Joe Frogge

RELEASED FOR CONSTRUCTION
As Noted on Plans Review

Development Services Department
Lee's Summit, Missouri
11/01/2021

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architecture & engineering

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project description:

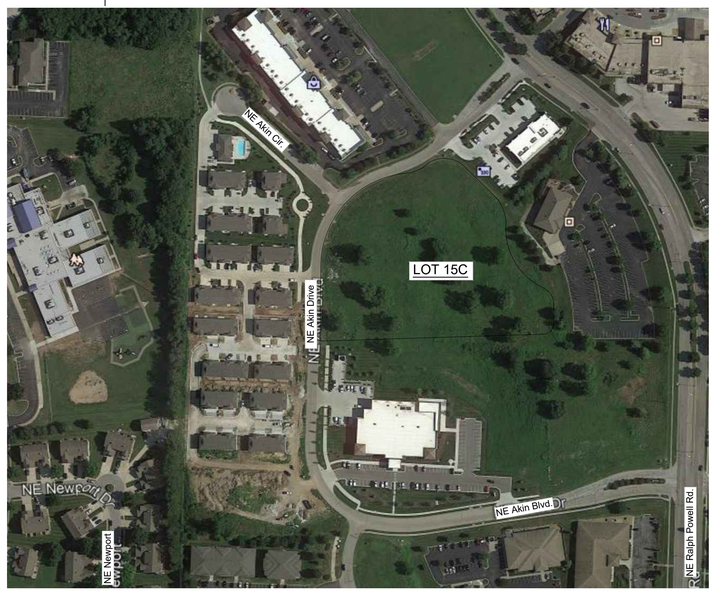
Phase 5 - Project purpose is to build a multi-building residential 2 story townhome rental development that will consist of a mixture of 3-plex, 4-plex, and 5-plex buildings.

Building construction is concrete slab on grade with wood framed walls, floors and roofing structure. Exterior materials are applied stone veneer, painted lap wood siding and composition asphalt shingles.

vicinity map

scale: none

north



code review:

Governing Municipality:	Lee's Summit, Missouri
Governing Codes:	2018 International Residential Code
Property Zoning:	RP-4 Planned Garden Apartments
Surrounding Zoning:	North - CP-2 West - RP-4 South - CP-2 East - CP-2
Setbacks:	front 50 major street front 20' other streets side 10' lot line side 20' between buildings rear 20'
Occupancy Type:	Residential
Construction Type:	V-B
Fire Suppression:	none
Actual Height / Stories:	28' / 2 stories
Distance between buildings:	20 feet minimum

sheet index:

owner:

Chapel Ridge Townhomes, LLC
Mike Atcheson
3170 NE Carnegie Drive Ste. 400
p:816-795-8100

general contractor:

Capital Construction Services, LLC
Doug Rothfuss
2642 NE Hagan Road
p:816-875-0018

architect:

Davidson Architecture & Engineering
Powell Minnis, RA
4301 Indian Creek Parkway
Overland Park, Kansas 66207
p: 913.451.9390 f: 913.451.9391

civil engineer:

Engineering Solutions
50 SE 30th Street
Lee's Summit, MO 64082
p: 816.623.9888 f: 816.623.9849

structural engineer:

Apex Engineers, Inc.
Bryce Crady, PE
1600 Baltimore, Suite 102
Kansas City, Missouri 64108
p: 816-421-3222 f: 816-421-1050

m/p/e engineer:

BC Engineers, Inc.
Richard Curry, PE
5720 Reeder Street
Shawnee, Kansas 66203
p: 913.262.1772 f: 913.262.1773

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6408
REGISTERED ARCHITECT

09.27.2021

new construction for:

Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, MO 64064

A0.0
cover sheet

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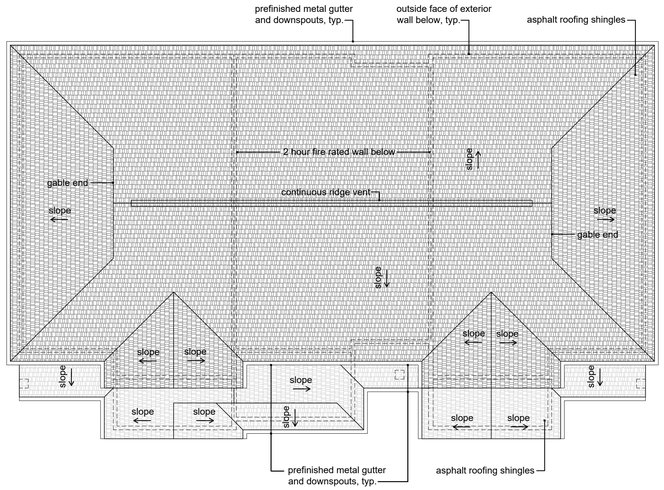
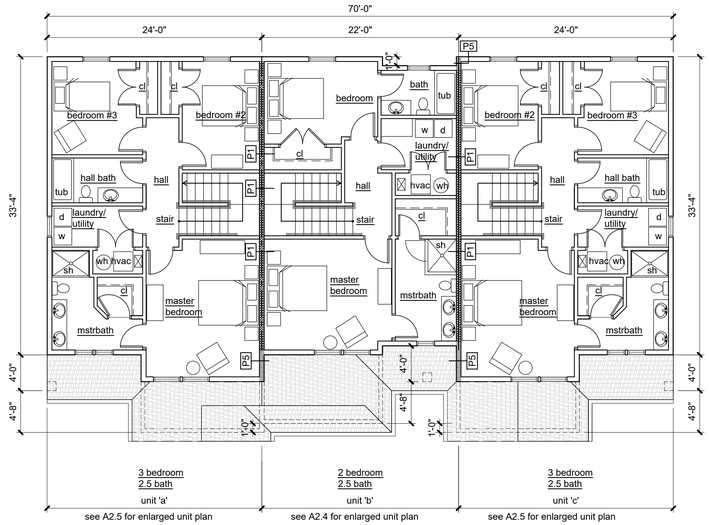


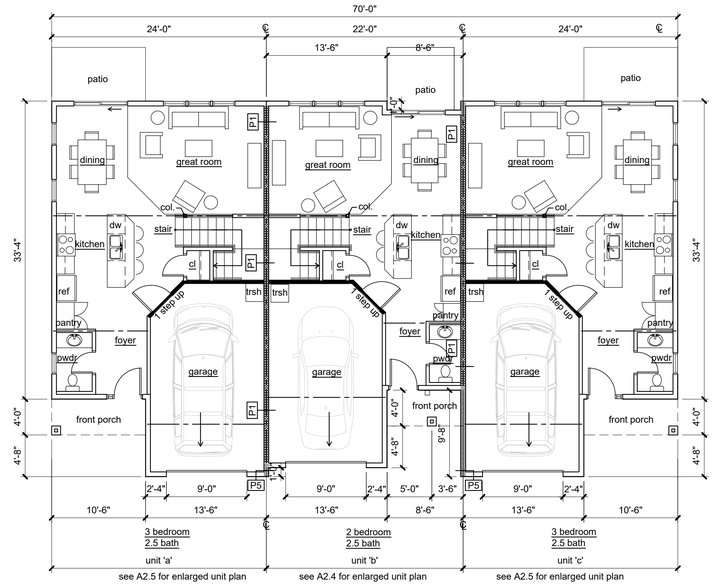
3 | 3 plex roof plan
1/8"=1'-0"



2 | 3 plex second floor plan
1/8"=1'-0"

3 plex building schedule - phase 5

building no.	building type	address	unit	#bedrooms	#baths	first floor living area	garage area	first floor total	second floor area	total living area	total gross area	gross bldg. area
01	3 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	5,033
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	3	2 1/2	630	286	916	840	1470	1756	
16	3 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	5,033
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	3	2 1/2	630	286	916	840	1470	1756	
					Totals:	3,610	1,666	5,276	4,792	8,402	10,066	10,066



1 | 3 plex first floor plan
1/8"=1'-0"

note: refer to sheet A2.4 and A2.5 for wall types.

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6566
REGISTERED ARCHITECT

09.27.2021

a new residential project for

Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A2.1

drawing type
permit

project number
21067

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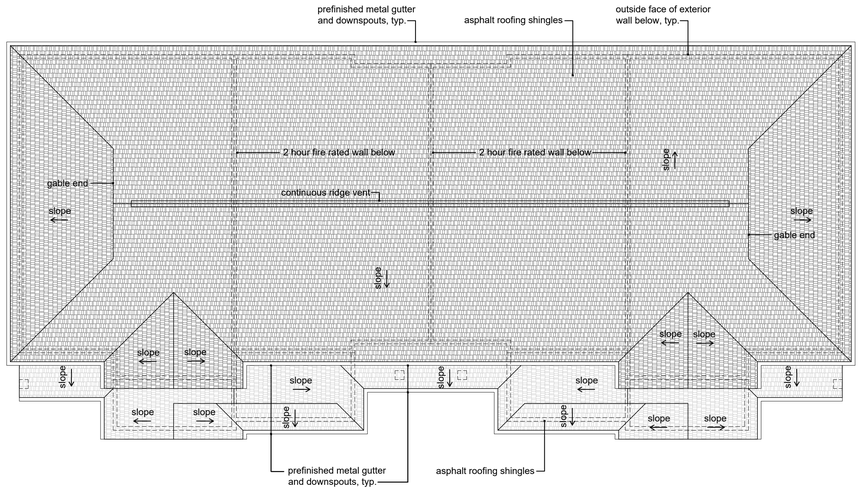
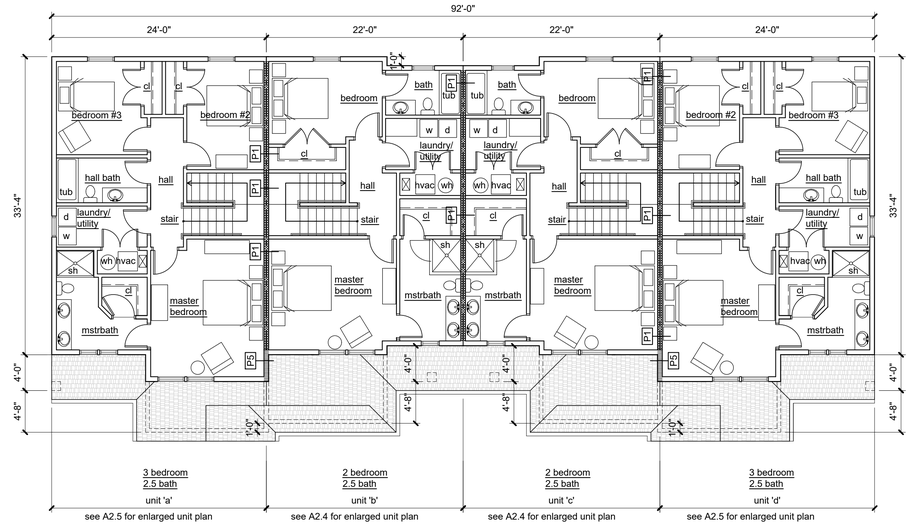


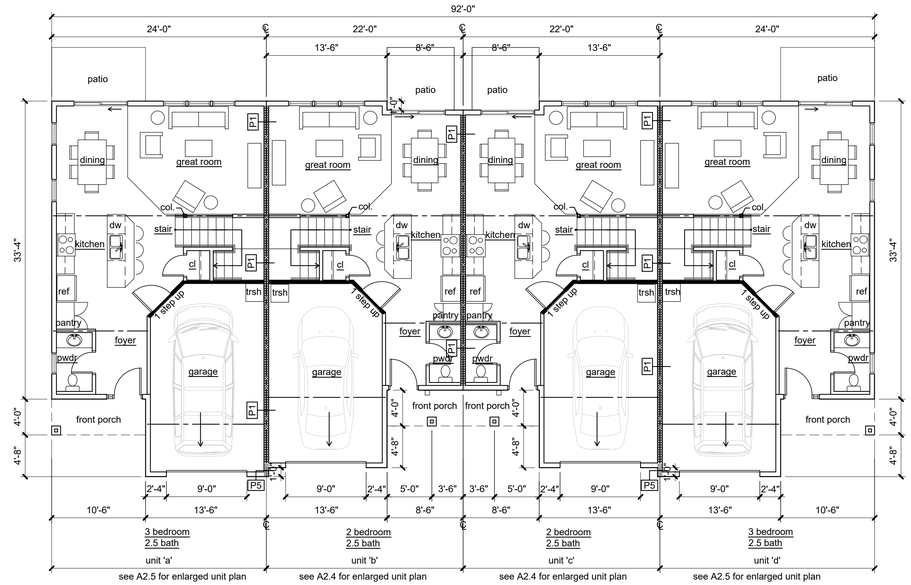
3 4 plex roof plan
1/8"=1'-0"



2 4 plex second floor plan
1/8"=1'-0"

4 plex building schedule - phase 5

building no.	building type	address	unit	#bedrooms	#baths	first floor living area	garage area	first floor total	second floor area	total living area	total gross area	gross bldg. area
02	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
03	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
04	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
05	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
06	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
07	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
08	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
09	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
10	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
14	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
15	4 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	6554
			b	2	2 1/2	545	261	806	716	1261	1521	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	3	2 1/2	630	286	916	840	1470	1756	
					Totals:	25,850	12,034	37,884	34,232	60,082	72,094	72,094



1 4 plex first floor plan
1/8"=1'-0"

note: refer to sheet A2.4 and A2.5 for wall types.

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6366
REGISTERED ARCHITECT

09.27.2021

a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A2.2
drawing type
permit
project number
21067

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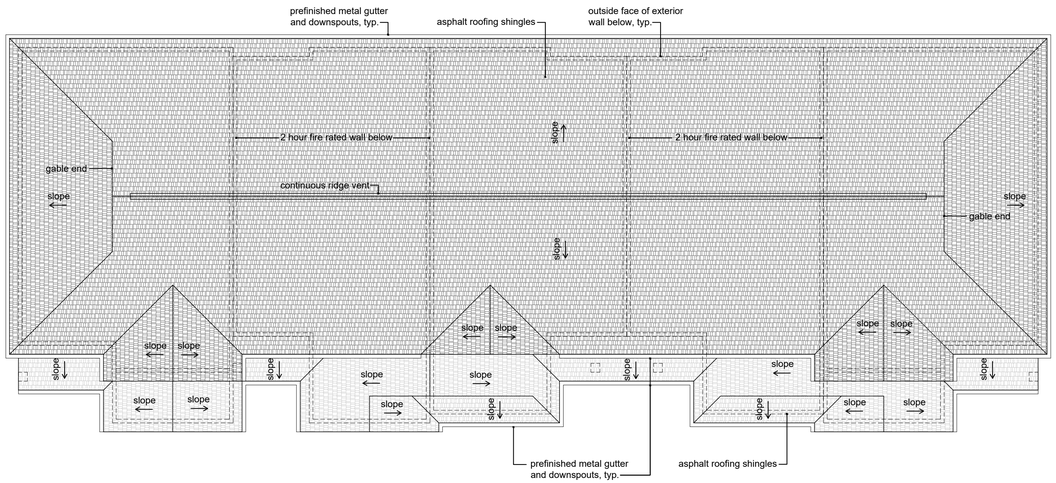
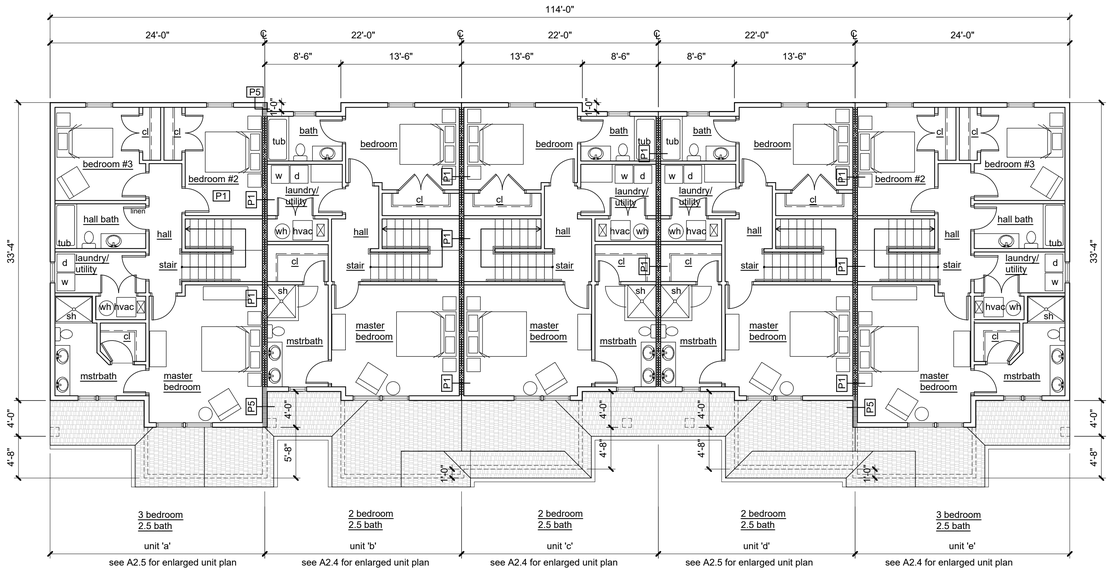


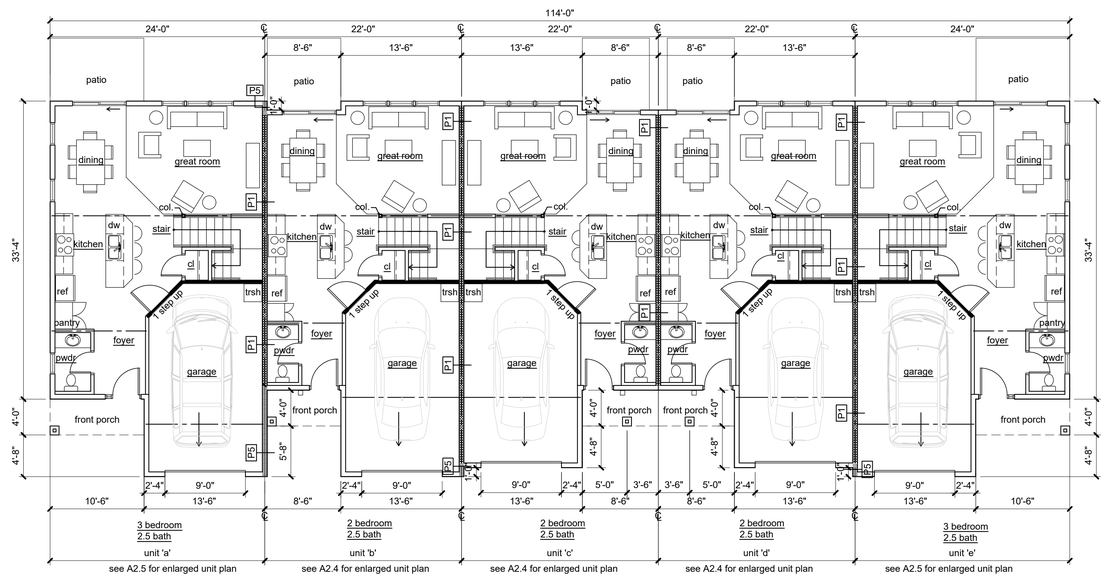
3 5 plex roof plan
1/8"=1'-0"



2 5 plex second floor plan
1/8"=1'-0"

5 plex building schedule - phase 5

building no.	building type	address	unit	#bedrooms	#baths	first floor living area	garage area	first floor total	second floor area	total living area	total gross area	gross bldg. area
11	5 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	8090
			b	2	2 1/2	545	275	820	716	1261	1536	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	2	2 1/2	545	261	806	716	1261	1521	
			e	3	2 1/2	630	286	916	840	1470	1756	
12	5 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	8090
			b	2	2 1/2	545	275	820	716	1261	1536	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	2	2 1/2	545	261	806	716	1261	1521	
			e	3	2 1/2	630	286	916	840	1470	1756	
13	5 plex	-	a	3	2 1/2	630	286	916	840	1470	1756	8090
			b	2	2 1/2	545	275	820	716	1261	1536	
			c	2	2 1/2	545	261	806	716	1261	1521	
			d	2	2 1/2	545	261	806	716	1261	1521	
			e	3	2 1/2	630	286	916	840	1470	1756	
					Totals:	7,050	4,107	12,792	11,484	20,169	24,270	24,270



1 5 plex first floor plan
1/8"=1'-0"

note: refer to sheet A2.4 and A2.5 for wall types.

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6566
REGISTERED ARCHITECT

09.27.2021

a new residential project for

Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A2.3

drawing type
permit

project number
21067

interior wall legend

2-hour P1 ▨ 2-hour rated unit separation wall:
two layers 5/8" type 'X' gypsum wallboard to each side of 2x4 wood studs 16" o.c. staggered 8" o.c. on 2x6 wood plates to underside of decking above - insulate wall full ht. with 3-1/2" batt insulation. (fire test UL Design U301)

P2 interior load bearing wall:
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard to underside of decking above. Provide full batt insulation where indicated.
Install 5/8" type 'X' between all garages and units. 01

P3 furred wall:
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard (moisture resistant at bathrooms) one side only to ceiling with full batt insulation

P4 standard wall (all interior walls unless noted otherwise):
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard to underside of ceiling. Provide full batt insulation where indicated.
Install 5/8" type 'X' between all garages and units. 01

2-hour P5 ▨ 2-hour rated unit separation wall:
two layers 5/8" type 'X' gypsum wallboard to interior side and one layer fire rated LP Flameblock sheathing and one layer 5/8" type 'X" gypsum sheathing on exterior side of 2x6 wood studs 16" o.c.underside of decking above - insulate wall full ht. batt insulation. (fire test UL Design W408 extended)

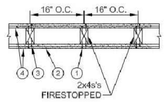
general notes

- All construction shall conform to the standards and regulations adopted by Lee's Summit, Missouri.
- The general contractor shall contact all utility companies prior to the start of construction and verify the location and depth of any utilities that may be encountered during construction.
- The contractor shall field verify exist. surface & subsurface ground conditions prior to start of construction.
- The contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- All exterior utility service equipment shall be painted to match the adjacent building standard color.
- All electrical outlets within 6' of any sink or water source shall be GFCI protected.
- Install address numbers adjacent to each unit entrance door in contrasting color to building color.
- All exterior walls are 2x6" wood studs per structural, with batt insulation to equal R-19 value.
- All second floor ceilings are insulated with blown-in insulation with value equal to R-38.

construction notes

1. Install 2 studs between window units.
2. Refer to structural for beam and column information. Provide furring and drywall around column, typical, paint.
3. Furnish and install wire frame closet shelf and clothes rod system at 70" a.f.f. to top of shelf.
4. Furnish and install wire frame closet shelf and clothes rod system at 2 levels this wall - at 84" and 42" a.f.f. to top of shelf.
5. Furnish and install 34" high vanity with countertop, lavatory and base cabinets.
6. Furnish and install kitchen cabinets with inset panel doors and countertops (materials as selected by owner) at 36" a.f.f. and stainless steel undermount sink with disposal. Provide door and drawer pulls.
7. Furnish and install pantry cabinet per detail.
8. Furnish and install water supply and valve at refrigerator for ice maker.
9. Furnish and install hook-ups, electrical and ventilation for residential washer and electric dryer units.
10. Furnish and install base cabinet and countertop, 36" high.
11. Line of soffit above.
12. Furnish and install 24"x30" attic access door/frame assembly. Coordinate final location with truss layout.
13. Insulate garage walls with full batt insulation, typical.
14. Location of carpet and wood flooring transition.
15. Furnish and install ceramic wall tile backsplash between countertop and wall cabinets and between stove and microwave/hood.
16. Microwave/hood vent above stove.
17. Furnish and install wood handrail and vertical spindles to meet IRC code requirements, stain/paint.
18. Furnish and install wood handrail and wall supports with blocking. Stain.
19. Furnish and install porch coach light.
20. Install concrete porch and steps as required and per A1.1.
21. Install ceramic tile floor, walls, curb and glass shower walls and door in masterbath shower area.
22. Furnish and install ½ hp electric garage door opener.
23. Install shower curtain rod at 76" a.f.f.
24. Location of exterior window on end unit only.
25. Install 5 wood shelves at 16" o.c., paint.
26. Door opening from garage to living unit shall be solid core wood door, 1-3/8" thick minimum, with (3) heavy weight spring hinges (3SPI 4.5x4.5, by Ive or equal, in finish to match rest of hardware in living unit).
27. Walls and ceilings in garages shall have 5/8" type 'X' gyp. bd. between garages and units per IRC table 302.6. 01

Design No. U301	Bearing Wall Rating 2 HR.	Finish Rating 66 Min.



1. **Nailheads** - Exposed or covered with joint finisher.
2. **Joints** - Exposed or covered with fiber tape and joint finisher. As an alternate, nominal 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.
3. **Nails** - 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam, 1/4 in. diam heads, and 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam heads.
4. **Gypsum Board** - * - 5/8 in. thick , two layers applied either horizontally or vertically. Inner layer attached to studs with the 1-7/8 in. nails spaced 6" o.c. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8" o.c. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
When used in widths other than 48 in., gypsum board to be installed horizontally.
When Steel Framing Members* (Item 6) are used, base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced max. 24 in. o.c.; face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max. 12 in. o.c.
    AMERICAN GYPSUM CO - Types AG-C, AGX-11, AGX-C.
    BEIJING NEW BUILDING MATERIALS CO LTD - Type DBX-1.
    CERTAINTEED GYPSUM, INC.- Types 1, FRPC, EGRG, ProRoc Type C or ProRoc Type X.
    CERTAINTEED GYPSUM CANADA, INC. - ProRoc Type C, ProRoc Type X, ProRoc Type Abuse-Resistant.
    CANADIAN GYPSUM COMPANY - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.
    G-P GYPSUM CORP, SUB OF
    GEORGIA-PACIFIC CORP - Types 5, 9, C, DAP, DD, DA, DGG, DS, GPFS6.
    LAFARGE NORTH AMERICA INC - Types LGFC-C, LGFC2, LGFC2A, LGFC6, LGFC6A, LGFC-C/A.
    NATIONAL GYPSUM CO - Types FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-C, FSW-G.
    PABCO GYPSUM, DIV OF
    PACIFIC COAST BUILDING PRODUCTS INC - Types C, PG-2, PG-3, PG-3W, PG-4, PG-5, PG-5W, PG-5WS, PG-9 or PG-C.
    TEMPLE-INLAND FOREST PRODUCTS CORP - Type TG-C.
    SIAM GYPSUM INDUSTRY (SARABURI) CO LTD - Type EX-1.
    STANDARD GYPSUM L L C - Types SGC, SG-C or SGC-G.
    UNITED STATES GYPSUM CO - Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.
    USG MEXICO S A DE C V - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.

4A. **Gypsum Board*** - (As an alternate to Item 4) - Nom. 3/4 in. thick , installed as described in Item 4.
    CANADIAN GYPSUM COMPANY - Types AR, IP-AR.
    UNITED STATES GYPSUM CO - Types AR, IP-AR.
    USG MEXICO S A DEV C V - Types AR, IP-AR.

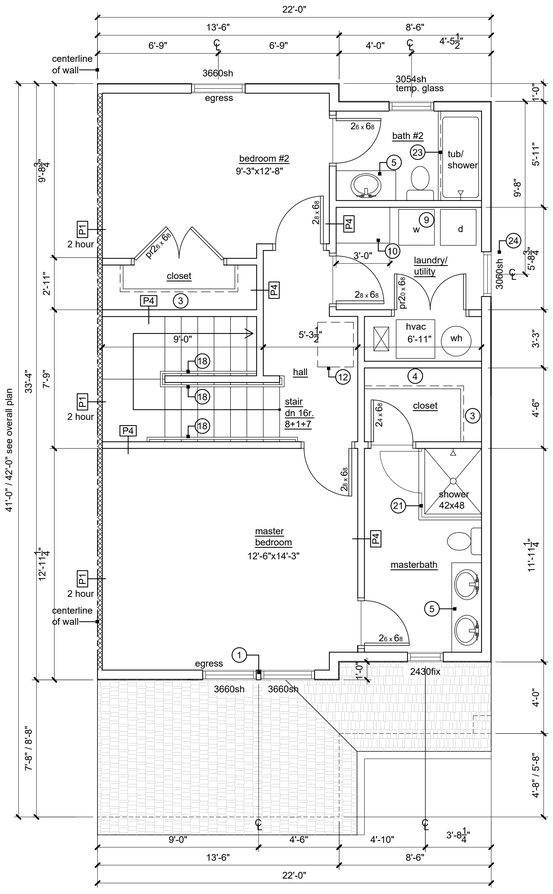
4B. **Gypsum Board*** - (As an alternate to Items 4 and 4A) - 5/8 in. thick , 2 ft. wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 4. Joint covering (Item 2) not required.
    CANADIAN GYPSUM COMPANY - Types SHX.
    UNITED STATES GYPSUM CO - Types SHX.
    USG MEXICO S A DEV C V - Types SHX.

5. **Molded Plastic*** - Not shown, Optional - Solid vinyl siding mechanically secured over the outer layer to framing members in accordance with manufacturer's recommended installation details.
    ASSOCIATED MATERIALS INC
    ALSIDE, DIV OF
    GENTEK BUILDING PRODUCTS LTD
    HEARTLAND BUILDING PRODUCTS INC
    VYTEC CORP
    NEBRASKA PLASTICS INC

6. **Steel Framing Members** - (Optional, Not shown)* - Furring channels and resilient sound isolation clip as described below:
    A. **Furring Channels** - Formed of No. 25 MSG galv. steel. 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. o.c. perpendicular to studs. Channels secured to studs as described in Item B. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 18 SWG galv. steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 4.
    B. **Steel Framing Members*** - Resilient sound isolation clip used to attach furring channels (Item 6A) to studs. Clips spaced 48 in. o.c. and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.

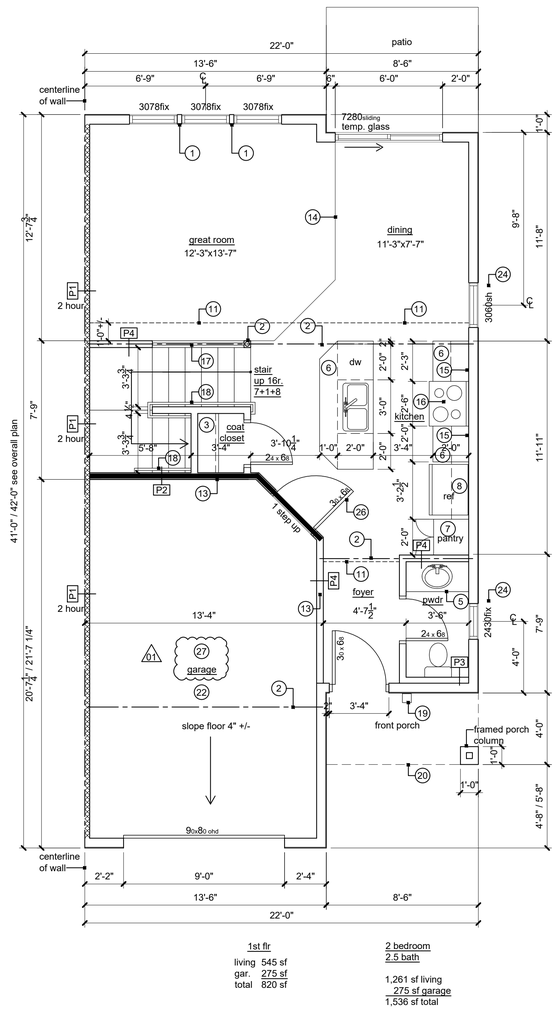
        PAC INTERNATIONAL INC - Type RSIC-1.

*Bearing the UL Classification Mark



2nd flr
living 716 sf

2 2 bedroom/2.5 bath unit second floor plan
1/4"=1'-0"



1st flr
living 545 sf
gar. 275 sf
total 820 sf

2 bedroom
2.5 bath

1,261 sf living
275 sf garage
1,536 sf total

1 2 bedroom/2.5 bath unit first floor plan
1/4"=1'-0"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
11/01/2021

davidson
architecture&engineering

4301 Indian Creek Parkway
Overland Park, KS 66207
phone: 913.451.9390
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www.davidsonae.com

POWELL EMERSON MINNIS
10.29.2021

a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

01	10.29.2021	01

sheet number
A2.4

drawing type
permit

project number
21067

interior wall legend

2-hour P1 — 2-hour rated unit separation wall:
two layers 5/8" type 'X' gypsum wallboard to each side of 2x4 wood studs 16" o.c. staggered 8" o.c. on 2x6 wood plates to underside of decking above - insulate wall full ht. with 3-1/2" batt insulation. (fire test UL Design U301)

P2 — interior load bearing wall:
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard to underside of decking above. Provide full batt insulation where indicated.
Install 5/8" type 'X' between all garages and units. 01

P3 — furred wall:
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard (moisture resistant at bathrooms) one side only to ceiling with full batt insulation

P4 — standard wall (all interior walls unless noted otherwise):
2x4 wood studs @ 16" o.c. with 1/2" gypsum wallboard to underside of ceiling. Provide full batt insulation where indicated.
Install 5/8" type 'X' between all garages and units. 01

2-hour P5 — 2-hour rated unit separation wall:
two layers 5/8" type 'X' gypsum wallboard to interior side and one layer fire rated LP Flameblock sheathing and one layer 5/8" type 'X" gypsum sheathing on exterior side of 2x6 wood studs 16" o.c.underside of decking above - insulate wall full ht. batt insulation. (fire test UL Design W408 extended)

general notes

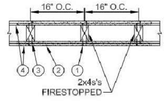
- All construction shall conform to the standards and regulations adopted by Lee's Summit, Missouri.
- The general contractor shall contact all utility companies prior to the start of construction and verify the location and depth of any utilities that may be encountered during construction.
- The contractor shall field verify exist. surface & subsurface ground conditions prior to start of construction.
- The contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- All exterior utility service equipment shall be painted to match the adjacent building standard color.
- All electrical outlets within 6' of any sink or water source shall be GFCI protected.
- Install address numbers adjacent to each unit entrance door in contrasting color to building color.
- All exterior walls are 2x6" wood studs per structural, with batt insulation to equal R-19 value.
- All second floor ceilings are insulated with blown-in insulation with value equal to R-38.

construction notes

1. Install 2 studs between window units.
2. Refer to structural for beam and column information. Provide furring and drywall around column, typical, paint.
3. Furnish and install wire frame closet shelf and clothes rod system at 70" a.f.f. to top of shelf.
4. Furnish and install wire frame closet shelf and clothes rod system at 2 levels this wall - at 84" and 42" a.f.f. to top of shelf.
5. Furnish and install 34" high vanity with countertop, lavatory and base cabinets.
6. Furnish and install kitchen cabinets with inset panel doors and countertops (materials as selected by owner) at 36" a.f.f. and stainless steel undermount sink with disposal. Provide door and drawer pulls.
7. Furnish and install pantry cabinet per detail.
8. Furnish and install water supply and valve at refrigerator for ice maker.
9. Furnish and install hook-ups, electrical and ventilation for residential washer and electric dryer units.
10. Furnish and install base cabinet and countertop, 36" high.
11. Line of soffit above.
12. Furnish and install 24"x30" attic access door/frame assembly. Coordinate final location with truss layout.
13. Insulate garage walls with full batt insulation, typical.
14. Location of carpet and wood flooring transition.
15. Furnish and install ceramic wall tile backsplash between countertop and wall cabinets and between stove and microwave/hood.
16. Microwave/hood vent above stove.
17. Furnish and install wood handrail and vertical spindles to meet IRC code requirements, stain/paint.
18. Furnish and install wood handrail and wall supports with blocking. Stain.
19. Furnish and install porch coach light.
20. Install concrete porch and steps as required and per A1.1.
21. Install ceramic tile floor, walls, curb and glass shower walls and door in masterbath shower area.
22. Furnish and install ½ hp electric garage door opener.
23. Install shower curtain rod at 76" a.f.f.
24. Location of exterior window on end unit only.
25. Install 5 wood shelves at 16" o.c., paint.
26. Door opening from garage to living unit shall be solid core wood door, 1-3/8" thick minimum, with (3) heavy weight spring hinges (3SPI 4.5x4.5, by Ive or equal, in finish to match rest of hardware in living unit).
27. Walls and ceilings in garages shall have 5/8" type 'X' gyp. bd. between garages and units per IRC table 302.6.

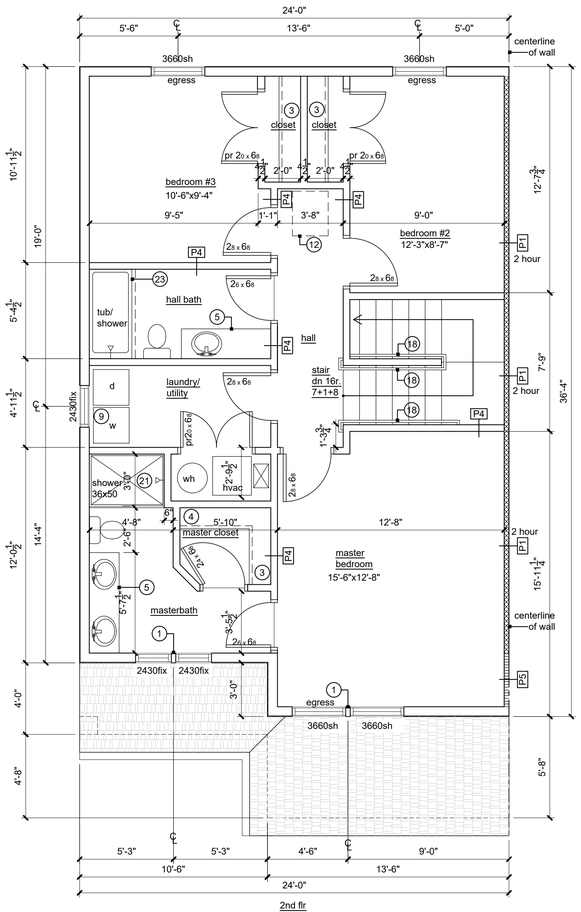
01

Design No. U301	Bearing Wall Rating 2 HR.	Finish Rating 66 Min.



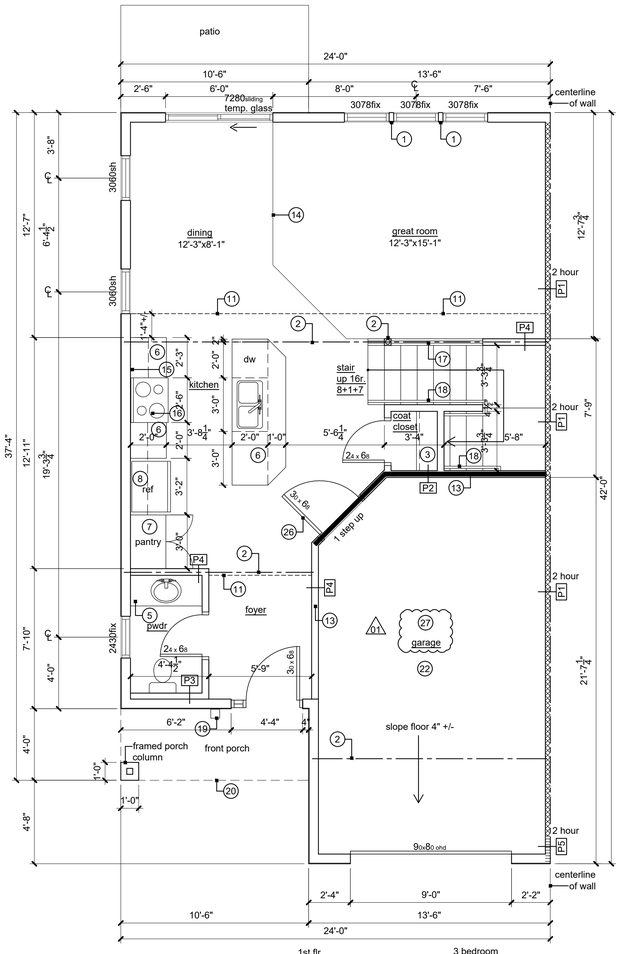
1. **Nailheads** - Exposed or covered with joint finisher.
2. **Joints** - Exposed or covered with fiber tape and joint finisher. As an alternate, nominal 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.
3. **Nails** - 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam, 1/4 in. diam heads, and 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam heads.
4. **Gypsum Board** - * - 5/8 in. thick , two layers applied either horizontally or vertically. Inner layer attached to studs with the 1-7/8 in. nails spaced 8" o.c. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8" o.c. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
When used in widths other than 48 in., gypsum board to be installed horizontally.
When Steel Framing Members* (Item 6) are used, base layer attached to furring channels with 1 in. long Type S bugle-head steel screws spaced max. 24 in. o.c.; face layer attached with 1-5/8 in. long Type S bugle-head steel screws spaced max. 12 in. o.c.
AMERICAN GYPSUM CO - Types AG-C, AGX-11, AGX-C.
BEIJING NEW BUILDING MATERIALS CO LTD - Type DBX-1.
CERTAINTEED GYPSUM, INC. - Types 1, FRPC, EGRG, ProRoc Type C or ProRoc Type X.
CERTAINTEED GYPSUM CANADA, INC. - ProRoc Type C, ProRoc Type X, ProRoc Type Abuse-Resistant.
CANADIAN GYPSUM COMPANY - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.
G-P GYPSUM CORP, SUB OF
GEORGIA-PACIFIC CORP - Types 5, 9, C, DAP, DD, DA, DGG, DS, GPFS6.
LAFARGE NORTH AMERICA INC - Types LGFC-C, LGFC2, LGFC2A, LGFC6, LGFC9A, LGFC-C/A.
NATIONAL GYPSUM CO - Types FSK, FSK-C, FSK-G, FSW, FSW-3, FSW-C, FSW-G.
PABCO GYPSUM, DIV OF
PACIFIC COAST BUILDING PRODUCTS INC - Types C, PG-2, PG-3, PG-3W, PG-4, PG-5, PG-5W, PG-5WS, PG-9 or PG-C.
TEMPLE-INLAND FOREST PRODUCTS CORP - Type TG-C.
SIAM GYPSUM INDUSTRY (SARABURI) CO LTD - Type EX-1.
STANDARD GYPSUM L L C - Types SGC, SG-C or SGC-G.
UNITED STATES GYPSUM CO - Types AR, C, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.
USG MEXICO S A DE C V - Types AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC, WRX.
4A. **Gypsum Board*** - (As an alternate to Item 4) - Nom. 3/4 in. thick , installed as described in Item 4.
CANADIAN GYPSUM COMPANY - Types AR, IP-AR.
UNITED STATES GYPSUM CO - Types AR, IP-AR.
USG MEXICO S A DEV C V - Types AR, IP-AR.
4B. **Gypsum Board*** - (As an alternate to Items 4 and 4A) - 5/8 in. thick , 2 ft. wide, tongue and groove edge, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 4. Joint covering (Item 2) not required.
CANADIAN GYPSUM COMPANY - Types SHX.
UNITED STATES GYPSUM CO - Types SHX.
USG MEXICO S. A DEV C V - Types SHX.
5. **Molded Plastic*** - Not shown. Optional - Solid vinyl siding mechanically secured over the outer layer to framing members in accordance with manufacturer's recommended installation details.
ASSOCIATED MATERIALS INC
ALSIDE, DIV OF
CENTEK BUILDING PRODUCTS LTD
HEARTLAND BUILDING PRODUCTS INC
VYTEC CORP
NEBRASKA PLASTICS INC
6. **Steel Framing Members** - (Optional, Not shown)* - Furring channels and resilient sound isolation clip as described below:
A. **Furring Channels** - Formed of No. 25 MSG galv. steel, 2-3/8 in. wide by 7/8 in. deep, spaced 24 in. o.c. perpendicular to studs. Channels secured to studs as described in Item B. Ends of adjoining channels are overlapped 6 in. and tied together with double strand of No. 16 SWG galv. steel wire near each end of overlap. As an alternate, ends of adjoining channels may be overlapped 6 in. and secured together with two self-tapping #6 framing screws, min. 7/16 in. long at the midpoint of the overlap, with one screw on each flange of the channel. Wallboard attached to furring channels as described in Item 4.
B. **Steel Framing Members*** - Resilient sound isolation clip used to attach furring channels (Item 6A) to studs. Clips spaced 48 in. o.c. and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center grommet. Furring channels are friction fitted into clips.
PAC INTERNATIONAL INC - Type RSIC-1.

*Bearing the UL Classification Mark



2nd flr
living 840 sf

2 3 bedroom/2.5 bath unit second floor plan
1/4"=1'-0"



1st flr
living 630 sf
gar. 286 sf
total 916 sf

3 bedroom
2.5 bath

1,470 sf living
286 sf garage
1,756 sf total

1 3 bedroom/2.5 bath unit first floor plan
1/4"=1'-0"

davidson architecture & engineering
4301 Indian Creek Parkway
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RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Development Services Department
Lee's Summit, Missouri
Approved

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6366
REGISTERED ARCHITECT

10.29.2021

Townhomes Phase 5

a new residential project for

Chapel Ridge Tow

Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions
01 10.29.2021 △

sheet number
A2.5
drawing type
permit
project number
21067

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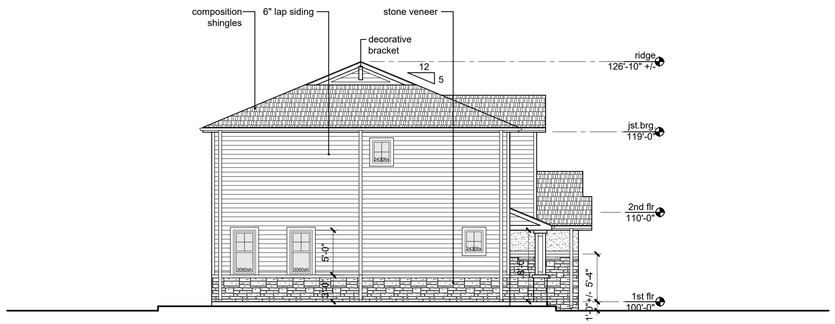
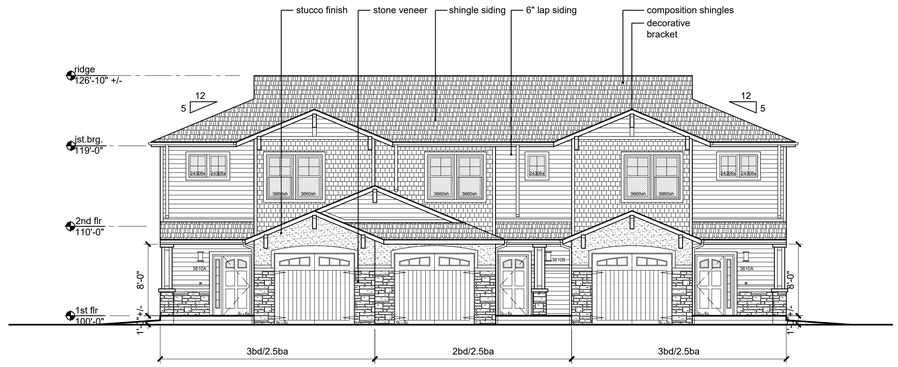


3 | 3 plex elevation - side
scale: 1/8"=1'-0"



1 | 3 plex elevation - front
scale: 1/8"=1'-0"

materials and finishes:

stone veneer: Complete Home Concepts, Model Stone, color - Southern, style - Ledge

lap siding: Cedar Creek Summit prefinished siding, color - Summit Sand

accent shingle siding: Cedar Creek Summit prefinished siding, color - Summit Red

trim, soffit and fascia: Cedar Creek Summit prefinished siding, color: Summit Almond

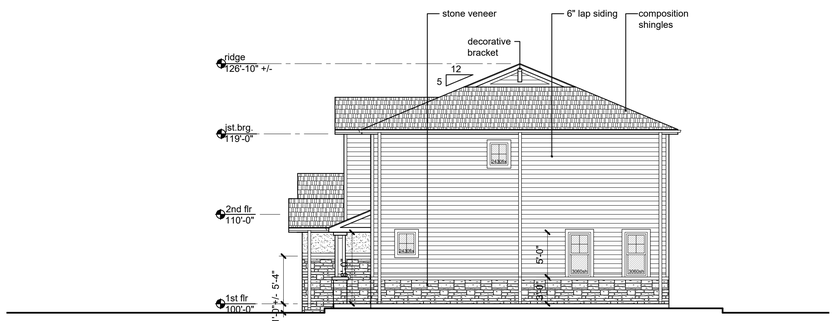
stucco: match paint color - SW7508 Tavern Taupe

prefinished gutters and downspouts: Almond

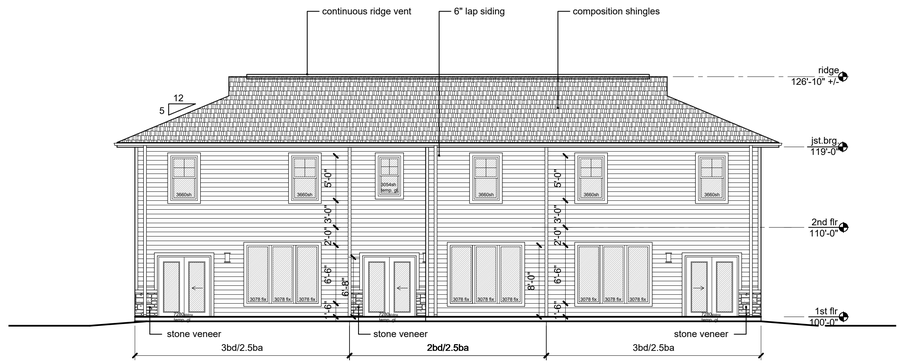
roofing: Certainteed Landmark, color - Weathered Wood

decorative brackets: paint SW7505 Manor House

front doors: SW7505 Manor House



4 | 3 plex elevation - side
scale: 1/8"=1'-0"



2 | 3 plex elevation - back
scale: 1/8"=1'-0"

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-5666
REGISTERED ARCHITECT

09.27.2021

a new residential project for

Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A3.1

drawing type
permit

project number
21067

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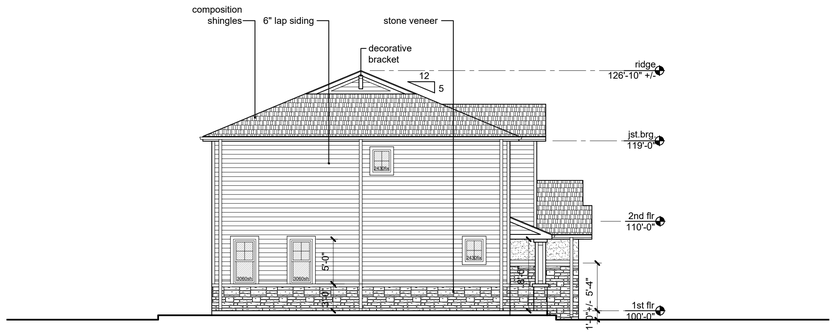
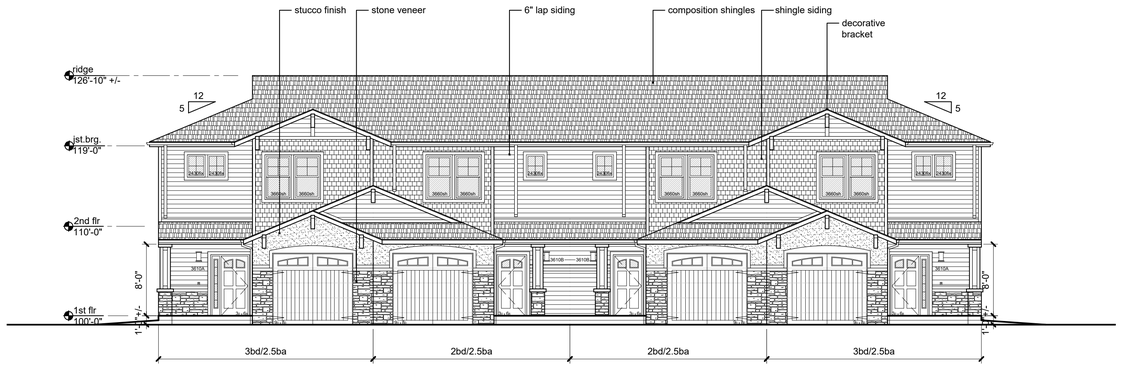


3 | 4 plex elevation - side
scale: 1/8"=1'-0"



1 | 4 plex elevation - front
scale: 1/8"=1'-0"

materials and finishes:

stone veneer: Complete Home Concepts, Model Stone, color - Southern, style - Ledge

lap siding: Cedar Creek Summit prefinished siding, color - Summit Sand

accent shingle siding: Cedar Creek Summit prefinished siding, color - Summit Red

trim, soffit and fascia: Cedar Creek Summit prefinished siding, color: Summit Almond

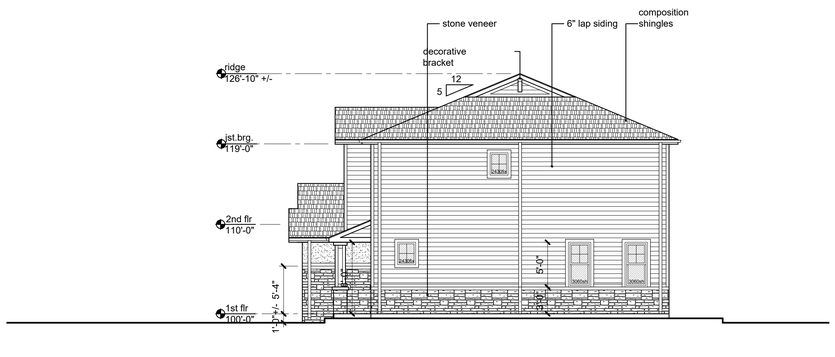
stucco: match paint color - SW7508 Tavern Taupe

prefinished gutters and downspouts: Almond

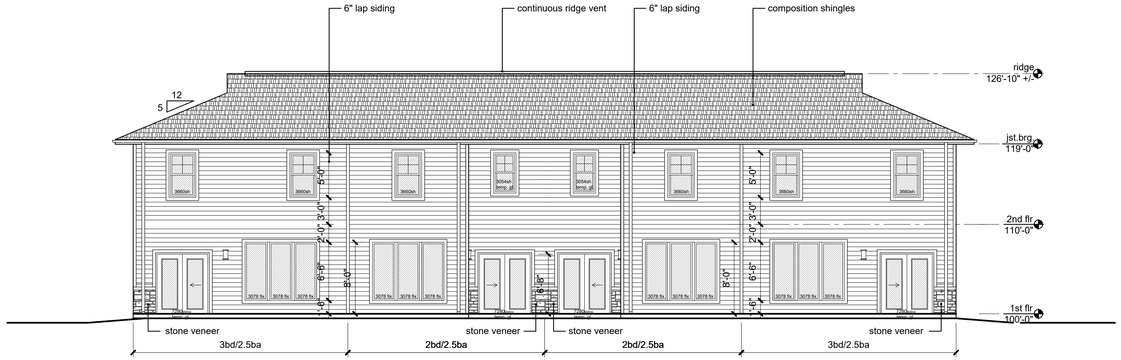
roofing: Certainteed Landmark, color - Weathered Wood

decorative brackets: paint SW7505 Manor House

front doors: SW7505 Manor House



4 | 4 plex elevation - side
scale: 1/8"=1'-0"



2 | 4 plex elevation - back
scale: 1/8"=1'-0"

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A-6566
REGISTERED ARCHITECT

09.27.2021

a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
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DAE
revisions

sheet number
A3.2
drawing type
permit
project number
21067

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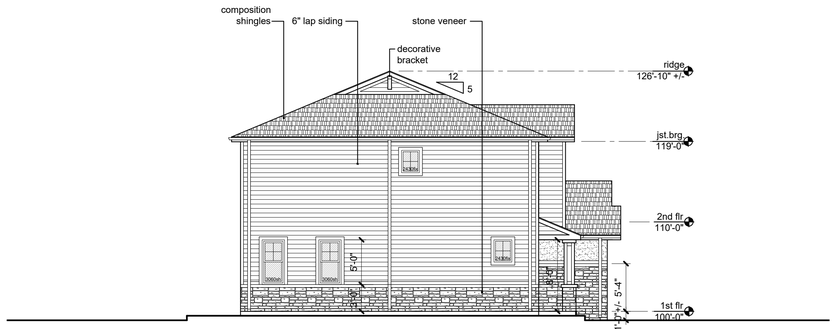
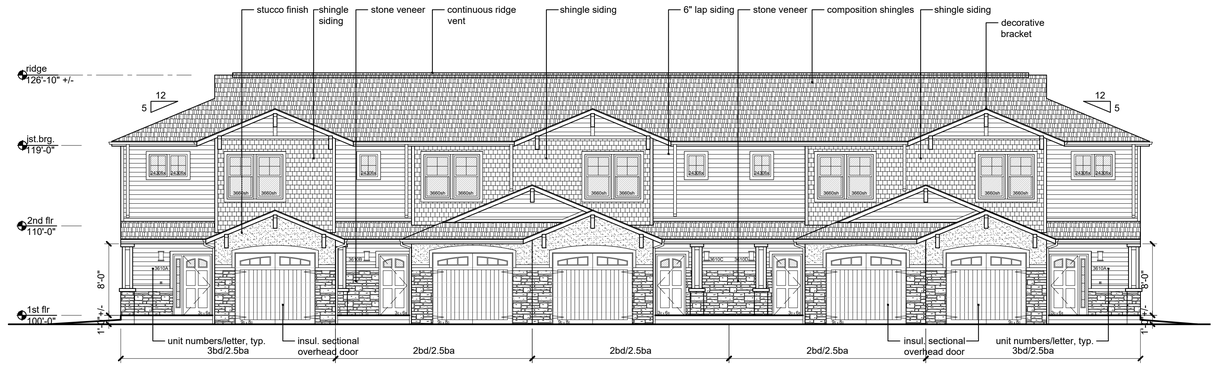


3 5 plex elevation - side
scale: 1/8"=1'-0"



1 5 plex elevation - front
scale: 1/8"=1'-0"

materials and finishes:

stone veneer: Complete Home Concepts, Model Stone, color - Southern, style - Ledge

lap siding: Cedar Creek Summit prefinished siding, color - Summit Sand

accent shingle siding: Cedar Creek Summit prefinished siding, color - Summit Olive

trim, soffit and fascia: Cedar Creek Summit prefinished siding, color: Summit Almond

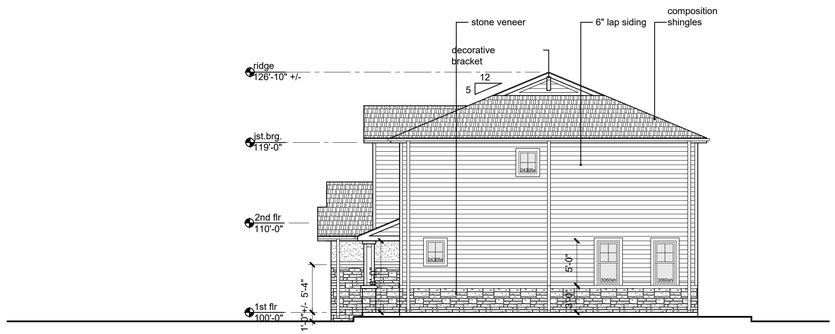
stucco: match paint color - SW7508 Tavern Taupe

prefinished gutters and downspouts: Almond

roofing: Certainteed Landmark, color - Weathered Wood

decorative brackets: paint SW7505 Manor House

front doors: SW7505 Manor House



4 5 plex elevation - side
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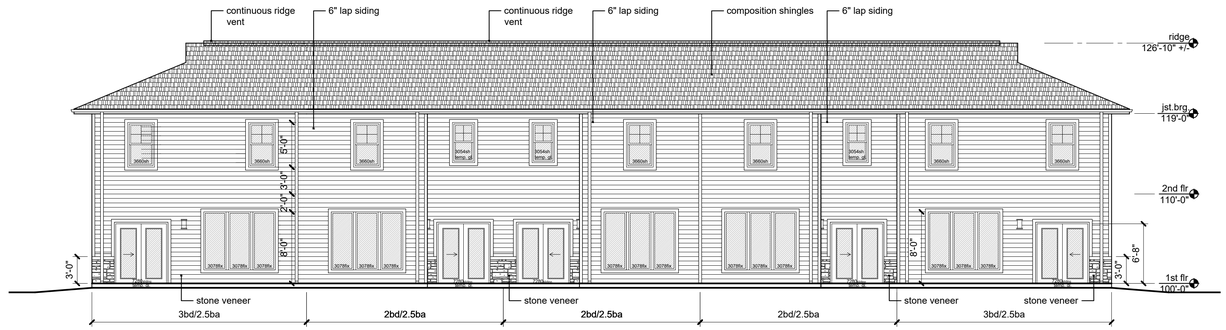


2 5 plex elevation - back
scale: 1/8"=1'-0"

09.27.2021

Chapel Ridge Townhomes Phase 5

a new residential project for

Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A3.3

drawing type
permit

project number
21067

room finish schedule

room name	floor					base				walls	ceiling		remarks
	wd	cpt	vpf	ct	sc	wb	vb	ctb				clg. ht. (note #16)	
foyer	●					●				pt	pt	9'-19'-0"	
powder room	●					●				pt	pt	8'-0"	
kitchen	●					●				pt/ctw	pt	8'-0"	ceramic wall tile between upper/lower cabinets, behind stove
dining room	●					●				pt	pt	9'-0"	
great room		●				●				pt	pt	9'-0"	
closet	●					●				pt	pt	8'-0"	
stair		●				●				pt	pt	varies	
hall		●				●				pt	pt	9'-0"	
laundry/utility			●				●			pt	pt	9'-0"	
hvac/water heater			●				●			pt	pt	9'-0"	
bath/hall bath				●				●		pt/ct	pt	9'-0"	
master bedroom		●				●				pt	pt	9'-0"	
master bath				●				●		pt/ct	pt	9'-0"	
master closet		●				●				pt	pt	9'-0"	
bedroom 2 and closet		●				●				pt	pt	9'-0"	
bedroom 3 and closet		●				●				pt	pt	9'-0"	
garage					●		●			pt	pt	-	

finish legend

wd	pre-finished laminated wood plank flooring
vpf	vinyl plank flooring (wood look)
cpt	carpet
ct	ceramic tile floor
sc	sealed concrete
wb	wood base, stain/paint
vb	vinyl base
ctb	ceramic tile base
pt	wall and ceiling paint (1 coat primer, 2 coats paint - to cover)
ctw	ceramic tile wall
int. doors	wood paint, color to be determined

finish notes:

1. The function of this schedule is to specify finish materials. Actual manufacturers and colors shall be selected by owner.
2. Any discrepancies in materials shall be brought to the attention of the designer prior to start of work.
3. All contractors shall verify all dimensions indicated in these design documents with conditions on the jobsite. Any discrepancies must be brought to the attention of the designer immediately.
4. All contractors must verify compliance of all materials and workmanship methods that they are providing with all applicable codes and ordinances.
5. The floor covering contractor is responsible for providing level transitions between flooring materials.
6. All electrical cabinets to be painted to match the color on which it occurs.
7. All painted wall surfaces unless noted otherwise, shall be painted with eggshell finish.
8. All ceilings and soffits to be painted flat finish.
9. All paint grade millwork, trim, doors, etc. shall be painted semi-gloss finish.
10. All floor finish changes shall occur under center line of door in closed position, unless noted otherwise.
11. Carpet seams shall occur at junctions of partitions, thresholds, or change of direction in corridors. No strip patch allowed smaller than 4'-0".
12. Use Dense Armor Plus in all plumbing wet walls, walls anticipated to be in contact with moisture or walls receiving ceramic tile.
13. All walls shall receive Level 4 finish.
14. Carpet to vinyl shall occur with rubber transition.
15. Carpet to ceramic tile shall occur with 2" marble threshold.
16. 9'-0" ceilings on first floor as called out on finish schedule are actually 9'-1 ⅛" depending on actual framing depth. 9'-0" ceilings on second floor are approximately 8'-11 ½".

door schedule

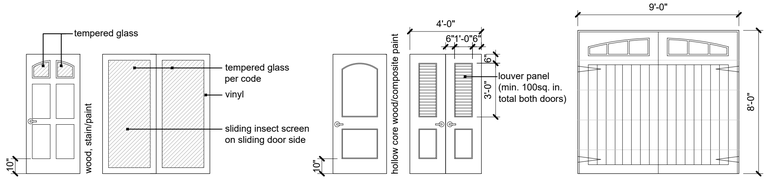
4-plex and 5-plex - 2 bedroom, 2.5 bath units

location	door size	door type	frame type	notes
garage	9'-0" wide x 8'-0" high	E	wood	
garage	3'-0" x 6'-8"	C	1	note 10
entry	3'-0" x 6'-8"	A	1	no sidelite
powder rm.	2'-4" x 6'-8"	C	1	
coat closet	2'-4" x 6'-8"	C	1	
dining	6'-0" x 6'-8"	B	1	sliding door
master bedrm	2'-8" x 6'-8"	C	1	
master bath	2'-6" x 6'-8"	C	1	
master closet	2'-4" x 6'-8"	C	1	
linen	2'-0" x 6'-8"	C	1	
laundry	2'-8" x 6'-8"	C	1	
utility	pr 2'-0" x 6'-8"	D	1	
bedroom #2	2'-8" x 6'-8"	C	1	
bdrm #2 closet	pr 2'-6" x 6'-8"	C	1	
bath #2	2'-6" x 6'-8"	C	1	

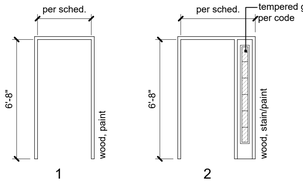
door schedule

4-plex and 5-plex - 3 bedroom, 2.5 bath units

location	door size	door type	frame type	notes
garage	9'-0" wide x 8'-0" high	E	wood	
garage	3'-0" x 6'-8"	C	1	note 10
entry	3'-0" x 6'-8"	A	2	
powder rm.	2'-4" x 6'-8"	C	1	
coat closet	2'-4" x 6'-8"	C	1	
dining	6'-0" x 6'-8"	B	1	sliding door
master bedrm	2'-8" x 6'-8"	C	1	
master bath	2'-6" x 6'-8"	C	1	
master closet	2'-4" x 6'-8"	C	1	
laundry	2'-8" x 6'-8"	C	1	
utility	pr 2'-0" x 6'-8"	D	1	
hall bath	2'-6" x 6'-8"	C	1	
bedroom #2	2'-8" x 6'-8"	C	1	
bdrm #2 closet	pr 2'-0" x 6'-8"	C	1	
bedroom #3	2'-8" x 6'-8"	C	1	
bdrm #3 closet	pr 2'-0" x 6'-8"	C	1	



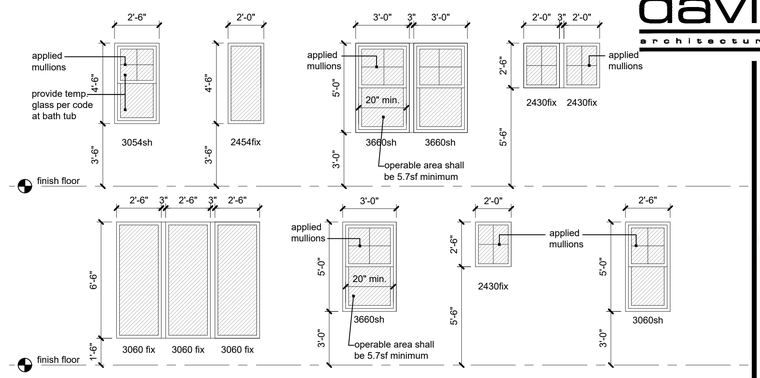
2 Door Types
scale: 1/4" = 1'-0"



3 Frame Types
scale: 1/4" = 1'-0"

door & hardware notes:

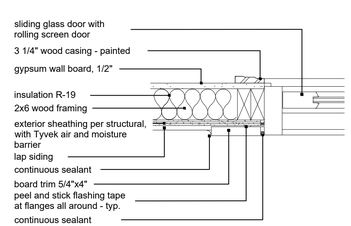
1. All hinges at exterior doors shall have non-removable pins.
2. Thresholds shall coordinate with adjacent floor finish at either side.
3. Keying shall be coordinated w/ owner prior to order of hardware.
4. All hardware sets shall be fitted with schlage "c" keyway compatible cylinders - 6 pin - "0" bit. Provide 2 change keys per lock.
5. All door frames shall be caulked around entire perimeter and at the inside corners.
6. All bathroom and bedroom doors receive 3 hinges, a privacy lockset and a door/wall stop.
7. All closet doors receive 3 hinges, a passage latchset, and a door/wall stop.
8. If closet utility area doors are a pair, provide 6 hinges, a passage latchset with dummy lever on other door.
9. All front entrance doors receive 3 hinges, entrance lockset and deadbolt combination, wall stop, door viewer, door sweep, threshold and perimeter gasket weatherstripping.
10. Door opening from garage to living unit shall be solid core wood door, 1-3/8" thick minimum, with (3) heavy weight spring hinges (3SPI 4.5x4.5, by Ive or equal, in finish to match rest of hardware in living unit).



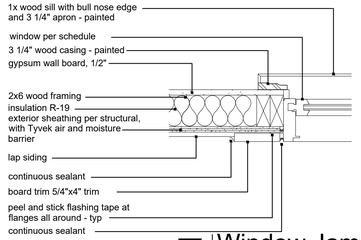
1 Window Types
scale: 1/4" = 1'-0"

Note: See plans and elevations for extent of windows. Window profiles are representative of design intent. Actual window profile and component sizes will be per actual manufacturer. Manufacturer numbers are based on Jeld-Wen. Other manufacturers shall be approved as equal.

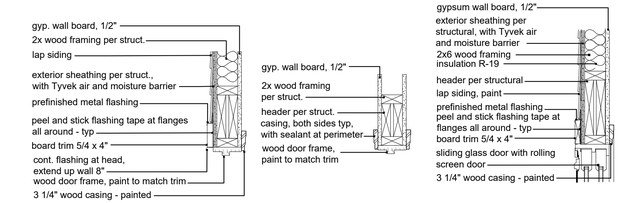
sh = single hung fix = fixed



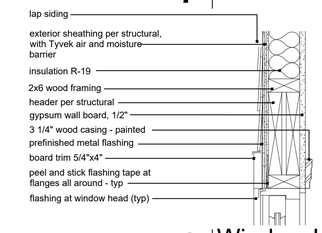
11 Sliding Door Jamb
scale: 1 1/2" = 1'-0"



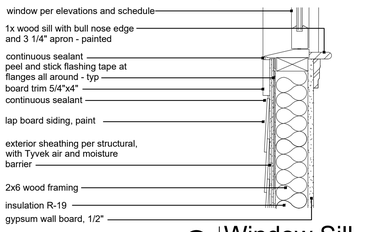
7 Window Jamb
scale: 1 1/2" = 1'-0"



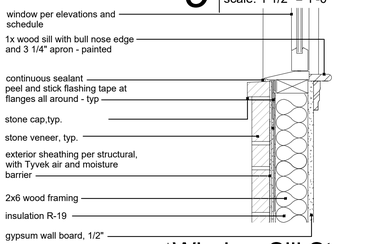
4 Head Types
scale: 1" = 1'-0"



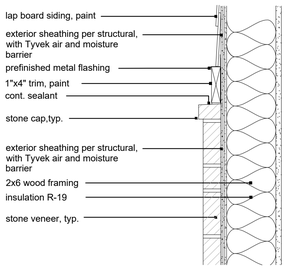
8 Window Head
scale: 1 1/2" = 1'-0"



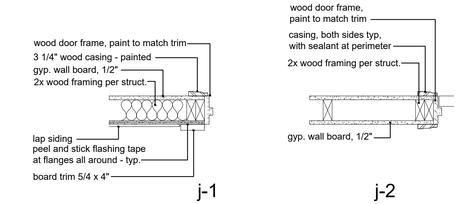
9 Window Sill
scale: 1 1/2" = 1'-0"



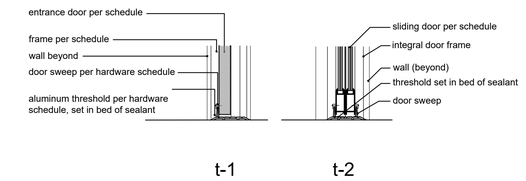
10 Window Sill Stone
scale: 1 1/2" = 1'-0"



12 Stone Detail
scale: 1 1/2" = 1'-0"



5 Jamb Types
scale: 1" = 1'-0"



6 Threshold Details
scale: 1" = 1'-0"

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Building Department
Lee's Summit, Missouri
09/27/2021

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STATE OF MISSOURI
POWELL EMERSON MINNIS NUMBER A-2006031746 REGISTERED ARCHITECT

09.27.2021

a new residential project for

Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

data
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A5.1

drawing type
permit

project number
21067

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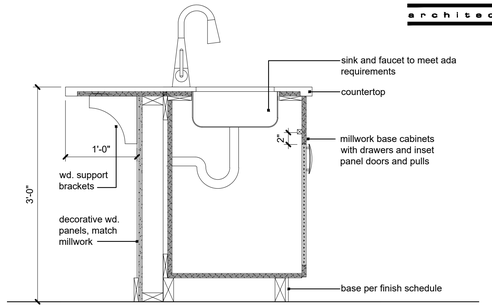
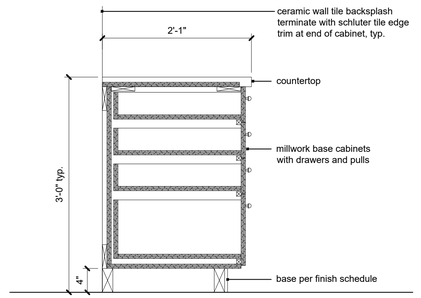
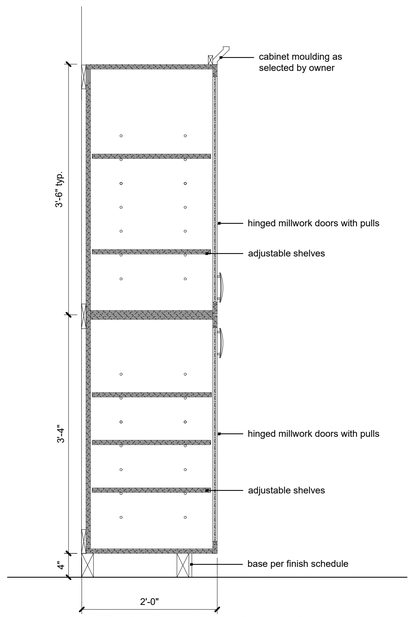


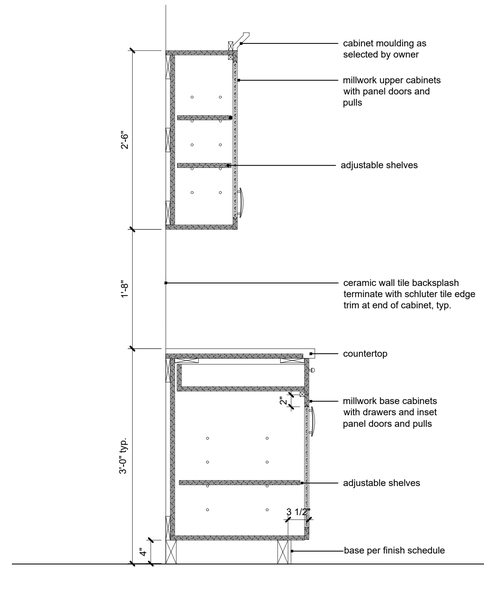
1 Detail cabinet island
scale: 1" = 1'-0"



2 Detail cabinet base
scale: 1" = 1'-0"



4 Detail cabinet pantry
scale: 1" = 1'-0"



3 Detail cabinet base and wall
scale: 1" = 1'-0"

STATE OF MISSOURI
POWELL EMERSON MINNIS
NUMBER A4064
REGISTERED ARCHITECT

09.27.2021

a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

date
07.12.2021
drawn by
DAE
checked by
DAE
revisions

sheet number
A5.2
drawing type
permit
project number
21067

General

Plans shall comply with the 2018 International Residential Code with amendments as adopted by the governing jurisdiction. If any changes or deviations from the plans are made during construction, the contractor shall notify the appropriate authority and the engineer of record, either (or both) of whom may require revised drawing or calculations at its discretion.

Where discrepancies exist between the standard comments, notes from the design professional or the code, the most restrictive shall apply.

The dwelling shall comply with the following load conditions:

AREA	MIN DEAD LOAD	MIN LIVE LOAD
EXTERIOR BALCONIES	10	60
DECKS	10	40
CEILING JOISTS/ATTICS NO STORAGE- SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS CEILING JOISTS/ATTICS W/O STORAGE-	5	10
SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12	10	10
CEILING JOISTS/ATTICS W/ STORAGE- DOOR/PULL DOWN LADDER ACCESS	10	20
ROOMS- NON-SLEEPING	10	40
SLEEPING ROOMS	10	30
ROOF-LIGHT ROOF COVERING	10	20
ROOF-HEAVY ROOF COVERING CONCRETE/TILE/SLATE	20	20
CLUBHOUSE COMMON AREA	15	100
CLUBHOUSE OFFICE	15	50

Note: Heavy roof covering will not be installed or used in the design calculations unless it is specifically noted on the plans that the design is for a heavy roof covering.

Foundations

1. The foundation design shall be based on a minimum soil bearing capacity of 2000 psf, unless otherwise indicated on the plans or if modified by an engineering report based on actual site conditions.
2. Concrete shall meet the following specified design strength criteria:
   - 2500psi for basement floor slabs on undisturbed soil
   - 3000psi for footings & foundation walls
   - 3500psi for garage floor slabs.
3. Footings shall extend below the frost line; minimum depth 36 inches below grade.
4. Unless otherwise noted on the plans or if site conditions require otherwise, footings shall be a minimum of 16 inches wide and 8 inches deep with 2 - #4 bars continuous.
5. Column pads shall be a minimum 30" x 30" x 12" with 4 - #4 bars each way unless otherwise noted.
6. Unless otherwise noted on the plans, foundation walls shall be minimum 8 inches thick x 8'-0" (or 9'-0") tall and reinforced per detail 8-S2.01.
   Foundation walls greater than 10'-0" tall require a separate engineered design. Provide a 2'-0" long interior or exterior dead-men for any straight wall panels exceeding 20'-0" in length (reference detail 4-S2.01).
7. Reinforcement shall be minimum grade 40 unless otherwise noted. Reinforcement shall lap a minimum of 24 inches at ends, splices, and around corners.
8. Foundation wall shall be backfilled with a clean lean clay (or better) low volume change material. On-site material may be used if deemed acceptable by the geotechnical engineer of record.
9. Wall will not achieve full strength until the basement slab and first floor deck have been properly placed. If backfilling the interior of the foundation wall with greater than 8" of earthen fill or 24" of granular fill, a structural basement slab, or alternate engineered solution (i.e. engineered fill) will be required.
10. Where jumps or steps in elevation occur foundation walls and footings shall be formed continuous and poured per detail 3-2.00.
11. Concrete floor slabs shall be a minimum 4 inches thick over a minimum 4 inch base of ½" or ¾" clean graded rock, unless otherwise noted or if site conditions require otherwise.
12. Provide a min. 6-mil. thick polyethylene moisture barrier over porous gravel base under basement floor slab per R406.2. Lap joints minimum 6" (not required for garage slabs or detached accessory buildings).
13. For a structural reinforced concrete floor over a usable area, such as a garage floor located over a storage area, submit sealed engineered details and calculations.
14. Garage slabs and basement overdigs supported by fill consisting of more than 24 inches of granular fill or 8 inches of earth, consult Engineer of record.
15. Basement foundation sill plates shall be bolted to the foundation w/ a minimum of ½" anchor bolts embedded at least 7" into the concrete and spaced not more than 3'-0" on center and within 12" of each end piece.
16. Foundation walls shall be damp-proofed per IRC Section R406.
17. Provide a minimum 4 inch perforated drain around usable space below grade or other equivalent materials per *IRC Section 405.1*. The pipe shall be covered with not less than 6 inches of washed gravel or crushed rock. The drain shall daylight to the exterior below the floor level or terminate in a minimum 20-gallon sump pit.
18. Interior bearing walls and columns shall be isolated from the basement floor slab.
19. Interior non-bearing walls, other than those resting directly on the footing, shall be isolated from the floor framing above.
20. All earth retaining structures on the site greater than 4'-0" tall (excluding concrete foundation walls restrained at both the top and bottom) shall require a separate engineered design (i.e. retaining walls, wing walls, etc.)

Concrete

Concrete shall be air entrained with a minimum compressive strength at 28 days of 2,500 psi for basement and interior floor slabs, 3,000 psi for basement and foundation walls and 3,500 psi for porches, carport and garage floor slabs.

Stairways

1. Stairways shall provide a maximum 7-3/4 inch rise and minimum 10 inch run.
2. Provide minimum 36 inch guardrails on the open sides of raised floors, porches and balconies; minimum 34 inch guardrails on the open sides of stairways located more than 30 inches above the floor or grade below. Guardrail enclosures shall have intermediate rails or ornamental patterns that do not allow passage of a sphere 4 inches in diameter.
3. Each stairway of three or more risers shall provide a continuous handrail on at least one side between 34 and 38 inches above the nosing of the treads.
4. Handrails shall have a circular cross section of 1-1/4 inches minimum to 2 inches maximum or other approved graspable shape per *IRC Section R311.7.8.3*
5. Provide a minimum 6 foot, 8 inches of headroom clearance in stairways.
6. Enclosed accessible space under stairways shall have walls and the underside of the stair and landing protected with 1/2-inch gypsum board on enclosure side per *IRC Section R302.7*
7. Per IRC 311.7.10 Spiral stairs to be constructed per *IRC Section R311.7.10.1*

Glazing

Glazing in hazardous locations as identified in *IRC Section R308.4* shall be of approved safety glazing materials: glass in storm doors; individual fixed or openable panels adjacent to a door where the nearest vertical edge is within a 24 inch arch of the door in a closed position and whose bottom edge is within 60 inches of the floor; walls enclosing stairways and landings where the glazing is within 60 inches of the top or bottom of the stair; enclosures for spas, tubs, showers and whirlpools; glazing in fixed or openable panels exceeding 9 square feet and whose bottom edge is less than h 18 inches above the floor or walking surface within 36 inches.

Emergency egress and rescue

1. Provide one window from each bedroom that has a minimum openable area of 5.7 square feet with a minimum openable height of 24 inches and width of 20 inches.
2. Provide smoke alarms in each sleeping room, outside of each sleeping area and on each floor including basements. Alarms shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the dwelling.
3. Smoke alarms shall be installed as required per IRC 2018 Section R314.
4. Provide smoke alarms in each sleeping room, outside of each sleeping area, on each including basements and habitable attics, and not less than 3'-0" horizontally from door or opening of a bathroom that contains a bathtub or shower. Alarms shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the dwelling.
5. Carbon Monoxide alarms shall be installed outside of each.
6. Carbon Monoxide alarms shall be installed outside of each separate sleeping area. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a Carbon Monoxide alarm shall be installed within the bedroom.

Framing general

1. All lumber sizes are for Douglas Fir-Larch unless otherwise noted.
2. All headers to be min. (2) #2-2x10 unless otherwise noted.
3. Block cantilevers, doorjambs, and over beams.
4. All headers to bear on a minimum of (2) 2x4 stud posts unless otherwise noted.
5. Interior non-bearing walls, other than those resting directly on the footing shall be isolated from the floor framing above.
6. Where joists run parallel to foundation walls, solid blocking for a minimum of (2) joist spaces be provided at a maximum of 4'-0" centers to transfer lateral loads on the wall to the floor diaphragm. The blocking shall be securely nailed to the joists and flooring. Nail joists and blocking to sill plate with (3) 10d nails (*IRC Table R602.3(1)*).
7. If ducts are installed in the first joist space(s), nail 2x4s flat at 4'-0" centers within the joist space(s) and then provide solid blocking, installed upright, in the next two joist spaces. Secure the 2x4s to the sill plate with (4) 10d nails.
8. All sills and sleepers supported on concrete or masonry and furring attached to concrete or masonry shall be of decay resistant materials.
9. Joists under bearing partitions shall be doubled and comply with *IRC Section R502.4.*
10. Joists framing from opposite sides over bearing supports shall lap a minimum 3 inches and shall be nailed together with a minimum 10d face nails.
11. Joists framing into a wood girder or beam shall be supported by approved framing anchors or on minimum 2" x 2" ledger strips.
12. Framing of openings - headers and trimmers shall be of sufficient cross section to support the floor framing. Trimmer joists shall be doubled when the header is supported more than 3 feet from the trimmer joist bearing. When the header span exceeds 4 feet, the header and trimmer shall be doubled.
13. Joists at supports shall be supported laterally at the ends by full-depth solid blocking not less than 2 inches nominal thickness or by attachment to a header, band or rim joist or to an adjoining stud or otherwise provided with lateral support to prevent rotation.
14. Water-resistive barrier shall be provided over all exterior walls. One layer of No.15 asphalt felt or any other barrier that meets ASTM D226 type I felt. (R703.2).
15. Where ceiling joists are not installed connected to the rafters at the top plate and/or where ceiling joists are not installed parallel to the rafters, rafter ties shall be installed in the lower ⅓ of the attic space and in accordance with table 1-S1.00.
16. Collar ties shall be provided in the upper ⅓ of the attic space in accordance with table 1-S1.00.

Garage

1. The garage floor shall slope towards the garage doorways.
2. Doors between the garage and the dwelling - minimum 1-3/8 inch solid core or honey combed steel door or 20-minute fire rated.
3. The garage shall be separated from the residence and its attic area by 5/8-inch, Type X gypsum board, or equivalent materials approved for one-hour fire-resistive construction, applied to garage side. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by 5/8-inch, Type X gypsum board, or materials approved for one-hour fire-resistive construction or equivalent, applied to the garage side. Pull down stairs located within garage shall be rated to be adequately protected with materials approved for one-hour fire-resistive construction. Attic access panels located within garage shall be of 5/8-inch, Type X gypsum board, or materials approved for one-hour fire-resistive construction.
4. Garage door and frame- The H-frame for the attachment of the track and counter balance shall consist of the following: 2x6 vertical jambs running from floor to ceiling attached with 1¾" x 0.120" nails @ 7" O.C. staggered with (7) 3¼" x 0.120" nails thru the jamb into the header, minimum 2x8 header for attachment of counter balance system

REBAR SCHEDULE

DEVELOPMENT LENGTHS - Ld									180 DEGREE HOOK
f'c = 3000 PSI					f'c = 4000 PSI				
BAR SIZE	STD Ld		CLASS B		BAR SIZE	STD Ld		CLASS B	
	TYP	TOP	TYP	TOP		TYP	TOP	TYP	TOP
#4	15"	19"	20"	25"	#4	13"	17"	17"	23"
#5	28"	36"	37"	47"	#5	24"	31"	32"	41"
#6	33"	43"	43"	56"	#6	29"	37"	38"	48"
#7	48"	63"	63"	82"	#7	42"	54"	55"	71"
#8	55"	72"	72"	94"	#8	48"	62"	63"	81"
#9	62"	81"	81"	106"	#9	54"	70"	71"	91"
#10	69"	90"	90"	117"	#10	60"	78"	78"	102"
#11	76"	98"	99"	128"	#11	66"	85"	86"	111"

STANDARD HOOKS									90 DEGREE HOOK
f'c = 3000 PSI					f'c = 4000 PSI				
BAR SIZE	Ldh	HOOK DIMENSIONS			BAR SIZE	Ldh	HOOK DIMENSIONS		
		"A"	"B"	"C"			"A"	"B"	"C"
#4	6"	2½"	6"	2"	#4	6"	2½"	6"	2"
#5	10"	2½"	7½"	2½"	#5	9"	2½"	7½"	2½"
#6	12"	3"	9"	3"	#6	10"	3"	9"	3"
#7	14"	3½"	10½"	3½"	#7	12"	3½"	10½"	3½"
#8	16"	4"	12"	4"	#8	14"	4"	12"	4"
#9	18"	4½"	13½"	5⅝"	#9	15"	4½"	13½"	5⅝"
#10	20"	5"	15"	6¼"	#10	17"	5"	15"	6¼"
#11	22"	5½"	16½"	6¼"	#11	19"	5½"	16½"	6¼"

USE THE ABOVE TABLE UNLESS NOTED OTHERWISE ON PLANS OR DETAILS

1 S1.00 SHEATHING & FRAMING FASTENING SCHEDULE

SHEATHING & FRAMING FASTENING SCHEDULE		
BUILDING COMPONENT	MATERIAL	FASTENING
ROOF SHEATHING[1]	7/16" PLYWOOD	16 GA. X 1-3/4" STAPLES @ 3" O.C. EDGES & 6" O.C. IN FIELD
	1 X 4 #3 FURRING	1/2" CROWN STAPLES
FLOOR SHEATHING[1]	3/4" T&G YELLOW PINE PLYWOOD APPLIED PERP. TO JOISTS & ENDS STAGGERED	8D COMMON NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD
		14 GA. X 2" STAPLES @ 4" O.C. EDGES & 8" O.C. IN FIELD
		12.5 GA. X 1-1/2" RING OR SCREW SHANK NAILS @ 6" O.C. EDGES & 8" O.C. IN FIELD
CEILING COVERING[1]	1/2" GYPSUM SHEATHING	7" O.C. NAILED / 12" O.C. SCREWED W/ 13GA, 1-3/8" LONG, 19/64" HEAD; 0.098 DIA., 1-1/4" LONG, ANG.-RINGED; 5D COOLER NAIL, 0.086 DIA., 1-5/8" LONG, 15/64" HEAD; OR GYP. BD. NAIL, 0.086 DIA., 1-5/8" LONG, 9/32" HEAD.
INTERIOR WALL COVERING[1]	1/2" GYPSUM SHEATHING	6D COMMON NAILS; 1/5/8" GALVANIZED STAPLES; 1-1/4" SCREWS, TYPE W OR S - @ 4" O.C. EDGES & 8" O.C. FIELD
EXTERIOR WALL SHEATHING	MIN. 3/8" APA RATED SHEATHING	8D COMMON NAILS @ 6" O.C. EDGES & 12" O.C. IN THE FIELD
CONVENTIONAL WOOD FRAMED WALLS	* SUPPORTING 2 FLRS, ROOF, AND CEIL. OR LESS. * HEIGHT: 10'-0" OR LESS. SIZE: NOM. 2x4 (NOM. 2x6 WHEN SUPP. 2 FLRS., CEIL., AND ROOF) * SPECIES: DOUG-FIR, HEM-FIR, SOUTH. PINE, SPRUCE-PINE-FIR * MAXIMUM SPACING 16" O.C. * GRADE: #3, STANDARD, OR STUD GRADE.	* TOE NAIL RIM JOIST TO SILL OR TOP PLATE: 8D COMMON @ 6" O.C.; 3" x 0.131" @ 6" O.C. * TOE NAIL STUD TO TOP AND SOLE PLATE: 4-8D COMMON, 4-3" x 0.131" * END NAIL TOP AND SOLE PLATE TO STUD: 2-16D COMMON; 3-3" x 0.131" * FACE NAIL BUILT-UP CORNER STUDS: 16D@24"O.C; 3"x0.131"@ 16"O.C. * FACE NAIL BUILT-UP CORNER STUDS (AT BRACED WALL PANELS): 16D COMMON @16" OC;3"x0.131" @12" O.C. * FACE NAIL JACK STUDS/TRIMMERS SUPPORTING HEADERS WITH: 10D NAILS @ 6" O.C. * FACE NAIL DBL TOP PLATE: 16D COMMON @16"O.C; 3"X0.131" @12"O.C; 3"X0.128" @12"O.C. * DBL TOP PLATES W/ MIN. 48" OFFSET OF EACH. FACE NAIL LAPPED AREA WITH: 8-16D COMMON; 12-3"x0.131"; 12-3"x0.128" * FACE NAIL DBL TOP PLATES AT LAPPED CORNERS AND INTERSECTIONS WITH: 2-16D COMMON; 3-3"x0.131"; 3-3"x0.128" * FACE NAIL SOLE PLATE TO FRAMING SYSTEM WITH: 16D COMMON @ 16" O.C; 3"x0.131"@12"O.C. * TOENAIL BRIDGING TO JOIST, EACH END: 2-8D COMMON; 2-3"x0.131"; 3-3"x0.128" * FACE NAIL LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS WITH: 3-16D COMMON; 4-3"x0.131"; 4-3"x0.128"
CONVENTIONAL WOOD HEADER FRAMING	PER PLAN	* TOE NAIL HEADERS TO WALL STUDS W/ 4-8D NAILS @ EA. END * FACE NAIL DOUBLE PIECE HEADERS W/ 16D COMMON NAILS @ 16" CTRS ALONG EACH EDGE.
RAFTER TIES[2]	MIN. 2x4 MEMBERS @ EACH RAFTER	REF TABLE R802.5.2
COLLAR TIES	MIN. 1x4 MEMBERS @ 48" O.C.	FACENAIL TO RAFTERS IN UPPER ⅓ OF ATTIC SPACE W/ (3) 10D NAILS @ EACH

1. NOTE: ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED.
2. RAFTER TIES SHALL NOT BE REQUIRED WHEN A STRUCTURAL RIDGE HAS BEEN PROVIDED AND ADEQUATELY DESIGNED (AS IN A FULLY VAULTED ROOM). SUCH SHALL BE NOTED AS 'STRUCTURAL' ON THE PLAN.

BUILDING COMPONENT	FASTEN TO	FASTEN W/
RAFTERS	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL W/ 4-16D ENDNAIL W/ 3-16D
	TO PLATE	TOENAIL W/ 2-16D
CEILING JOISTS	TO TOP PLATE	TOENAIL W/ 3-8D @ EACH END
		WHERE CJ. RUN PARALLEL TO RAFTERS FACENAIL TO RAFTERS W/ 3-10D MIN.
FLOOR JOISTS	TO SILL OR GIRDER	TOENAIL WITH: 3-8D COMMON; 3-3"x0.131"; 4-3"x0.128
	TO RIM JOIST	END NAIL WITH: 3-16D COMMON; 4-3"x0.131"; 4-3"x0.128
BRACED WALL PANELS PERPENDICULAR TO FRAMING MEMBERS ABOVE/BELOW: PARALLEL TO FRAMING MEMBERS ABOVE/BELOW:	TO FRAMING MEMBER	SOLE PLATE, 16" O.C. WITH: 3-16D COMMON; 4-3"x0.131" TOP PLATE , 6" O.C. WITH: 8D COMMON; 3" x 0.131"
	TO FRAMING AND BLOCKING @ 16" O.C.	SOLE PLATE, 16" O.C. WITH: 3-16D COMMON;4-3"x0.131" AND @ EACH BLOCK: 3-16D COMMON;4-3"x0.131" TOP PLATE , 6" O.C. WITH: 8D COMMON; 3"x0.131" AND @ EACH BLOCK: 3-8D COMMON; 3-3"x0.131

Engineered Lumber (Min. Design Requirements)			
	Fb (psi)	E (psi)	Fv (psi)
LVL	2600	1.8 x 10^6	285
Glu-Lam	2400	1.8 x 10^6	190
Parallam	2600	2.0 x 10^6	290

Cathedral/ Vaulted Ceiling Framing & Insulation				
	2 x 6	2 x 8	2 x 10	2 x 12
Max. Insulation Value 1" Air Space (Fiberglass)	N/A	R-19 (6-1/4")	R-30 (8-1/4")	R-38 (10-1/4")

Where the ceiling is applied directly to the bottom of the rafters a minimum 1" air space shall be provided between the top of the insulation and the sheathing for ventilation (R806.3)
Note: Rafter sizes specified on the plans are the minimum required for structural purposes only.
Builder to Verify:
If the full rafter depth is not adequate for the minimum insulation value, rafter sizes will need to be increased, or adequate furring shall be used to obtain th min. joist depth for the required insulation. In addition, if the rafter size is

SHEET INDEX

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STATE OF MISSOURI
BRYCE D. CRUSE
NUMBER PE-2006026494
2021.07.13
PROFESSIONAL ENGINEER

a new residential project for
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Lot 15C
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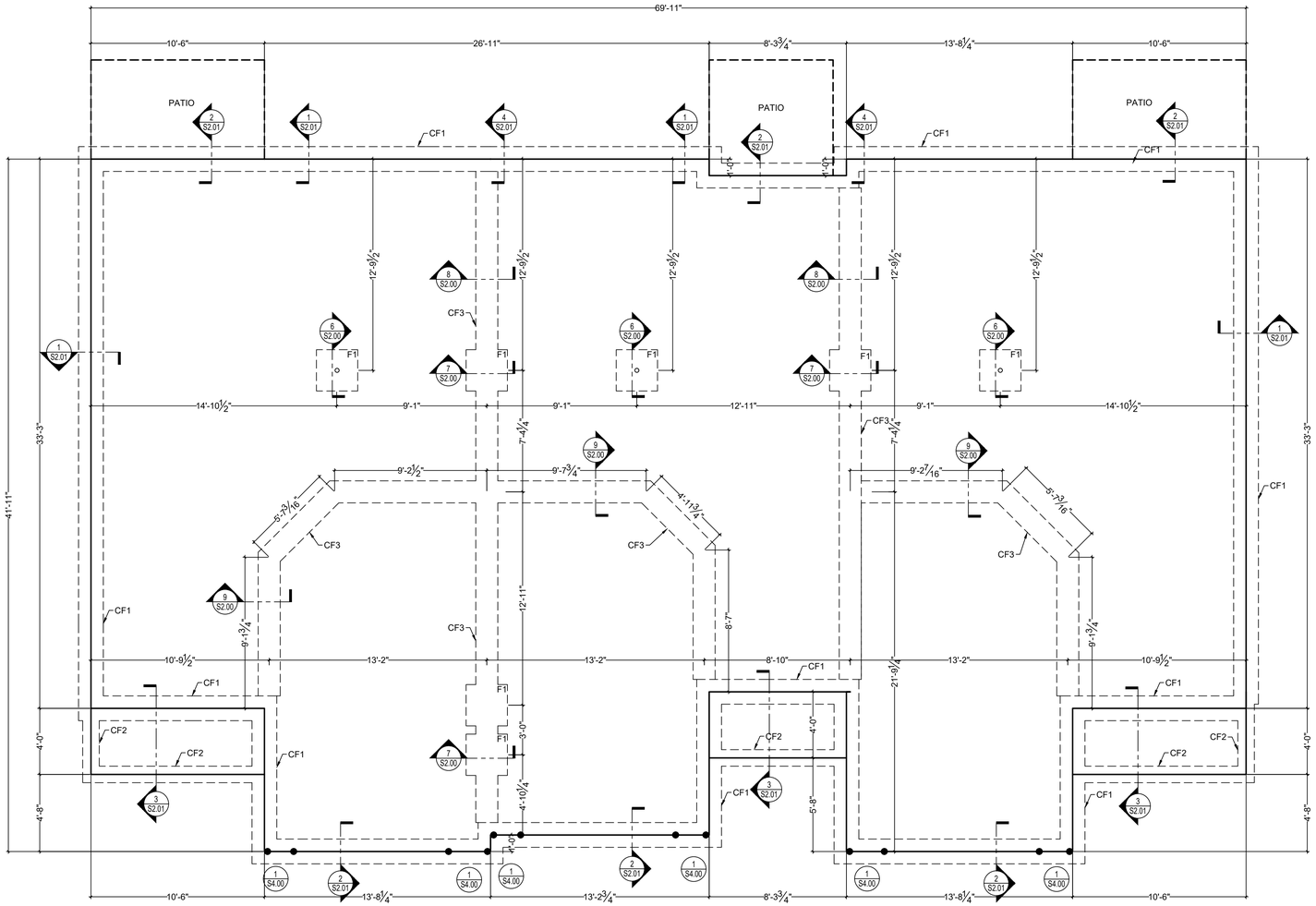

CONTINUOUS FOOTING SCHEDULE		
CONTINUOUS FOOTING MARK	FOOTING SIZE	REINFORCEMENT
CF1	1'-6"x3'-0"x CONT	(4) #5 CONT [(2) AT T&B] AND #4 STIRRUPS AT 24" OC
CF2	1'-0"x3'-0"x CONT	(2) #5 CONT [(1) AT T&B] AND #4 VERT AT 24" OC
CF3	1'-4"x0'-8"x CONT	(2) #4 BARS CONTINUOUS
SPREAD FOOTING SCHEDULE		
SPREAD FOOTING MARK	FOOTING SIZE	REINFORCEMENT
F1	2'-6"x2'-6"x1'-0"	(4) #4 EACH WAY
F2	3'-0"x3'-0"x1'-0"	(4) #4 EACH WAY
F3	4'-0"x4'-0"x1'-0"	(6) #4 EACH WAY

1 S1.01 3-PLEX FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. SLAB CONSTRUCTION: 4" CONC SLAB REINFORCED WITH #4 BARS AT 24" OC EACH WAY OR 6x6-W1.4xW1.4 WWF ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH.
2. SLAB CONSTRUCTION GARAGE: 5" CONC SLAB REINFORCED WITH #4 BARS AT 12" OC EACH WAY ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH.
3. CONTROL JOINTS AT 10'-0" OC MAX, EACH WAY (NOT SHOWN FOR CLARITY).
4. CONTRACTOR TO FIELD VERIFY ALL FOUNDATION ELEVATIONS AND STEP FOUNDATION PER SITE CONDITIONS.
5. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
6. REF ARCH FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

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a new residential project for

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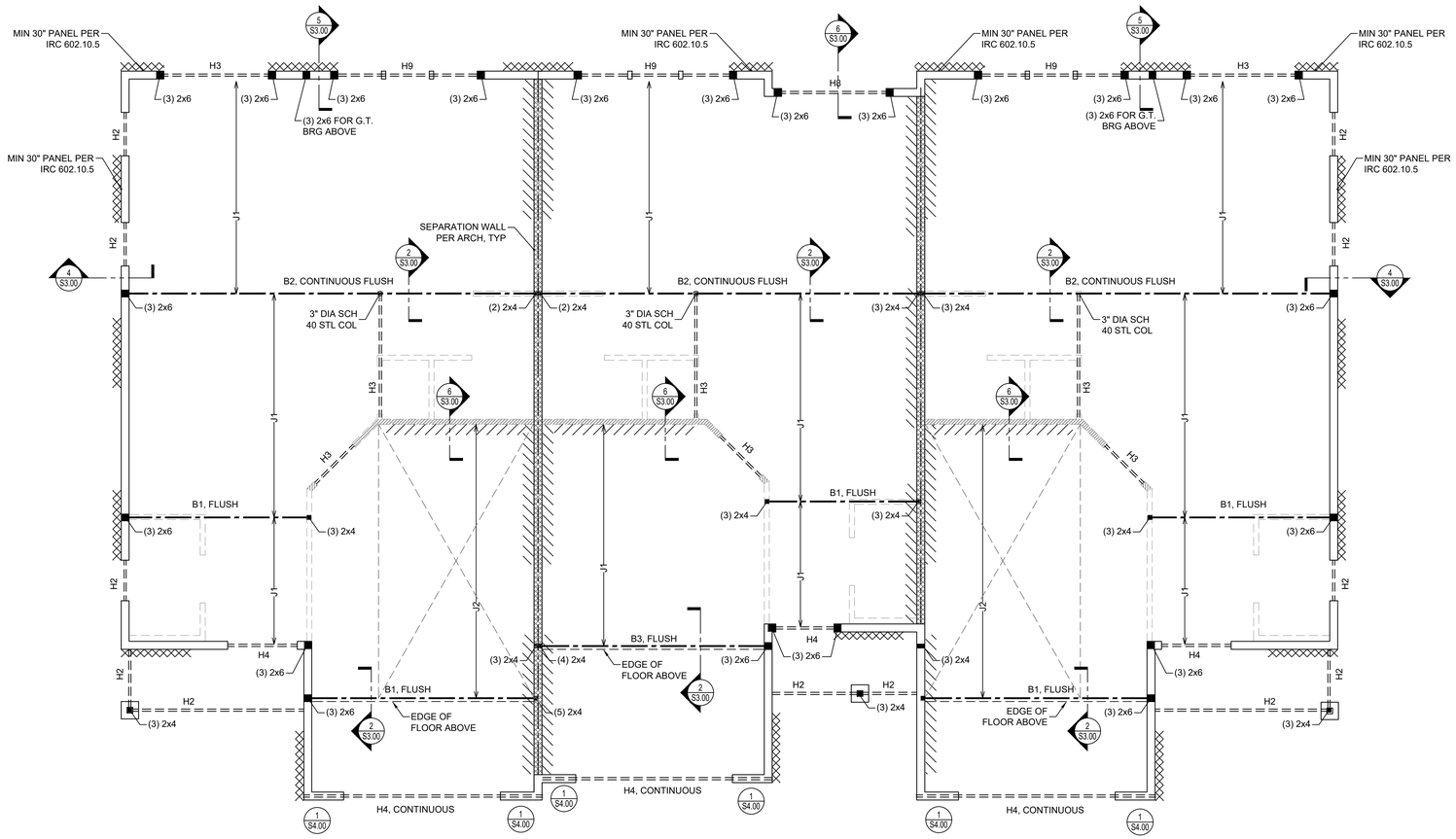

HEADER SCHEDULE		
MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
H2	(2) #2-2x8	
H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

BEAM SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
B1	W8x10 STEEL BEAM	
B2	W8x15 STEEL BEAM	
B3	W8x21 STEEL BEAM	
B4	W8x24 STEEL BEAM	
B5	W8x31 OR W10x26 STEEL BEAM	

JOIST SCHEDULE		
MARK	JOIST SIZE	DETAIL REFERENCE/COMMENT
J1	#2-2x10 AT 16" O.C.	
J2	#2-2x10 AT 16" O.C. DOUBLE EVERY OTHER	
J3	#2-2x10 AT 16" O.C. DOUBLED	
J4	11⅞" TJI 230 I-JOISTS AT 16" OC	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 NON-LOAD BRG STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 S1.02 3-PLEX SECOND FLOOR FRAMING
SCALE: 1/4" = 1'-0"

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 2⁹/16 FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1½" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ¾" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
7. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
8. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Building Department
Lee's Summit, Missouri
JUN 2021

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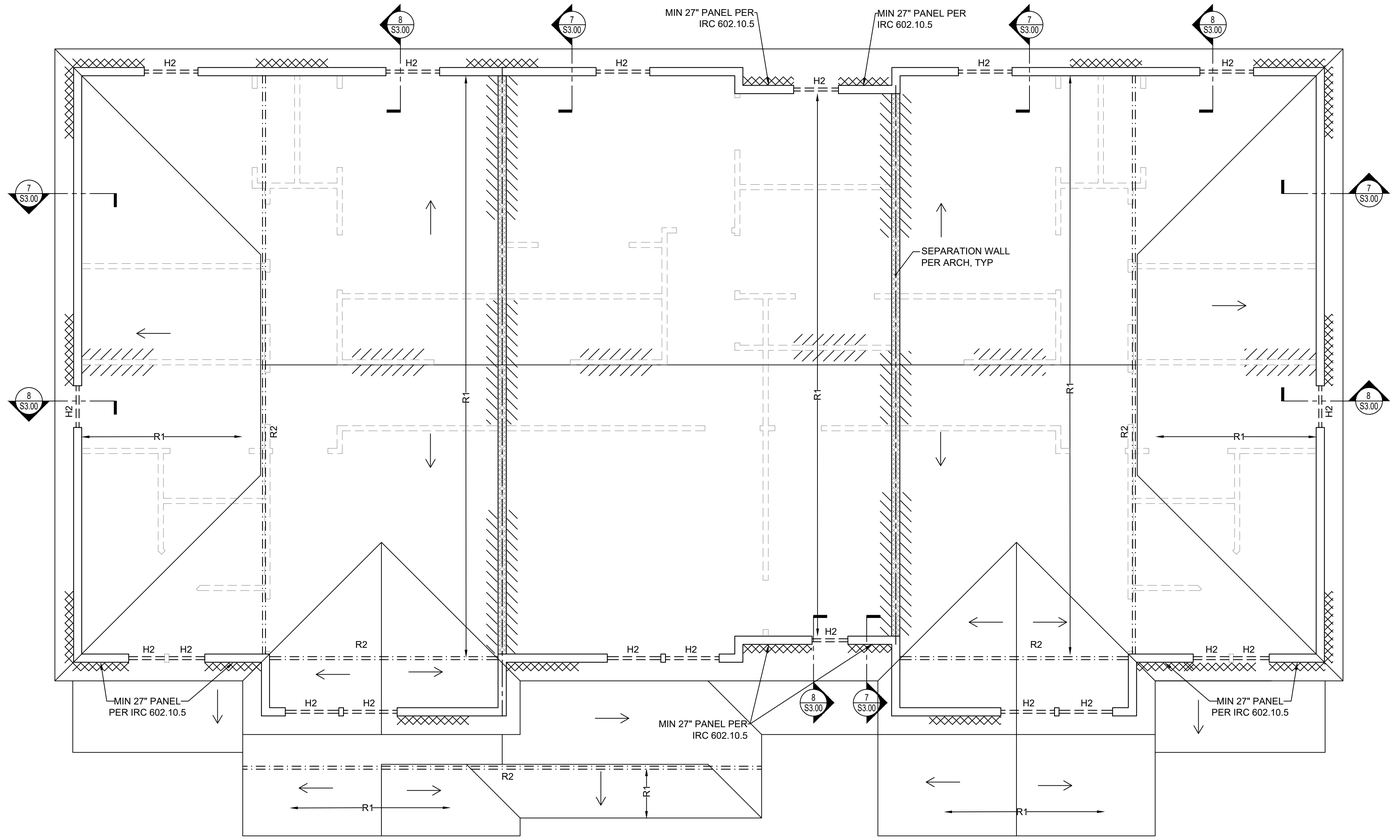

HEADER SCHEDULE		
MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
H2	(2) #2-2x8	
H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

TRUSS SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
R1	TRUSSES AT 24" O.C. (BY OTHERS)	
R2	GIRDER TRUSS (BY OTHERS)	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 S1.03 3-PLEX ROOF FRAMING
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES:

1. ROOF CONSTRUCTION: REFERENCE ARCHITECTURAL PLANS FOR ROOF MATERIAL, WATERPROOFING MEMBRANE, AND INSULATION.
2. SEE SHEET S1.0 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
3. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.
4. ROOF DECKING: ⅝" NOMINAL WOOD STRUCTURAL PANELS (WSP) APA 48/24, BLOCKED PANEL EDGES, FASTENED W/ 10D NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON PREFAB. WOOD TRUSSES (BY OTHERS) SPACED @ 24" O.C., UNLESS NOTED OTHERWISE. FASTEN TRUSSES TO SUPPORT STRUCTURE PER MANUFACTURER'S SPECIFICATIONS.

TRUSS ROOF NOTES: (BY OTHERS)

1) DESIGNED FOR LIGHT ROOF COVERING
   TOP CHORD:
   LIVE LOAD/SNOW LOAD (PSF): 20
   DEAD LOAD (PSF): 10
   BOTTOM CHORD:
   DEAD LOAD(PSF): 10
2) ALL EXTERIOR HEADERS SHALL BE MIN. (2) #2-2x10 UNLESS OTHERWISE NOTED.
3) CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR WALLS SHOWN AS NON-LOAD BEARING ON APPROVED PRINTS.
4) MIN. (4) 2x4 BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED.
5) PROVIDE 2x SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
6) ROOF IS ENGINEERED TO COMPLY WITH IRC 802.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ⅜" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
7. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
8. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1¼" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

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a new residential project for
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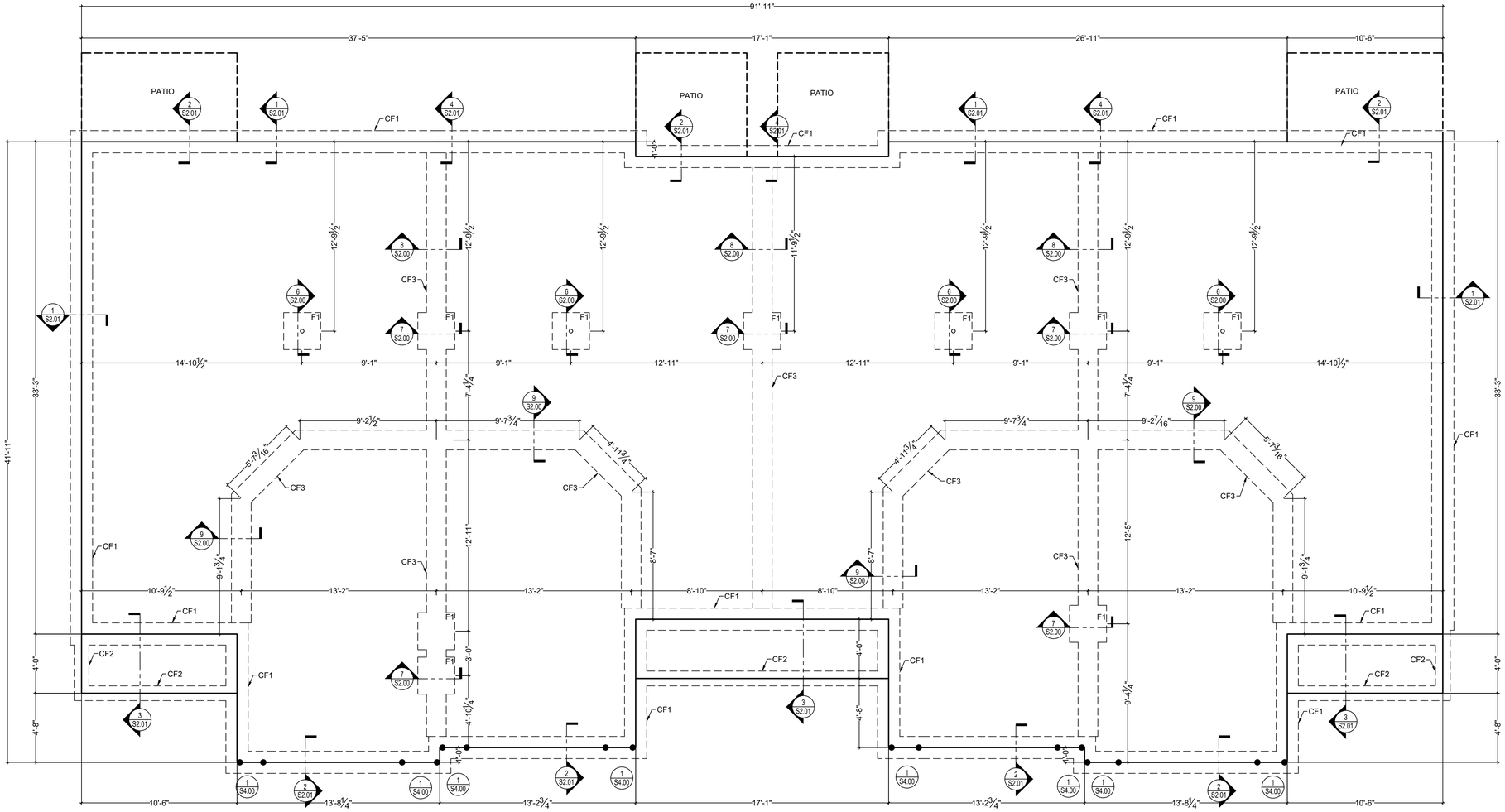

CONTINUOUS FOOTING SCHEDULE		
CONTINUOUS FOOTING MARK	FOOTING SIZE	REINFORCEMENT
CF1	1'-6"x3'-0"x CONT	(4) #5 CONT [(2) AT T&B] AND #4 STIRRUPS AT 24" OC
CF2	1'-0"x3'-0"x CONT	(2) #5 CONT [(1) AT T&B] AND #4 VERT AT 24" OC
CF3	1'-4"x0'-8"x CONT	(2) #4 BARS CONTINUOUS
SPREAD FOOTING SCHEDULE		
SPREAD FOOTING MARK	FOOTING SIZE	REINFORCEMENT
F1	2'-6"x2'-6"x1'-0"	(4) #4 EACH WAY
F2	3'-0"x3'-0"x1'-0"	(4) #4 EACH WAY
F3	4'-0"x4'-0"x1'-0"	(6) #4 EACH WAY

1 S1.04 4-PLEX FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN NOTES

1. SLAB CONSTRUCTION: 4" CONC SLAB REINFORCED WITH #4 BARS AT 24" OC EACH WAY OR 6x6-W1.4xW1.4 WWF ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH.
2. SLAB CONSTRUCTION GARAGE: 5" CONC SLAB REINFORCED WITH #4 BARS AT 12" OC EACH WAY ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH.
3. CONTROL JOINTS AT 10'-0" OC MAX, EACH WAY (NOT SHOWN FOR CLARITY).
4. CONTRACTOR TO FIELD VERIFY ALL FOUNDATION ELEVATIONS AND STEP FOUNDATION PER SITE CONDITIONS.
5. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
6. REF ARCH FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

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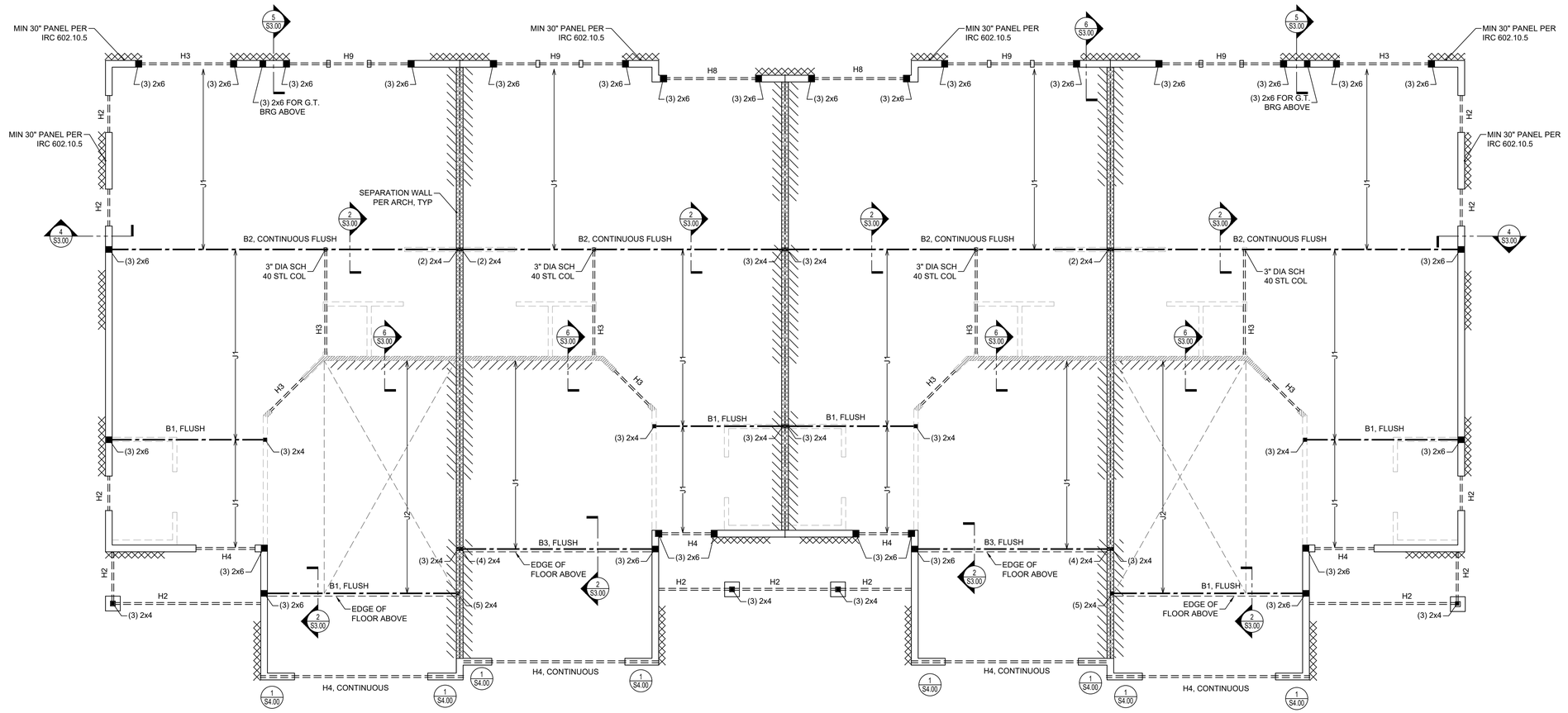

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MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
H2	(2) #2-2x8	
H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

BEAM SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
B1	W8x10 STEEL BEAM	
B2	W8x15 STEEL BEAM	
B3	W8x21 STEEL BEAM	
B4	W8x24 STEEL BEAM	
B5	W8x31 OR W10x26 STEEL BEAM	

JOIST SCHEDULE		
MARK	JOIST SIZE	DETAIL REFERENCE/COMMENT
J1	#2-2x10 AT 16" O.C.	
J2	#2-2x10 AT 16" O.C. DOUBLE EVERY OTHER	
J3	#2-2x10 AT 16" O.C. DOUBLED	
J4	11⅞" TJI 230 I-JOISTS AT 16" OC	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 NON-LOAD BRG STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 / S1.05 4-PLEX SECOND FLOOR FRAMING
SCALE: 1/4" = 1'-0"

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 2⁵/16 FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1½" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ¾" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
7. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
8. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

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BRYCE D CRAIG
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2021.07.13
PROFESSIONAL ENGINEER

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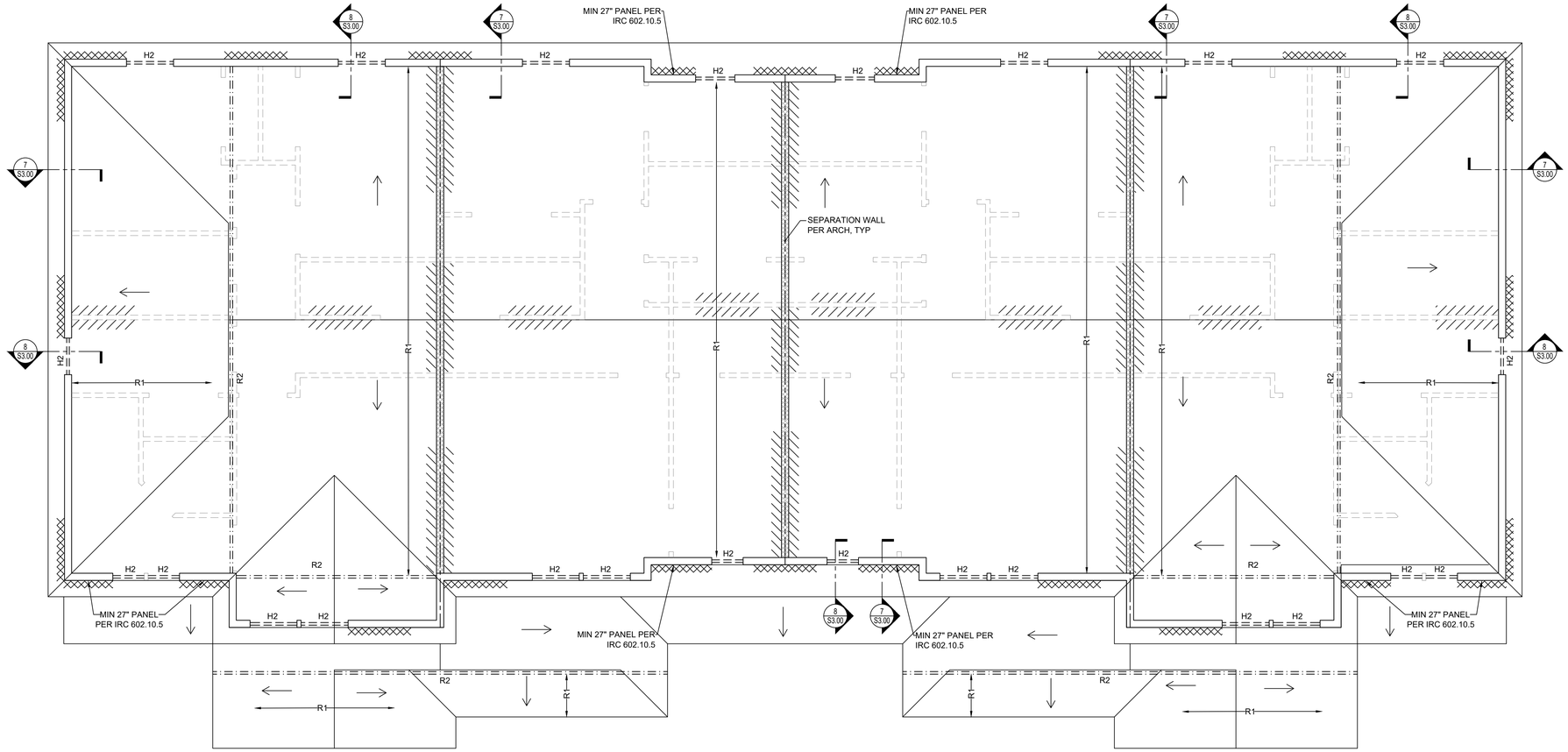

HEADER SCHEDULE		
MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
H2	(2) #2-2x8	
H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

TRUSS SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
R1	TRUSSES AT 24" O.C. (BY OTHERS)	
R2	GIRDER TRUSS (BY OTHERS)	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 S1.06 4-PLEX ROOF FRAMING
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES:

1. ROOF CONSTRUCTION: REFERENCE ARCHITECTURAL PLANS FOR ROOF MATERIAL, WATERPROOFING MEMBRANE, AND INSULATION.
2. SEE SHEET S1.0 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
3. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.
4. ROOF DECKING: ⅝" NOMINAL WOOD STRUCTURAL PANELS (WSP) APA 48/24, BLOCKED PANEL EDGES, FASTENED W/ 10D NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON PREFAB. WOOD TRUSSES (BY OTHERS) SPACED @ 24" O.C., UNLESS NOTED OTHERWISE. FASTEN TRUSSES TO SUPPORT STRUCTURE PER MANUFACTURER'S SPECIFICATIONS.

TRUSS ROOF NOTES: (BY OTHERS)

1) DESIGNED FOR LIGHT ROOF COVERING
   TOP CHORD:
   LIVE LOAD/SNOW LOAD (PSF): 20
   DEAD LOAD (PSF): 10
   BOTTOM CHORD:
   DEAD LOAD(PSF): 10
2) ALL EXTERIOR HEADERS SHALL BE MIN. (2) #2-2x10 UNLESS OTHERWISE NOTED.
3) CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR WALLS SHOWN AS NON-LOAD BEARING ON APPROVED PRINTS.
4) MIN. (4) 2x4 BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED.
5) PROVIDE 2x SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
6) ROOF IS ENGINEERED TO COMPLY WITH IRC 802.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ⅜" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
7. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
8. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 2⁴/16 FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1¼" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)
OR
LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Building Department of Safety and Development
City of Lee's Summit, Missouri
Ordinance

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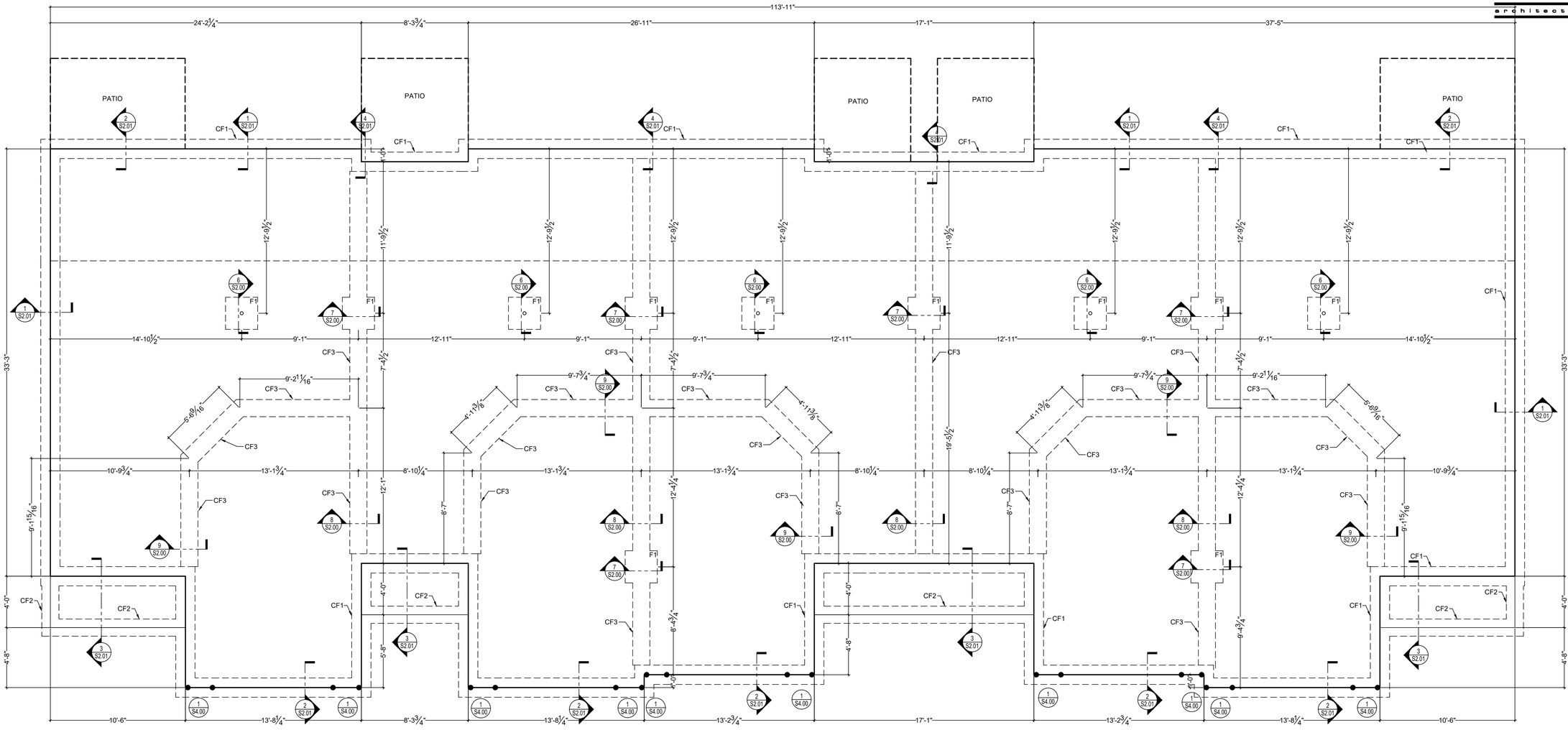

CONTINUOUS FOOTING SCHEDULE		
CONTINUOUS FOOTING MARK	FOOTING SIZE	REINFORCEMENT
CF1	1'-6"x3'-0"x CONT	(4) #5 CONT [(2) AT T&B] AND #4 STIRRUPS AT 24" OC
CF2	1'-0"x3'-0"x CONT	(2) #5 CONT [(1) AT T&B] AND #4 VERT AT 24" OC
CF3	1'-4"x0'-8"x CONT	(2) #4 BARS CONTINUOUS
SPREAD FOOTING SCHEDULE		
SPREAD FOOTING MARK	FOOTING SIZE	REINFORCEMENT
F1	2'-6"x2'-6"x1'-0"	(4) #4 EACH WAY
F2	3'-0"x3'-0"x1'-0"	(4) #4 EACH WAY
F3	4'-0"x4'-0"x1'-0"	(6) #4 EACH WAY

FOUNDATION PLAN NOTES

1. SLAB CONSTRUCTION: 4" CONC SLAB REINFORCED WITH #4 BARS AT 24" OC EACH WAY OR 6x6-W1.4xW1.4 WWF ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH..
2. SLAB CONSTRUCTION GARAGE: 5" CONC SLAB REINFORCED WITH #4 BARS AT 12" OC EACH WAY ON 10 MIL VAPOR BARRIER ON 4" OF ¾" CLEAN GRAVEL ON SUB BASE PER GEOTECH.
3. CONTROL JOINTS AT 10'-0" OC MAX, EACH WAY (NOT SHOWN FOR CLARITY).
4. CONTRACTOR TO FIELD VERIFY ALL FOUNDATION ELEVATIONS AND STEP FOUNDATION PER SITE CONDITIONS.
5. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
6. REF ARCH FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

1 / S1.07 5-PLEX FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

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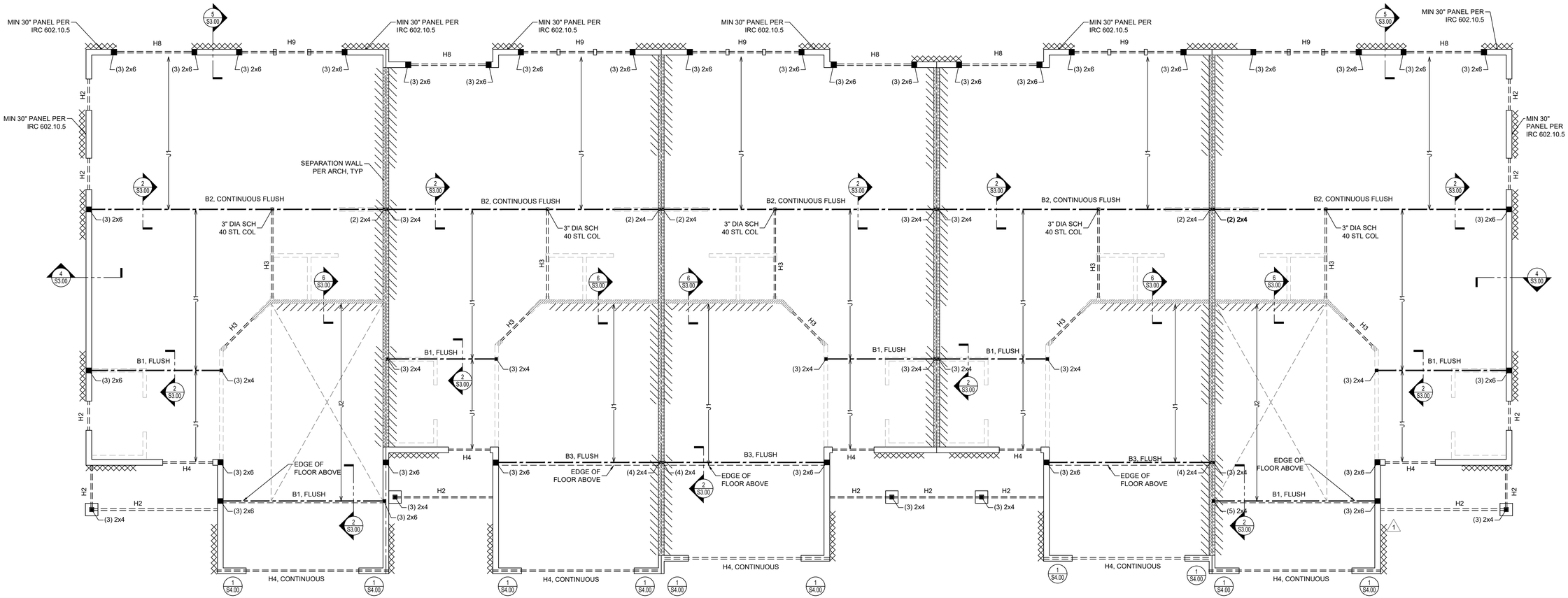

HEADER SCHEDULE		
MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
H2	(2) #2-2x8	
H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

BEAM SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
B1	W8x10 STEEL BEAM	
B2	W8x15 STEEL BEAM	
B3	W8x21 STEEL BEAM	
B4	W8x24 STEEL BEAM	
B5	W8x31 OR W10x26 STEEL BEAM	

JOIST SCHEDULE		
MARK	JOIST SIZE	DETAIL REFERENCE/COMMENT
J1	#2-2x10 AT 16" O.C.	
J2	#2-2x10 AT 16" O.C. DOUBLE EVERY OTHER	
J3	#2-2x10 AT 16" O.C. DOUBLED	
J4	11⅞" TJI 230 I-JOISTS AT 16" OC	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 NON-LOAD BRG STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 S1.08 5-PLEX SECOND FLOOR FRAMING
SCALE: 1/4" = 1'-0"

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX.UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1½" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ¾" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
7. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
8. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.

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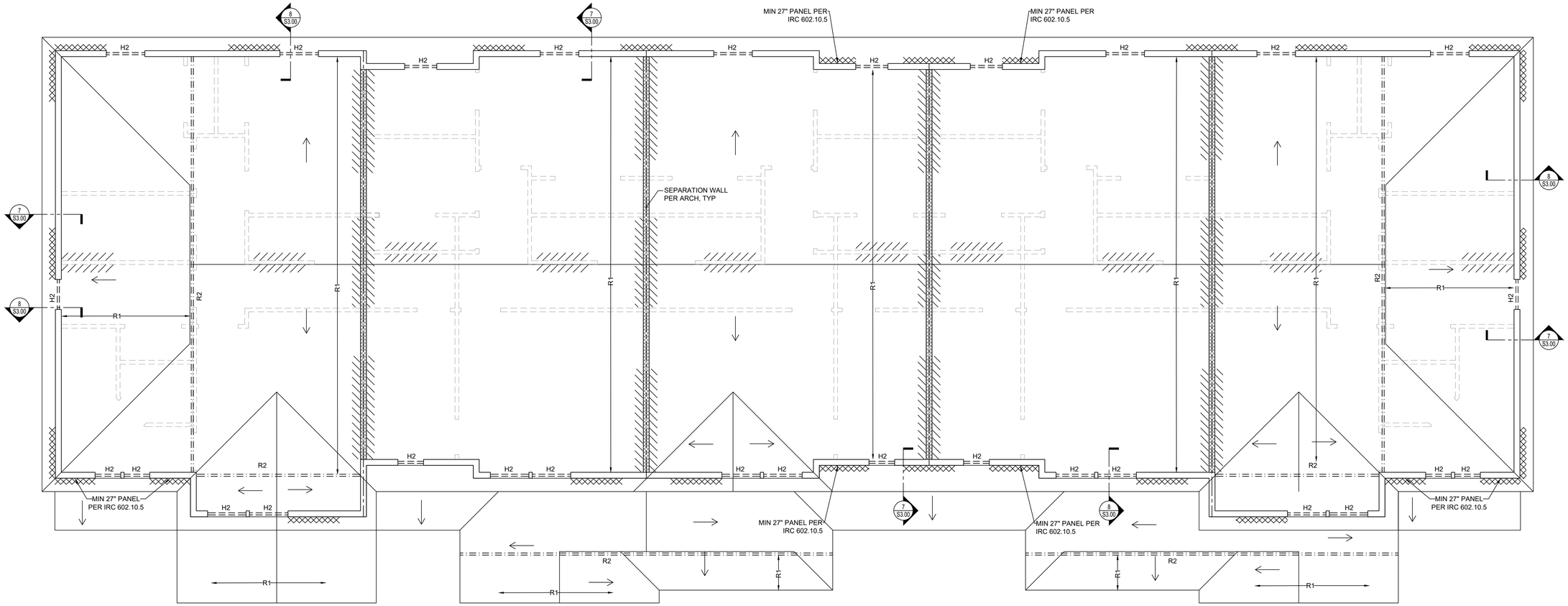

HEADER SCHEDULE		
MARK	HEADER SIZE	DETAIL REFERENCE/COMMENT
H1	(2) #2-2x6	
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H3	(2) #2-2x10	
H4	(2) #2-2x12	
H5	(3) #2-2x12	
H6	(2) 1¾"x9¼" LVL	
H7	(2) 1¾"x9½" LVL	
H8	(2) 1¾"x11¼" LVL	
H9	(2) 1¾"x11⅞" LVL	

TRUSS SCHEDULE		
MARK	BEAM SIZE	DETAIL REFERENCE/COMMENT
R1	TRUSSES AT 24" O.C. (BY OTHERS)	
R2	GIRDER TRUSS (BY OTHERS)	

= 2x6 STUD WALL AT 16" O.C. SPACING

= 2x4 BEARING STUD WALL AT 16" O.C. SPACING

= 2x4 NON-LOAD BRG STUD WALL AT 16" O.C. SPACING

= SEPARATION WALL, REF ARCH

1 S1.09 5-PLEX ROOF FRAMING
SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES:

1. ROOF CONSTRUCTION: REFERENCE ARCHITECTURAL PLANS FOR ROOF MATERIAL, WATERPROOFING MEMBRANE, AND INSULATION.
2. SEE SHEET S1.00 FOR ADDITIONAL STRUCTURAL SPECIFICATIONS.
3. REF. ARCH. FOR ALL DIMENSIONS, EXTERIOR FINISHES AND ADDITIONAL NOTES.
4. ROOF DECKING: ⅝" NOMINAL WOOD STRUCTURAL PANELS (WSP) APA 48/24, BLOCKED PANEL EDGES, FASTENED W/ 10D NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON PREFAB. WOOD TRUSSES (BY OTHERS) SPACED @ 24" O.C., UNLESS NOTED OTHERWISE. FASTEN TRUSSES TO SUPPORT STRUCTURE PER MANUFACTURER'S SPECIFICATIONS.

FLOOR FRAMING NOTES:

1. FLOOR CONSTRUCTION: ¾" WOOD SUBFLOOR SHEATHING APA 48/24, FASTENED W/ 10d NAILS @ 6" O.C. EDGES & 12" O.C. IN FIELD, ON FLOOR JOISTS (PER PLAN)
2. REFERENCE ARCHITECTURAL PLANS FOR INSULATION AND GYPSUM SHEATHING
3. WALL CONSTRUCTION: WOOD STUDS PER SCHEDULE THIS SHEET
4. ALL HEADERS TO BE MIN H3 UNO.
5. REF 1-S3.00 FOR JAMB FRAMING U.N.O.
6. EXTERIOR WALL SHEATHING: MIN 7/16" APA RATED WSP CONTINUOUS EXTERIOR SHEATHING, PER BRACED WALL METHODOLOGY
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BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING PER WSP METHOD (BELOW)
UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 2⁵/₁₆ FOR 24" OC SPACING WITH 8d NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX,UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2-S4.00):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1¼" TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

TRUSS ROOF NOTES: (BY OTHERS)

1) DESIGNED FOR LIGHT ROOF COVERING
   TOP CHORD:
   LIVE LOAD/SNOW LOAD (PSF): 20
   DEAD LOAD (PSF): 10
   BOTTOM CHORD:
   DEAD LOAD(PSF): 10
2) ALL EXTERIOR HEADERS SHALL BE MIN. (2) #2-2x10 UNLESS OTHERWISE NOTED.
3) CONSULT ENGINEER IF TRUSSES BEAR ON INTERIOR WALLS SHOWN AS NON-LOAD BEARING ON APPROVED PRINTS.
4) MIN. (4) 2x4 BELOW EACH BEARING POINT OF EACH GIRDER TRUSS, UNLESS OTHERWISE NOTED.
5) PROVIDE 2x SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
6) ROOF IS ENGINEERED TO COMPLY WITH IRC 802.

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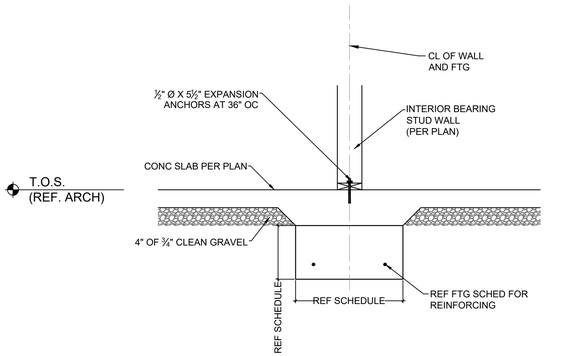
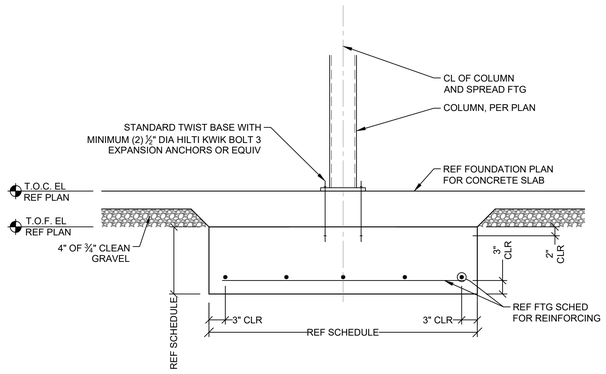
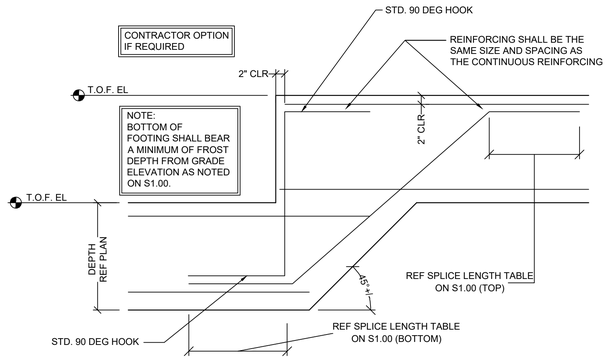


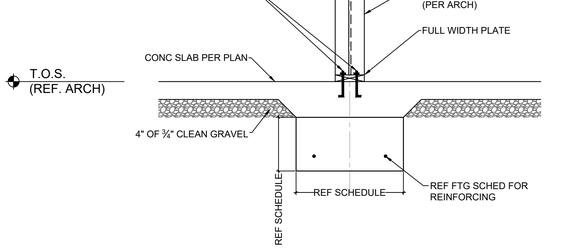
9 S2.00 INTERIOR GRADE BEAM
SCALE: 3/4" = 1'-0"



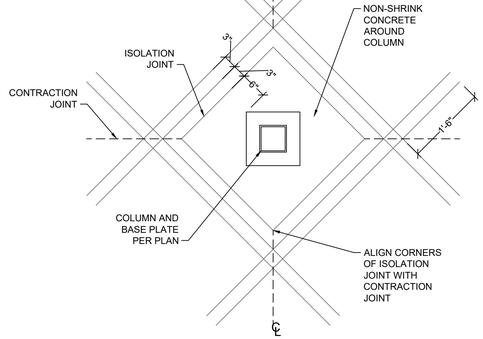
6 S2.00 INTERIOR COLUMN FOOTING
SCALE: 3/4" = 1'-0"



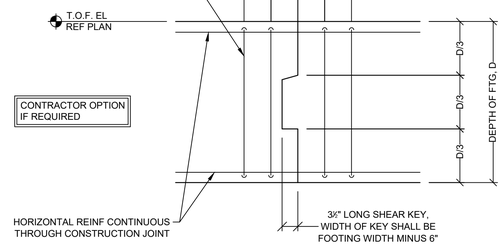
3 S2.00 TYPICAL FOOTING STEP
SCALE: 3/4" = 1'-0"



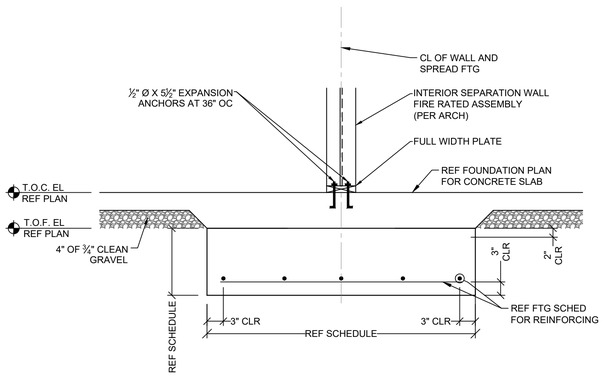
8 S2.00 SEPARATION WALL AT INTERIOR GRADE BEAM
SCALE: 3/4" = 1'-0"



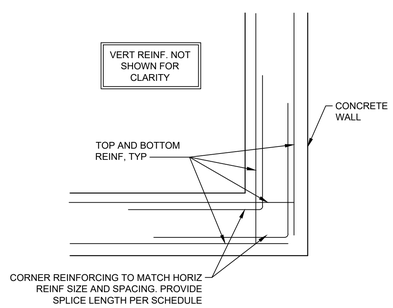
5 S2.00 TYPICAL COLUMN ISOLATION JOINT
SCALE: 3/4" = 1'-0"



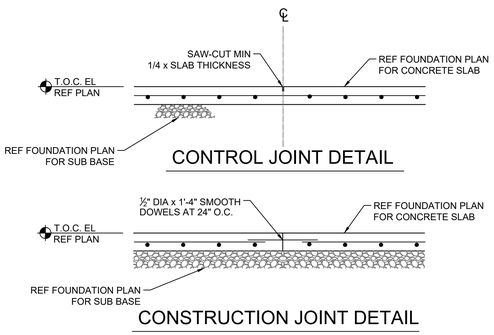
2 S2.00 TYPICAL GRADE BEAM CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"



7 S2.00 SEPARATION WALL AT SPREAD FOOTING
SCALE: 3/4" = 1'-0"



4 S2.00 CORNER REINFORCING
SCALE: 3/4" = 1'-0"



1 S2.00 TYPICAL SLAB JOINT DETAIL
SCALE: 3/4" = 1'-0"

STATE OF MISSOURI
BRYCE D CRAIG
NUMBER
PE-2006026494
2021.07.13
PROFESSIONAL ENGINEER

a new residential project for
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Lot 15C
Lee's Summit, Missouri 64064

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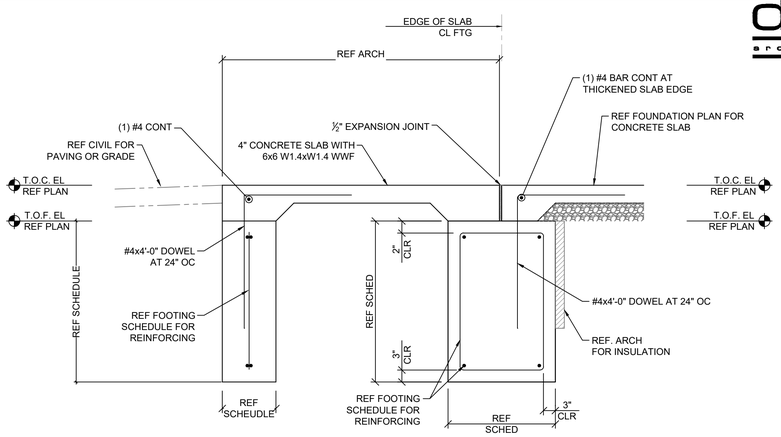
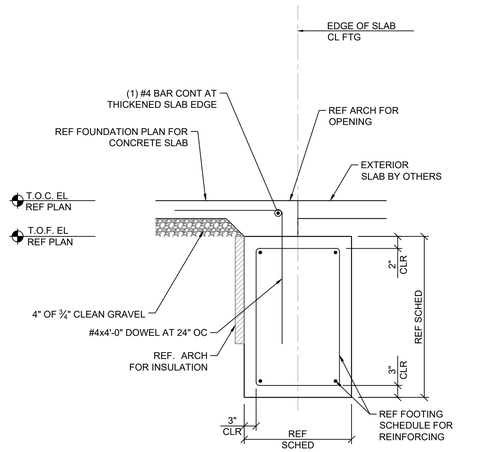
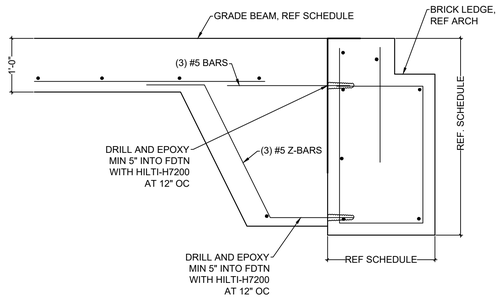


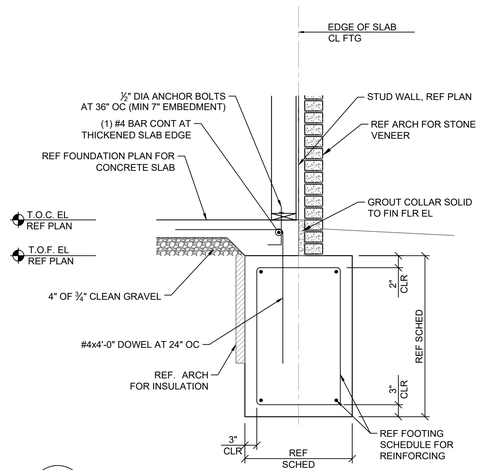
3 S2.01 TYPICAL STOOP OPENING
SCALE: 3/4" = 1'-0"



2 S2.01 TYPICAL PERIMETER TRENCH FOOTING
SCALE: 3/4" = 1'-0"



4 S2.01 TYPICAL FOOTING JUMP AT OVERDIG
SCALE: 3/4" = 1'-0"



1 S2.01 TYPICAL PERIMETER TRENCH FOOTING
SCALE: 3/4" = 1'-0"

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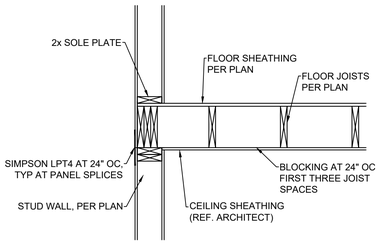
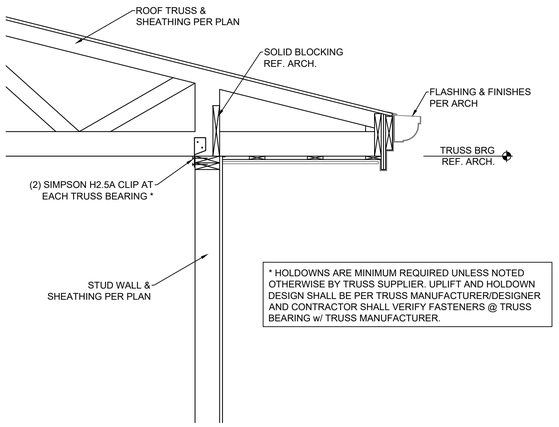
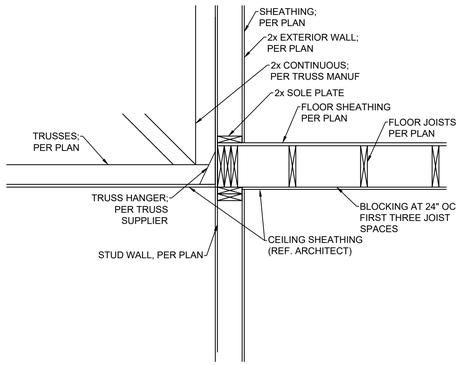


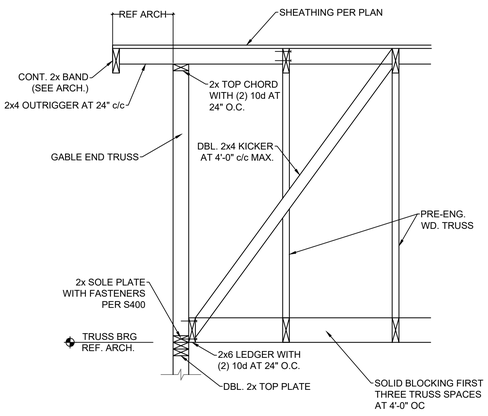
4 S3.00 EXTERIOR WALL, JOISTS PARALLEL
SCALE: 3/4" = 1'-0"



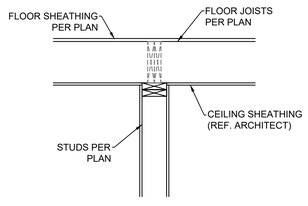
7 S3.00 EXTERIOR TRUSS SECTION
SCALE: 3/4" = 1'-0"



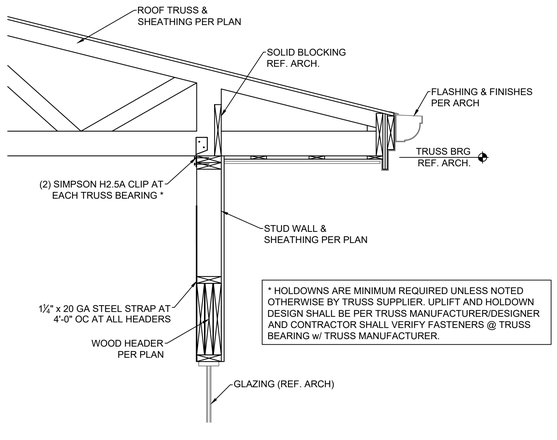
3 S3.00 ROOF TRUSS BEARING DETAIL
SCALE: 3/4" = 1'-0"



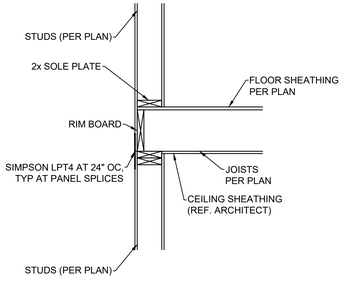
9 S3.00 EXTERIOR GABLE WALL SECTION
SCALE: 3/4" = 1'-0"



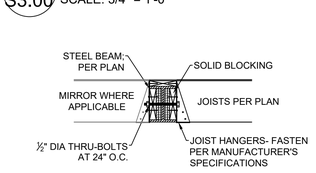
6 S3.00 INTERIOR WALL, JOIST BEARING
SCALE: 3/4" = 1'-0"



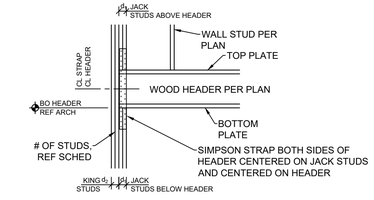
8 S3.00 EXTERIOR TRUSS SECTION AT HEADER
SCALE: 3/4" = 1'-0"



5 S3.00 EXTERIOR WALL, JOISTS PERPENDICULAR
SCALE: 3/4" = 1'-0"



2 S3.00 FLUSH BEAM TO JOIST CONNECTION
SCALE: 3/4" = 1'-0"



JAMB SCHEDULE			
OPENING WIDTH	# OF STUDS		STRAP TYPE
	d_1	d_2	
UP TO 3'-4"	1	1	SIMPSON MSTC28 WITH 16d NAILS
3'-5" TO 10'-0"	2	2	SIMPSON MSTC40 WITH 16d NAILS
10'-1" TO 19'-0"	2	4	SIMPSON MSTC66 WITH 16d NAILS

NOTE: MINIMUM # OF STUDS U.N.O. ON PLANS

1 S3.00 TYPICAL JAMB DETAIL
SCALE: 3/4" = 1'-0"

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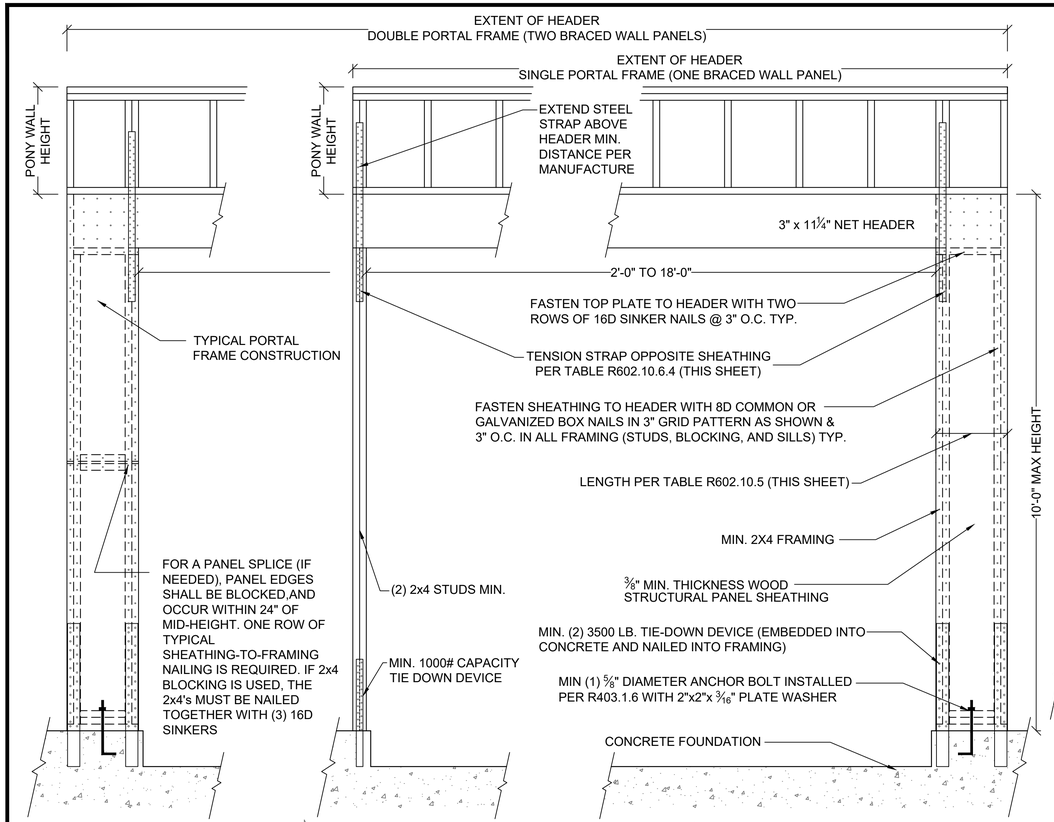
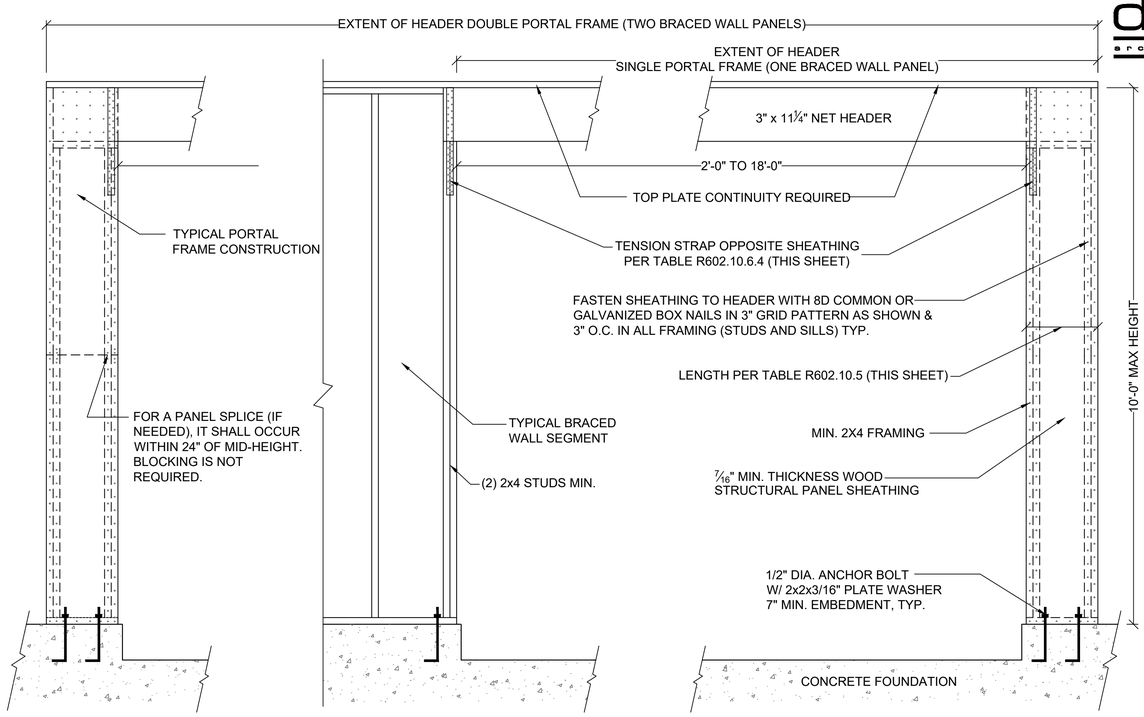
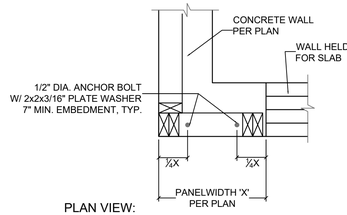
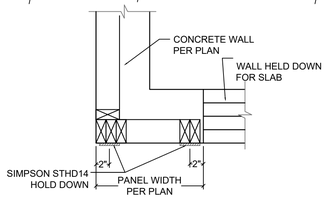




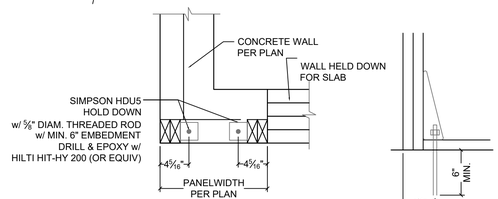
1 S4.0 ALT. PORTAL FRAME AT GARAGE DOOR W/O HOLD DOWNS (METHOD PFG)
SCALE: ¾" = 1'-0"
(ALT ALLOWED AT GARAGE DOOR ONLY)
(PER IRC R602.10.6.3)



PLAN VIEW:
APA NARROW WALL BRACING METHOD WITHOUT HOLD-DOWNS



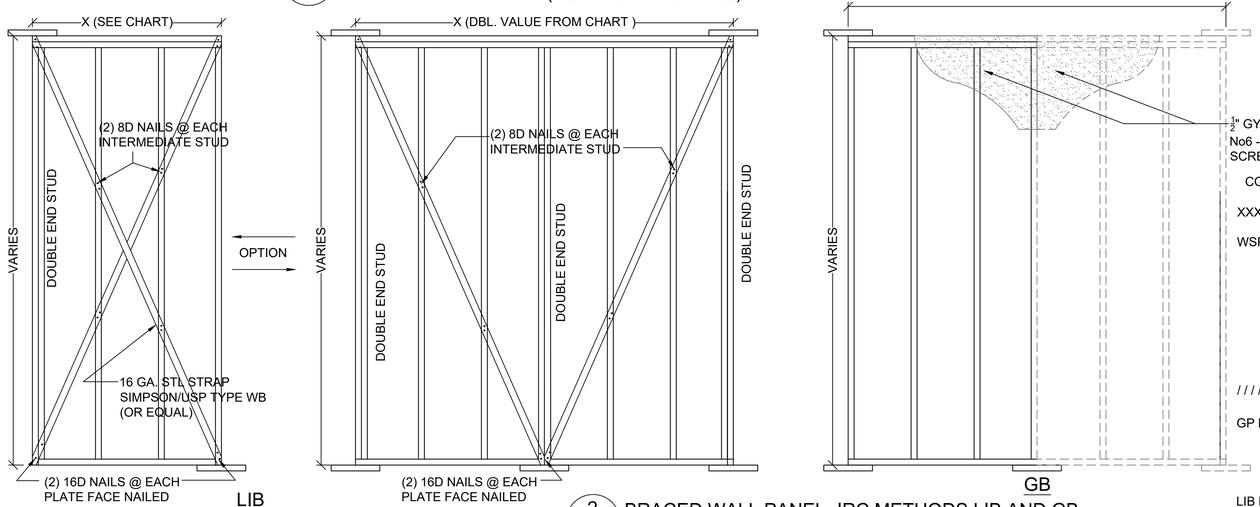
PLAN VIEW -
ALTERNATE BRACED WALL PANEL



PLAN VIEW -
ALTERNATE BRACED WALL PANEL **DRILL & EPOXY OPTION**

BRACED WALL PANEL LENGTHS BASED ON WALL HEIGHT FOR IRC, LIB		
WALL HEIGHT	MIN. WALL LENGTH (X)	MAX. WALL LENGTH (X)
8'-0"	4'-7"	8'-0"
9'-0"	5'-2"	9'-0"
10'-0"	5'-9"	10'-0"
11'-0"	NP	-
12'-0"	NP	-

1 S4.0 PORTAL FRAME WITH HOLD DOWNS (METHOD PFH)
SCALE: ¾" = 1'-0"
(PER IRC R602.10.6.2)



2 S4.0 BRACED WALL PANEL- IRC METHODS LIB AND GB
SCALE: ¾" = 1'-0"

BRACED WALL METHODOLOGY

CONTINUOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW) UNLESS OTHERWISE NOTED ON THE PLAN

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN ⅜" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" O.C. STUD SPACING WITH 6d COMMON NAILS @ 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" O.C. SPACING WITH 8d NAILS @ 6" O.C. EDGES AND 12" O.C. IN FIELD.
(NOTE: FRAMING MEMBERS 16" O.C. MAX,UNBLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2/S4.0):

GP METHOD: ½" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1¼" TYPE 'W' OR 'S' DRYWALL SCREWS @ 7" O.C. EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

TABLE R602.10.6.4 TENSION CAPACITY STRAP TABLE				
MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (FEET)	MAXIMUM TOTAL WALL HEIGHT (FEET)	MAXIMUM OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQUIRED (POUNDS) 115 EXPOSURE B
2x4 NO. 2 GRADE	0	10	18	1,000
	1	10	9	1,000
			16	1,025
			18	1,275
	2	10	9	1,000
			16	2,175
			18	2,500
	2	12	9	1,500
			16	3,375
			18	3,975
	4	12	9	2,750
			16	3,775
2x6 STUD GRADE	2	12	9	1,000
			16	2,150
			18	2,550
	4	12	9	1,750
			16	2,400
			18	3,800

TABLE R602.10.5 (PARTIAL) MINIMUM LENGTH OF BRACED WALL PANELS						
METHOD		MINIMUM LENGTH (INCHES) WALL HEIGHT				
		8 FEET	9 FEET	10 FEET	11 FEET	12 FEET
PFH	SUPPORTING ROOF ONLY	16	16	16	16	16
	SUPPORTING ONE STORY AND ROOF	24	24	24	24	24
PFG		24	27	30	30	30
NOTE: MAX HEADER HEIGHT IS 10'-0", BUT WALL HEIGHT SHALL BE PERMITTED TO BE INCREASED TO 12-0" WITH PONY WALL.						

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MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. MOTORS:
   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 30 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES.
   F. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
6. PIPING:
   A. DOMESTIC COLD AND HOT WATER (ABOVEGROUND).
      1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
      2) WROUGHT BRONZE SOLDERED FITTINGS.
         a) GATE VALVE: JOMAR T-76-301 OR EQUAL. NSF 61-8, ANSI B16.20.1, ANSI B16.18
         b) GLOBE VALVE: CRANE #7 OR EQUAL.
         c) BALL VALVE: JOMAR T-76-100G OR EQUAL, COMPACT LEAD FREE FORGED BRASS BALL VALVE (UL842, CSA 3371-12 & 3371-92, FM, NSF 61, CALIFORNIA CODE AB1953-NSF61 ANNEX G APPROVED.
         d) BALL VALVE: JOMAR T-100NE OR EQUAL. UL842, FM, CSA, NSF 61-8, MSS SP-110
      3) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03.
         a) PEX MECHANICAL, CRIMP/INSERT FITTINGS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE, INCREASE PEX PIPING SIZE AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER.
   B. DOMESTIC COLD, AND HOT WATER (UNDERGROUND).
      1) TYPE K HARD OR SOFT DRAWN COPPER TUBING, ASTM B-88.
         a) WROUGHT BRONZE SOLDERED FITTINGS.
         b) WROUGHT BRONZE FLARED FITTINGS.
      2) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03.
         a) PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. INCREASE PEX PIPING DIAMETER ONE SIZE UP FROM COPPER SIZE AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER.
         b) PEX MECHANICAL, CRIMP/INSERT FITTINGS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
   C. DOMESTIC WATER SERVICE, 3/4" - 3"
      1) TYPE K SOFT DRAWN COPPER TUBING, ASTM B-88.
         a) WROUGHT BRONZE FLARED FITTINGS.
   D. SANITARY SEWER, AND VENTS (UNDERGROUND, INTERIOR TO BUILDING).
      1) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (WHERE APPROVED BY LOCAL CODES).
      2) SERVICE WEIGHT, BELL-AND-SPIGOT, COATED CAST IRON, ASTM A-74.
      3) ACRYLONITRILE-BUTADIENE-STYRENE (ABS) SEWER PIPE, ASTM D 2751-83a SDR 23.5, SOLVENT-CEMENTED JOINTS.
      4) "NO-HUB" CAST IRON, NEOPRENE GASKETS, STAINLESS STEEL CLAMPS.
      5) DWV, WROUGHT COPPER, ANSI B-16.29.
   E. SANITARY SEWER AND VENTS (EXTERIOR TO BUILDING).
      1) SERVICE WEIGHT, BELL-AND-SPIGOT, COATED CAST IRON, ASTM A-74.
      2) DUCTILE IRON GRAVITY SEWER PIPE & FITTINGS, ASTM A746/747, CLASS 50 OR 51, SEALCOATED, MECHANICAL OR PUSH-ON JOINTS, DIP COATING, NEOPRENE OR SYNTHETIC RUBBER GASKETS.
      3) ACRYLONITRILE-BUTADIENE-STYRENE (ABS) SEWER PIPE, SDR-23.5 OR SCHEDULE 40, SOLVENT JOINT (WHERE APPROVED BY LOCAL CODES).
      4) POLYVINYLCHLORIDE (PVC) PIPE, SDR-26, SOLVENT OR ELASTOMERIC JOINT (WHERE APPROVED BY LOCAL CODES).
      5) POLYVINYLCHLORIDE (PVC) PIPE, SDR-35, SOLVENT OR ELASTOMERIC JOINT (WHERE APPROVED BY LOCAL CODES).
   F. SANITARY SEWER, AND VENTS (ABOVEGROUND).
      1) SERVICE WEIGHT, BELL-AND-SPIGOT, COATED CAST IRON, ASTM A-74.
      2) DWV, WROUGHT COPPER, ANSI B-16.29.
      3) GALVANIZED STEEL PIPE, WITH MALLEABLE IRON, THREADED FITTINGS, DRAINAGE PATTERN FOR SEWERS.
      4) "NO-HUB" CAST IRON, NEOPRENE GASKETS, STAINLESS STEEL CLAMPS.
      5) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (WHERE APPROVED BY LOCAL CODES). (NOT FOR USE IN A RETURN AIR PLENUM)
   G. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).
      1) DWV, WROUGHT COPPER, ANSI B-16.29.
      2) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT.
   H. REFRIGERANT.
      1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
      2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8, CLASSIFICATION BAG-1 (SILVER).
      3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
      4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   I. NATURAL GAS.
      1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
         a) PIPE 2" AND SMALLER: 150 LB. MALLEABLE IRON, THREADED FITTINGS.
         b) PIPE 2" AND SMALLER: VEGA MEGAPRESS FOR WATER AND GAS. CSA LC4, T65A/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
         c) PIPE 2-1/2" AND LARGER, WELDED
         d) PLUG VALVE: ROCKWELL NORDSTROM FIGURE NO. 142 OR 143.
         e) BALL VALVE: JOMAR T-100NE. APPROVALS- UL842, FM, CSA, NSF 61-8, MSS SP-110

MECHANICAL SPECIFICATIONS (CONTINUED)

   J. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELCEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.
   K. SLEEVES
      1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
      2) INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL. PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
      3) ROOF: FROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
      4) PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
   L. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
7. INSULATION AND DUCT LINING:
   A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   B. PIPE INSULATION - ABOVE GRADE:
      1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*F° OR LESS.
      2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
      3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
      4) FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
      5) INSULATION SCHEDULE:
         a) DOMESTIC COLD WATER 1/2"
         b) DOMESTIC HOT WATER 1-1/2"
         c) CONDENSATE DRAINS INSIDE BUILDING 1/2"
         d) REFRIGERANT SUCTION 1-1/2" FOR PIPING UP TO 1 1/2"Ø, & 2" FOR PIPING 1-1/2"Ø AND LARGER
   C. PIPE INSULATION - BELOW GRADE:
      1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.27 Btu PER in/hr*sqft*F° OR LESS.
      2) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, UNSLIT OR PRESLIT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO K-FLEX INSUL-TUBE OR EQUAL RATED FOR UNDERGROUND INSTALLATION ABOVE THE WATER TABLE. COVER PIPING WITH A CLEAN FILL SUCH AS SAND (3"-5" LAYER) TO PROTECT INSULATION FROM COMPACTION.
      3) PRE-INSULATED PIPE SYSTEMS WITH CLOSED CELL PEX-FOAM INSULATION AND COVERED BY A WATERPROOF CORRUGATED HDPE JACKET. UPONOR ECOFLEX OR EQUAL. ASTM F876, F877, CSA B137.5
      4) INSULATION SCHEDULE:
         a) DOMESTIC HOT WATER 1-1/2"
   D. EQUIPMENT INSULATION:
      1) FLEXIBLE FIBERGLASS: GLASS FIBER INSULATION; ASTM C 553, TYPE 1, CLASS B-4, SEMI-RIGID BOARD, WITH FACTORY LAMINATED KRAFT ALUMINUM FOIL (ALL SERVICE JACKET), VAPOR BARRIER, OWENS/CORNING PIPE AND TANK INSULATION.
   E. DUCTWORK: ACOUSTICAL INSULATION.
      1) DUCT LINING: 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
         a) DUCT LINING SCHEDULE:
            (1) RECTANGULAR SUPPLY DUCT 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.
            (2) RETURN AIR DUCT 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.
   F. DUCTWORK: THERMAL INSULATION.
      1) DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
         a) DUCT COVERING SCHEDULE: MINIMUM R-6 (MIN. R-5 IN ATTIC)
            (1) ROUND SUPPLY DUCT 2"
            (2) RECTANGULAR SUPPLY DUCT 2"
            (3) RETURN AIR DUCT 2"
8. PLUMBING:
   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
   B. ALL EXPOSED PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
   C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
   E. CLEANOUTS:
      1) VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
      2) QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
      3) CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
      4) UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
      5) WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
      6) GIRLAND: JR SMITH #4258, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
   F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
   G. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1) INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
      2) INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
9. DUCTWORK:
   A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G-60 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
   B. DUCTWORK, METAL GAUGES, REINFORCING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE
   C. ALL FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION.
   D. SEAL ALL CONCEALED DUCTWORK JOINTS WITH NON-HARDENING, NON-MIGRATING MASTIC SEALANT, AS RECOMMENDED FOR SEALING SEAMS AND JOINTS IN DUCTWORK. OIL BASE CAULKING AND GLAZING COMPOUNDS SHALL NOT BE ACCEPTABLE. DUCTS SHALL BE SEALED TO THE CLASS LEVEL LISTED BELOW.

	CLASS B	CLASS A	CLASS C	CLASS B
1) UNCONDITIONED SPACES				
1) CONDITIONED SPACES (PLENUM)	CLASS C	CLASS B	CLASS B	CLASS C
	SUPPLY ≤ 2" W.C.	SUPPLY > 2" W.C.	EXHAUST	RETURN

   E. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEETMETAL SIZES, ALLOWANCE FOR DUCT LINER HAS BEEN MADE WHERE APPLICABLE.
10. FLEXIBLE DUCT:
   A. ATCO 9056 (R-6), OR EQUAL.
   B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.
   C. MAXIMUM LENGTH OF 6'-0".
11. FLUES AND ACCESSORIES:
   A. FLUE FOR GAS FIRED CONDENSING WATER HEATER OR FURNANCE SHALL BE AS RECOMMENDED BY THE GAS APPLIANCE MANUFACTURER. FLUES SHALL BE SCHEDULE 40, PVC OR CPVC PIPE PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
   B. PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.
12. EXHAUST FANS:
   A. CENTRIFUGAL CEILING EXHAUSTERS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACOUSTICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED, WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.
13. FURNACE AND CONDENSING UNIT:
   A. CONDENSING FURNACES:
      1) GAS FIRED FURNACE SHALL BE FACTORY ASSEMBLED, PRE-WIRED UNIT CONSISTING OF SHEETMETAL CASING, SUPPLY FAN, GAS FIRED HEAT EXCHANGER, AND CONTROLS. CAPACITY SHALL BE AS SCHEDULED.
      2) THE PRIMARY HEAT EXCHANGER SHALL BE ALUMINIZED STEEL CONSTRUCTION WITH A STAINLESS STEEL SECONDARY HEAT EXCHANGER.
      3) THE FURNACE SHALL BE OF THE CONDENSING TYPE, UTILIZING A SEALED COMBUSTION CHAMBER. UNIT SHALL INCLUDE FINNED CAST IRON HEAT EXCHANGER, ALUMINIZED STEEL EXHAUST DECOUPLER SECTION, AND FINNED STAINLESS STEEL TUBE CONDENSER SECTION.
      4) THE UNIT SHALL BE EQUIPPED WITH THE MANUFACTURER'S STANDARD CONTROLS INCLUDING 24 VOLT CONTROL TRANSFORMER, AUTOMATIC SPARK IGNITION, AUTOMATIC GAS VALVE TRAIN, HIGH TEMPERATURE LIMIT SWITCH, AND FAN TIMED DELAY RELAY.
      5) RETURN AIR INLET ON UNIT SHALL BE PROVIDED WITH A 1" THROWAWAY TYPE FILTER AND SLIDE IN FRAME, MOUNTED ON THE UNIT.

MECHANICAL SPECIFICATIONS (CONTINUED)

   6) FAN SHALL BE A DIRECT DRIVE MULTI-SPEED BLOWER, RESILIENTLY MOUNTED IN THE CASING. MOTOR SHALL BE PROVIDED WITH AUTOMATIC THERMAL OVERLOAD PROTECTION.
   7) FURNACE SHALL BE AGA APPROVED.
   B. CONDENSING UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED AIR-COOLED CONDENSING UNIT, CONSISTING OF COMPRESSOR, CONDENSER COIL, FAN, MOTOR, REFRIGERANT RESERVOIR, OPERATING CONTROLS, ETC. CAPACITY AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED.
      1) COMPRESSOR: HERMETICALLY SEALED WITH BUILT-IN OVERLOADS AND VIBRATION ISOLATION. COMPRESSOR MOTOR, SHALL HAVE THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICES, INTERNAL HIGH-PRESSURE PROTECTION, HIGH AND LOW PRESSURE CUTOUT SWITCHES, START CAPACITOR AND RELAY, 2-POLE CONTACTOR, CRANKCASE HEATER, AND TEMPERATURE ACTUATED SWITCH AND TIMER TO PREVENT COMPRESSOR RAPID CYCLE.
      2) COIL SHALL BE COPPER TUBING WITH ALUMINUM FINS; COMPLETE WITH LIQUID ACCUMULATOR AND LIQUID SUBCOOLER. UNIT SHALL INCLUDE FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVE, LIQUID LINE SERVICE VALVE, AND REFRIGERANT PIPING EXTENDED TO EXTERIOR OF CASING.
14. CONTROL WIRING:
   A. ELECTRICAL WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM, SHALL BE PROVIDED BY THIS CONTRACTOR, UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR SPECIFICATIONS.
   B. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED. INSTALL IN NEAT WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND THE ELECTRICAL SPECIFICATIONS.
      1) INSTALL CIRCUITS OVER 25 VOLT WITH COLOR CODED NUMBER 12 WIRE.
      2) INSTALL CIRCUITS UNDER 25 VOLT WITH COLOR CODED NUMBER 18 WIRE WITH 0.031 INCH HIGH TEMPERATURE 105 DEGREES F PLASTIC INSULATION ON EACH CONDUCTOR AND PLASTIC SHEATH OVER ALL.
      3) INSTALL ELECTRONIC CIRCUITS WITH COLOR CODED NUMBER 22 WIRE WITH 0.023 INCH POLYETHYLENE INSULATION ON EACH CONDUCTOR WITH PLASTIC JACKETED COPPER SHIELD OVER ALL.
      4) INSTALL LOW VOLTAGE CIRCUITS, LOCATED IN CONCRETE SLABS AND MASONRY WALLS, OR EXPOSED IN OCCUPIED AREAS, IN ELECTRIC CONDUIT.
      5) ALL WIRING IN AREAS USED AS AIR PLENUMS SHALL BE IN ELECTRIC CONDUIT EXCEPT THAT LOW VOLTAGE WIRING MAY BE TEFLON COATED ALUMINUM SHEATHED CABLE OR OTHER WIRE SPECIFICALLY APPROVED FOR INSTALLATION IN AIR PLENUMS, WHERE ACCEPTABLE BY LOCAL CODES.
      6) ALL WIRING IN AREAS NOT USED FOR AIR MOVEMENT SHALL BE IN ELECTRIC METALLIC TUBING EXCEPT LOW VOLTAGE WIRING MAY BE IN APPROVED SIGNAL CABLE WHERE ACCEPTED BY LOCAL CODES.

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	NECK SIZE	FACE SIZE	FINISH	REMARKS
SR-1	TITUS	250	12"x8"	"	WHITE	W O.B.D.
SR-2	"	"	8"x6"	"	"	W O.B.D.
RG-1	TITUS	350RL	22"x14"	"	"	-
TG-1	TITUS	350RL	18"x8"	"	"	-

EXHAUST FAN SCHEDULE

MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL VOLT/Ø/HZ	ELECTRICAL FWR	FAN TYPE	NOTES
EF-1	BROAN	XB50L	50	0.25	550	120/1/60	21 W	CEILING EXH.	1,2,3
EF-2	"	XB110L	100	"	900	"	36 W	"	1,2,3

NOTES:
1. PROVIDE CEILING GRILLE, INTEGRAL BACK DRAFT DAMPER, VARI-SPEED CONTROLLER (NEAR FAN AND ABOVE CEILING), AND WEATHER HEAD FOR ALL UNITS.
2. FANS SHALL NOT EXCEED SCHEDULED RPM.
3. COMBINATION FAN/LIGHT.

FURNACE SCHEDULE

MARK	MFGR	MODEL NO.	CFM	EXT. STATIC P. IN. WG.	HEATING (GAS) BTUH INPUT	HEATING (GAS) BTUH OUTPUT	ELECTRICAL VOLT/Ø/HZ	ELECTRICAL HP	NOTES
F-1	LENNOX	EL196DF090XE48B	1,000	0.7	70,000	66,000	115/1/60	1/3	1,2,3,4,5,6
F-2	"	EL196DF090XE48C	1,200	0.7	88,000	83,000	"	1/3	1,2,3,4,5,6

NOTES:
1. PROVIDE 1" THICK THROWAWAY TYPE FILTER WITH HOLDING FRAME FOR EACH UNIT.
2. PROVIDE EACH UNIT WITH 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER THERMOSTAT.
3. CONDENSING UNITS, COOLING COILS, AND FURNACES SHALL ALL BE OF THE SAME MANUFACTURER.
4. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO FILTERS AND COILS.
5. PROVIDE WATER-LEVEL MONITORING DEVICE IN DRAIN PAN TO SHUT DOWN THE UNIT IF CONDENSATE DRAIN BECOMES RESTRICTED.
6. PROVIDE MINIMUM 24" TALL EQUIPMENT STAND.

CONDENSING UNIT SCHEDULE

MARK	MFGR	MODEL NO.	COOLING TOTAL BTUH	COOLING AMB.	EVAP. EAT DB/WB	ELECTRICAL VOLT/Ø/HZ	MIN. MCA (AMPS)	MIN. MOCP (AMPS)	EVAP. COIL MODEL NO.	SEER	NOTES
CU-1	LENNOX	EL16XC1-030	28,800	95	80/67	230/1/60	17.1	25	CR33-30/36B	15.5	1,2,3,4,5
CU-2	"	EL16XC1-036	34,600	"	"	"	18.6	30	CR33-48C	"	"

NOTES:
1. PROVIDE TIME DELAY ON COMPRESSOR RE-START, CRANKCASE HEATER, AND COMPRESSOR LOCK-OUT WITH AMBIENT BELOW 35 °F. PROVIDE INDOOR COIL WITH THERMAL EXPANSION VALVE (TXV).
2. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.
3. PROVIDE CONCRETE OR PRE-MAUFACTURED POLYOLEFIN PAD FOR EACH UNIT.
4. PROVIDE HAIL GUARDS FOR EACH UNIT.
5. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.

NATURAL VENTILATION THRU OPERABLE WINDOWS/DOORS PER 2018 R303.1

4/5 PLEXES:

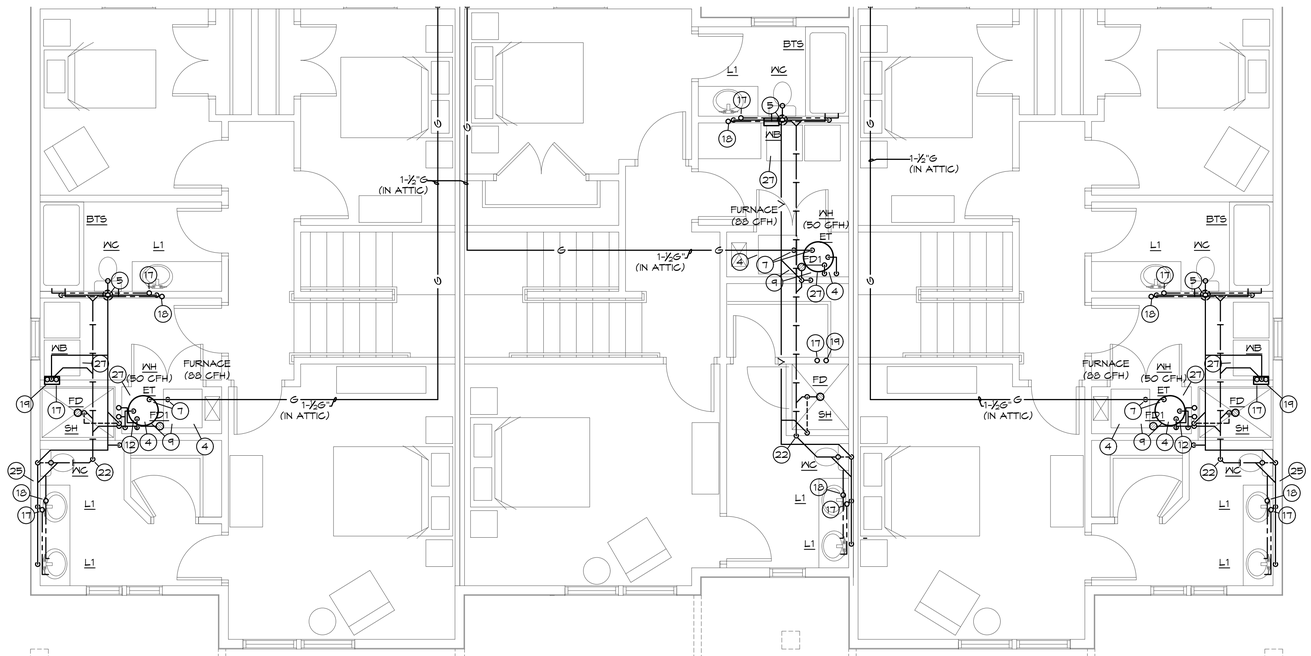
-DINING ROOM AREA= 344 SF
4% FLOOR AREA = 15.76 SF REQUIRED
PATIO DOOR AREA= 19.83 SF

-MASTER BEDROOM= 191 SF
4% FLOOR AREA = 7.64 SF REQUIRED
OPERABLE WINDOW AREA= 5.83 (X2)= 11.66 SF

-SPARE BEDROOMS AREA= 113 SF
4% FLOOR AREA = 4.52 SF REQUIRED
OPERABLE WINDOW AREA= 5.83 (X2)= 11.66 SF

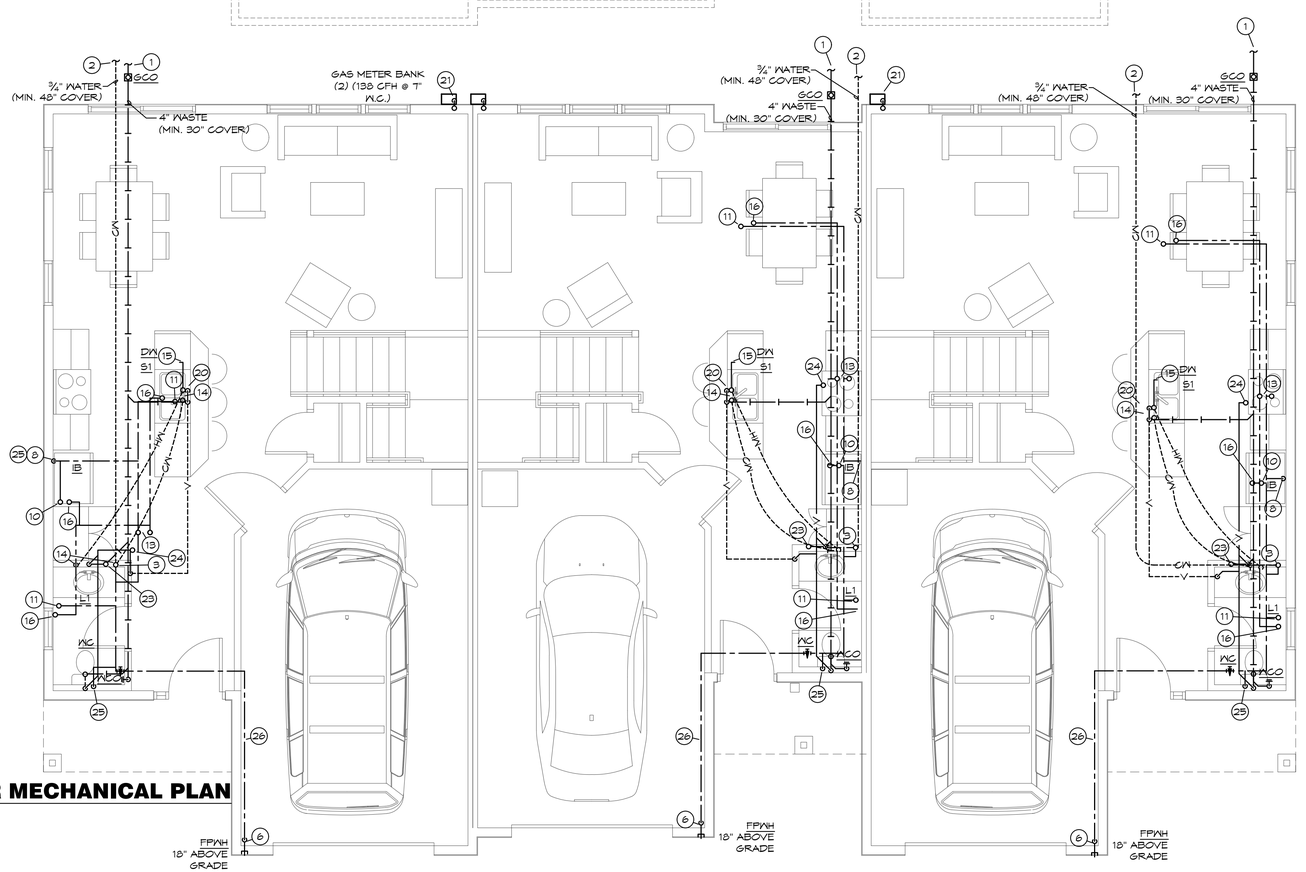
MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- THERMOSTAT, MOUNTED AT 48" AFF
- NEW DUCTWORK
- 32"x14" SIZE OF RECTANGULAR DUCT
- 6"Ø SIZE OF ROUND DUCT
- FLEXIBLE DUCTWORK
- FLE



TYPICAL 3PLEX SECOND FLOOR MECHANICAL PLAN

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



TYPICAL 3PLEX FIRST FLOOR MECHANICAL PLAN

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

PLUMBING PLAN NOTES:

1. SEE CIVIL FOR CONTINUATION OF 4" WASTE. MAINTAIN MINIMUM 30" COVER.
2. SEE CIVIL FOR CONTINUATION OF ¾" GAS. MAINTAIN 48" COVER.
3. ROUTE ¾" GAS UP FROM BELOW FLOOR. PROVIDE ACCESSIBLE SHUT OFF VALVE.
4. ROUTE (2) 3"Ø CPVC FLUE & COMBUSTION AIR INTAKE UP THROUGH ROOF TO MANUFACTURER'S VENT TERMINATION AS REQUIRED FOR WATER HEATER AND FURNACE. OFFSET AS REQUIRED TO MAINTAIN 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATIONS WEATHER TIGHT.
5. LOCATION OF 4" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
6. ROUTE ¾" DOWN AND INSTALL WALL HYDRANT 18" ABOVE GRADE / FINISHED FLOOR.
7. CONNECT ¾" GAS TO EQUIPMENT AS REQUIRED AND AS DETAILED.
8. PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
9. ROUTE ¾" DRAIN FROM FURNACE EVAPORATOR COILS, AND ¾" FLUE CONDENSATE FROM FURNACE AND WATER HEATER TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
10. ROUTE ½" CW UP TO SECOND FLOOR.
11. ROUTE ¾" CW UP TO SECOND FLOOR.
12. CONNECT ¾" CW AND ¾" HW TO WATER HEATER (WH) AND EXPANSION TANK (ET) AS REQUIRED AND AS PER RISER DIAGRAM.
13. ROUTE ¾" CW AND ¾" HW UP TO WATER HEATER ON SECOND FLOOR.
14. ROUTE ½" CW AND ½" HW DOWN TO BELOW FLOOR. EXTEND AND CONNECT TO S1 AS REQUIRED.
15. EXTEND AND CONNECT ½ HW TO DW AS REQUIRED. ROUTE DRAIN FROM DW TO SINK, S1, AND CONNECT AS PER MANUFACTURER'S REQUIREMENTS.
16. ROUTE ½" HW UP TO SECOND FLOOR.
17. ROUTE ½" HW DOWN TO FIRST FLOOR.
18. ROUTE ¾" CW DOWN TO FIRST FLOOR.
19. ROUTE ½" CW DOWN TO FIRST FLOOR.
20. FIXTURE TO BE ISLAND VENTED, REFER TO DETAIL.
21. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF GAS METER WITH (3) METERS WITH CAPACITY FOR 138 CFH @ 7" W.C. EACH. ROUTE 1-½" GAS PIPING FOR EACH TENANT UP INSIDE THE EXTERIOR WALL AND PENETRATE ABOVE SECOND FLOOR CEILING IN ATTIC. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
22. ROUTE 3" WASTE DOWN TO FIRST FLOOR.
23. 3" WASTE FROM SECOND FLOOR. PROVIDE CLEANOUT AT BASE OF RISER.
24. 2" VENT UP TO SECOND FLOOR.
25. ROUTE PIPING DOWN INTERIOR SIDE OF INSULATION FOR FREEZE PROTECTION.
26. COORDINATE WITH ELECTRICAL TO HEAT-TRACE PIPING LOCATED IN GARAGE.
27. PROVIDE DRAIN PAN UNDER EQUIPMENT AS REQUIRED.

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7/8/2021

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REGISTERED PROFESSIONAL ENGINEER

Chapel Ridge Townhomes Phase 5

a new residential project for

Lot 15C
Lee's Summit, Missouri 64064

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sheet number
P1.0
drawing type
permit
project number
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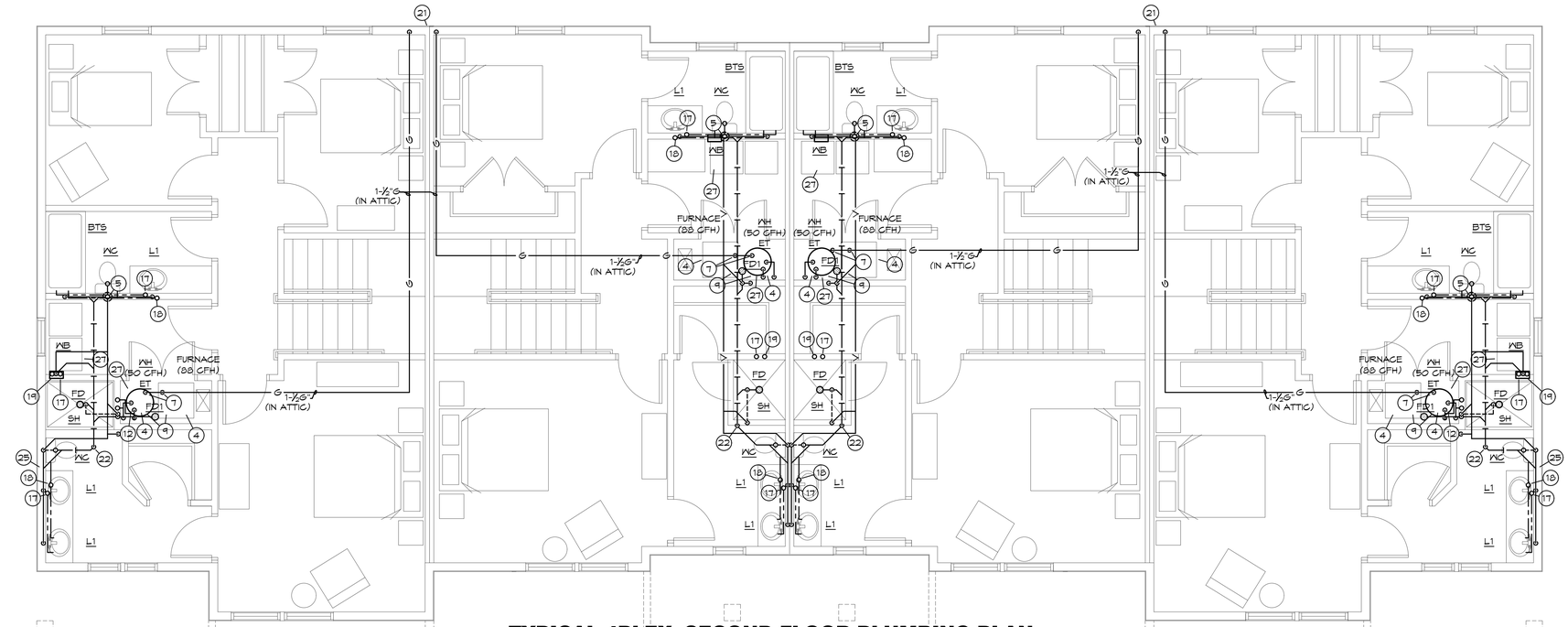
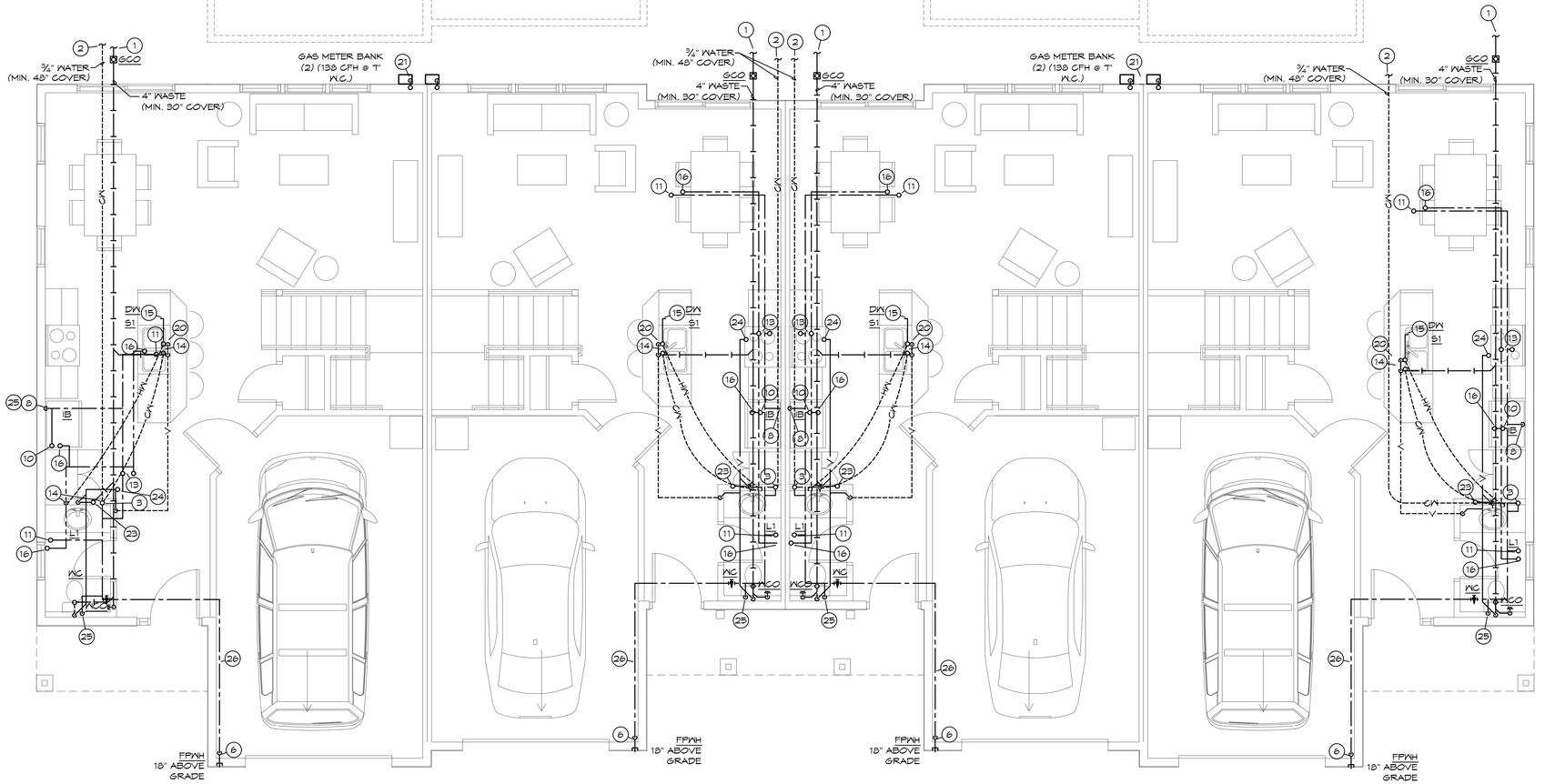


TYPICAL 4PLEX SECOND FLOOR PLUMBING PLAN

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



TYPICAL 4PLEX FIRST FLOOR PLUMBING PLAN

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

PLUMBING PLAN NOTES:

1. SEE CIVIL FOR CONTINUATION OF 4" WASTE. MAINTAIN MINIMUM 30" COVER.
2. SEE CIVIL FOR CONTINUATION OF ¾" CW. MAINTAIN 48" COVER.
3. ROUTE ¾" CW UP FROM BELOW FLOOR. PROVIDE ACCESSIBLE SHUT OFF VALVE.
4. ROUTE (2) 3"Ø CPVC FLUE & COMBUSTION AIR INTAKE UP THROUGH ROOF TO MANUFACTURER'S VENT TERMINATION AS REQUIRED FOR WATER HEATER AND FURNACE. OFFSET AS REQUIRED TO MAINTAIN 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATIONS WEATHER TIGHT.
5. LOCATION OF 4" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
6. ROUTE ¾" DOWN AND INSTALL WALL HYDRANT 18" ABOVE GRADE / FINISHED FLOOR.
7. CONNECT ¾" GAS TO EQUIPMENT AS REQUIRED AND AS DETAILED.
8. PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
9. ROUTE ¾" DRAIN FROM FURNACE EVAPORATOR COILS, AND ¾" FLUE CONDENSATE FROM FURNACE AND WATER HEATER TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
10. ROUTE ½" CW UP TO SECOND FLOOR.
11. ROUTE ¾" CW UP TO SECOND FLOOR.
12. CONNECT ¾" CW AND ¾" HW TO WATER HEATER (WH) AND EXPANSION TANK (ET) AS REQUIRED AND AS PER RISER DIAGRAM.
13. ROUTE ¾" CW AND ¾" HW UP TO WATER HEATER ON SECOND FLOOR.
14. ROUTE ½" CW AND ½" HW DOWN TO BELOW FLOOR. EXTEND AND CONNECT TO S1 AS REQUIRED.
15. EXTEND AND CONNECT ½ HW TO DW AS REQUIRED. ROUTE DRAIN FROM DW TO SINK, S1, AND CONNECT AS PER MANUFACTURER'S REQUIREMENTS.
16. ROUTE ½" HW UP TO SECOND FLOOR.
17. ROUTE ½" HW DOWN TO FIRST FLOOR.
18. ROUTE ¾" CW DOWN TO FIRST FLOOR.
19. ROUTE ½" CW DOWN TO FIRST FLOOR.
20. FIXTURE TO BE ISLAND VENTED, REFER TO DETAIL.
21. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF GAS METER BANK WITH (4) METERS WITH CAPACITY FOR 138 CFH @ 1" W.C. EACH. ROUTE 1-½" GAS PIPING FOR EACH TENANT UP INSIDE THE EXTERIOR WALL AND PENETRATE ABOVE SECOND FLOOR CEILING IN ATTIC. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
22. ROUTE 3" WASTE DOWN TO FIRST FLOOR.
23. 3" WASTE FROM SECOND FLOOR. PROVIDE CLEANOUT AT BASE OF RISER.
24. 2" VENT UP TO SECOND FLOOR.
25. ROUTE PIPING DOWN INTERIOR SIDE OF INSULATION FOR FREEZE PROTECTION.
26. COORDINATE WITH ELECTRICAL TO HEAT-TRACE PIPING LOCATED IN GARAGE.
27. PROVIDE DRAIN PAN UNDER EQUIPMENT AS REQUIRED.

a new residential project for Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

date
07.09.2021
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sheet number
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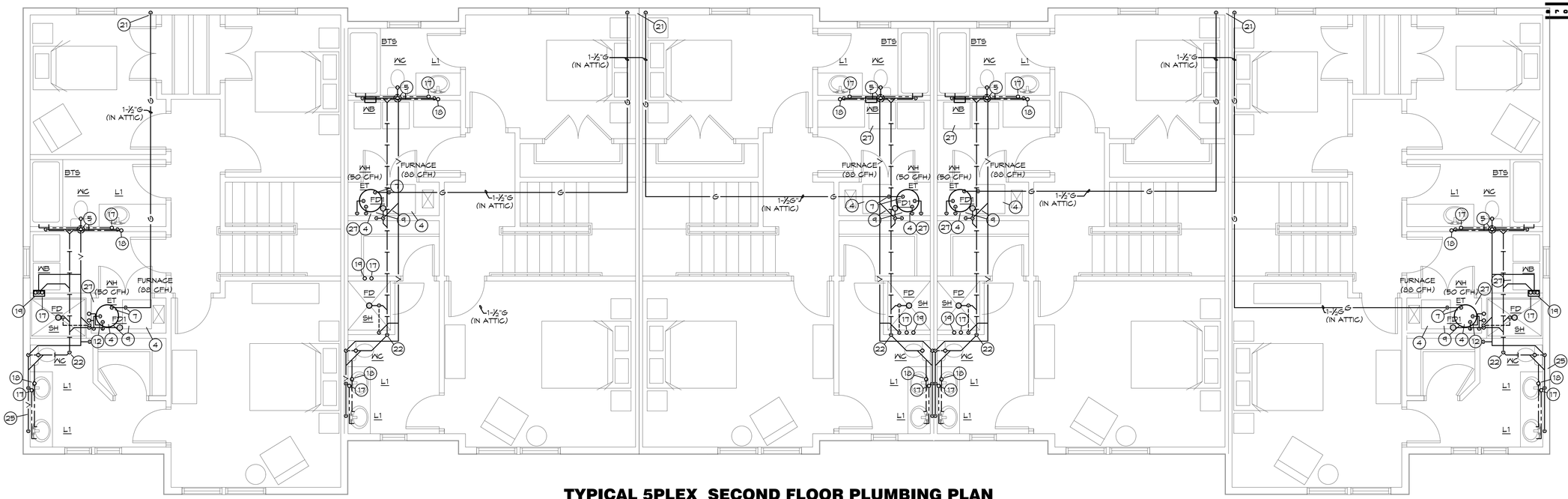
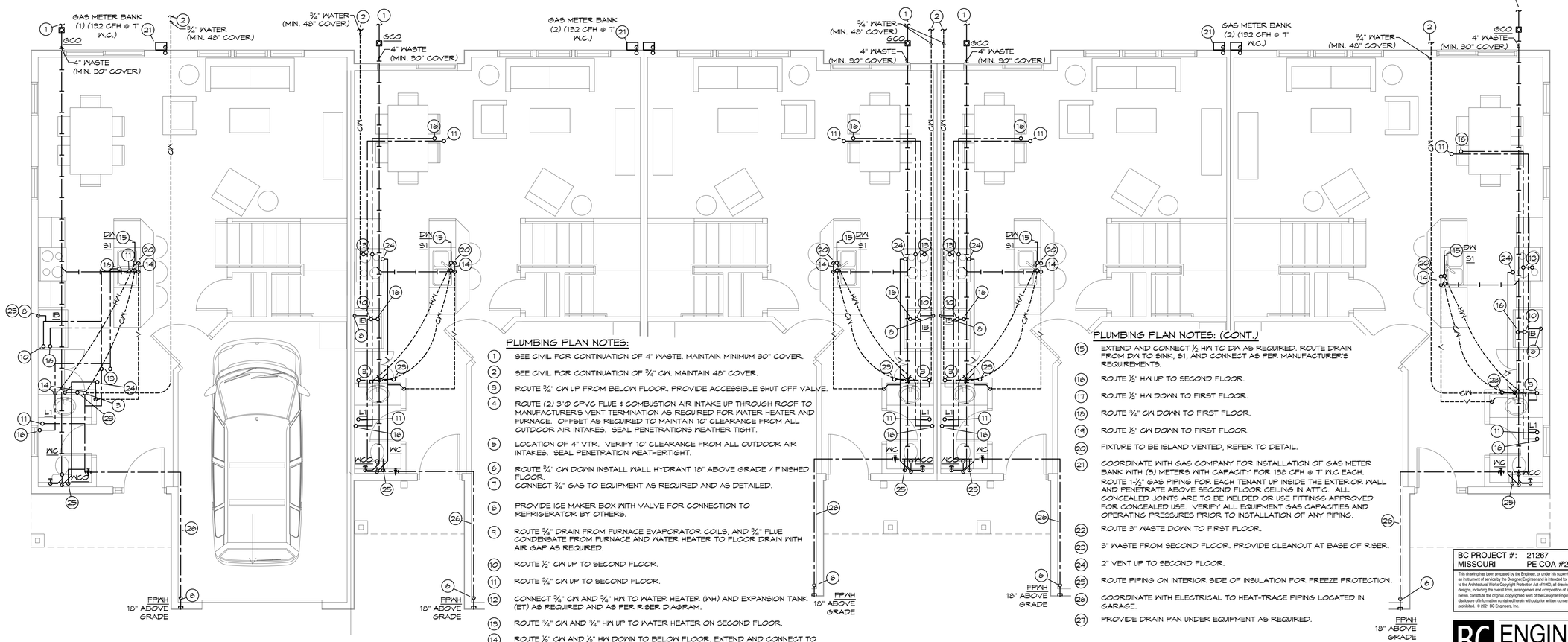
7/8/2021

STATE OF MISSOURI
STEVEN S. POND
NUMBER PE-2004-009070
REGISTERED PROFESSIONAL ENGINEER



TYPICAL 5PLEX SECOND FLOOR PLUMBING PLAN

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



PLUMBING PLAN NOTES:

1. SEE CIVIL FOR CONTINUATION OF 4" WASTE. MAINTAIN MINIMUM 30" COVER.
2. SEE CIVIL FOR CONTINUATION OF ¾" CW. MAINTAIN 48" COVER.
3. ROUTE ¾" CW UP FROM BELOW FLOOR. PROVIDE ACCESSIBLE SHUT OFF VALVE.
4. ROUTE (2) 3"Ø CPVC FLUE & COMBUSTION AIR INTAKE UP THROUGH ROOF TO MANUFACTURER'S VENT TERMINATION AS REQUIRED FOR WATER HEATER AND FURNACE. OFFSET AS REQUIRED TO MAINTAIN 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATIONS WEATHER TIGHT.
5. LOCATION OF 4" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
6. ROUTE ¾" CW DOWN INSTALL WALL HYDRANT 18" ABOVE GRADE / FINISHED FLOOR.
7. CONNECT ¾" GAS TO EQUIPMENT AS REQUIRED AND AS DETAILED.
8. PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
9. ROUTE ¾" DRAIN FROM FURNACE EVAPORATOR COILS, AND ¾" FLUE CONDENSATE FROM FURNACE AND WATER HEATER TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
10. ROUTE ½" CW UP TO SECOND FLOOR.
11. ROUTE ¾" CW UP TO SECOND FLOOR.
12. CONNECT ¾" CW AND ¾" HW TO WATER HEATER (WH) AND EXPANSION TANK (ET) AS REQUIRED AND AS PER RISER DIAGRAM.
13. ROUTE ¾" CW AND ¾" HW UP TO WATER HEATER ON SECOND FLOOR.
14. ROUTE ½" CW AND ½" HW DOWN TO BELOW FLOOR. EXTEND AND CONNECT TO S1 AS REQUIRED.

PLUMBING PLAN NOTES: (CONT.)

15. EXTEND AND CONNECT ½ HW TO DW AS REQUIRED. ROUTE DRAIN FROM DW TO SINK, S1, AND CONNECT AS PER MANUFACTURER'S REQUIREMENTS.
16. ROUTE ½" HW UP TO SECOND FLOOR.
17. ROUTE ½" HW DOWN TO FIRST FLOOR.
18. ROUTE ¾" CW DOWN TO FIRST FLOOR.
19. ROUTE ½" CW DOWN TO FIRST FLOOR.
20. FIXTURE TO BE ISLAND VENTED, REFER TO DETAIL.
21. COORDINATE WITH GAS COMPANY FOR INSTALLATION OF GAS METER BANK WITH (5) METERS WITH CAPACITY FOR 130 CFH @ 7" W.C. EACH. ROUTE 1-½" GAS PIPING FOR EACH TENANT UP INSIDE THE EXTERIOR WALL AND PENETRATE ABOVE SECOND FLOOR CEILING IN ATTIC. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
22. ROUTE 3" WASTE DOWN TO FIRST FLOOR.
23. 3" WASTE FROM SECOND FLOOR. PROVIDE CLEANOUT AT BASE OF RISER.
24. 2" VENT UP TO SECOND FLOOR.
25. ROUTE PIPING ON INTERIOR SIDE OF INSULATION FOR FREEZE PROTECTION.
26. COORDINATE WITH ELECTRICAL TO HEAT-TRACE PIPING LOCATED IN GARAGE.
27. PROVIDE DRAIN PAN UNDER EQUIPMENT AS REQUIRED.

TYPICAL 5PLEX FIRST FLOOR PLUMBING PLAN

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

BC PROJECT #: 21267
MISSOURI PE COA #2009003629

BC ENGINEERS INCORPORATED
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a new residential project for

Chapel Ridge Townhomes Phase 5

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sheet number P1.2
drawing type permit
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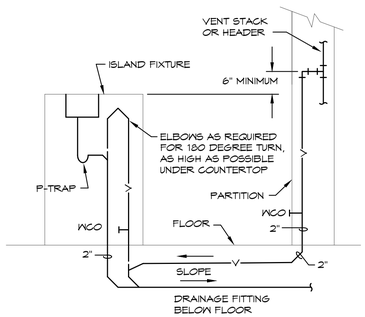
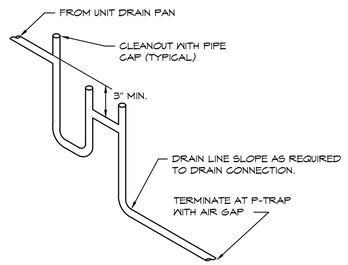


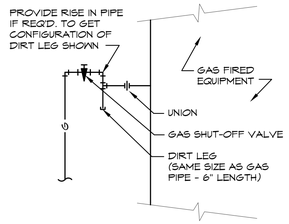
ISLAND SINK VENT DETAIL

SCALE: NONE



CONDENSATE DRAIN DETAIL

SCALE: NONE



GAS CONNECTION DETAIL

SCALE: NONE

PLUMBING GENERAL NOTES:

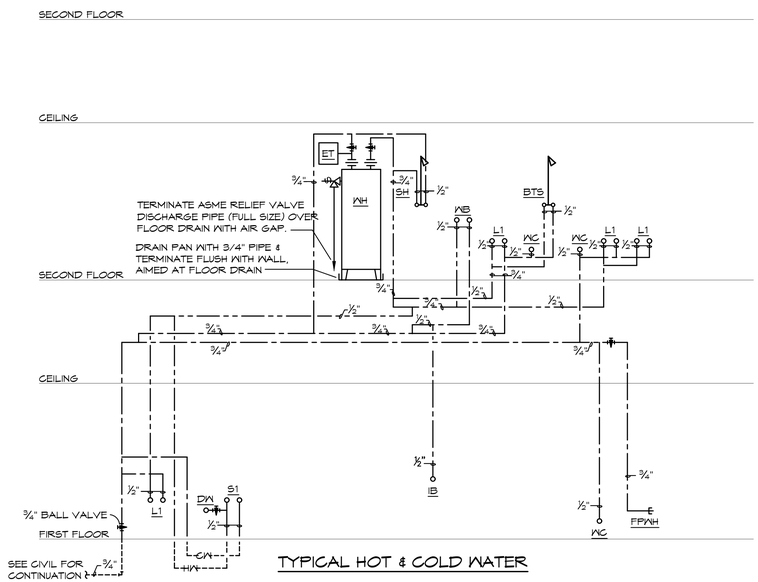
1. INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
4. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
5. NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
6. CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.

PEX PIPING REQUIREMENTS

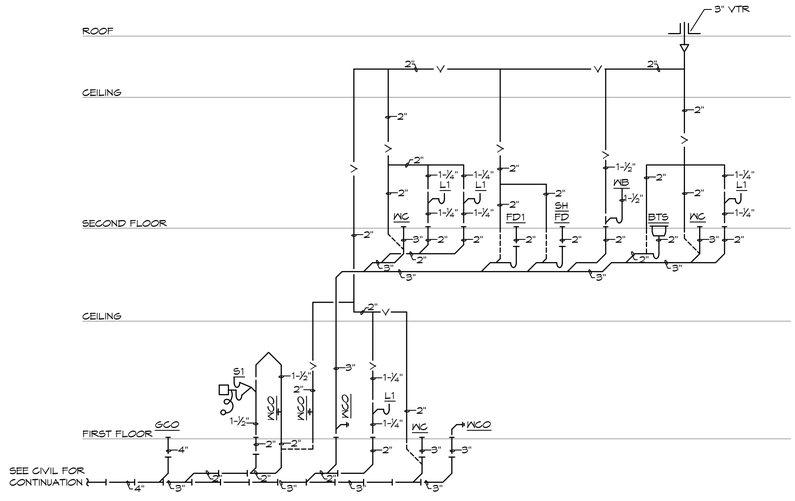
PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. IF PEX PIPING IS USED, INCREASE PEX PIPING ONE SIZE ABOVE LISTED SIZES AS REQUIRED TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER.

PLUMBING FIXTURE SCHEDULE:

- WC — WATER CLOSET: 1.6 GALLON FLUSH, ELONGATED BOWL, FLOOR MOUNTED, FLOOR OUTLET, TANK TYPE, VITREOUS CHINA, SIPHON-JET ACTION, SEAT WITH CHECK HINGE AND COVER, CHROME PLATED ANGLE STOP AND RISER.
- L1 — LAVATORY, COUNTERTOP: VITREOUS CHINA, 20"x 17" OVAL BASIN, FAUCET WITH SINGLE METAL LEVER HANDLE, 1-1/4" TAILPIECE, CHROME PLATED P-TRAP, CHROME PLATED ANGLE STOPS AND RISERS.
- SH — SHOWER, WALLS AND CONTROLS PROVIDED BY OWNER. PROVIDE GRID DRAIN WITH 2" P-TRAP (FD), 2.5 GPM FLOW RESTRICTOR, PRESSURE BALANCING VALVE, CHROME PLATED ANGLE STOPS AND RISERS.
- BTS — BATHTUB/SHOWER, WALLS AND CONTROLS PROVIDED BY OWNER. PROVIDE DRAIN CONNECTION WITH 2" P-TRAP, 2.5 GPM FLOW RESTRICTOR WITH DIVERTER, PRESSURE BALANCING VALVE, CHROME PLATED ANGLE STOPS AND RISERS.
- S1 — SINK, DOUBLE COMPARTMENT: ELKAY, #LR-3322, TWO 13-1/2"x16"x8" DEEP BOWL, 32-3/8"x21-3/8" CUT-OUT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, CHICAGO FAUCET #1100 FAUCET, SWING SPOUT, AERATOR, WING HANDLES, #LK-35 BASKET STRAINER WITH 1-1/2" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS, IN-SINK-ERATOR #BADGER 5 DISPOSAL, 1/2 HP, 120 VOLT. SINK CUT-OUT IN CASEWORK SHALL BE BY CASEWORK CONTRACTOR.
- DW — DISHWASHER: OWNER FURNISHED, CONTRACTOR INSTALLED, CONNECT TO HW AND DRAIN PIPING UNDER SINK AS REQUIRED. PROVIDE HOSE, PIPING AND SHUT-OFF VALVES AS REQUIRED TO MAKE CONNECTIONS.
- WB — WASHER BOX: GUY GRAY #B-150, WASHER BOX WITH 1-1/2" DRAIN OUTLET AND TAILPIECE, AND 1/2" HOSE BIBBS.
- FPWH — FREEZEPROOF WALL HYDRANT: JR SMITH #5509QT, 3/4" SIZE, NICKEL-BRONZE FACE, KEY OPERATED, INTEGRAL VACUUM BREAKER, RECESSED LOCKABLE WALL-BOX AND KEY.
- FD — FLOOR DRAIN: JR SMITH, #2005-A, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP AND 6" NIKALOY STRAINER.
- FD1 — FLOOR DRAIN: JR SMITH, #2005-F37, CAST IRON FLOOR DRAIN WITH RECESSED 6" NIKALOY STRAINER AND QUAD CLOSE TRAP SEAL.
- WH — HOT WATER HEATER: AO SMITH, #GPVT-40, GAS FIRED, CONDENSING TYPE, 40 GALLON STORAGE, 50 MBTUH INPUT, 90 GPH RECOVERY AT 100 DEGREES F RISE, MAIN & PILOT AUTOMATIC GAS VALVES, 120 VOLT, TEMPERATURE AND PRESSURE RELIEF VALVE.
- ET — HOT WATER EXPANSION TANK: AMTROL, #ST-8, 3.2 GALLON EXPANSION TANK WITH DIAPHRAGM.
- IB — ICE BOX: SIOUX CHIEF #696-1000, ICE BOX WITH 1/2" INLET AND CONNECTION AND 1/4-TURN SHUT OFF VALVE.



TYPICAL HOT & COLD WATER



* SOME UNITS ARE MIRRORED *

TYPICAL WASTE & VENT

PLUMBING RISER DIAGRAMS

SCALE: NONE

PLUMBING FIXTURE BRANCH PIPING SCHEDULE				
FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (TANK TYPE)	3"	2"	1/2"	– –
URINAL	2"	1–1/2"	3/4"	– –
LAVATORY	1–1/4"	1–1/4"	1/2"	1/2"
SINK	1–1/2"	1–1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	– –	– –
MOP BASIN	2"	2"	1/2"	1/2"
SHOWER	2"	1–1/2"	1/2"	1/2"
WALL HYDRANT	– –	– –	3/4"	– –
ICE BOX	– –	– –	1/2"	– –
WASHER BOX	1–1/2"	1–1/2"	1/2"	1/2"

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Review of Specific Item Only Not Approval of Quantity, Dimensions or Summit Missouri
Approval
Any Revisions Not Indicated by the Plan Review Remain the Responsibility of the Contractor

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7/8/2021

STATE OF MISSOURI
STEVEN S. POND
NUMBER 2004008070
REGISTERED PROFESSIONAL ENGINEER

a new residential project for

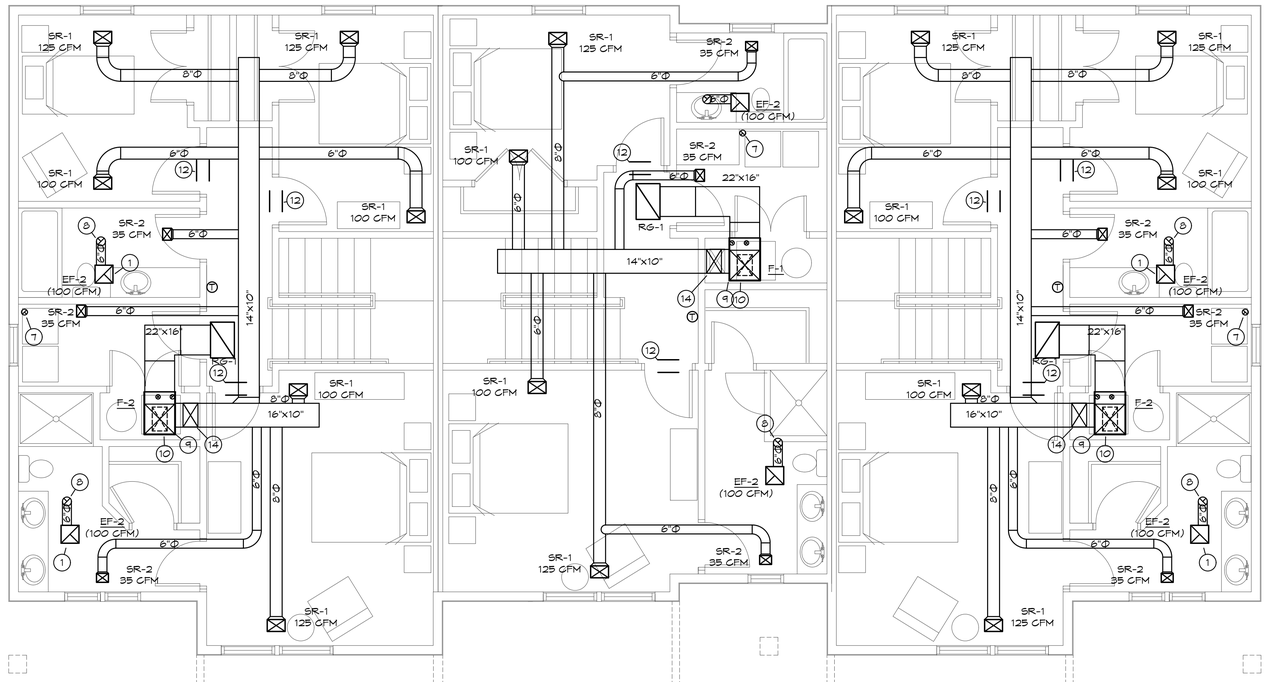
Chapel Ridge Townhomes Phase 5

Lot 15C
Lee's Summit, Missouri 64064

date 07.09.2021
drawn by SP/BH
checked by EK/DS
revisions △

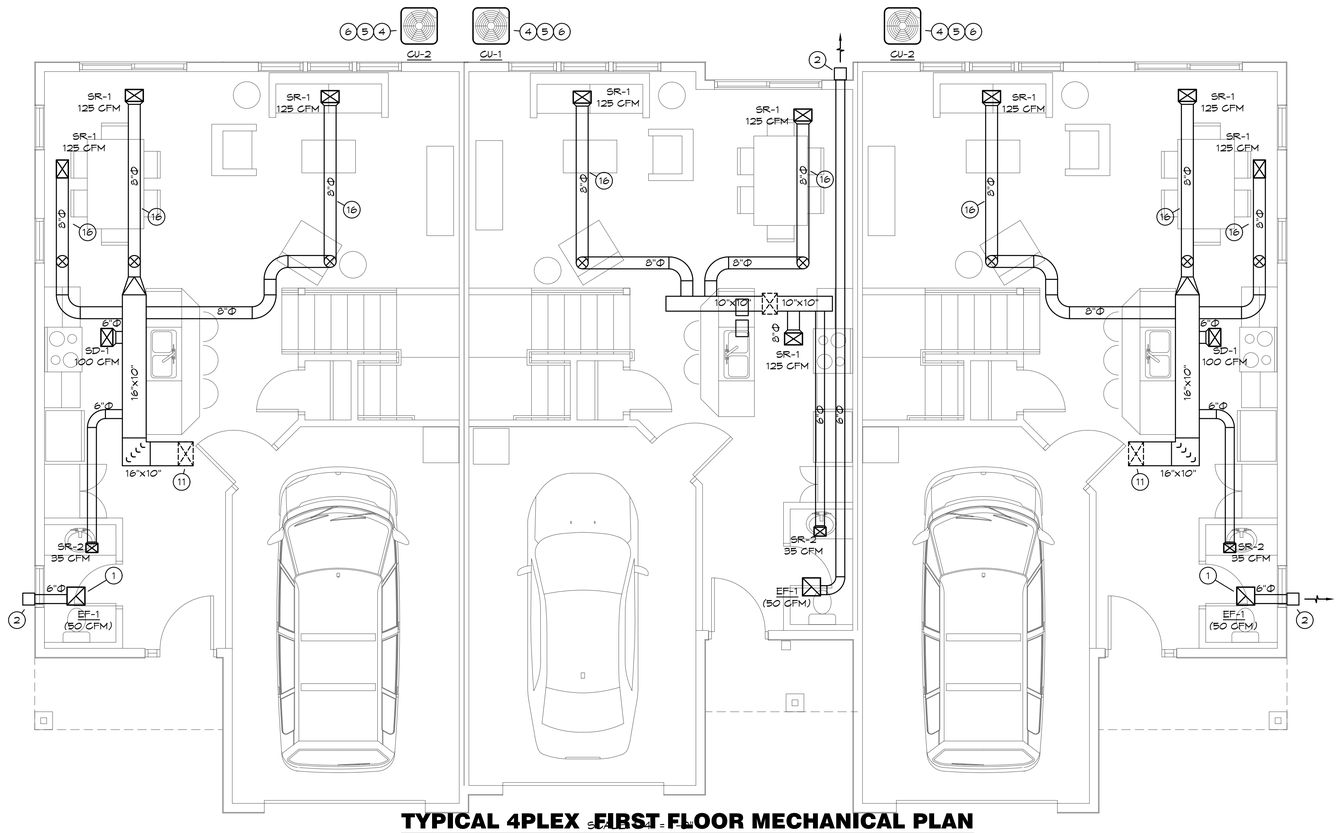
BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, Ks. 66203 (913)262-1772

sheet number P2.0
drawing type permit
project number 21067



TYPICAL 4PLEX SECOND FLOOR MECHANICAL PLAN

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



TYPICAL 4PLEX FIRST FLOOR MECHANICAL PLAN

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

MECHANICAL PLAN NOTES:

1. SUPPORT FAN FROM STRUCTURE AS REQUIRED.
2. ROUTE 6"Φ EXHAUST DUCT THRU WALL TO WALL CAP WITH BACKDRAFT DAMPER AS REQUIRED. SEAL PENETRATION WEATHERTIGHT. VERIFY EXHAUST IS MINIMUM 10' HORIZONTAL OF 3' ABOVE ANY OPERABLE OPENING.
3. NOT USED.
4. REFRIGERANT PIPING THROUGH EXTERIOR WALL AT 18" ABOVE GRADE. SEAL WALL PENETRATION WEATHERTIGHT. ROUTE PIPE UP INSIDE WALL TO AS HIGH AS POSSIBLE AND ROUTE TO UNITS.
5. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
6. PROVIDE PREFABRICATED PAD FOR CONDENSING UNITS, COORDINATE LOCATION WITH OWNER.
7. CONNECT 4"Φ FLEX DUCT TO DRYER AS REQUIRED BY THE MANUFACTURER. PROVIDE 4" DRYER EXHAUST DUCTS THRU ROOF TO ROOF CAP AS PER MANUFACTURER'S RECOMMENDATIONS. SEAL PENETRATION WEATHERTIGHT.
8. ROUTE 6"Φ EXHAUST UP THRU ROOF TO ROOF JACK AS REQUIRED. SEAL PENETRATION WEATHERTIGHT.
9. REFER TO PLUMBING PLANS FOR CONDENSATE AND DRAIN PAN PIPING.
10. ROUTE 16"x10" S.A. DOWN TO FIRST FLOOR.
11. ROUTE 16"x10" S.A. UP TO SECOND FLOOR.
12. TRANSFER AIR GRILLES, TG-1, LOCATED ABOVE DOOR ON BOTH SIDES OF WALL.
13. NOT USED.
14. ROUTE 14"x10" S.A. UP TO ABOVE CEILING IN ATTIC.
15. NOT USED.
16. ROUTE DUCT UP IN JOIST SPACE.

RELEASED FOR CONSTRUCTION
As Noted on Plans Review
Building Department
Lee's Summit, Missouri
10/4/2021

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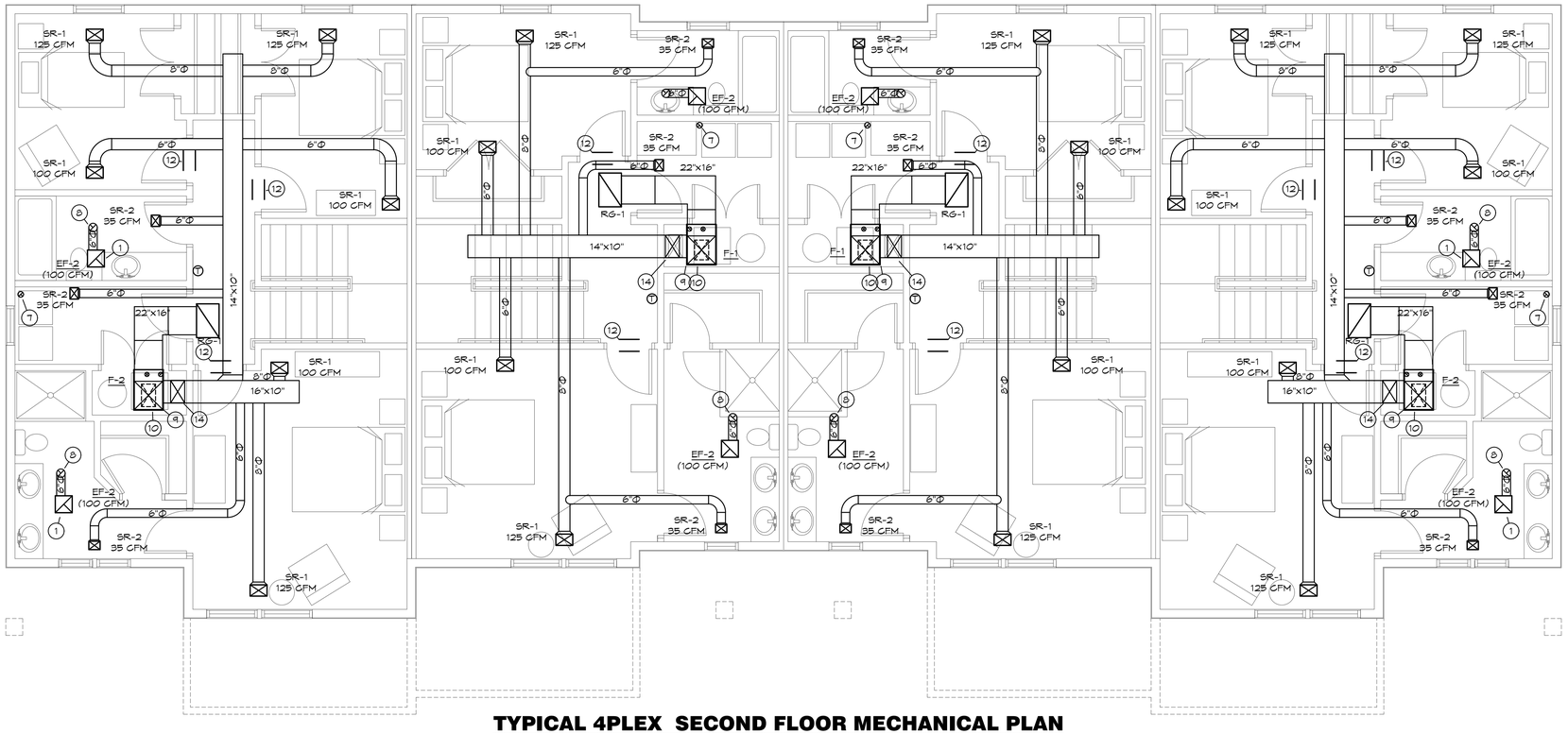
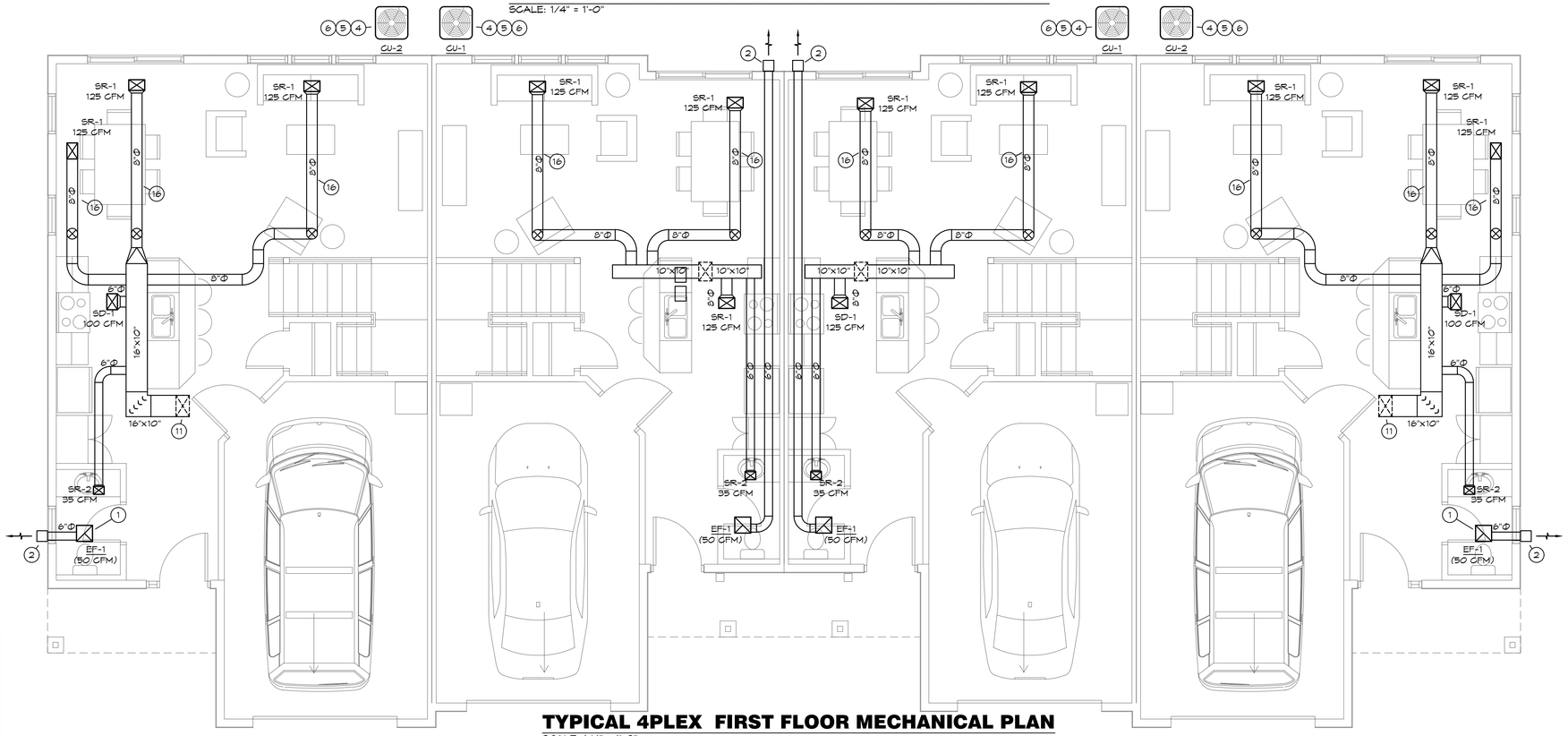


TYPICAL 4PLEX SECOND FLOOR MECHANICAL PLAN

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



TYPICAL 4PLEX FIRST FLOOR MECHANICAL PLAN

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

MECHANICAL PLAN NOTES:

1. SUPPORT FAN FROM STRUCTURE AS REQUIRED.
2. ROUTE 6"Ø EXHAUST DUCT THRU WALL TO WALL CAP WITH BACKDRAFT DAMPER AS REQUIRED. SEAL PENETRATION WEATHERTIGHT. VERIFY EXHAUST IS MINIMUM 10' HORIZONTAL OF 3' ABOVE ANY OPERABLE OPENING.
3. NOT USED.
4. REFRIGERANT PIPING THROUGH EXTERIOR WALL AT 18" ABOVE GRADE. SEAL WALL PENETRATION WEATHERTIGHT. ROUTE PIPE UP INSIDE WALL TO AS HIGH AS POSSIBLE AND ROUTE TO UNITS.
5. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
6. PROVIDE PREFABRICATED PAD FOR CONDENSING UNITS, COORDINATE LOCATION WITH OWNER.
7. CONNECT 4"Ø FLEX DUCT TO DRYER AS REQUIRED BY THE MANUFACTURER. PROVIDE 4" DRYER EXHAUST DUCTS THRU ROOF TO ROOF CAP AS PER MANUFACTURER'S RECOMMENDATIONS. SEAL PENETRATION WEATHERTIGHT.
8. ROUTE 6"Ø EXHAUST UP THRU ROOF TO ROOF JACK AS REQUIRED. SEAL PENETRATION WEATHERTIGHT.
9. REFER TO PLUMBING PLANS FOR CONDENSATE AND DRAIN PAN PIPING.
10. ROUTE 16"X10" S.A. DOWN TO FIRST FLOOR.
11. ROUTE 16"X10" S.A. UP TO SECOND FLOOR.
12. TRANSFER AIR GRILLES, TG-1, LOCATED ABOVE DOOR ON BOTH SIDES OF WALL.
13. NOT USED.
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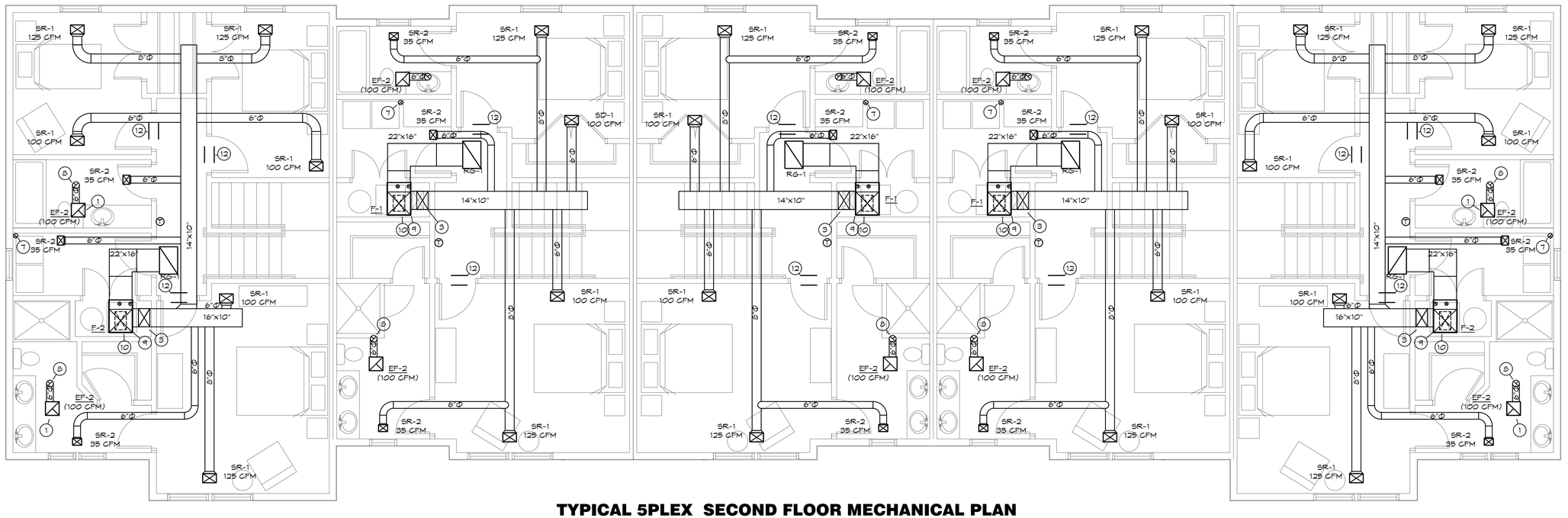

TYPICAL 5PLEX SECOND FLOOR MECHANICAL PLAN

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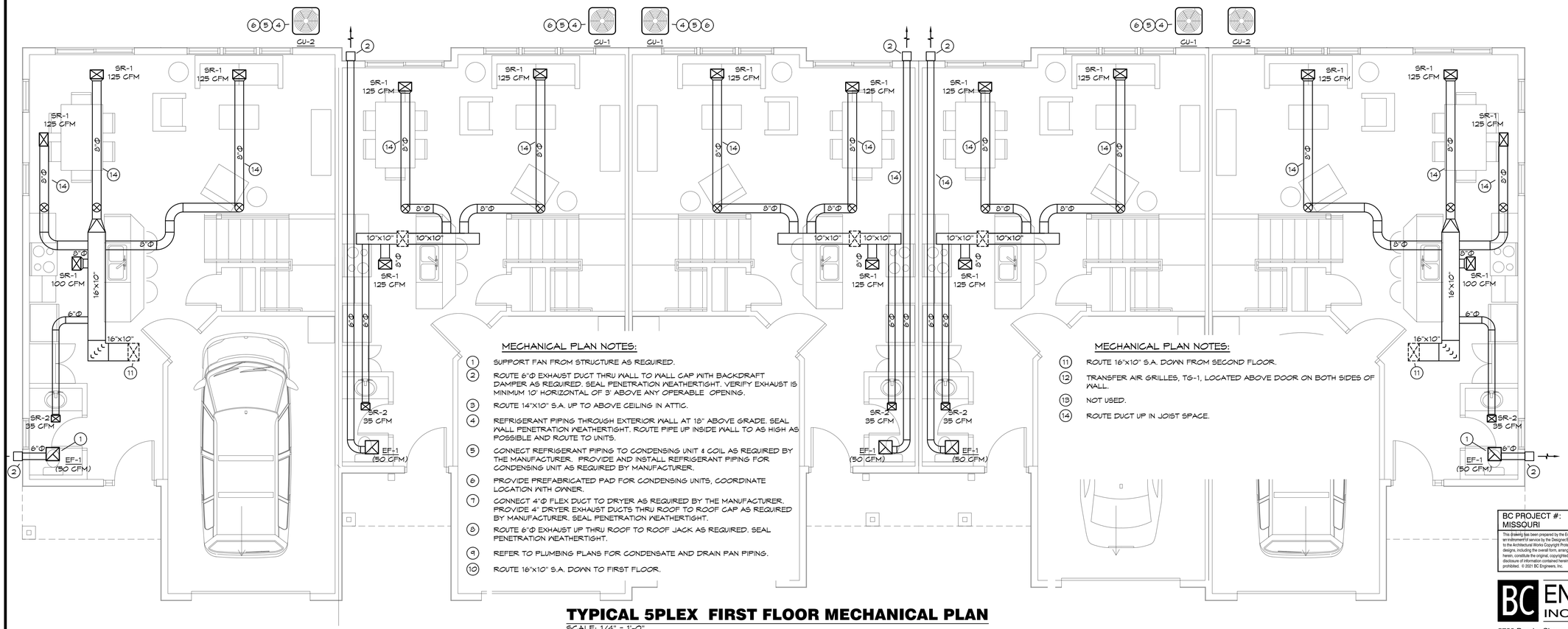

MECHANICAL PLAN NOTES:

1. SUPPORT FAN FROM STRUCTURE AS REQUIRED.
2. ROUTE 6"Φ EXHAUST DUCT THRU WALL TO WALL CAP WITH BACKDRAFT DAMPER AS REQUIRED. SEAL PENETRATION WEATHERTIGHT. VERIFY EXHAUST IS MINIMUM 10' HORIZONTAL OF 3' ABOVE ANY OPERABLE OPENING.
3. ROUTE 14"X10" S.A. UP TO ABOVE CEILING IN ATTIC.
4. REFRIGERANT PIPING THROUGH EXTERIOR WALL AT 18" ABOVE GRADE. SEAL WALL PENETRATION WEATHERTIGHT. ROUTE PIPE UP INSIDE WALL TO AS HIGH AS POSSIBLE AND ROUTE TO UNITS.
5. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
6. PROVIDE PREFABRICATED PAD FOR CONDENSING UNITS, COORDINATE LOCATION WITH OWNER.
7. CONNECT 4"Φ FLEX DUCT TO DRYER AS REQUIRED BY THE MANUFACTURER. PROVIDE 4" DRYER EXHAUST DUCTS THRU ROOF TO ROOF CAP AS REQUIRED BY MANUFACTURER. SEAL PENETRATION WEATHERTIGHT.
8. ROUTE 6"Φ EXHAUST UP THRU ROOF TO ROOF JACK AS REQUIRED. SEAL PENETRATION WEATHERTIGHT.
9. REFER TO PLUMBING PLANS FOR CONDENSATE AND DRAIN PAN PIPING.
10. ROUTE 16"x10" S.A. DOWN TO FIRST FLOOR.

MECHANICAL PLAN NOTES:

11. ROUTE 16"x10" S.A. DOWN FROM SECOND FLOOR.
12. TRANSFER AIR GRILLES, TG-1, LOCATED ABOVE DOOR ON BOTH SIDES OF WALL.
13. NOT USED.
14. ROUTE DUCT UP IN JOIST SPACE.

TYPICAL 5PLEX FIRST FLOOR MECHANICAL PLAN

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

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, Ks. 66203 (913)262-1772

a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

date 07.09.2021
drawn by SP/BH
checked by EK/DS
revisions △

sheet number
M1.2
drawing type permit
project number 21067

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7/9/2021

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. TESTING, AND BALANCING:
   A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.
   B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.
   C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.
5. RACEWAYS:
   A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.
   B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.
   C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 264 PSI, OF 70 DEGREES C. AND A TENSILE STRENGTH OF 8,200 PSI. JOINTS SHALL BE FLUSH SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON PLOWER AND COMMUNICATIONS DUCT TYPE DB (DIRECT BURIAL). CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.
   D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".
6. CONDUCTORS:
   A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, WIREWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.
   B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 14 A.W.G., 600 VOLT.
   C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
   D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.
   E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.
7. NM CABLE
   A. TYPE NMG CABLE SHALL BE SECURED BY STAPLES, CABLE TIES, STRAPS OR SIMLAR FITTINGS SO DESIGNED AND INSTALLED AS NOT TO DAMAGE THE CABLE. CABLE SHALL BE SECURED IN PLACE AT INTERVALS NOT EXCEEDING 4.5 FEET AND WITHIN 12 INCHES FROM EVERY CABINET, BOX, OR FITTING. TWO CONDUCTOR CABLES SHALL NOT BE STAPLED ON EDGE.
   B. FEEDER WIRES FROM METER TO BRANCH CIRCUIT PANELS: CABLE SHALL BE UL LISTED TYPE SE, STYLE SERG, SUITABLE FOR OPERATION AT 600 VOLTS. CONDUCTORS SHALL BE ANNEALED TRIPLE E ALUMINUM ALLOY. AMPACITIES AS ALLOWED PER NEC BASE ON 90°C INSULATION.
   C. ALL ALUMINUM FEEDER CONDUCTOR TERMINATIONS SHALL BE TERMINATED PER MANUFACTURER RECOMMENDATIONS AND SHALL UTILIZE AN OXIDE INHIBITING COMPOUND.
8. WIRING DEVICES:
   A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 15 AMPS, WITH THERMOPLASTIC COVER PLATES.
      1) SINGLE POLE: HUBBELL #PR5115-X, OR EQUAL.
      2) THREE WAY: HUBBELL #PR5315-X, OR EQUAL.
   B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 15 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #RR15S-XTR-X, OR EQUAL.
   C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GFTR15-X. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   D. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED WEATHER-RESISTANT HUBBEL #GFTR15-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMATIC #WP1010MG OR #WP1010HMG DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
   E. EXTERIOR RECEPTACLES SHALL BE WEATHER RESISTANT TYPE PER NEC 2008. DEVICES SHALL BE HUBBELL #DR20WRTR, OR EQUAL.
   F. VERIFY DEVICES AND DEVICE COVERPLATES COLOR WITH ARCHITECT.
9. BOXES:
   A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
   B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.
10. MODULAR METER CENTER:
   A. FURNISH AND INSTALL MODULAR METER CENTER WHERE SHOWN ON DRAWINGS WITH CIRCUIT DISCONNECT SWITCH. MODULAR METER CENTER SHALL BE NEMA 3R CONSTRUCTION. THE MODULAR METER CENTER SHALL BE DESIGNED FOR 120/240 VOLT 1 PHASE 3 WIRE SN INPUT AND 120/240 VOLT 1 PHASE 3 WIRE SN OUTPUT. THE METER SOCKETS SHALL BE OF A TYPE APPROVED BY THE LOCAL UTILITY COMPANY.
   B. THE GROUPED METERING SECTIONS SHALL BE IN ACCORDANCE WITH THE PLANS AND DESCRIPTIONS HEREIN AND SHALL BE COMMERCIAL 1 PHASE MODULAR METERS WITH MAIN BREAKERS IMMEDIATELY ADJACENT TO THE METER SOCKETS. THE BUS SYSTEM SHALL BE AN INTEGRAL PART OF EACH METER SOCKET MODULE. NO SEPARATE BUSWAYS ARE ACCEPTABLE. UNLESS NOTED OTHERWISE METERS AND RELATED MAIN BREAKERS WILL BE FURNISHED & INSTALLED BY OTHERS UNDER SEPARATE TENANT BUILD-OUTS.
   C. THE MAIN BUS OF ADJACENT MODULES SHALL BE CONNECTED BY A SINGLE-BOLT JOINT ASSEMBLY. THE SINGLE-BOLT JOINTS SHALL BE ACCESSIBLE FOR TIGHTENING WITHOUT REMOVAL OF BARRIERS, WHETHER THE BUS IS ENERGIZED OR DE-ENERGIZED.
   D. VERTICAL BUS SHALL BE WELDED TO THE MAIN HORIZONTAL BUS AND TIED TO THE METER SOCKET JAWS BY MEANS OF BUS CONNECTION STRAPS. BOLTS JOINING THE STRAPS TO THE BUS SHALL BE ACCESSIBLE OUTSIDE THE SOCKET BASE WITH THE METER REMOVED.
   E. THE UNMETERED BUS IN EACH METER MODULE SHALL BE COMPLETELY BARRIERED TO PREVENT UNAUTHORIZED ACCESS TO CURRENT. METER SOCKETS SHALL HAVE INDIVIDUAL COVERS OF RING OR RINGLESS STYLE DESIGN AS REQUIRED BY LOCAL UTILITY COMPANY.
   F. ALL CURRENT CARRYING PARTS SHALL BE TIN-PLATED TO RESIST CORROSION. ALL LUGS SHALL BE SUITABLE FOR USE WITH 60/75 DEGREE COPPER WIRE.
   G. METER MODULES SHALL HAVE METER SOCKETS LISTED BY UNDERWRITERS LABORATORIES, INC. THEY SHALL BE RATED FOR 200 AMPERE, 2-POLE BREAKERS AND SHALL BE OF THE TYPE REQUIRED BY THE LOCAL UTILITY COMPANY.
   H. ENCLOSURES SHALL BE FABRICATED FROM 0.90 ZINC-COATED STEEL FINISHED WITH ANSI LIGHT GRAY PAINT APPLIED BY AN ELECTRODEPOSITION PROCESS.
   I. MAIN DISCONNECT SHALL HAVE PADLOCKING PROVISIONS. METER CENTER SHALL PERMIT UNDERGROUND SERVICE ENTRANCE.
   J. THE MODULAR METER CENTER SHALL BE COMPLETE WITH A SINGLE MAIN DISCONNECT AS INDICATED ON THE DRAWINGS. MAIN DISCONNECT SHALL BE SERVICE ENTRANCE RATED.

ELECTRICAL SPECIFICATIONS (CONTINUED)

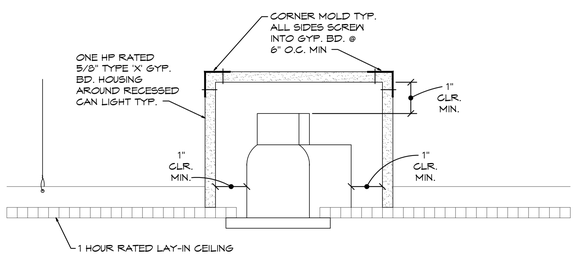
11. LOAD CENTERS:
   A. FURNISH AND INSTALL CIRCUIT BREAKER LOAD CENTERS AS SHOWN ON THE DRAWINGS. LOAD CENTERS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. LOAD CENTERS SHALL BE EQUAL TO GENERAL ELECTRIC POWER MARK SERIES WITH PLUG IN TYPE BREAKERS.
   B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-1. CIRCUIT BREAKERS SHALL BE PLUG-IN TYPE, WITH COMMON TRIP. UL RATED TO CARRY 100% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 25 DEGREE C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C.
      1) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
      2) ALL BREAKERS SHALL BE "HACR" RATED.
   C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, SEMI-CONCEALED HINGES, DOOR LATCH, AND DIRECTORY CARD-HOLDER.
   D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.
   E. BUS BAR BRACING SHALL BE UL LISTED AT 10,000 SYMMETRICAL AMPERES MINIMUM. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
   F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.
12. DISCONNECTS:
   A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.
   B. INDOOR SWITCHES SHALL BE NEMA 1 AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.
13. FUSES:
   A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING U.L. CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.
   B. ALL OTHER FUSES SHALL BE U.L. CLASS RK-5, DUAL-ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SECONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.
14. LIGHT FIXTURES:
   A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BEYOND EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 12 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.
   B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
   C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS. ALL FLUORESCENT FIXTURE BALLASTS SHALL BE HIGH FREQUENCY ELECTRONIC BALLASTS WITH A "TOTAL HARMONIC DISTORTION" OF LESS THAN 20%, REGARDLESS OF THE NUMBER OF LAMPS CONNECTED TO EACH BALLAST AND SHALL HAVE CBM LABEL. ALL FLUORESCENT FIXTURES INSTALLED SHALL INCORPORATE BALLAST PROTECTION. ALL FLUORESCENT BALLASTS SHALL HAVE AN AUDIBLE NOISE RATING OF "CLASS A" OR BETTER. ALL FLUORESCENT BALLASTS SHALL HAVE A STANDARD BALLAST FACTOR UNLESS SPECIFIED OTHERWISE.
   D. ALL FLUORESCENT LAMPS SHALL BE 3500 K COLOR TEMPERATURE WITH A MINIMUM COLOR RENDERING INDEX (CRI) OF 82 OR AS INDICATED ON LIGHT FIXTURE SCHEDULE.
15. SLEEVES:
   A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.
   B. INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
   C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
16. GROUNDING:
   A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.
   B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A)(4).
17. BOXES IN FIRE RATED ASSEMBLIES:
   A. OUTLET BOXES THAT DO NOT EXCEED 16 SQUARE INCHES AND INSTALLED IN FIRE RATED WALLS SHALL NOT BE INSTALLED CLOSER THAN 24" HORIZONTAL INCHES TO OTHER OUTLET BOXES.
   B. IF BOXES MUST BE INSTALLED WITHIN 24" OF EACH OTHER THAN BOTH OUTLET BOXES SHALL BE PROTECTED WITH LISTED PUTTY PADS, 3M FIRE BARRIER MOLDABLE PUTTY + OR EQUAL.

ELECTRICAL SYMBOLS LIST

CIRCUITING & NOTES	
+48"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
WP	WEATHERPROOF ENCLOSURE ON DEVICE
⊠	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	CONDUIT ROUTED UNDER FLOOR/GRADE
LIGHTING	
A	FLUORESCENT STRIP FIXTURE WITH TYPE DESIGNATION
A	FLUORESCENT FIXTURE WITH TYPE DESIGNATION
A NL	NIGHT LIGHT, CONNECT TO UNSWITCHED CIRCUIT
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	DEVICE MOUNTED ABOVE COUNTER AND/OR SPLASH GUARD
	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
	PANEL BOARD, TOP OF BOX 6'-0" AFF
J	JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
M	MOTOR WITH DESIGNATION
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_2	TWO POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_3	THREE-WAY WALL SWITCH, TOP OF BOX AT 48" AFF
S_{DM}	DIMMER WALL SWITCH, TOP OF BOX AT 48" AFF
S_m	MANUAL MOTOR STARTER WITH OVERLOADS
COMMUNICATIONS	
▽	DATA OUTLET (BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE WITH (1) CAT5 CABLE TO TELECOMM TERMINATION CABINET.
▼	TELEPHONE OUTLET (BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE WITH (1) TELEPHONE CABLE TO TELECOMM TERMINATION CABINET.
TV	TELEVISION - PROVIDE AND INSTALL ONE (1) SINGLE GANG JUNCTION BOX WITH (1) RG-6 CABLE TO TELECOMM TERMINATION CABINET.
SMOKE/CARBON MONOXIDE DETECTION	
SD	AUDIBLE BASE 120V CEILING MOUNT COMBINATION CARBON MONOXIDE/SMOKE DETECTOR, ALL CARBON MONOXIDE/SMOKE DETECTORS WITHIN EACH UNIT TO BE INTERLOCKED DETECTORS TO BE LOCATED 10'-0" FROM COOKING APPLIANCES AND 3'-0" FROM VAC DIFFUSERS

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
3. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
5. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 200.4.
6. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.



RECESSED CAN FIXTURE IN 1 HOUR RATED CEILING INSTALATION DETAIL

SCALE: NONE

BC PROJECT #: 21267
MISSOURI PE COA #2009003629

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Chapel Ridge Townhomes Phase 5

a new residential project for

Lot 15C
Lee's Summit, Missouri 64064

date 07.09.2021
drawn by SP/BH
checked by EK/DS
revisions △

sheet number E0.0
drawing type permit
project number 21067

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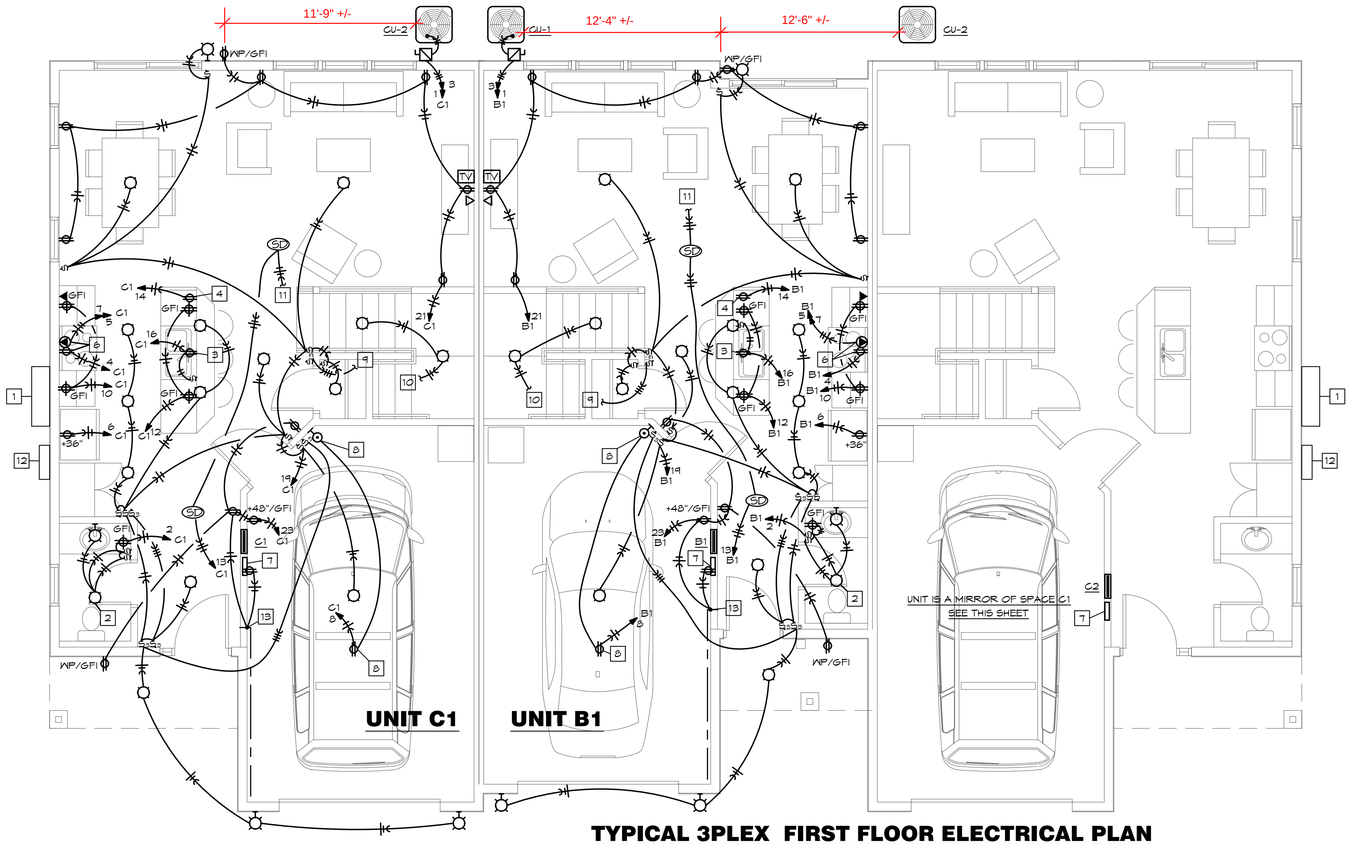
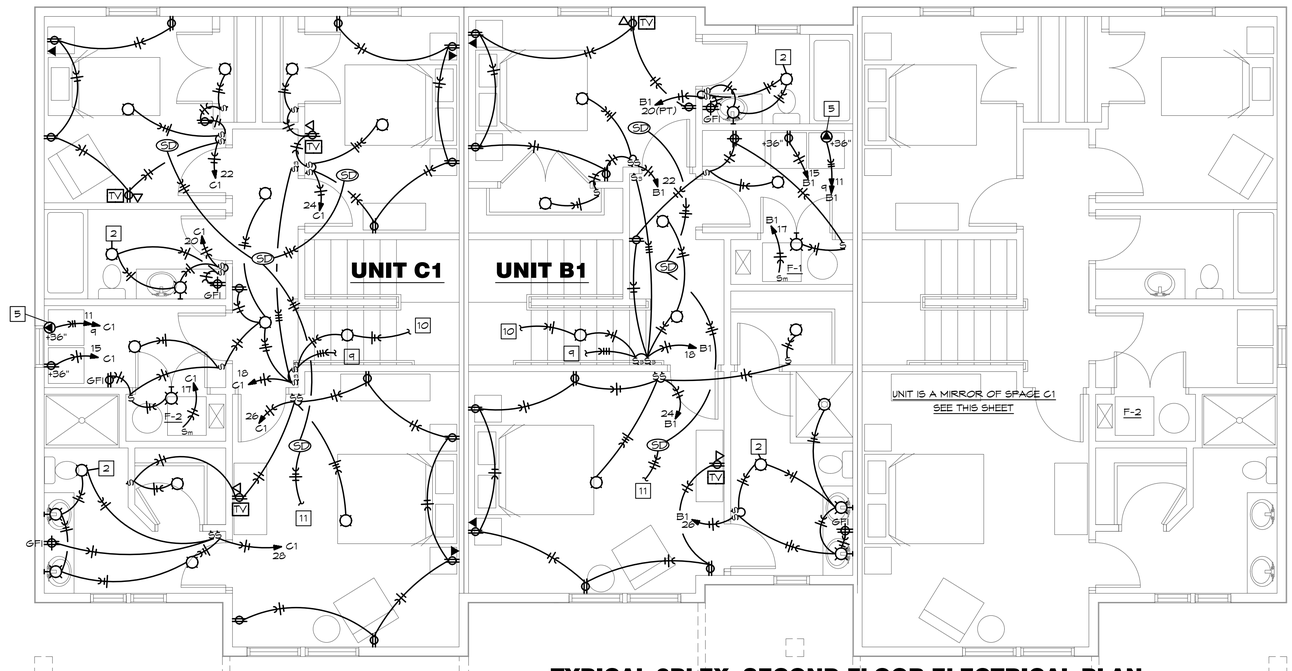
7/9/2021



TYPICAL 3PLEX FIRST FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"



TYPICAL 3PLEX SECOND FLOOR ELECTRICAL PLAN
SCALE: 1/4" = 1'-0"

ELECTRICAL PLAN NOTES:

1. PROPOSED LOCATION OF METER CENTER FOR ELECTRICAL SERVICE. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SITE PLAN SHEET E3.0 AND RISER DIAGRAM ON SHEET E1.2 FOR MORE INFORMATION.
2. CEILING MOUNTED COMBINATION LIGHT/EXHAUST FAN. PROVIDE (2) WALL SWITCHES ON WALL. ONE FOR CONNECTION TO LIGHT AND OTHER FOR CONNECTION TO EXHAUST FAN AS INDICATED.
3. SWITCHED DUPLEX RECEPTACLE BELOW SINK FOR GARBAGE DISPOSAL. VERIFY EXACT LOCATION. ROUTE ALL WIRING CONCEALED
4. DUPLEX RECEPTACLE BELOW COUNTER FOR CONNECTION TO DISHWASHER. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS. CIRCUIT TO BE PROTECTED BY GFCI BREAKER IN PANEL. ROUTE ALL WIRING CONCEALED
5. HEAVY DUTY OUTLET FOR CONNECTION TO CLOTHES DRYER. VERIFY NEMA CONFIGURATION AND ELECTRICAL REQUIREMENTS.
6. PROVIDE HEAVY DUTY OUTLET AS FOR ELECTRIC RANGE TO RANGE/OVEN PER MANUFACTURERS INSTRUCTIONS. PROVIDE DUPLEX RECEPTACLE FOR CONNECTION TO MICROWAVE ABOVE OVEN. VERIFY EXACT LOCATION, ELECTRICAL REQUIREMENTS, AND NEMA CONFIGURATION.
7. PROVIDE TELECOM TERMINATION CABINET WITH (2) 1"C TO MAIN TELEPHONE/TV SERVICE ENTRANCE ON EXTERIOR OF BUILDING FOR TELEPHONE/SATELLITE/CABLE WIRING BY OTHERS. VERIFY EXACT LOCATION. INSTALL DUPLEX RECEPTACLE IN CABINET FOR EQUIPMENT PROVIDED BY OTHERS.
8. RECEPTACLE FLUSH MOUNTED IN CEILING FOR CONNECTION TO OVERHEAD DOOR EQUIPMENT. VERIFY EXACT LOCATIONS. PROVIDE CONTROL WIRING BETWEEN GARAGE DOOR OPENER AND CONTROL AT WALL. INSTALL PER MANUFACTURES INSTRUCTIONS.
9. CONNECTION BETWEEN 3-WAY SWITCHES CONTROLLING STAIR LIGHTS.
10. CONNECTION BETWEEN LIGHT FIXTURES ILLUMINATING STAIRS.
11. CONNECTION BETWEEN SMOKE DETECTORS ON FIRST AND SECOND FLOOR.
12. PROPOSED LOCATION OF TELEPHONE CABINET. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SHEET E2.0 FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH OWNER/SERVICE PROVIDER.
13. PROVIDE POWER TO HEAT TRACE FOR PIPING ROUTED THROUGH UNCONDITIONED GARAGE. INSTALL PER MANUFACTURERS INSTRUCTIONS.

ALL RECEPTACLES WITHIN DWELLING UNITS SHALL BE TAMPER RESISTANT PER NEC 406.12

PROVIDE FIRE CAULK FOR ALL PENETRATIONS IN FIRE RATED WALLS/CEILING. REFER TO DETAIL ON THIS SHEET FOR INSTALLATION OF RECESSED FIXTURES IN FIRE RATED CEILINGS.

ALL LIGHT FIXTURES TO BE SELECTED BY OWNER.

BC ENGINEERS INCORPORATED
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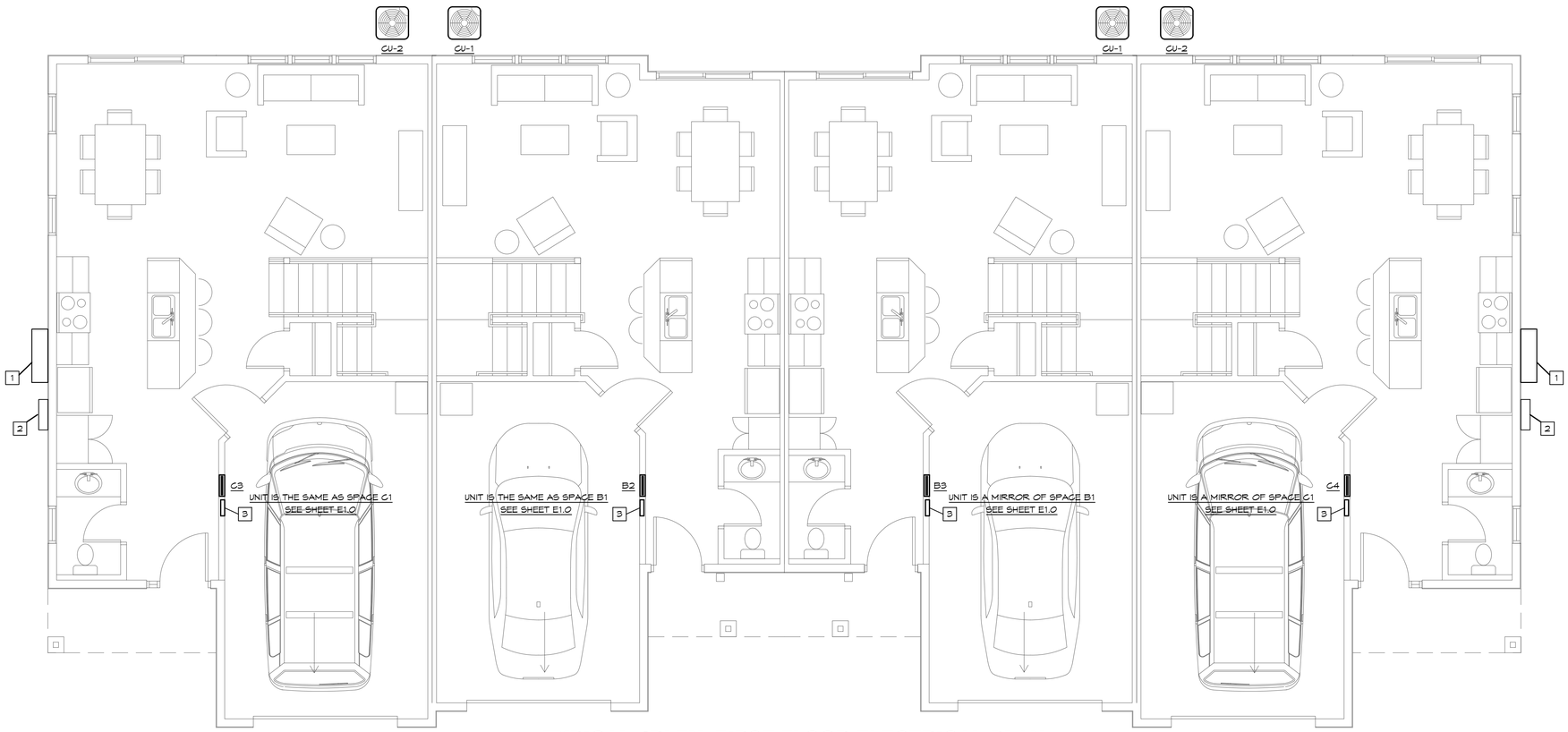
a new residential project for
Chapel Ridge Townhomes Phase 5
Lot 15C
Lee's Summit, Missouri 64064

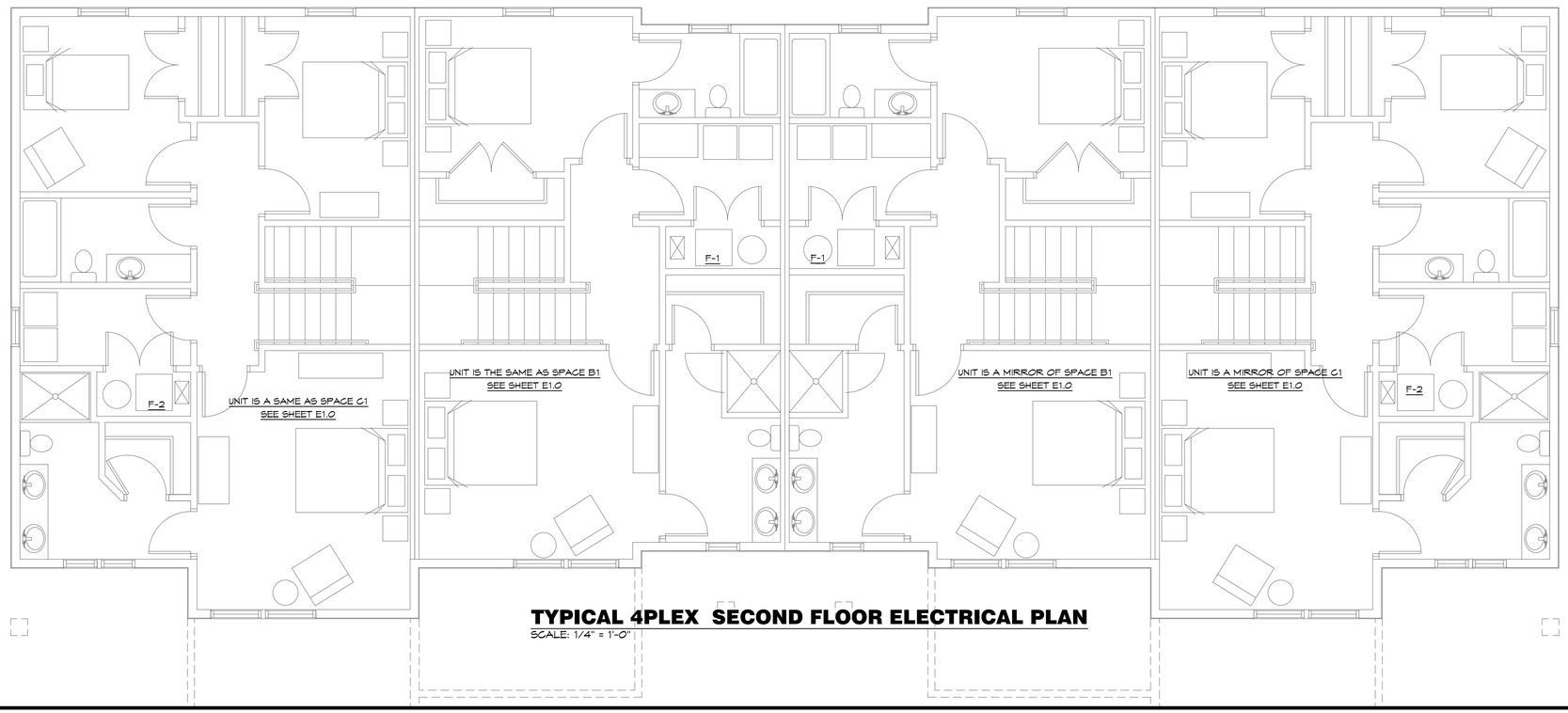
date 07.09.2021
drawn by SP/BH
checked by EK/DS
revisions △

sheet number
E1.0
drawing type permit
project number 21067



TYPICAL 4PLEX FIRST FLOOR ELECTRICAL PLAN

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



TYPICAL 4PLEX SECOND FLOOR ELECTRICAL PLAN

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

ELECTRICAL PLAN NOTES:

1. PROPOSED LOCATION OF METER CENTER FOR ELECTRICAL SERVICE. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SITE PLAN SHEET E3.0 AND RISER DIAGRAM ON SHEET E1.2 FOR MORE INFORMATION.
2. PROPOSED LOCATION OF TELEPHONE CABINET. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SHEET E3.0 FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH OWNER/SERVICE PROVIDER
3. PROVIDE TELECOM TERMINATION CABINET WITH (2) 1"C TO MAIN TELEPHONE/TV SERVICE ENTRANCE ON EXTERIOR OF BUILDING FOR TELEPHONE/SATELLITE/ CABLE WIRING BY OTHERS. VERIFY EXACT LOCATION. INSTALL DUPLEX RECEPTACLE IN CABINET FOR EQUIPMENT PROVIDED BY OTHERS.

ALL RECEPTACLES WITHIN DWELLING UNITS SHALL BE TAMPER RESISTANT PER NEC 406.12

PROVIDE FIRE CAULK FOR ALL PENETRATIONS IN FIRE RATED WALLS/CEILING. REFER TO DETAIL ON THIS SHEET FOR INSTALLATION OF RECESSED FIXTURES IN FIRE RATED CEILINGS.

ALL LIGHT FIXTURES TO BE SELECTED BY OWNER.

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7/9/2021

STATE OF MISSOURI
BRETT M. HERMANN
NUMBER
PE-2018035615
REGISTERED PROFESSIONAL ENGINEER

a new residential project for
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Lee's Summit, Missouri 64064

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sheet number
E1.1
drawing type
permit
project number
21067

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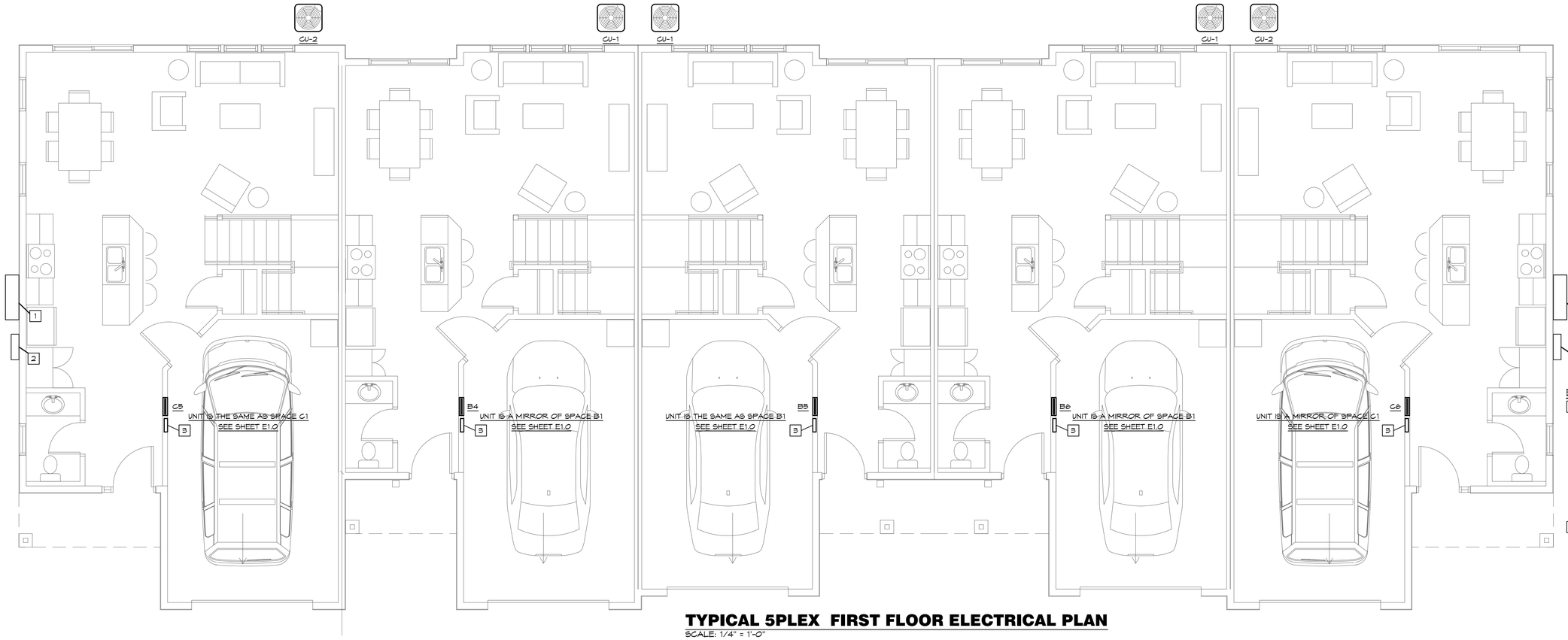
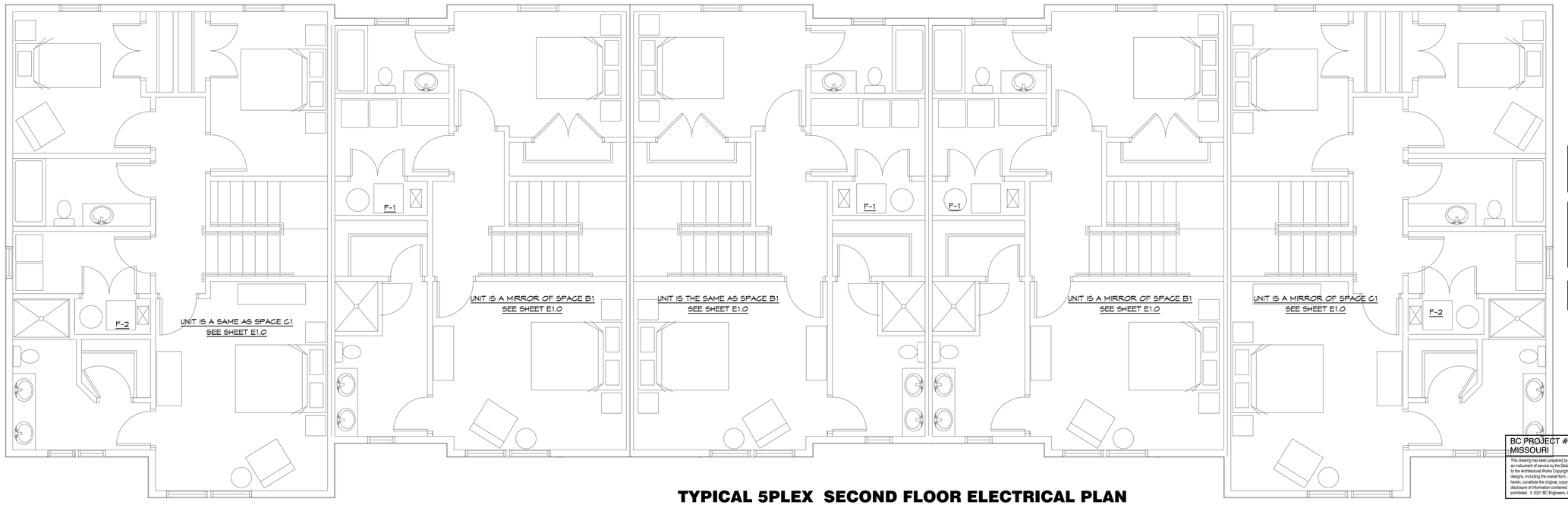


TYPICAL 5PLEX FIRST FLOOR ELECTRICAL PLAN

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



TYPICAL 5PLEX SECOND FLOOR ELECTRICAL PLAN

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

ELECTRICAL PLAN NOTES:

1. PROPOSED LOCATION OF METER CENTER FOR ELECTRICAL SERVICE. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SITE PLAN SHEET E3.0 AND RISER DIAGRAM ON SHEET E1.2 FOR MORE INFORMATION.
2. PROPOSED LOCATION OF TELEPHONE CABINET. SIDE OF BUILDING IS DETERMINED BY SITE PLAN LAYOUT. REFER TO SHEET E3.0 FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH OWNER/SERVICE PROVIDER
3. PROVIDE TELECOM TERMINATION CABINET WITH (2) 1"C TO MAIN TELEPHONE/TV SERVICE ENTRANCE ON EXTERIOR OF BUILDING FOR TELEPHONE/SATELLITE/ CABLE WIRING BY OTHERS. VERIFY EXACT LOCATION. INSTALL DUPLEX RECEPTACLE IN CABINET FOR EQUIPMENT PROVIDED BY OTHERS.

ALL RECEPTACLES WITHIN DWELLING UNITS SHALL BE TAMPER RESISTANT PER NEC 406.12

PROVIDE FIRE CAULK FOR ALL PENETRATIONS IN FIRE RATED WALLS/CEILING. REFER TO DETAIL ON THIS SHEET FOR INSTALLATION OF RECESSED FIXTURES IN FIRE RATED CEILINGS.

ALL LIGHT FIXTURES TO BE SELECTED BY OWNER.

BC PROJECT #: 21267
MISSOURI PE COA #2009003629

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07.09.2021
drawn by
SP/BH
checked by
EK/DS
revisions △

sheet number
E1.2

drawing type
permit

project number
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7/9/2021

TYP. LOAD CENTER: BX INTERIOR UNIT		VOLTS/PHASE/WIRE: 120/240V/1Φ/3W			LOCATION: GARAGE				MOUNTING: FLUSH				
BUS: 125A		MAIN: 100A MLO			IC: 10,000 RMS SYM. AMPS				FEEDER: SEE RISER DIAGRAM				
CKT NO	DESCRIPTION	BRKR AMPS	BRKR POLE	WIRE SIZE	ΦA	ΦB	ΦA	ΦB	WIRE SIZE	BRKR POLE	BRKR AMP	DESCRIPTION	CKT NO
1	CU-1	25	2	10					12	1	20	1ST FLR RESTROOM	2
3									12	1	20	MICROWAVE *AFCI*	4
5	RANGE/OVEN	50	2	6					14	1	15	REFRIGERATOR *AFCI*	6
7									14	1	15	GARAGE DOOR *AFCI*	8
9	DRYER	30	2	10					12	1	20	KITCHEN RECEPTS *AFCI*	10
11									12	1	20	KITCHEN RECEPTS *AFCI*	12
13	SMOKE DETECTORS *AFCI*	15	1	14					12	1	20	DISHWASHER *AFCI*	14
15	WASHER *GFCI* *AFCI*	20	1	12					12	1	20	DISPOSAL *AFCI*	16
17	FURNACE F-1 *AFCI*	15	1	12					14	1	15	2ND FLR LTS/RECS *AFCI*	18
19	1ST FLR GEN LTS *AFCI*	15	1	14					14	1	20	2ND FLR RESTROOM	20
21	1ST FLR RECEPTS *AFCI*	15	1	14					14	1	15	2ND FLR BEDROOM *AFCI*	22
23	ENTRY/GARAGE REC *AFCI*	15	1	14					14	1	15	2ND FLR BEDROOM *AFCI*	24
25	SPARE *AFCI*	15	1						14	1	15	2ND FLR RESTROOM	26
27	SPARE *AFCI*	15	1							1	15	SPARE *AFCI*	28
29	BUSSED SPACE											BUSSED SPACE	30

NOTES:
AFCI - PROVIDE AFCI BREAKER
GFCI - PROVIDE GFCI BREAKER

TYP. LOAD CENTER: CX		VOLTS/PHASE/WIRE: 120/240V/1Φ/3W			LOCATION: GARAGE				MOUNTING: FLUSH				
BUS: 125A		MAIN: 100A MLO			IC: 10,000 RMS SYM. AMPS				FEEDER: SEE RISER DIAGRAM				
CKT NO	DESCRIPTION	BRKR AMPS	BRKR POLE	WIRE SIZE	ΦA	ΦB	ΦA	ΦB	WIRE SIZE	BRKR POLE	BRKR AMP	DESCRIPTION	CKT NO
1	CU-2	30	2	10					12	1	20	1ST FLR RESTROOM	2
3									12	1	20	MICROWAVE *AFCI*	4
5	RANGE/OVEN	50	2	6					14	1	15	REFRIGERATOR *AFCI*	6
7									14	1	15	GARAGE DOOR *AFCI*	8
9	DRYER	30	2	10					12	1	20	KITCHEN RECEPTS *AFCI*	10
11									12	1	20	KITCHEN RECEPTS *AFCI*	12
13	SMOKE DETECTORS *AFCI*	15	1	14					12	1	20	DISHWASHER *AFCI*	14
15	WASHER *GFCI* *AFCI*	20	1	12					12	1	20	DISPOSAL *AFCI*	16
17	FURNACE F-1 *AFCI*	15	1	12					14	1	15	2ND FLR LTS/RECS *AFCI*	18
19	1ST FLR GEN LTS *AFCI*	15	1	14					14	1	20	2ND FLR RESTROOMS	20
21	1ST FLR RECEPTS *AFCI*	15	1	14					14	1	15	2ND FLR BEDROOM *AFCI*	22
23	ENTRY/GARAGE REC *AFCI*	15	1	14					14	1	15	2ND FLR BEDROOM *AFCI*	24
25	SPARE *AFCI*	15	1						14	1	15	2ND FLR BEDROOM *AFCI*	26
27	SPARE *AFCI*	15	1						14	1	15	2ND FLR RESTROOMS	28
29	BUSSED SPACE											BUSSED SPACE	30

NOTES:
AFCI - PROVIDE AFCI BREAKER
GFCI - PROVIDE GFCI BREAKER

3PLEX METER CENTER - ELECTRICAL LOAD CALCULATIONS PER NEC 220.82 & 220.84

UNIT TYPE	# OF UNITS	SQFT	LTG (3W/SQFT)	SM APP	HVAC	RANGE	LAUNDRY	DRYER	WTR HTR	UNIT VA	AMPS	SERVICE SIZE
B	1	1536	4608	3000	4104	8000	1500	5000	0	18947	78.9	100A
C	2	1757	5271	3000	4464	8000	1500	5000	0	19572	81.6	100A
TOTAL	3	1536	15150	9000	13032	24000	4500	15000	0			

3PLEX FEEDER DEMAND CALC		
LIGHTING		15150
SMALL APPLIANCE		9000
HVAC		13032
COOKING		24000
LAUNDRY		4500
DRYER		15000
WATER HEATER		0
TOTAL		80682
DEMAND FACTOR		0.45
APT DEMAND LOAD		36307
AMPS @	240V 1ø	151.3
HOUSE LOADS		
GRAND TOTAL		36307
AMPS @	240V 1ø	151.3

3PLEX ELECTRICAL RISER DIAGRAM
SCALE: NONE

4PLEX METER CENTER - ELECTRICAL LOAD CALCULATIONS PER NEC 220.82 & 220.84

UNIT TYPE	# OF UNITS	SQFT	LTG (3W/SQFT)	SM APP	HVAC	RANGE	LAUNDRY	DRYER	WTR HTR	UNIT VA	AMPS	SERVICE SIZE
B	2	1536	4608	3000	4104	8000	1500	5000	0	18947	78.9	100A
C	2	1757	5271	3000	4464	8000	1500	5000	0	19572	81.6	100A
TOTAL	4	1536	13758	12000	17136	32000	6000	20000	0			

4PLEX FEEDER DEMAND CALC		
LIGHTING		13758
SMALL APPLIANCE		12000
HVAC		17136
COOKING		32000
LAUNDRY		6000
DRYER		20000
WATER HEATER		0
TOTAL		106894
DEMAND FACTOR		0.45
APT DEMAND LOAD		48102
AMPS @	240V 1ø	200.4
HOUSE LOADS		
GRAND TOTAL		48102
AMPS @	240V 1ø	200.4

4PLEX ELECTRICAL RISER DIAGRAM
SCALE: NONE

5PLEX METER CENTER - ELECTRICAL LOAD CALCULATIONS PER NEC 220.82 & 220.84

UNIT TYPE	# OF UNITS	SQFT	LTG (3W/SQFT)	SM APP	HVAC	RANGE	LAUNDRY	DRYER	WTR HTR	UNIT VA	AMPS	SERVICE SIZE
B	3	1536	4608	3000	4104	8000	1500	5000	0	18947	78.9	100A
C	2	1757	5271	3000	4464	8000	1500	5000	0	19572	81.6	100A
TOTAL	5	8122	24366	15000	21240	40000	7500	25000	0			

5PLEX FEEDER DEMAND CALC		
LIGHTING		24366
SMALL APPLIANCE		15000
HVAC		21240
COOKING		40000
LAUNDRY		7500
DRYER		25000
WATER HEATER		0
TOTAL		133106
DEMAND FACTOR		0.45
APT DEMAND LOAD		59898
AMPS @	240V 1ø	249.6
HOUSE LOADS		
GRAND TOTAL		59898
AMPS @	240V 1ø	249.6

5PLEX ELECTRICAL RISER DIAGRAM
SCALE: NONE

Chapel Ridge Townhomes Phase 5

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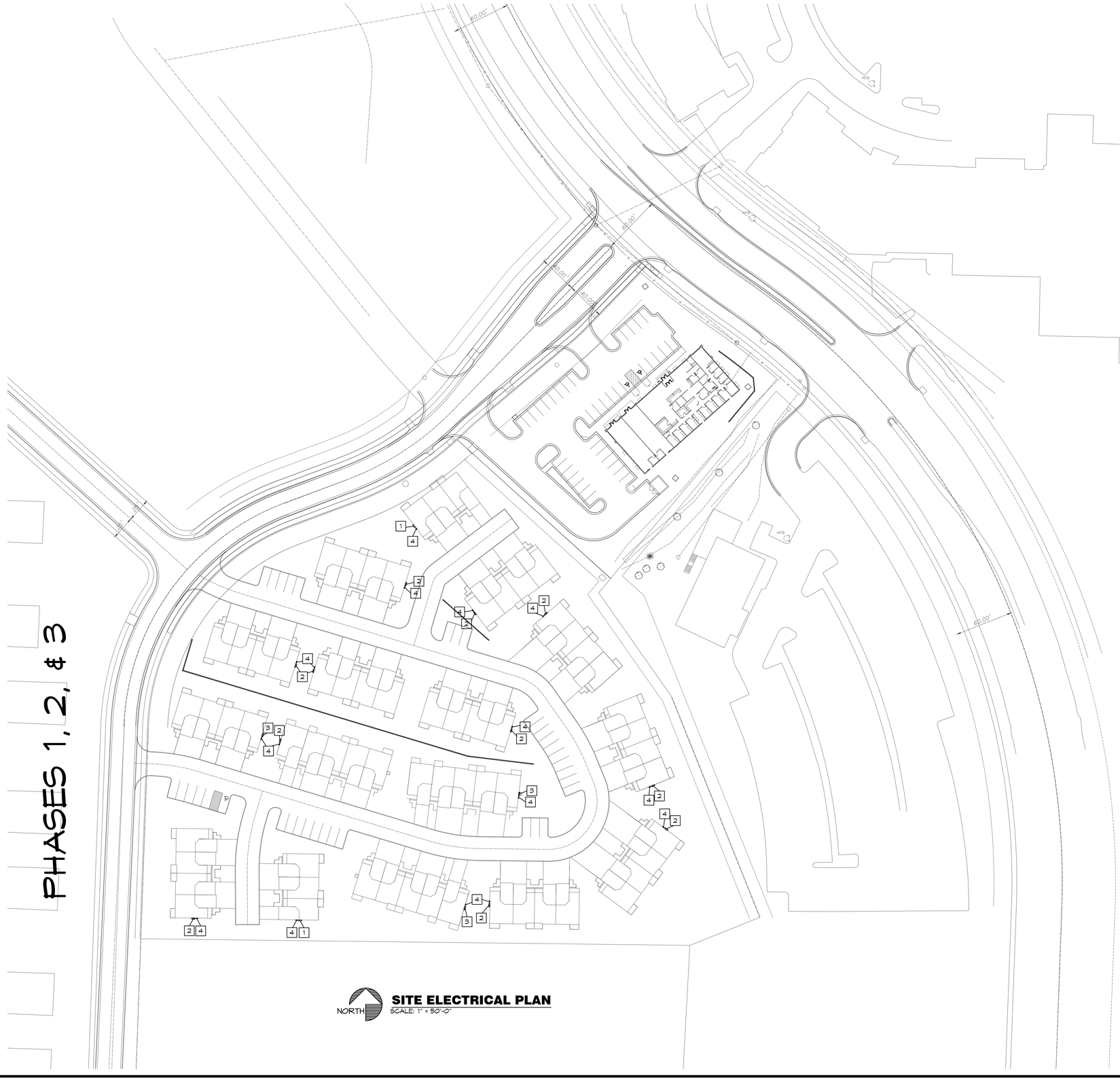

SITE ELECTRICAL PLAN

NORTH

SCALE: 1" = 50'-0"

ELECTRICAL SITE PLAN PLAN NOTES:

1. NEW ELECTRICAL SERVICE ENTRANCE EQUIPMENT FOR 3PLEX. REFER TO 3PLEX ELECTRICAL RISER DIAGRAM ON SHEET E2.0 FOR MORE INFORMATION.
2. NEW ELECTRICAL SERVICE ENTRANCE EQUIPMENT FOR 4PLEX. REFER TO 4PLEX ELECTRICAL RISER DIAGRAM ON SHEET E2.0 FOR MORE INFORMATION.
3. NEW ELECTRICAL SERVICE ENTRANCE EQUIPMENT FOR 5PLEX. REFER TO 5PLEX ELECTRICAL RISER DIAGRAM ON SHEET E2.0 FOR MORE INFORMATION.
4. PROPOSED LOCATION OF TELEPHONE CABINET. COORDINATE EXACT LOCATION WITH OWNER/SERVICE PROVIDER

COORDINATE WITH EVERGY FOR ROUTING OF ALL PRIMARY AND SECONDARY CONDUITS AS WELL AS TRANSFORMER LOCATIONS. PROVIDE ALL EASEMENTS AS REQUIRED

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