE DUCT AND THE PERIPHERY OF OPENING SHALL BE MIN. 0" (POINT CONTACT) TO MAX. 1" (0 TO MAX 25mm). DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR-CEILING ASSEMBLY.

3. FILL, VOID OR CAVITY MATERIALS* – CAULK OR SEALANT – MIN. 3/4" (19mm) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR. MIN. 5/8" (16mm) THICKNESS OF APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTTOM SURFACE OF CEILING. AN ADDITIONAL MIN. 1/4" (6mm) BEAD OF FILL MATERIAL APPLIED AT THE DUCT/FLOOR INTERFACE AT POINT CONTACT LOCATION ON THE TOP SURFACE OF FLOOR AND AT THE DUCT/CEILING INTERFACE AT POINT CONTACT LOCATION ON THE LOWER SURFACE OF CEILING.

   3M COMPANY – CP 25WB+JC 15WB+CAULK OR FB-3000 WT SEALANT.

* BEARING THE UL CLASSIFICATION MARKING.

10 FIRE STOP SYSTEM F-E-7001 DETAIL
NO SCALE

STATE OF MISSOURI
RICHARD R. RAMEY
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT
TR¡ ARCHITECTS
STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY
CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR
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Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com
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DATE: 07.29.19

REVISIONS ___

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

MP102

MECHANICAL DETAILS

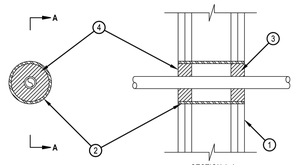
LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com
LSA PROJECT NO. 1904023

System No. W-L-2186

F Ratings — 1 and 2 Hr (See Items 1 and 4)
T Ratings — 1/2 and 1 Hr (See Items 3 and 4)
L Rating at Ambient - Less Than 1 CFM/sq ft
L Rating at 400 F - 2 CFM/sq ft

WL 2186

Classified by Underwriters Laboratories, Inc. to UL 1479



SECTION A-A

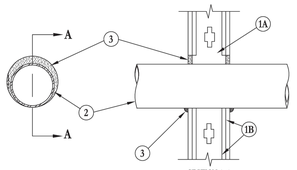
1. Wall Assembly — The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, W400 or W400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) . Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — For 1 hr assembly, one layer of min 5/8 in. (16 mm) thick gypsum board as required in the individual Wall and Partition Design. For 2 hr assembly, two layers of min 5/8 in. (16 mm) thick gypsum board as required in the individual Wall and Partition Design. Max diam of opening is 3 in. (76 mm).
   The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Steel Sleeve — (Optional) - Max 3 in. (75 mm) diam Schedule 40 (or heavier) steel pipe sleeve friction-fit into circular opening core drilled through wall. Length of steel sleeve to be equal to thickness of wall.
3. Through-Penetrant — One nom 1 in. (25 mm) diam (or smaller) SDR 9 cross-linked polyethylene (PEX) tubing for use in closed (process or supply) piping systems. The tubing installed concentrically or eccentrically within the opening. The annular space between the tube and the steel sleeve or wall opening shall be min 1/2 in. (13 mm) to max 1-3/8 in. (35 mm). Tube to be rigidly supported on both sides of wall assembly. When steel sleeve (Item 2) is not provided, tube may be installed at an angle not greater than 45 degrees from perpendicular.
   The hourly T Rating is 1/2 hr and 1 Hr for 1 Hr and 2 Hr fire rated wall assemblies, respectively.
4. Fill, Void or Cavity Material*-Sealant — Min 5/8 in. (16 mm) and 1-1/4 in. (32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall assembly for 1 and 2 hr rated walls, respectively. When a steel sleeve (Item 2) is provided for assemblies with L Ratings, sealant shall be applied around periphery of opening to cover the exposed ends of the sleeve and to lap min 1/4 in. (6 mm) onto gypsum board on each side of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant
   * Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc. January 22, 2015

System No. W-L-2264

November 20, 2009
F Ratings – 1 and 2 Hr (See Item 1)
T Ratings – 0, 1and 2 Hr (See Item 2)



SECTION A-A

1. **Wall Assembly** – The 1 and 2 hr fire rated gypsum board/stud wall assemblies shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. **Studs** – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** – Thickness, type, number of layers and fasteners as required in the individual Wall and Partition Design. Diam of opening shall be 1 in. (25 mm) larger than nom pipe diam.
   The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. **Through-Penetrants** – One nonmetallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe or conduit and periphery of opening shall be min of 0 in. (0 mm, point contact) to max 5/8 in. (16 mm). Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes or conduits may be used:
   A. **Polyvinyl Chloride (PVC) Pipe** – Nom 2 in. (51 mm) diam (or smaller). Schedule 40 solid core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   B. **Chlorinated Polyvinyl Chloride (CPVC) Pipe** – Nom 2 in. (51 mm) diam (or smaller) SDR13.5 CPVC pipe for use in closed (process or supply) piping systems.
   C. **Rigid Nonmetallic Conduit**+ – Nom 2 in. (51 mm) diam (or smaller). Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).
   D. **Acrylonitrile Butadiene Styrene (ABS) Pipe** – Nom 2 in. (51 mm) diam (or smaller). Schedule 40 solid core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   The hourly T Rating of the firestop system is 0 Hr when pipes are used in vented (drain, waste or vent) piping systems. The hourly T Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed when pipes are used in closed (process or supply) piping systems.
3. **Fill, Void or Cavity Materials*** – **Caulk or Sealant** – Min thickness of 5/8 in. (16 mm) of caulked applied within annulus between pipe or conduit and periphery of the opening, flush with both surfaces of wall assembly. At the point contact location between pipe or conduit and gypsum board, a min 1/2 in. (13 mm) diam bead of caulk or putty shall be applied at the pipe or conduit/gypsum board interface on both surfaces of wall assembly.
   3M COMPANY - FireDam 150+, CP 25WB+, IC 15WB+ caulk or FB-3000 WT sealant.
   (Note: CP 25WB+ and FireDam 150+ not suitable for use with CPVC pipes.)
   *Bearing the UL Classification Mark

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Through Penetrations | Non-Metallic Pipes | 2000 Series | Gypsum | WL

3M Fire Protection Products www.3m.com/firestop

W-L-2264 • 1 of 1

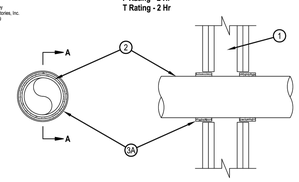
Product Support Line 1-800-328-1467

System No. W-L-2344

F Rating - 2 Hr
T Rating - 2 Hr

WL 2344

Classified by Underwriters Laboratories, Inc. to UL 1479



SECTION A-A

1. Wall Assembly – The 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs – Wall framing shall consist of either wood or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
   B. Gypsum Board* – Min 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the individual U300 or U400 Wall and Partition Design. Max diam of opening is 5-1/2 in.
2. Through Penetrants – One nonmetallic pipe to be centered within the firestop system. A nom annular space of 3/8 to1/2 in. is required within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:
   A. Acrylonitrile Butadiene Styrene (ABS) Pipe – Nom 4 in. diam (or smaller) Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   B. Polyvinyl Chloride (PVC) Pipe – Nom 4 in. diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   C. Chlorinated Polyvinyl Chloride (CPVC) Pipe – Nom 4 in. diam (or smaller) SDR 13.5 CPVC pipe for use in closed (process or supply) piping systems.
3. Firestop System – The firestop system shall consist of the following:
   A. Fill, Void or Cavity Material* – Wrap Strip – Two layers of nom 3/16 in. thick by 1-3/4 in. wide intumescent wrap strip individually wrapped around the outer circumference of the pipe and slid into the annular space such that wrap strip extends 3/4 in. beyond both surfaces of wall. Butted ends in successive layers shall be offset. Wrap strip secured with tape, wire or tie wire.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – CP648-E W45/1-3/4" Wrap Strip
   *Bearing the UL Classification Mark

Hilti Firestop Systems

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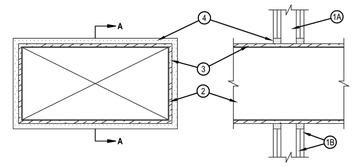
System No. W-L-7059

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings - 1 and 2 Hr (See Item 1)	F Ratings - 1 and 2 Hr (See Item 1)
T Rating - 1/2 and 3/4 Hr (See Item 1)	FT Rating - 1/2 and 3/4 Hr(See Item 1)
	FH Ratings - 1 and 2 Hr (See Item 1)
	FTH Rating - 1/2 and 3/4 Hr (See Item 1)

WL 7059

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400, V400 or W400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing shall consist of channel studs. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. The opening in the wall to accommodate the steel duct (Item 2) shall be framed on all sides using lengths of studs installed between the vertical studs and attached to the studs at each end. The framed opening in the wall shall be a nom 6 in. (152 mm) wide and 12 in. (305 mm) higher than the width and height of the steel duct.
   B. Wallboard, Gypsum* — 5/8 in. (16 mm) thick, 4 ft (1.22 mm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400, V400 or W400 Series Design in the UL Fire Resistance Directory. Max area of opening is 385 sq. in. (0.25 m2)with max dimensions of 35-3/4 in. (879 mm) for steel studs. The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T, FT and FTH Ratings are 1/2 hr and 3/4 hr for 1 and 2 hr rated assemblies, respectively

Hilti Firestop Systems

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System No. W-L-7059

WL 7059

2. Steel Duct — Nom 24 in. by 12 in. (610 by 305 mm) (or smaller) No. 24 gauge (or heavier) steel duct to be installed eccentrically within the framed opening. The annular space shall be min 1 in. (25 mm) to max 1-3/4 in. (45 mm) Steel duct to be rigidly supported on both sides of wall assembly.
3. Batts and Blankets* — Max 1-1/2 in. (38 mm) thick glass fiber batt or blanket (min 3/4 pcf or 12 kg/m3) jacketed on the outside with a foil-scrim-kraft facing. Longitudinal and transverse joints sealed with aluminum foil tape. During the installation of the fill material, the batt or blanket shall be compressed 50% such that the annular space within the firestop system shall be min 1/4 in. (6 mm) to max 1 in. (25 mm). See Batts and Blankets - (BKNV) category in the Building Materials Directory for names of manufacturers. Any batt or blanket meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index 50 or less may be used.
4. Fill, Void or Cavity Material* - Sealant — Min 5/8 in. or 1-1/4 in. (16 or 32 mm) thickness of fill material applied within annulus, flush with both surfaces of wall for 1 or 2 hr walls, respectively. If voids develop after the fil materials cures, the voids shall be sealed with additional fill material.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Hilti Firestop Systems

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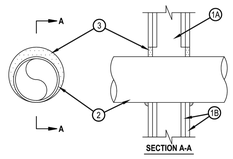
System No. W-L-1054

WL 1054

Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Ratings —1 and 2 Hr (See Items 1 and 3)	F Ratings — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating at Ambient — Less Than 1 CFM/sq ft	FH Ratings —1 and 2 Hr (See Items 1 and 3)
L Rating at 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	FTH Rating — 0 Hr
	L Rating at Ambient — Less Than 1 CFM/sq ft L Rating at 400 F — Less Than 1 CFM/sq ft



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* — 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. (819 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.
   The F and FH Ratings of the firestop system are equal to the fire rating of the wall assembly.

Hilti Firestop Systems

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Page: 1 of 2

NOTES AND LEGENDS:

1. 1. Wall Assembly — The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.
   B. Gypsum Board* — One layer of nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max diam of opening is 8-5/8 in.
   Metallic Sleeve — Nom 8 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast into wall assembly with joint compound and installed flush with wall surfaces.
2. Air Duct — Nom 6 in. diam (or smaller) prefabricated No. 28 MSG galv sheet metal duct. A min 1/2 to max 1-1/2 in. annular space is required within the firestop system. Duct to be rigidly supported on both sides of wall assembly.
3. Forming Material* — Foamed plastic forming material foamed into opening as a permanent form. Forming material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC — CFB10, CFB12 or CF511 Foam Sealant
4. Fill, Void or Cavity Material* — Min 5/8 in. thickness of fill material applied within annulus, flush with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC — FS-ONE Sealant
5. *Bearing the UL Classification Mark

NOTES:

1. Wall Assembly – The 1 or 2 hr fire rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or V400 series wall and partition design in the UL Fire Resistance Directory and shall include the following construction features:

   A. Studs:
   Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102mm) lumber spaced 16 in. (406mm) o.c. Steel studs to be min 3 1/2 in. (89mm) wide spaced max 24 in. (610mm) o.c.

   B. Gypsum Board:
   The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified the individual design in the UL fire resistance directory. Max diameter of opening is 5 in. (127mm).

   The hourly f rating of the firestop system is equip to the hourly fire rating of the wall assembly in which it is installed. The hourly t rating is 1 and 2 hr for 1 and 2 hr rated assemblies, respectively.

2. Through Penetrations – One nonmetallic pipe or conduit concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 3/4 in. (10mm) to max 5/8 in. (16mm). Penetrant to be rigidly supported on both sides of wall assembly. The following types of sizes of nonmetallic pipes or conduits:

   A. Polyvinyl Chloride (PVC) Pipe:
   Nom 4 in. (102mm) diameter (or smaller) schedule 40 solid core or cellular core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

   B. Fire Retardant Polypropylene (FRPP) Pipe:
   Nom 4 in. (102mm) diameter (or smaller) schedule 40 FRPP pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

   C. Rigid Nonmetallic Conduit:
   Nom 4 in. (102mm) diameter (or smaller) schedule 40 PVC conduit installed in accordance with the national electrical code (NFPA no. 70).

   Firestop System – The firestop system shall consist of the following:

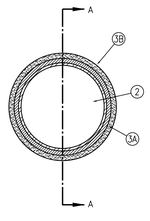
3.

   A. Fill, Void or Cavity Materials – wrap strip:
   min 3/16 in. (5mm) thick intumescent material supplied in 2 1/2 in. (64mm) wide strips. Single layer of pre-cut wrap strip tightly wrapped around nonmetallic pipe and secured with the adhesive closure tab. Wrap strip to be slid into opening such that the outer edge of wrap strip extends approximately 5/8 in. (16mm) from both surfaces of wall.

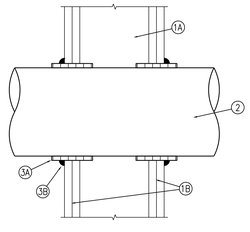
   B. Fill, Void or Cavity Material – Caulk or Sealant:
   Min 1/4 in. (6mm) diameter bead of sealant applied to gypsum board/wrap strip interface on both sides of wall.

U.L. SYSTEM NO. WL2551
F RATING = 1 AND 2 HR (SEE ITEM 1)
T RATING = 1 AND 2 HR (SEE ITEM 1)

FRONT VIEW



SECTION A–A



NOTES:

1. Floor–Ceiling Assembly The 1 hr fire–rated solid or trussed lumber joist floor–ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor–Ceiling Designs in the UL Fire Resistance Directory. The general construction features of the floor–ceiling assembly are summarized below:

   A. Flooring System Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor–Ceiling Design. Max diam of opening shall be 5 in.

   B. Wood Joist* Nom 10 in. deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or Structural Wood Members* with bridging as required and with ends firestopped.

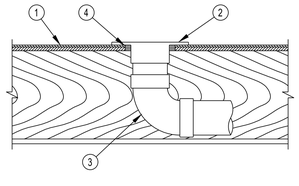
   C. Gypsum Board* Nom 5/8 in. thick, 4 ft wide as specified in the individual Floor–Ceiling Design.

2. Closet Flange Acrylonitrile butadiene styrene (ABS) or polyvinyl chloride (PVC) closet stub sized to accommodate drain pipe. Closet flange installed over drain piping within floor opening with flange secured to plywood floor with steel screws. Diam of circular opening through flooring (Item 1A) to be max ½ in. larger than outside diam of closet flange.

3. Drain Piping Nom 4 in. diam (on smaller) Schedule 40 acrylonitrile butadiene styrene (ABS) or polyvinyl chloride (PVC) drain pipe and 90 degree elbow for use in vented (drain, waste or vent) piping systems. Pipe installed concentrically within firestop system.

4. Fill, Void or Cavity Materials*–-Sealant Min 3/4 in. thickness of fill material applied within the annulus, flush with the bottom surface of floor.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC –- FS–ONE Sealant

5. Water Closet (Not Shown)–-Floor mounted vitreous china water closet.
   *Bearing the UL Classification Mark



NOTES:

1. Floor–Ceiling Assembly The 1 hr fire–rated solid or trussed lumber joist floor–ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor–Ceiling Designs in the UL Fire Resistance Directory. The general construction features of the floor–ceiling assembly are summarized below:

   A. Flooring System Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor–Ceiling Design. Max diam of opening is 3 in.

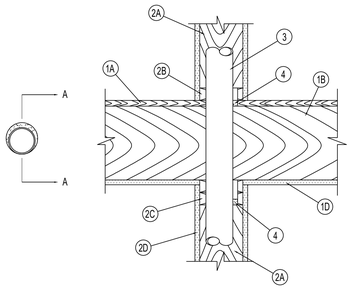
   B. Wood Joists* Nom 10 in. deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or Structural Wood Members* with bridging as required and with ends firestopped.

   C. Gypsum Board* Nom 5/8 in. thick, 4 ft wide as specified in the individual Floor–Ceiling Design.

2. Chase Wall The through penetrant (Item 3) shall be routed through a 1 hr fire–rated single, double or staggered wood stud/gypsum wallboard chase wall constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs Nom 2 by 4 in. lumber studs.
   B. Sole Plate Nom 2 by 4 in. lumber plates.
   C. Top Plate The double top plate shall consist of two nom 2 by 4 in. lumber plates. Max diam of opening is 3 in.
   D. Gypsum Board* Thickness, type, number of layers and fasteners shall be as specified in individual Wall and Partition Design.

3. Through – Penetrants One nonmetallic pipe to be installed either eccentrically or concentrically within the firestop system. The annular space between the through penetrant and the periphery of the opening shall be a min 0 in. (point contact) to a max of 5/8 in. Pipe to be rigidly supported on both sides of the floor–ceiling assembly. The following types and sizes of nonmetallic pipes may be used.
   A. Polyvinyl Chloride (PVC) Pipe Nom 2 in. diam (or smaller) Schedule 40 cellular or solid core PVC pipe for use in closed (process or supply) or vented (drain, waste, or vent) piping systems.
   B. Acrylonitrile Butadine Styrene (ABS) Pipe Nom 2 in diam (or smaller) Schedule 40 cellular or solid core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
   C. Chlorinated Polyvinyl Chloride (CPVC) Pipe Nom 2 in. diam (or smaller) SDR17 CPVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.

4. Fill, Void or Cavity Material* –- Sealant Min 3/4 in. thickness of fill material applied within the annulus, flush with top surface of floor and flush with bottom surface of lower top plate.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC – FS – ONE Sealant
   *Bearing the UL Classification Marking



1 FIRE STOP DETAIL
NO SCALE SYSTEM W-L-7017

2 FIRE STOP SYSTEM W-L-2551 DETAIL
NO SCALE

3 FIRE RATED PENETRATION DETAIL
NO SCALE SYSTEM FC-2203

4 FIRE RATED PENETRATION DETAIL
NO SCALE SYSTEM FC-2142

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRANDOM
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT — TR¡ ARCHITECTS
STRUCTURAL ENGINEER — BOB D CAMPBELL & COMPANY
CIVIL ENGINEER — RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR — BRINKMANN CONSTRUCTORS
MECHANICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES
PLUMBING ENGINEER — LATIMER SOMMERS & ASSOCIATES
ELECTRICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
© Copyright 2018
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

DATE: 07.29.19

REVISIONS

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.
MP103

MECHANICAL DETAILS

HVAC SYSTEM SCHEDULE

MARK	MFGR	NOM TON	MODEL	CFM	OA CFM	E.S.P.	HP	SMBH	TMBH	HEAT CAP	ELEC	FLA	OCP	MFGR	MODEL	ELEC	FLA	OCP	SEER	NOTES
		AHU/RTU												OUTDOOR UNIT						
UNITS																				
A, B, C	GOODMAN	1 1/2	AWUF2408C14	600		0.5	0.2	12.4	17.4	5.6 KW	208/1	31	40	GOODMA N	GSX14018	208/1	14	20	14.0	
D1, D2, F	GOODMAN	2	AWUF2408C14	750		0.5	0.2	17.2	22.8	5.6 KW	208/1	31	40	GOODMAN	GSX14024	208/1	14	25	14.0	
G, H	GOODMAN	2 1/2	AWUF3010C14	950		0.5	0.33	20.6	27.4	7.5 KW	208/1	41	60	GOODMAN	GSX14030	208/1	15	30	14.0	
COMMON AREAS																				
1/1, 1/4, 1/7	GOODMAN	2 1/2	ARUF-31B14	850-950	100	0.5	0.33	20.0	27.0	7.5 KW	208/1	40	50	GOODMAN	GSX14-030	208/1	13.9	25	14.0	
1/3	GOODMAN	5	ARUF61D14	1650-1950	265	0.5	0.75	41	57.5	11.4 KW	208/1	57	70	GOODMAN	GSX14-0601	208/1	26.3	50	14.0	
2/1, 3/1, 4/1, 2/2, 3/2,4/2, 2/3, 3/3, 4/3, 2/4, 3/4, 4/4, 2/5, 3/5	GOODMAN	2	ARUF25B14	600-800	100	0.5	0.33	17.0	23.2	7.5 KW	208/1	40	50	GOODMAN	GSX14025	208/1	14	25	14.0	
1/5	Removed																			
1/2, 1/6	GOODMAN	3	ARUF-37C14	1350	160	0.4	FR	25.8	33	7.5 KW	208/1	40	50	GOODMAN	GSX14-037	208/1	15	30	14.0	
RTU - 1 THRU 4, 6	TRANE	5	TSC060E1E	1675-1880	SEE TABLE	0.7	1	47	60	17.3 KW	208/3	55	70							
RTU - 5	TRANE	3	TSC036E1E	1000	SEE TABLE	0.5	1	26	36	9 KW	208/3	31	40							
DSS-G1, G2, G3	FUJITSU	1	AUU9RLF	300	0	0			9	12	208/1/5	W/HP		FUJITSU	AOU9RLFC	208/230/1	5	20	20.0	WALL STAT, LOW AMB
DSS	FUJITSU	1 1/2	ASU18RLF	540	0	0			18	23 MBH	208-240/1	W/HP		FUJITSU	ASU18RLF	208-240/1	13	25	19	WALL STAT, LOW AMB
DSS-4/1, 4/2, 4/3	FUJITSU	2	ASU24RLF	700	0	0			22	25 MBH	208/1	W/HP		FUJITSU	AOU24RXLFW1	208-240/1	15.5	25	19	WALL STAT, LOW AMB

NOTE: PROVIDE LONG LINE ACCESSORY KIT ON ALL SPLIT SYSTEMS THAT EXCEED MFGR'S LIMITS

ELECTRIC UNIT HEATER SCHEDULE

MARK	MFGR	MODEL	KW	MBH	CFM	ELECTRICAL VOLTS/ PH	FLA	OCP	WIRING	CONFIGURATION - NOTES
EUH - A	BERKO	FRA-4024	3.0	10.2	100	208/1	12	20	(3) #12	WALL, 1, 4, 5
EUH - B	BERKO	HUHAA-1520	15.0	51.0	910	208/3	42	60	(2)#8 (1)#10	SUSPENDED, 4, 7
EUH-B2	BERKO	HUH-520	5.0	17.0	270	208/1	25	35	(2) #8, (1) #10	SUSPENDED, 4, 6
EUH-B3	BERKO	HUHTA-524TA	1.9	6.4	270	208/1	8	20	(3) #12	SUSPENDED, 4, 6
EUH - C	BERKO	SRC-1512	1.5	5.1	65	120/1	12	20	(3) #12	CEILING, 1, 4, 6
EUH-D	BERKO	EFF4004	3.0	10.2	150	208/1	12	20	(3) #12	CEILING, 3, 4, 5

NOTES:
1-SURFACE MOUNTED
2-SEMI-RECESSED
3-FULLY RECESSED
4-DISCONNECT
5-INTEGRAL TSTAT
6-WALL TSTAT
7 - MOUNT TSTAT ON BACK OF UNIT

AIR TERMINAL DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	FINISH	DAMPER	FRAME TYPE	NOTES
A	AIR MATE	A190	WHITE	YES	GYP BD	
B	AIR MATE	170	WHITE	NO	GYP BD	
B1	AIR MATE	280 FF	WHITE	NO	GYP BD	
C	AIR MATE	240 V/O	WHITE	YES	GYP BD	
D	PRICE	620DAL/N/L/A/B12	WHITE	YES	GYP. BD.	W/CRD
E	PRICE	635/N/L/A/B12	WHITE	NO	GYP. BD.	
E1	PRICE	635DAL/L/A/B12	WHITE	YES	GYP. BD.	
F	PRICE	AMD/6/4A/B12	WHITE	NO	GYP. BD.	W/CRD
G	PRICE	TBD//7/B12 1-slot 1-way	WHITE	NO	GYP BD	W/PLASTER FRAME

FAN SCHEDULE

MARK	MFGR	MODEL	CFM	ESP	FAN HP	ELECTRICAL VOLT S/ PH	FL A	OCP	WIRING	CONFIGURATIO N - NOTES
EF - 1/1, 1/4	GREENHECK	SQ-100-B	600	0.25	0.16	120/1	3	15	(3) #12	in-line, 2, 3
EF-1/2, 1/3, 1/5,1/6	AIR KING	FRAK80H	80	0.1	Fr.	120/1	1	15	(3) #12	ceiling, 1
EF-G1, G2	GREENHECK	44 USF-400-AF	38000	0.5	15	208/3	48	90	(3) #2 AL	utility, 4
APT EF	AIR KING	FRAK80H	80	0.1	Fr.	120/1	1	15	(3) #12	ceiling, 1
APT EF2	AIR KING	FRAK50S	50	0.1	Fr.	120/1	1	15	(3) #12	ceiling, 1
EF-1/7	GREENHECK	SP-A90	100	0.1	Fr.	120/1	1	15	(3) #12	ceiling, 1

NOTES:
1-CEILING GRILLE, DS, WALL/ROOF CAP
2-BD DAMPER, DS, SPEED CONTROLLER, WALL/ROOF CAP
3-BD DAMPER, DS, VIBRATION ISOLATORS, INLET GUARD
4-VFD/DS, VIBRATION ISOLATION BASE, STARTER, CO/NO2 SENSING SYSTEM
5-BD DAMPER, DS, VFD, VIBRATION ISOLATORS

PLUMBING FIXTURE SCHEDULE

Mark	Item	Model	Description	Individual Connections W	V	CW	HW	Accessories Supplies	Stops	Carrier	P-Trap	Drain	Other
P-1	Water Closet, Tank Type	ProFlo #PF1401T	Floor-mounted standard height white vitreous china elongated bowl 1.6 gpf gravity type with Fluidmaster 400A flush mechanicsm and bolt covers. Provide molded wood closed front elongated white seat with integral bumpers, external check hinges with stainless steel posts. Type P-1P has open front white seat.	3" or 4"	2"	1"		2					
P-1H, P-1HP	Accessible Water Closet, Tank Type	ProFlo #1403T	Floor-mounted ADA height white vitreous china elongated bowl 1.6 gpf gravity type with Fluidmaster 400A flush mechanicsm and bolt covers. Provide molded wood closed front elongated white seat with integral bumpers, external check hinges with stainless steel posts. Type P-1HP has white open front seat.	3" or 4"	2"	1"		2					
P-1P	Accessible Water Closet, Flush Valve	Proflo #PF1723 with Sloan Regal 111 SFSM	Floor-mounted ADA height white vitreous china elongated bowl 1.28 gpf automatic flush valve. Provide solid plastic open front elongated white seat with integral bumpers, external check hinges with stainless steel posts.	3" or 4"	2"	1"							
P-2, 2H	Lavatory, Countertop	ProFlo #PF20174 with Peerless #P136PF-M	20" x 17" oval vitreous china countertop lavatory with overflow. Faucet is 4" o.c. single lever ADA handle, copper waterways, chrome finish, 1.5 GPM, metal pop-up.	2"	1 1/2" or 2"	1/2"	1/2"	2	1		1	1	
P-2P	Lavatory, Countertop	Proflo #20171WH with Peerless #P136LF	20"x17" oval vitreous china countertop lavatory with overflow. Faucet is ADA compliant, 1.2 GPM.	2"	1 1/2" or 2"	1/2"	1/2"	2	1		1	1	
P-2W	Lavatory, Wall hung	Proflo #PF5511WH with Peerless #P136LF	ADA compliant, wall hung, single hole 20"x16" oval vitreous china lavatory with overflow. Faucet is ADA compliant, 1.2 GPM.	2"	1 1/2" or 2"	1/2"	1/2"	2	1		1	1	
P-3	Bathtub	Kohler #K-715/6 with Delta #R-10000-UN/T13420	60" x 36" x 20" tall non-slip basin and tub overflow and turn and lift stop with finish to match faucet. Pressure-balanced single handle chrome valve, 1.5 gpm showerhead, tub spout with pull-up diverter. Provide future grab bar blocking. Water Sense label.	2"	2"	1/2"	1/2"				2, 4		
P-3S1	Shower	Aquarius G4236 with Peerless #PTT188780	42" x 36" white fiberglass reinforced plastic/acrylic non-slip basin with surround, soap dishes. Pressure-balanced single handle valve, 2.0 gpm chrome showerhead, drain to match.	2"	2"	1/2"	1/2"				2		
P-3S2	Shower	Aquarius G4836 with Peerless #PTT188780	48" x 36" white fiberglass reinforced plastic/acrylic non-slip basin with surround, soap dishes. Pressure-balanced single handle valve, 2.0 gpm chrome showerhead, drain to match.	2"	2"	1/2"	1/2"				2		
P-3PS	Shower	Freedom Showers #APF6033BFPAN C with Moen T8346	60" x 33" white fiberglass reinforced plastic/acrylic non-slip basin. Compressable rubber threshold. Handheld ADA sprayer.	2"	2"	1/2"	1/2"				2		
P-4	Kitchen Sink	ProFlo #PFUE206 with Peerless #P188103LF	Stainless steel under-mount 20 ga.dual bowl 33" x 22" x 8" deep. Single handle faucet with pull-out sprayer. Evergrind Model E101 disposer with cord/plug.	2"	2"	1/2"	1/2"	1	1		2	2	
P-4H	Accessible Kitchen Sink	Elkay ELUHAD281655 with Delta 16968	Stainless steel under-mount 20 ga.dual bowl 33" x 22" x 6" deep with back outlet. Single handle faucet with pull-out sprayer. ISE Badger 1 disposer with cord/plug. Install per ADA clearnaces.	2"	2"	1/2"	1/2"	1	1		2	2	
P-5	Washer Box	Guy Gray #WB2000HATM	Recessed non-metallic with dual PVC/ABS 2" outlets, two angle quarter turn stops with built-in shock absorbers.	2"	2"	1/2"	1/2"	1			3		
P-6	Water Outlet Box	Guy Gray #BM877QTS	Recessed non-metallic with two angle quarter turn stops.			1/2"		1					
P-7	Urinal	American Standard #6561.017	White vitreous china wall hung with 3/4" top spud, 1.0 gallon siphon jet flushing action. Mount rim per Architectural elevation.	2"	2"	3/4"		3		1	1	2	
P-8	Janitor's Sink	Fiat #MSB-2424	24" x 24" x 10" white molded stone with stainless steel integral drain, chrome plated brass wall mounted faucet with VB, integral stops, adjustable wall brace, pail hook, 3/4" hose threaded spout.	2" or 3"	2"	1/2"	1/2"				2		2
P-9	Accessible Dual Height Fountain with Bottle Filler	Elkay #LZSTL8WSLK	ADA wall-mounted water station including bubbler and bottle-filler, side and front push buttons.	2"	1 1/2" or 2"	1/2"		2	1		2		
P-10	Undercounter Sink	Elkay ELUHAD281655/L KGT2041	18 ga. Undermount 31.5"x18.5"x5.5" deep stainless steel sink with strainer and st. stl. finish single handle chrome, brass body, ceramic disc pull out sprayer 1.75 gpm faucet. This is to be an ADA installation.	2"	1 1/2" or 2"	1/2"	1/2"	1	1		2	2	

Supplies
1 - Flexible braided stainless steel
2 - Flexible braided compression hose.
3 - Zurn #ZER0003-CP 1.0 gpf diaphragm type.
4 - Provide tempering valve below sink set at 110 deg

Stops
1 - Angle handle compression

Carrier
1 - Steel tube floor-mounted in-wall carrier with arms

P-Trap
1 - PVC with deep escutcheon
2 - PVC
3 - deep seal PVC trap and 30" standpipe.

Drain
1 - Metal pop-up with tailpiece
2 - Basket strainers in finish to match faucet, tailpiece.

WATER HEATER SCHEDULE

MARK	MFGR	MODEL	FUEL	VOLTAGE/PH/ AMPS	INPUT	EFFICIENCY/ PF	GALLONS STORAGE	GPH RECOVERY @ 80° RISE	FLUE TYPE	EXPANSION	CIRCULATOR GPM/HD	NOTES
WH-CL1, CL5	A.O. SMITH	EMT-2.5	ELEC	120/1/13	1.4 KW	N/A	2.5	7	N/A	RELIEF V.		1, 2
WH-CL2, WH-CL3	A.O. SMITH	ECLN-40	ELEC	208/1/19	4.5 KW	0.95	38	23	N/A	2 GAL TANK		1, 2, 3
CL4	A.O. SMITH	EJC-6	ELEC	120/1/13	1.5 KW	N/A	2.5	7	N/A	RELIEF V.		1, 2
TYP APT	A.O. SMITH	ECLN-40	ELEC	208/1/19	4.5 KW	0.95	38	23	N/A			1, 2, 3

NOTES
1- PROVIDE ASME P&T VALVE, DRAIN VALVE
2- PROVIDE COMBINATION STOP AND OPERATING PRESSURE RELIEF VALVE
3- LOW TYPE

DRAIN SCHEDULE

MARK	APPLICATION	MFGR	MODEL	BODY MATL	DEPTH	GRATE MATL	GRATE SHAPE	ACCESSORIES
APT FD	FLOOR	SIOUX CHIEF	842	ABS/PVC	3"	NICKEL BRONZE	6" SQUARE	2
FD-1	FLOOR	ZURN	ZN-415S	COATED CAST IRON	3"	NICKEL BRONZE	6" ROUND	1, 2
FD-2	FLOOR	ZURN	Z-611-S	COATED CAST IRON	6"	COATED CAST IRON	9" SQUARE	1, 2, 3
FD-3	FLOOR - GARAGE	ZURN	Z-534-Y	COATED CAST IRON	3"	COATED CAST IRON	12" ROUND	6
RD-1	ROOF	SIOUX CHIEF	868	ABS/PVC	6"	POLY	DOME	
RD-2	ROOF	SIOUX CHIEF	868-STP2	ABS/PVC	6"	POLY	DOME	5
TRENCH	TRENCH	ABT	POLYDRAIN	POLYMER CONCRETE	6"	EPOXY CTD DUCTILE	6" WIDTH	4

ACCESSORIES:
1 - DEEP TRAP, ADJUSTABLE GRATE
2 - USE WIDE FLANGE MODEL WHERE IN WOOD CONSTRUCTION
3 - INTERNAL STRAINER
4 - SLOPED TO END , MEDIUM DUTY GRATE
5 - 2" DAM FOR OVERFLOW SERVICE
6 - SEDIMENT BUCKET

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR.i ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR.i ARCHITECTS
TR.i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 09.12.19

REVISIONS

3 REVISION 3	04.03.20

DWG BY RRB

TR.i PROJECT NO. 18-046

SHEET NO.

MP104

MECHANICAL SCHEDULES

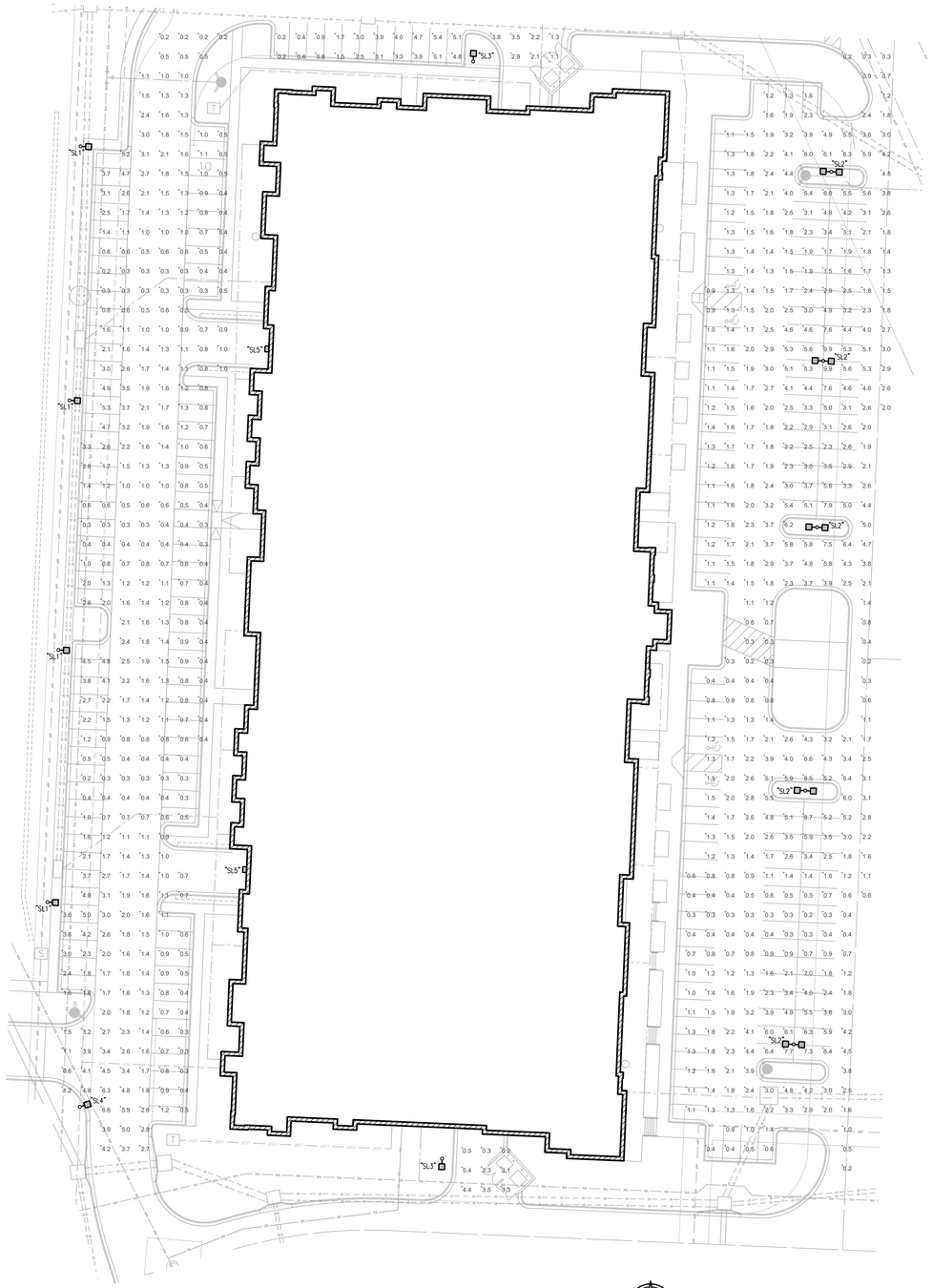
SITE LIGHT FIXTURE SCHEDULE

MARK	MANUFACTURE	MODEL NUMBER	MOUNTING			FINISH	LAMPS					REMARKS
			RECESS	SURFACE	WALL		LED	FLOUR.	HID	CODE	QUANTITY	
SL 1	COOPER	GLEON-AF-03-LED-E1-T4FT		POLE		BRONZE	X			20,515LUM/191W	1	1
SL 2	COOPER	(2) GLEON-AF-03-LED-E1-T4FT		POLE		BRONZE	X			20,515LUM/191W	2	1
SL 3	COOPER	GLEON-AF-03-LED-E1-SL2		POLE		BRONZE	X			19,977LUM/191W	1	1
SL 4	COOPER	GLEON-AF-03-LED-E1-T3R		POLE		BRONZE	X			19,713LUM/191W	1	1
SL 5	COOPER	ISC-E02-LED-E1-BL3		X	X	BRONZE	X			5,503LUM/55W	1	2

REMARKS
1 MOUNT ON 25' STRIGHT SQUARE STEEL MATCHING POLE.
2 MOUNT AT 12' AFG.

STATISTICS

Description	Avg	Max	Min	Max/Min	Avg/Min
PARKING LOT	2.0 FC	9.9 FC	0.2 FC	49.5:1	10:01



1 SITE PHOTOMETRIC PLAN
1" = 30'-0"
NORTH

McGraw-Edison

DESCRIPTION
The Gallean™ LED luminaire delivers exceptional performance in a highly scalable, low-profile design. Patented, high-efficiency AccuLED Optics™ system provides uniform and energy conscious illumination to walkways, parking lots, roadways, building areas and security lighting applications. IP66 rated and UL/cUL Listed for wet locations.

Catalog #	
Project	
Comments	
Prepared by	
Type	"SL1", "SL2", "SL3", "SL4"
Date	

SPECIFICATION FEATURES

Construction
Extruded aluminum driver enclosure thermally isolated from Light Squares for optimal thermal performance. Heavy-wall, die-cast aluminum end caps enclose housing and die-cast aluminum heat sinks. A unique, patent pending interlocking housing and heat sink provides scalability with superior structural rigidity. 3G vibration tested and rated. Optional tool-less hardware available for ease of entry into electrical chamber. Housing is IP66 rated.

Optics
Patented, high-efficiency injection-molded AccuLED Optics technology. Optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT 70 CRI. Optional 3000K, 5000K and 6000K CCT.

Electrical
LED drivers are mounted to removable tray assembly for ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 480V is compatible for use with 480Y/Wye systems only. Standard with 0-10V dimming. Shipped standard with Eaton proprietary circuit module designed to withstand 10kV of transient line surge.The Galleon LED luminaire is suitable for operation in -40°C to 40°C ambient environments. For applications with ambient temperatures exceeding 40°C, specify the HA (High Ambient) option. Light Squares are IP66 rated. Greater than 90% lumen maintenance expected at 60,000 hours. Available in standard 1A drive current and optional 600mA, 800mA and 1200mA drive currents (nominal).

Mounting
STANDARD ARM MOUNT:
Extruded aluminum arm includes internal bolt guides allowing for easy positioning of fixture during mounting. When mounting two or more luminaires at 90° and 120° apart, the EA extended arm may be required. Refer to the arm mounting requirement table. Round pole adapter included. For wall mounting, specify wall mount bracket option. QUICK MOUNT ARM: Adapter is bolted directly to the pole. Quick mount arm slide into place on the adapter and is secured via two screws, facilitating quick and easy installation.The versatile, patent pending, quick mount arm accommodates multiple drill patterns ranging from 1-1/2" to 4-7/8". Removal of the door on the quick mount arm enables wiring of the fixture without having to access the driver compartment. A knock-out enables round pole mounting.

Finish
Housing finished in super durable TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is powder coated black. Standard housing colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available.

Warranty
Five-year warranty.

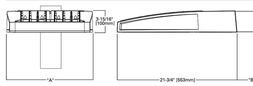
GLEON
GALLEON LED

1-10 Light Squares
Solid State LED

AREA/SITE LUMINAIRE

LuminaAlle Technology LOCK & LOAD

DIMENSIONS



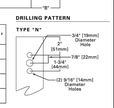
DIMENSION DATA

Number of Light Squares	'A' Width	'B' Standard Arm Length	'B' Optional Arm Length	Weight with Arm (lbs.)	EPA with Arm * (Sq. Ft.)
1-4	15-1/2" (394mm)	7" (178mm)	10" (254mm)	33 (15.0 kgs.)	0.90
5-6	21-5/8" (549mm)	7" (178mm)	10" (254mm)	44 (20.0 kgs.)	1.00
7-8	27-5/8" (702mm)	7" (178mm)	13" (330mm)	54 (24.5 kgs.)	1.07
9-10	33-3/4" (857mm)	7" (178mm)	16" (406mm)	63 (28.6 kgs.)	1.12

NOTES: 1. Optional arm length to be used when mounting two fixtures at 90° on a single pole. 2. EPA calculated with optional arm length.

DRILLING PATTERN

TYPE "N"



CERTIFICATION DATA
UL/cUL Listed
Design Lights Consortium® Qualified*
IP66 Rated
ISO 9001
LM79 / LM80 Compliant
UL/cUL Wet Location Listed

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V, 50/60Hz & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Max. Temperature
50°C Max. Temperature (HA Option)

EATON Powering Business Worldwide

*www.designlights.org

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June 3, 2019 11:11 AM

McGraw-Edison

DESCRIPTION
The Impact Elite family of wall luminaires is the ideal complement to site design. Incorporating modular LightSquares technology, the Impact Elite luminaire provides outstanding uniformity and energy-conscious illumination. Combined with a rugged construction, the Impact Elite luminaire is the ideal facade and security luminaire for zones surrounding schools, office complexes, apartments and recreational facilities. UL/cUL listed for wet locations.

Catalog #	
Project	
Comments	
Prepared by	
Type	"SL5"
Date	

SPECIFICATION FEATURES

Construction
Heavy-wall, die-cast aluminum housing and removable hinged door frame for precise tolerance control and repeatability. Hinged door inset for clean mating with housing surface and secured via two captive fasteners. Optional tamper-resistant Torx™ head fasteners offer vandal resistant access to the electrical chamber.

Optics
Choice of 10 patented, high-efficiency AccuLED Optics™ distributions. Optics are precisely designed to shape the light output, maximizing efficiency and application spacing. AccuLED Optics technology creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 3000K, 5000K and 5700K CCT.

Electrical
LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less than 20% harmonic distortion, and are suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightSquares feature an IP66 enclosure rating and maintain greater than 90% lumen maintenance at 60,000 hours per IESNA TM-21. Emergency egress options for -20°C ambient environments and occupancy sensor available.

Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" j-box or wall with the Impact Elite "Hook-N-Lock" mechanism for quick installation. Secured with two captive corrosion resistant black oxide coated allen head set screws concealed but accessible from bottom of fixture.

Finish
Cast components finished in a five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult the McGraw-Edison Architectural Colors brochure for the complete selection.

Warranty
Five-year warranty.

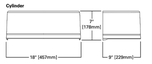
ISC/ISS/IST/ISW
IMPACT ELITE LED

1 LightSquare
Solid State LED

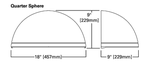
WALL MOUNT LUMINAIRE

DIMENSIONS

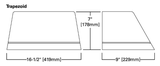
Cylinder



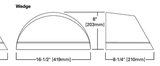
Quarter Sphere



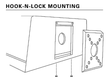
Trapezoid



Wedge



HOOK-N-LOCK MOUNTING



CERTIFICATION DATA
UL/cUL Listed
LM79 / LM80 Compliant
IP66 LightSquare
Design Lights Consortium® Qualified*
ISO 9001

ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V, 50/60Hz & 60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

SHIPPING DATA
Approximate Net Weight:
18 lbs. (8 kgs.)

EATON Powering Business Worldwide

*www.designlights.org

TD514030EN
July 23, 2019 4:13 PM

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
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Pearl COMPANIES

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DATE: 09.12.19

REVISIONS 6

2 FDP RESUBMITTAL	09.11.19
6 REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

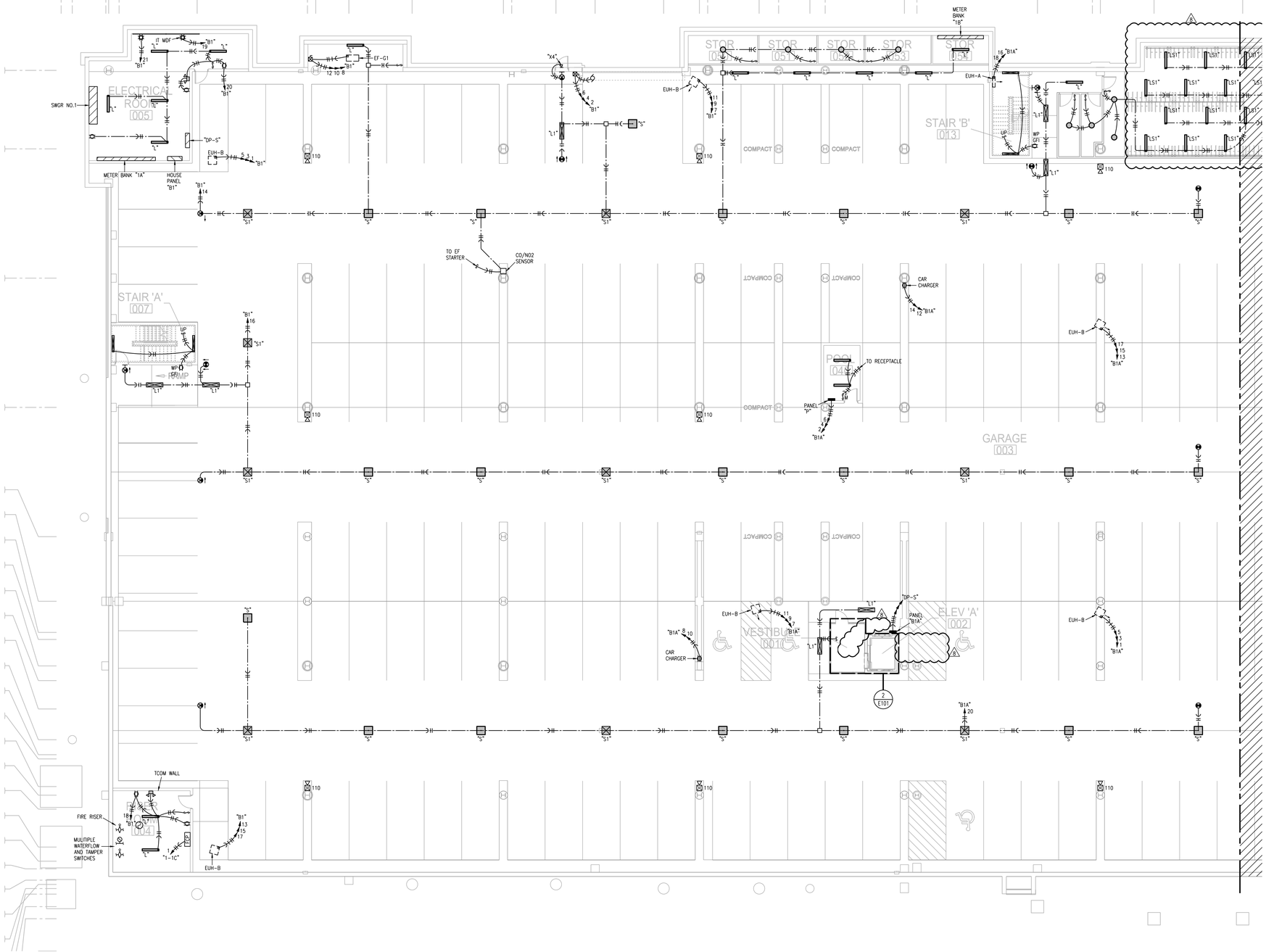
E001

SITE PHOTOMETRIC PLAN

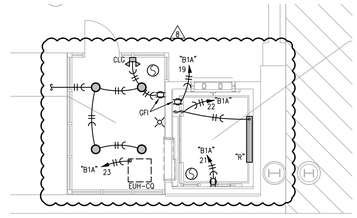
LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com
LSA PROJECT NO. 1904023

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

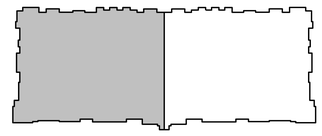
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 PARTIAL GARAGE PLAN
3/32"=1'-0" ELECTRICAL NORTH



2 PARTIAL GARAGE PLAN TYP. ELEVATOR PIT/LOBBY
3/16"=1'-0" ELECTRICAL NORTH



KEY PLAN
NO SCALE NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI RICHARD R. BEARDMORE NUMBER PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

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9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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REVISIONS	
1 PERMIT COMMENTS	09.06.19
2 REVISION 1	12.20.19
3 REVISION 2	1.24.20
4 REVISION 3	04.03.20
DWG BY	RRB
TR¡ PROJECT NO.	18-046

SHEET NO.

E101

PARTIAL GARAGE PLAN - ELECTRICAL

NOTES:

1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
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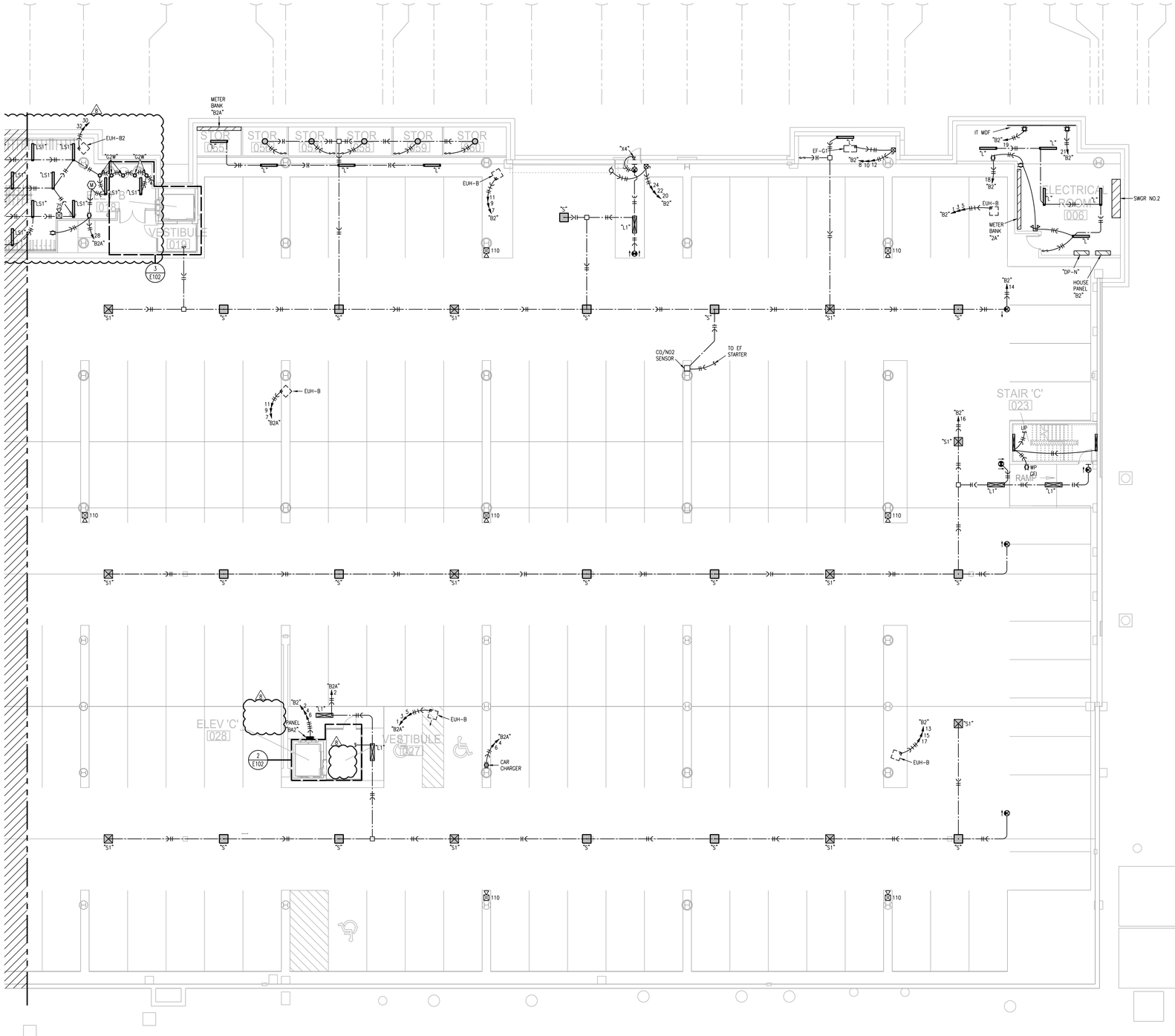
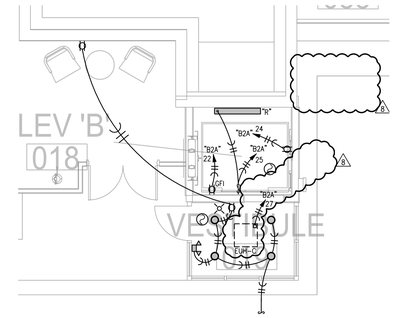
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:

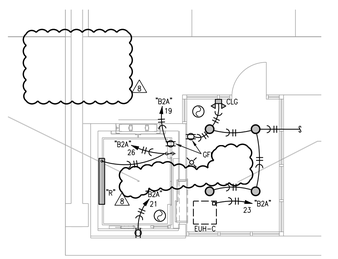
(1) TO LIGHTING CONTROL PANEL.



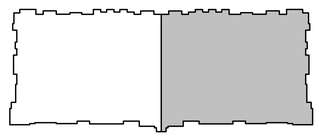
1 PARTIAL GARAGE PLAN
3/32"=1'-0" ELECTRICAL NORTH



3 PARTIAL GARAGE PLAN TYP. ELEVATOR PIT/LOBBY
3/16"=1'-0" ELECTRICAL NORTH



2 PARTIAL GARAGE PLAN TYP. ELEVATOR PIT/LOBBY
3/16"=1'-0" ELECTRICAL NORTH



KEY PLAN
NO SCALE NORTH

STATE OF MISSOURI RICHARD R. BEARDMORE NUMBER PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

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REVISIONS

#		
1	PERMIT COMMENTS	09.06.19
2	REVISION 1	12.20.19
3	REVISION 2	1.24.20
4	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E102

PARTIAL GARAGE PLAN - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

NOTES:
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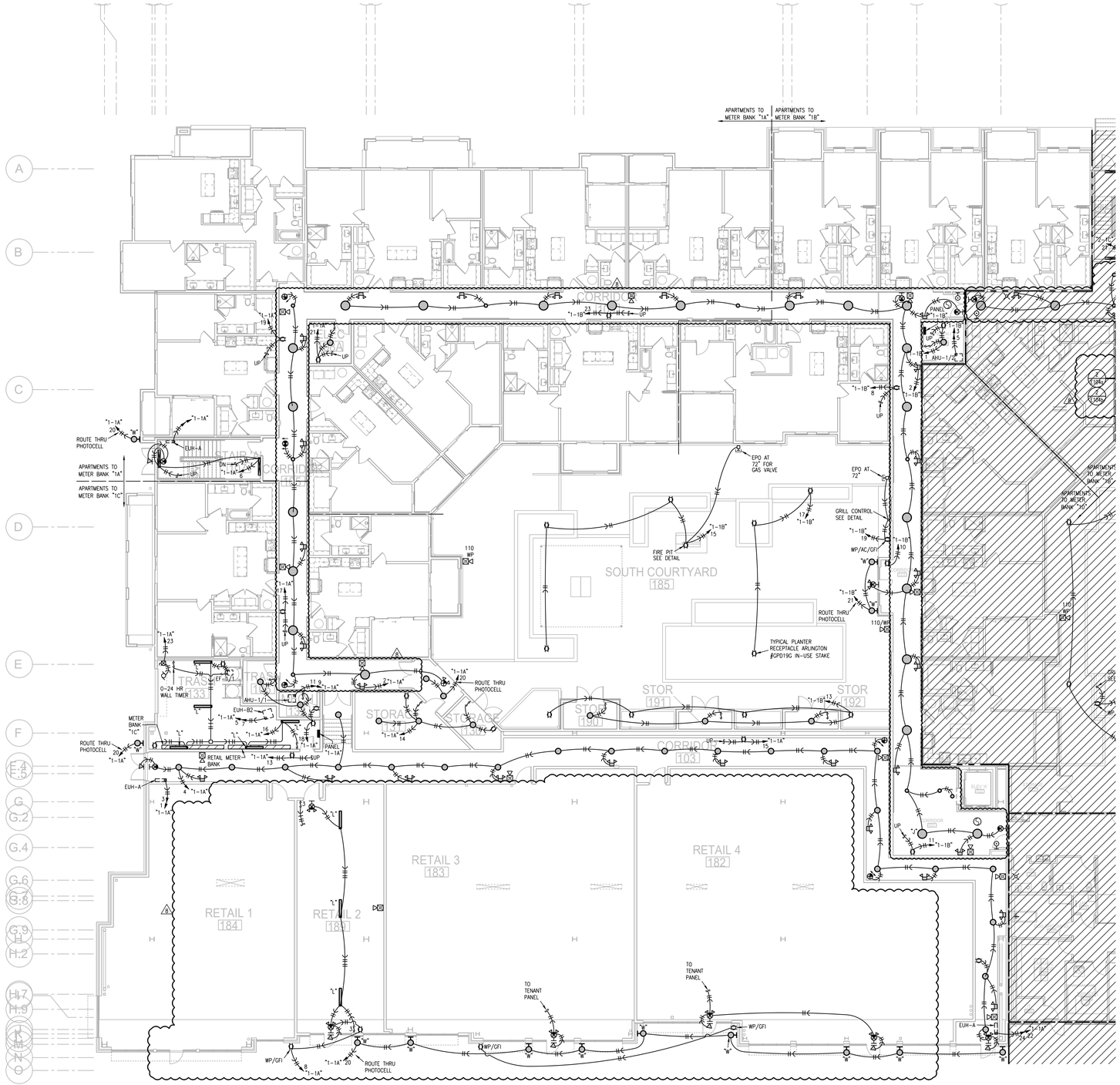
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

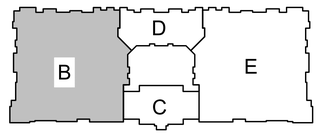
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 FIRST FLOOR PLAN - AREA B

3/32"=1'-0" ELECTRICAL

NORTH



KEY PLAN

NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

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DATE: 09.12.19

REVISIONS

6	REVISION 1	12.20.19
8	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

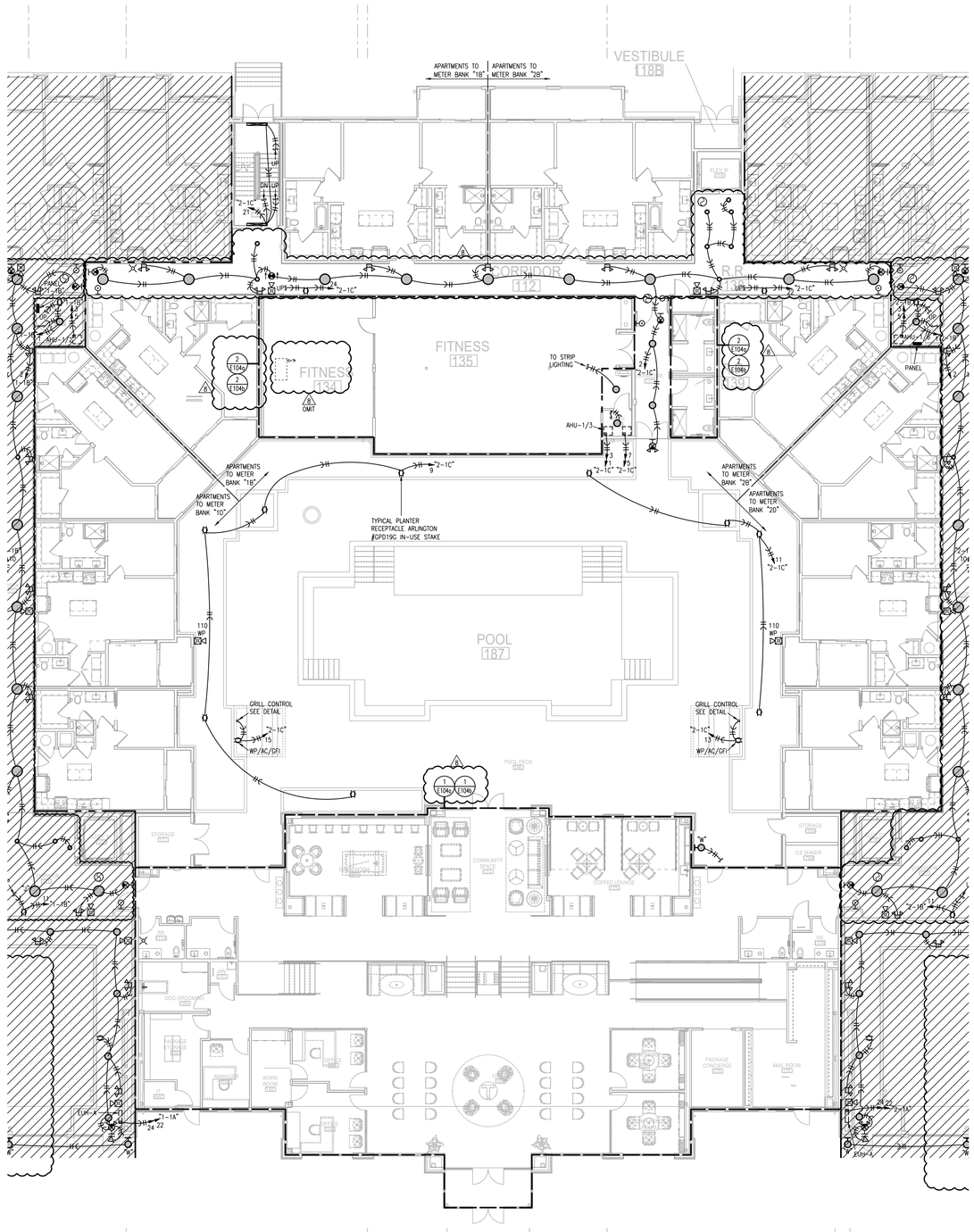
SHEET NO.

E103

FIRST FLOOR PLAN - AREA B - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



1 **FIRST FLOOR PLAN - AREA C/D**
3/32"=1'-0" POWER

NORTH

NOTES:
1. ALL ⊖ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
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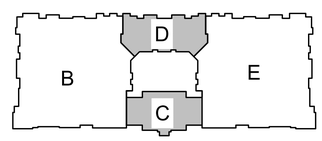
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

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TR¡ Architects
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REVISIONS 4

2 REVISION 1	12.20.19
3 REVISION 3	04.03.20

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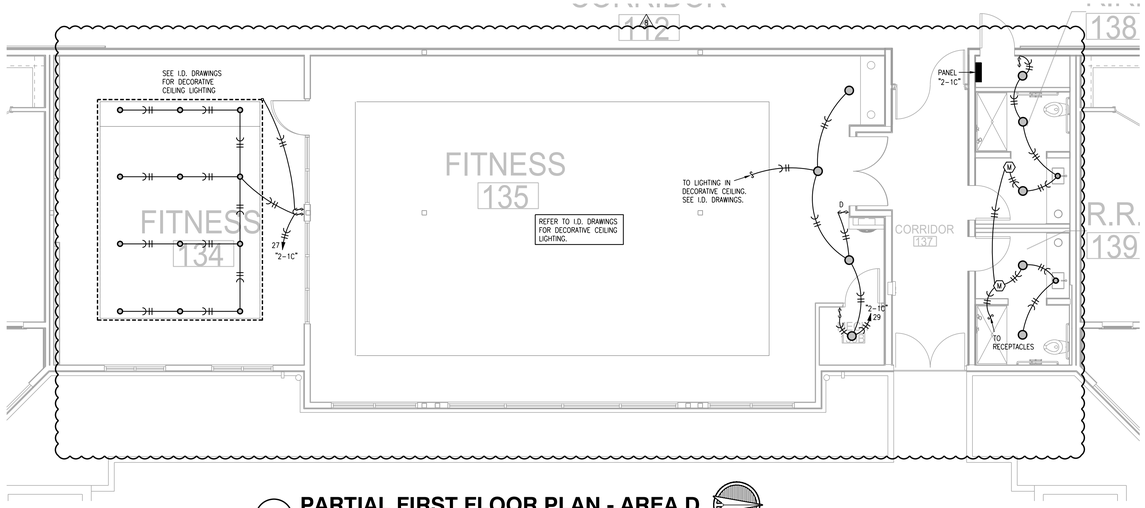
TR¡ PROJECT NO. 18-046

SHEET NO.

E104

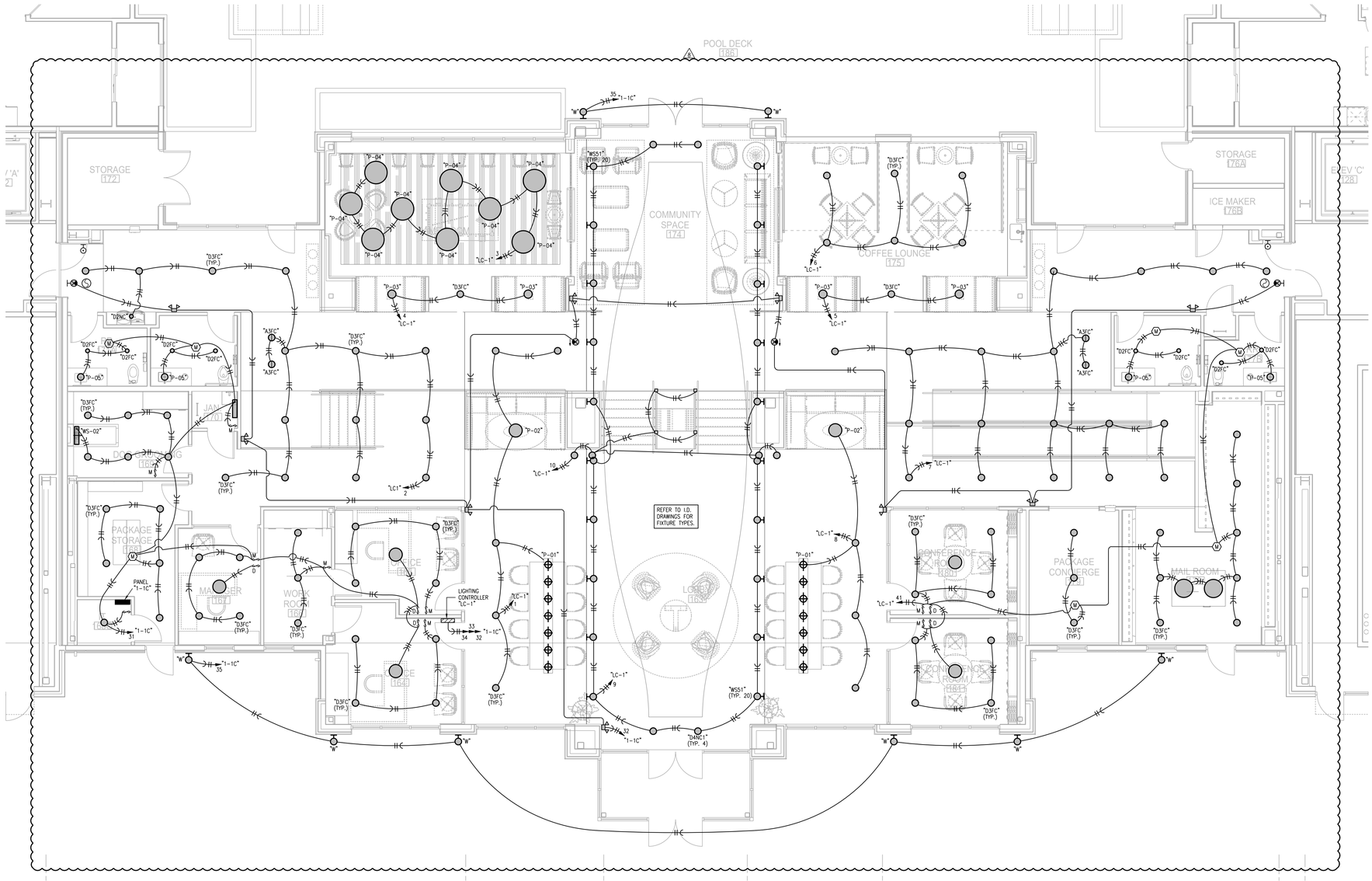
FIRST FLOOR PLAN - AREA C/D - ELECTRICAL



2 PARTIAL FIRST FLOOR PLAN - AREA D

3/16"=1'-0" — LIGHTING

NORTH



1 FIRST FLOOR PLAN - AREA C

3/16"=1'-0" — ELECTRICAL

NORTH

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
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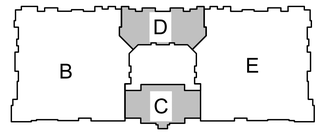
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:
(1) TO LIGHTING CONTROL PANEL.



KEY PLAN

NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI — RICHARD R. BEARDMORE — NUMBER PE-2009018961 — PROFESSIONAL ENGINEER

4-3-20

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

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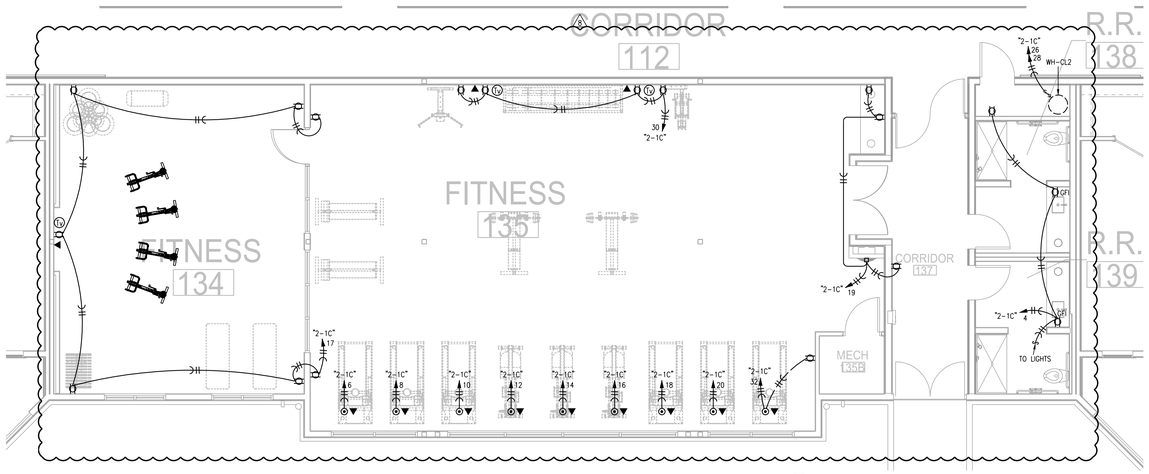
DATE:	09.12.19
REVISIONS (A)	
(A) REVISION 1	12.20.19
(B) REVISION 3	04.03.20
DWG BY	RRB
TR¡ PROJECT NO.	18-046

SHEET NO.

E104a

FIRST FLOOR PLAN - AREA D - LIGHTING



2 PARTIAL FIRST FLOOR PLAN - AREA D

3/16"=1'-0" — LIGHTING

NORTH

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
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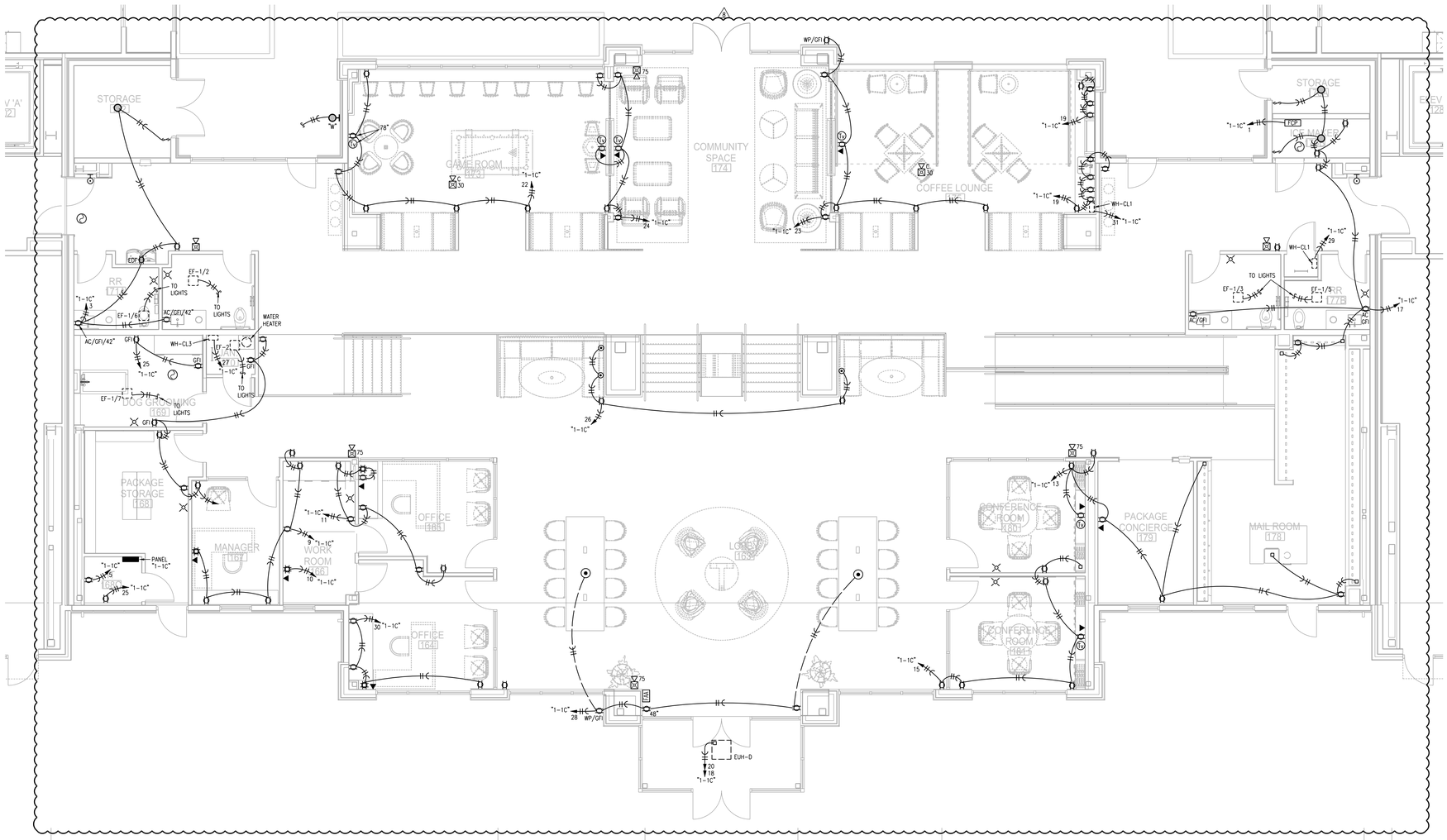
12. "DP-1" DENOTES DISTRIBUTION PANEL.

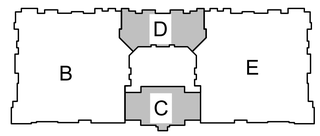
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 FIRST FLOOR PLAN - AREA C

3/16"=1'-0" — ELECTRICAL

NORTH



KEY PLAN

NO SCALE

NORTH

LS&A
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Topeka, Kansas 66614-3974
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LSA PROJECT NO. 1904023

STATE OF MISSOURI — RICHARD R. BEARDMORE — PROFESSIONAL ENGINEER

4-3-20

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
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REVISIONS

2 REVISION 1	12.20.19
3 REVISION 3	04.03.20

DWG BY: RRB

TR¡ PROJECT NO.: 18-046

SHEET NO.

E104b

FIRST FLOOR PLAN - AREA D - LIGHTING

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
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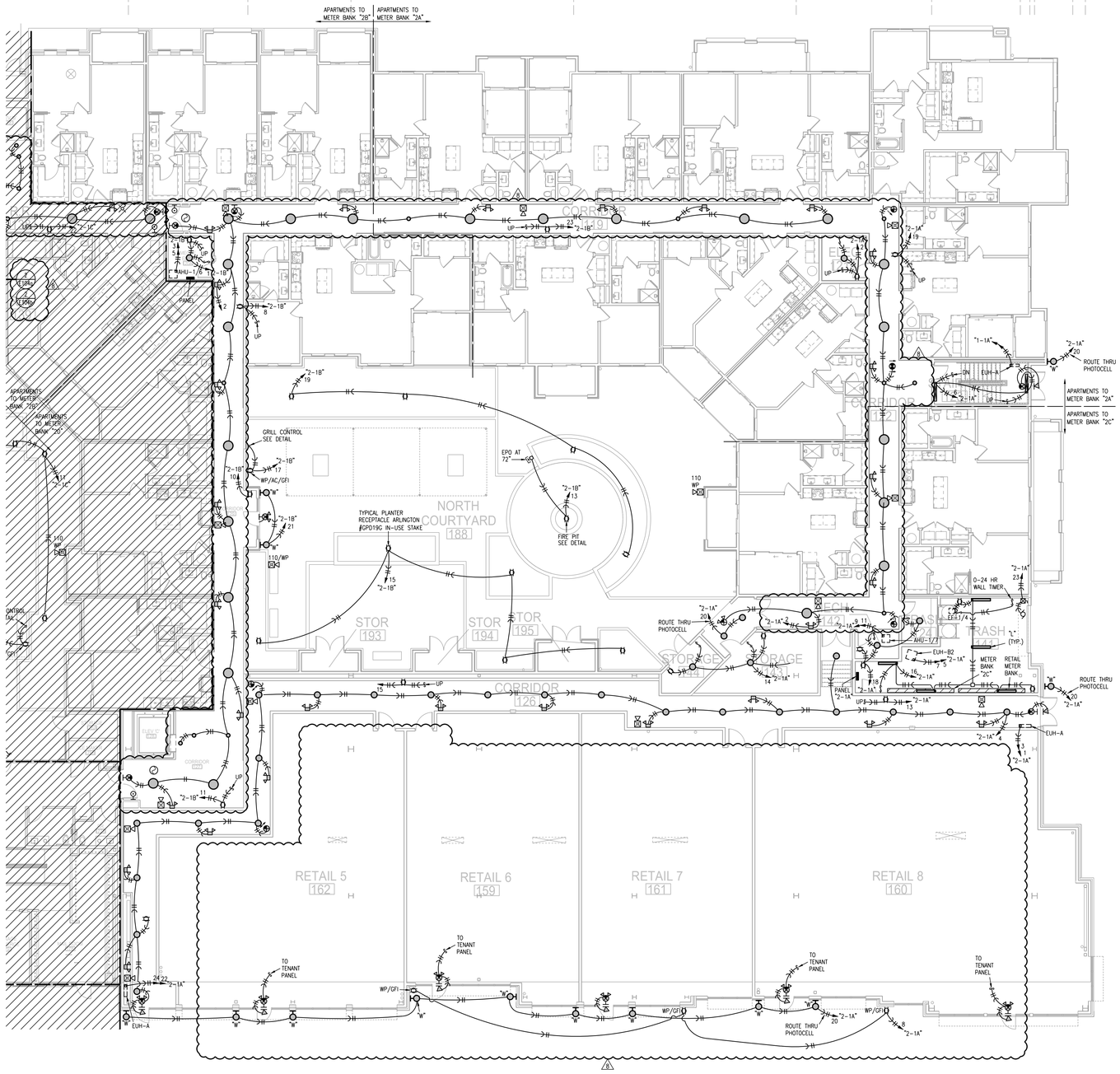
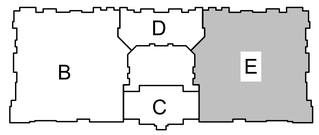


1 **FIRST FLOOR PLAN - AREA E** — ELECTRICAL
3/32"=1'-0"



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD L. BEARDMORE
NUMBER 2010018761
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

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TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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REVISIONS 8

1	PERMIT COMMENTS	09.06.19
6	REVISION 1	12.20.19
8	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

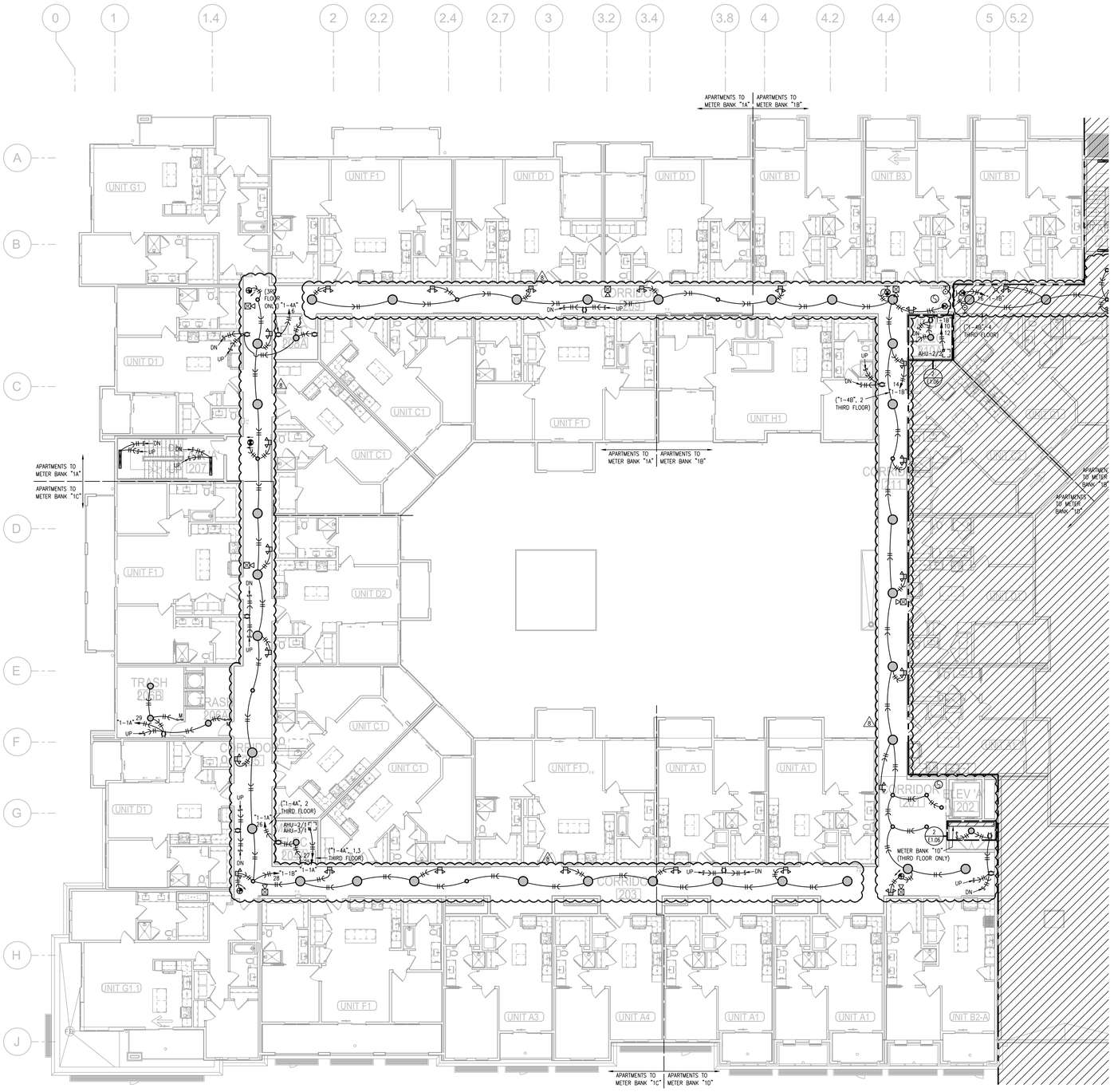
E105

FIRST FLOOR PLAN - AREA E - ELECTRICAL

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

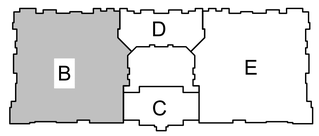
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 SECOND FLOOR PLAN - AREA B
3/32"=1'-0" (THIRD FLOOR SIMILAR) ELECTRICAL

NORTH

2 PARTIAL THIRD FLOOR PLANS
3/32"=1'-0" ELECTRICAL



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR;i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR;i ARCHITECTS

TR;i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 3	04.03.20

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TR;i PROJECT NO. 18-046

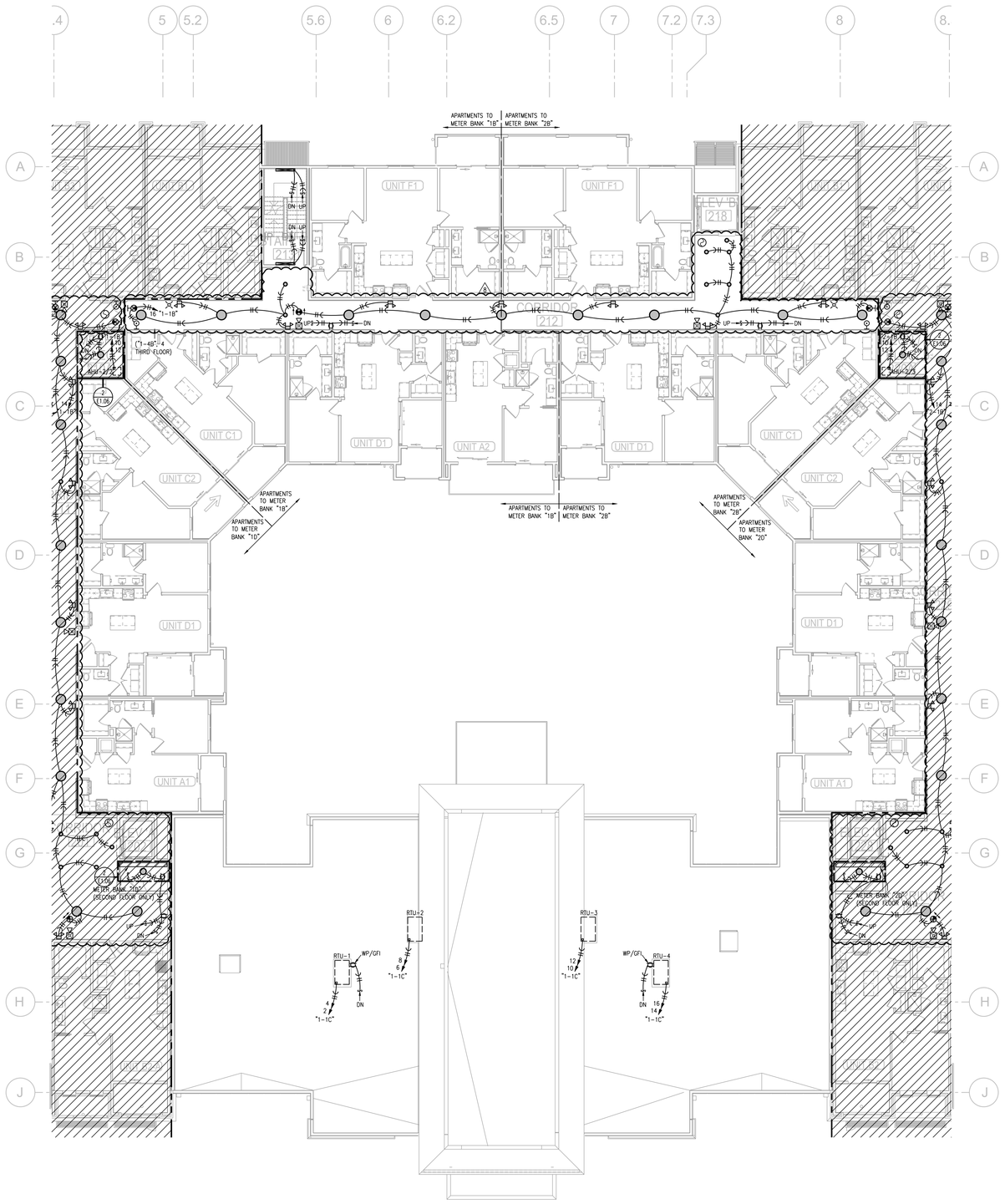
SHEET NO.

E106

SECOND FLOOR PLAN - AREA B - ELECTRICAL

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

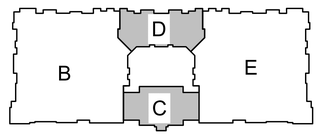


1 **SECOND FLOOR PLAN - AREA C/D**
3/32"=1'-0" (THIRD FLOOR SIMILAR) ELECTRICAL

NORTH

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:
(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018751
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E107

SECOND FLOOR PLAN - AREA C/D - ELECTRICAL

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
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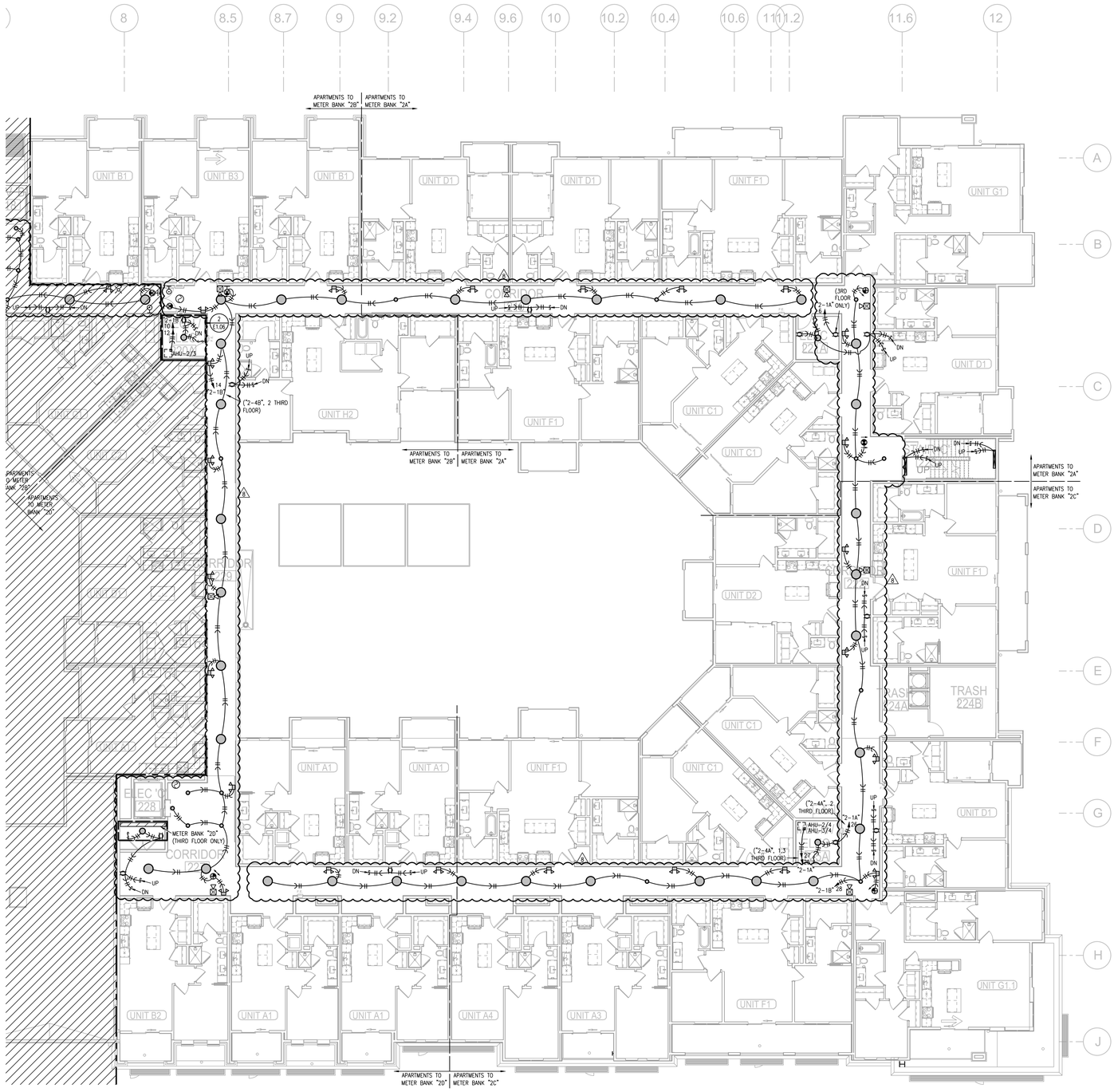
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

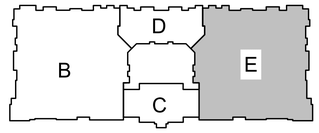
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 SECOND FLOOR PLAN - AREA E
3/32"=1'-0" (THIRD FLOOR SIMILAR) ELECTRICAL

NORTH

2 PARTIAL THIRD FLOOR PLANS
3/32"=1'-0" ELECTRICAL



KEY PLAN
NO SCALE

NORTH

TR¡ ARCHITECTS
BOB D CAMPBELL & COMPANY
RENAISSANCE INFRASTRUCTURE CONSULTING
BRINKMANN CONSTRUCTORS
LATIMER SOMMERS & ASSOCIATES
LATIMER SOMMERS & ASSOCIATES
LATIMER SOMMERS & ASSOCIATES

ARCHITECT
STRUCTURAL ENGINEER
CIVIL ENGINEER
GENERAL CONTRACTOR
MECHANICAL ENGINEER
PLUMBING ENGINEER
ELECTRICAL ENGINEER

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018751
PROFESSIONAL ENGINEER
4-3-20

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
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DATE:	09.12.19
REVISIONS (6)	
1 PERMIT COMMENTS	09.06.19
6 REVISION 3	04.03.20
DWG BY	RRB
TR¡ PROJECT NO.	18-046

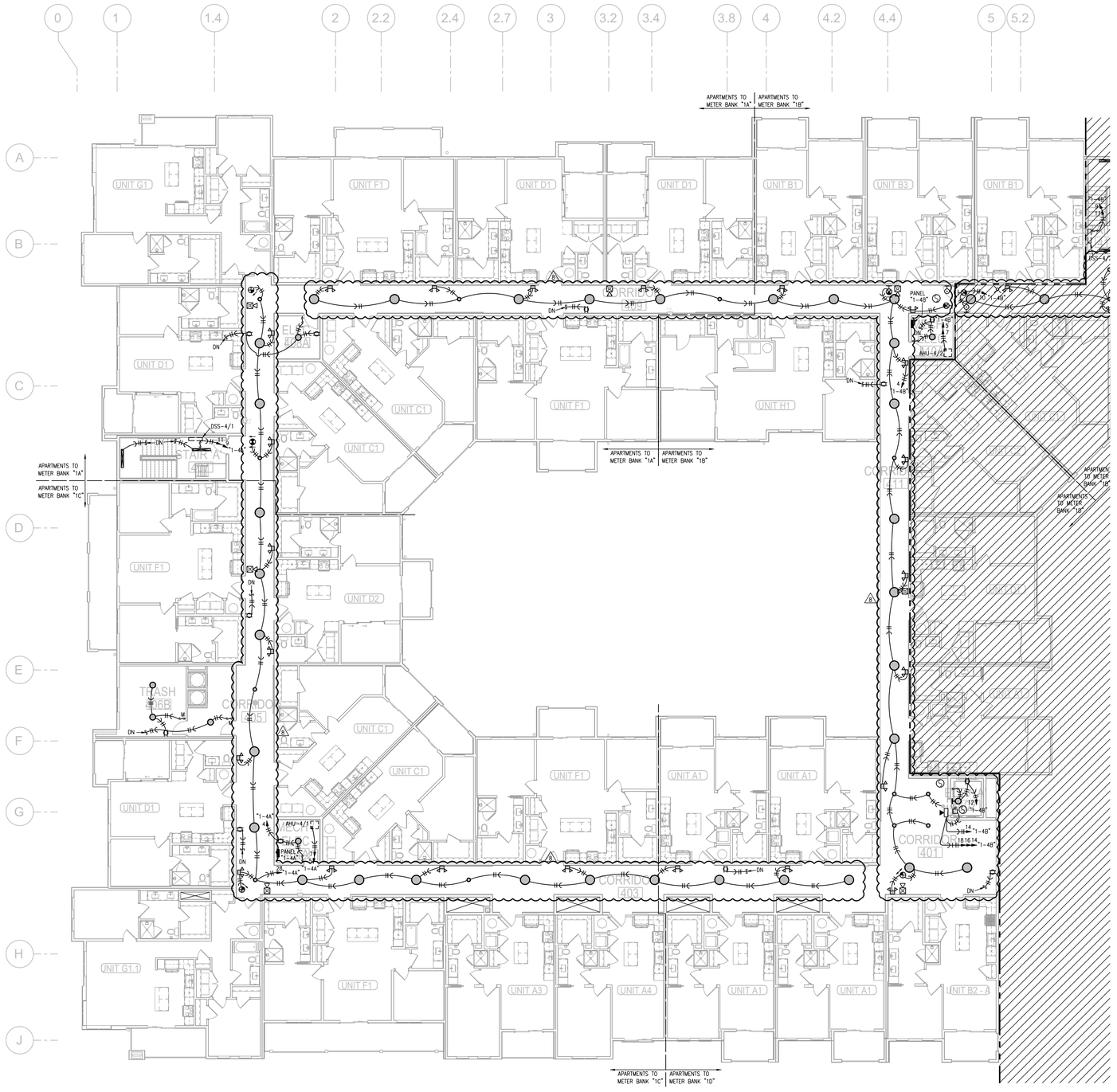
SHEET NO.

E108

SECOND FLOOR PLAN - AREA E - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



1 **FOURTH FLOOR PLAN - AREA B**
3/32"=1'-0"
ELECTRICAL

NORTH

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
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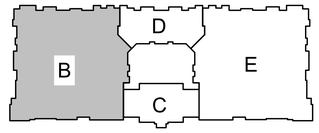
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:
(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDSLEE
NUMBER 2010018761
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

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9812 Manchester Road
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DATE:	09.12.19
REVISIONS 6	
1 PERMIT COMMENTS	09.06.19
6 REVISION 3	04.03.20
DWG BY	RRB
TR¡ PROJECT NO.	18-046

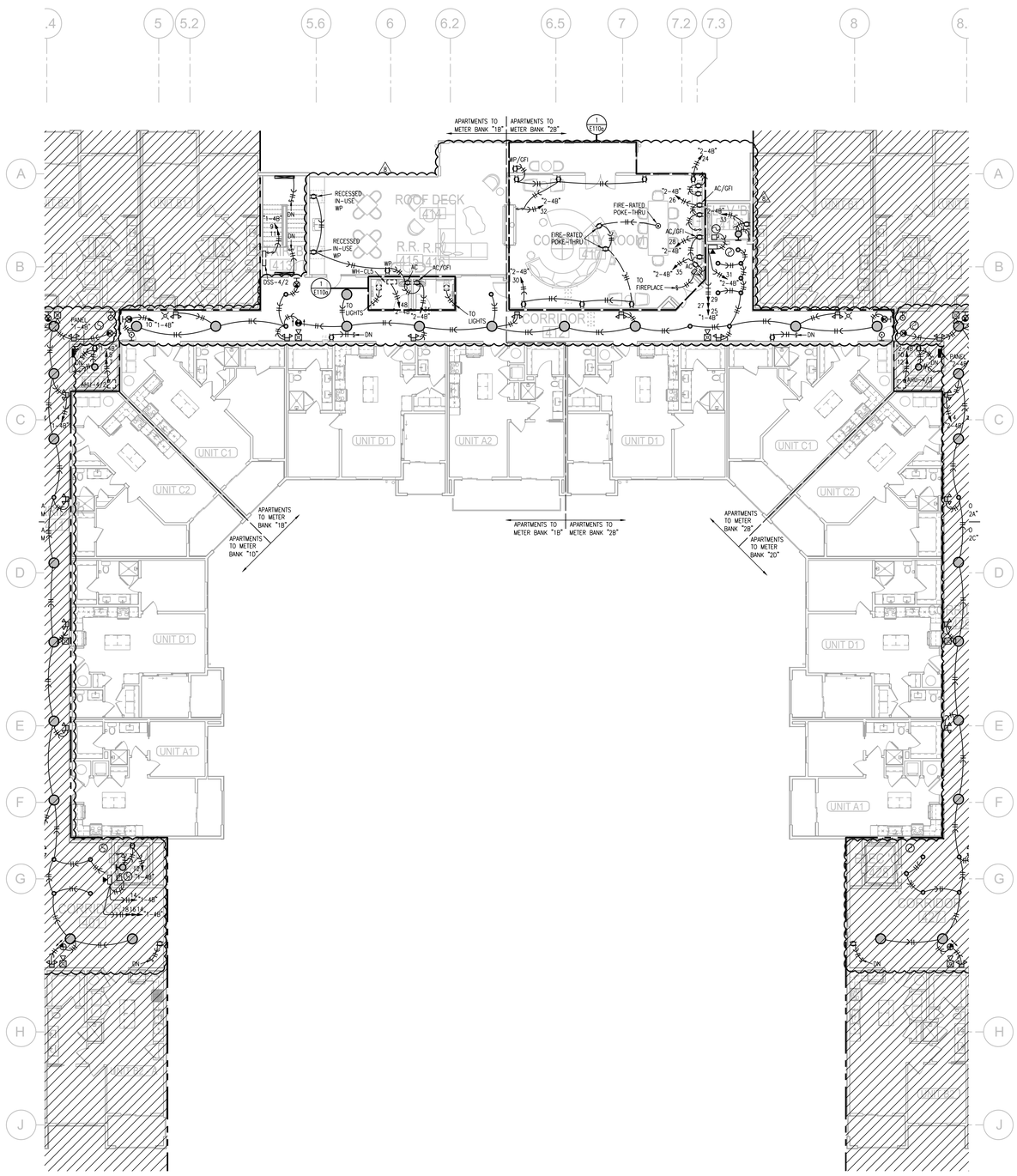
SHEET NO.

E109

FOURTH FLOOR PLAN - AREA B - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com

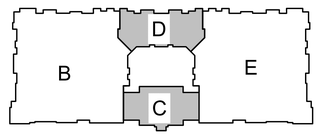
LSA PROJECT NO. 1904023



1 **FOURTH FLOOR PLAN - AREA C/D**
3/32"=1'-0"
ELECTRICAL
NORTH

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:
(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE
NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

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TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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DATE: 09.12.19

REVISIONS (A)

1	PERMIT COMMENTS	09.06.19
A	REVISION 1	12.20.19
B	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E110

FOURTH FLOOR PLAN - AREA C/D - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

NOTES:

1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
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5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
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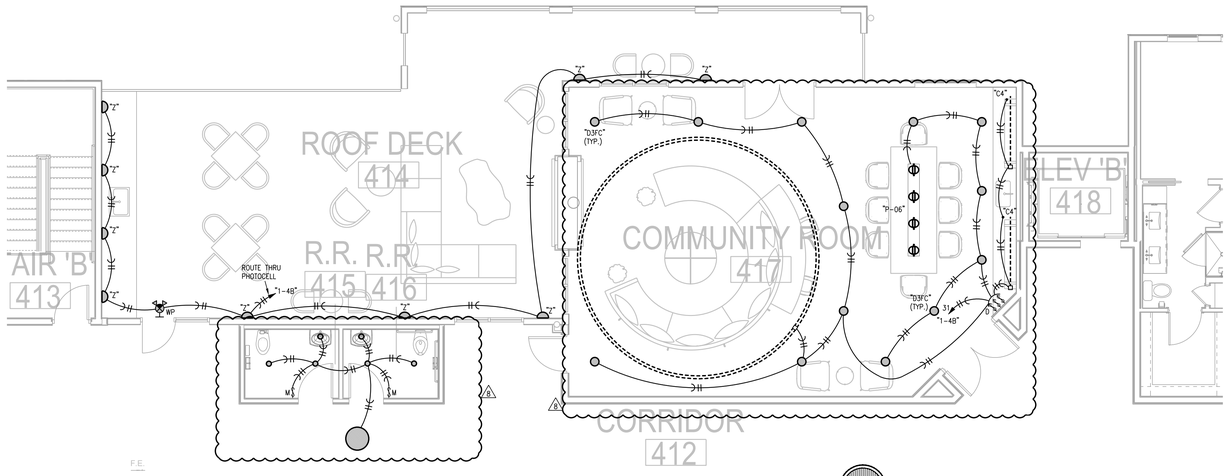
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

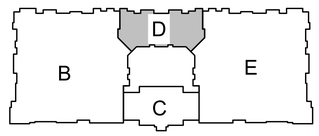
LEGEND:

(1) TO LIGHTING CONTROL PANEL.



1 **PARTIAL FOURTH FLOOR PLAN - AREA D**
3/16"=1'-0" LIGHTING

NORTH



KEY PLAN
NO SCALE

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018744
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119

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F: 314-395-9751
www.triarchitects.com

DATE: 09.12.19

REVISIONS (6)

(4) REVISION 1	12.20.19
(5) REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E110a

PARTIAL FOURTH FLOOR PLAN - AREA C/D - LIGHTING

NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
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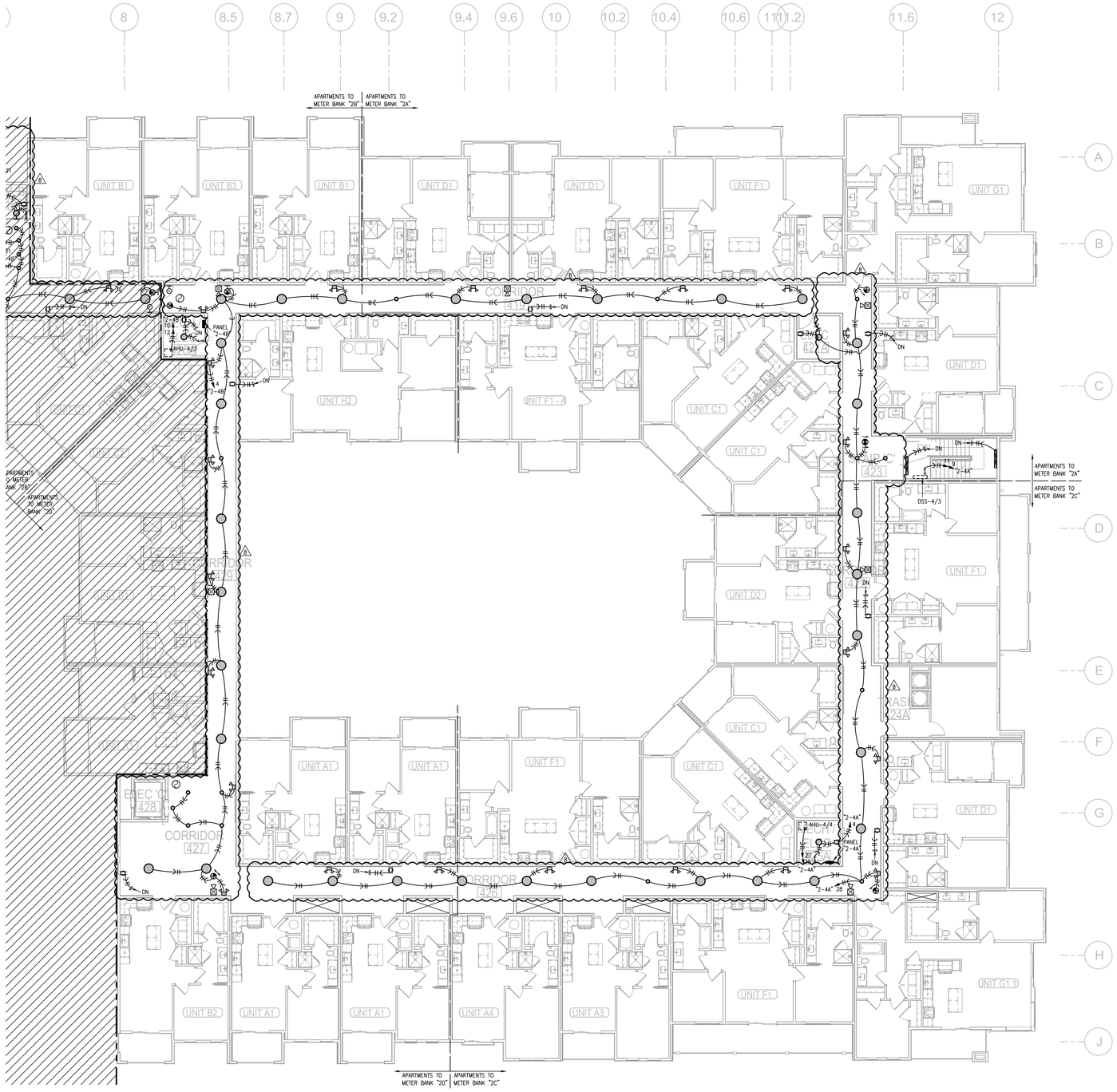
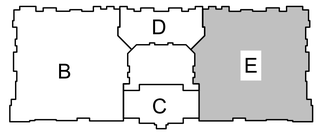
LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 **FOURTH FLOOR PLAN - AREA E**
3/32"=1'-0" ELECTRICAL

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TRi Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 09.12.19

REVISIONS 6

1	PERMIT COMMENTS	09.06.19
6	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

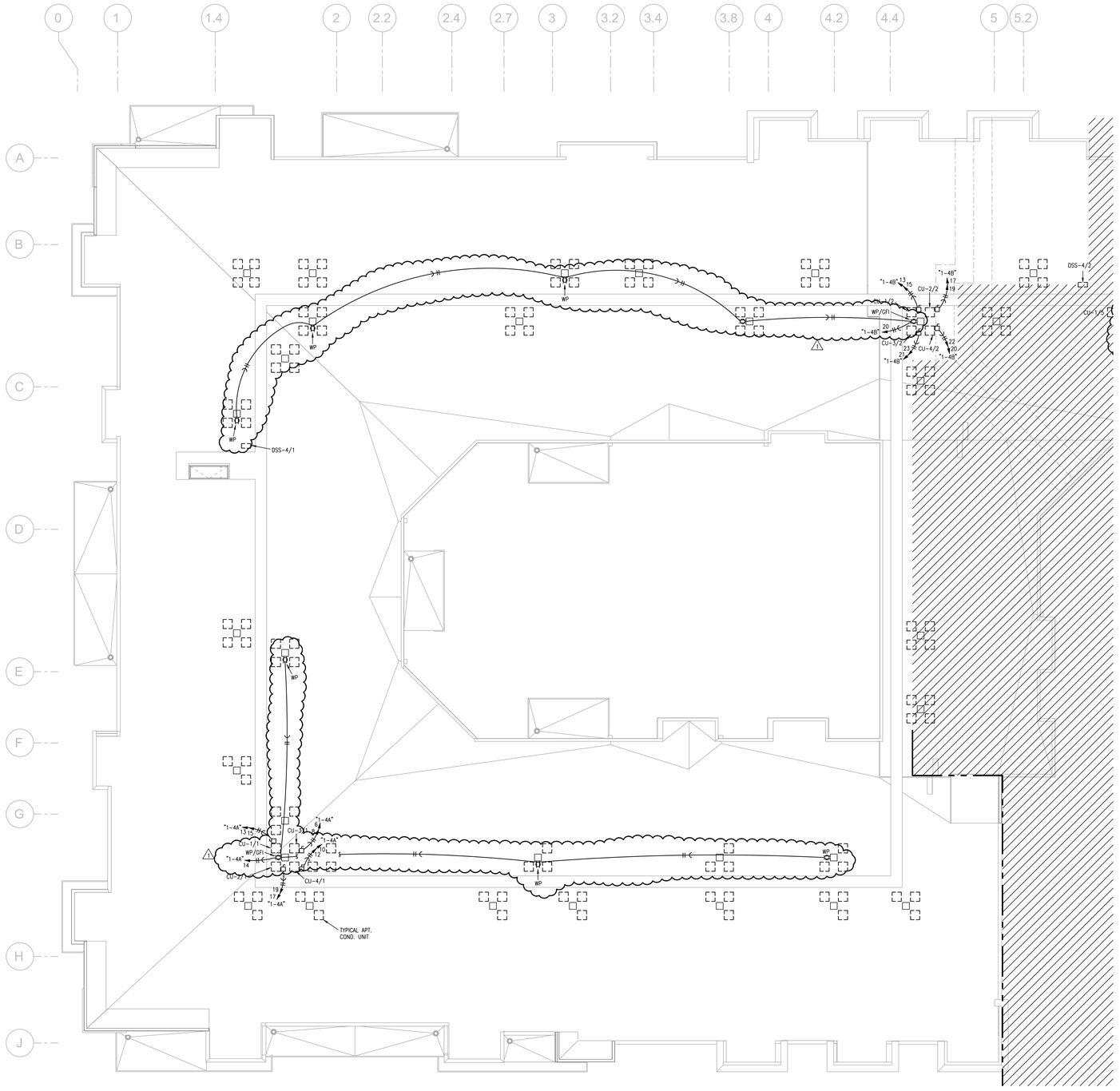
SHEET NO.

E111

FOURTH FLOOR PLAN - AREA E - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



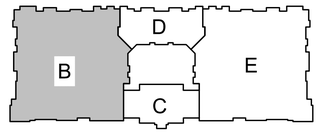
1 **ROOF PLAN - AREA B**
3/32"=1'-0" ELECTRICAL
NORTH

NOTES:

1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:

(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE
NORTH

STATE OF MISSOURI
RICHARD R. BEARCMORE
NUMBER 2007018744
PROFESSIONAL ENGINEER
9-6-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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DATE: 07.29.19

REVISIONS

1	PERMIT COMMENTS	09.06.19

DWG BY RRB

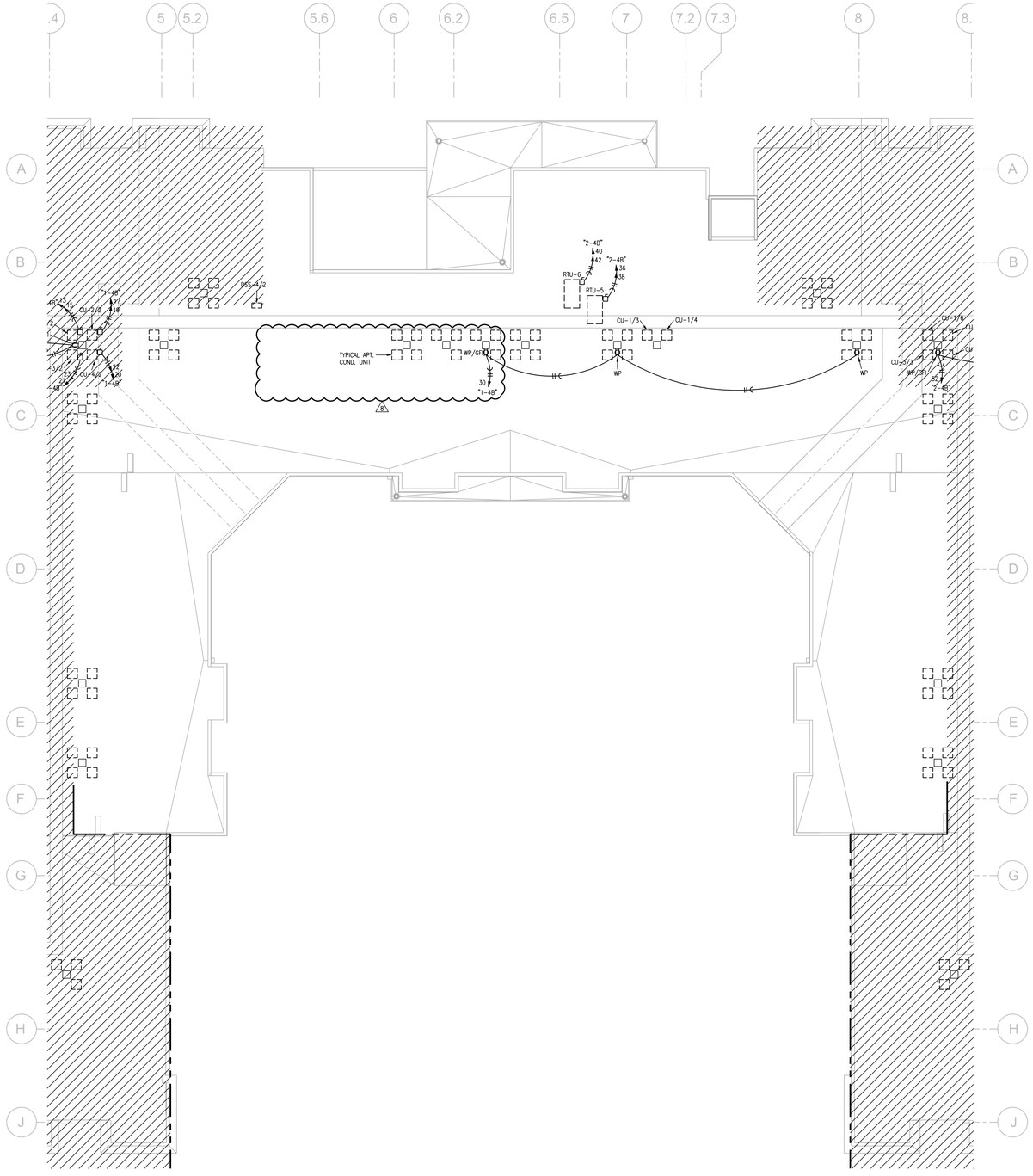
TR¡ PROJECT NO. 18-046

SHEET NO.

E112

ROOF PLAN - AREA B - ELECTRICAL

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



1 **ROOF PLAN - AREA D**
3/32"=1'-0" ELECTRICAL

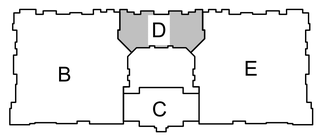
NORTH

NOTES:

1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:

(1) TO LIGHTING CONTROL PANEL.



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER 2010018761
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

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TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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DATE: 09.12.19

REVISIONS 2

1	PERMIT COMMENTS	09.06.19
2	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E113

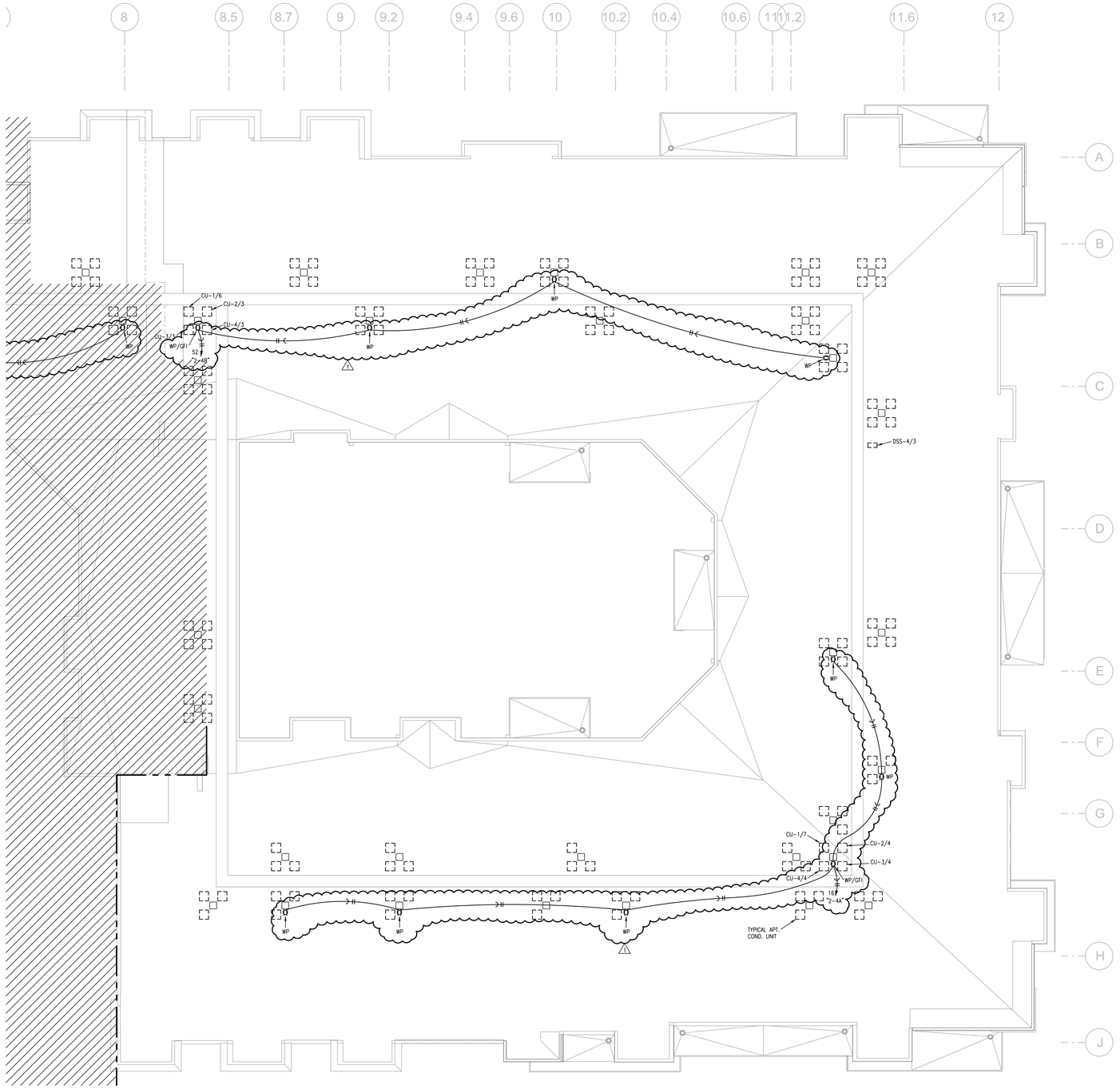
ROOF PLAN - AREA D - ELECTRICAL

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

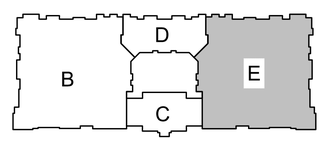
NOTES:
1. ALL ⊙ ARE TYPE "A" UNLESS NOTED OTHERWISE.
2. ALL STAIR LIGHTS ARE TYPE "L1" UNLESS NOTED OTHERWISE.
3. ALL ⊗ ARE TYPE "X1" UNLESS NOTED OTHERWISE.
4. ALL ⊗ ARE TYPE "X2" UNLESS NOTED OTHERWISE.
5. ALL ⊗ ARE TYPE "X5" UNLESS NOTED OTHERWISE.
6. CONNECT FIRE/SMOKE DAMPERS SHOWN ON MECHANICAL PLANS TO 120V. AND FIRE ALARM RELAY TO SHUT UPON SMOKE DETECTION IN CORRIDORS.
7. SEE UNIT PLANS FOR FURTHER WORK.
8. LIGHTS AT APT. ENTRY DOORS CONNECT TO APT. HOT CIRCUIT.
9. ALL AHU'S HAVE AUTO DAMPER/THERMOSTAT SYSTEM TO WIRE. SEE HVAC PLANS.
10. EXIT SIGNS SHALL BE READILY VISIBLE TO OCCUPANTS.
11. EXTERIOR LIGHTING TO BE ROUTED THRU PHOTOCELL.
12. "DP-1" DENOTES DISTRIBUTION PANEL.

LEGEND:
(1) TO LIGHTING CONTROL PANEL.



1 **ROOF PLAN - AREA E**
3/32"=1'-0" ELECTRICAL

NORTH



KEY PLAN
NO SCALE

NORTH

STATE OF MISSOURI
RICHARD R. BEARCHIEF
NUMBER
PROFESSIONAL ENGINEER
9-6-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

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TRi ARCHITECTS

TRi Architects
9612 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 07.29.19

REVISIONS 6

1	PERMIT COMMENTS	09.06.19

DWG BY RRB

TR¡ PROJECT NO. 18-046

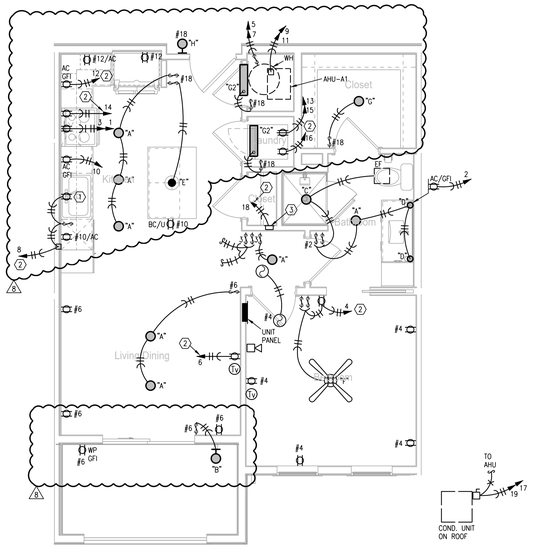
SHEET NO.

E114

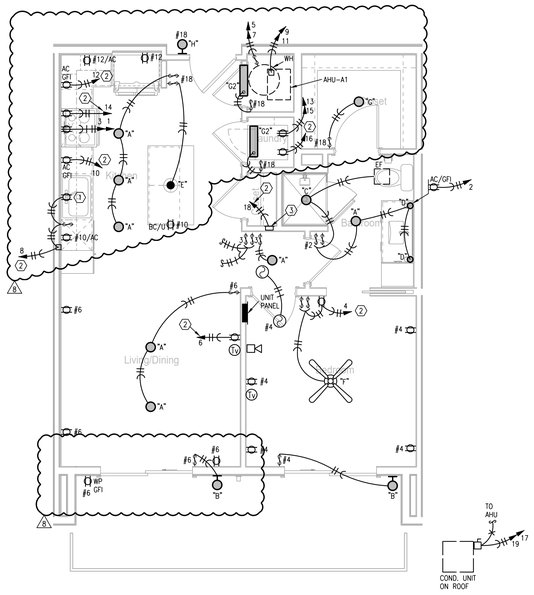
ROOF PLAN - AREA E - ELECTRICAL

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsapa@lsapa.com

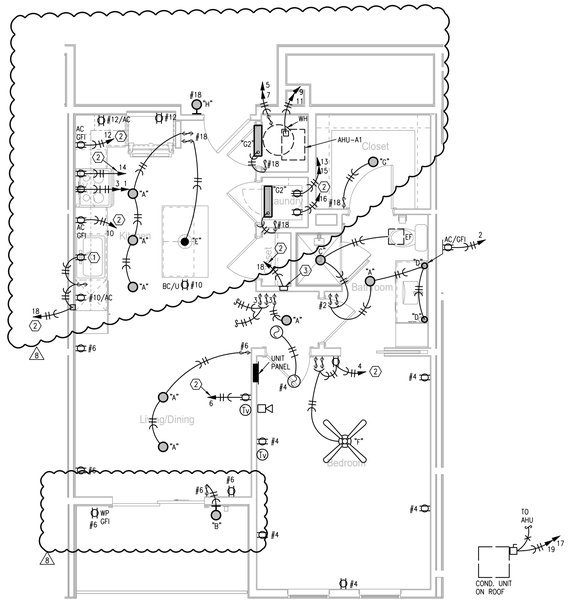
LSA PROJECT NO. 1904023



1 TYPICAL UNIT PLAN - A1
1/4"=1'-0" ELECTRICAL

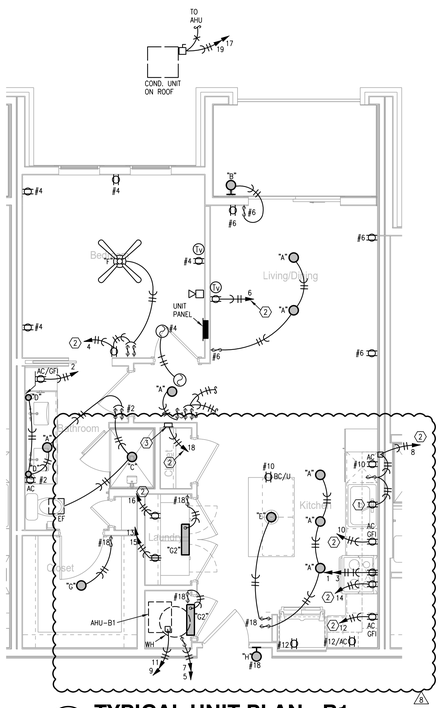


2 TYPICAL UNIT PLAN - A2
1/4"=1'-0" ELECTRICAL

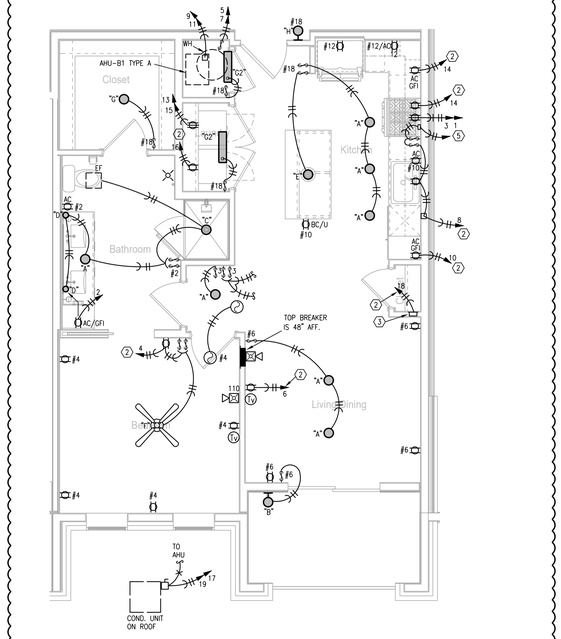


3 TYPICAL UNIT PLAN - A3
1/4"=1'-0" (UNIT A4 SIMILAR) ELECTRICAL

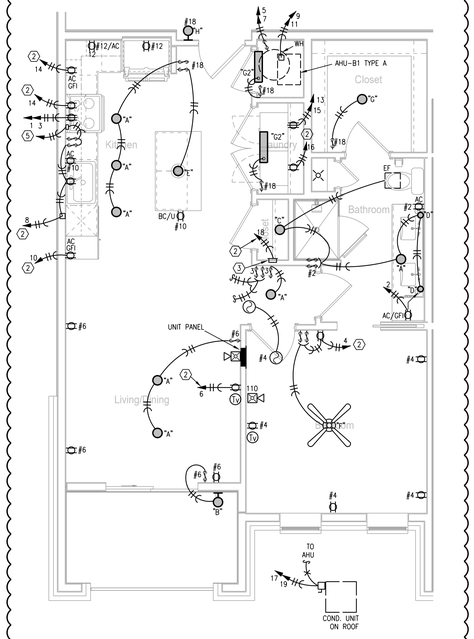
NOTE: SEE I.D. DRAWINGS FOR DIMENSIONED LIGHTING PLANS AND DETAILS.



4 TYPICAL UNIT PLAN - B1
1/4"=1'-0" (UNIT B3 SIMILAR) ELECTRICAL



5 TYPICAL UNIT PLAN - B2 TYPE A
1/4"=1'-0" ELECTRICAL



6 TYPICAL UNIT PLAN - B2
1/4"=1'-0" ELECTRICAL

NOTES:

1. TYPE "J" FIXTURE IN HALLWAYS ARE UNSWITCHED. MOUNT AT 72"AFF, VERIFY WITH ARCHITECT.
2. CEILING FAN SWITCHES PROVIDED WITH FAN. CONTROL LIGHT AND FAN SEPARATELY. INTENDED FOR SINGLE GANG BOX.
3. CENTER "H" PENDANT LIGHTS OVER BASE BACK WALL AND CENTERED EQUALLY LEFT TO RIGHT OVER SINK. THESE ARE SEPARATELY SWITCHED.
4. 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.
5. THERMOSTATS HAVE LOW VOLTAGE WIRE BACK TO AHU. CONDENSING UNITS HAVE LOW VOLTAGE WIRE BACK TO AHU.
6. (CO) = 120V. SMOKE/CO ALARM WITH BATTERY BACK-UP AND AUXILIARY CONTACT SO ALL SOUND TOGETHER.
7. ALL ARC-FAULT CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH CEILING FANS, COMPACT AND STANDARD FLUORESCENT LAMPS/FIXTURES AND OTHER ELECTRONIC DEVICES.
8. PROVIDE PROTECTION AT ELECTRICAL BOXES AT RATED CEILING MEMBRANES PER IBC 712.4.1.2(2). BOXES TO BE LISTED FOR RATED MEMBRANES, NOT EXCEED 16 SQUARE INCHES, NOT COMBINE FOR MORE THAN 100 SQUARE INCHES IN 100 SQUARE FEET AND ANNULAR SPACE NOT EXCEED 1/8".
9. FIRE ALARM HORN/STROBE CIRCUITS SHALL BE SIZED TO ACCEPT BEDROOM HORN/STROBES IN FUTURE INCLUDING WIRING AND PANEL CAPACITY.
10. ALL RANGES SERVED BY (3) #8 & (1) #10 AND 50A. RECEPTACLE.
11. ALL WATER HEATERS SERVED BY (3) #10
12. ALL WASHERS AND REFRIGERATORS HAVE RECEPTACLES AT 48".
13. SEE HVAC SCHEDULE AND SHOP DRAWINGS FOR AHU AND HEAT PUMP CIRCUITS.
14. 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.
16. EXTERIOR RECEPTACLES SHALL BE ARLINGTON #DBVM1C RECESSED TYPE.

LEGEND:

1. SWITCHED 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.
4. SMOKE ALARM TO HAVE STROBES.
5. CONNECT RANGE HOOD TO TWO SWITCHES ABOVE COUNTER TO CONTROL LIGHT AND FAN.

ELECTRICAL SYMBOLS LEGEND;

- DUPLEX RECEPTACLE.
- 120/240V. RECEPTACLE. 30A. FOR DRYER, 50A. FOR RANGE.
- SW RECEPTACLE HALF SWITCHED.
- U USB CHARGING COMB. RECEPTACLE.
- ▼ DATA OUTLET.
- ▽ VOICE OUTLET.
- TV COMBINATION CATV/DATA OUTLET.
- AC ABOVE COUNTER
- BC BELOW COUNTER
- LOW FREQUENCY HORN

STATE OF MISSOURI
RICHARD R. BEARDMORE
PROFESSIONAL ENGINEER
4-3-20

TR;i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Summit at West Pryor

TR;i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 1	12.20.19
3	REVISION 3	04.03.20

DWG BY RRB

TR;i PROJECT NO. 18-046

SHEET NO.

E201

TYPICAL UNIT PLANS - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

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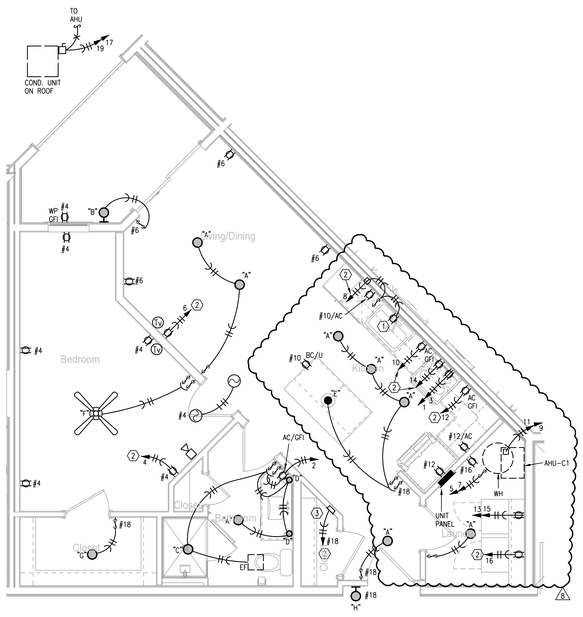
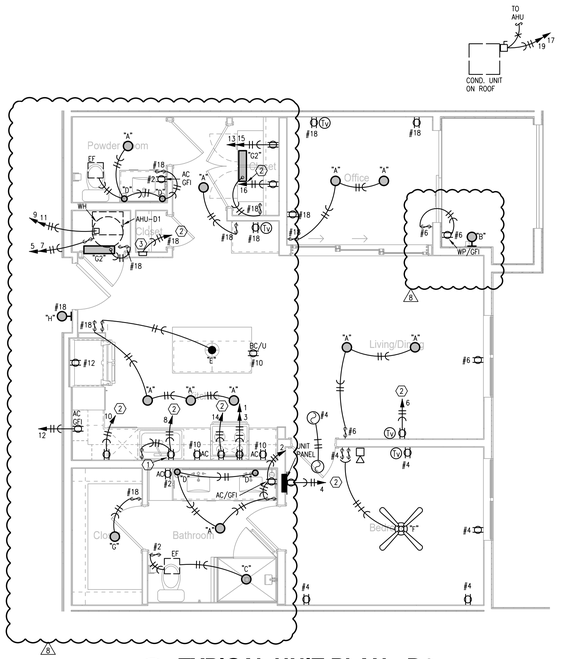
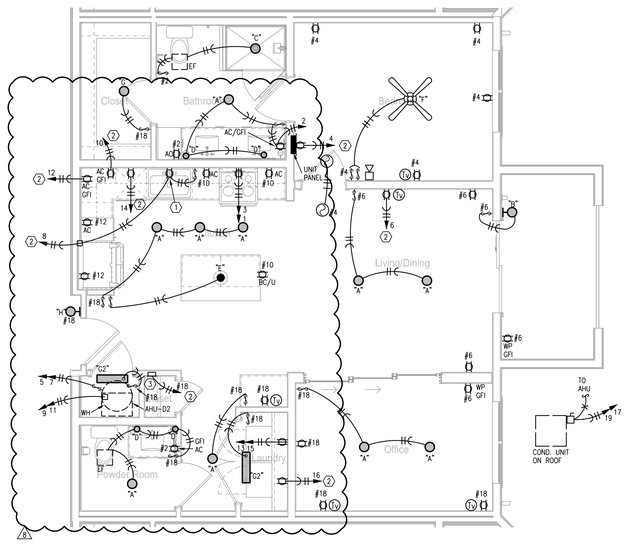


1 **TYPICAL UNIT PLAN - C1**
1/4"=1'-0" (UNIT C2 SIMILAR) ELECTRICAL



2 **TYPICAL UNIT PLAN - D1**
1/4"=1'-0" ELECTRICAL



3 **TYPICAL UNIT PLAN - D2**
1/4"=1'-0" ELECTRICAL

NOTES:

1. TYPE "J" FIXTURE IN HALLWAYS ARE UNSWITCHED. MOUNT AT 72"AFF, VERIFY WITH ARCHITECT.
2. CEILING FAN SWITCHES PROVIDED WITH FAN. CONTROL LIGHT AND FAN SEPARATELY. INTENDED FOR SINGLE GANG BOX.
3. CENTER "H" PENDANT LIGHTS OVER BASE BACK WALL AND CENTERED EQUALLY LEFT TO RIGHT OVER SINK. THESE ARE SEPARATELY SWITCHED.
4. 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.
5. THERMOSTATS HAVE LOW VOLTAGE WIRE BACK TO AHU. CONDENSING UNITS HAVE LOW VOLTAGE WIRE BACK TO AHU.
6. (SD) = 120V. SMOKE/CO ALARM WITH BATTERY BACK-UP AND AUXILIARY CONTACT SO ALL SOUND TOGETHER.
7. ALL ARC-FAULT CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH CEILING FANS, COMPACT AND STANDARD FLUORESCENT LAMPS/FIXTURES AND OTHER ELECTRONIC DEVICES.
8. PROVIDE PROTECTION AT ELECTRICAL BOXES AT RATED CEILING MEMBRANES PER IBC 712.4.1.2(2). BOXES TO BE LISTED FOR RATED MEMBRANES, NOT EXCEED 16 SQUARE INCHES, NOT COMBINE FOR MORE THAN 100 SQUARE INCHES IN 100 SQUARE FEET AND ANNULAR SPACE NOT EXCEED 1/8".
9. FIRE ALARM HORN/STROBE CIRCUITS SHALL BE SIZED TO ACCEPT BEDROOM HORN/STROBES IN FUTURE INCLUDING WIRING AND PANEL CAPACITY.
10. ALL RANGES SERVED BY (3) #8 & (1) #10 AND 50A. RECEPTACLE.
11. ALL WATER HEATERS SERVED BY (3) #10
12. ALL WASHERS AND REFRIGERATORS HAVE RECEPTACLES AT 48".
13. SEE HVAC SCHEDULE AND SHOP DRAWINGS FOR AHU AND HEAT PUMP CIRCUITS.
14. 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.
16. EXTERIOR RECEPTACLES SHALL BE ARLINGTON #DBVM1C RECESSED TYPE.

LEGEND:

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5. CONNECT RANGE HOOD TO TWO SWITCHES ABOVE COUNTER TO CONTROL LIGHT AND FAN.

ELECTRICAL SYMBOLS LEGEND;

- DUPLEX RECEPTACLE.
- 120/240V. RECEPTACLE. 30A. FOR DRYER, 50A. FOR RANGE.
- $_{SW}$ RECEPTACLE HALF SWITCHED.
- $_{U}$ USB CHARGING COMB. RECEPTACLE.
- ▼ DATA OUTLET.
- ▽ VOICE OUTLET.
- (TV) COMBINATION CATV/DATA OUTLET.
- AC ABOVE COUNTER
- BC BELOW COUNTER
- LOW FREQUENCY HORN

STATE OF MISSOURI
RICHARD R. BRANDMORE
NUMBER PE-2010018911
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Summit at West Pryor

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
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DATE: 09.12.19

REVISIONS /8

1	PERMIT COMMENTS	09.06.19
2	REVISION 1	12.20.19
3	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E202

TYPICAL UNIT PLANS - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

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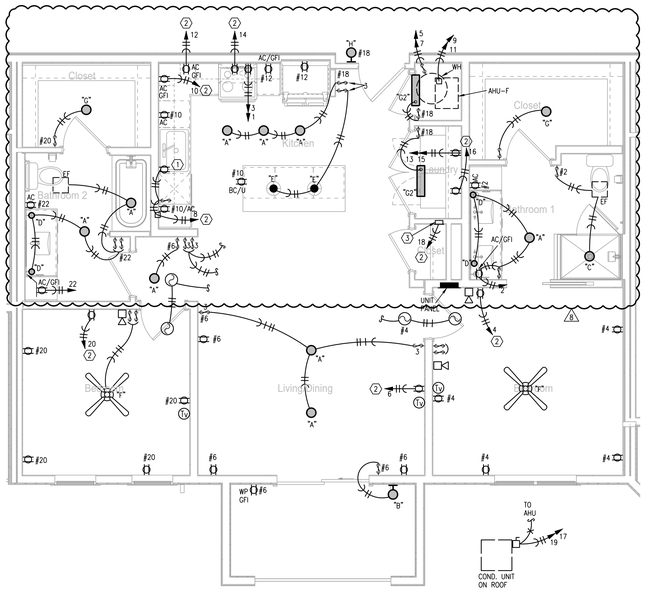
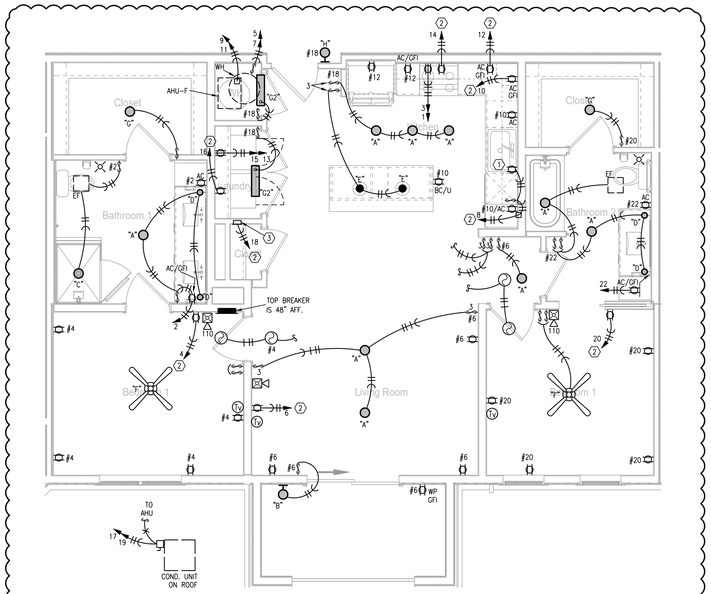
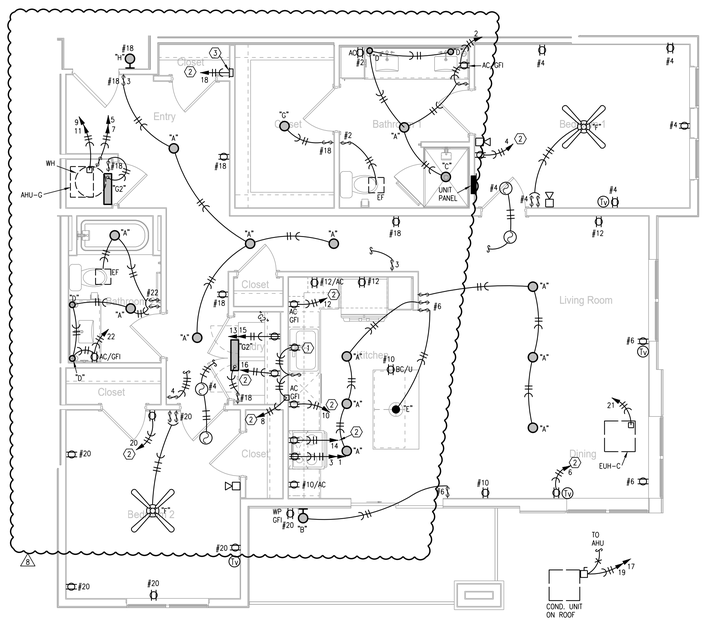


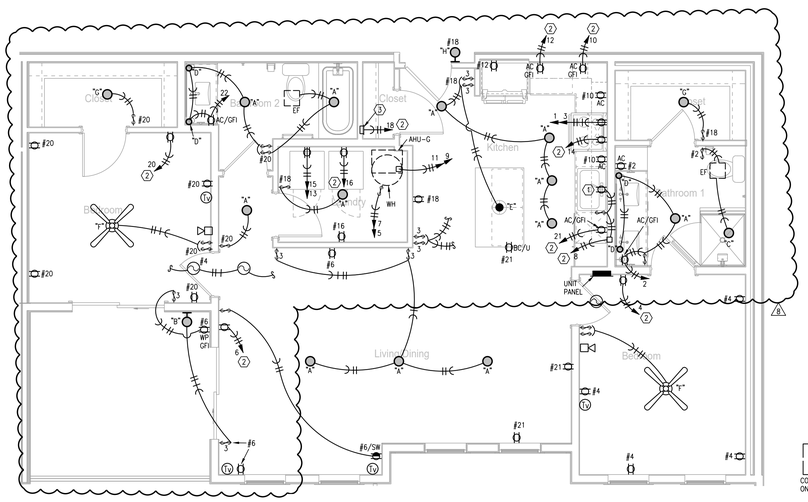
1 TYPICAL UNIT PLAN - F1
1/4"=1'-0" ELECTRICAL



4 TYPICAL UNIT PLAN - F1 TYPE A
1/4"=1'-0" ELECTRICAL



2 TYPICAL UNIT PLAN - G
1/4"=1'-0" (UNIT G1.1 SIMILAR) ELECTRICAL



3 TYPICAL UNIT PLAN - H
1/4"=1'-0" (UNIT H2 SIMILAR) ELECTRICAL

NOTES:

1. TYPE "J" FIXTURE IN HALLWAYS ARE UNSWITCHED. MOUNT AT 72"AFF, VERIFY WITH ARCHITECT.
2. CEILING FAN SWITCHES PROVIDED WITH FAN. CONTROL LIGHT AND FAN SEPARATELY. INTENDED FOR SINGLE GANG BOX.
3. CENTER "H" PENDANT LIGHTS OVER BASE BACK WALL AND CENTERED EQUALLY LEFT TO RIGHT OVER SINK. THESE ARE SEPARATELY SWITCHED.
4. 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.
5. THERMOSTATS HAVE LOW VOLTAGE WIRE BACK TO AHU. CONDENSING UNITS HAVE LOW VOLTAGE WIRE BACK TO AHU.
6. (CO) = 120V. SMOKE/CO ALARM WITH BATTERY BACK-UP AND AUXILIARY CONTACT SO ALL SOUND TOGETHER.
7. ALL ARC-FAULT CIRCUIT BREAKERS SHALL BE COMPATIBLE WITH CEILING FANS, COMPACT AND STANDARD FLUORESCENT LAMPS/FIXTURES AND OTHER ELECTRONIC DEVICES.
8. PROVIDE PROTECTION AT ELECTRICAL BOXES AT RATED CEILING MEMBRANES PER IBC 712.4.1.2(2). BOXES TO BE LISTED FOR RATED MEMBRANES, NOT EXCEED 16 SQUARE INCHES, NOT COMBINE FOR MORE THAN 100 SQUARE INCHES IN 100 SQUARE FEET AND ANNULAR SPACE NOT EXCEED 1/8".
9. FIRE ALARM HORN/STROBE CIRCUITS SHALL BE SIZED TO ACCEPT BEDROOM HORN/STROBES IN FUTURE INCLUDING WIRING AND PANEL CAPACITY.
10. ALL RANGES SERVED BY (3) #8 & (1) #10 AND 50A. RECEPTACLE.
11. ALL WATER HEATERS SERVED BY (3) #10
12. ALL WASHERS AND REFRIGERATORS HAVE RECEPTACLES AT 48".
13. SEE HVAC SCHEDULE AND SHOP DRAWINGS FOR AHU AND HEAT PUMP CIRCUITS.
14. 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.
16. EXTERIOR RECEPTACLES SHALL BE ARLINGTON #DBVM1C RECESSED TYPE.

LEGEND:

1. SWITCHED 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.
4. SMOKE ALARM TO HAVE STROBES.
5. CONNECT RANGE HOOD TO TWO SWITCHES ABOVE COUNTER TO CONTROL LIGHT AND FAN.

ELECTRICAL SYMBOLS LEGEND;

- DUPLEX RECEPTACLE.
- 120/240V. RECEPTACLE. 30A. FOR DRYER, 50A. FOR RANGE.
- SW RECEPTACLE HALF SWITCHED.
- U USB CHARGING COMB. RECEPTACLE.
- ▼ DATA OUTLET.
- ▽ VOICE OUTLET.
- TV COMBINATION CATV/DATA OUTLET.
- AC ABOVE COUNTER
- BC BELOW COUNTER
- LOW FREQUENCY HORN

STATE OF MISSOURI
RICHARD R. BEARDMORE
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Summit at West Pryor

TR¡ Architects
9612 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 09.12.19

REVISIONS (6)

1	PERMIT COMMENTS	09.06.19
6	REVISION 1	12.20.19
8	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E203

TYPICAL UNIT PLANS - ELECTRICAL

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
3639 SW Summerfield Drive, Suite A
Topeka, Kansas 66614-3974
Telephone: (785) 233-3232
FAX: (785) 233-0647
Email: lsepe@lsapa.com

LSA PROJECT NO. 1904023

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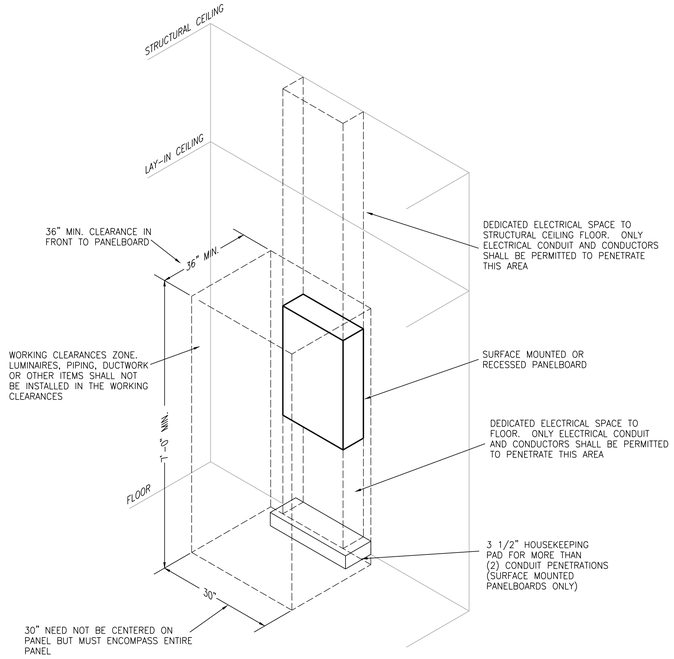
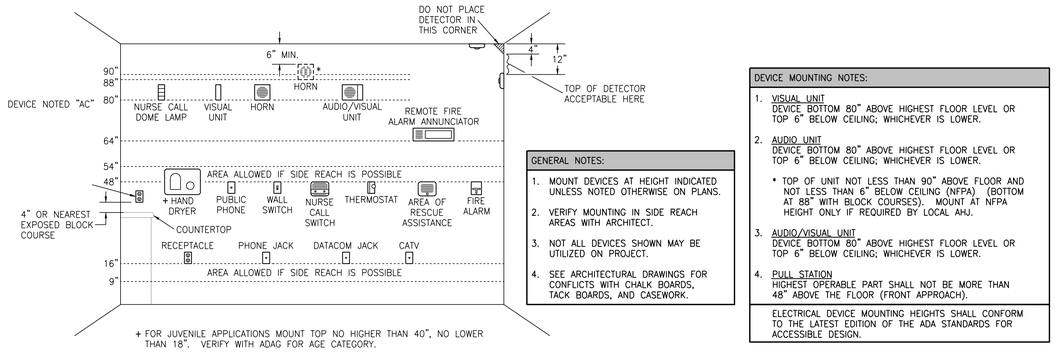


NOTE:
COORDINATE ALL WORK WITH OTHER TRADES. MAINTAIN ALL OTHER NEC CLEARANCES AND REQUIREMENTS.

1 TYPICAL PANELBOARD INSTALLATION DETAIL
NO SCALE



+ FOR JUVENILE APPLICATIONS MOUNT TOP NO HIGHER THAN 40", NO LOWER THAN 18". VERIFY WITH ADAG FOR AGE CATEGORY.

GENERAL NOTES:
1. MOUNT DEVICES AT HEIGHT INDICATED UNLESS NOTED OTHERWISE ON PLANS.
2. VERIFY MOUNTING IN SIDE REACH AREAS WITH ARCHITECT.
3. NOT ALL DEVICES SHOWN MAY BE UTILIZED ON PROJECT.
4. SEE ARCHITECTURAL DRAWINGS FOR CONFLICTS WITH CHALK BOARDS, TACK BOARDS, AND CASEWORK.

DEVICE MOUNTING NOTES:
1. VISUAL UNIT DEVICE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER.
2. AUDIO UNIT DEVICE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER. * TOP OF UNIT NOT LESS THAN 90" ABOVE FLOOR AND NOT LESS THAN 6" BELOW CEILING (NFPA) (BOTTOM AT 88" WITH BLOCK COURSES). MOUNT AT NFPA HEIGHT ONLY IF REQUIRED BY LOCAL AHJ.
3. AUDIO/VISUAL UNIT DEVICE BOTTOM 80" ABOVE HIGHEST FLOOR LEVEL OR TOP 6" BELOW CEILING; WHICHEVER IS LOWER.
4. PULL STATION HIGHEST OPERABLE PART SHALL NOT BE MORE THAN 48" ABOVE THE FLOOR (FRONT APPROACH).
ELECTRICAL DEVICE MOUNTING HEIGHTS SHALL CONFORM TO THE LATEST EDITION OF THE ADA STANDARDS FOR ACCESSIBLE DESIGN.

2 ELECTRICAL DEVICE MOUNTING HEIGHTS
NO SCALE

SECURITY SYMBOLS LEGEND	
ACC	ACCESS CONTROL SERVER
ACM	ACCESS CONTROL WORK STATION
	CAMERA WITH AUTO IRIS
	CAMERA WITH FIXED IRIS
CR	CARD READER
CCVE	CCVE PANEL
CCVE M	CCVE MASTER PANEL
DP	DOOR POSITION CONTACT
D	DURESS SWITCH
ES	ELECTRIC STRIKE
GB	GLASS BREAK DETECTOR
ISC	INTELLIGENT SYSTEM CONTROLLER
KBRD	KEY BOARD
KP	KEY PAD
ML	MAG LOCK
MD	CAMERA WITH MOTION DETECTOR
M	MONITOR
MD	MOTION DETECTOR
PTZ	PAN, TILT, ZOOM CAMERA
RQE	PUSH BUTTON REQUEST TO EXIT
RX	AUTO REQUEST TO EXIT
APD RQE	PUSHBAR REQUEST TO EXIT
RIC	RELAY INTERFACE CABINET
* ALL SYMBOLS SHOWN ABOVE MAY NOT APPEAR ON PLANS	

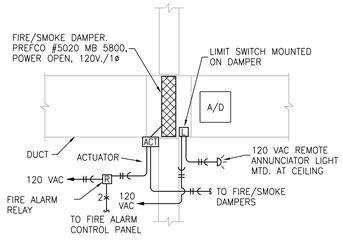
ELECTRICAL SYMBOLS LEGEND

	CONDUIT CONCEALED IN CEILING OR WALL	"A"	LIGHT FIXTURE AND TYPE
	CONDUIT CONCEALED IN FLOOR SLAB		FLUORESCENT LIGHT FIXTURE
	EXPOSED CONDUIT		EMERGENCY LIGHT FIXTURE WITH BATTERY PACK
	HOMERUN - ARROW INDICATES CKT., LINES INDICATE WIRES		EXIT LIGHT (CEILING OR WALL MOUNTED)
	GROUND WIRE		FLUSH PANELBOARD
	GROUNDING ROD		SURFACE PANELBOARD
	SINGLE RECEPTACLE		DISTRIBUTION PANEL OR SWITCHBOARD
	DUPLEX RECEPTACLE (20 AMP UNLESS NOTED)		A/V (WALL MOUNTED) 24 VDC
U	USB CHARGING RECEPTACLE		STROBE
	FOURPLEX RECEPTACLE		FLOW DETECTOR/SWITCH
	208 OR 240 VOLT RECEPTACLE (20 AMP UNLESS NOTED)		TAMPER DETECTOR
	TELE/DATA OUTLET *		ADDRESSABLE MANUAL PULL STATION
	PUSHBUTTON		SMOKE DETECTOR
	MOTOR		HEAT DETECTOR
	FUSIBLE SWITCH (BUSSMAN SSU)		ELECTRIC DOOR HOLDER ON FIRE ALARM
	DISCONNECT SWITCH (D.S.)	FS	FIRE/SMOKE DAMPER
	COMBINATION MOTOR STARTER (CMS)	FCP	FIRE ALARM CONTROL PANEL
R	RELAY	FAA	FIRE ALARM ANNUNCIATOR PANEL
	JUNCTION BOX	ARA	AREA RESCUE CALL STATION
	THERMOSTAT ELECTRIC	AC	DEVICE LOCATED ABOVE COUNTER
	SWITCH - SINGLE POLE	AFF	ABOVE FINISHED FLOOR
3, 4	3-WAY, 4-WAY	D	DIMMER
TV	COMBINATION TV AND DATA OUTLET	EDF	ELECTRIC DRINKING FOUNTAIN
		GFI	GROUND FAULT INTERRUPTER
		NL	NIGHTLIGHT FIXTURE, WIRED HOT
		WP	WEATHERPROOF

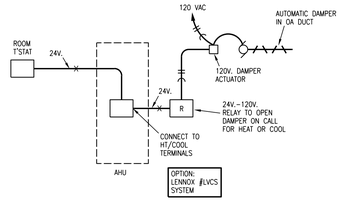
NOTES: ALL SYMBOLS SHOWN ABOVE MAY NOT APPEAR ON PLANS. REFER TO MECHANICAL SYMBOLS LEGEND FOR MECHANICAL SYMBOLS THAT MAY BE SHOWN ON ELECTRICAL PLANS. * 4x4 BACKBOX WITH SINGLE GANG PLASTER RING AND A 1" CONDUIT TO ABOVE ACCESSIBLE CEILING.

3 GROUNDING ELECTRODE SYSTEM DETAIL
NO SCALE

4 MECHANICAL CLOSET DETAIL
NO SCALE



5 FIRE/SMOKE DAMPER DETAIL
NO SCALE



OUTSIDE AIR DAMPER CONTROL SCHEMATIC
6 NO SCALE (TYP. FOR CORRIDOR UNITES)

STATE OF MISSOURI
RICHARD R. REARDON
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

ARCHITECT — TR¡ ARCHITECTS
STRUCTURAL ENGINEER — BOB D CAMPBELL & COMPANY
CIVIL ENGINEER — RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR — BRINKMANN CONSTRUCTORS
MECHANICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES
PLUMBING ENGINEER — LATIMER SOMMERS & ASSOCIATES
ELECTRICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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DATE: 07.29.19

REVISIONS

DWG BY RRB

TR¡ PROJECT NO. 18-046

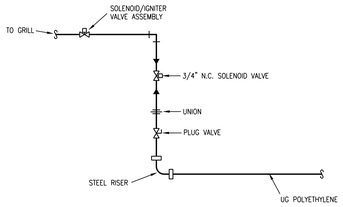
SHEET NO.

E301

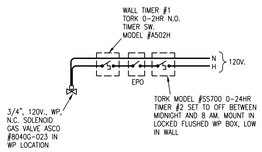
ELECTRICAL DETAILS

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

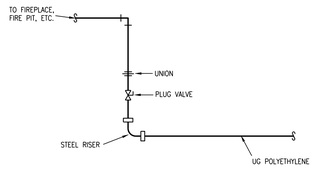


PIPING SCHEMATIC

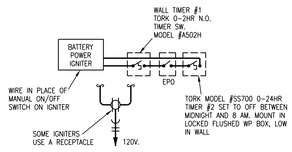


CONTROL SCHEMATIC

1 GAS CONTROL DETAIL
NO SCALE (GRILL)

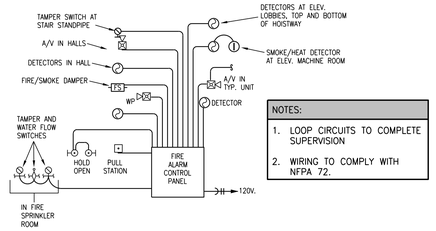


PIPING SCHEMATIC



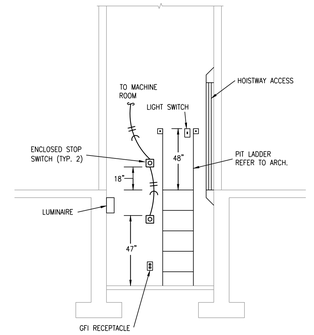
CONTROL SCHEMATIC

2 GAS CONTROL DETAIL
NO SCALE (FIRE PIT)



NOTES:
1. LOOP CIRCUITS TO COMPLETE SUPERVISION
2. WIRING TO COMPLY WITH NFPA 72.

3 FIRE ALARM RISER DIAGRAM
NO SCALE

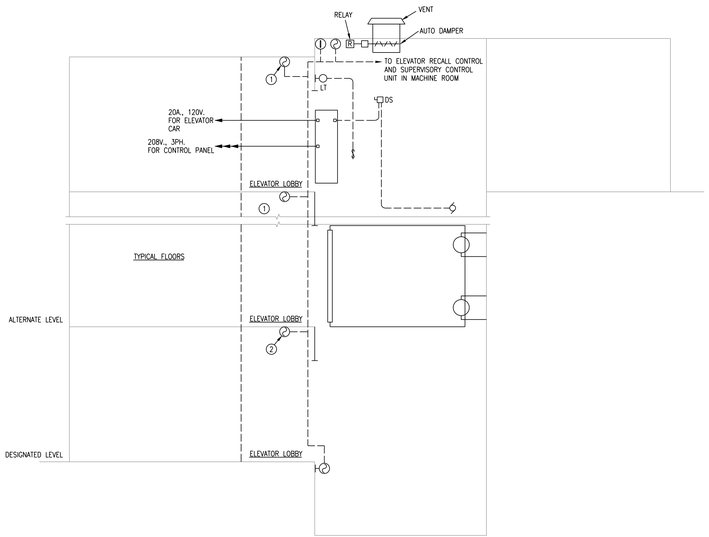


4 ELEVATOR PIT DETAIL
NO SCALE

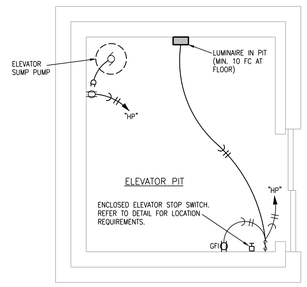
DETECTOR OPERATION:
1 RECALL TO DESIGNATED LEVEL.
2 RECALL TO ALTERNATE LEVEL.

SYSTEM SEQUENCE:
UPON DETECTION OF SMOKE IN ELEVATOR LOBBIES, MACHINE ROOM, TOP OF HOISTWAY OR BOTTOM OF HOISTWAY, ELEVATOR RECALL CONTROLS SHALL BE ACTIVATED AND VENT DAMPER OPENED.

SYMBOLS LEGEND:	
1	HEAT DETECTOR
2	SMOKE DETECTOR
	SPRINKLER



5 ELECTRIC ELEVATOR FIRE PROTECTION SYSTEM OPERATION DETAIL
NO SCALE



6 ELEVATOR PIT ELECTRICAL DETAIL
NO SCALE

1 OMIT

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER PE-2010018744
PROFESSIONAL ENGINEER
9-6-19

TR,i ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR,i ARCHITECTS
TR,i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 07.29.19

REVISIONS 2

1	PERMIT COMMENTS	09.06.19

DWG BY RRB

TR,i PROJECT NO. 18-046

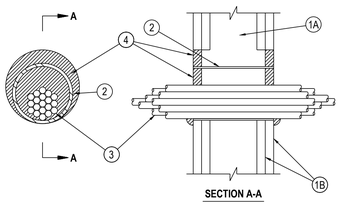
SHEET NO.

E302

ELECTRICAL DETAILS

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023



SECTION A-A

NOTES AND LEGENDS:

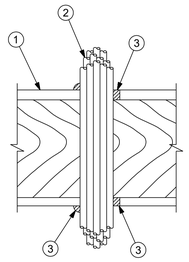
1. 1. Wall Assembly – The 1 or 2 fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* – Nom 5/8 in. (16 mm) thick gypsum board, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 5-1/2 in. (138 mm) when sleeve (Item 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (Item 2) is not employed. The F Rating of the firestop system is equal to the fire rating of the wall assembly.

   Metallic Sleeve – (Optional) – Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 (or heavier) steel pipe or min 0.016 in. thick (0.41 mm, NZo. 28 ga) galv steel sleeve installed flush with wall surfaces. The annular space between steel sleeve and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25mm). When Schedule 5 steel pipe or EMT is used, sleeve may extend up to 18 in. (457 mm) beyond the wall surfaces.
2. Cables – Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (0 mm, point contact) to max 1 in. (25 mm) Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:
3. A. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
   B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   C. Type RG/U coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of ½ in. (13 mm).
   D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm).
   E. Through Penetrating Products*– Max three copper conductor No. 8 AWG . Metal–Clad Cable+.
   AFC CABLE SYSTEMS INC
   F. Max 3/C (with ground)(or smaller) No. 8 AWG copper conductor cable with PVC insulation and jacketing.
   G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket.
   H. Fire Resistive Cables* – Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
4. Through Penetrating Product† – Any cables, Metal–Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating Products category. See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers.

   Fill, Void or Cavity Material*– Sealant or Putty – Fill material applied within the annulus, flush with each end of the steel sleeve or wall surface. Fill material installed symmetrically on both sides of the wall. A min 5/8 in. (16 mm) thickness of sealant is required for the 1 or 2 hr F Rating . An additional 1/2 in. (13 mm) diam bead of fill material shall be applied around the perimeter of sleeve on both sides of the wall when sleeve extends beyond surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC – CP601S, CP606, FS–One Sealants or CP618 Putty
   *Bearing the UL Classification Mark
   +Bearing the UL Listing Mark

FIRE RATED PENETRATION DETAIL

1 NO SCALE SYSTEM WL-3065



NOTES AND LEGENDS:

1. 1. Floor–Ceiling Assembly – The 1 hr fire–rated solid or trussed lumber joist floor–ceiling assembly shall be constructed of the materials and in the manner specified in the individual L500 Series Floor–Ceiling Designs in the UL Fire Resistance Directory. The general construction features of the floor–ceiling assembly are summarized below:
   A. Flooring System – Lumber or plywood subfloor with finish floor of lumber, plywood or Floor Topping Mixture* as specified in the individual Floor–Ceiling Design. Max diam of opening shall be 3 in.
   B. Wood Joists* – Nom 10 in. deep (or deeper) lumber, steel or combination lumber and steel joists, trusses or Structural Wood Members* with bridging as required and with ends firestopped.
1A. C. Gypsum Board* – Nom 4 ft wide by 5/8 in. thick as specified in the individual Floor–Ceiling Design. Gypsum board secured to wood joists or furring channels as specified in the individual Floor–Ceiling Design.

   Chase Wall – (Optional, Not Shown) – The through penetrants (Item 2) may be routed through a 1 hr fire rated single, double or staggered wood stud/gypsum board chase wall. Depth of chase wall stud cavity to be min 1/2 in. greater than diameter of opening cut in sole and top plates to accommodate the through penetrant (Item 2). The hose wall shall be constructed of the materials and in the manner specified in the individual U300 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include
2. the following construction features:
   A. Studs – Nom 2 by 4 in., 2 by 6 in. or double nom 2 by 4 in. lumber studs.
   B. Sole Plate – Nom 2 by 4 in., 2 by 6 in. or parallel 2 by 4 in. lumber plates, tightly butted. Max diam of opening is 3 in.
   C. Top Plate – The double top plate shall consist of two nom 2 by 4 in., two nom 2 by 6 in. or two sets of parallel 2 by 4 in. lumber plates, tightly butted. Max diam of opening is 3 in.
   D. Gypsum Board* – Thickness, type, number of layers and fasteners shall be as specified in the individual Wall and Partition Design.

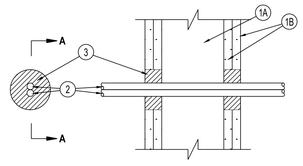
   Cables – Aggregate cross–sectional area of cable in opening to be max 50 percent of the cross–sectional area of the opening. The annular space between the cable bundle and the
3. periphery of the opening to be min 0 in. (point contact) to max 1 in. Cables to be rigidly supported on both sides of the floor–ceiling assembly. Any combination of the following types and sizes of copper conductor cables may be used:
   A. Max 150 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   B. Max 2/C No. 10 with ground Type NM nonmetallic sheathed (Romex) cable with PVC insulation and jacket.
   C. Max 3/C with ground 2/0 AWG aluminum SER cable with PVC insulation and jacket.
   D. Max 3/C No. 10 AWG copper conductor steel clad cable.
   E. Max 24 fiber optic cable.
   F. RG 59U coaxial cable.
   G. CAT 5 data cable.

   Fill, Void or Cavity Materials*–Sealant – Min 3/4 in. thickness of sealant applied within the annulus flush with the top surface of the floor or sole plate and min 5/8 in. thickness of sealant applied within the annulus flush with the bottom surface of gypsum board or lower top plate. A min 1/2 in. diameter bead of sealant applied at the cable bundle/subflooring or sole plate interface and the cable bundle/gypsum board or top plate interface at point contact locations.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC – CP 606 Flexible Firestop Sealant

   *Bearing the UL Classification Mark

FIRE RATED PENETRATION DETAIL

2 NO SCALE SYSTEM FC-3074



SECTION A-A

NOTES AND LEGENDS:

1. Wall Assembly -- The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features.

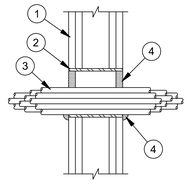
   A. Studs -- Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC.

   B. Gypsum Board* -- 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening is 3 in. The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. The hourly T Rating of the firestop system is 1/4 and 3/4 hr for 1 and 2 hr rated wall assemblies, respectively.
2. Cables -- Max two 3/C with ground No. 2/0 AWG aluminum or copper Type SER cable with polyvinylchloride (PVC) insulation. Cable to be rigidly supported on both sides of wall assembly. The annular space between the cables and the periphery of opening shall be min 1/2 in. to max 1-1/2 in.
3. Fill, Void or Cavity Material* -- Sealant -- Installed to completely fill the annular space between the cables and gypsum wallboard on both sides of wall.

   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC -- FS-One Sealant

FIRE STOP DETAIL

3 NO SCALE SYSTEM W-L-3071



NOTES AND LEGENDS:

1. Wall Assembly -- The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the Fire Resistance Directory and shall include the following construction features:

   A. Studs -- Wall framing shall consist of either wood studs or channel shaped steel studs. Wood studs to consist of 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide, fabricated from min 25 MSG galvanized steel, spaced max 24 in. OC.

   B. Gypsum Board* -- Nom 5/8 in. thick with square or tapered edges. The gypsum board type, number of layers and sheet orientation shall be as specified in the individual Wall and Partition Design Number. Max diameter of opening is 4 in. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Non-Metallic Sleeve -- Nom 4 in. diam (or smaller) Schedule 40 solid or cellular core polyvinyl chloride (PVC) pipe friction fit into wall flush with both surfaces of wall.
3. Cables -- Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (point contact) to max 1-3/8 in. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:
   A. Max 500 KCMIL power cable.
   B. Max 100 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   C. Type RG /U coaxial cable with polyethylene (PE) insulation and PVC jacket and having a max OD of ½ in.
   D. Max 3/C No. 8 AWG steel clad cable.
   E. Max 3/C No. 8 AWG (with ground) with PVC insulation and jacket.
   F. Multiple fiber optical communication cable with PVC jacket with a max OD of 5/8 in.
   G. Max 3/4 in diam copper ground cable with PVC jacket.
4. Fill, Void or Cavity Material* - Putty -- Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point contact location between cables/sleeve, a min ½ in. diam bead of fill material shall be applied at the cable /sleeve interface.

   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC -- CP618 Putty Stick.

   *Bearing the UL Classification Mark

FIRE STOP DETAIL

4 NO SCALE SYSTEM W-L-3213

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRADSHAW
NUMBER PE-2005020856
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS
TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 07.29.19

REVISIONS

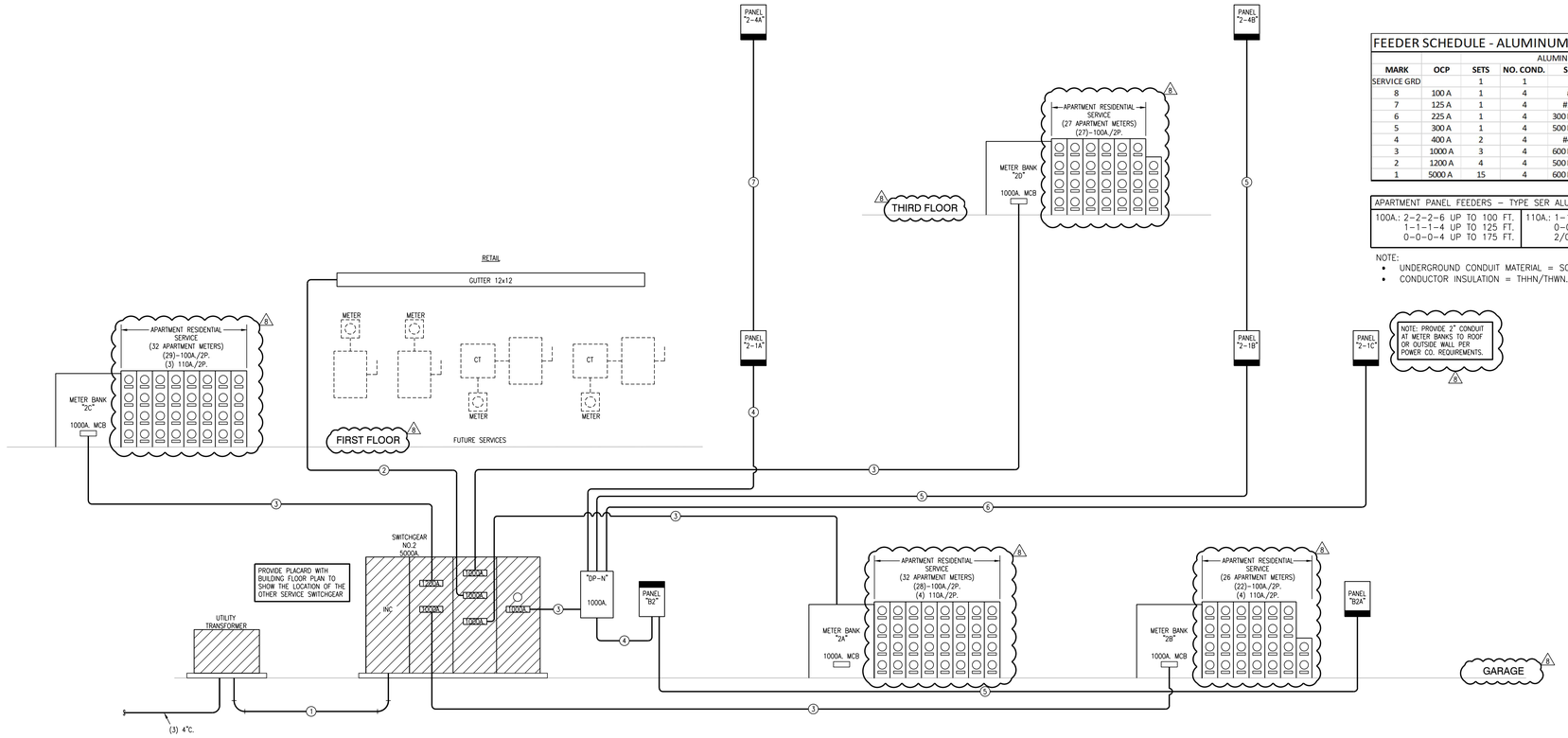
DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E303

ELECTRICAL DETAILS

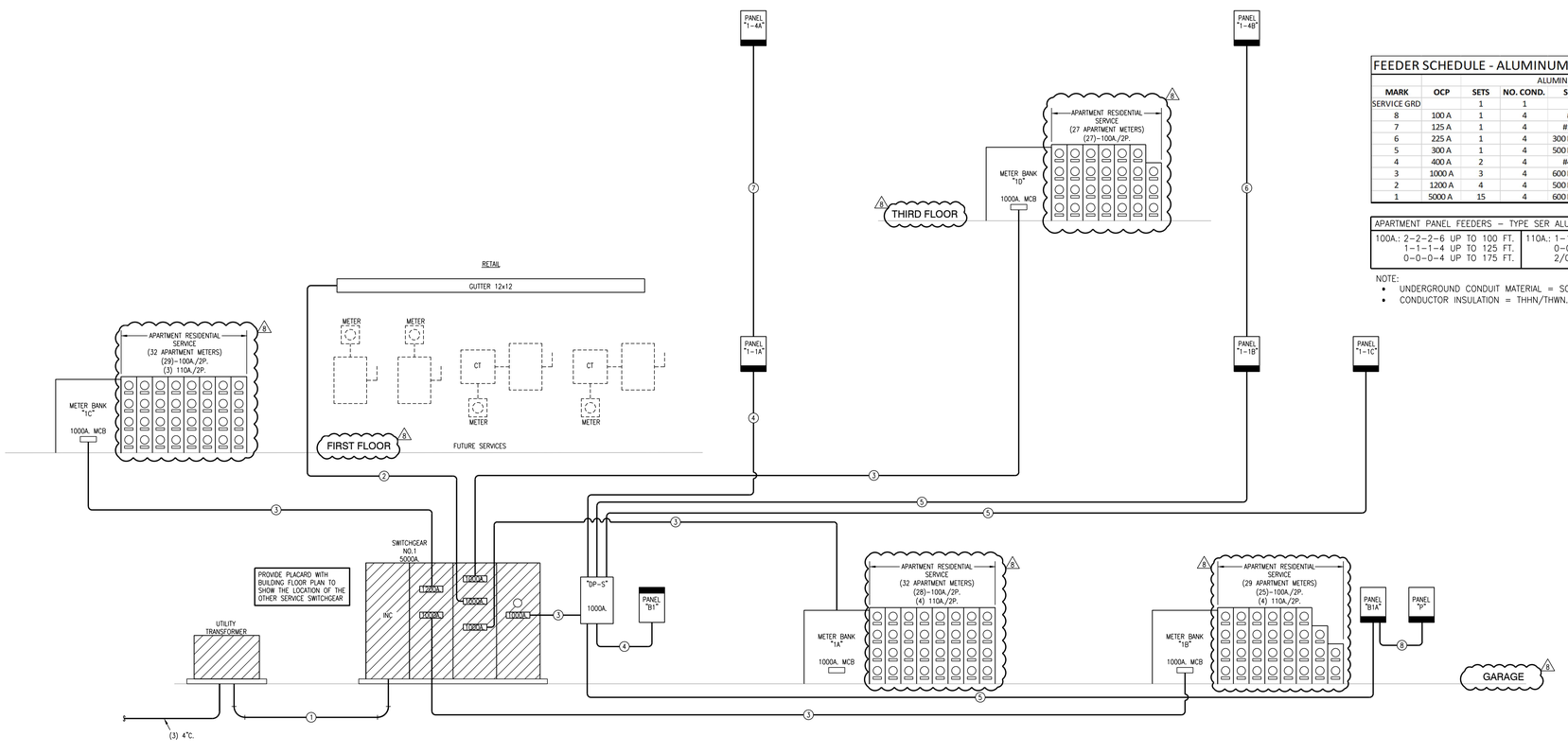


2 ELECTRICAL DISTRIBUTION RISER DIAGRAM - NORTH SERVICE
NO SCALE

FEEDER SCHEDULE - ALUMINUM AA8000						
				ALUMINUM AA8000		
MARK	OCP	SETS	NO. COND.	SIZE	SIZE GRD	CONDUIT
SERVICE GRD		1	1		3/0	
8	100 A	1	4	#1	#6	1.25
7	125 A	1	4	#1/0	#4	1.5
6	225 A	1	4	300 KCMIL	#2	2.5
5	300 A	1	4	500 KCMIL	#2	3
4	400 A	2	4	#4/0	#1	2
3	1000 A	3	4	600 KCMIL	#3/0	3
2	1200 A	4	4	500 KCMIL	#3/0	3
1	5000 A	15	4	600 KCMIL	#3/0	4

APARTMENT PANEL FEEDERS – TYPE SER ALUMINUM	
100A.: 2-2-2-6 UP TO 100 FT. 1-1-1-4 UP TO 125 FT. 0-0-0-4 UP TO 175 FT.	110A.: 1-1-1-4 UP TO 115 FT. 0-0-0-4 UP TO 140 FT. 2/0-2/0-2/0-3 UP TO 180FT.

NOTE:
- UNDERGROUND CONDUIT MATERIAL = SCH. 40 PVC.
- CONDUCTOR INSULATION = THHN/THWN.



1 ELECTRICAL DISTRIBUTION RISER DIAGRAM - SOUTH SERVICE
NO SCALE

FEEDER SCHEDULE - ALUMINUM AA8000						
				ALUMINUM AA8000		
MARK	OCP	SETS	NO. COND.	SIZE	SIZE GRD	CONDUIT
SERVICE GRD		1	1		3/0	
8	100 A	1	4	#1	#6	1.25
7	125 A	1	4	#1/0	#4	1.5
6	225 A	1	4	300 KCMIL	#2	2.5
5	300 A	1	4	500 KCMIL	#2	3
4	400 A	2	4	#4/0	#1	2
3	1000 A	3	4	600 KCMIL	#3/0	3
2	1200 A	4	4	500 KCMIL	#3/0	3
1	5000 A	15	4	600 KCMIL	#3/0	4

APARTMENT PANEL FEEDERS – TYPE SER ALUMINUM	
100A.: 2-2-2-6 UP TO 100 FT. 1-1-1-4 UP TO 125 FT. 0-0-0-4 UP TO 175 FT.	110A.: 1-1-1-4 UP TO 115 FT. 0-0-0-4 UP TO 140 FT. 2/0-2/0-2/0-3 UP TO 180FT.

NOTE:
- UNDERGROUND CONDUIT MATERIAL = SCH. 40 PVC.
- CONDUCTOR INSULATION = THHN/THWN.

STATE OF MISSOURI
RICHARD R. BEARDMORE
NUMBER PE-2009018755
PROFESSIONAL ENGINEER
4-3-20

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

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PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.traarchitects.com

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DATE: 09.12.19

REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E304

ELECTRICAL DISTRIBUTION RISER DIAGRAM

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

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Luminaire Schedule - Units and Buildings

MARK	DESCRIPTION	MFGR	MODEL	MOUNTING	FINISH	LAMPS	NOTES
A	Disk Light	Halo	SLD612/8030/WH	jb/surface	white	1200 Lumen 3000K 15W LED	Wet Location
B	Patio Light	Astro	Oslo 100	wall	text. black	1-10W LED	Wet Location
C	Shower/Small Disk Light	Halo	SLD606/8030/WH	jb/surface	white	600 Lumen 3000K 15W LED	Wet Location
D	Vanity Sconce	Custom	To match Stephan Outdoor Sconce	wall	aged iron	1 - 12W LED	
E	Counter pendant	Hudson Valley	Lambert #612-OB	pendant	old bronze	1-15W LED	
F	5-blade fan, 3-spd, rev. w/globe	Minka-Aire	Avation #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	
G2	Utility Strip	Progress	P730011-030-30	surface	white	20W LED	
H	Entry Sconce	Hinkley	56500M	pendant	satin nickel	1-10W LED	
J	Drum Light	Nuvo/Rensen House	642285	surface	pol. Nickel	2- 13W LED Screw-in	
K	Closet Strip	Royal Pacific	4311W	surface	white	10W 750 Lumen LED	
L	Enclosed Strip	Williams	96-4-L40/835-HIAFR-DRV	pendant	satin nickel	4000 LUMEN 3500K LED	LI = w/battery
M	Cylinder	Prescolite	LCC8LED-W-24L-30K-8-Z	wall	zet	2400 Lumen 3000K 33W LED	
N	Decorative Light	Allowance	$1,500	jb/surface	white	1200 Lumen 3000K 15W LED	
P	Public Vanity	Progress	P300182-009-30	wall	br. nickel	L35W LED	
R	Elevator Pit	Royal Pacific	4306WH	surface	white	35W 3000 Lumen 4000K LED	
S	Garage Light	Royal Pacific	4431OB-60-MS	surface	standard	60W 4000K	with 50% motion dimming
S1	Garage Light	Royal Pacific	4431OB-60-MS	surface	standard	60W 4000K	with 50% motion dimming/battery
T	Public Vanity	Progress	P300182-009-30	wall	br. nickel	L35W LED	
U	Fitness Linear	Williams	75S-4-L30-8-30	surface	white	3000 Lumen 3000K LED	see plans for length
V	Club Fitness Fan	Big Ass Fans	B3213-X4-AB-04-02-D-01	pendant	alum. black	none	
W	Sconce	Visa	OW1295-L35K-H-GS/L	wall	Graphite silver	15W 800 Lumen 3000K LED	
X1	Exit	Lithonia	LHQM-LED-R-HO-RO	surface	white/red	1.5W LED	
X2	Exit w/heads	Lithonia	LHQM-LED-R-HO	surface	white/red	1.5W LED	
X3	Exit w/heads and remote	Lithonia	LHQM-LED-R-HO-ELAQ-L0309	surface	white/red	1.5W LED	
X4	Exterior Remote Head	Lithonia	ELA-LED	surface	std	1W LED	
X5	Dual-Head Emergency	Lithonia	ELM4L	surface	std	640 lumen	
						69W 7900 lumen 4000K LED	

6

Multi-Family Building Load Analysis

Building: South Entrance

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
19	A1, A2	31480	598.1
6	A3, A4	31630	189.8
37	B, C	31720	1173.6
26	D1, D2	32260	838.6
21	F	32770	688.2
11	G, H	36270	399.0
		Total Building KVA	3887.4
		Total Units	120
		Diversity per NEC Table 230.84	0.23
		Diversified KVA	894.1
		Amps @ 208 V Three Phase	2484
		House Load - Amps	1000
		Total Demand - Amps	3484

Multi-Family Building Load Analysis

Building: North Entrance

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
16	A1, A2	31480	503.7
6	A3, A4	31630	189.8
37	B1, B3, C	31720	1173.6
26	D1, D2	32260	838.6
21	F	32770	688.2
11	G, H	36270	399.0
		Total Building KVA	3793.0
		Total Units	117
		Diversity per NEC Table 230.84	0.23
		Diversified KVA	872.4
		Amps @ 208 V Three Phase	2423
		House Load - Amps	1000
		Total Demand - Amps	3423

Multi-Family Building Load Analysis

Building: Meter Bank 1A/2A

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
0	A1, A2	31480	0.0
0	A3, A4	31630	0.0
8	B1, B3, C	31720	253.8
12	D1, D2	32260	387.1
8	F	32770	262.2
4	G, H	36270	145.1
		Total Building KVA	1048.1
		Total Units	32
		Diversity per NEC Table 230.84	0.31
		Diversified KVA	324.9
		Amps @ 208 V Three Phase	903
		House Load - Amps	0
		Total Demand - Amps	903

Multi-Family Building Load Analysis

Building: Meter Bank 1B

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
3	A1, A2	31480	94.4
0	A3, A4	31630	0.0
16	B1, B3, C	31720	507.5
3	D1, D2	32260	96.8
3	F	32770	98.3
4	G, H	36270	145.1
		Total Building KVA	942.1
		Total Units	29
		Diversity per NEC Table 230.84	0.33
		Diversified KVA	310.9
		Amps @ 208 V Three Phase	864
		House Load - Amps	0
		Total Demand - Amps	864

Multi-Family Building Load Analysis

Building: Meter Bank 1C/2C

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
0	A1, A2	31480	0.0
6	A3, A4	31630	189.8
6	B1, B3, C	31720	190.3
7	D1, D2	32260	225.8
10	F	32770	327.7
3	G, H	36270	108.8
		Total Building KVA	1042.4
		Total Units	32
		Diversity per NEC Table 230.84	0.31
		Diversified KVA	323.2
		Amps @ 208 V Three Phase	898
		House Load - Amps	0
		Total Demand - Amps	898

Multi-Family Building Load Analysis

Building: Meter Bank 2B

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
0	A1, A2	31480	0.0
0	A3, A4	31630	0.0
16	B1, B3, C	31720	507.5
3	D1, D2	32260	96.8
3	F	32770	98.3
4	G, H	36270	145.1
		Total Building KVA	847.7
		Total Units	26
		Diversity per NEC Table 230.84	0.34
		Diversified KVA	288.2
		Amps @ 208 V Three Phase	801
		House Load - Amps	0
		Total Demand - Amps	801

Multi-Family Building Load Analysis

Building: Meter Bank 1D/2D

Unit Quantity	Unit Type	Connected Load - VA	Total KVA
16	A1, A2	31480	503.7
0	A3, A4	31630	0.0
7	B1, B3, C	31720	222.0
4	D1, D2	32260	129.0
0	F	32770	0.0
0	G, H	36270	0.0
		Total Building KVA	854.8
		Total Units	27
		Diversity per NEC Table 230.84	0.34
		Diversified KVA	290.6
		Amps @ 208 V Three Phase	807
		House Load - Amps	0
		Total Demand - Amps	807

Unit Load Calculation

Unit: A1, A2 — VA

630 square feet at 3 VA per sq. ft.	1890
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	25880
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	6352
Heater Load 5600 65%	3640
Total load	19992
Load for unit service Amp @ 208 volt/1	96
Connected Load	31480

Unit Load Calculation

Unit: A3, A4 — VA

680 square feet at 3 VA per sq. ft.	2040
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	26030
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	6412
Heater Load 5600 65%	3640
Total load	20052
Load for unit service Amp @ 208 volt/1	96
Connected Load	31630

Unit Load Calculation

Unit: B1, B2, B3, C — VA

710 square feet at 3 VA per sq. ft.	2130
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	26120
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	6448
Heater Load 5600 65%	3640
Total load	20088
Load for unit service Amp @ 208 volt/1	97
Connected Load	31720

Unit Load Calculation

Unit: D1, D2 — VA

890 square feet at 3 VA per sq. ft.	2670
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	26660
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	6664
Heater Load 5600 65%	3640
Total load	20304
Load for unit service Amp @ 208 volt/1	98
Connected Load	32260

Unit Load Calculation

Unit: F — VA

1060 square feet at 3 VA per sq. ft.	3180
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	27170
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	6868
Heater Load 5600 65%	3640
Total load	20508
Load for unit service Amp @ 208 volt/1	99
Connected Load	32770

Unit Load Calculation

Unit: G, H — VA

1260 square feet at 3 VA per sq. ft.	3780
2 small appliance circuits	3000
Range	8000
Microwave	1000
Washer	1500
Dryer	4400
Water Heater	4500
Dishwasher	740
Disposer	850
Total general load	27770
NEC 220-84 Calculation	
First 10 KVA at 100%	10000
Remainder at 40%	7108
Heater Load 8500 65%	5525
Total load	22633
Load for unit service Amp @ 208 volt/1	109
Connected Load	36270

ELECTRICAL PANEL SCHEDULE

PANEL: A, B, C — POLES: 24 — MOUNTING: FLUSH

BUS: 125A — MAINS: MLO — VOLTAGE: 120/240 — PHASE/WIRE: 1 Ph 3 Wire — KAIC:10K

CIRCUIT NUMBERS	DESCRIPTION	AMPS	POLES	QUANTITY
1, 3	RANGE	40	2	1
5, 7, 13, 15	WATER HEATER, DRY ER	30	2	2
9, 11	AHU	40	2	1
17, 19	CONDENSING UNIT	20	2	1
2, 8 THRU 16 EVEN	LIGHTS AND RECEPTACLES	20	1	6
4, 6, 18	ARC-FAULT LIGHTS AND RECEPTACLES	20	1	3
20	SPARE	20	1	1

ELECTRICAL PANEL SCHEDULE

PANEL: D — POLES: 24 — MOUNTING: FLUSH

BUS: 125A — MAINS: MLO — VOLTAGE: 120/240 — PHASE/WIRE: 1 Ph 3 Wire — KAIC:10K

CIRCUIT NUMBERS	DESCRIPTION	AMPS	POLES	QUANTITY
1, 3	RANGE	40	2	1
5, 7, 13, 15	WATER HEATER, DRY ER	30	2	2
9, 11	AHU	40	2	1
17, 19	CONDENSING UNIT	25	2	1
2, 8 THRU 16 EVEN	LIGHTS AND RECEPTACLES	20	1	6
4, 6, 18	ARC-FAULT LIGHTS AND RECEPTACLES	20	1	3
20	SPARE	20	1	1

ELECTRICAL PANEL SCHEDULE

PANEL: F — POLES: 24 — MOUNTING: FLUSH

BUS: 125A — MAINS: MLO — VOLTAGE: 120/240 — PHASE/WIRE: 1 Ph 3 Wire — KAIC:10K

CIRCUIT NUMBERS	DESCRIPTION	AMPS	POLES	QUANTITY
1, 3	RANGE	40	2	1
5, 7, 13, 15	WATER HEATER, DRY ER	30	2	2
9, 11	AHU	40	2	1
17, 19	CONDENSING UNIT	25	2	1
2, 8 THRU 16 EVEN, 22	LIGHTS AND RECEPTACLES	20	1	7
4, 6, 18, 20	ARC-FAULT LIGHTS AND RECEPTACLES	20	1	4
21	SPARE	20	1	1

ELECTRICAL PANEL SCHEDULE

PANEL: G, H — POLES: 24 — MOUNTING: FLUSH

BUS: 125A — MAINS: MLO — VOLTAGE: 120/240 — PHASE/WIRE: 1 Ph 3 Wire — KAIC:10K

CIRCUIT NUMBERS	DESCRIPTION	AMPS	POLES	QUANTITY
1, 3	RANGE	40	2	1
5, 7, 13, 15	WATER HEATER, DRY ER	30	2	2
9, 11	AHU	60	2	1
17, 19	CONDENSING UNIT	30	2	1
2, 8 THRU 16 EVEN, 21, 22	LIGHTS AND RECEPTACLES	20	1	8
4, 6, 18, 20	ARC-FAULT LIGHTS AND RECEPTACLES	20	1	4
23	SPARE	20	1	1

STATE OF MISSOURI — RICHARD R. BEARDMORE — NUMBER — PROFESSIONAL ENGINEER

4-3-20

ARCHITECT — TR;i ARCHITECTS
STRUCTURAL ENGINEER — BOB D CAMPBELL & COMPANY
CIVIL ENGINEER — RENAISSANCE INFRASTRUCTURE CONSULTING
GENERAL CONTRACTOR — BRINKMANN CONSTRUCTORS
MECHANICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES
PLUMBING ENGINEER — LATIMER SOMMERS & ASSOCIATES
ELECTRICAL ENGINEER — LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR;i ARCHITECTS

TR;i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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www.tri-architects.com

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REVISIONS 2

2 REVISION 3 — 04.03.20

DWG BY RRB

TR;i PROJECT NO. 18-046

SHEET NO.

E305

ELECTRICAL SCHEDULES

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

ELECTRICAL PANEL SCHEDULE

PANEL: SWGR NO. 1 | LOCATION: | MOUNTING: SURFACE
BUS: 5000 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
RETAIL	100000			1200		1 2		1000	108000			METER BANK 1C
		100000				3 4				108000		
			100000	3P		5 6	3P				108000	
METER BANK 1A	82000			1000		7 8		1000	97000			METER BANK 1D
		82000				9 10				97000		
			82000	3P		11 12	3P				97000	
METER BANK 1B	104000			1000		13 14		1000	143180			HOUSE PANEL DP-S
		104000				15 16				136930		
			104000	3P		17 18	3P				125400	
SPARE						19 20						
SPARE						21 22						SPACE
SPARE						23 24						SPACE
SPARE						25 26						SPACE
SPARE						27 28						SPACE
SPARE				20	12	29 30						SPACE
CONNECTED LOAD-WATTS	634180	627930	616400						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	5285	5233	5137						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: SWGR NO. 2 | LOCATION: | MOUNTING: SURFACE
BUS: 5000 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
RETAIL	100000			1200		1 2		1000	108000			METER BANK 1C
		100000				3 4				108000		
			100000	3P		5 6	3P				108000	
METER BANK 1A	82000			1000		7 8		1000	97000			METER BANK 1D
		82000				9 10				97000		
			82000	3P		11 12	3P				97000	
METER BANK 1B	104000			1000		13 14		1000	149720			HOUSE PANEL DP-N
		104000				15 16				146580		
			104000	3P		17 18	3P				128100	
SPARE						19 20						
SPARE						21 22						SPACE
SPARE						23 24						SPACE
SPARE						25 26						SPACE
SPARE						27 28						SPACE
SPARE				20	12	29 30						SPACE
CONNECTED LOAD-WATTS	640720	637580	619100						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	5339	5313	5159						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: DP-S | LOCATION: | MOUNTING: SURFACE
BUS: 1000 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 42

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
PANEL B1	24700			400		1 2		400	30400			PANEL 1-1A
		23900				3 4				29500		
			22700	3P		5 6		3P			27000	
PANEL B-1A	30000			225		7 8		225	28400			PANEL 1-1B
		25550				9 10				30200		
			25500	3P		11 12		3P			25400	
PANEL 1-1C	29680			225		13 14						200 A SPACE
		27780				15 16						
			24800	3P		17 18						
						19 20						
						21 22						
						23 24						
CONNECTED LOAD-WATTS	143180	136930	125400						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	1193	1141	1045						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			1000 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: B1 | LOCATION: | MOUNTING: SURFACE
BUS: 400 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
EUH-B	5100			60	8	1 2	12	20	1000			OHD
		5100			8	3 4	12			1000		
			5100	3P	8	5 6	12	3P			1000	
EUH-B	5100			60	8	7 8	6	90	5800			EF-G1
		5100			8	9 10	6			5800		
			5100	3P	8	11 12	6	3P			5800	
EUH-B	5100			60	8	13 14	12	20	1200			LIGHTING
		5100			8	15 16	12	20		1200		LIGHTING
			5100	3P	8	17 18	12	20			600	LTS/RECEPTS
RECEPTACLES	600			20	12	19 20	12	20	800			LTS/RECEPTS
RECEPTACLES		600		20	12	21 22						
SPARE				20		23 24						
SPARE				20		25 26						SPACE
SPARE				20		27 28						SPACE
SPARE				20		29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	24700	23900	22700						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	206	199	189						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			400 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: B1A | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
EUH-B	5100			60	8	1 2		100	3800			PANEL P
		5100			8	3 4				4100		
			5100	3P	8	5 6	3P				3200	
EUH-B	5100			60	8	7 8		60	4000			CAR CHARGER
		5100			8	9 10		8-2P		4000		
			5100	3P	8	11 12		60			4000	CAR CHARGER
EUH-B	5100			60	8	13 14		8-2P	4000			
		5100			8	15 16		20		1500		EUH-A
			5100	3P	8	17 18		12-2P			1500	
ELEV PIT	200			20	10	19 20		20	1200			LIGHTING
SUMP PUMP		600		20	12	21 22		12		600		ELEVATOR/RT LTG
EUH-C			1500	20	12	23 24						SPACE
EUH-C	1500			20	10	25 26						SPACE
				20		27 28						SPACE
				20		29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	30000	25500	25500						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	250	213	213						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			225 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: P | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
PUMP	2200			35	10	1 2	12	20	300			HEATERS
5 HP VERIFY		2200		2P	10	3 4	12	20		600		LTS/RECEPTS
PUMP			1300	20	12	5 6	12	20			600	RECEPTACLES
3 HP VERIFY	1300			2P	12	7 8		20				SPARE
PUMP		1300		20	12	9 10		20				SPARE
3 HP VERIFY			1300	2P	12	11 12		20				SPARE
SPACE						13 14						SPACE
SPACE						15 16						SPACE
SPACE						17 18						SPACE
SPACE						19 20						SPACE
SPACE						21 22						SPACE
SPACE						23 24						SPACE
SPACE						25 26						SPACE
SPACE						27 28						SPACE
SPACE				20	12	29 30						SPACE
CONNECTED LOAD-WATTS	3800	4100	3200						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	32	34	27						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			100 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 1-1A | LOCATION: | MOUNTING: SURFACE
BUS: 400 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
EUH-A	1500			20	12	1 2	12	20	1000			LIGHTING
		1500		2P	12	3 4	12	20		1000		LIGHTING
EUH-B2			2500	30	10	5 6	12	20			1000	LIGHTING
	2500			2P	10	7 8	12	20	600			LTS/RECEPTS
AHU-1/1		4600		50	8	9 10	12	20		600		LTS/RECEPTS
			4600	2P	8	11 12	12	20			600	LTS/RECEPTS
RECEPTACLES	800			20	12	13 14	12	20	500			LTS/RECEPTS
RECEPTACLES		800		20	12	15 16	12	20		600		LTS/RECEPTS
RECEPTACLES			800	20	12	17 18	12	20			500	LTS/RECEPTS
RECEPTACLES	800			20	12	19 20	12	20	1200			EXTERIOR LIGHTING
LTS/RECEPTS		800		20	12	21 22	12	20		1500		EUH-A
OHD			1500	20	12	23 24	12	2P			1500	
AHU-2/1	4800			50	8	25 26	12	20	800			LTS/RECEPTS
		4800		2P	8	27 28	12	20		1000		LIGHTING
LTS/RECEPTS			1000	20	12	29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38		125	15900			PANEL 1-4A
SPARE				20		39 40				12100		
SPARE				20		41 42		3P			12800	
CONNECTED LOAD-WATTS	30400	29600	27000						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	253	246	225						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			400 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 1-1B | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
LTS/RECEPTS	400			20		1 2	12	20	1000			LIGHTING
AHU-1/2		4800		50	8	3 4	12	20		1000		LIGHTING
			4800	3P	8	5 6	12	20			400	RECEPTACLES
AHU-2/2	4800			50	8	7 8	12	20	800			RECEPTACLES
		4800		2P	8	9 10		20		200		RECEPTACLES
RECEPTACLES			800			11 12						
COURTYARD	1000			20	12	13 14	12	20				
COURTYARD		1000		20	12	15 16	12	20				
COURTYARD			600	20	12	17 18	12	20				
COURTYARD	200			20	12	19 20	12	20				
COURTYARD		400		20	12	21 22						SPACE
RECEPTACLES			800	20	12	23 24						SPACE
				20	12	25 26						SPACE
				20	12	27 28						SPACE
				20	12	29 30						SPACE
				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38			26200			PANEL 1-4B
SPARE				20		39 40				18000		
SPARE				20		41 42		3P			18000	
CONNECTED LOAD-WATTS	28400	30200	25400						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	237	252	212						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			225 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 1-1C | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
FIRE ALARM PANEL - HLO	800					1 2		70	6600			RTU-1
LTS/RECPTS		400				3 4		6 2P		6600		
RECEPTACLES			600			5 6		6	70		6600	RTU-2
RECEPTACLES	1000					7 8		6 2P	6600			
DRINKING FOUNTAIN		600		20	12	9 10		6	70	6600		RTU-3
RECEPTACLES			1000			11 12		6 2P			6600	
RECEPTACLES	1000			20	12	13 14		6	70	6600		RTU-4
RECEPTACLES		1200		20	12	15 16		6 2P		6600		
RECEPTACLES			600	20	12	17 18		12	20		1500	EUH-D
RECEPTACLES	600			20	12	19 20		12 2P		1500		
RECEPTACLES		600		20	12	21 22		12	20		600	RECEPTACLES
RECEPTACLES			1200	20	12	23 24		12	20		800	RECEPTACLES
RECEPTACLES	600			20	12	25 26		12	20	800		RECEPTACLES
						27 28		12	20	1000		RECEPTACLES
WATER HEATER			1500	20	12	29 30		12	20		800	RECEPTACLES
LIGHTING	600			20		31 32		12	20	600		LIGHTING
LIGHTING		600		20		33 34		12	20		600	LIGHTING
LIGHTING			600	20		35 36		12	20		1500	WATER HEATER
WH-CL3	1980			30	10	37 38		12	20	400		IT EQUIP
		1980		2P	10	39 40		12	20	400		IT EQUIP
LIGHTING			1500	20	12	41 42						SPACE
CONNECTED LOAD-WATTS	29680	27780	24800						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	247	232	207						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			225 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 1-4A | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
AHU-3/1	4800			50	8	1 2	12	20	400			LTS/RECEPTS
		4800		2P	8	3 4	12	20		1000		LIGHTING
AHU-4/1			4800	50	8	5 6	10	25			1700	CU-3/1
	4800			2P	8	7 8	10	2P	1700			
DSS-4/1		1900		25	10	9 10	10	25		1700		CU-4/1
			1900	2P	10	11 12	10	2P			1700	
CU-1/1	1700			25	10	13 14	12	20	800			RECEPTACLES
		1700		2P	10	15 16		20				
CU-2/1			1700	25	12	17 18		20				
	1700			2P	12	19 20		20				
RECEPTACLES		1000		20	12	21 22						SPACE
LIGHTING			1000	20	12	23 24						SPACE
						25 26						SPACE
						27 28						SPACE
						29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	15900	12100	12800						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	133	101	107						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			125 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 1-4B | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
AHU-3/2	4800			50	8	1 2	12	20	1000			LIGHTING
		4800		2P	8	3 4	12	20		1000		LIGHTING
AHU-4/2			4800	50	8	5 6	12	20			400	RECEPTACLES
	4800			2P	8	7 8	12	20	400			RECEPTACLES
CU-4/2		1700		50	8	9 10	12	20		400		ELEVATOR CAR
			1700	2P	8	11 12	12	20			200	HOISTWAY
CU-1/2	1700			20	12	13 14	6	60	4800			ELEVATOR
		1700		20	12	15 16	6			4800		
CU-2/2			1700	20	12	17 18	6	3P			4800	
	1700			20	12	19 20	12	20	1000			RECEPTACLES
CU-3/2		1700		20	12	21 22	10	25		1900		DSS-4/2
			1700	20	12	23 24	10	2P			1900	
						25 26						SPACE
						27 28						SPACE
						29 30	12	20			800	RECEPTACLES
						31 32						SPACE
						33 34						SPACE
						35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	20200	18000	18000						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	168	150	150						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			150 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: DP-N | LOCATION: | MOUNTING: SURFACE
BUS: 1000 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 42

DESCRIPTION	WATTS A	WATTS B	WATTS C	BRKR	WIRE	POLE	WIRE	BRKR	WATTS A	WATTS B	WATTS C	DESCRIPTION
PANEL B2	24900			400		1 2		400	29600			PANEL 2-1A
		24900				3 4				30500		
			23700	3P		5 6		3P			27000	
PANEL B-2A	29040			225		7 8		225	47500			PANEL 2-1B
		27800				9 10				47900		
			29400	3P		11 12		3P			38400	
PANEL 2-1C	18680			225		13 14						200 A SPACE
		15480				15 16						
			9600	3P		17 18						
						19 20						
						21 22						
						23 24						
CONNECTED LOAD-WATTS	149720	146580	128100						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	1248	1222	1068						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			1000 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

STATE OF MISSOURI
RICHARD R. BEARDSLEE
NUMBER
PROFESSIONAL ENGINEER
4-3-20

TR¡ ARCHITECTS — ARCHITECT
BOB D CAMPBELL & COMPANY — STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING — CIVIL ENGINEER
BRINKMANN CONSTRUCTORS — GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES — MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES — PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES — ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

DATE: 09.12.19

REVISIONS

1	PERMIT COMMENTS	09.06.19
2	REVISION 1	12.20.19
3	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

E306

ELECTRICAL SCHEDULES

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

ELECTRICAL PANEL SCHEDULE

PANEL: B2 | LOCATION: | MOUNTING: SURFACE
BUS: 400 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
EUH-B	5100			60	8	1 2		225	1000			PANEL B2A
		5100			8	3 4				1000		
			5100	3P	8	5 6		3P			1000	
EUH-B	5100			60	8	7 8	6	90	5800			EF-G2
		5100			8	9 10	6			5800		
			5100	3P	8	11 12	6	3P			5800	
EUH-B	5100			60	8	13 14	12	20	1200			LIGHTING
		5100			8	15 16	12	20		1200		LIGHTING
			5100	3P	8	17 18	12	20			600	LTS/RECEPTS
RECEPTACLES	600			20	12	19 20	12	20	1000			OHD
RECEPTACLES		600		20	12	21 22	12			1000		
SPARE				20		23 24	12	3P			1000	
SPARE				20		25 26						SPACE
SPARE				20		27 28						SPACE
SPARE				20		29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	24900	24900	23700						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	208	208	198						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			400 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: B2A | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
EUH-B	5100			60	8	1 2	12	20	1200			LIGHTING
		5100			8	3 4	8	60		4000		CAR CHARGER
			5100	3P	8	5 6	8	2P			4000	
EUH-B	5100			60	8	7 8	8	60	4000			CAR CHARGER
		5100			8	9 10	8	2P		4000		
			5100	3P	8	11 12	8	60			4000	CAR CHARGER
EUH-B	5100			60	8	13 14	8	2P	4000			
		5100			8	15 16	12	20		1500		EUH-A
			5100	3P	8	17 18	12	2P			1500	
ELEV PIT	200			20	12	19 20	12	20	1200			LIGHTING
SUMP PUMP		600		20	12	21 22	12	20		200		ELEV PIT
EUH-C			1500	20	12	23 24	12	20			600	SUMP PUMP
ELEVATOR LTG	40			20	12	25 26	12	20	600			ELEV PIT
EUH-C		1500		20	12	27 28	12	20		700		LTS/RECEPTS
SPARE				20		29 30	10	30			2500	EUH_B2
SPARE				20		31 32	10	2p	2500			
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	29040	27800	29400						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	242	232	245						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			225 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 2-4A | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
AHU-3/4	4800			50	8	1 2	12	20	400			LTS/RECEPTS
		4800		2P	8	3 4	12	20		1000		LIGHTING
AHU-4/4			4800	50	8	5 6	10	25			1700	CU-3/4
	4800			2P	8	7 8	10	2P	1700			
DSS-4/3		1900		25	10	9 10	10	25		1700		CU-4/4
			1900	2P	10	11 12	10	2P			1700	
CU-1/7	1700			25	10	13 14		20				
		1700		2P	10	15 16	12	20		1000		RECEPTACLES
CU-2/4			1700	25	12	17 18		20				
	1700			2P	12	19 20		20				
RECEPTACLES		1000		20	12	21 22						SPACE
LIGHTING			1000	20	12	23 24						SPACE
						25 26						SPACE
						27 28						SPACE
						29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38						SPACE
SPARE				20		39 40						SPACE
SPARE				20		41 42						SPACE
CONNECTED LOAD-WATTS	15100	13100	12800						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	126	109	107						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			125 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 2-4B | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
AHU-3/3	4800			50	8	1 2	12	20	1000			LIGHTING
		4800		2P	8	3 4	12	20		1000		LIGHTING
AHU-4/3			4800	50	8	5 6	12	20			400	RECEPTACLES
	4800			2P	8	7 8	12	20	400			RECEPTACLES
CU-4/3		1700		50	8	9 10	12	20		400		ELEVATOR CAR
			1700	2P	8	11 12	12	20			200	HOISTWAY
CU-1/3	1700			20	12	13 14	6	60	4800			ELEVATOR
		1700		20	12	15 16	6			4800		
CU-2/2			1700	20	12	17 18	6	3P			4800	
	1700			20	12	19 20	8	50	3100			CU-1/3
CU-3/2		1700		20	12	21 22	8	2P		3100		
			1700	20	12	23 24	12	20			800	RECEPTACLES
ELEVATOR	4800			60	6	25 26	12	20	800			RECEPTACLES
		4800			6	27 28	12	20		600		RECEPTACLES
			4800	3P	6	29 30	12	20			400	RECEPTACLES
ELEV CAR	400			20	12	31 32	12	20	1500			RECEPTACLES
ELEV HOISTWAY		200		20	12	33 34	12	20		600		RECEPTACLES
RECEPTACLES			800	20		35 36	8	40			3700	RTU-5
RTU-6	3700			40	8	37 38	8		3700			
		3700			8	39 40	8	3P		3700		
			3700	3P	8	41 42						SPACE
RECEPTACLES	400			20	12	43 44	10	25	1700			CU-1/4
RECEPTACLES		400		20	12	45 46	10	2P		1700		
SPARE				20		47 48	12	20			1500	WATER HEATER
SPARE				20		49 50						SPACE
SPARE				20		51 52	12	20		800		RECEPTACLES
SPARE				20		53 54						SPACE
CONNECTED LOAD-WATTS	39300	35700	31000						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	328	298	258						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			300 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 2-1A | LOCATION: | MOUNTING: SURFACE
BUS: 400 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
EUH-A	1500			20	12	1 2	12	20	1000			LIGHTING
		1500		2P	12	3 4	12	20		1000		LIGHTING
EUH-B2			2500	30	10	5 6	12	20			1000	LIGHTING
	2500			2P	10	7 8	12	20	600			LTS/RECEPTS
AHU-1/7		4800		50	8	9 10	12	20		600		LTS/RECEPTS
			4800	2P	8	11 12	12	20			600	LTS/RECEPTS
RECEPTACLES	800			20	12	13 14	12	20	500			LTS/RECEPTS
RECEPTACLES		800		20	12	15 16	12	20		600		LTS/RECEPTS
RECEPTACLES			800	20	12	17 18	12	20			500	LTS/RECEPTS
RECEPTACLES	800			20	12	19 20	12	20	1200			EXTERIOR LIGHTING
LTS/RECEPTS		800		20	12	21 22	12	20		1500		EUH-A
OHD			1500	20	12	23 24	12	2P			1500	
AHU-2/4	4800			50	8	25 26	12	20	800			LTS/RECEPTS
		4800		2P	8	27 28	12	20		1000		LIGHTING
LTS/RECEPTS			1000	20	12	29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38		125	15100			PANEL 2-4A
SPARE				20		39 40				13100		
SPARE				20		41 42		3P			12800	
CONNECTED LOAD-WATTS	29600	30500	27000						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	247	254	225						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			400 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 2-1B | LOCATION: | MOUNTING: SURFACE
BUS: 400 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
LTS/RECEPTS	400					1 2	12	20	1000			LIGHTING
AHU-1/6		4800		50	8	3 4	12	20		1000		LIGHTING
			4800	2P	8	5 6	12	20			400	RECEPTACLES
AHU-2/3	4800			50	8	7 8	12	20	800			RECEPTACLES
		4800		2P	8	9 10				200		RECEPTACLES
RECEPTACLES			800			11 12						
COURTYARD	1000			20	12	13 14	12	20				
COURTYARD		1000		20	12	15 16	12	20				
COURTYARD			600	20	12	17 18	12	20				
COURTYARD	200			20	12	19 20	12	20				
COURTYARD		400		20	12	21 22						SPACE
RECEPTACLES			800	20	12	23 24						SPACE
				20	12	25 26						SPACE
				20	12	27 28						SPACE
				20	12	29 30						SPACE
SPARE				20		31 32						SPACE
SPARE				20		33 34						SPACE
SPARE				20		35 36						SPACE
SPARE				20		37 38		300	39300			PANEL 2-4B
SPARE				20		39 40				35700		
SPARE				20		41 42		3P			31000	
CONNECTED LOAD-WATTS	47500	47900	38400						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	396	399	320						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			400 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

ELECTRICAL PANEL SCHEDULE

PANEL: 2-1C | LOCATION: | MOUNTING: SURFACE
BUS: 225 A | MAINS: MLO | VOLTAGE: 120/208 | PHASE/WIRE: 3/4 | KAIC: 10

DESCRIPTION	A	B	C	BRKR	WIRE	POLE	WIRE	BRKR	A	B	C	DESCRIPTION
	WATTS								WATTS			
AHU-1/3	6900			70	6	1 2	12	20	600			LIGHTING
		6900		2P	6	3 4	12	20		800		LTS/RECEPTS
AHU-1/4			4800	50	8	5 6	12	20			600	LTS/RECEPTS
	4800			2P	8	7 8	12	20	600			RECEPTACLES
COURTYARD		1000		20	12	9 10	12	20		600		RECEPTACLES
COURTYARD			800	20	12	11 12	12	20			600	RECEPTACLES
COURTYARD	400			20	12	13 14	12	20	600			RECEPTACLES
COURTYARD		400		20	12	15 16	12	20		600		RECEPTACLES
RECEPTACLES			800	20	12	17 18	12	20			600	RECEPTACLES
RECEPTACLES	1000			20	12	19 20	12	20	800			RECEPTACLES
RECEPTACLES		800		20	12	21 22	12	20		800		RECEPTACLES
						23 24	10	20			800	RECEPTACLES
						25 26	10	30	1980			WH-CL2
LIGHTING		600		20	12	27 28	10	2P		1980		
LIGHTING			600	20	12	29 30	12	20				
LIGHTING	1000			20	12	31 32	12	20				
LIGHTING		1000		20	12	33 34	12	20				
				20		35 36						
						37 38						
						39 40						
						41 42						SPACE
CONNECTED LOAD-WATTS	18680	15480	9600						FEEDER LOAD-WATTS			
CONNECTED LOAD-AMPS	156	129	80						FEEDER LOAD-AMPS			
CONTINUOUS LOAD									FEEDER WIRE			
RECEPTACLES									FEEDER OCP			225 A
NON-CONTINUOUS LOAD												
OTHER DIVERSIFIED LOAD				@	0.5							

STATE OF MISSOURI
RICHARD R. BEARDMORE
PROFESSIONAL ENGINEER
4-3-20

ARCHITECT
TR¡ ARCHITECTS

STRUCTURAL ENGINEER
BOB D CAMPBELL & COMPANY

CIVIL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING

GENERAL CONTRACTOR
BRINKMANN CONSTRUCTORS

MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES

ELECTRICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

DATE: 09.12.19

REVISIONS 6

1	PERMIT COMMENTS	09.06.19
4	REVISION 1	12.20.19
6	REVISION 3	04.03.20

DWG BY RRB

TR¡ PROJECT NO. 18-046

SHEET NO.

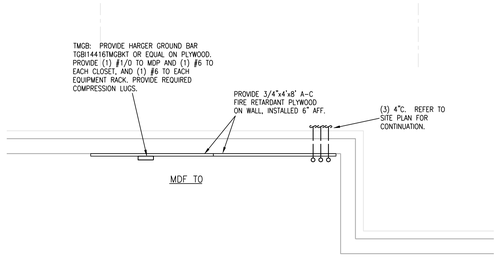
E307

ELECTRICAL SCHEDULES

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

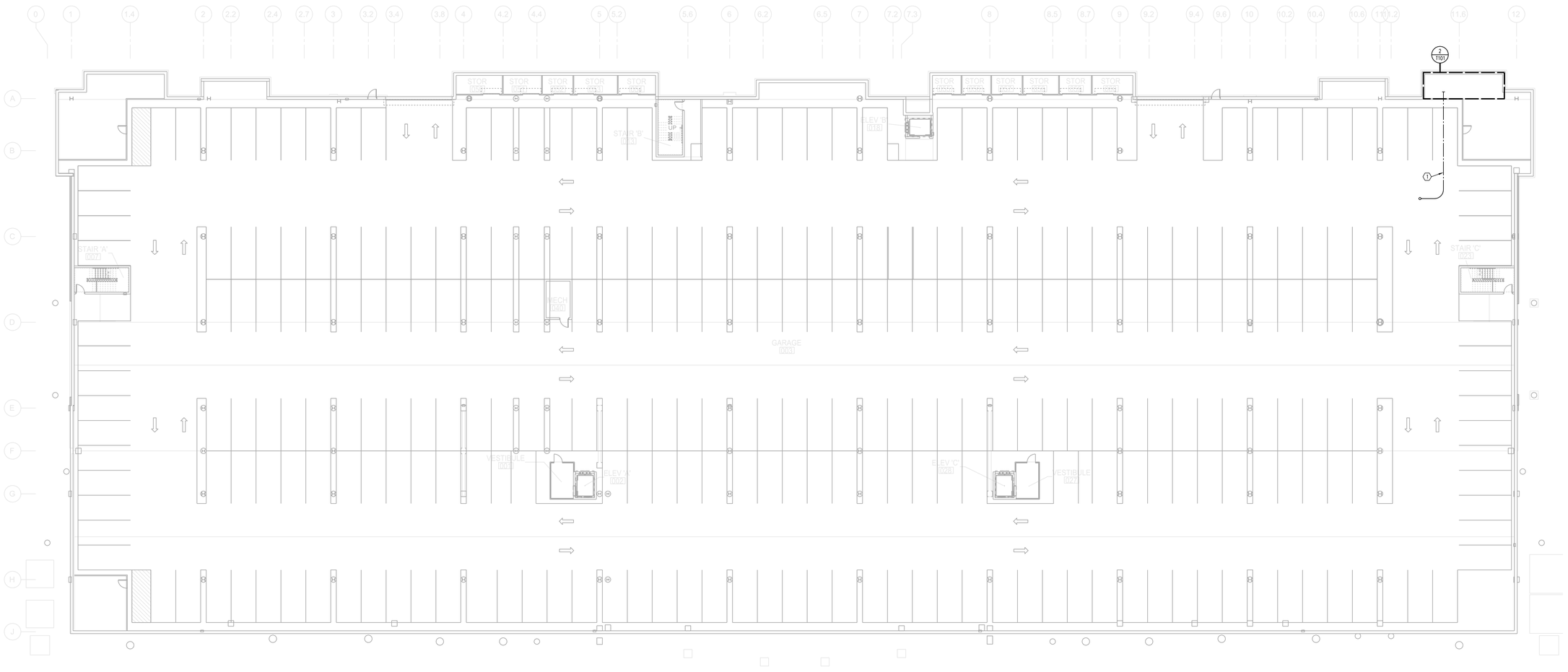
LEGEND:

1 (3) 4" EMT CONDUITS BY E/C



2 PARTIAL FLOOR PLAN
1/4"=1'-0" TELECOM

NORTH



1 GARAGE PLAN
1/16"=1'-0" TELECOM

NORTH

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEACHNER
NUMBER PE-2009020886
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

Summit at West Pryor

TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
www.triarchitects.com

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DATE: 07.29.19

REVISIONS ___

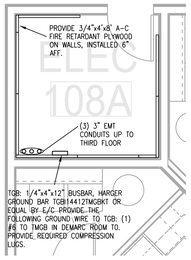
DWG BY RRB

TR¡ PROJECT NO. 18-046

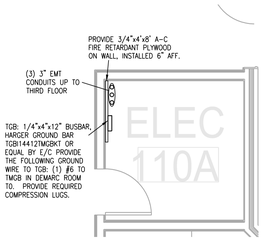
SHEET NO.

T101

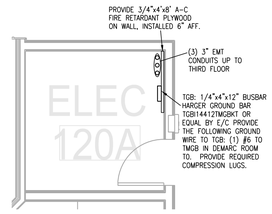
GARAGE PLAN - TELECOM



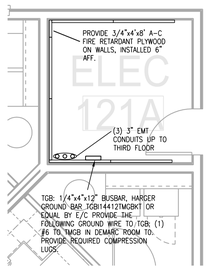
2 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



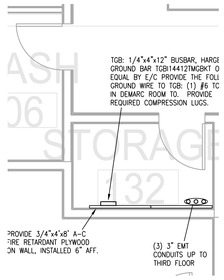
3 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



4 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



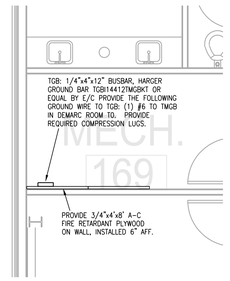
5 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



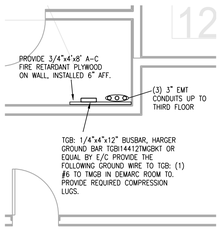
6 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH

LEGEND:

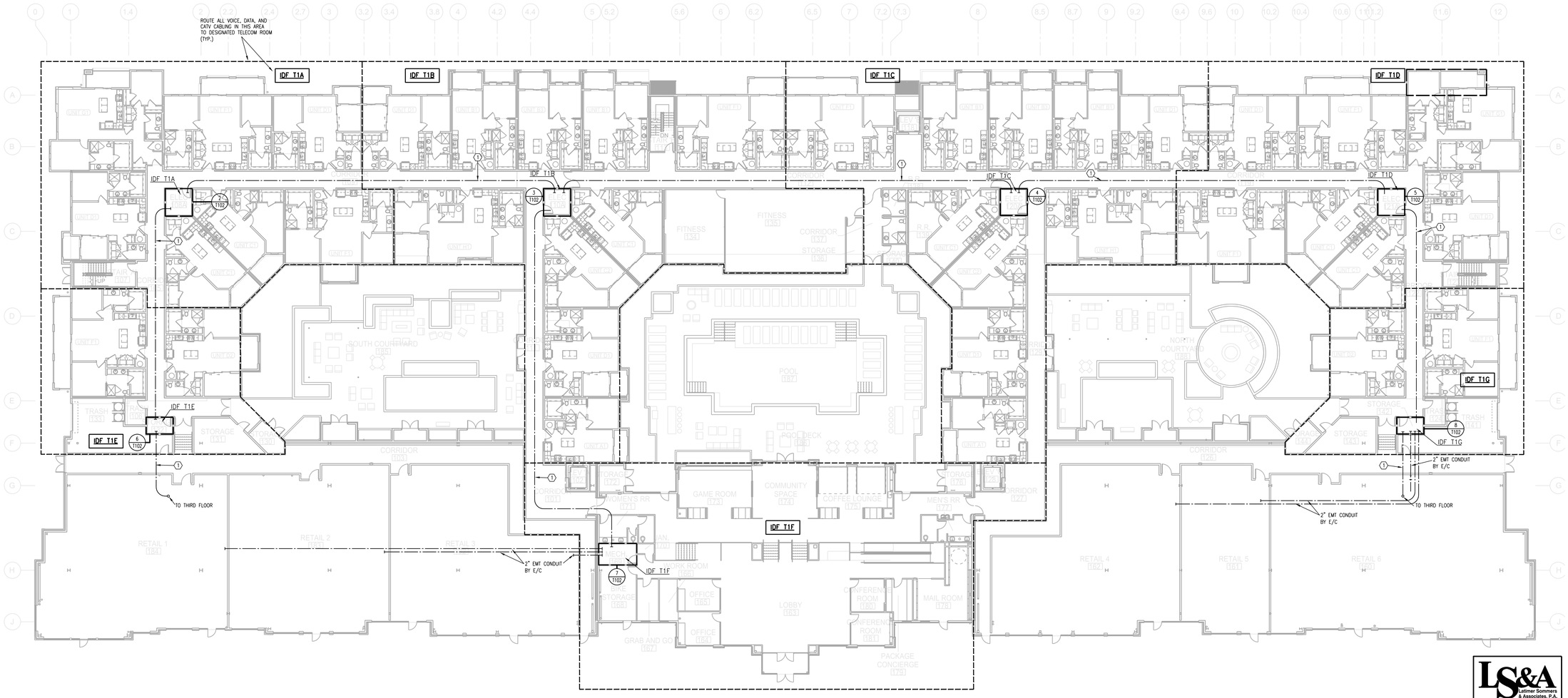
1 (3) 4" EMT CONDUITS BY E/C



7 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



8 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM NORTH



1 **FIRST FLOOR PLAN** 1/16"=1'-0" TELECOM NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEARDSLEE
NUMBER PE-2009030996
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
LATIMER SOMMERS & ASSOCIATES	PLUMBING ENGINEER
LATIMER SOMMERS & ASSOCIATES	ELECTRICAL ENGINEER

Pearl COMPANIES

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TRi ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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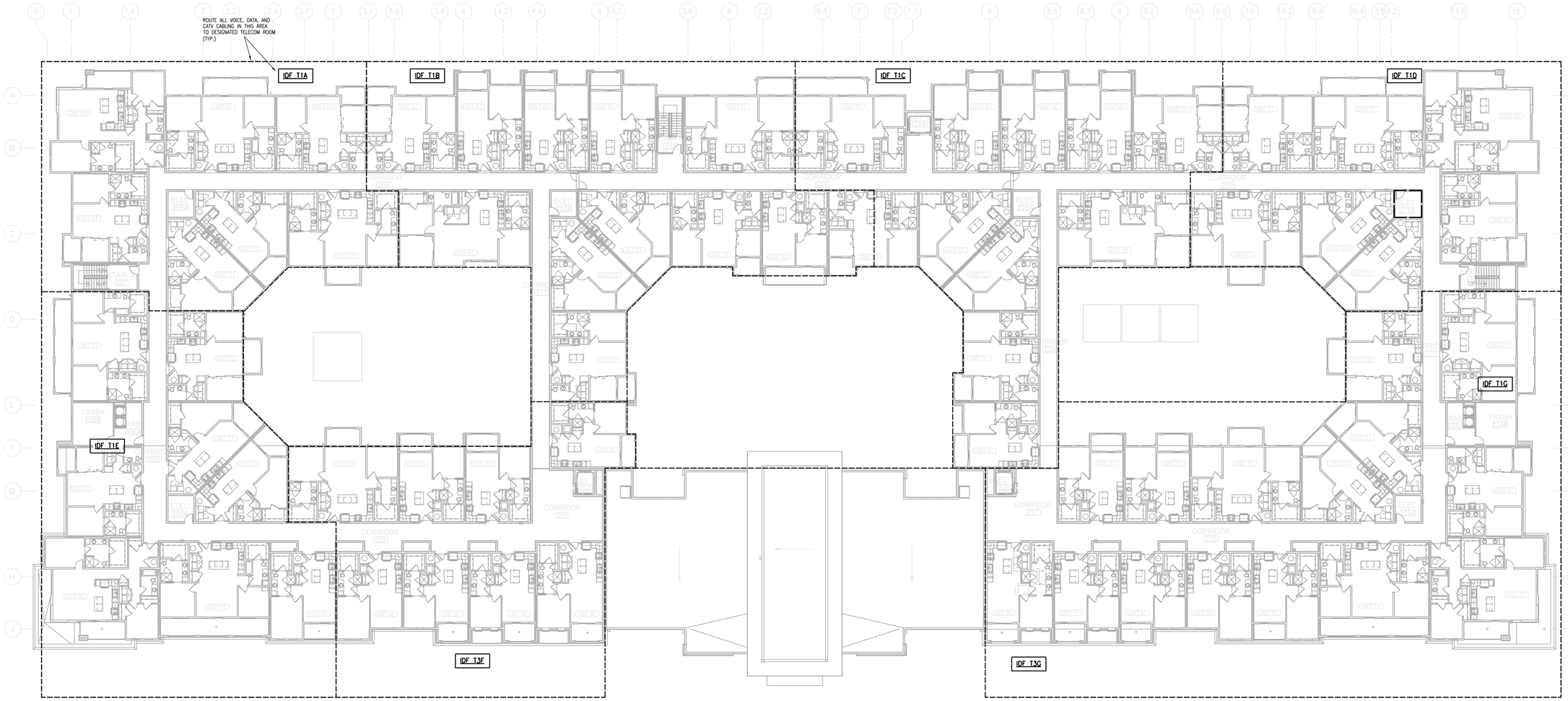
T102

FIRST FLOOR PLAN - TELECOM

LEGEND:

(1) (3) 4" EMT CONDUITS BY E/C



1 **SECOND FLOOR PLAN** — TELECOM
1/16"=1'-0"

NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BRANDENBURG
NUMBER PE-2009020886
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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Pearl COMPANIES

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TR¡ ARCHITECTS

TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751

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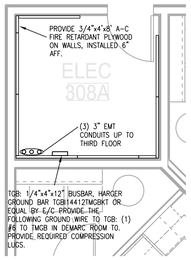
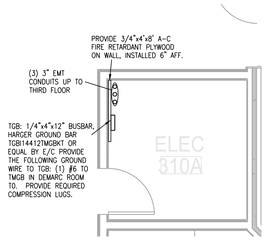
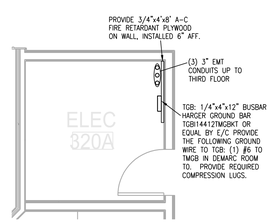
SECOND FLOOR PLAN- TELECOM



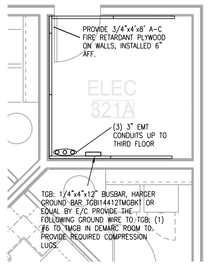
2 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



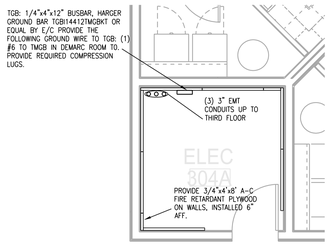
3 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



4 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



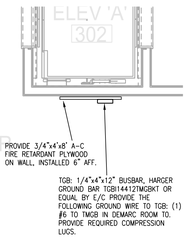
5 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



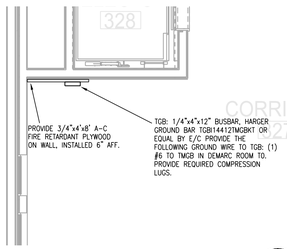
6 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH

LEGEND:

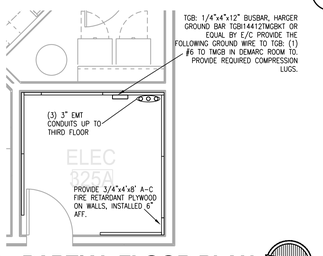
1 (3) 4" EMT CONDUITS BY E/C



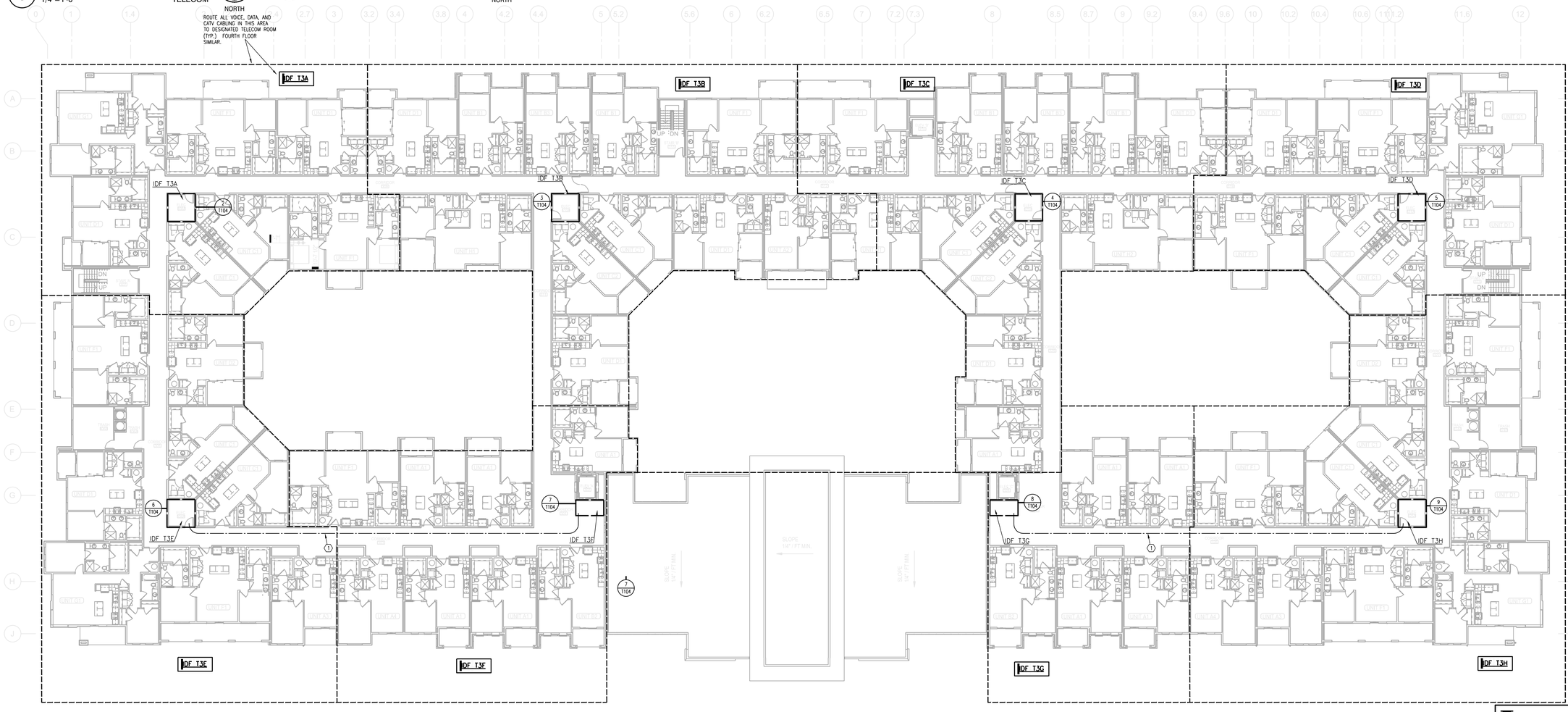
7 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



8 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



9 **PARTIAL FLOOR PLAN** 1/4"=1'-0" TELECOM — NORTH



1 **THIRD FLOOR PLAN** 1/16"=1'-0" TELECOM — NORTH

LS&A Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI — RICHARD R. BRANDOM — NUMBER PE-2009020096 — PROFESSIONAL ENGINEER — 07-29-19

TR,i ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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Pearl COMPANIES

Summit at West Pryor

TRi ARCHITECTS

TR,i Architects
9812 Manchester Road
St. Louis, Missouri 63119
T: 314-395-9750
F: 314-395-9751
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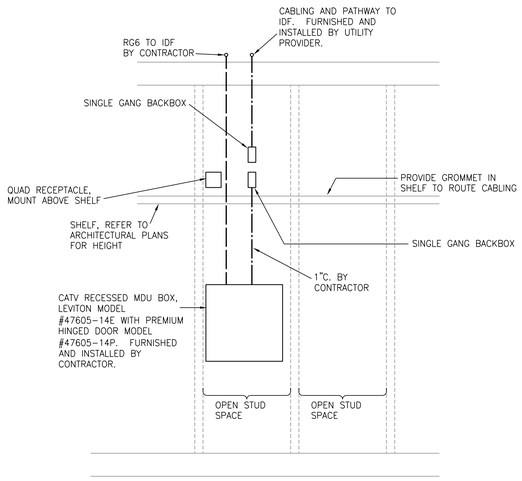
THIRD FLOOR PLAN - TELECOM



1 **TELE/TV DEMARK FLUSH BOX DETAIL**
NO SCALE

LS&A
Latimer Sommers & Associates, P.A.
CONSULTING ENGINEERS
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. 1904023

STATE OF MISSOURI
RICHARD R. BEACHNER
NUMBER PE-2009030056
PROFESSIONAL ENGINEER
07-29-19

TR¡ ARCHITECTS	ARCHITECT
BOB D CAMPBELL & COMPANY	STRUCTURAL ENGINEER
RENAISSANCE INFRASTRUCTURE CONSULTING	CIVIL ENGINEER
BRINKMANN CONSTRUCTORS	GENERAL CONTRACTOR
LATIMER SOMMERS & ASSOCIATES	MECHANICAL ENGINEER
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TR¡ Architects
9812 Manchester Road
St. Louis, Missouri 63119
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F: 314-395-9751
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