

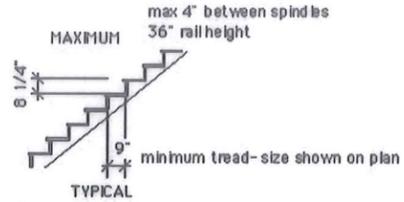
2018 PA ALTERNATIVE ENERGY CODE  
WITH OPTION 6 OR 7 ON TABLE PA 104

- 1) Windows and doors to be .32U or lower
- 2) Skylites to be .6 U or lower
- 3) walls to be R-21 batt, ceilings R-49 blown where flat. provide R-49 over top plate at wall with 7" closed cell foam (R-7 per inch) below baffle.
- 4) Floors to be R-30 (over garage or uninsulated basement)
- 5) basement walls to be R-10 continuous or R-13 batt.
- 6) slabs in conditioned space- R-10 for 2'
- 7) crawl space to be R-10 continuous or R-13 batt
- 8) ducts in unconditioned attic R-8 minimum, ducts in unconditioned basement R-6 minimum. (insulated basement is conditioned space)
- 8) Heating System (forced Air) to be 86 AFUE or 9.5 HSPF heat pump
- 9) Certificate to be attached to Electric box stating all above values as well as window SHGC (solar heat gain coefficient) and water heater efficiency. Certificate to be signed by builder.

additional notes for 2018 IRC compliance

- 1) see wall bracing notes identifying braced wall lines, braced wall panels, and braced wall connection details
- 2) egress door shall hold min. 32" clear opening width and 78" min. clear opening height net of door, threshold, and stops.
- 3) all exterior landings, decks, balconies and stairs to be positively anchored to house per note on plan.
- 4) 30" maximum height for landing with no guard to be measured 36" away from open side.
- 5) carbon monoxide alarm to be mounted outside each separate sleeping area
- 6) pressure treated wood to be fastened minimum ASTM A653 type G185 (Simpson Z-max)
- 7) Site address sign mounted clearly from street, minimum 4" high letters with min. 1/2" widestroke.
- 8) under 8' basement fdn wall to have (1)#4 bar within 12" of top horizontal, and 1 close to mid height. horizontal. Over 8' to have (1)#4 bar within 12" of top, and one at each third of height.
- 9) deck ledger board to be attached w/ thru bolts- 1/2" approved material, 21" staggered centers 2" from top and bottom. Supply 2- lateral load connection devices min. 1500# rating connecting deck joists to inside joists.
- 10) rafter/ceiling joist connections to meet table 602.5.1(9) (page 397)
- 11) vinyl soffit over 16" to have mid span support .
- 12) supply kickout flashing to direct water away from wall on gable end-step flashing conditions
- 13) forced air HVAC systems to use programmable thermostat
- 14) circulating domestic hot water systems insulated to R-3
- 15) minimum 75% of bulbs in electric fixtures to be high efficacy type. Recessed lighting to be IC rated with less than 2.0CFM leakage.
- 16) all HVAC supply and return to be tested or placed in conditioned space. Perimeter room return flow rate shall not be greater than supply rate delivered to room.
- 17) outdoor appliances to be kept out of driveway, or protected with concrete filled bollards.
- 18) dryer ducts to be 4" nominal hard duct, max length 25' electric, 35' gas. with reductions for elbows per table 62439.5.5.2. if concealed, place permanent label stating equivalent length within 6' of dryer.
- 19) range hood over 400cfm to have make up air provided.
- 20) all receptacles to be tamper resistant.
- 21) all circuits not GFI protected to be ARC fault protected
- 22) building shall be tested and verified as having air leakage rate not exceeding 5 air changes per hour.
- 23) Size heating and cooling equipment in accordance with ACCA manual J (8th Edition) and manual S (2004). Provide design criteria prior to rough in inspection.
- 24) Mechanical ventilation to meet requirements of M1507.

1500-3000 sf floor area, 2-3 bedroom, 60cfm. continuous air flow rate.



STAIR DETAIL

GENERAL WALL BRACING NOTES:

- 1) braced wall lines to be spaced no more than 35' apart. walls may be offset up to 4' (8' total) from braced wall line.
- 2) continuous sheathed wall panels to be 48" wide, less per table R602.10.4.2. locations noted on plan.
- 3) sheathing nailed 6d - 6" o.c. edges- 12" o.c. field block at joints w/ 6" o.c. 6d nail.
- 4) braced wall panels to be 25' o.c. max on each braced wall line- 12 1/2' from corner maximum.
- 5) Interior braced wall panels to be 1/2" gypsum both sides. Double length if only one side. (at stairwell)- apply wallboard vertically at panel location- or provide blocking at splice (2 rows on 9' wall)
- 6) joist or blocking must be located beneath braced wall panels.- attach sole plate to jst or blocking with (3) 16d nails @ 16" o.c.

NOTE: TABLE R602.10.4.2  
MINIMUM LENGTH BRACED WALL PANEL FOR 9' WALL WITH 66" OPENING HEIGHT ADJACENT IS 27"  
MINIMUM LENGTH BRACED WALL PANEL FOR 10' WALL WITH 80" OPENING IS 30"  
INDICATED ON PLAN BY (BWP)

CASTLE MILL LP 1  
20' TOWNHOUSE  
UNITS 6-11

DESIGN CRITERIA:

ALL STRUCTURAL AND MECHANICAL COMPONENTS OF THE BUILDING TO CONFORM TO IRC-2018 AS ADOPTED BY THE PA. U.C.C.- WITH AMENDMENTS (Act 1) ELECTRIC TO FOLLOW NATIONAL ELECTRIC CODE WITH IRC 2018 ADDITIONS FIRE SPRINKLERS TO BE PROVIDED PER IRC SECTION P-2904 OR NFPA 13D

1ST FLOOR LOADING -	40# LIVE-10# DEAD
SECOND FLOOR BEDROOM -	30# LIVE -10# DEAD
ATTIC-	20# LIVE - 10# DEAD

ROOF - 30# GROUND SNOW LIVE- 10# DEAD

LUMBER SPECIES ASSUMED TO BE HEM/FIR #2&BTR.  
ENGINEERED LUMBER TO HAVE Fb -2900, Fv-290, E-2,000,000  
STEEL TO BE 36ksi

UNIT SIZE:

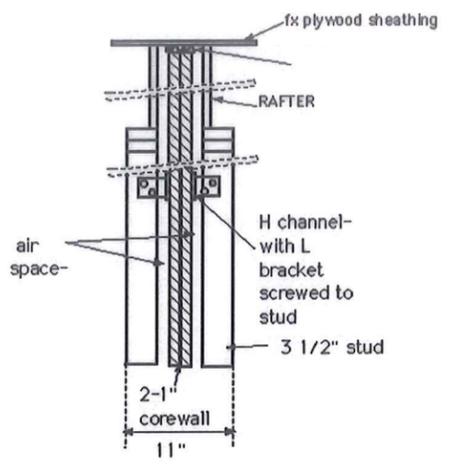
1ST FLOOR LIVING SPACE:	760 SF (720 unit 5)
2ND FLOOR :	760 SF (720 unit 5)
lower level	15 SF
<b>TOTAL gross:</b>	<b>1535 SF (1455 unit 5)</b>

DRAWING INDEX

- COVER SHEET AND DETAILS  
A\*1 FIRST WALLS  
A\*2 SECOND WALLS  
A\*3 FOUNDATION AND LOWER LEVEL  
A\*4 FRONT ELEVATION  
A\*5 REAR ELEVATION  
A\*6 SIDE ELEVATIONS

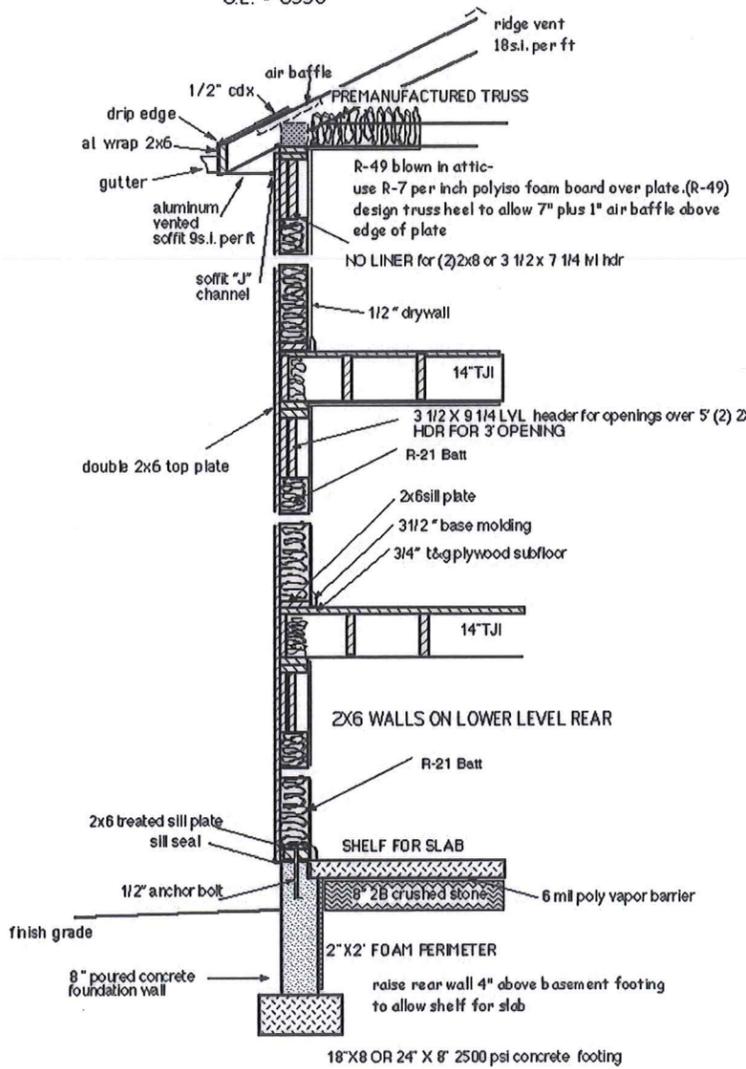
<p>Castle MILL 1 LP 20' TOWNHOUSE BOLLING GREENE HOME DESIGN</p>		<p>Lot # _____ Date 3-25-22 Last Revision _____ Drawn By _____</p>	<p><b>C</b> details no scale</p>
<p>1444 HAMILTON -SUITE 106 ALLENTOWN, PA. 18102 610-770-1777 pottstomas@mac.com</p>			

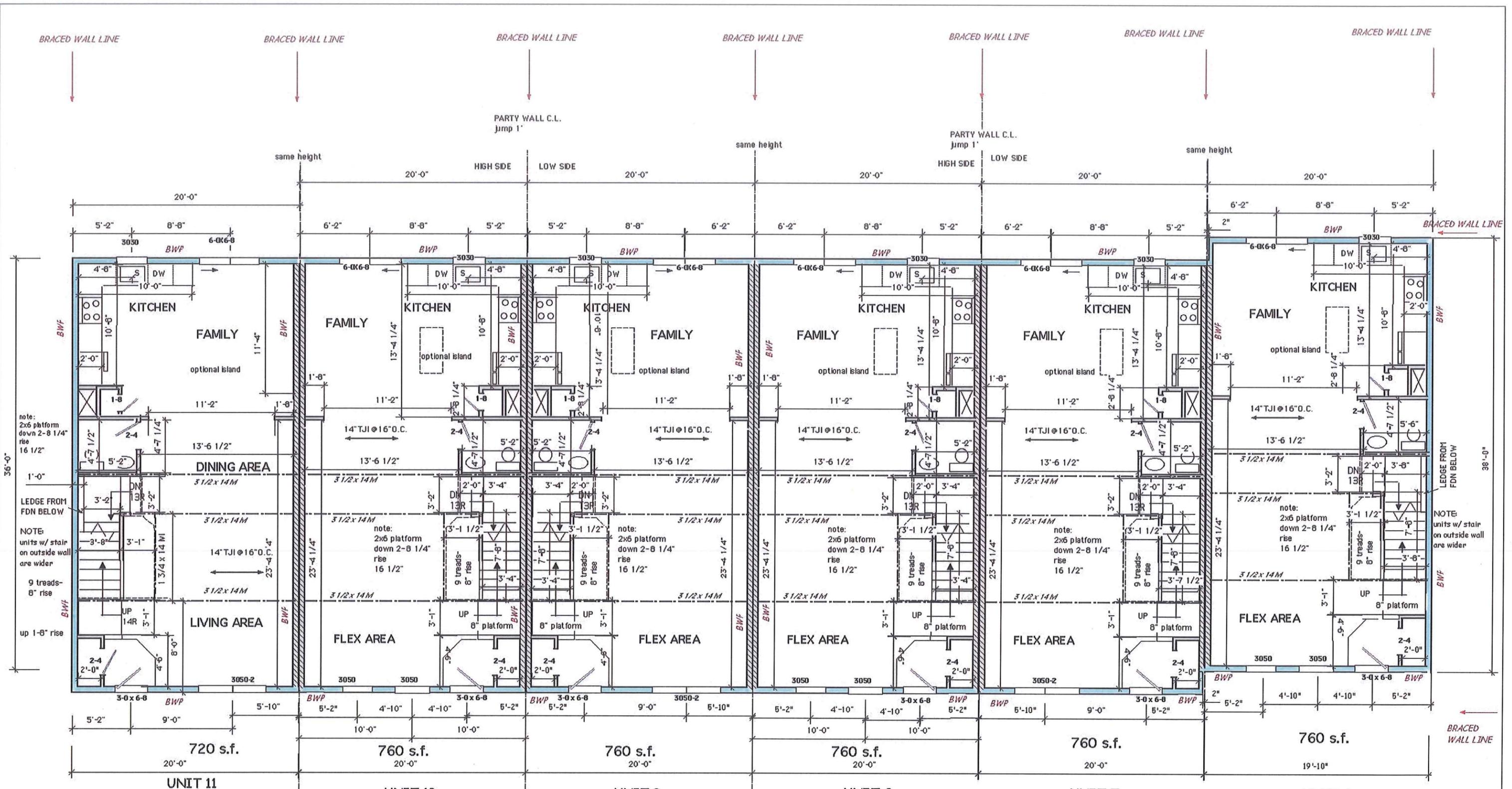
USE 1/2" FIRE RATED SHEATHING 4'-0" ON EACH SIDE OF PARTY WALL-



COREWALL DETAIL-EXTENDS FROM FOUNDATION WALL TO UNDERSIDE OF ROOF DECK

tested 4-28-83 in accordance with ASTM E119 @WH INT'L INC. Antioch, Ca. File: WHI 493-psv-0245 U.L. # U336





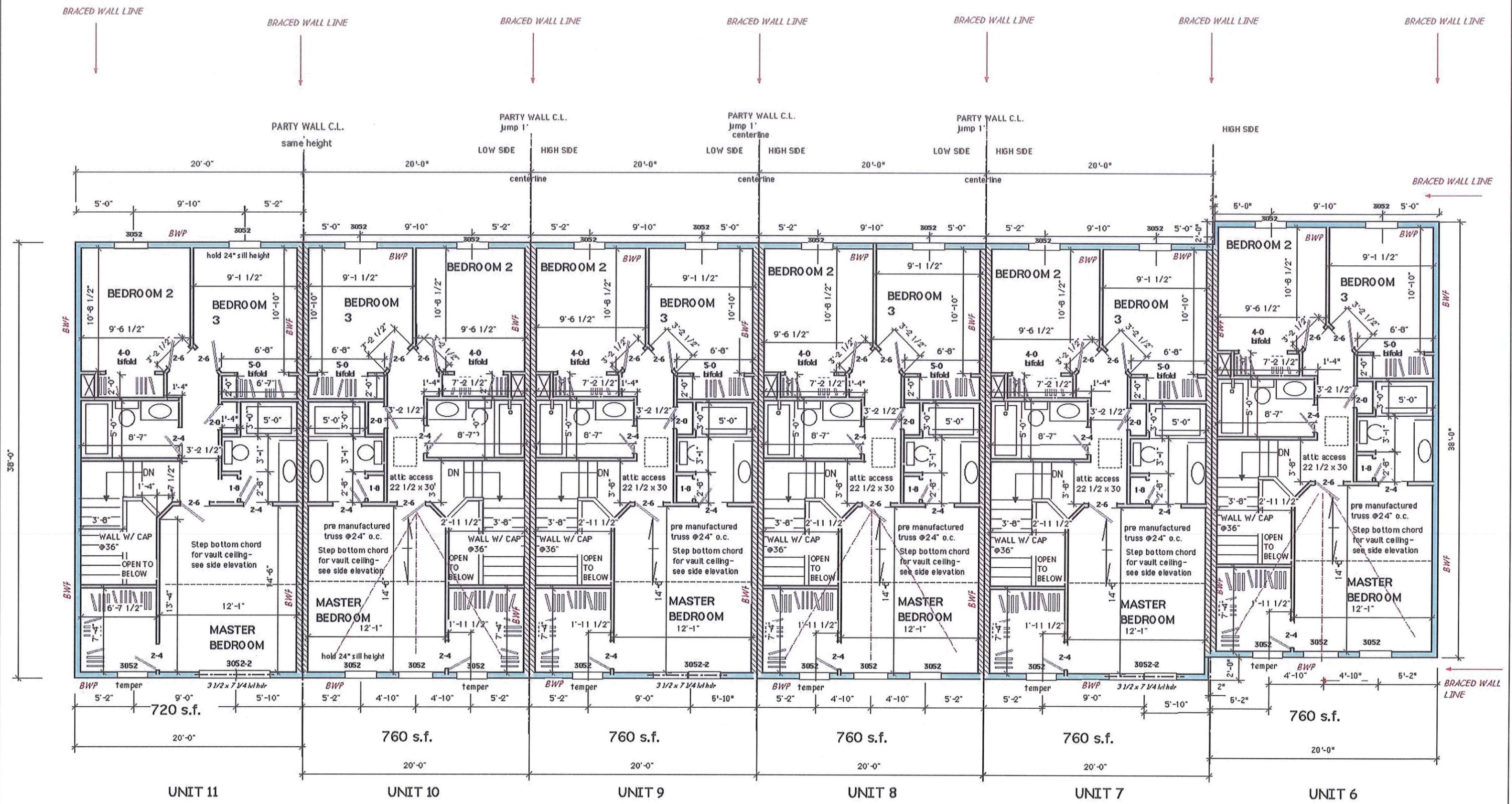
- FRAMING PLAN NOTES**
- 1) Exterior walls to be 2x6, read 6" on plans, interior wall to be 2x4, read 3 1/2" on plans, exterior garage walls 2x4, read 4" on plans. ALL CEILINGS TO BE 8' - 1 1/8" HIGH EXCEPT WHERE NOTED.
  - 2) Exterior walls sheathed with 7/16" O.S.B.
  - 3) Floor Joists 14" TJI @ 16" o.c.
  - 4) Floor sheathing 3/4" T&G sturdfloor
  - 5) Interior bearing and exterior headers to be 2-2x10 for all openings under 5' over 5' to be 2-2x12 or 3 1/2" x 9 1/2" paralam. HEIGHT OFF F.F. TO BE 6'-10" EXCEPT WHERE NOTED
  - 6) windows shown to be SINGLE HUNG VINYL - R.O. = CALLOUT SIZE -3050 = 36" X 60" - 7'0" HEADER HT. - hold 24" sill.
  - 7) hard wired smoke detectors required on each level by stairs and in each bedroom. hardwire with battery backup
  - 8) cement backer board in wet areas of bath.
  - 9) 1 1/2" firestops to be placed in all interior soffit and drop ceiling areas.
  - 10) interior openings 3" off corner or centered in wall segment

(NOTE: braced wall panels in party wall to be 8' long (drywall one side only))

**UNITS 6-11**  
**Castle MILL TLP**  
**20' TOWNHOUSE**  
**BOLLING GREENE HOME DESIGN**

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Lot # _____ Date 12-8-23 Last Revision _____ Drawn _____ By _____	<h1 style="font-size: 2em; margin: 0;">A1</h1> <p>1ST WALLS        1/8" = 1'-0"</p>
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**FRAMING PLAN NOTES**

- 1) Exterior walls to be 2x6, read 6" on plans, interior wall to be 2x4, read 3 1/2" on plans, exterior garage walls 2x4, read 4" on plans. ALL CEILINGS TO BE 8' - 1 1/8" HIGH EXCEPT WHERE NOTED.
- 2) Exterior walls sheathed with 7/16" O.S.B.
- 3) rafters and c/j to be premanufactured truss @24" o.c. - design for 30# snow load and 20# live load on bottom chord.
- 4) roof sheathing 1/2" cdx plywood - 4 ply fir
- 5) Interior bearing and exterior headers to be 2-2x10 for all openings under 5'; over 5' to be 2-2x12 or 31/2 x 91/2 paralam. HEIGHT OFF F.F. TO BE 6'-10" EXCEPT WHERE NOTED
- 6) windows shown to be SINGLE HUNG VINYL- R.O. = CALLOUT SIZE -3052 = 36" X 62"- 7'2" HEADER HT.- use (2) 2x8 hdns on single windows- 3 1/2 x 7 1/4 lvl on twin.-HOLD 24" SILL HEIGHT.

- 7) hard wired smoke detectors required on each level by stairs and in each bedroom. hardwire with battery backup
- 8) CEMENT BACKER BOARD in all wet areas of baths.
- 9) 1 1/2" firestops to be placed in all interior soffit and drop ceiling areas.
- 10) interior doors 3" off corner or centered in wall segment

NOTE: 3050 to be egress window with more than 5.7 s.f. of clear opening area

overframe reverse gable- 16' wide  
 on units with 3 individual windows on  
 front wall- center over middle window- hold 16" back from front wall  
 use 2x6 @16" o.c. with 2x10 on flat in valley

**UNITS 6-11**  
**Castle MILL I LP**  
**20' TOWNHOUSE**  
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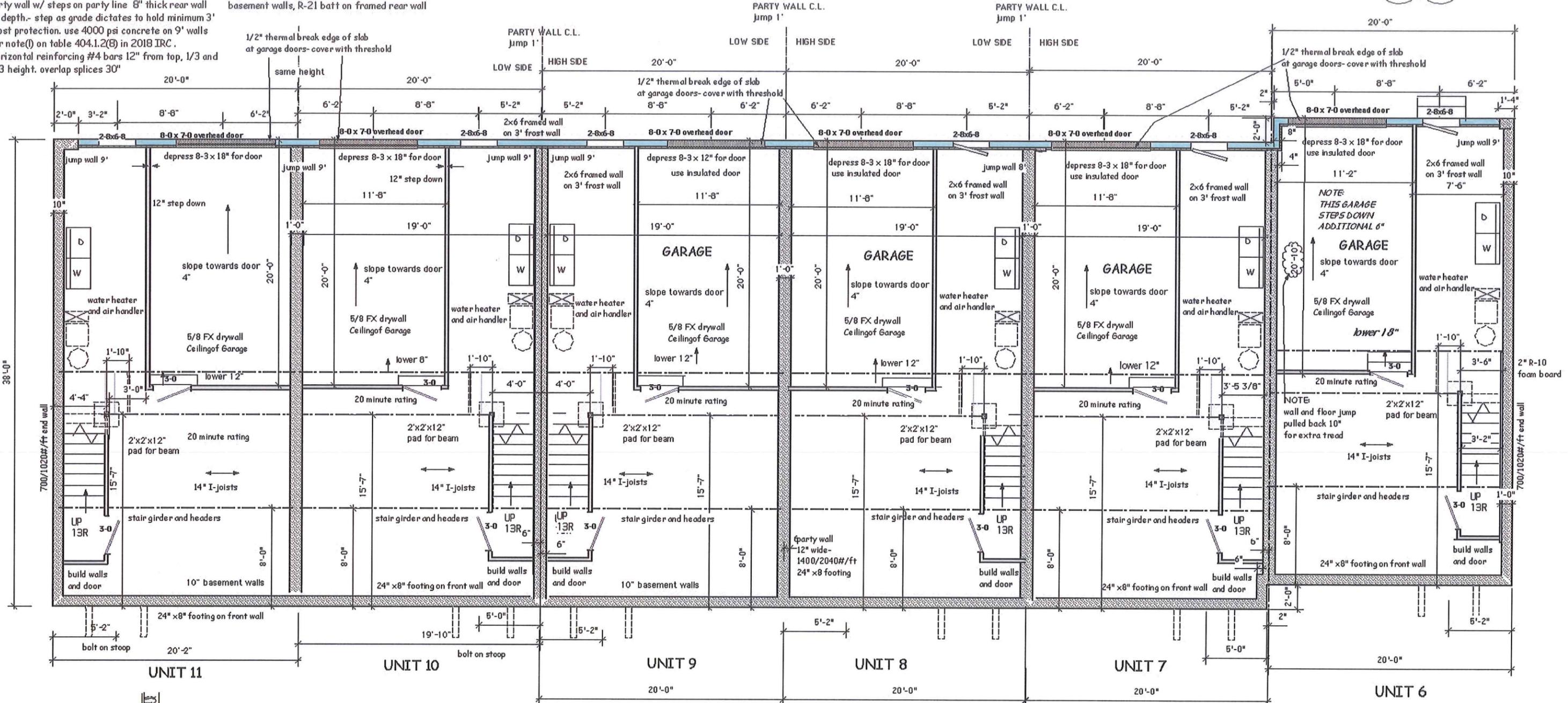
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**A2**  
 2nd WALLS  
 1/8" = 1'-0"

**FOUNDATION PLAN NOTES**

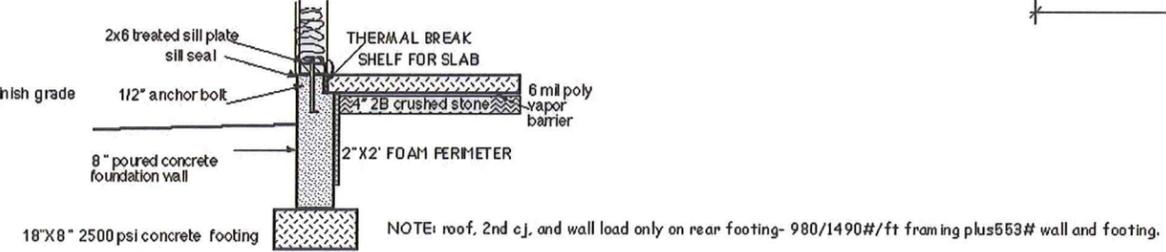
- 1) All footings to bear on soil capable of supporting 1500 p.s.f.
- 2) Footings to be 18" x 8" 2500 psi concrete under all 8" walls, 24"x8" under basement and party walls
- 3) Walls to be 9' - 0" high or as excavation dictates.- 3' WALL IN back, raise 4" above basement footer w/ shelf for slab.
- 4) Walls to be 10" thick basement wall- 12" thick party wall w/ steps on party line 8" thick rear wall 4' depth.- step as grade dictates to hold minimum 3' frost protection. use 4000 psi concrete on 9' walls per note(1) on table 404.1.2(B) in 2018 IRC. Horizontal reinforcing #4 bars 12" from top, 1/3 and 2/3 height. overlap splices 30"
- 5) Depress garage door openings 18"
- 6) all jumps in footings to be bulkheaded, tied with 2#4 reinforcing bars.
- 7) basement floor to be 8" 2-b crushed stone, 6 mil vapor barrier, 4" 3500 p.s.i. concrete.
- 8) step down for garage floor 8" where noted. garage floor pitched to door additional 4"-use 3500 psi concrete.
- 9) 24"x24"x12" pad for framed bearing point where shown.
- 10) 1/2" anchor bolts to be installed 6' o.c. starting 12" from all corners
- 11) sill plate in basement area to be 2x6 treated material with sill seal.
- 12) 2" x2" foam placed on rear wall where shown. Use R-10 Batt on basement walls, R-21 batt on framed rear wall

insulate edge of foundation wall to 2' below grade- 2" R-10 foam



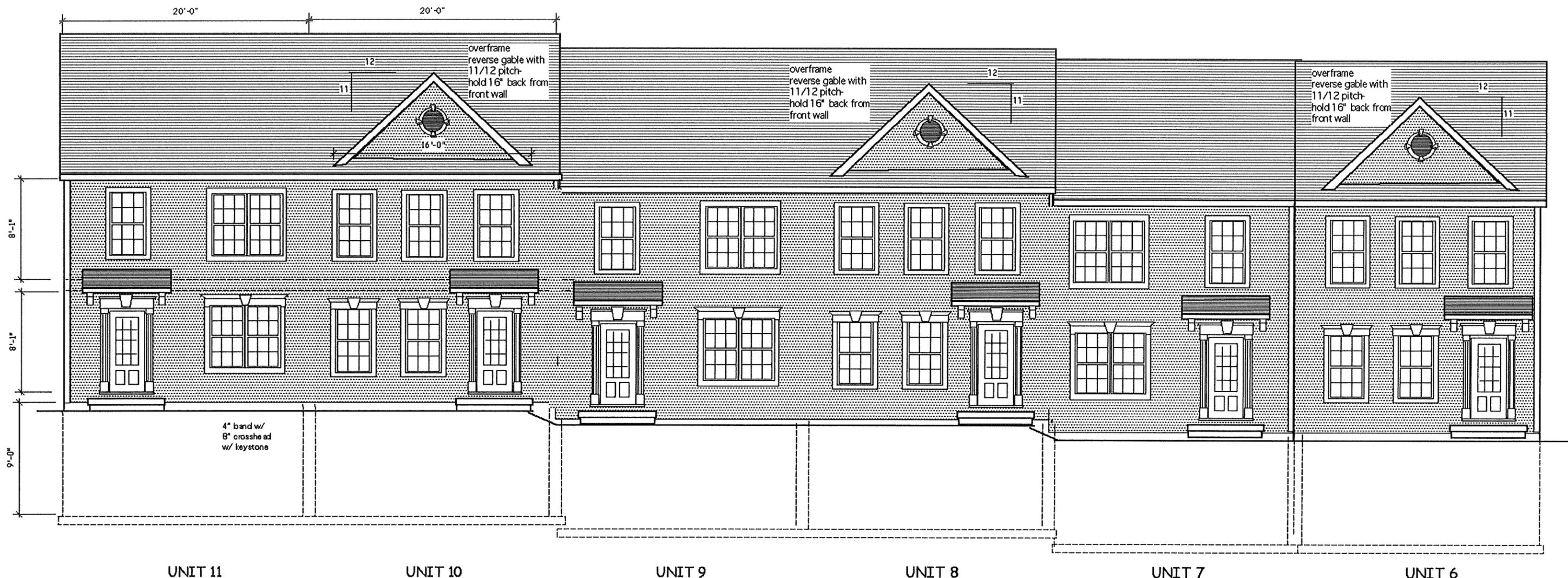
**NOTE: GARAGE AND BASEMENT AREAS ARE CONDITIONED SPACE FOR ACH CALCULATION**

**NOTE:**  
top of basemnt floor slab = top of footing

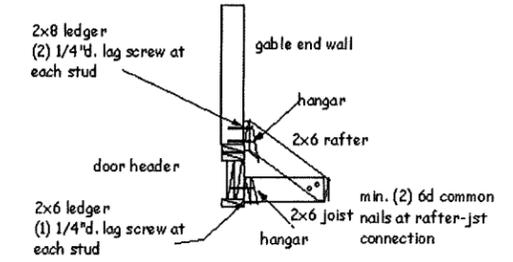


<b>UNITS 6-11</b>		<b>A3</b>
<b>Castle MILL 1 LP</b> <b>20' TOWNHOUSE</b> <b>BOLLING GREENE HOME DESIGN</b>		
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PROVIDE  
3' FROST PROTECTION  
STEP FOOTINGS AS GRADE DICTATES



1st floor	760
2nd floor	760
lower level	72
total s.f.	1592



**UNITS 6-11**  
**Castle MILL TLP**  
**20' TOWNHOUSE**

**BOLLING GREENE HOME DESIGN**

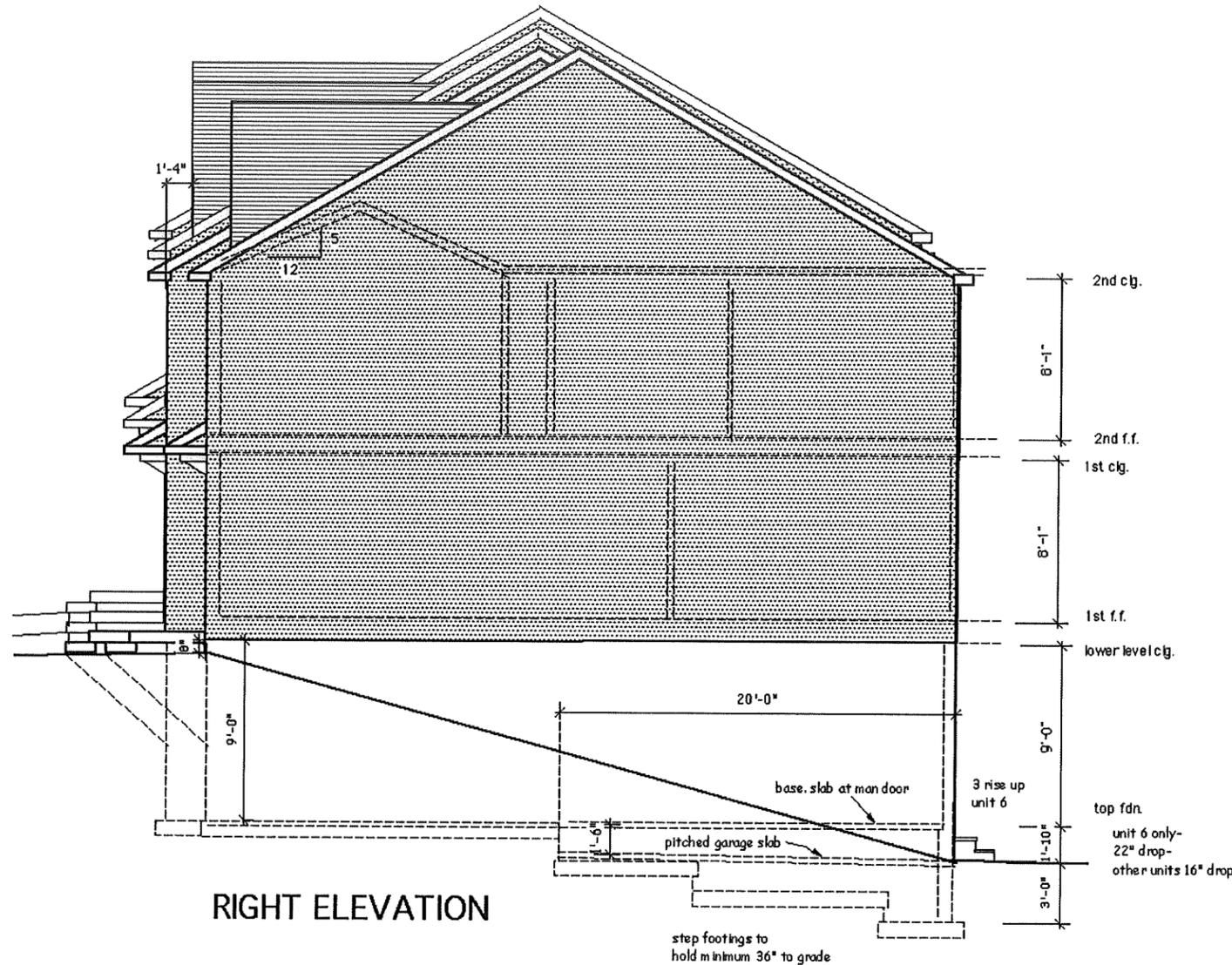
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front elevation  
1/8" = 1'-0"

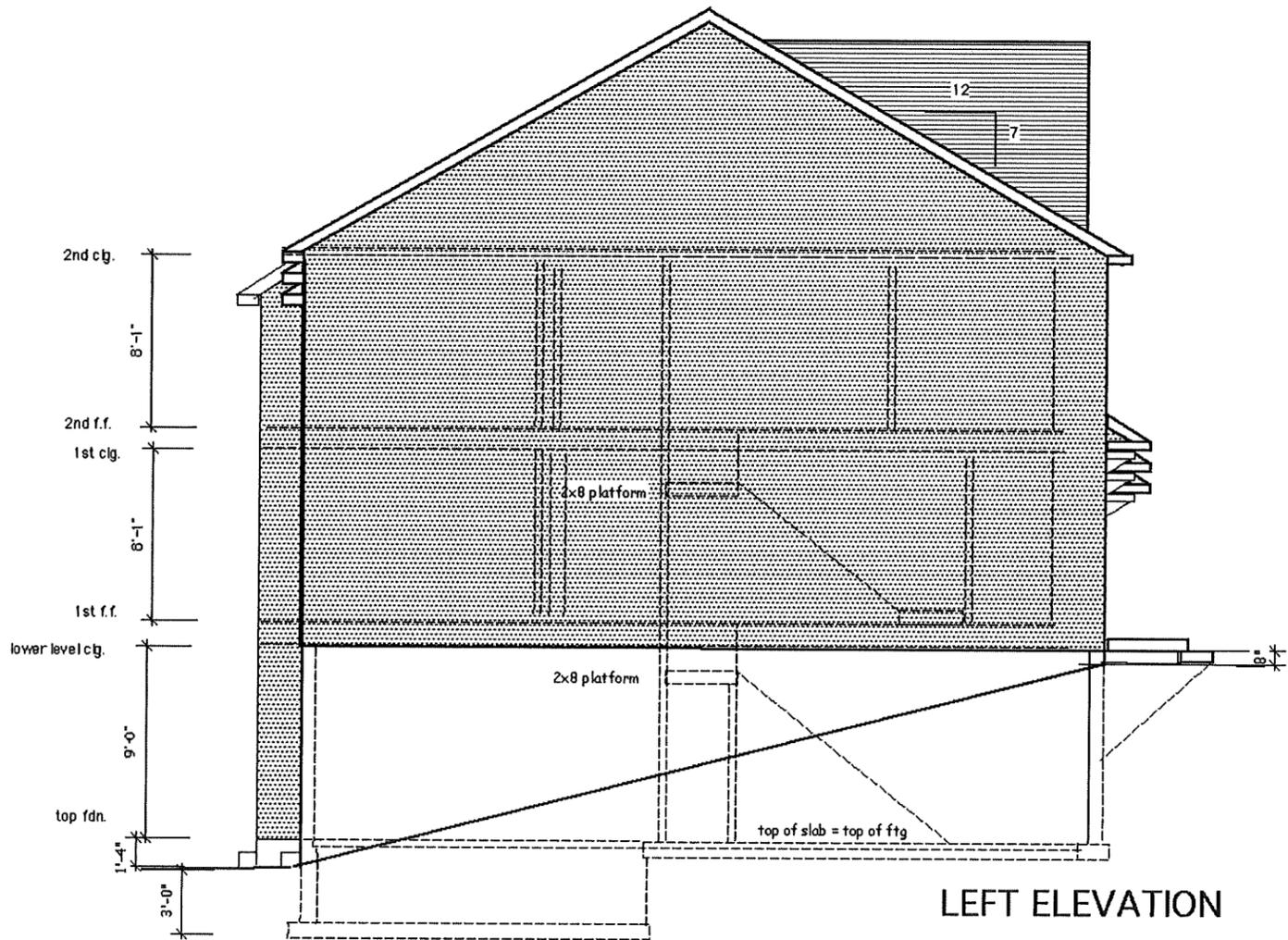


USE RIDGE AND SOFFIT VENTS



RIGHT ELEVATION

USE RIDGE AND SOFFIT VENTS



LEFT ELEVATION

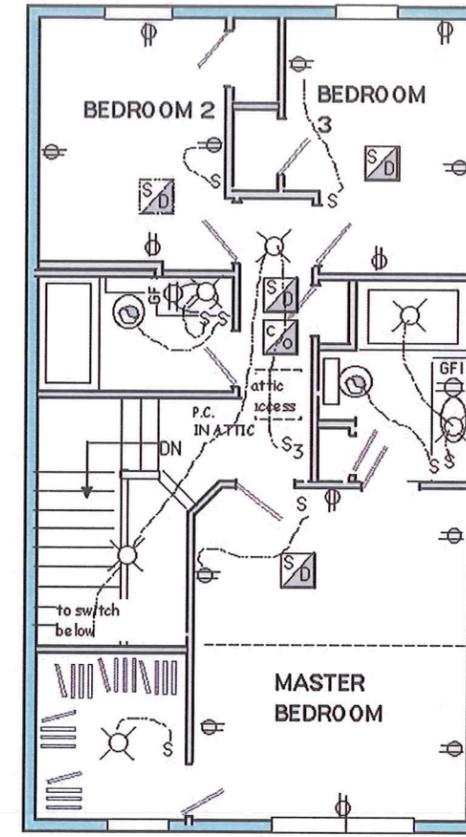
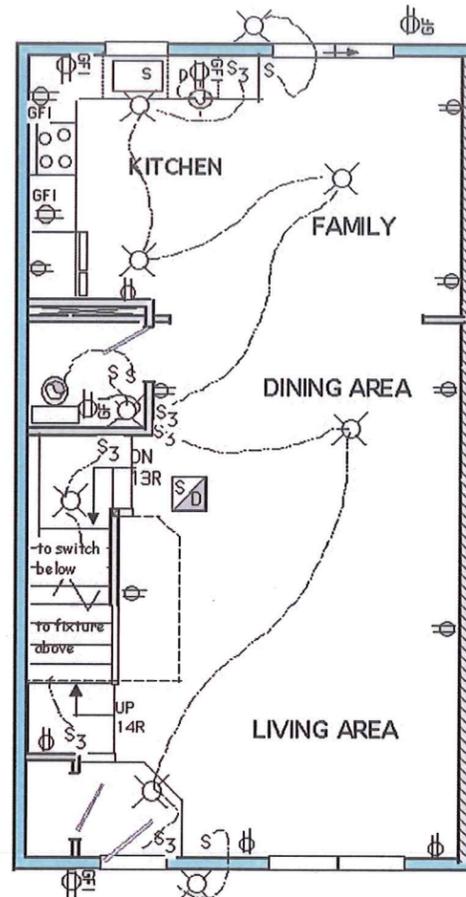
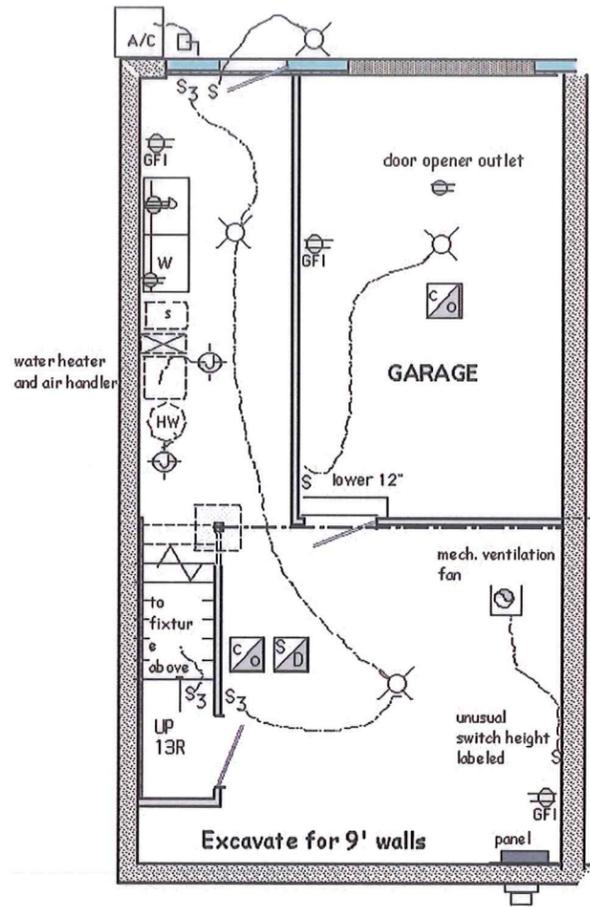
**UNITS 6-11**  
**Castle MILL T LP**  
**20' TOWNHOUSE**

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A6

SIDE ELEVATIONS  
1/8" = 1'-0"



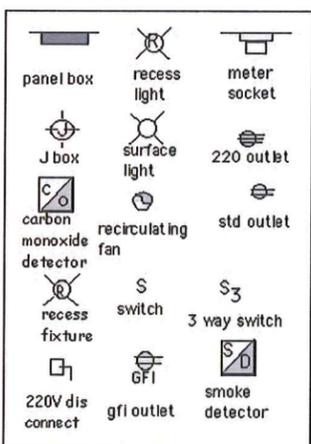
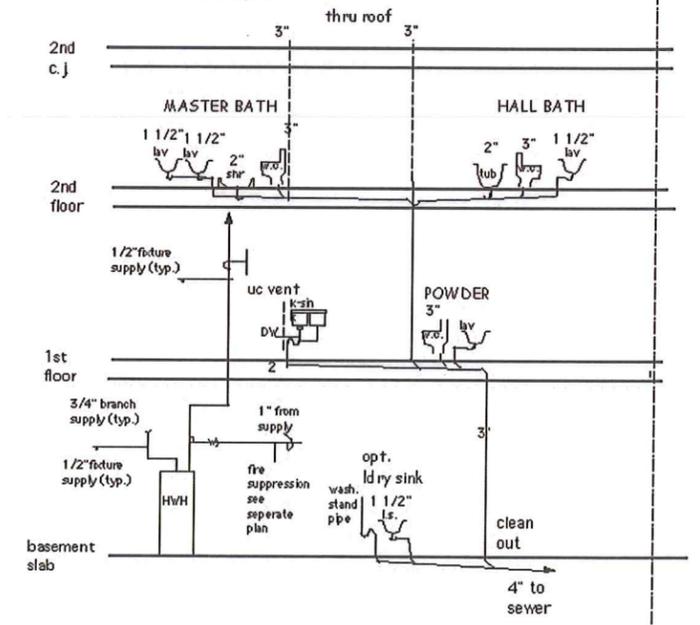
**Plumbing Notes**

- 1) All plumbing done in accordance with appropriate Codes
- 2) Contractor to provide a complete workable system of hot and cold water distribution and waste disposal. Existing system shall be tied in, and upgraded as needed to provide a complete workable system. Contractor to furnish and install new fixtures and vent same to outside air.
- 3) Plumbing fixtures required indicated on floor plans to include:
  - (1) Tubs- upstairs bath
  - (1) shower pan mas. bath
  - (5) lavvy sinks ( 2 m bath, 1 upper bath, 1 pr-1st, 1 pr-basement (opt.)
  - (4) water closets -1 mas bath, 1 upper bath, 1 1st fl pr, 1 basement pr (optional)
  - (2) sinks- kitchen, laundry room (optional)
  - (1) washer standpipe and connections 1 -2nd floor
  - 4) Provide air chambers on all hot and cold water supplies
  - 5) Insulate all piping not in conditioned space
  - 6) Provide shut-off valves at each fixture
  - 7) Minimum branch supply lines to be 1/2". 3/4" pipes when serving more than 1 fixture. 1" from public water supply.
  - 8) pitch piping and install valves to allow complete drainage of system.
  - 9) Plumbing contractor to insure existing water service is adequately sized for total new water demand.

Plumbing supply lines to be type L copper, or approved cross-linked polyethylene- "pex"

Drains and vents to be schedule 40 PVC

Gas piping to meet requirements of Chapter 24 IRC and NFPA 58.



**ELECTRIC SYMBOLS**

**ELECTRICAL NOTES**

- 1) All work to be in accordance with the National Electrical Code
- 2) Main Panel to be 200 amp. with 50A 2P breaker to heater, 50A 2P breaker to Compressor, 30A 2P breaker to Dryer or hot water heater, 20A 2P breaker to electric Baseboard (if any), 20A 1P breaker to kitchen, laundry, dw, dining, 15A 1P breaker to branch circuits
- 3) Electric Contractor responsible to provide a complete workable system of power distribution and lighting for the new work. He shall lay out and install the system with the greatest efficiency and economy. He shall tie in to the main distribution panel, and provide new sub panels and circuits as required to produce the greatest efficiency and economy.
- 4) Fixtures added shown on the drawings. All to be installed including the appropriately sized lamps.
- 5) Electric contractor to verify exact type and locations of all connections.
- 6) Electric contractor shall coordinate all control wiring for Heat, exhaust, and cooking equipment where applicable. Also telephone and cable TV outlets.
- 7) where required, electric contractor to provide aluminum ductwork to screened, hooded, and dampened exhaust from toilet areas to exterior.
- 8) ADDITIONAL ELECTRIC REQUIREMENTS SHOWN ON NOTES FOR 2018 IRC

**NOTE:**

THIS ELECTRIC PLAN DESIGNED TO MEET PERMIT REQUIREMENTS ONLY. PLAN IS SUBJECT TO CHANGE BY OWNER AND CONTRACTOR COMPLIANCE WITH ALL APPLICABLE CODES TO BE DETERMINED BY INSPECTIONS AT TIME OF ROUGH IN AND FINISH.

**General Electric Notes:**

- 1) GFI circuits in kitchen, garage, baths, exterior locations, and at whirlpool
- kitchen GFI not wired in series with other GFI locations
- 2) exterior outlets to be waterproof, NEMA 3R foam liners
- 3) Arc-fault circuit interrupter installed at all branch circuits for all required rooms per applicable code.
- 4) smoke detectors hardwired and interconnected with battery backup
- 5) carbon monoxide detector at each floor, attached garage,
- 6) 75% of bulbs to be high efficacy
- 6) and bedroom with fuel fired appliance.

**UNITS 1-11**  
**Castle MILL 1 LP**  
**20' TOWNHOUSE**  
**BOLLING GREENE HOME DESIGN**

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