



# COMMISSION OF ARCHITECTURAL REVIEW

## APPLICATION FOR CERTIFICATE OF APPROPRIATENESS

### PROPERTY (location of work)

Address 524 W 21st St  
Historic district Union Hill

Date/time rec'd: _____
Rec'd by: _____
Application #: _____
Hearing date: _____

### APPLICANT INFORMATION

Name Emie Chamberlain - Whitney Ventures LLC  
Company \_\_\_\_\_  
Mailing Address 413 N Stafford Ave  
Richmond, VA 23220

Phone 804-921-4307  
Email emie@gargerva.com  
Applicant Type:  Owner  Agent  
 Lessee  Architect  Contractor  
 Other (please specify): \_\_\_\_\_

### OWNER INFORMATION (if different from above)

Name \_\_\_\_\_  
Mailing Address \_\_\_\_\_

Company \_\_\_\_\_  
Phone \_\_\_\_\_  
Email \_\_\_\_\_

### PROJECT INFORMATION

Review Type:  Conceptual Review  Final Review  
Project Type:  Alteration  Demolition  New Construction  
(Conceptual Review Required)

Project Description: (attach additional sheets if needed)

*See attached*

### ACKNOWLEDGEMENT OF RESPONSIBILITY

**Compliance:** If granted, you agree to comply with all conditions of the COA. Revisions to approved work require staff review and may require a new application and CAR approval. Failure to comply with the COA may result in project delays or legal action. The COA is valid for one (1) year and may be extended for an additional year, upon written request.

**Requirements:** A complete application includes all applicable information requested on checklists to provide a complete and accurate description of existing and proposed conditions. Applicants proposing major new construction, including additions, should meet with Staff to review the application and requirements prior to submitting an application. Owner contact information and signature is required. Late or incomplete applications will not be considered.

**Zoning Requirements:** Prior to Commission review, it is the responsibility of the applicant to determine if zoning approval is required and application materials should be prepared in compliance with zoning.

Signature of Owner *[Handwritten Signature]*

Date 11/19/19

November 19, 2019  
Watney Ventures LLC (Ernie Chamberlain) – Owner  
524 N 21<sup>st</sup> St, Richmond, VA 23223

Commission of Architectural Review:

Per the CAR meeting on October 22, 2019, the following changes updates have been made to the attached plans/descriptions.

- The As Is built survey now shows the proposed duplex at 524 N 21<sup>st</sup> in line with, or even with, the home at 526 N 21<sup>st</sup> St.
- The second story porch on the front elevation of 524 N 21<sup>st</sup> St has been removed.
- Information, along with photos, have been provided regarding the staircase and access to the front of the duplex.
- Updates have been made to the roofline.
- A photo showing the removal of the retaining wall on the southside of the lot is included. The wall will be replaced by the new foundation of the proposed duplex. No other significant grading/topography changes will be required and plans will follow the recommendations of Koontz Bryand Johnson Williams Group soil test.
- Window schedule is updated.
- Location of HVAC units are included.

Respectfully,

Ernie & Tawny Chamberlain  
Watney Ventures LLC

September 16, 2019

Watney Ventures LLC (Ernie Chamberlain) – Owner  
524 N 21<sup>st</sup> St, Richmond, VA 23223

Commission of Architectural Review:

We are very excited about the prospect of getting started with a new multi-family home in the Union Hill neighborhood. The general concept for the home is very similar to other multi-family homes found throughout the neighborhood, including 966 Pink St and 821 N 24<sup>th</sup> St.

This multi-family home features 2,376 finished square feet with 1,188 square feet on both floors. Each unit will have 2 bedrooms and 2 full baths, hardwood floors throughout with tile in the bathrooms. Each unit will be equipped with onsite washer/dryer.

Foundation: Per the soil report obtained on 9/6/19 by KBJW, all concrete shall be minimum 3000 psi, only new deformed reinforcing steel shall be used, grade 60 ksi, all reinforcing steel shall be tied and supported with rebar stakes or chairs, all interior pier footings shall be excavated and reinforced as continuous footings, all footings shall bear on undisturbed soil unless fill has been tested, and certified as being capable of supporting the structure planned. Minimum soil bearing pressure shall be 2000 psf. All steel shall have a minimum overlap of 12 inches.

Siding: Smooth Hardie plank boards.

Windows: The preference here would be aluminum clad windows, white in color.

Doors: The front and rear doors are planned to be steel, tempered with 14" transom.

Roof: Pre-engineered wood trusses with white TPO roofing material.

Paint Colors: We're open to suggestions but will use the Richmond Old and Historic Districts Handbook.

Per the Richmond Old and Historic Districts Handbook, page 46:

*"New construction should use a building form compatible with that found elsewhere in the historic district. Building form refers to the specific combination of massing, size, symmetry, proportions, projections and roof shapes that lend identity to a building. Form is greatly influenced by the architectural style of a given structure. New residential construction should maintain the existing human scale of nearby historic residential construction in the district."*

We believe our proposed multi-family unit meets the above standard and is very much compatible with the surrounding buildings and structures.

Materials Used in Construction of the home include but may not be limited to:

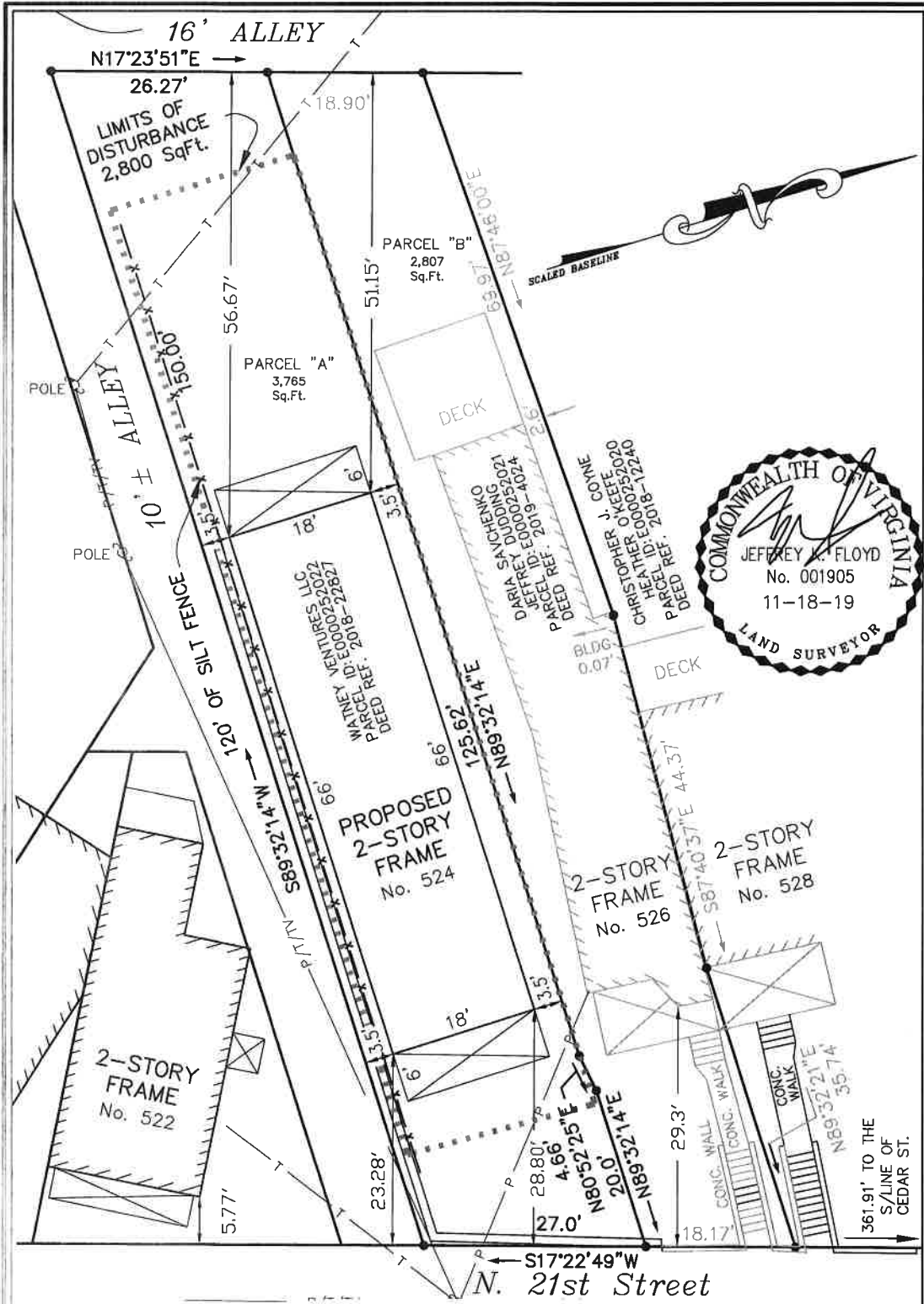
(taken from attached plans)

BLDG ELEVATION MATERIAL KEYNOTES				
1] PARGED CONCRETE TO GRADE, TYP	6] WOOD FRAMED PORCH, PAINTED	11] STEEL DOOR W/ TRANSOM AND PAINTED MOULDING SURROUND	16] EPDM ROOFING AT PORCH ROOF	22] 1X6 PAINTED RAKE BOARD
2] 6" EXPOSURE FIBER CEMENT HORIZONTAL LAP SIDING, PAINT FINISH	7] TAG WOOD DECKING W/ PAINTED BUILT-UP TRIM AT PORCH BAND BOARD	12] ARCHITECTURAL SHINGLES, TYP	17] BEADED VINYL SOFFIT, TYP	23] PVC BEADED PORCH PANELING
3] FIBER CEMENT SIDING TRIM AT CORNERS	8] 6X6 DECORATIVE WOOD PAINTED COLUMN	13] BRICK PIERS, TYP	18] PVC PICTURE FRAME MOULDING, TYP	24] GLASS GILDED HOUSE NUMBERS
4] PVC BRACKET BKT12X12GP	9] 1X6 PAINTED WOOD TRIM FASCIA	14] WOOD LATTICE BELOW DECK	19] PVC DENTIL MOULDING FYPON MLD354-12	25] ARCHITECTURAL SHINGLES
5] WOOD "RICHMOND RAIL" RAILING, PAINT FINISH	10] TWO PANEL WOOD DOOR W/ TRANSOM & MOULD SURROUND	15] DECORATIVE FYPON WINDOW HEADSET	20] PVC BRACKET FYPON BKT7X18	26] 12"X32" FOUNDATION VENT
			21] VENTS, SEE FOUNDATION PLAN	27] 18"X24" GABLE VENT, TYP

Please let me know what else we can do to improve our proposal and any necessary changes required by the committee.

Thank you,

Ernie & Tawny Chamberlain  
Watney Ventures LLC



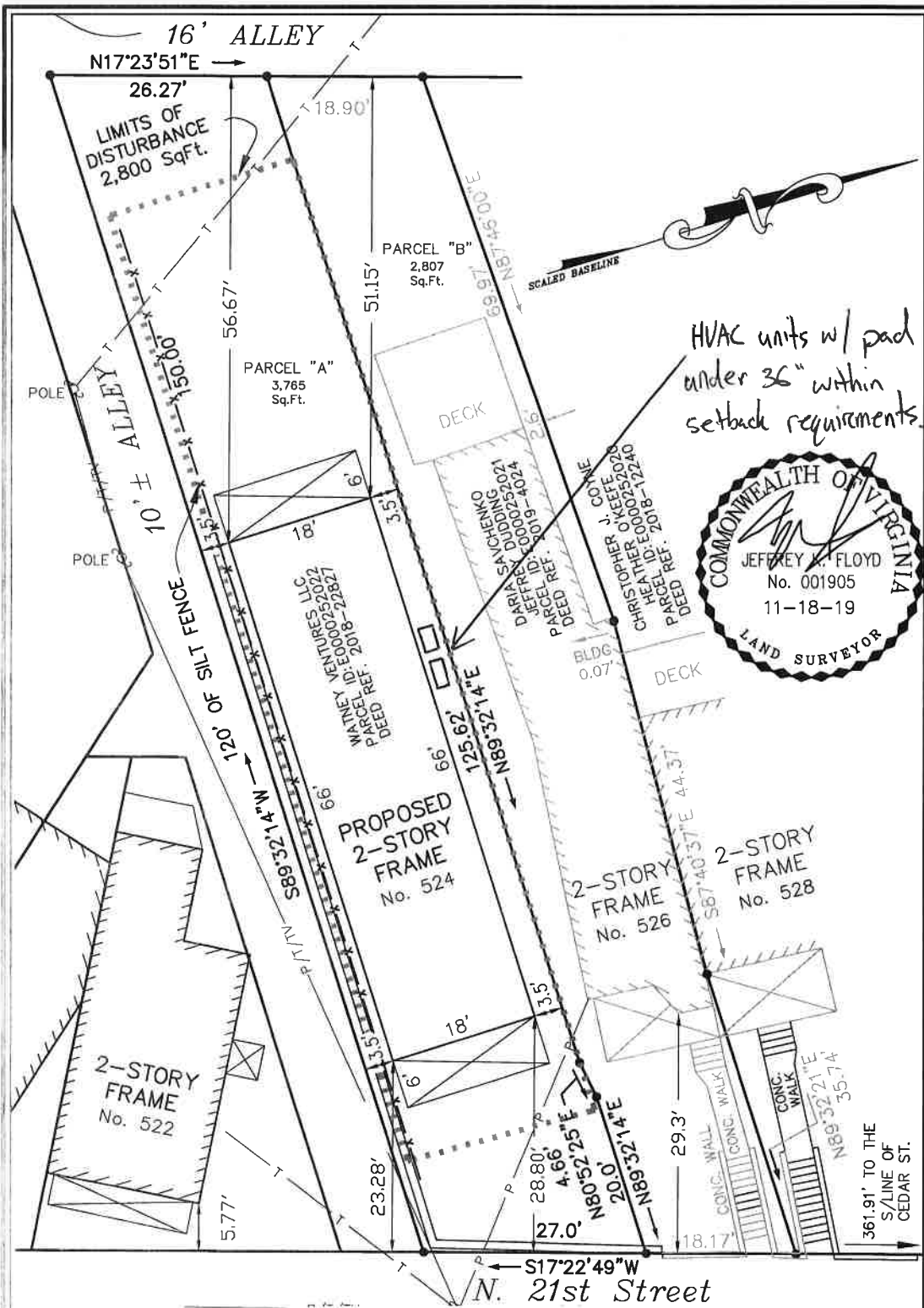
**Virginia Surveys**

P.O. BOX 118  
 CHESTERFIELD, VA 23832  
 (804) 748-9481  
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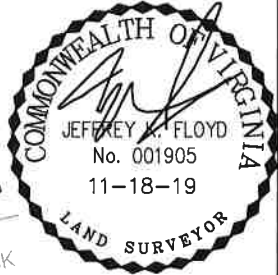
**SKETCH SHOWING THE PROPOSED  
 IMPROVEMENTS ON 524 N 21st STREET  
 IN THE CITY OF RICHMOND, VA.**

REVISED: 11-18-19  
 DATE: 9-9-19  
 CERTIFIED BY JEFFREY K. FLOYD  
 VIRGINIA CERTIFICATE NO. 001905

SCALE: 1"=15'  
 JOB NO. 180612202



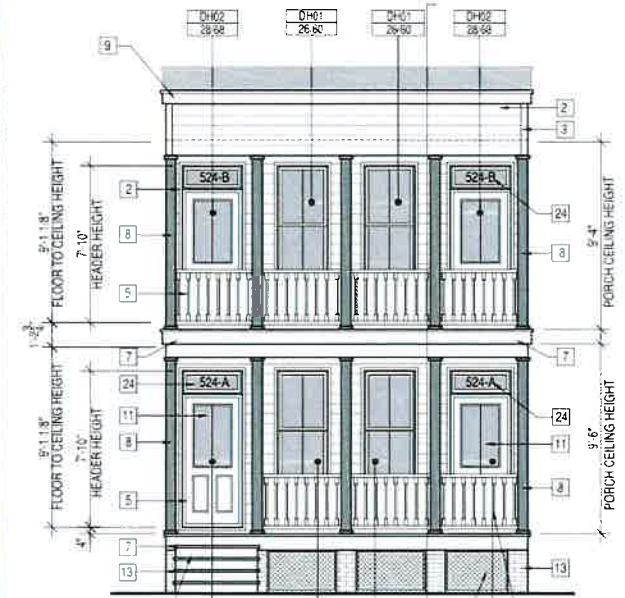
HVAC units w/ pad  
under 36" within  
setback requirements.



**Virginia Surveys**  
 P.O. BOX 118  
 CHESTERFIELD, VA 23832  
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Cinderblock wall facing the street will be parged to match the neighboring homes. A staircase similar to those at 526 and 528 N 21<sup>st</sup> St, seen above next door, will be cut into the existing cinderblock wall fronting the property at 524 N 21<sup>st</sup> St. A brushed concrete path will lead to the door.

The tree in the front of the property will be removed.



Steps leading to 526 and 528 N 21<sup>st</sup> St. Similar steps to be cut into the retaining wall at 524 N St w/ brushed concrete path leading to the door.





Existing retaining wall on the south side of parcel to be removed and replaced by the foundation of the proposed duplex.

# 524 N 21ST STREET DEVELOPMENT

NORTH CHURCH HILL CORNER - RICHMOND, VA

PLAN REVISED	11-15-19
ELEVATIONS CORRECT	9-2-19
FINAL PLANS	7-20-19
CLIENT REVIEW	7-18-19
CLIENT REVIEW	7-15-19

**PENN & CO.**  
4309 BENFOLD SQUARE  
RICHMOND, VA 23144  
(703) 874-4888

**HOMETOWN REALTY**  
MATT JARREAU  
(804) 782-6000 PHONE

524 N 21ST STREET DEVELOPMENT  
CITY OF RICHMOND, VIRGINIA  
COVER SHEET

C-001

SYMBOL LEGEND	
△ - COLUMN TAG	DETAIL LETTER
○ - BEAM TAG	POINT OF VIEW
◡ - FOOTING TAG	SHEET NUMBER
DN/UP #R	DETAIL TAG
● - STAIR TAG	SECTION CUT PLANE
■ - POINT LOAD	SECTION NUMBER
	POINT OF VIEW
	SHEET NUMBER
	SECTION TAG



**PENN & CO.**

P.O. BOX 4481  
FAIRFAX, VA 22038

Phone: (703) 675-4592

SQUARE FOOTAGE CALCULATIONS			
ELEVATION:	ITALIANATE		
AREA	FINISHED	AREA	UNFINISHED
1ST FLOOR	1,188 SF	FRONT PORCH	108 SF
2ND FLOOR	1,188 SF	REAR PORCH	108 SF
TOTAL	2,376 SF	TOTAL	216 SF

**BUILDING CODE:**  
PROJECT SHALL CONFORM TO THE 2015 VIRGINIA UNIFORM STATEWIDE BUILDING CODE

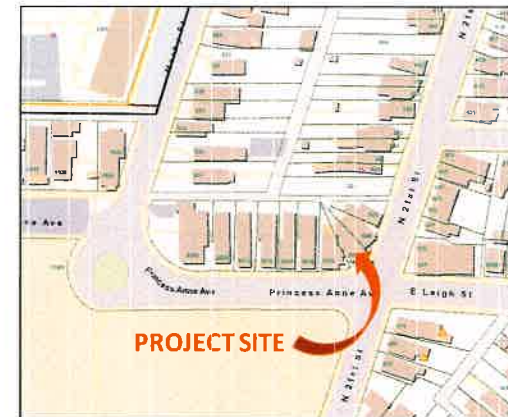
**CITY OF RICHMOND APPLICABLE DOCUMENTS/PERMITS:**  
COMMISSION OF ARCHITECTURAL REVIEW PROJECT NUMBER:

**RICHMOND CITY ORDINANCE:**

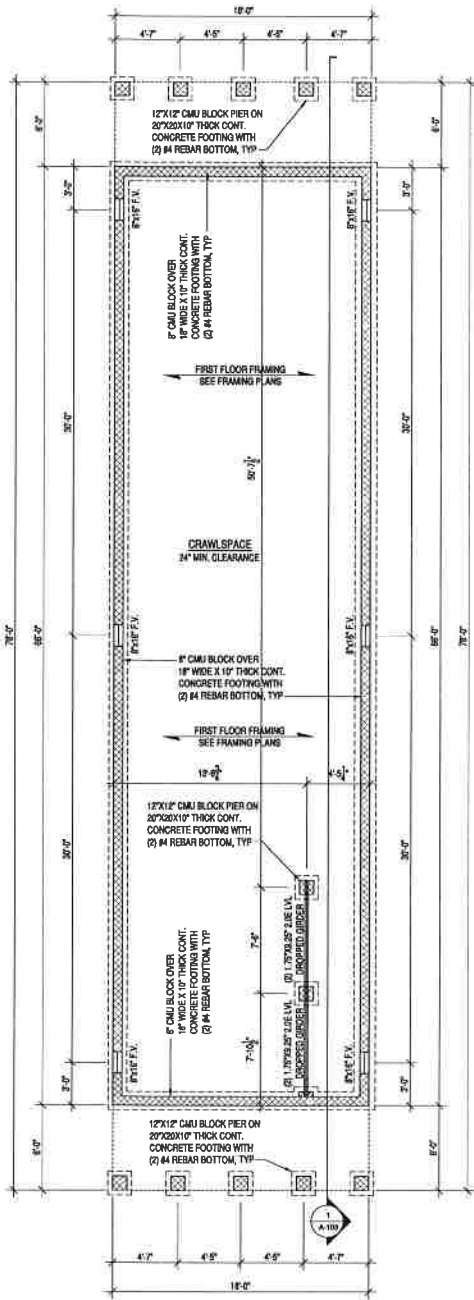
ZONED R-63  
SETBACKS:  
REQUIRED FRONT YARD: 15'      DESIGNED FRONT YARD: 25'  
REQUIRED SIDE YARD: 3'        DESIGNED SIDE YARDS: 3.5'  
REQUIRED REAR YARD: 5'        DESIGNED REAR YARD: 57'  
DESIGNED HEIGHT: 2 STORIES, 26'2"

**LOT SIZE & COVERAGE:**  
LOT AREAS: 3,765 S.F.  
DESIGNED COVERAGE: 1,188 S.F.  
MAX COVERAGE: 32%  
DESIGNED COVERAGE RATIO: 47%

SHEET INDEX	
PAGE NUMBER	DESCRIPTION
C-001	COVER SHEET
A-101	FOUNDATION AND FIRST FLOOR PLAN
A-102	SECOND FLOOR AND ROOF PLAN
A-103	BUILDING SECTION
A-104	SCHEDULES AND FIRE WALL INFORMATION
A-201	FRONT AND LEFT ELEVATIONS
A-202	REAR AND RIGHT ELEVATIONS
S-001	GENERAL NOTES
S-101	FIRST AND SECOND FLOOR FRAMING PLAN
S-102	ROOF FRAMING PLAN
S-103	FIRST AND SECOND FLOOR BRACED WALL PLAN
S-104	SECTIONS AND DETAILS AND BRACED WALL CALCULATIONS
S-105	TYPICAL SECTIONS AND DETAILS

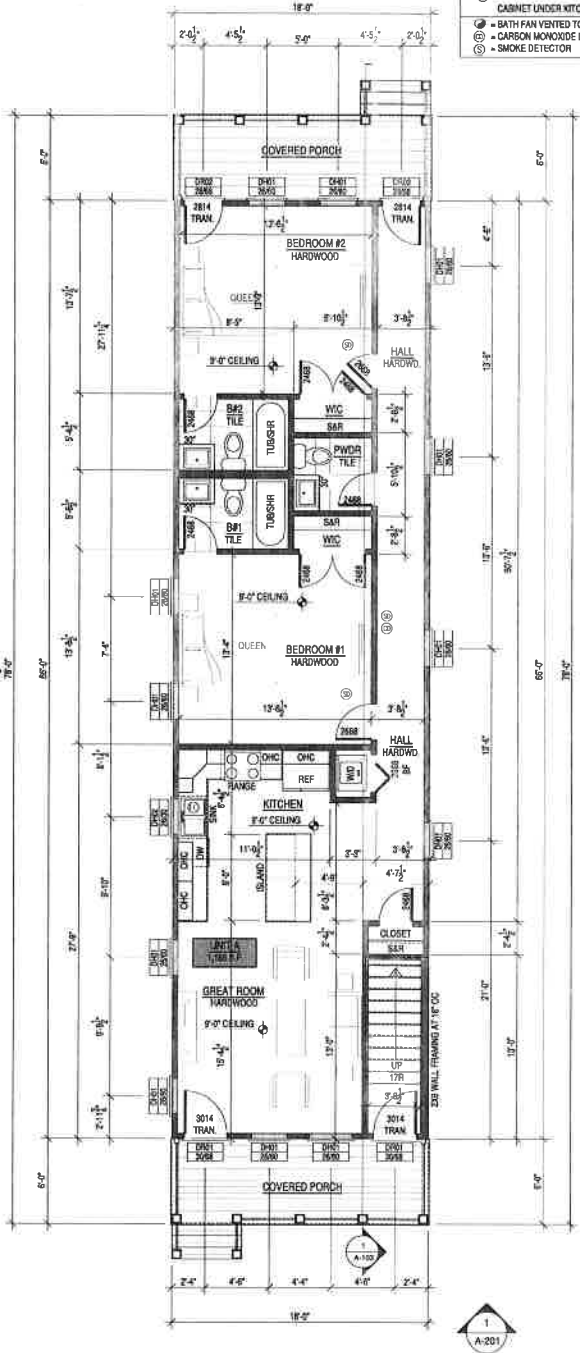


VICINITY MAP



**FOUNDATION PLAN**

- FOUNDATION NOTES:**
1. SEE SOIL REPORT FOR FOOTING SIZE AND REINFORCEMENT.
  2. DRAWLSPACE ACCESS DOOR TO BE FIELD LOCATED. HEADER FOR DRAWL DOOR TO BE (2) LVL FLUSH IN FLOOR SYSTEM WITH TOP MOUNT JOIST HANGERS.
  3. DRAWLSPACE INTERIOR GROUND SURFACE TO BE COVERED WITH 8 MIL POLY VAPOR BARRIER.



**FIRST FLOOR PLAN**

- PLAN AND FRAMING NOTES:**
1. ALL WALL FRAMING TO BE 2X4S AT 16" OC UNLESS OTHERWISE NOTED.
  2. ALL INTERIOR AND EXTERIOR WALLS TO BE 4-12" THICK (PARTIES) UNLESS OTHERWISE NOTED.
  3. ALL WINDOW AND DOOR HEADERS TO BE (2) 2X6S WITH (1) JACK STUDS UNLESS OTHERWISE NOTED.
  4. INTERIOR DOORS IN CLOSE PROXIMITY TO A PERPENDICULAR WALL ON THE HINGE SIDE TO MAINTAIN 4" CLEAR FROM JAMB TO ADJACENT PERPENDICULAR WALL SURFACE. COORDINATE THIS DIMENSION WITH DOOR SURROUND TRIM.
  5. CLOSET DOORS (SINGLE AND DOUBLE TYPE) ARE TO BE CENTERED WITHIN THE CLOSET THEY SERVE.
  6. DOOR SIZES PROVIDED AND WINDOWS DIMENSIONED ARE NOMINAL. COORDINATE ROUGH FRAMING OPENING SIZES WITH WINDOW AND DOOR MANUFACTURER/INSTALLERS REQUIREMENTS AND CLEARANCES.
  7. PROVIDE WOOD BLOCKING IN EXA FRAMING AT ALL BUILT-IN CABINERY LOCATIONS. REQUIRED GRAB BAR LOCATIONS, CLOSET SHELVING, AND WALL MOUNTED TV LOCATIONS.
  8. CLOSETS AND OTHER SURFACES NOT CALLED OUT OTHERWISE ABOVE FLOOR, WALL, AND CEILING MATERIALS AND FINISHES TO MATCH THE SPACE THEY ARE ACCESSED FROM. REFER TO PLANS FOR ANY INTERRUPTION OF FLOORING BETWEEN THESE SPACES.

- FIRE-RATED STAIR WELL WALLS**  
STAIR WELL FIRE WALLS TO BE 1 HOUR FIRE-RATED ASSEMBLY U304. SEE SHEET A-104
- FIRE-RATED FLOOR/CEILING**  
CEILING TO BE WEYERHAEUSER 1 HOUR FIRE RATED CEILING ASSEMBLY E. SEE SHEET A-104
- STAR RISERS NOT TO EXCEED 8 1/4" PER CODE  
TREADS TO BE 9" MIN. WITH 1" NOBING
- HANDRAILS & PICKETS:  
36" HIGH HANDRAILS @ ALL STAIRS, 36" RAILING @ ALL BALCONIES PICKETS SPACED TO NOT ALLOW A 4" SPHERE TO PASS THROUGH  
LABEL DRYER VENT LENGTH ON DUCT  
ALL DRYWALL TO BE 1/2"
- (E) = FIRE EXTINGUISHER TO BE LOCATED IN CABINET UNDER KITCHEN SINK  
(B) = BATH FAN VENTED TO EXTERIOR  
(C) = CARBON MONOXIDE DETECTOR  
(S) = SMOKE DETECTOR

<p>524 N 21ST STREET DEVELOPMENT</p> <p>CITY OF RICHMOND, VIRGINIA</p> <p>FOUNDATION AND FIRST FLOOR PLAN</p>	<p>DATE: 11-15-19</p> <p>PROJECT: 524 N 21ST STREET DEVELOPMENT</p> <p>CLIENT: CITY OF RICHMOND, VIRGINIA</p> <p>SCALE: AS SHOWN</p>	<p>PLAN REVISIONS</p> <table border="1"> <tr> <td>PLAN REVISION</td> <td>11-15-19</td> </tr> <tr> <td>ELEVATIONS CORRECT</td> <td>9-2-19</td> </tr> <tr> <td>FINAL PLANS</td> <td>7-20-19</td> </tr> <tr> <td>CLIENT REVIEW</td> <td>7-13-19</td> </tr> <tr> <td>CLIENT REVIEW</td> <td>11-3-18</td> </tr> </table>	PLAN REVISION	11-15-19	ELEVATIONS CORRECT	9-2-19	FINAL PLANS	7-20-19	CLIENT REVIEW	7-13-19	CLIENT REVIEW	11-3-18
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TREADS TO BE 9" MIN. WITH 1" NOSING.

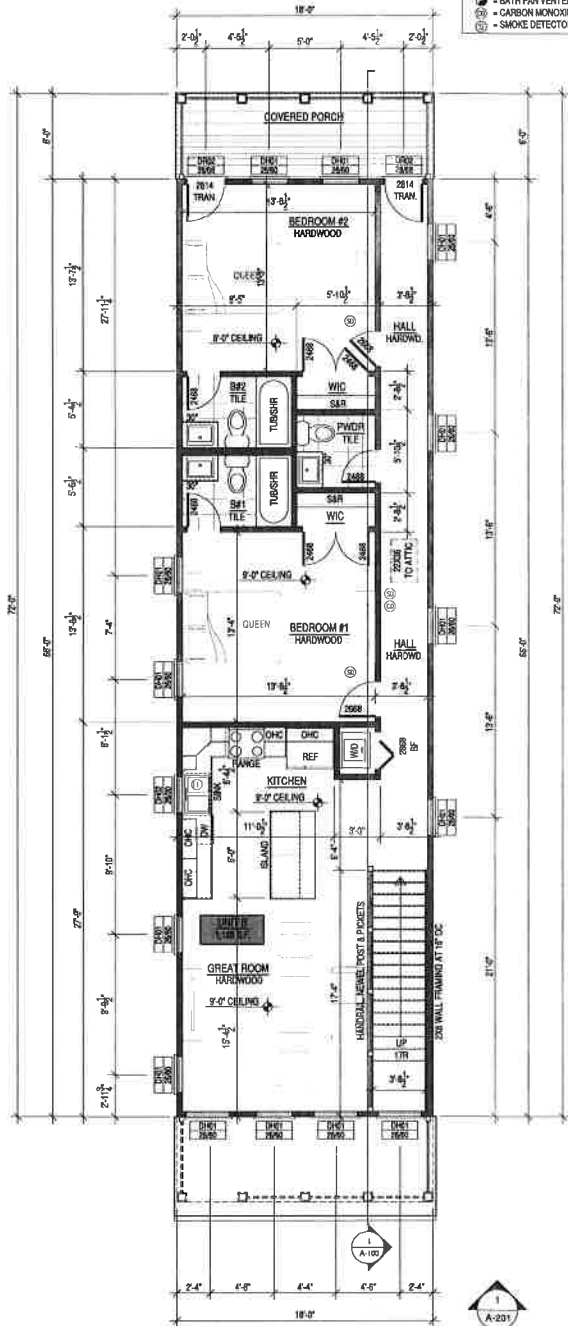
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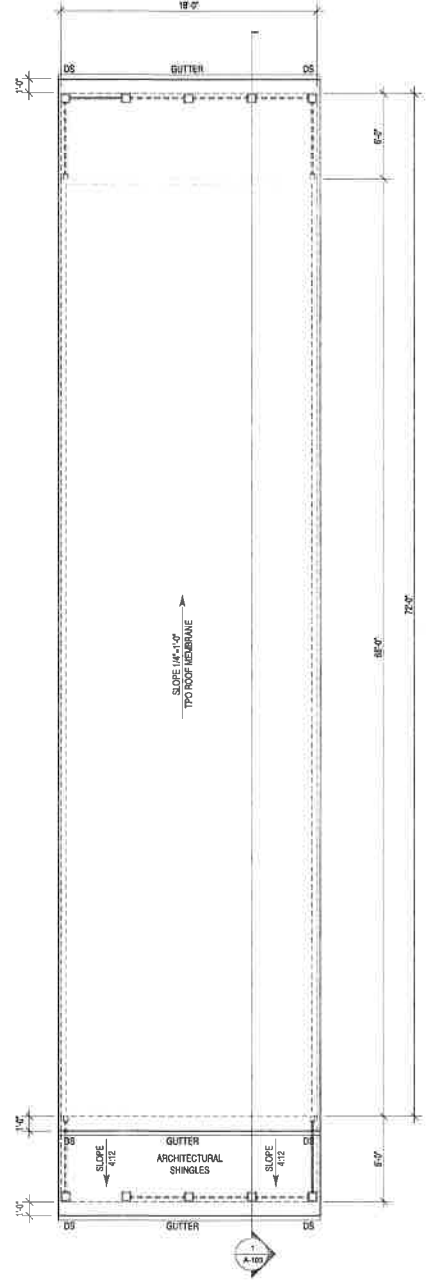
④ = SMOKE DETECTOR



**SECOND FLOOR PLAN**

**PLAN AND FRAMING NOTES:**

1. ALL WALL FRAMING TO BE 2X4S AT 16" OC UNLESS OTHERWISE NOTED.
2. ALL INTERIOR AND EXTERIOR WALLS SHOWN ARE 4-1/2" THICK (FINISHED) UNLESS OTHERWISE NOTED.
3. ALL WINDOW AND DOOR HEADERS TO BE (2) 2X6S WITH (1) JACK STUD (UNLESS OTHERWISE NOTED).
4. INTERIOR DOORS IN CLOSE PROXIMITY TO A PERPENDICULAR WALL ON THE HINGE SIDE TO MAINTAIN 4" CLEAR FROM JAMB TO ADJACENT PERPENDICULAR WALL SURFACE. COORDINATE THIS DIMENSION WITH DOOR SURROUND TRIM.
5. CLOSET DOORS (SINGLE AND DOUBLE TYPE) ARE TO BE CENTERED WITHIN THE CLOSET THEY SERVE.
6. DOOR SIZES PROVIDED AND WINDOWS DIMENSIONS ARE NOMINAL. COORDINATE ROUGH FRAMING OPENING SIZES WITH WINDOW AND DOOR MANUFACTURER/INSTALLERS REQUIREMENTS AND CLEARANCES.
7. PROVIDE WOOD BLOCKING BY 2X4 FRAMING AT ALL BUILT-IN CABINETRY LOCATIONS, REQUIRED GRAB BAR LOCATIONS, CLOSET SHELVING, AND WALL MOUNTED TV LOCATIONS.
8. CLOSETS AND OTHER SURFACES NOT CALLED OUT OTHERWISE ANY FLOOR, WALL, AND CEILING MATERIALS AND FINISHES TO MATCH THE SPACE THEY ARE ACCESSED FROM. REFER TO PLANS FOR ANY INTERRUPTION OF FLOORING BETWEEN THESE SPACES.



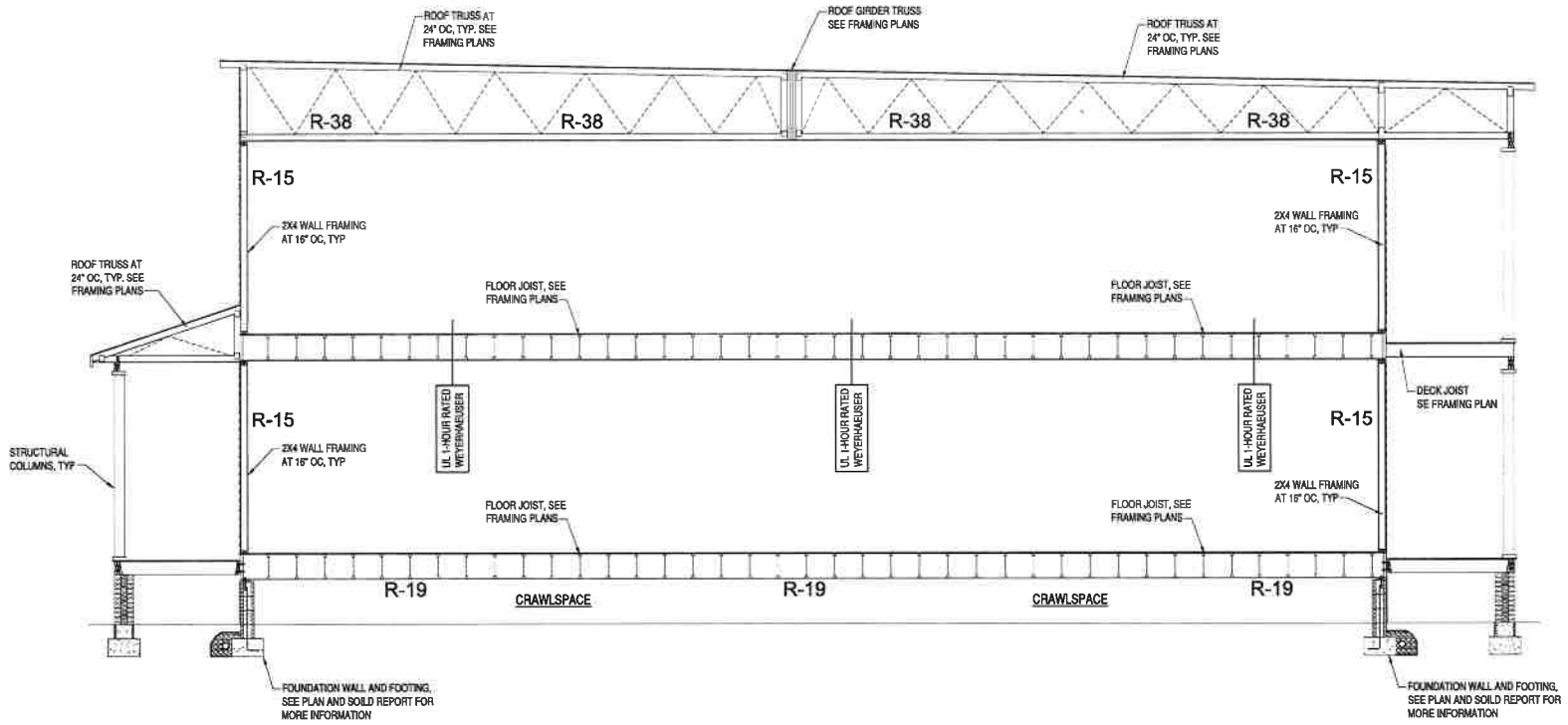
**ROOF PLAN**

**PLAN NOTES**

1. 12" OVERHANGS AND NO GABLE END EXTENSIONS, TYP.
2. ALL ROOF FRAMING TO BE PRE-ENGINEERED ROOF TRUSSES AT 24" OC UNLESS OTHERWISE NOTED.
3. MAIN HOUSE ROOFING TO BE 60 MIL. TPO ROOFING MEMBRANE, TYP.

<p>524 N 21ST STREET DEVELOPMENT</p> <p>CITY OF RICHMOND, VIRGINIA</p> <p>SECOND FLOOR PLAN AND ROOF LINE</p>	<p><b>PREPARED BY:</b> MATT JARREAU</p> <p><b>DATE:</b> 7-20-19</p>	<p><b>REVISIONS:</b></p> <table border="1"> <tr> <td>1</td> <td>PLAN REVISIONS</td> <td>11-15-19</td> </tr> <tr> <td>2</td> <td>ELEVATIONS CORRECT</td> <td>9-2-19</td> </tr> <tr> <td>3</td> <td>FINAL PLANS</td> <td>7-20-19</td> </tr> <tr> <td>4</td> <td>CLIENT REVIEW</td> <td>7-13-19</td> </tr> <tr> <td>5</td> <td>CLIENT REVIEW</td> <td>11-3-18</td> </tr> </table>	1	PLAN REVISIONS	11-15-19	2	ELEVATIONS CORRECT	9-2-19	3	FINAL PLANS	7-20-19	4	CLIENT REVIEW	7-13-19	5	CLIENT REVIEW	11-3-18
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R VALUE	INSULATION LOCATION
R-15	EXTERIOR WALLS
R-19	FLOORS
R-30	CANTILEVERS & OVERHANGS
R-19	FLOOR ABOVE GARAGE
R-38	ALL CEILINGS



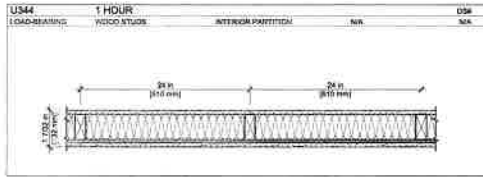
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11-3-18	CLIENT REVIEW

**PENNGO**  
4520 BENTWOOD SQUARE  
ASHLEIGH, VA 20148  
(703) 975-0822 PENNGO

**HOMETOWN REALTY**  
A FRANCHISE COMPANY  
**MATT JARREAU**  
(804) 762-6022 PHONE

524 N 21ST STREET DEVELOPMENT  
CITY OF RICHMOND, VIRGINIA  
BUILDING SECTION

A-103



**EXTERIOR PARTITIONS: WOOD STUD (LOAD-BEARING)**

FIRE RATING: 1 HOUR  
 STC: N/A  
 SOUND TEST: N/A  
 SYSTEM THICKNESS: 5-7/8"

**ASSEMBLY**  
 GYPSUM BOARD: 5/8 IN. THICK GYPSUM BOARD APPLIED HORIZONTALLY OR VERTICALLY.  
 WOOD STUDS: 2 IN. X 4 IN. WOOD STUDS SPACED MAX. 24 IN. O.C.  
 INSULATION: MIN. 3-1/2 IN. THICK FIBERGLASS FRICION FIT.  
 PLYWOOD SHEATHING: MIN. 1/2 IN. THICK PLYWOOD APPLIED VERTICALLY, WITH VERTICAL JOINTS CENTERED ON STUDS. SHEATHING ATTACHED TO STUDS WITH 4D CEMENT COATED STEEL NAILS SPACED 12 IN. O.C. ALONG INTERIOR STUDS AND 6 IN. O.C. AT PERIMETER.  
 GYPSUM BOARD: 5/8 IN. THICK GYPSUM BOARD APPLIED HORIZONTALLY OR VERTICALLY.

MARK	DESCRIPTION	WIDTH	HEIGHT	OPERATION	HARDWARE	NOTES
DR01	FRONT ENTRY	3'-0"	6'-8"	SEE PLAN	BT	STEEL, TEMPERED WITH 1/4" TRANSOM
DR02	REAR ENTRY	3'-0"	6'-8"	SEE PLAN	BT	STEEL, TEMPERED WITH 1/4" TRANSOM

**DOOR NOTES:**

- GENERAL CONTRACTOR SHALL VERIFY ALL DOOR SCHEDULE INFORMATION PRIOR TO ORDERING DOORS AND FRAMES.
- ALL EXTERIOR DOORS SHALL BE PROVIDED WITH WEATHERSTRIPPING AND THRESHOLD.
- ALL SWING DOORS SHALL BE PROVIDED WITH HINGE-OR WALL-MOUNTED DOOR STOPS.
- ALL GLASS IN DOORS AND TRANSOMS SHALL BE TEMPERED.

**DOOR HARDWARE SETS:**

- (B) HINGES, ENTRY HANDLE LOCK SET, DEAD BOLT.

MARK	DESCRIPTION	WIDTH	HEIGHT	HEADER HEIGHT	NOTES
WH01	DOUBLE HUNG	3'-0"	6'-0"	SEE PLAN	WOOD WINDOWS
WH02	DOUBLE HUNG	3'-0"	6'-0"	SEE PLAN	WOOD WINDOWS

**WINDOW NOTES:**

- GENERAL CONTRACTOR SHALL VERIFY ALL WINDOW SCHEDULE INFORMATION PRIOR TO ORDERING WINDOWS AND FRAMES.
- ALL WINDOWS NOMINAL. GENERAL CONTRACTOR TO VERIFY ACTUAL SIZES AND FRAMING REQUIREMENTS WITH WINDOW MANUFACTURER.
- SECOND FLOOR WINDOWS REQUIRED FOR EMERGENCY EGRESS SHALL MEET THE REQUIREMENTS OF IRC R310.1, GENERALLY 20" MIN. CLEAR WIDTH, 36" MIN. CLEAR HEIGHT, AND 5.7 SQUARE FEET NET CLEAR OPENING.
- NO WINDOW GLAZING SHALL BE WITHIN 18" OF FINISH FLOOR.
- SAFETY GLAZING SHALL BE TEMPERED.

*All windows will be wood - no exceptions.  
 - wood windows throughout the home.*

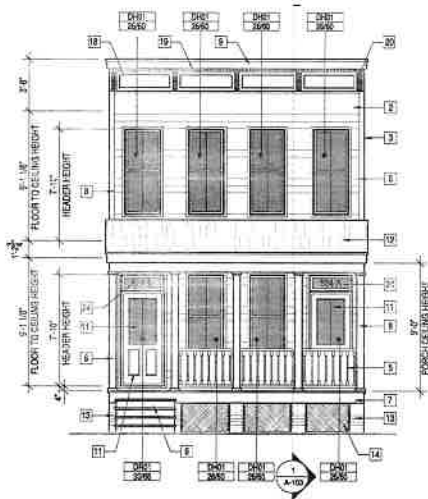
11-15-19	PLAN REVISED	177	1/8" x 11" x 11"
9-2-19	ELEVATIONS CORRECT		
7-13-19	FINAL PLANS		
7-13-19	CLIENT REVIEW		
11-3-18	CLIENT REVIEW		

**PENING CO**  
 4208 SHERWOOD SQUARE  
 ALEXANDRIA, VA 22304  
 (703) 474-8800 PHONE

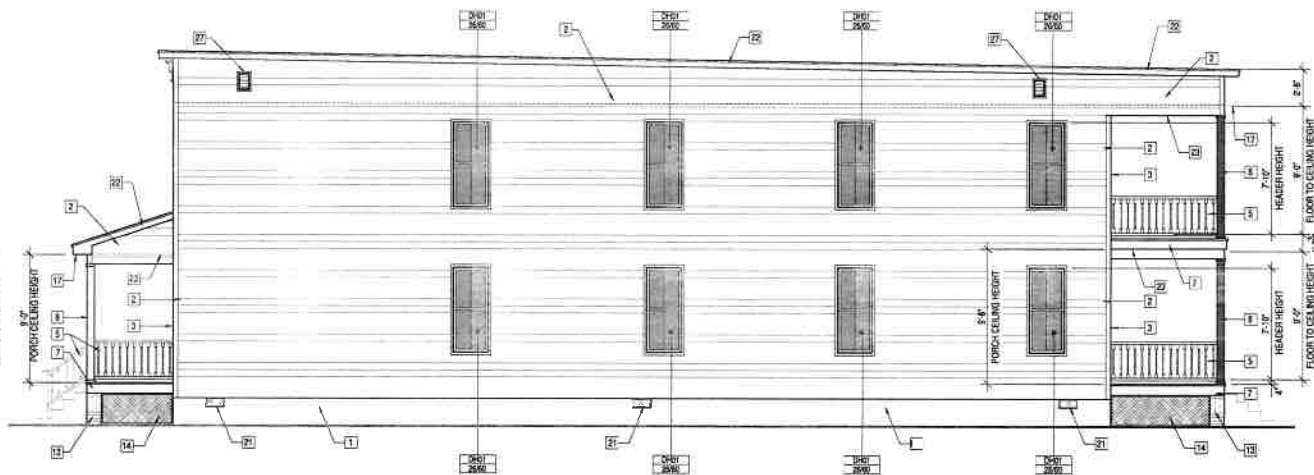
**HOMETOWN REALTY**  
 REAL ESTATE BROKER  
**MATT JARREAU**  
 (804) 752-4002 PHONE

524 N 21ST STREET DEVELOPMENT  
 CITY OF RICHMOND, VIRGINIA  
 SCHEDULES AND FIRE WALL INFORMATION

A-104



1  
A-201  
**FRONT ELEVATION**



2  
A-201  
**RIGHT ELEVATION**

**BLDG ELEVATION MATERIAL KEYNOTES**

- |  |  |   |                                       |                               |
|--|--|---|---------------------------------------|-------------------------------|
| 1 PARSED CONCRETE TO GRADE, TYP.                               | 6 WOOD FRAMED PORCH, PAINTED.                                    | 11 STEEL DOOR WITH TRANSOM AND PAINTED MOLDING SURROUND | 16 EPMD ROOFING AT PORCH ROOF         | 22 1X8 PAINTED PINE BOARD     |
| 2 1" EXPOSURE FIBER CEMENT HORIZONTAL LAP SIDING, PAINT FINISH | 7 TAG WOOD DECKING W/ PAINTED BUILT-UP TRIM AT PORCH BAND BOARD. | 12 ARCHITECTURAL SHINGLES, TYP                          | 17 BEADED VINYL SOFFIT, TYP           | 23 PVC BEADED PORCH PANELING  |
| 3 FIBER CEMENT SIDING TRIM AT CORNERS                          | 8 6X6 DECORATIVE WOOD PAINTED COLUMN                             | 13 BRICK PIERS, TYP                                     | 18 PVC PICTURE FRAME MOLDING, TYP     | 24 GLASS GILDED HOUSE NUMBERS |
| 4 PVC BRACKET BKT12X120P                                       | 9 1X8 PAINTED WOOD TRIM FASCIA                                   | 14 WOOD LATTICE BELOW DECK                              | 19 PVC DENTIL MOLDING PYPON MLD084-12 | 25 ARCHITECTURAL SHINGLES     |
| 5 WOOD "RICHMOND SAL" ISOLING, PAINT FINISH                    | 10 TWO PANEL WOOD DOOR WITH TRANSOM & MOULD SURROUND             | 15 DECORATIVE PYPON WINDOW HEADER                       | 20 PVC BRACKET PYPON BKT7X18          | 26 12"X32" FOUNDATION VENT    |
|  |  |   | 21 VENTS, SEE FOUNDATION PLAN         | 27 18"X24" GABLE VENT, TYP    |

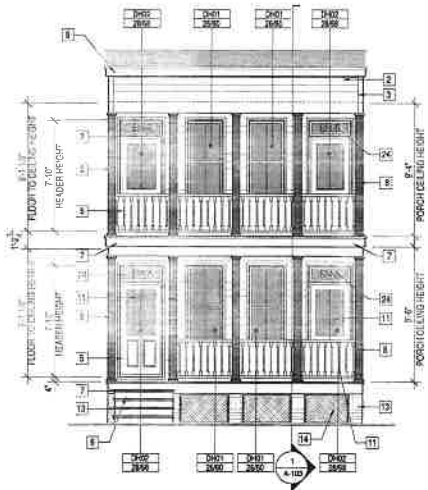
11-15-19	PLAN REVISED
9-2-19	ELEVATIONS CORRECT
7-31-18	FENCE LAINS
7-31-18	FENCE REVIEW
11-3-18	CLIENT REVIEW

**PENNING CO**  
4228 BIRNFIELD SQUARE  
ASHLEIGH, VA 23014  
PH: 757-481-7600

**HOMETOWN REALTY**  
**MATT JARREAU**  
604-782-0022

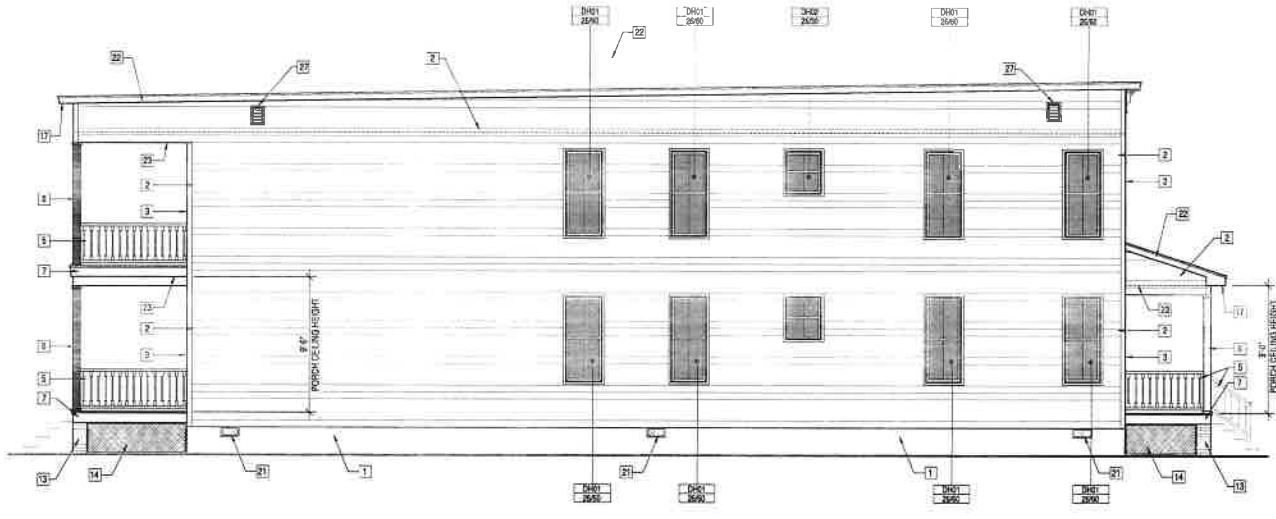
524 N 21ST STREET DEVELOPMENT  
CITY OF RICHMOND, VIRGINIA  
FRONT AND LEFT ELEVATIONS

A-201



**REAR ELEVATION**

A-202



**LEFT ELEVATION**

A-202

**BUILDING ELEVATION MATERIAL KEYNOTES**

- |   |  |  |  |                               |
|---|--|--|--|-------------------------------|
| 1 PARGED CONCRETE TO GRADE, TYP.                                  | 5 WOOD FRAMED PORCH, PAINTED.                                    | 11 STEEL DOOR WITH TRANSOM AND PAINTED MOULDING SURROUND | 16 EPDM ROOFING AT PORCH ROOF          | 22 1X8 PAINTED RAKE BOARD     |
| 2 1/2" EXPOSURE FILLER CEMENT HORIZONTAL LAP SIDING, PAINT FINISH | 7 1x6 WOOD DECKING W/ PAINTED BUILT-UP TRIM AT PORCH BAND BOARD. | 12 ARCHITECTURAL SHINGLES, TYP                           | 17 BEADED VINYL SOFFIT, TYP            | 23 PVC BEADED PORCH PANELING  |
| 3 FIBER CEMENT SIDING TRIM AT CORNERS                             | 8 4X6 DECORATIVE WOOD PAINTED COLUMN                             | 13 BRICK PIERS, TYP                                      | 18 PVC PICTURE FRAME MOULDING, TYP     | 24 GLASS GILDED HOUSE NUMBERS |
| 4 PVC BRACKET BKT12X12GP  | 9 1X6 PAINTED WOOD TRIM FASCIA                                   | 14 WOOD LATTICE BELOW DECK                               | 19 PVC DENTIL MOULDING PYPON MLD354-12 | 25 ARCHITECTURAL SHINGLES     |
| 5 WOOD 'RICHMOND RAIL' RAILING, PAINT FINISH                      | 15 TWO PANEL WOOD DOOR WITH TRANSOM & MOULD SURROUND             | 15 DECORATIVE PYPON WINDOW HEADER                        | 20 PVC BRACKET PYPON BKT7X18           | 26 12"X22" FOUNDATION VENT    |
|   |  |  | 21 VENTS, SEE FOUNDATION PLAN          | 27 18"X24" GABLE VENT, TYP    |

11-15-19	PLAN REVISIONS
9-2-19	ELEVATIONS CORRECT
7-20-19	FINAL PLANS
7-11-19	CLIENT REVIEW
11-3-18	CLIENT REVIEW
	DATE
 4208 BENFOLD SQUARE ARLINGTON, VA 22244 (703) 978-8800 FAX	
 <b>MATT JARREAU</b> (804) 782-8700 FAX (804) 782-8700	
524 N 21ST STREET DEVELOPMENT CITY OF RICHMOND, VIRGINIA REAR AND RIGHT ELEVATIONS	
A-202	



GENERAL NOTES

- DESIGN BUILD CODE: 2012 VIRGINIA RESIDENTIAL BUILDING CODE
2. THE CONTRACTOR SHALL COMPLY WITH ALL DIMENSIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS WITH ARCHITECTURAL AND OTHER TRADE DRAWINGS...
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AND SHORING AS REQUIRED TO INSURE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF...

Table with columns: LOAD TYPE, LOAD VALUE, DIMENSION. Includes items like FLOOR, EXTERIOR DECKS, ROOF, SNOW, WIND, and LUMBER/VEENER SPECIFICATIONS.

MASONRY

- 1. ALL MASONRY SHALL CONFORM TO BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (ACI 530/ASCE 5/TMS 602) AND 'SPECIFICATIONS FOR MASONRY STRUCTURES' (ACI 530.1/ASCE 6/TMS 602) FOR THE YEAR REFERENCED IN THE BUILDING CODE NOTE.
2. ALL BRICK AND CONCRETE MASONRY AND CONSTRUCTION SHALL COMPLY WITH THE RECOMMENDATIONS OF BRICK INSTITUTE OF AMERICA (BIA) AND THE NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA) AND MINIMUM REQUIREMENTS ESTABLISHED BY NOTED BUILDING CODES...
3. GROUT TO FILL CORES SHALL BE ASTM C476, COURSE GROUT (38" MAXIMUM AGGREGATE) WITH A MINIMUM COMPRESSIVE STRENGTH OF 2800 PSI IN 28 DAYS...

Table: WIRE JOINT REINFORCING SPLICE LENGTH. Columns: WIRE SIZE, SPLICE LENGTH (30" MIN), SPLICE LENGTH (36" MIN). Includes notes on lap joints and reinforcement placement.

SOIL WORK

- 1. EXERCISE DESIGN DILIGENCE. THE FOLLOWING SUBSURFACE INFORMATION IS ASSUMED FOR DESIGN PURPOSES. THE CONTRACTOR SHALL ENGAGE A QUALIFIED GEOTECHNICAL ENGINEER TO VERIFY THE ADEQUACY OF THE DATA FOR THE PROPOSED CONSTRUCTION.
A. BEARING OF VIRGIN MATERIAL: LEAN CLAY OR BETTER
B. BEARING PRESSURE: 1500 PSF
2. BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE MINIMUM OF 18" BELOW GRADE...

CAST-IN-PLACE CONCRETE

- 1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 301, ACI 308 AND ACI 309, EDITIONS REFERENCED BY BUILDING CODE.
2. REINFORCING STEEL SHALL BE DEFORMED BULLET STEEL, CONFORMING TO ASTM A618 GRADE 60. REINFORCEMENT SPLICES SHALL BE LAPPED SPLICES WITH A MINIMUM LAP OF 42 BAR DIAMETERS UNLESS NOTED OTHERWISE.
3. CONCRETE COMPRESSIVE STRENGTHS AT 28 DAY CURE = 3200 PSI.
4. PORTLAND CEMENT SHALL BE TYPE 1 OR TYPE II. USE TREATED WOOD FOR ALL FLOOR JOIST AND BEAMS, WHICH ARE EXPOSED, OR WITHIN 18" OF THE GROUND, OR IN PERMANENT CONTACT WITH EARTH...
5. PROVIDE PROPERLY TIED BRACINGS, CHAIRS, BOLSTERS, ETC., AS REQUIRED AND NECESSARY TO ASSEMBLE, PLACE AND SUPPORT ALL REINFORCING IN PLACE...

CONCRETE MASONRY

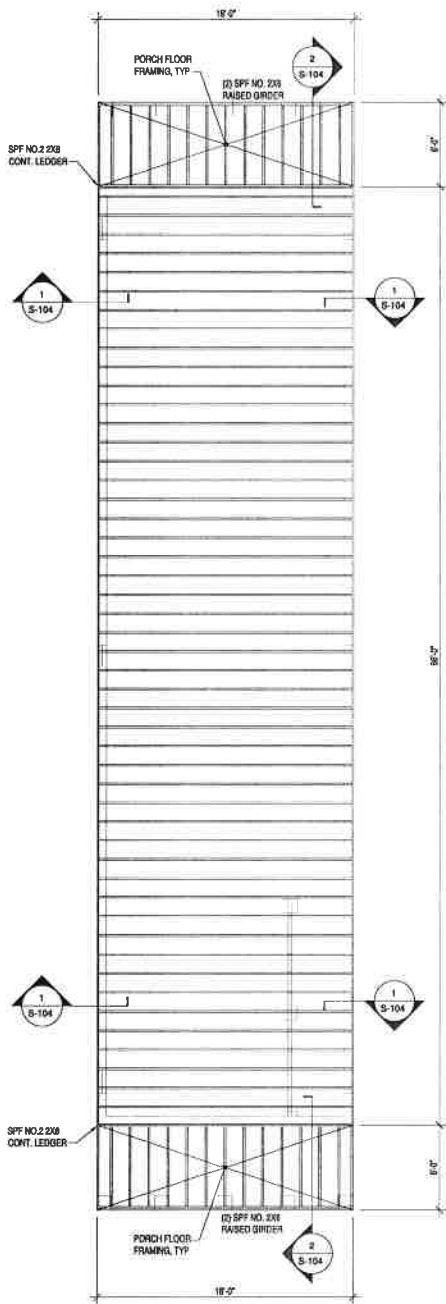
- 1. FLOORING AND CEILING LINTELS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT, TYPE 1, GRADE N WITH TENSILE AND COMPRESSIVE STRENGTH OF 1900 PSI NET AREA COMPRESSIVE MASONRY STRENGTH Fm = 1900 PSI.
2. MORTAR SHALL BE TYPE M BELOW GRADE AND TYPE S AT ALL OTHER LOCATIONS. MORTAR SHALL CONFORM TO ASTM C270 (PROPORTION OR PROPERTY SPECIFICATIONS).
3. FILLED CELLS SHALL BE FILLED WITH COURSE GROUT. COURSE GROUT SHALL CONFORM TO ASTM C476. PROPERTIES SHALL INCLUDE 3200 PSI AT 28 DAY, 50% MAX. AGGREGATE, AND 3" SLUMP. FILLED CELLS MAY ALTERNATIVELY BE FILLED WITH A 3000 PSI PEA GRAVEL MIX CONCRETE...
4. VERTICAL REINFORCING BARS SHALL BE HELD IN POSITION, WITH BAR POSITIONERS, AT THE TOP AND BOTTOM OF BAR AND AT 8" OC MAX WITH A MINIMUM CLEARANCE OF 1/2" FROM MASONRY...
5. PROVIDE AIR 90 DEGREE STANDARD HOOKS INTO FOOTINGS AND ROOF-TIE BEAMS...
6. MINIMUM LAP SPLICES SHALL BE 6 BAR DIAMETERS, WIRE TIE LAP SPLICES...

- 25. LAP SPLICES SHALL BE AS FOLLOWS:
A. BAR SIZE = 40" SPLICE LENGTH
B. BAR SIZE = 54" SPLICE LENGTH
C. BAR SIZE = 68" SPLICE LENGTH
26. POWER ACTUATED REINFORCING PIPES NOT PERMITTED AT MASONRY.
27. ALL REINFORCING HOOKS AND BENDS SHALL BE STANDARD ACI TYPE.
28. ALL WALL DOWELS SHALL MATCH REINFORCING SIZE AND QTY.

Table: PROJECT TIMELINE. Columns: DATE, EVENT. Rows: 11-15-19 (PLAN REVISED), 9-2-19 (ELEVATIONS CORRECT), 7-20-19 (FINAL PLANS), 7-18-19 (CLIENT REVIEW), 11-18-18 (CLIENT REVIEW).



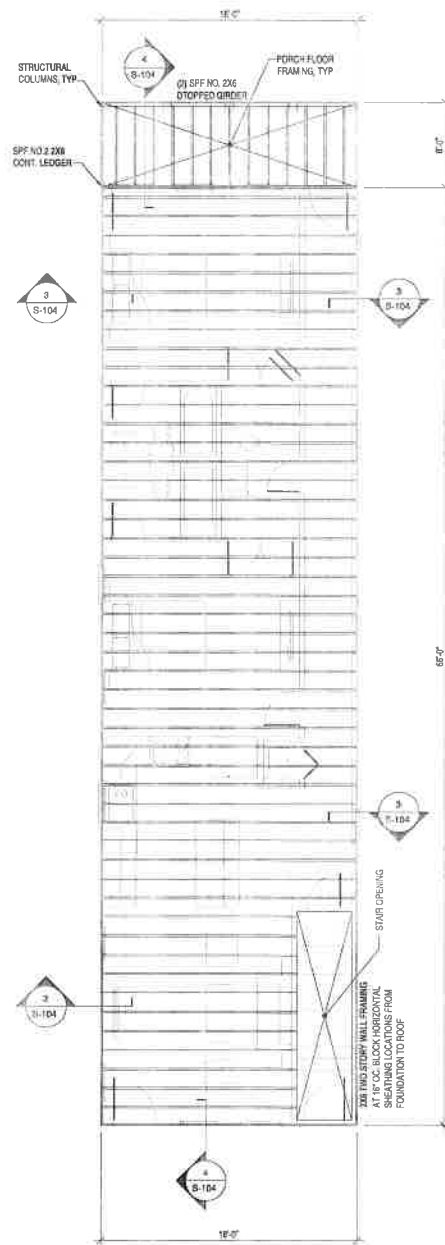
524 N 21ST STREET DEVELOPMENT
CITY OF RICHMOND, VIRGINIA
STRUCTURAL GENERAL NOTES
S-001



**FIRST FLOOR FRAMING PLAN**

**FLOOR FRAMING NOTES:**

1. FLOOR FRAMING SHALL BE 14" T.J. JOIST AT 18" OC UON, 110 SERIES
2. ALL FIM BOARDS TO BE 1-1/8" THICK. SEE MANUFACTURERS FRAMING PLANS
3. ALL PORCH FLOOR JOIST TO BE SPF, NO. 2 2X8 @ 18" OC
4. ALL JOIST HANGERS AT FRONT AND REAR PORCH TO BE SIMPSON LUSA, ATTACH PER SIMPSON SPECIFICATIONS. SEE CALCULATIONS PACKAGE FOR MORE INFORMATION.
5. PROVIDE DOUBLE FLOOR JOIST UNDER ALL INTERIOR PARALLEL WALLS.

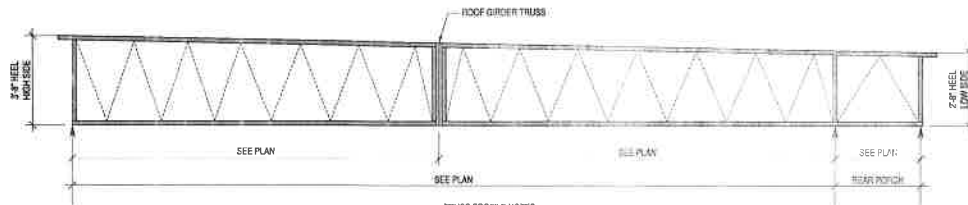


**SECOND FLOOR FRAMING PLAN**

**FLOOR FRAMING NOTES:**

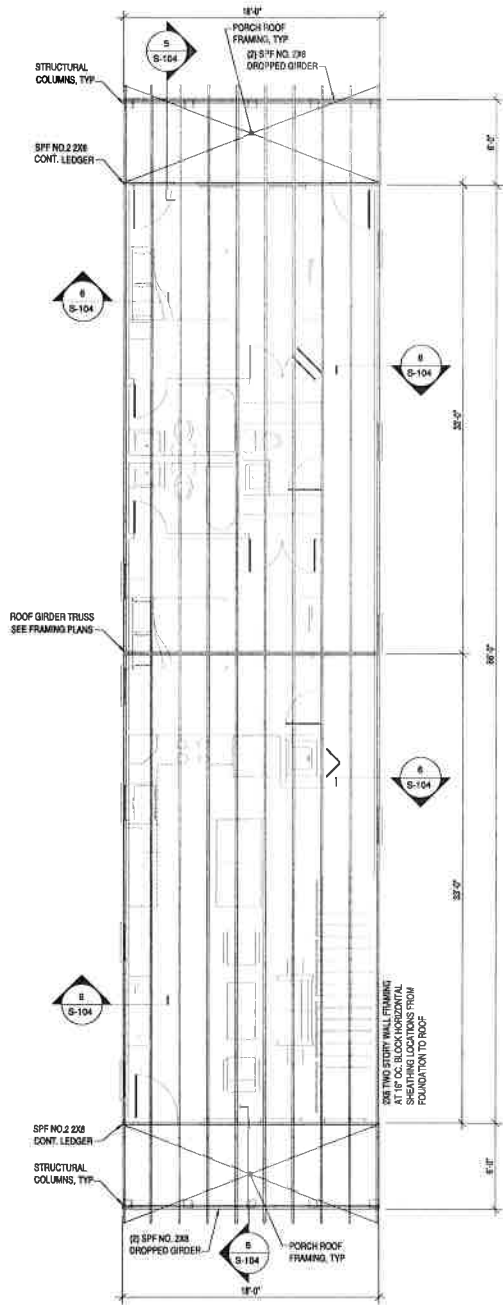
1. FLOOR FRAMING SHALL BE 14" T.J. JOIST AT 18" OC UON, 360 SERIES
2. ALL FIM BOARDS TO BE 1-1/8" THICK. SEE MANUFACTURERS FRAMING PLANS
3. ALL PORCH FLOOR FRAMING TO BE SPF, NO. 2 2X8 @ 18" OC
4. ALL JOIST HANGERS AT FRONT AND REAR PORCH TO BE SIMPSON LUSA, ATTACH PER SIMPSON SPECIFICATIONS. SEE CALCULATIONS PACKAGE FOR MORE INFORMATION.
5. PROVIDE DOUBLE FLOOR JOIST UNDER ALL INTERIOR PARALLEL WALLS.

S-101	524 N 21ST STREET DEVELOPMENT		 	PLAN REVISED	11-15-19
	CITY OF RICHMOND, VIRGINIA			ELEVATIONS CORRECT	9-2-19
	FIRST AND SECOND FLOOR FRAMING PLAN			FINAL PLANS	7-20-18
				CLIENT REVIEW	7-13-18
			CLIENT REVIEW	11-3-18	



**ROOF TRUSS PROFILE**

TRUSS PROFILE NOTES:  
 1. TRUSS WEB CONFIGURATION SHOWN IS REPRESENTATIONAL ONLY. TRUSS MANUFACTURER TO DETERMINE CONFIGURATION.



**ROOF FRAMING PLAN**

ROOF FRAMING NOTES:  
 1. ALL ROOF FRAMING SHALL BE PRE-ENGINEERED TRUSSES AT 24' OC UNLESS OTHERWISE NOTED.  
 2. ALL PORCH ROOF FRAMING TO BE PRE-ENGINEERED MONO TRUSSES AT 24' OC.

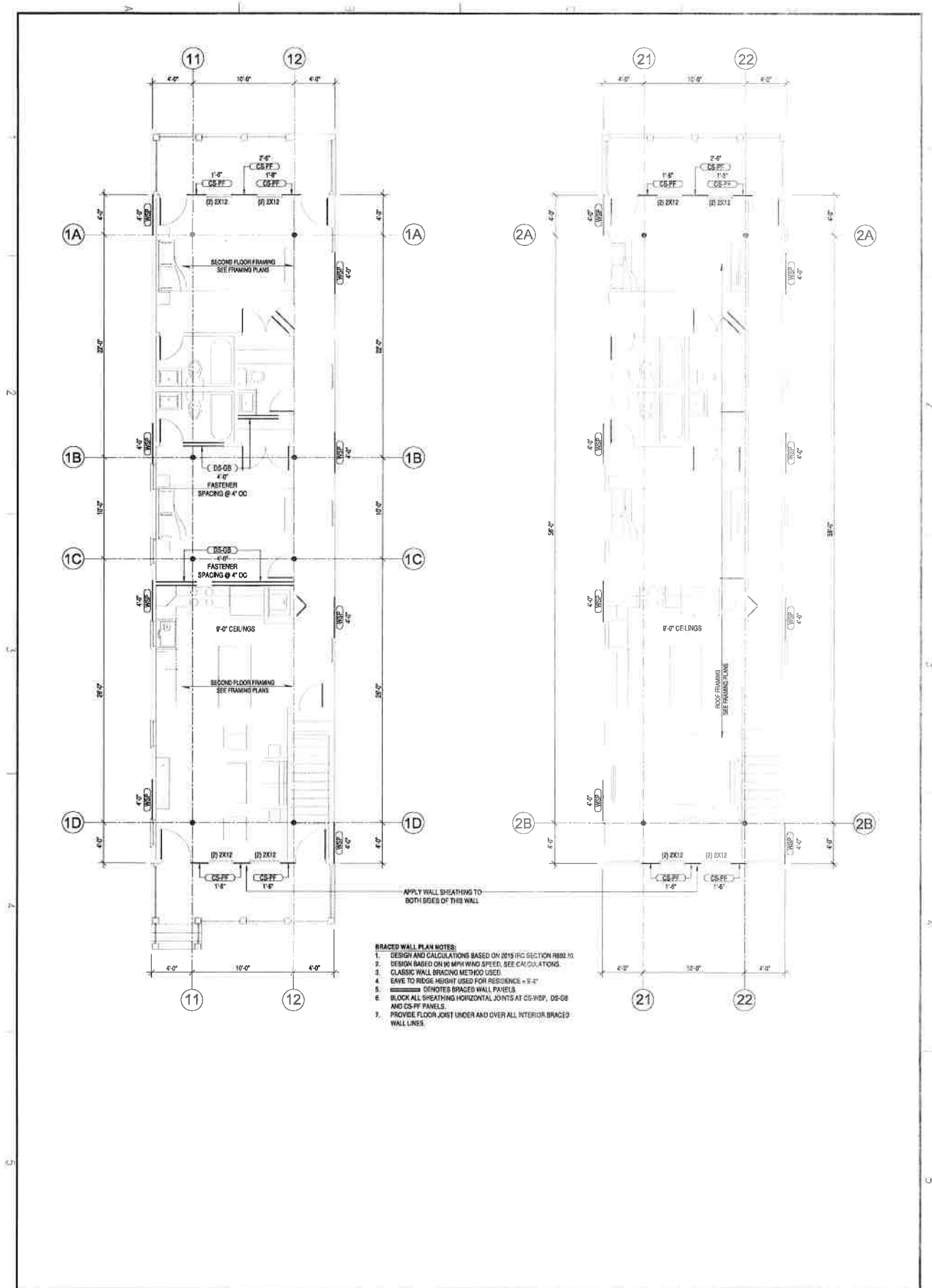
**PRE-ENGINEERED, PRE-FABRICATED WOOD TRUSSES**

1. THE DESIGN, FABRICATION AND INSTALLATION OF ALL PRE-ENGINEERED, PRE-FABRICATED WOOD TRUSSES SHALL CONFORM TO THE LATEST, ADOPTED EDITIONS OF THE STANDARDS AND MATERIAL SPECIFICATIONS REFERENCED HEREIN.
2. REFERENCES STANDARDS:
  - 2.1. NDS "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION" BY THE AMERICAN FOREST & PAPER ASSOCIATION (AF&PA).
  - 2.2. TPIA, "DESIGN STANDARDS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION" BY THE TRUSS PLATE INSTITUTE.
3. MATERIALS:
  - 3.1. THE TERM "TRUSS" USED IN THIS SECTION APPLIES TO TRUSSES THAT ARE DESIGNED AND FABRICATED AS SEPARATE ENGINEERED PRODUCTS, AND DELIVERED TO THE PROJECT SITE FOR INSTALLATION.
  - 3.2. LUMBER SPECIES PER DESIGN BY THE TRUSS MANUFACTURER, NO. 2 GRADE OR BETTER, 15% MAXIMUM M.C., EXCEPT THE TRUSS MANUFACTURER MAY USE STUD-GRADE PCH WEB MEMBERS.
4. DESIGN:
  - 4.1. THE TRUSS MANUFACTURER SHALL DESIGN, DETAIL, PROVIDE AND INSTALL ALL INTERNAL TRUSS COMPONENT CONNECTIONS.
  - 4.2. THE TRUSS MANUFACTURER SHALL DESIGN AND DESIGNATE ALL TRUSS-TO-TRUSS HANGERS, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRUSS-TO-TRUSS HANGERS IN ACCORDANCE WITH THE HANGER MANUFACTURER'S SPECIFICATIONS.
  - 4.3. METAL CONNECTOR PLATES: USE GALVANIZED SHEET STEEL, CONFORMING WITH ASTM A363, COATING CLASS G30, MANUFACTURE WITH HOLES, FLUGS, TEETH, OR PROMOS UNIFORMLY SPACED AND FORMED.
  - 4.4. IN ADDITION TO THE UNIFORM LOADS INDICATED BELOW, DESIGN TRUSSES FOR ALL SUPERIMPOSED DEAD LOADS INCLUDING BUT NOT LIMITED TO OVERLAY FRAMING, CHIMNEYS, KITCHEN/CAL EQUIPMENT, ETC. DESIGN TRUSSES AND REQUIRED BRACING TO RESIST THE NET WIND UPLIFT INDICATED ON THE DRAWINGS.
  - 4.5. DESIGN OF MEMBERS AND CONNECTIONS SHALL BE PERFORMED BY A PROFESSIONAL ENGINEER, REGISTERED IN THE DISTRICT OF COLUMBIA, EXPERIENCED IN SIMILAR DESIGN, RETAINED BY THE MANUFACTURER.
  - 4.6. DESIGN BOTTOM CHORDS OF GIRDER TRUSSES FOR THE END REACTIONS OF SUPPORTED TRUSSES.
  - 4.7. DESIGN ALL TRUSSES FOR ADDITIONAL SERVICE LOADS INDICATED ON PLAN.
5. DESIGN LOADS:
  - 5.1. ROOF:
 

5.1.1. TOP CHORD DEAD LOAD	=	10	PSF
5.1.2. TOP CHORD LIVE LOAD	=	20	PSF
5.1.3. BOTTOM CHORD DEAD LOAD	=	14	PSF
5.1.4. BOTTOM CHORD LIVE LOAD	=	0	PSF
5.1.5. WIND LOADING:			SEE DESIGN LOADS SECTION ON SHEET S-001
5.1.5.1. NET WIND UPLIFT	=	8	PSF
  - 5.2. DEFLECTIONS:
    - 5.2.1. ROOF:
 

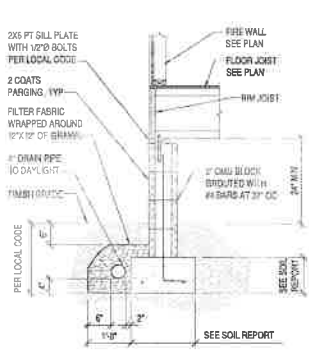
5.2.1.1. MAXIMUM LIVE LOAD DEFLECTION	=	L/960, OR 625" MAXIMUM
5.2.1.2. MAXIMUM TOTAL LOAD DEFLECTION	=	L/240, OR 12" MAXIMUM
6. SUBMITTALS:
  - 6.1. SUBMIT TRUSS SHOP DRAWINGS WHICH EXHIBIT THE SEAL OF THE ENGINEER RESPONSIBLE FOR TRUSS DESIGN.
  - 6.2. SUBMIT LAYOUT DRAWING WHICH INDICATES THE LOCATION OF EACH TRUSS.
  - 6.3. SUBMIT HANGER CONNECTION TYPES AND LOCATIONS.
  - 6.4. INDICATE ALL TEMPORARY AND PERMANENT BRACING REQUIREMENTS OF TRUSS MEMBERS, IN AREAS WHERE TRUSS TOP CHORDS AND/OR BOTTOM CHORDS DO NOT RECEIVE BREATHING. INDICATE THE REQUIRED CHORD BRACING AND BRACE SPACINGS FOR ALL APPLICABLE LOAD CASES. INDICATE ANCHORAGE OF "CAP" TRUSSES AND/OR "OVERLAY" TRUSSES.

S-102	524 N 21ST STREET DEVELOPMENT	 <b>MATT JARREAU</b> <small>(919) 750-9900</small>	 <small>4700 WILSON ROAD SUITE 1000</small> <small>GREENSBORO, NC 27409</small> <small>(336) 733-1100</small>	PLAN REVISION	11-15-19
	CITY OF RICHMOND, VIRGINIA			ELEVATIONS CORRECT	9-2-19
	ROOF FRAMING PLAN			FINAL PLANS	7-20-19
				CLIENT REVIEW	7-13-19
				CLIENT REVIEW	11-3-18

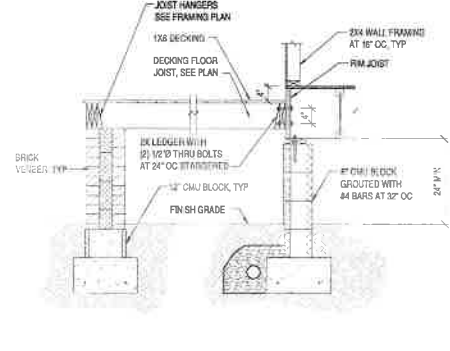


- BRACED WALL PLAN NOTES:**
1. DESIGN AND CALCULATIONS BASED ON 2019 IRC SECTION R602.10.
  2. DESIGN BASED ON 90 MPH WIND SPEED. SEE CALCULATIONS.
  3. CLASSIC WALL BRACING METHOD USED.
  4. EAVE TO RIDGE HEIGHT USED FOR RESIDENCE = 9'-2".
  5. DENOTES BRACED WALL PANELS.
  6. BLOCK ALL SHEATHING HORIZONTAL JOINTS AT CS-WSP, OS-GB AND CS-PF PANELS.
  7. PROVIDE FLOOR JOIST UNDER AND OVER ALL INTERIOR BRACED WALL LINES.

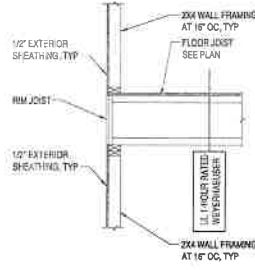
524 N 21ST STREET DEVELOPMENT CITY OF RICHMOND, VIRGINIA <b>FIRST AND SECOND FLOOR BRACED WALL PLAN</b>			PLAN REVISED 11-15-19 ELEVATIONS CORRECT 9-2-19 FINAL PLANS 7-20-19 CLIENT REVIEW 7-13-19 CLIENT REVIEW 11-3-18
	S-103		



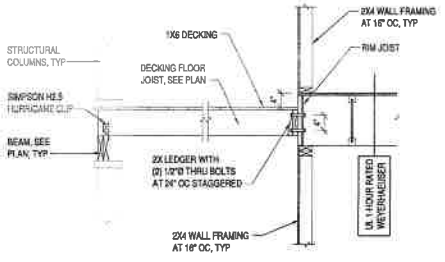
1 SECTION  
S-104 3/4\"/>



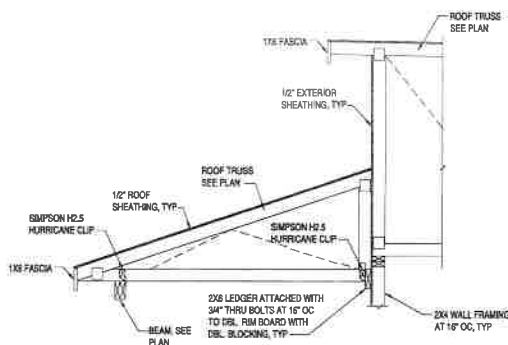
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S-104 3/4\"/>



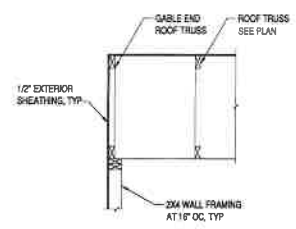
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S-104 3/4\"/>



4 SECTION  
S-104 3/4\"/>

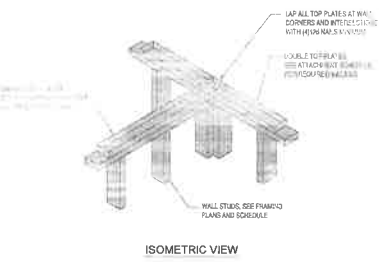


5 SECTION  
S-104 3/4\"/>

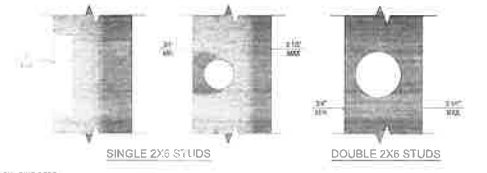


6 SECTION  
S-104 3/4\"/>

11-15-19	PLAN REVISED	11-15-19
9-2-19	ELEVATIONS CORRECT	9-2-19
7-20-19	FINAL PLANS	7-20-19
7-19-19	CLIENT REVIEW	7-19-19
11-3-16	CLIENT REVIEW	11-3-16
PENNS CO		
4200 BENFOLD SQUARE KROGER, VA 22404 (703) 693-4800 PHONE		
HOMETOWN READY The Residential Advantage		
MATT JARREAU (804) 782-8062 PHONE		
524 N 21ST STREET DEVELOPMENT CITY OF RICHMOND, VIRGINIA SECTIONS AND DETAILS		
S-104		

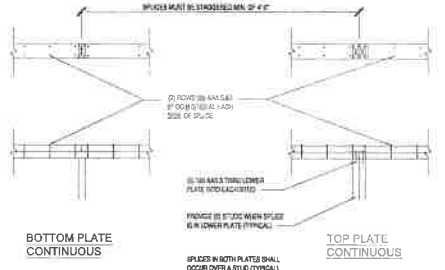


**TYPICAL SHEAR WALL INTERSECTION**  
S-105 1/4"=1'-0"

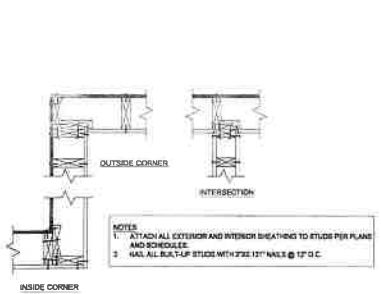


**ALLOWABLE STUD NOTCH & BORING**  
S-106 3/4"=1'-0"

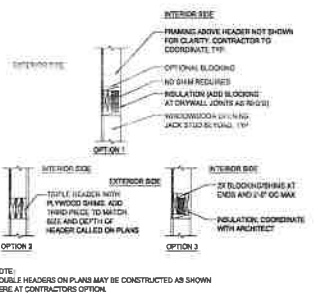
2012 INTERNATIONAL BUILDING CODE  
7203.5.2 CUTTING AND NOTCHING  
FLOOR JOISTS AND PARTITION STUDS  
PARTITION STUDS: A PARTITION STUD IS PERMITTED TO BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25% OF ITS WIDTH, CUTTING OR NOTCHING TO BE MADE AT THE CENTER OF THE STUD OR PARTITION. THE STUD OR PARTITION SHALL BE PERMITTED TO SUPPORT A LOAD OTHER THAN THE WEIGHT OF THE PARTITION.  
2012 INTERNATIONAL BUILDING CODE 603.2.1 BORED HOLES  
BORED HOLES: HOLES IN JOISTS OR TRUSSES SHALL BE PERMITTED TO BE BORED IN ANY WOOD JOIST, BORED HOLES NOT GREATER THAN 80% OF THE WIDTH OF THE JOIST OR TRUSS. HOLES IN TRUSSES OR RAFTERS SHALL BE PERMITTED TO BE BORED IN ANY TRUSS OR RAFTER, PROVIDED NOT MORE THAN TWO SUCCESSIVE DOUBLED STUDS ARE SO BORED.  
• IN NO CASE SHALL THE EDGES OF THE BORED HOLE BE NEARER THAN 8IP TO THE EDGE OF THE STUD.  
• BORED HOLES SHALL NOT BE LOCATED AT THE BASE SECTION OF STUD AS A CLUT OR NOTCH.



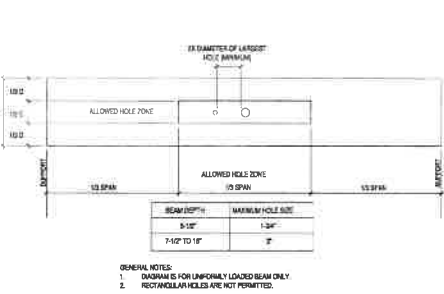
**TYP TOP PLATE SPLICE AT BEARING WALLS**  
S-107 1/4"=1'-0"



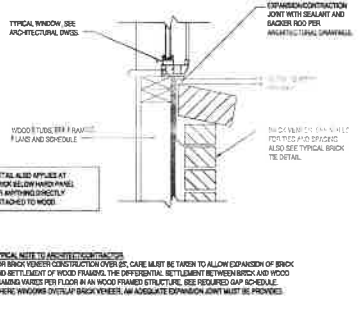
**CORNER AND INTERSECTION FRAMING**  
S-108 1/4"=1'-0"



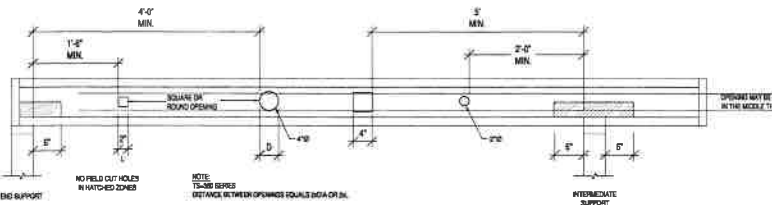
**2-PLY HEADER FOR 2X6 WALLS**  
S-109 1/4"=1'-0"



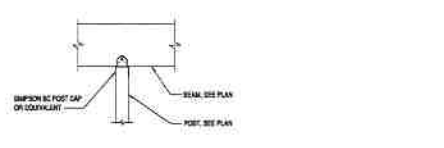
**ALLOW HOLES FOR BEAM/HEADER**  
S-110 1-1/2"=1'-0"



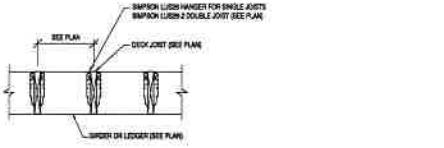
**TYPICAL EXPANSION JOINT AT BRICK VENEER**  
S-111 1-1/2"=1'-0"



**TYPICAL OPENINGS IN JOIST**  
S-112 1/4"=1'-0"



**TYP DECK POST TO BEAM DETAIL**  
S-113 3/4"=1'-0"



**2X6 & 2X8 DECK JOIST DETAIL**  
S-114 3/4"=1'-0"

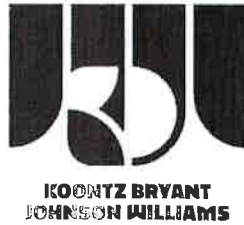
PLAN REVISION	11-16-19
ELEVATIONS CORRECT	9-2-19
FINAL PLANS	7-23-19
CLIENT REVIEW	7-23-19
CLIENT REVIEW	11-3-18

**PENNING CO.**  
4200 BENTLEY SQUARE  
ASHBURN, VA 20148  
(703) 574-9000

**HOMETOWN REALTY**  
**MATT JARREAU**  
(804) 782-8082 PHONE

524 N 21ST STREET DEVELOPMENT  
CITY OF RICHMOND, VIRGINIA  
TYPICAL SECTIONS AND DETAILS

DATE	
PROJECT NO.	
CUSTOMER NO.	
DESCRIPTION	
SHEET	S-105



**SUBSURFACE INVESTIGATION AND  
SHRINK/SWELL SOIL ANALYSIS, AND  
BEARING CAPACITY TESTING**

**PROJECT:** 524 North 21<sup>st</sup> Street  
Richmond, Virginia

**CLIENT:** Hometown Realty  
Attn: Mr. Ernie Chamberlain  
114 North 3<sup>rd</sup> Street  
Richmond, Virginia 23219

**DATE:** September 6, 2019

Project # 2019-965

---

Ladies and Gentlemen,

**Koontz Bryant Johnson Williams Group** is pleased to provide you with the following subsurface investigation and shrink/swell soil analysis. This report has been completed at your request to determine the potential for structural damage due to volume change of the natural soils located on the subject lot. This report meets the requirements of the City of Richmond for residential soil analysis.

Please do not hesitate to contact KBIW if you have any questions regarding the findings presented within this report. KBIW greatly appreciates the opportunity to serve as your geotechnical consultant on this project.

Sincerely,

**Koontz Bryant Johnson Williams Group**

Brent E. Johnson P.E.; P.G.  
Principal Engineer/Geologist



## **SCOPE OF SERVICES**

**KBJW** has completed a subsurface investigation and shrink/swell analysis for the proposed single-family home to be located at **524 North 21st Street, Richmond, Virginia**. The analysis has been completed in accordance with Richmond City guidelines for new single-family dwellings. Soils have been evaluated to determine their potential for volume change and subsequent potential for causing structural damage.

The subsurface exploration included three (3) hand auger borings located approximately at the center of the proposed structure (see Figure 1, Appendix B). A total of two samples were collected and submitted to the KBJW soils laboratory for analysis. Soils have been sampled within a zone of 0-24" below the bottom of the proposed footing. The sample exhibiting the poorest properties has been selected and tested for Atterberg Limits, percent passing a #200 sieve, and unified soil classification in accordance with ASTM standards. The results of this testing have been evaluated in conjunction with the soils parent material and other available geologic information to determine the potential for volume change. This report contains our conclusions, recommendations, and soils laboratory analyses.

## **LOT DESCRIPTION**

The construction of a duplex at **524 North 21st Street, Richmond, Virginia** has been proposed by **Hometown Realty**. The site is currently vacant and was previously occupied by a house that was demolished and removed. The homesite slopes from the right to the left at a 1-2% grade. It appears that shallow uncontrolled fill material has been placed on this lot for grading proposes. All footings should be over excavated to firm and undisturbed soils.



**RESULTS AND CONCLUSIONS**

The following is a generalized profile of the soils encountered within the proposed building envelope. For the exact profile at a specific boring location, please see Appendix A: Hand Auger Boring Logs. Our test borings indicate **Uncontrolled Fill** material with an average depth of thirty inches (0.0'-2.5'), (Fill depth may vary across the lot). The fill is underlain by reddish brown, moist, medium stiff, Sandy Lean CLAY (CL) (2.5'-3.0'); underlain by strong brown, moist, dense, Clayey SAND w/gravel (SC) (3.0'-5.0'). Groundwater was not encountered within test boring. The results of our laboratory testing and the analysis of other available geologic information indicate that the natural soils encountered within the proposed footing zone exhibit **LOW to MODERATE plasticity**. **KBJW concludes that there is a LOW to MODERATE threat of structural damage due to shrink/swell action of these soils.** Furthermore, due to extent of the fill material in place on the site, we recommend that the footing be designed by an engineer to accommodate the onsite soil conditions (See attached detail). All footings shall bear within firm, undisturbed soil.

<b>TABLE A            LABORATORY TEST RESULTS            524 North 21st Street</b>	
SAMPLE	HA-2; 2.5 feet
NATURAL MOISTURE: ASTM D-2216	20.0
LIQUID LIMIT: ASTM D-4318	38.4
PLASTIC LIMIT: ASTM D-4318	20.0
PLASTICITY INDEX: ASTM D-4318	18.4
%PASSING #200 SIEVE: ASTM D-1140	62.0
UNIFIED SOIL CLASSIFICATION	CL

## **SOIL SAMPLING AND LABORATORY TESTING PROCEDURES**

### Description of Soil Sampling

Test borings were advanced using a three inch hand auger to depths of 5.0 feet below the existing surface or to auger refusal. Three (3) borings were completed at the subject lot. The borings were located approximately at the corners of the proposed dwelling. A field log of the soils encountered was prepared by the geotechnical technician onsite. Samples were taken within a zone of 0-24" below the bottom of the proposed footing from each boring. Samples were sealed in moisture tight containers and submitted to the KBJW soils laboratory.

An experienced geotechnical engineer classified each soil sample on the basis of texture and plasticity in accordance with the Unified Soil Classification System, ASTM D-2488. The group symbols for each soil type are indicated in parentheses following the soil descriptions.

### Laboratory Tests

The sample exhibiting the poorest properties has been selected and tested for Atterberg Limits, natural moisture, percent passing a #200 sieve, and unified soil classification in accordance with ASTM standards. A brief description of the methods and procedures used to perform the various laboratory tests are presented below.

### Natural Moisture Content

Moisture content measurement was made to determine the natural in-place soil moisture. The moisture content of the soil is the ratio, expressed as a percentage, of the weight of water in a given mass of soil to the weight of the dry soil particles. The test was performed in general accordance with ASTM D-2216.

### Percent Passing #200 Sieve

The percentage of soil by weight that will pass through a #200 sieve was determined through this test. This method provides the percentage of sand versus silt and clay

particles present within the sample. This test has been completed utilizing the general wash method in accordance with ASTM D-1140.

### Atterberg Limits

In order to determine the plasticity characteristics of the soils and their behavior with changes in moisture content, tests to determine the Plastic Limit (PL) and Liquid Limit (LL) of the soils were performed. The Liquid Limit is the moisture content at which the soil passes from a plastic to a liquid state. The Plastic Limit is the lowest moisture content at which the soil remains plastic. The soil's Plasticity Index ( $PI = LL - PL$ ) indicates the range of water contents in which the soil will behave plastically. These tests were performed in general accordance with ASTM D-4318.

### LIMITATIONS

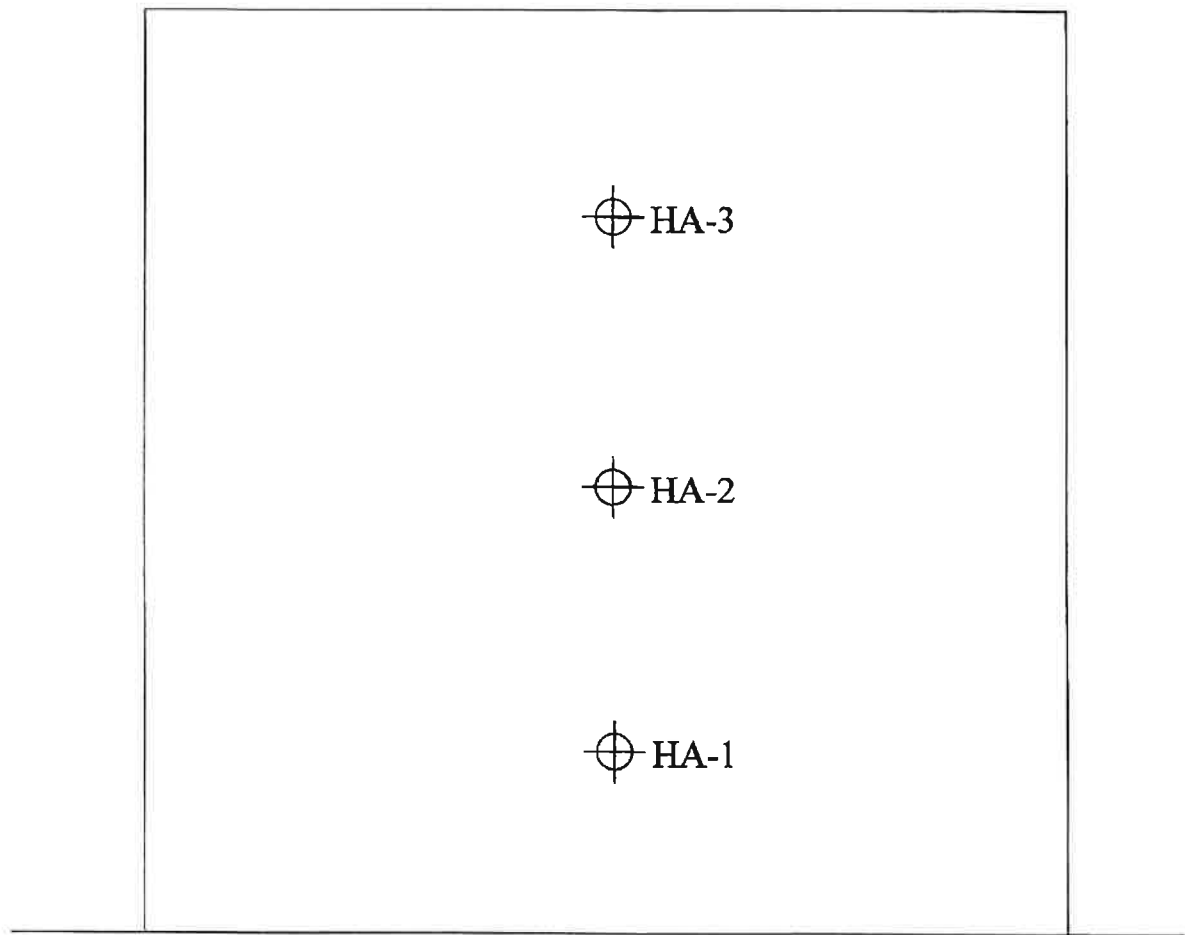
This report has been prepared in accordance with generally accepted soil and geotechnical engineering practices for the exclusive use of the referenced client. Our on-site observations pertain only to the specific locations noted at the time of sampling. Our observations and conclusion do not reflect variations in subsurface conditions that may exist between sampling locations, in unexplored areas of the site, or at times other than those represented by our reported findings. No other warranty, either expressed or implied, is made.

This report is not to be reproduced, either in whole or in part, without written consent from KBJW. KBJW will not assume any liability for errors which results from failure to follow recommendations in this report by any party; direct or indirect.


**APPENDIX A**  
**HAND AUGER BORING LOG**

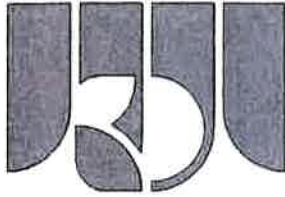
<b>PROJECT</b>	<b>524 North 21st Street</b>
<b>PROJECT#</b>	2019-965
<b>DATE SAMPLED</b>	09/03/19
<b>ENGINEER</b>	Khalid Hsain, MS.

<u>HA-1</u>	<u>Depth(ft)</u>	<u>Soil Description</u>	<u>Additional Remark</u>
	0 – 2.5	<b>Uncontrolled Fill (organics/debris)</b> reddish brown, moist, fine to medium, medium stiff, Sandy Lean CLAY (CL)	
	2.5 – 3.5		
	3.5 – 5.0		strong brown, moist, fine to medium, dense, Clayey SAND w/gravel (SC)
<u>HA-2</u>	<u>Depth(ft)</u>	<u>Soil Description</u>	<u>Additional Remark</u>
	0 – 1.0	<b>Uncontrolled Fill (organics/debris)</b> Auger Refusal at 12"	
<u>HA-3</u>	<u>Depth(ft)</u>	<u>Soil Description</u>	<u>Additional Remark</u>
	0 – 1.0	<b>Uncontrolled Fill (organics/debris)</b> Auger Refusal at 12"	



⊕ HA-1 Hand Auger Location

<b>Boring Location Plan</b> 524 North 21st Street, Richmond	
Date: 9/05/19	 <b>KOONTZ BRYANT JOHNSON WILLIAMS</b>
Scale: NTS	
Project: 2019-965	
11901 Old Stage Road Chester, VA 23836	



**KOONTZ  
BRYANT  
JOHNSON  
WILLIAMS**

11901 Old Stage Road  
Chester, VA 23836

PROJECT: 524 North 21st Street  
Richmond, VA

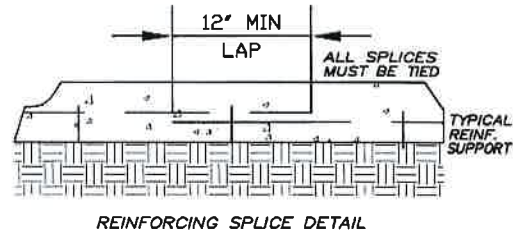
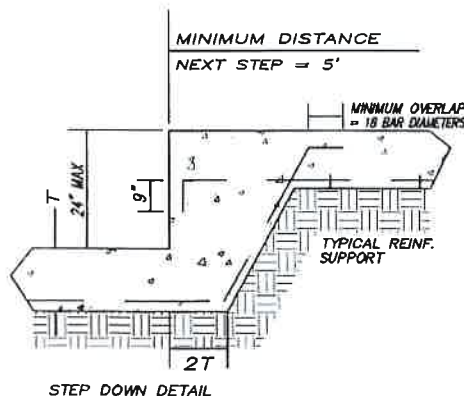
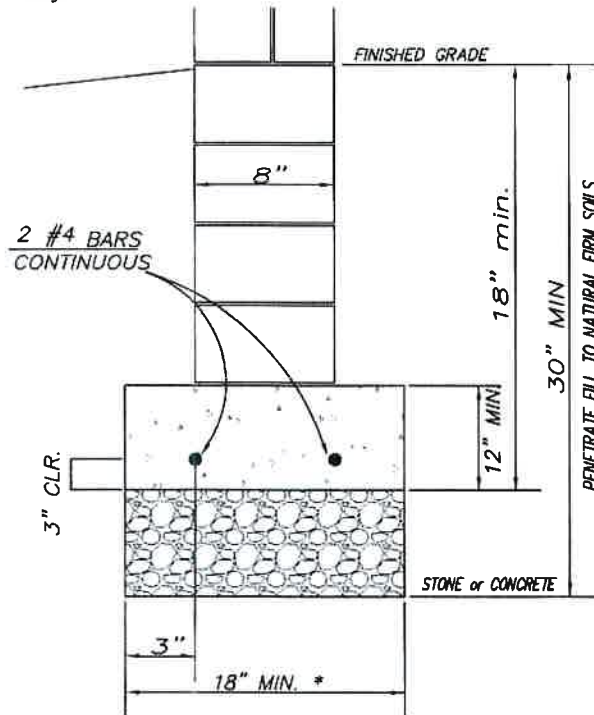
CONT: Hometown Realty

# Footing Design

HOUSE STYLE: TYPICAL DUPLEX

## NOTES

1. All concrete shall be minimum 3000 p.s.i.
2. Only new deformed reinforcing steel shall be used, grade 60 KSI.
3. All reinforcing steel shall be tied and supported with rebar stakes or chairs.
4. All interior pier footings shall be excavated and reinforced as continuous footings.
5. All footings shall bear on undisturbed soil unless fill has been tested, and certified as being capable of supporting the structure planned. Minimum soil bearing pressure shall be 2000 PSF.
6. All steel shall have a minimum overlap of 12 inches.
7. Contractor is responsible for verifying all field dimensions.
8. Footing shall be examined by a registered engineer or certified inspector prior to placement of concrete.
9. Footing design has been based upon proposed construction of a typical two story frame dwelling. If house style differs from this standard, engineer should be contacted prior to construction for any needed modifications to this design.



\* REFER TO APPROVED PLANS FOR FOOTING DIMENSIONS IF GREATER THAN ABOVE STANDARDS.

NOT TO SCALE