INTRODUCED: December 9, 2024

AN ORDINANCE No. 2024-328

To authorize the special use of the property known as 2501 Dana Street for the purpose of up to three single-family detached dwellings, upon certain terms and conditions.

Patron – Mayor Stoney (By Request)

Approved as to form and legality
by the City Attorney

PUBLIC HEARING: JAN 13 2025 AT 6 P.M.

WHEREAS, the owner of the property known as 2501 Dana Street, which is situated in a R-4 Single-Family Residential District, desires to use such property for the purpose of up to three single-family detached dwellings, which use, among other things, is not currently allowed by sections 30-408.4, concerning lot area and width, 30-408.5, concerning yards, and 30-408.8, concerning driveways from streets, of the Code of the City of Richmond (2020), as amended; and

WHEREAS, in accordance with section 17.11 of the Charter of the City of Richmond (2020), as amended, it has been made to appear that, if granted subject to the terms and conditions set forth in this ordinance, the special use granted by this ordinance will not be detrimental to the safety, health, morals and general welfare of the community involved, will not tend to create

AYES: _____ NOES: _____ ABSTAIN: _____

ADOPTED: _____ REJECTED: _____ STRICKEN: _____

congestion in streets, roads, alleys and other public ways and places in the area involved, will not create hazards from fire, panic or other dangers, will not tend to overcrowding of land and cause an undue concentration of population, will not adversely affect or interfere with public or private schools, parks, playgrounds, water supplies, sewage disposal, transportation or other public requirements, conveniences and improvements, and will not interfere with adequate light and air; and

WHEREAS, (i) the City Planning Commission has conducted a public hearing to investigate the circumstances and conditions upon which the Council is empowered to authorize such use, (ii) the City Planning Commission has reported to the Council the results of such public hearing and investigation and its recommendations with respect thereto, and (iii) the Council has conducted a public hearing on this ordinance at which the person in interest and all other persons have had an opportunity to be heard;

NOW, THEREFORE,

THE CITY OF RICHMOND HEREBY ORDAINS:

§ 1. **Finding.** Pursuant to section 30-1050.1 of the Code of the City of Richmond (2020), as amended, the Council hereby finds that the special use set forth in and subject to the terms and conditions of this ordinance will not (i) be detrimental to the safety, health, morals and general welfare of the community involved, (ii) tend to create congestion in streets, roads, alleys and other public ways and places in the area involved, (iii) create hazards from fire, panic or other dangers, (iv) tend to overcrowding of land and cause an undue concentration of population, (v) adversely affect or interfere with public or private schools, parks, playgrounds, water supplies, sewage disposal, transportation or other public requirements, conveniences and improvements, or (vi) interfere with adequate light and air.

§ 2. **Grant of Special Use Permit.**

(a) Subject to the terms and conditions set forth in this ordinance, the property known as 2501 Dana Street and identified as Tax Parcel No. S009-0064/032 in the 2024 records of the City Assessor, being more particularly shown on a survey entitled "2501 Dana Street, Three House Development, Existing Conditions," prepared by Balzer & Associates, dated March 4, 2024, and last revised June 20, 2024, a copy of which is attached to and made a part of this ordinance, hereinafter referred to as "the Property," is hereby permitted to be used for the purpose of up to three single-family detached dwellings, hereinafter referred to as "the Special Use," substantially as shown on the plans entitled "2501 Dana Street, Three House Development," prepared by Balzer & Associates, dated March 4, 2024, and last revised June 20, 2024, and the plans entitled "Richmond Habitat for Humanity," prepared by Tightlines Designs, with sheets A1.1 through A1.10, A2.1 through A2.2, and A3.1 dated February 22, 2023, and sheets A1.1 through A1.7, A2.1 through A2.3, and A3.1 dated April 4, 2023, and hereinafter referred to, collectively, as "the Plans," copies of which are attached to and made a part of this ordinance.

(b) The adoption of this ordinance shall constitute the issuance of a special use permit for the Property. The special use permit shall inure to the benefit of the owner or owners of the fee simple title to the Property as of the date on which this ordinance is adopted and their successors in fee simple title, all of which are hereinafter referred to as "the Owner." The conditions contained in this ordinance shall be binding on the Owner.

§ 3. **Special Terms and Conditions.** This special use permit is conditioned on the following special terms and conditions:

(a) The Special Use of the Property shall be as up to three single-family detached dwellings, substantially as shown on the Plans.

(b) No less than one off-street parking space per unit shall be provided for the Special Use, substantially as shown on the Plans.

(c) The height of the Special Use shall not exceed two stories, substantially as shown on the Plans.

(d) All building materials, elevations, and site improvements shall be substantially as shown on the Plans.

(e) All mechanical equipment serving the Property shall be located or screened so as not to be visible from any public right-of-way.

(f) Prior to the issuance of a building permit for the Special Use, the establishment of up to three residential lots, substantially as shown on the Plans, shall be accomplished by obtaining the necessary approvals from the City and recording the appropriate plats and deeds among the land records of the Clerk of the Circuit Court of the City of Richmond.

§ 4. **Supplemental Terms and Conditions.** This special use permit is conditioned on the following supplemental terms and conditions:

(a) All required final grading and drainage plans, together with all easements made necessary by such plans, must be approved by the Director of Public Utilities prior to the issuance of the building permit.

(b) Storm or surface water shall not be allowed to accumulate on the land. The Owner, at its sole cost and expense, shall provide and maintain at all times adequate facilities for the drainage of storm or surface water from the Property so as not to adversely affect or damage any other property or public streets and the use thereof.

(c) Facilities for the collection of refuse shall be provided in accordance with the requirements of the Director of Public Works. Such facilities shall be located or screened so as not to be visible from adjacent properties and public streets.

(d) Any encroachments existing, proposed on the Plans or contemplated in the future shall require separate authorization and shall be subject to the applicable provisions of the Code of the City

of Richmond (2020), as amended, and all future amendments to such laws.

(e) The Owner shall make improvements within the right-of-way, including the installation of an asphalt apron and gravel driveway along Dana Street and a concrete sidewalk, asphalt aprons, and gravel driveways along Lynhaven Avenue, substantially as shown on the Plans, which improvements may be completed in one or more phases as approved by the Director of Public Works. All improvements and work within the public right-of-way shall be (i) completed in accordance with the requirements of the Director of Public Works, (ii) considered completed only upon written confirmation by the Director of Public Works or his designee that such improvements and work are in accordance with such requirements, and (iii) transferred to the City, following the written confirmation by the Director of Public Works, or his designee, pursuant to a transfer of interest document approved as to form by the City Attorney and accepted by the Chief Administrative Officer or the designee thereof on behalf of the City. The Chief Administrative Officer or the designee thereof, for and on behalf of the City, is hereby authorized to accept, in the manner for which this subsection provides, all improvements and work required by and meeting the requirements of this subsection. The final certificate of occupancy shall not be issued for the Property until all requirements of this subsection are fully satisfied.

(f) In all other respects, the use of the Property shall be in accordance with the applicable underlying zoning regulations.

§ 5. **General Terms and Conditions.** This special use permit is conditioned on the following general terms and conditions:

(a) No permit implementing this special use permit shall be approved until satisfactory evidence has been presented to the Zoning Administrator that any delinquent real estate taxes applicable to the Property have been paid.

(b) The Owner shall be bound by, shall observe and shall comply with all other laws,

ordinances, rules and regulations applicable to the Property, except as otherwise expressly provided in this ordinance.

(c) Words and phrases used in this ordinance shall be interpreted to have the meanings ascribed to them by section 30-1220 of the Code of the City of Richmond (2020), as amended, unless the context clearly indicates that a different meaning is intended.

(d) Notwithstanding any other provision of law, this special use permit is being approved due, in part, to the mitigating effects of each and every condition attached hereto; consequently, if any portion of this ordinance is determined to be invalid for any reason by a final, non-appealable order of any Virginia or federal court of competent jurisdiction, the invalidity shall cause the entire ordinance to be void and of no further effect from the effective date of such order.

(e) The privileges granted by this ordinance may be revoked pursuant to the provisions of sections 30-1050.7 through 30-1050.11 of the Code of the City of Richmond (2020), as amended, and all future amendments to such laws. Failure to comply with the terms and conditions of this ordinance shall constitute a violation of section 30-1080 of the Code of the City of Richmond (2020), as amended, and all future amendments to such law, or any other applicable laws or regulations.

(f) When the privileges granted by this ordinance terminate and the special use permit granted hereby becomes null and void, whether as a result of the Owner relinquishing this special use permit in a writing addressed to the Director of Planning and Development Review or otherwise, use of the Property shall be governed thereafter by the zoning regulations prescribed for the district in which the Property is then situated.

§ 6. **Implementation.** The Commissioner of Buildings is authorized to issue a building permit substantially in accordance with the Plans for the Special Use subject to the terms and conditions set forth in this ordinance. An application for the building permit shall be made within

1,096 calendar days following the date on which this ordinance becomes effective. If either the application for the building permit is not made within the time period stated in the previous sentence or the building permit terminates under any provision of the Virginia Statewide Building Code, this ordinance and the special use permit granted hereby shall terminate and become null and void.

§ 7. **Effective Date.** This ordinance shall be in force and effect upon adoption.

APPROVED AS TO FORM:

CITY ATTORNEY'S OFFICE

City of Richmond

900 East Broad Street
2nd Floor of City Hall
Richmond, VA 23219
www.rva.gov

Master

File Number: Admin-2024-0709

File ID:	Admin-2024-0709	**Type:**	Request for Ordinance or Resolution	**Status:**	Regular Agenda
Version:	1	**Reference:**		**In Control:**	City Clerk Waiting Room
Department:	Richmond Dept of Planning & Development. Review	**Cost:**		**File Created:**	06/26/2024
Subject:				**Final Action:**	
Title:					
Internal Notes:					
Code Sections:				**Agenda Date:**	12/09/2024
Indexes:				**Agenda Number:**	
Patron(s):				**Enactment Date:**	
Attachments:	Admin-2024-0709 - APPLICATION DOCS, Admin-2024-0709 - AATF Ordinance			**Enactment Number:**	
Contact:				**Introduction Date:**	
Drafter:	jonathan.brown@richmondgov.com			**Effective Date:**	
Related Files:					

Approval History

Version	Seq #	Action Date	Approver	Action	Due Date
1	1	11/6/2024	Matthew Ebinger	Approve	11/8/2024
1	2	11/6/2024	Kris Daniel-Thiem - FYI	Notified - FYI	
1	3	11/6/2024	Kevin Vonck	Approve	11/13/2024
1	4	11/6/2024	Alecia Blackwell - FYI	Notified - FYI	
1	5	11/7/2024	Sharon Ebert	Approve	11/8/2024
1	6	11/7/2024	Caitlin Sedano - FYI	Notified - FYI	
1	7	11/19/2024	Jeff Gray	Approve	11/11/2024
1	8	11/21/2024	Lincoln Saunders	Approve	11/21/2024
1	9	11/22/2024	Mayor Stoney	Approve	11/25/2024

History of Legislative File

Ver-sion:	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:

Text of Legislative File Admin-2024-0709

City of Richmond

Intracity Correspondence

O&R Transmittal

DATE: November 6, 2024

TO: The Honorable Members of City Council

THROUGH: The Honorable Levar M. Stoney, Mayor (by request)

(This is no way reflects a recommendation on behalf of the Mayor)

THROUGH: J.E. Lincoln Saunders, Chief Administrative Officer

THROUGH: Sharon L. Ebert, DCAO for Planning & Economic Development

FROM: Kevin J. Vonck, Director of Planning & Development Review

RE: To authorize the special use of the property known as 2501 Dana Street for the purpose of up to three single-family detached dwellings, upon certain terms and conditions.

ORD. OR RES. No.

PURPOSE: The applicant is requesting a Special Use Permit to authorize three single-family detached dwellings within an R-4 Single-Family Residential District. which use, among other things, is not currently allowed by sections 30-408.4, concerning lot area and width, 30-408.5, concerning yards, and 30-408.8, concerning driveways from streets, of the Code of the City of Richmond (2020), as amended. A Special Use Permit is therefore required.

BACKGROUND: The property is located in the Jeff Davis neighborhood on Dana Street between Lynhaven Avenue and Richmond Highway. The property is currently a 15,000 sq. ft. (.34 acre) unimproved parcel of land. The City's Richmond 300 Master Plan designates a future land use for the subject property as Neighborhood Mixed-Use, which is defined as "Existing or new highly walkable urban neighborhoods that are predominantly residential with a small, but critical, percentage of parcels

providing retail, office, personal service, and institutional uses."

Intensity: Building heights are generally two to four stories. Buildings taller than four stories may be found along major streets. Parcels are generally between 1,500 and 5,000 sq. ft. Primary Uses: Single family houses, accessory dwelling units, duplexes, small multi-family buildings (typically 3-10 units), and open space. Secondary Uses: Large multifamily buildings (10+units), retail/office/personal service, institutional, cultural, and government. (p. 56)

The current zoning for this property is R-4 Single-Family Residential District. All adjacent and nearby properties are located within the same R-4 zone. The area is primarily single family residential. The proposed density of the parcel is 3 units upon .34 acres, or approximately 9 units per acre.

COMMUNITY ENGAGEMENT: Richmond Highway Neighborhood Association was notified of the application; additional community notification will take place after introduction.

STRATEGIC INITIATIVES AND OTHER GOVERNMENTAL: Richmond 300 Master Plan

FISCAL IMPACT: The Department of Planning and Development Review does not anticipate any impact to the City's budget for this or future fiscal years.

DESIRED EFFECTIVE DATE: Upon adoption

REQUESTED INTRODUCTION DATE: December 9, 2024

CITY COUNCIL PUBLIC HEARING DATE: January 13, 2025

REQUESTED AGENDA: Consent

RECOMMENDED COUNCIL COMMITTEE: Planning Commission (January 7, 2025)

AFFECTED AGENCIES: Law Department (for review of draft ordinance)

RELATIONSHIP TO EXISTING ORD. OR RES.: None

ATTACHMENTS: Draft Ordinance, Application Form, Applicant's Report, Plans, Map

STAFF: Jonathan Brown, Senior Planner, Land Use Administration (Room 511) 646-5734

Application for **SPECIAL USE PERMIT**

Department of Planning and Development Review
Land Use Administration Division
900 E. Broad Street, Room 511
Richmond, Virginia 23219
(804) 646-6304
http://www.richmondgov.com/

Application is hereby submitted for: (check one)

- [x] **special use permit, new**
- [ ] **special use permit, plan amendment**
- [ ] **special use permit, text only amendment**

Project Name/Location

Property Address: 2501 DANA STREET Date: 03/04/2024

Parcel I.D. #: S0090064032 Fee: $300.00

Total area of affected site in acres: 0.344

(See ***page 6*** for fee schedule, please make check payable to the "**City of Richmond**")

Zoning

Current Zoning: R-4

Richmond 300 Land Use Designation: NEIGHBORHOOD MIXED USE

Proposed Use

(Please include a detailed description of the proposed use in the required applicant's report)

Existing Use: VACANT LOT

Is this property subject to any previous land use cases?

Yes [ ] No [x] If Yes, please list the Ordinance Number:

Applicant/Contact Person: DAVID J. LISOWSKI, LA

Company: BALZER AND ASSOCIATES, INC

Mailing Address: 15871 CITY VIEW DRIVE SUITE 200

City: MIDLOTHIAN State: VIRGINIA Zip Code: 23113

Telephone: (804) 794-0571 Fax: (804) 794-2532

Email: DLISOWSKI@BALZER.CC

Property Owner: RICHMOND METROPOLITAN HABITAT FOR HUMANITY

If Business Entity, name and title of authorized signee: Matt Waring, COO

(The person or persons executing or attesting the execution of this Application on behalf of the Company certifies that he or she has or have been duly authorized and empowered to so execute or attest.)

Mailing Address: 2281-A Dabney Rd

City: Richmond State: VA Zip Code: 23230

Telephone: (804) 2327001 Fax: (804) 2327025

Email: mwaring@richmondhabitat.org

Property Owner Signature:

The names, addresses, telephone numbers and signatures of all owners of the property are required. Please attach additional sheets as needed. If a legal representative signs for a property owner, please attach an executed power of attorney. **Faxed or photocopied signatures will not be accepted.**

NOTE: Please attach the required plans, checklist, and a check for the application fee (see Filing Procedures for special use permits)

Review & Approval process for
SPECIAL USE PERMIT

In instances where it has been determined that underlying zoning regulations cannot be met, a special use permit may be granted by City Council to provide relief from zoning regulations.

Special use permit applications are reviewed for compliance with the *Richmond 300* to ensure the proposal is compatible with the surrounding area and that it is an appropriate use for the site. Specifically, applications are reviewed to ensure that the City Charter conditions for granting special use permits have been met. The City Charter requires that prior to City Council approval; it must be shown that the proposed special use will ***not:***

1. be detrimental to the safety, health, morals and general welfare of the community involved;
2. create congestion in streets, roads, alleys and other public ways and places in the area involved;
3. create hazards from fire, panic or other dangers;
4. tend to cause overcrowding of land and an undue concentration of population;
5. adversely affect or interfere with public or private schools, parks, playgrounds, water supplies, sewage disposal, transportation or other public requirements, conveniences and improvements; or
6. interfere with adequate light and air.

Applicants ***are encouraged*** to schedule a pre-application conference with the Division of Land Use Administration staff to review related Master Plan, land use and other issues that may be involved prior to making application. Please call (804) 646-6304 to schedule an appointment with the staff. Staff will review submitted applications to ensure all required materials and information are provided. If the application is not acceptable, the required information must be provided prior to formal staff review.

Applicants should also discuss the proposed special use permit with area civic associations, property owners, residents, and the area Council Representative prior to submitting an application. Letters from the associations and property owners stating their position in regards to the request should be submitted with the application.

The Division of Land Use Administration circulates the special use permit application materials to appropriate City agencies as determined necessary. City agencies reviewing the proposal may include: Public Works, Building Permits & Inspections, Public Utilities, Water Resources, Zoning Administration, and Fire and Emergency Services. The Division of Land Use Administration will coordinate responses by City agencies. Written comments will be provided generally within 30 days of the application submittal date.

After review by these agencies and by the Division of Land Use Administration, the staff will confer with the applicant regarding suggested conditions to be included in the ordinance and any suggested changes to the plans. If the property is located in a City Old and Historic District and the request involves exterior alterations, additions or new construction, the plans should also be reviewed by the Commission of Architectural Review prior to an ordinance being introduced in City Council. Once the plans are in final form, an ordinance is drafted and the plans are attached to and are made a part of the ordinance. The staff will forward a copy of the ordinance to the applicant for review and approval.

The ordinance is then reviewed by the City Attorney's office and the City Administration. Once their review is complete, the ordinance is introduced to City Council and a public hearing is scheduled, usually thirty days after introduction. During this thirty-day period, public notice of the hearing is posted on the site and in a daily newspaper. Notices are also mailed to the owners of all properties within 150 feet of the subject property. One week prior to the City Council public hearing, the Planning Commission, after receiving a report from the Department of Planning and Development Review, considers the proposed special use permit and forwards a recommendation to City Council. The Planning Commission welcomes information submitted prior to the meeting and may ask questions of proponents and opponents during the course of its deliberation on the ordinance. Six affirmative votes of City Council are required to adopt a special use ordinance. Please note that there is a fee of $250 for each continuance caused by the applicant.

If the special use ordinance is adopted by City Council, the applicant has a specified time period in which to apply for a building permit to implement the special use permit. Building permit plans must be substantially in accordance with the adopted special use permit plans, otherwise a building permit will not be issued. In general, the approval process for special use permits takes between 120 to 180 days. However, depending on the complexity of the proposed special use permit, more or less time may be required. The City Planning Commission considers approval of special use permits at its regular meetings on the first and third Monday of each month. ***Incomplete submissions or major modifications to the plan during the review process may cause delays in the schedule.***

Legislative Land Use Application Process

Pre-Application

Applicant Meetings

Optional meetings with applicant to discuss project programming, design, and due diligence.

Step 1

Applicantion Received

Step 2

Application & Letters Routing

Within 2 working days the application is routed to other reviewing agencies. Notify civic associations and provide applicant with civic association contact information.

Step 3

Comment Letter

Within 30 days of receipt, a comment letter is sent to the applicant requesting additional information or clarification.

Step 4

Meeting with Applicant

If necessary, a meeting with the applicant occurs to discuss requests made in the comment letter.

Step 5

Applicantion Resubmission

The application with additional information is resubmitted within 60 days of the comment letter. The applicant can request additional time if necessary, otherwise the application is withdrawn and a refund of the fees is given.

Step 6

Resubmission Routing

The application resubmission is routed for review by agencies within 2 working days.

Step 7

Additional Information

The applicant is notified within 15 days if additional information is required. If more information is required, the process returns to Step 5. If the application is complete, the process continues to Step 8.

Step 8

Ordinance and O&R

If no additional information is required, staff prepares and submits the ordinance and O&R request to the CAO.

Step 9

Ordinance Introduction

Approximately 45 days later, the ordinance is introduced at City Council. Civic associations are notified of City Planning Commission hearing date.

Step 10

Planning Commision

Approximately 3 weeks later, the application is heard by City Planning Commission. The CPC makes a recommendation to City Council.

Step 11

City Council

Typically, the CPC recommendation is forwarded to the next council meeting one week later. City Council takes action.

Post-Approval

Applicant

When required, final plans submitted for review to meet terms of approval. Work commences.

Filing Procedures for
SPECIAL USE PERMIT

FILING

Special use permit applications are filed with the:

Department of Planning and Development Review
Land Use Administration Division, Room 511
City Hall, 900 East Broad Street, Richmond, Virginia 23219
Telephone (804) 646-6304

APPLICATION REQUIREMENTS

The application for a special use permit must include the following, each part of which is explained below. ***Application must be submitted in an electronic format (PDF).***

1. **Application form;**
2. **Application fee;**
3. **Applicant's report;**
4. **Electronic PDF plans; and**
5. **Survey plat.**

1. **Application Form:** All owners of the property must sign the application form. If a legal representative signs for a property owner, a copy of an executed power of attorney is required.

2. **Application Fee:** The appropriate fee must accompany the application. Checks should be made payable to the "City of Richmond". The fees are determined from the attached fee schedule.

3. **Applicant's Report:** ***A written report must be submitted describing the proposed use.*** For non-residential development, the description should include the anticipated number of employees, hours of operation, and an estimated amount of vehicular traffic that will be generated by the use. The report should point out the specific features of the special use that will ensure that it will be compatible with the surrounding area, and that it is an appropriate use for the site. In addition, the City Charter specifies certain conditions that must be met before City Council can approve a special use permit. It must be shown that the proposed special use will ***not:***

   a. be detrimental to the safety, health, morals and general welfare of the community involved;
   b. tend to create congestion in streets, roads, alleys and other public ways and places in the area involved;
   c. create hazards from fire, panic or other dangers;
   d. tend to cause overcrowding of land and an undue concentration of population;
   e. adversely affect or interfere with public or private schools, parks, playgrounds, water supplies, sewage disposal, transportation or other public requirements, conveniences and improvements; or
   f. interfere with adequate light and air.

   The report must indicate the reasons why the applicant feels these conditions will be met (e.g., features of the plan, characteristics of the proposed use or surrounding area). ***Please note*** that the ***above materials will be forwarded to the City Planning Commission and City Council along with the special use permit ordinance.***

FILING

4. **Plans:** Plans are required to provide sufficient detail to permit the staff to make a determination of the compatibility of the proposed project with surrounding development. Plans must be properly scaled and include a scale bar. Depending on the request, plans may include the following:

    a. Site Plan
    b. Elevation Plans
    c. Floor Plans
    d. Landscape Plans
    e. Signage Plan & Details
    f. Lighting Plan & Details

    In some cases not all plans would be relevant to the request and may not be required. If there is a question about the level of detail required, please contact Land Use Administration Staff. Electronic Plans (PDF) are required with the initial application and any subsequent resubmissions. Electronic plans may be submitted on a disk or via email at: DCDLanduseadmin@richmondgov.com.

5. **Survey Plat:** A PDF of a survey plat showing the property and including metes and bounds is required. The plat should show existing physical features of the property, including:

    a. North arrow, scale, property address, the distance to nearest public street, preparer of plat, date, revision dates, area of site;
    b. Existing structures, buildings, paved areas, fences, streets, alleys, easements, and limits of the 100 year flood plain, Chesapeake Bay Preservation Area limits, wetlands, and streams.

(As of 9_7_2018) **(FEE SHEDULE)**
Department of Planning and Development Review
Land Use Administration Division
900 E. Broad Street, Room 511
Richmond, Virginia 23219
(804) 646-6304
http://www.richmondgov.com/

COMMUNITY UNIT PLAN	
Preliminary	$3,000 + $100/acre[1]
Extension of Preliminary Approval	$1,500
Final	$1,500 + $100/acre[1]
Amendment	$1,500 + $100/acre[1]
CONDITIONAL USE PERMIT	
Initial	$1,500 + $100/acre[2]
Amendment	$1,000 + $100/acre[2]
PLAN OF DEVELOPMENT	
Floor area & Land disturbed ≤5,000 square feet	$500 + $100/acre[2]
Floor area & Land disturbed ≥5,001 & ≤50,000 square feet	$1,000 + $100/acre[2]
Floor area & Land disturbed ≥50,001 square feet	$1,500 + $100/acre[2]
REZONING/CONDITIONAL REZONING	$1,500 + $100/acre[2]
Each continuance caused by the applicant	$250

SPECIAL USE PERMIT

Use	*Initial*	*Amendment*
Day Nursery	$300	$200
Single- or two-family detached or attached dwelling	$300	$200
Outdoor dining	$300	$200
Mobile food business	$300	$200
Sign	$300	$200
Multi-family dwelling (3 to ten units)	$1,800	$1,200
Commercial or industrial equal to or less than 5,000 sq ft	$1,800	$1,200
Multi-family dwelling (more than 10 units)	$2,400	$1,800
Commercial or industrial more than 5,000 sq ft	$2,400	$1,800
Each continuance caused by the applicant	$250	

SUBDIVISION	
Preliminary Plat	$500 + $15/lot
Extension of Preliminary Plat Approval	$150
Final Plat	$500 + $15/lot
Subdivision Confirmation Letter	$100
Continuance*	$50
Plat of Correction	$100

A full refund of the application fee is permitted if the application is withdrawn prior to the second submittal of plans. Once a second submittal of plans is made, fees are not refundable.

[1]For Community Unit Plans (CUP), the first 10 acres are included in the base price.
[2]For Conditional Use Permits, Plans of Development, and Rezonings, the first acre is included in the base price.

For all applications with an additional price per acre, fractions of an acre are rounded up to the nearest whole number. Do not prorate the fee per fraction of acre.

- Example: A Conditional Use Permit (CUP) for a 0.76 acre property would owe $1,500 (base fee only). A CUP for a 2.3 acre property would owe $1,700 ($1,500 base fee + 2*100 (for the 1.3 acres over the first acre))

* No charge for the 1st continuance requested by the applicant or for any continuance requested by the Planning Commission. The second or subsequent continuance request by the applicant costs $50.

Fees went into effect upon adoption of Ordinance No. 2018-209 by City Council on September 10, 2018.

BALZER
& ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571
www.balzer.cc

Roanoke
Richmond
New River Valley
Shenandoah Valley

March 5, 2024

2501 Dana Street
Special Use Permit Application
Applicant's Report

This is a request for a special use permit at 2501 Dana Street to allow the current vacant lot to be subdivided into three (3) new residential lots for single family homes.

Development of the lots shall conform to the required conditions of the R-4 District as outlined in the Zoning Ordinance, except for the following:

1. Lot Area and Width. Each lot shall have an area of not less than *4,355* square feet and a lot width not less than forty-three (43) feet.
2. Front Yard. Minimum of fifteen (15) feet in depth along Lynhaven Avenue. Unenclosed porches, balconies and steps may project into required front yards not more than ten (10) feet.
3. Driveways from streets. Two (2) of the proposed lots will have driveways within the front yard along Lynhaven Avenue. These driveways shall not exceed 10.5 feet in width.

The proposed special use permit will not *be detrimental to the safety, health, morals, and general welfare of the community involved* because the proposal is to create three (3) new residential lots instead of two (2) residential lots and will provide affordable housing with these new homes. The Richmond Metropolitan Habitat for Humanity currently owns the property and will be developing the new lots.

There is no alley access for these lots, which is why individual driveways will be utilized – one (1) driveway on Dana Street and two (2) driveways on Lynhaven Avenue – which is in keeping with the surrounding residential lots. The proposed additional lot than what is allowed by right will not create enough traffic to cause *congestion in streets, roads, alleys and other public ways and places in the area involved*. The proposed use is in line with the existing uses in the area.

The proposed homes will not *create hazards from fire, panic, or other dangers* because each home will be at least twenty (20) feet from each other, which is more than required by ordinance, creating ample separation. There is also an existing fire hydrant on the corner of Dana Street and Lynhaven Avenue for fire control.

The applicant does not see this proposed special use permit as a *cause overcrowding of land and an undue concentration of population* because the exception request does not include lot coverage. The homes will not exceed 30% coverage on each lot and even the side and rear yard dimensions shown on the development plan are more than required to give residents more space on their own lot. The location of the development fronts two streets that have a low traffic volume and have the same type of development, which is single family homes.

This proposal will not *adversely affect or interfere with public or private schools, parks, playgrounds, water supplies, sewage disposal, transportation or other public requirements, conveniences, and improvements* because the lots will utilize current road and waterline infrastructure. The applicant is extending the main sewer line to serve one (1) of the proposed homes that is beyond reach of the existing main line and is installing on site stormwater detention to release the 10-year storm below pre-development rates.

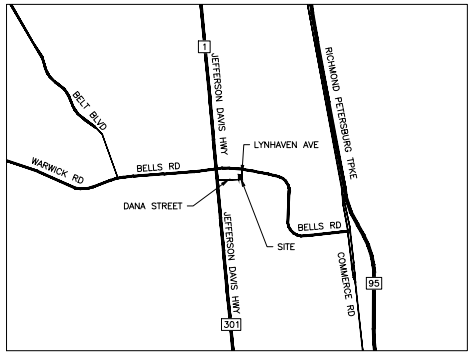
BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Again, the proposal is to only create three (3) lots instead of two (2) lots; therefore, the applicant does not see how it would *interfere with adequate light and air*. The exception request does not include an exception to height and the proposed homes will be no taller than the existing homes in the immediate area. While existing vegetation will be removed to build the homes, the applicant is providing a landscape plan that includes rear yard screening, foundation plantings, and other trees on each and between lots. Most, if not all, plantings will be native to Virginia.

2501 DANA STREET

THREE HOUSE DEVELOPMENT

SOUTHSIDE 8TH DISTRICT
CITY OF RICHMOND, VIRGINIA



VICINITY MAP

SCALE: 1" = 2000'

THE VICINITY MAP SHOWN WAS PREPARED BY DATA COMPILED FROM RECORDED SUBDIVISION PLATS, PARCEL PLATS, DEEDED DESCRIPTION DATA, AND OTHER RECORDS OWNED BY CHESTERFIELD COUNTY. THE COUNTY ASSUMES NO LEGAL RESPONSIBILITY OR LIABILITY FOR ANY OF THE INFORMATION CONTAINED ON THIS MAP.

EROSION CONTROL QUANTITIES

(FOR BOND PURPOSES ONLY)

SAFETY	113 LF	3.01	SAFETY FENCE	SAF
	1 EA	3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
	698 LF	3.05	SILT FENCE	SF
	0.35 AC	3.31	TEMPORARY SEEDING	TS
	2 EA	--	SILT FENCE OUTLET	SFO
	2 EA	3.07	STORM DRAIN INLET PROTECTION	IP
	0.30 AC	3.32	PERMANENT SEEDING	PS

BEFORE YOU DIG, CALL MISS UTILITY
1-800-552-7001

SURVEY NOTES:

THE TOPOGRAPHICAL SURVEY SHOWN HEREON IS FROM A FIELD SURVEY COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF CHRISTOPHER M. FINLEY FROM AN ACTUAL GROUND SURVEY MADE UNDER HIS SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON JUNE 4, 2022; AND THAT THIS PLAT, MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

NO TITLE REPORT PROVIDED AS OF JUNE 8, 2022
THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO INFORMATION WHICH MAY BE DISCLOSED BY SUCH. NOT ALL EASEMENTS MAY BE SHOWN.

CONTOUR INTERVAL = 1 FOOT
HORIZONTAL DATUM = NAD 83
VERTICAL DATUM = NGVD 29

UNDERGROUND UTILITIES SHOWN HEREON BASED ON PAINTED MARKINGS FROM MISS UTILITY TICKET #A214600690-00A AND VISIBLE FIELD EVIDENCE.

NOTE: THE FIELD CREW SPOKE WITH THE ADJOINING OWNER CONCERNING THE ENCROACHING SHED AND GARDEN. HE IS AWARE OF THE ENCROACHMENTS AND STATED HE HOPED THE OWNER OF THE SUBJECT PROPERTY WOULD ALLOW THE SHED TO STAY. SHED IS ON A FOUNDATION.

SHEET LIST TABLE	
Sheet Number	Sheet Title
C01	COVER
C01.1	GENERAL NOTES
C02	EXISTING CONDITIONS
C03	EROSION AND SEDIMENT CONTROL PLAN PHASE 1
C04	EROSION AND SEDIMENT CONTROL PLAN PHASE 2
C05	EROSION AND SEDIMENT CONTROL NOTES
C05.1	EROSION AND SEDIMENT CONTROL DETAILS
C06	LAYOUT AND UTILITY PLAN
C07	GRADING PLAN
C08	STORM PIPE SCHEDULE
C09	PROFILES
C10	STORMWATER DETAILS
C11	CALCULATIONS
C12	PRE & POST-DEVELOPEMENT DRAINAGE AREA PLAN
C13	PRE AND POST SOILS PLAN
C14	1% PLAN
C15	NOTES & DETAILS
L01	LANDSCAPE
L02	LANDSCAPE DETAILS

GENERAL NOTES

1. SITE ADDRESS: 2501 DANA STREET RICHMOND, VA 23234
2. DEVELOPER: RICHMOND METROPOLITAN HABITAT FOR HUMANITY 2281 DABNEY ROAD, SUITE A RICHMOND VA 23230 CONTACT: ANN COBLE PHONE: (804) 232-7001X114 EMAIL: ACOBLE@RICHMONDHABITAT.ORG
3. ENGINEER: BALZER AND ASSOCIATES INC 15871 CITY VIEW DRIVE, SUITE 200 MIDLOTHIAN, VA 23113 CONTACT: DAVID J. LISOWSKI, LA PHONE: (804) 794-0571 EMAIL: DLISOWSKI@BALZER.CC
4. USE: SINGLE FAMILY HOUSING
5. ZONING: R-4
6. PARCEL ID: S0090064032 VILLA HEIGHTS BLOCK 1 LOTS 32&33
7. SITE AREA: 0.344 ACRES
   DISTURBED AREA: 0.42 ACRES
   TOTAL ON-SITE IMPERVIOUS COVER: 0.00 AC (PRE-DEVELOPMENT) 0.14 AC (POST-DEVELOPMENT)
8. WATER: PUBLIC
9. SEWER: PUBLIC

BUILDING AREA: 3809 LYNHAVEN AVE 1-STORY 1,118 SQ FT
3813 LYNHAVEN AVE 1 STORY 1,118 SQ. FT.
3817 LYNHAVEN AVE 2-STORY 2,543 SQ. FT.

10. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST, HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OR OTHER OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT "MISS UTILITY" OF CENTRAL VA TOLL FREE 1-800-552-7001.
11. ALL UTILITY LINES SUCH AS ELECTRIC, TELEPHONE, AND CATV, OR OTHER SIMILAR LINES SHALL BE INSTALLED UNDERGROUND. THIS SHALL APPLY TO LINES SERVING INDIVIDUAL SITES AS WELL AS TO UTILITY LINES WITHIN THE PROJECT.
12. ALL PARKING LOT DIMENSIONS ARE FROM FACE OF CURB, UNLESS NOTED OTHERWISE.
13. ALL PARKING SPACES TO BE MARKED WITH FOUR INCH (4") WIDE STRIPES (WHITE PAINT), UNLESS NOTED OTHERWISE.
14. ALL CURVE RADII ARE 5 FEET UNLESS OTHERWISE SPECIFIED.
15. ROOFTOP AND GROUND LEVEL MECHANICAL EQUIPMENT SHALL BE SCREENED FROM PUBLIC VIEW AND DESIGNED TO BE PERCEIVED AS AN INTEGRAL PART OF THE BUILDING(S).
16. LANDSCAPE PLANTINGS AT ENTRANCES/EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS.
17. ANY SIGN IN EXCESS OF 8 SQUARE FEET REQUIRES A SEPARATE PERMIT. SIGN PERMITS MAY BE OBTAINED THROUGH THE DEPARTMENT OF BUILDING INSPECTIONS. SIGNAGE IS CONTINGENT UPON APPROVAL THROUGH SIGN PERMIT REVIEW PROCESS.
18. THE APPROXIMATE AREA OF THE LIMITS OF CLEARING, GRADING, AND CONSTRUCTION IS 0.42 ACRES.
19. THE VICINITY MAP SHOWN WAS PREPARED BY DATA COMPILED FROM RECORDED SUBDIVISION PLATS, PARCEL PLATS, DEEDED DESCRIPTION DATA, AND OTHER RECORDS OWNED BY CHESTERFIELD COUNTY. THE COUNTY OF CHESTERFIELD ASSUMES NO LEGAL RESPONSIBILITY OR LIABILITY FOR ANY OF THE INFORMATION CONTAINED ON THIS MAP.
20. STORMWATER COMPLIANCE IS ACHIEVED WITH THE ON SITE DETENTION
21. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE IN CONFORMANCE WITH WITH THE LATEST EDITIONS OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS AND ROAD AND BRIDGE STANDARDS.
22. NO LANDSCAPING OF ANY TYPE SHALL BE PLACED WITHIN A THREE FOOT RADIUS OF ANY FIRE HYDRANT, FIRE PUMP TEST HEADER, FIRE DEPARTMENT SPRINKLER SYSTEM CONNECTION, FIRE DEPARTMENT STANDPIPE CONNECTION OR FIRE SUPPRESSION CONTROL VALVE. LANDSCAPING IN THE AREA OF FIRE HYDRANTS, FIRE PUMP TEST HEADERS, FIRE DEPARTMENT SPRINKLER SYSTEM CONNECTIONS OR FIRE DEPARTMENT STANDPIPE CONNECTIONS SHALL BE OF THE TYPE THAT WILL NOT ENCROACH ON THE REQUIRED THREE FOOT CLEAR RADIUS ON MATURITY OF LANDSCAPING.
23. CONTRACTOR SHALL PROVIDE A MIN. 6" DEPTH OF TOPSOIL IN ALL GREEN AREAS. CONTRACTOR SHALL USE EXISTING TOPSOIL AND/OR PROVIDE NEW TOPSOIL, WHICH IS FERTILE, FRIABLE, NATURAL LOAM SURFACE SOIL, REASONABLY FREE OF FOREIGN MATTER, ROOTS, STUMPS, AND STONES LARGER THAN 2" IN DIAMETER.
24. A MEETING WITH THE VDOT INSPECTOR IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION WITHIN THE RIGHT-OF-WAY.
25. ANYONE SUBMITTING A MAINTENANCE OF TRAFFIC PLAN WHICH IS PART OF A TRAFFIC MAINTENANCE PLAN SHALL ALSO SUBMIT THE ACCREDITATION NUMBER FOR TAKING THE VDOT ADVANCED TRAFFIC CONTROL TRAINING.
26. HUC CODE: JL02
27. RECEIVING WATERS: FALLING CREEK
28. COORDINATES: 37.409, -77.548
29. TOTAL RPA IMPACTS: 0 SF
30. IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATION 107.14 (A), SPECIAL PROVISION 107D, ALL CONTRACTORS PERFORMING REGULATED LAND DISTURBING ACTIVITIES WITHIN VDOT RIGHT-OF-WAY MUST HAVE AN EMPLOYEE THAT HAS SUCCESSFULLY COMPLETED THE VDOT EROSION & SEDIMENT CONTROL CONTRACTOR CERTIFICATION TRAINING. REGULATED LAND DISTURBING ACTIVITIES ARE DEFINED AS THOSE ACTIVITIES THAT DISTURB 2,500 SQUARE FEET OR GREATER IN TIDEWATER, VIRGINIA OR 10,000 SQUARE FEET OR GREATER IN ALL OTHER AREAS OF THE STATE. THE DEPARTMENT WILL REQUIRE EVIDENCE OF THIS CERTIFICATION WITH ANY LAND USE PERMIT APPLICATION THAT INVOLVES UTILITY AND/OR COMMERCIAL RIGHT-OF-WAY IMPROVEMENT.
31. AN APPROVED KEY BOX SHALL BE PROVIDED FOR THE PROPOSED BUILDING IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE, SECTION 506.1. THE REQUIRED FORMS AND INSTALLATION INSTRUCTIONS FOR THE KEY BOX CAN BE OBTAINED FROM RICHMOND FIRE AND EMS, FIRE AND LIFE SAFETY DIVISION, AT 748-1426.
32. EXTERNAL ROOF LADDERS AND PARAPET OPENINGS ARE PROHIBITED. ACCESS TO ROOF MUST BE FROM INSIDE THE BUILDING.

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
COVER

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	N/A
REVISIONS	
06-20-2024	

C01

PROJECT NO. 56220055.00

VDOT Virginia Department of Transportation

Richmond District Land Use
Subdivision and Site Construction Plan General Notes

Effective Date
January 2021

1. All materials and construction within the public right of way shall be in accordance with the latest edition of the *Virginia Department of Transportation's Road and Bridge Specifications, Road and Bridge Standards and Virginia Work Area Protection Manual.*
2. Land Use Permits (LUP) shall be obtained from the Virginia Department of Transportation prior to beginning any construction within the existing state maintained right-of-way (including access).
3. VDOT requires notification 48 hours prior to commencing with initial construction activities. Please contact the appropriate permit office in which your proposed activities are to occur.
4. Approval of a detailed construction sequencing and maintenance of traffic plan for the work zone is a prerequisite for issuance of a Land Use Permit. The plan shall accommodate access to and construction within VDOT maintained right-of-way.
5. Work Zones – Requests for the implementation of temporary lane and shoulder closures on Interstate, Limited Access Primary Routes, and Routes 58 and 460 must be entered into the VDOT Lane Closure Advisory Management System (LCAMS) by 12:00 pm on Thursday the week before the work is to take place for approval. Contact the Work Zone Coordinator at 804-609-5338 for questions and assistance. All lane/shoulder closures requiring LCAMS approval shall be entered into VA Traffic. Lane/Shoulder closures on primary and major secondary routes must also be entered in VA Traffic. Major secondary routes are defined as those listed in the Richmond District Recommended Work Hours document. Just prior to the first cone going down, users must contact the TOC at 804-796-4520 to activate the work zone and when the last cone has been picked up to deactivate the work zone.
6. Permittee must notify Virginia Department of Transportation TOC when there is a crash in a work zone at 804-796-4520.
7. Prior to any construction, the contractor shall consult the developer's engineering consultant and verify the approval of the plans by all applicable federal, state and local agencies.
8. Contractor shall verify location and elevation of all underground utilities shown on plans in areas of construction prior to starting work. Contact the developer's engineering consultant immediately if location or elevation is different from that shown on plan. If there appears to be a conflict, or upon discovery of any utility not shown on this plan, call "Miss Utility" at 811. The developer shall be responsible for the relocation of any utility within existing and proposed right of way required by the development.
9. The permittee or their agent must contact the VDOT Customer Service Center at 1-800-367-7623 a minimum of 48 hours prior to initiating any planned excavation within 1,000 feet of a signalized intersection and/or near VDOT ITS infrastructure. Excavation may proceed only after the VDOT regional utility location agent has notified the permittee that the utility marking has been completed. Additional information can be found at: http://www.virginiadot.org/business/resources/IIM/TE-383_Request_For_Marking_VDOT_Utility_Location.pdf "Miss Utility" does not locate VDOT utilities.
10. The contractor shall verify the elevations of all points of connection of proposed work to existing curbs, sanitary lines, water lines, etc., prior to construction.
11. Design changes, specified materials changes and field changes from the approved plans shall be re-submitted to VDOT for approval prior to proceeding with the work. A letter of explanation shall accompany the proposed revision along with drainage calculations when appropriate.
12. VDOT approval of construction plans does not preclude the right to require additional facilities as deemed necessary for acceptance of the roads into the VDOT Secondary Road System based on field conditions or unapproved plan changes.
13. VDOT approval of these plans will expire five (5) years from the date of approval for site plans and subdivision plans if construction has not started.
14. Preliminary design of the pavement structure for all subdivision streets shall be in accordance with the current edition of *The Pavement Design Guide for Subdivision and Secondary Roads in Virginia*. The completed design worksheet appendix IV shall be included with the initial plan submittal for each proposed pavement section utilizing the predicted soil support value shown in Appendix I of The Pavement Design Guide or as reported in a geotechnical analysis of the on-site soils.
15. A copy of the complete CBR report shall be submitted to VDOT in conjunction with final pavement designs. All pavement design recommendations shall be performed in accordance with the current edition of *Pavement Design Guide for Subdivision and Secondary Roads in Virginia.*
16. All vegetation and organic material shall be removed from the right of way limits prior to conditioning of the subgrade.
17. Upon discovery of soils that are unsuitable for foundations, subgrades, or other roadway construction purposes, the developer or his designee, which may be the contractor, shall immediately engage a geotechnical engineer and notify VDOT. These areas shall be excavated below plan grade as directed by the geotechnical engineer, backfilled with suitable material and compacted in accordance with current VDOT specifications.
18. The necessity and locations for additional VDOT standard underdrains shall be determined at time of subgrade inspection. Video inspection of accessible outlet locations, mainline longitudinal connections, and longitudinal pipe for all pavement underdrains, cross drains, edgedrains and prefabricated geocomposite panel drains shall be conducted in accordance with Section 501 of the *Road and Bridge Specifications* and *Virginia Test Method 108 – Post Installation Inspection of Underdrains, Crossdrains, and Edgedrains.*
19. VDOT shall have performed the required field inspection (proof roll) prior to placement of the aggregate base course(s). Contact VDOT for subgrade inspection 48 hours prior to scheduling placement of aggregate base course(s).
20. The scheduling of aggregate base installation and subsequent paving activities shall accommodate forecasted weather conditions per Section 315 of *The Road and Bridge Specifications.*
21. VDOT shall have approved the aggregate base course(s) for depth, template and performed the required field inspection (proof roll) prior to placement of any asphalt concrete surface course(s). Contact VDOT for inspection of the aggregate base course(s) 48 hours prior to application of the surface course(s).
22. A licensed geotechnical engineer or his designee shall ascertain cause and certify recommended method of repair for all pavement structural failures prior to state acceptance.
23. VDOT shall be provided documentation by a licensed geotechnical engineer, certifying that all in-place pavements meet or exceed the approved pavement design thickness prior to state acceptance of the street. Cores are to be obtained verifying pavement thickness unless otherwise directed by VDOT. The Permit Inspector shall be contacted 24 hours prior to the core samples being taken.
24. All storm sewer design and construction shall be in accordance with latest *VDOT Drainage Manual, Road and Bridge Standards*, and IIMs.
25. All pre-cast units shall be VDOT approved. Certification and VDOT stamp is required on all units.
26. All concrete shall be class A3-AE (air entrained 3,000 PSI) unless otherwise specified.
27. All roadside ditches shown as paved on plans are to be paved in accordance with the standard typical section as shown on the plans. Any additional paving of the ditches, other than those shown on the road plans will be determined prior to acceptance of the roads into the VDOT secondary road system.
28. Road & Bridge Specifications Section 302, Drainage Structures addresses post installation visual/video camera inspection of storm sewer pipes and pipe culverts. Inspection frequency shall be in accordance with the specifications and/or as necessitated by the Engineer. Video inspection shall be conducted in accordance with *Virginia Test Method (VTM) 123, Post Installation Inspection of Buried Storm Sewer Pipe and Pipe Culverts.*
29. A construction entrance shall be installed on each individual lot prior to any lot grading or home construction activities and shall be adequately maintained until all construction traffic areas within the lot have been stabilized.
30. All entrances shall be designed and constructed in accordance with current VDOT standards. Residential lot access shall be provided per the following criteria:
    - All driveway entrances and entrance culverts shall conform to PE-1 private entrance standards unless otherwise approved by VDOT. No entrance culverts are to be installed within five (5) feet of a property corner.
    - VDOT standard CG-9D entrances shall be used when an entrance is required in curb and gutter neighborhoods unless otherwise approved by VDOT.
31. Dry gutter is not allowed in VDOT right of way except as shown on VDOT's entrance standard details.
32. The developer shall furnish and install stop signs and stop bars at street intersections and all regulatory signage per the *Manual of Uniform Traffic Control Devices*. All signs must be installed on VDOT standard STP-1 sign posts.
33. Installation, maintenance and operation of street lighting shall be provided by and at the sole expense of others. VDOT will allow lighting within the right of way by Land Use Permit (LUP) only. Lighting on curb sections shall be placed behind the curb and preferably behind the sidewalk. For shoulder sections, the pole shall be placed a minimum of 10' from edge of pavement and behind the ditch line. All lighting proposed within the right of way must be designed in accordance with the *AASHTO guide for Roadway Lighting* and shall meet the current Illuminating Engineering Society of North America (IESNA) Standards.
34. Traffic signals require an individual Land Use Permit. The applicant shall be responsible for the design costs of any traffic signal installation or modification of existing signals. Design plans must be prepared and submitted to VDOT by a licensed professional engineer for review and approval. This includes the foundation design and any equipment associated with the completed traffic signal. All equipment must be approved by VDOT. Shop drawings must be submitted for review and approval prior to fabricating any signal structural components.
35. Soil stabilization is required within 7 days for all areas where clearing, grading, excavation or other land disturbing activities have permanently ceased or where land disturbance activities have been temporarily suspended for an anticipated duration of greater than 7 days, or upon completion of grading operations for a specified area. Soil stabilization shall begin as soon as practicable, but not later than the seven days following the day when land disturbing activities temporarily or permanently ceased.
36. No structure shall be constructed on state maintained right of ways, or on right of ways intended to be maintained by VDOT unless said structures are shown on construction plans approved by VDOT or such structures are covered by a VDOT LUP (or by a letter of intent from the Resident Administrator/Resident Engineer to issue said permit at the time of state acceptance).

J:\22\50\56\56220055.00 DANA ST 2501 STORMWATER PLAN\CIVIL\dwg\SHEET\C01.1 GENERAL NOTES.dwg PLOTTED: 6/20/2024 7:55:30 AM

CONSTRUCTION SITE PLAN GENERAL NOTES

CONSTRUCTION METHODS

1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, AND LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS, WHERE APPLICABLE.
2. THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION WORK AND NOTIFY ENGINEER IMMEDIATELY IF LOCATIONS DIFFER FROM PLANS.
3. THE CONTRACTOR SHALL NOTIFY 'MISS UTILITY' AT 1-800-552-7001 OR 811 PRIOR TO ANY CONSTRUCTION WORK IN THIS AREA.

HANDICAPPED ACCESSIBILITY / ADA COMPLIANCE

1. THE MAXIMUM ALLOWABLE CROSS SLOPE ACROSS ACCESSIBLE PARKING SPACES AND ACCESSIBLE AISLES IS 2%. NO SLOPE IN ANY DIRECTION SHALL EXCEED 2% WITHIN ADA PARKING SPACES OR AISLES.
2. THE MAXIMUM ALLOWABLE LONGITUDINAL SLOPE ALONG ACCESSIBLE ROUTES IS 5%. THE MAXIMUM ALLOWABLE CROSS SLOPE IS 2%.
3. THE CONTRACTOR SHALL VERIFY SLOPES AND GRADES FOR ALL ACCESSIBLE PARKING SPACES AND ACCESS AISLES AFTER STAKING IS COMPLETE AND BOTH BEFORE AND AFTER INSTALLATION.
4. ANY SLOPE DISCREPANCIES DETECTED BY THE SURVEYOR AND/OR CONTRACTOR SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION.
5. UNLESS SPECIFICALLY NOTED ON THE SITE PLAN, DETECTABLE WARNINGS STRIPS ARE REQUIRED AT ALL CURB RAMPS AND FLUSH CURB TRANSITIONS TO PARKING LOTS.
6. HAND RAILS ARE REQUIRED FOR ANY ACCESSIBLE SITE PEDESTRIAN RAMPS WITH LONGITUDINAL SLOPES THAT EXCEED 5% AND / OR 6-INCHES IN RISE.
7. SITE HAND RAILS SHALL BE PER VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
8. SITE HAND RAILS SHALL BE INSTALLED ON BOTH SIDES OF THE SITE SIDEWALKS WHERE HAND RAILS ARE REQUIRED.
9. PER VDOT STANDARDS, THE MAXIMUM PERMISSIBLE CURB RAMP SLOPE IS 12:1.
10. WHEEL STOPS FOR ACCESSIBLE PARKING SPACES SHALL BE INSTALLED 3'-0" OFF THE FACE OF CURB.
11. GUTTER PAN INSTALLED IN ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 2% SLOPE.
12. NO VERTICAL TRANSITIONS IN ADA ACCESSIBLE ROUTES SHALL EXCEED 1/4".

CURB AND GUTTER

1. THE CONTRACTOR SHALL USE A MINIMUM OF THREE (3) RUNNING CONSTRUCTION STAKES TO AVOID HARD BREAK LINES IN THE CURB - UNLESS SPECIFICALLY CALLED FOR ON THE PLANS.
2. THE MINIMUM LONGITUDINAL SLOPE FOR GUTTER PAN IS 0.5%, UNLESS OTHERWISE NOTED ON PLANS.
3. A MINIMUM 20-FOOT TRANSITION FROM CG-6 TO CG-7 IS REQUIRED, UNLESS OTHERWISE NOTED ON THE PLANS.
4. ALL CURB AND GUTTER SHOWN ON THE PLANS SHALL BE VDOT CG-6, CG-2, OR CG-7, UNLESS SPECIFICALLY NOTED OTHERWISE.

UNDERGROUND UTILITIES

1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LINE AND GRADE FOR ALL DRY UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING DRY UTILITY LINES AND GRADES AGAINST ALL PROPOSED UTILITIES SHOWN ON THE PLANS. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS POSSIBLE.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING TELEPHONE, CABLE, FIBER OPTIC, AND ELECTRICAL SERVICES TO THE PROJECT. CONTACT UTILITY PROVIDERS AS SOON AS POSSIBLE TO BEGIN COORDINATION.
4. THE CONTRACTOR SHALL REVIEW SITE AND BUILDING DRAWINGS TO VERIFY COORDINATION OF UTILITY INVERTS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION.

VDOT RIGHT OF WAY

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR WORKING IN VDOT RIGHT OF WAY.
2. CONTRACTOR IS RESPONSIBLE FOR HAVING A VDOT CERTIFIED RESPONSIBLE LAND DISTURBER ON SITE IN ACCORDANCE WITH VDOT REQUIREMENTS.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS AND PROVIDING VDOT WITH RECORDS OF REQUIRED INSPECTIONS.
4. CONTRACTOR IS RESPONSIBLE FOR REVIEWING GUARDRAIL REQUIREMENTS WITH THE VDOT INSPECTOR PRIOR TO THE START OF CONSTRUCTION. GUARDRAIL LOCATIONS SHOWN ON THE PLANS ARE PER VDOT STANDARDS, BUT THE VDOT INSPECTOR SHALL HAVE THE ABILITY TO ALTER REQUIREMENTS.
5. CG-12'S MUST BE INSTALLED AT CURB RETURNS WHERE THERE IS AN EXISTING OR POTENTIAL FUTURE SIDEWALK IN THE RIGHT OF WAY ALONG THE PROPERTY FRONTAGE. IF SIDEWALK IS NOT EXISTING OR PROPOSED, CURB MUST BE DEPRESSED TO ACCOMMODATE FUTURE SIDEWALK EXTENSIONS.

SIDEWALKS AND SITE STAIRS

1. ALL SITE STAIRS SHALL BE FURNISHED WITH VDOT HR-1 ON BOTH SIDES OF THE STAIRS.
2. ALL SITE STAIRS SHALL BE CONSTRUCTED IN ACCORDANCE WITH VDOT / ADA / ANSI STANDARDS AND SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE.
3. SIDEWALKS SHALL BE INSTALLED WITH A MAXIMUM 2% CROSS-SLOPE
4. SIDEWALKS SHALL BE BROOM FINISHED, UNLESS NOTED OTHERWISE ON THE PLANS.
5. SIDEWALKS SHALL BE 5-FOOT IN WIDTH, UNLESS NOTED OTHERWISE ON THE PLANS.

ROOF DRAINS AND DOWN SPOUTS

1. ALL DOWNSPOUTS NOT CONNECTED TO STORM SEWER SHALL BE FURNISHED WITH SPLASH BLOCKS.
2. ALL DOWN SPOUTS SHALL BE FURNISHED WITH A DOWNSPOUT/ROOFDRAIN TRANSITION BOOT. STUBBING OF DOWNSPOUT INTO ROOF DRAIN LATERAL WITHOUT A SUITABLE BOOT TRANSITION IS NOT PERMITTED.
3. ALL ROOF DRAIN LATERALS SHALL BE INSTALLED IN ACCORDANCE WITH THE PREVAILING LOCAL JURISDICTIONAL PLUMBING CODE OR THE INTERNATIONAL PLUMBING CODE, WHICHEVER IS MORE STRINGENT.
4. MINIMUM ALLOWABLE SLOPE FOR 4-INCH ROOF DRAIN LATERAL IS 2.08%.
5. MINIMUM ALLOWABLE SLOPE FOR 6-INCH ROOF DRAIN LATERAL IS 1.04%.
6. ROOF DRAIN LATERALS SHALL BE 6-INCH DIAMETER (SMOOTH-WALLED), UNLESS NOTED OTHERWISE ON THE PLANS.

TELEPHONE, FIBER OPTIC, CABLE, AND GAS LINE SERVICES

1. CONTRACTOR SHALL HAVE 'MISS UTILITY' MARK EXISTING UTILITY LINES PRIOR TO START OF CONSTRUCTION AND AS NECESSARY THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL REVIEW PLANS TO VERIFY EXISTING LOCATIONS MARKED IN THE FIELD MATCH THOSE SHOWN ON THE PLANS.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY POTENTIAL DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.
4. CONTRACTOR SHALL POT-HOLE EXISTING UTILITIES AT CRITICAL CROSSING LOCATIONS PRIOR TO THE START OF CONSTRUCTION AND PROVIDE ENGINEER WITH LINE AND GRADE INFORMATION.

BUILDING DOORS AND GRADES

1. A MINIMUM 5'X5' PAD SHALL BE INSTALLED AT ALL BUILDING DOOR LOCATIONS (MAXIMUM 2% SLOPE IN ANY DIRECTION). COMPLY WITH ADA DOOR CLEARANCE REQUIREMENTS FOR PAD POSITIONING OUTSIDE OF THE DOOR.
2. FINISHED GRADE SHALL BE 6-INCHES BELOW FINISHED FLOOR ELEVATION ALONG ALL BUILDING WALLS, IN AREAS WHERE PERVIOUS SURFACES ARE PROVIDED, UNLESS OTHERWISE NOTED. FINISHED GRADE FOR AREAS TO BE MULCHED SHALL BE AT TOP OF MULCH. FINISHED GRADE FOR AREAS TO RECEIVE SOD SHALL BE TO TOP OF SOD.
3. ALL PERVIOUS SURFACES SHALL BE INSTALLED WITH A MINIMUM OF 2% SLOPE AWAY FROM THE BUILDING (FOR A MINIMUM OF 10-FEET), TO PROVIDE FOR POSITIVE DRAINAGE.
4. CONTRACTOR SHALL COORDINATE LOCATION OF WEEP HOLES ALONG ALL BUILDING WALLS AND VERIFY REQUIRED SEPARATION BETWEEN WEEP HOLES AND FINISHED GRADES.
5. CONTRACTOR SHALL REVIEW GRADING ALONG BUILDINGS WITH STOREFRONTS TO VERIFY REQUIRED SEPARATION IS PROVIDED.

RETAINING WALLS

1. RETAINING WALL LAYOUT AND GRADING DESIGN IS PRELIMINARY. CONTRACTOR/OWNER IS RESPONSIBLE FOR SHOP DRAWINGS AND ACQUIRING ANY REQUIRED BUILDING PERMIT AS WELL AS ANY OTHER JURISDICTIONAL REQUIREMENTS.
2. BUILDING PERMIT IS REQUIRED FOR RETAINING WALLS GREATER THAN 2-FT IN HEIGHT.
3. TW=FINISHED GRADE AT TOP OF WALL (WALL SHALL PROJECT A MINIMUM OF 6-INCHES ABOVE FINISHED GRADE, UNLESS NOTED OTHERWISE).
4. BW=FINISHED GRADE AT BOTTOM FACE OF WALL.
5. WHEN SEGMENTED BLOCK ('STACKED-BLOCK') RETAINING WALLS ARE CALLED FOR ON THE PLANS, ENGINEER SIGNED AND SEALED SHOP DRAWINGS MUST ENSURE THAT GEO-FABRIC IS PROPERLY ANCHORED TO THE WALL IN AREAS WITH VERTICAL PENETRATIONS. UNAPPROVED PENETRATIONS WILL REQUIRE GEOGRID REPLACEMENT AT CONTRACTORS EXPENSE.
6. WHEN SEGMENTED BLOCK ('STACKED-BLOCK') RETAINING WALLS ARE CALLED FOR ON THE PLANS, CONTRACTOR SHALL VERIFY THAT ALL REQUIRED VERTICAL PENETRATIONS THROUGH THE GEO-GRID ARE SPECIFIED ON THE PLANS PRIOR TO START OF CONSTRUCTION.
7. ENGINEER SHALL REVIEW AND APPROVE RETAINING WALL SHOP DRAWINGS PRIOR TO INSTALLATION.

FENCES

1. FENCES TALLER THAN 6-FOOT IN HEIGHT WILL REQUIRE A BUILDING PERMIT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE BUILDING PERMIT AT CONTRACTOR'S EXPENSE.
2. CONSTRUCTION BARRIERS - ALL CONSTRUCTION BARRIERS SHALL BE DESIGNED AND PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH IBC CHAPTER 33.
3. THE CONTRACTOR SHALL SUBMIT FOR BUILDING PERMIT FOR CONSTRUCTION BARRIERS AS REQUIRED BY LOCAL CODES.

CONSTRUCTION STANDARDS

ALL CONSTRUCTION METHODS AND MATERIAL SHALL CONFORM TO THESE DRAWINGS, PROJECT SPECIFICATIONS, STANDARDS WITH ALL CURRENT APPLICABLE CODES, AND, UNLESS OTHERWISE SPECIFIED, WITH THE CURRENT EDITIONS AND LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:

- VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD & BRIDGE SPECIFICATIONS
- VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD & BRIDGE STANDARDS
- MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
- VIRGINIA SUPPLEMENT TO THE MUTCD
- INSTRUCTIONAL AND INFORMATIONAL MEMORANDA (IIM)
- VIRGINIA WORK AREA PROTECTION MANUAL

SPECIFIC STANDARDS AND DETAILS FROM THE CURRENT AND OR REVISED VERSION OF THE 2016 VDOT ROAD AND BRIDGE STANDARDS INCLUDE:

1. CG-2
2. CG-6
3. CG-11
4. WP-2
5. CG-12
6. IS-1
7. DI-3A, 3C
8. DI-1
9. MH-2
10. FE-CL

LEGEND

348 EX. INTRMDT. CONTOUR	PROP. INTRMDT. CONTOUR
345 EX. INDEX CONTOUR	1320 PROP. INDEX CONTOUR
+ 35.55 EX. SPOT ELEVATION	35.55 / 35.05 PROP. SPOT ELEVATION
8" WL EX. WATER LINE	8" WL PROP. WATER LINE
8" SAN EX. SANITARY SEWER	8" SAN PROP. SANITARY SEWER
18"RCP EX. STORM PIPE	PROP. STORM PIPE
EX. EDGE OF PAVEMENT	PROP. EDGE OF PAVEMENT
EX. BUILDING	PROP. BUILDING
EX. CONCRETE	PROP. CONCRETE
EX. PAVEMENT	PROP. ASPHALT PAVEMENT (STANDARD/HEAVY DUTY)
EX. GRAVEL	PROP. GRAVEL
PAVEMENT REPLACEMENT	PROP. PAVERS
EX. POWER POLE	PROP. POWER POLE
EX. SANITARY SEWER MANHOLE	PROP. MANHOLE
EX. STORM SEWER MANHOLE	SIGN
CLEANOUT	WATER METER
EX. LIGHT POLE	PROP. GATE VALVE
WATER LINE REDUCER	BLOW-OFF VALVE
EX. TELEPHONE	BENCHMARK
G EX. GAS LINE	G PROP. GAS LINE
OHU EX. OVERHEAD CABLE	OHU PROP. OVERHEAD CABLE
X EX. FENCE	P PROP. UNDERGRND POWER LINE
EX. TREE LINE	X PROP. FENCE
ADJOINING PROPERTY LINE	PROP. TREE LINE
EXISTING ROAD MONUMENTS	SITE PROPERTY LINE
WETLAND AREA	INLET PROTECTION
RMA RESOURCE MANAGEMENT AREA	RPA RESOURCE PROTECTION AREA

ABBREVIATIONS

AHFH	ARROW HEAD TOP OF FIRE HYDRANT	EVCS	END VERT. CURVE STA.	RR	RAILROAD
		EW	ENDWALL	RYS	REAR YARD SETBACK
APPROX	APPROXIMATE	EXIST	EXISTING	SAN	SANITARY
ASPH	ASPHALT	FDN	FOUNDATION	SBL	SOUTH BOUND LANE
BC	BACK OF CURB	FF	FINISHED FLOOR	SD	STORM DRAIN
BIT	BITUMINOUS	FG	FINISH GRADE	SECT	SECTION
BLDG	BUILDING	GBE	GRADE BREAK ELEVATION	SE	SLOPE EASEMENT
BLK	BLOCK	GBS	GRADE BREAK STATION	SS	SANITARY SEWER
BM	BENCHMARK	HOA	HOMEOWNERS ASSOCIATION	SSD	STOPPING SIGHT DISTANCE
BS	BOTTOM OF BOTTOM STEP	HPT	HIGH POINT	SSE	SANITARY SEWER EASEMENT
BVCE	BEGIN VERT. CURVE ELEV.	HSD	HEADLIGHT SIGHT DISTANCE	STA	STATION
BVCS	BEGIN VERT. CURVE STA.	INTX	INTERSECTION	STD	STANDARD
BW	BOTTOM OF WALL	INV	INVERT	STO	STORAGE
CB	CINDER BLOCK	IP	IRON PIN	SYS	SIDE YARD SETBACK
C&G	CURB & GUTTER	LT	LEFT	TBM	TEMPORARY BENCHMARK
CMP	CORRUGATED METAL PIPE	LVC	LENGTH OF VERTICAL CURVE	TBR	TO BE REMOVED
CONC	CONCRETE	MH	MANHOLE	TC	TOP OF CURB
COR	CORNER	MIN	MINIMUM	TEL	TELEPHONE
DBL	DOUBLE	MBL	MINIMUM BUILDING LINE	TRANS	TRANSFORMER
DEFL	DEFLECTION	MON	MONUMENT	TS	TOP OF TOP STEP
DI	DROP INLET	NBL	NORTH BOUND LANE	TW	TOP OF WALL
DIA	DIAMETER	PROP	PROPOSED	TYP	TYPICAL
DE	DRAINAGE EASEMENT	PUE	PUBLIC UTILITY EASEMENT	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
ELEC	ELECTRIC	PVMT	PAVEMENT	VERT	VERTICAL
ELEV	ELEVATION	R	RADIUS	WBL	WEST BOUND LANE
ENTR	ENTRANCE	RT	RIGHT	YD	YARD
EP	EDGE OF PAVEMENT	R.O.W.	RIGHT OF WAY		
EVCE	END VERT. CURVE ELEV.	REQD	REQUIRED		

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

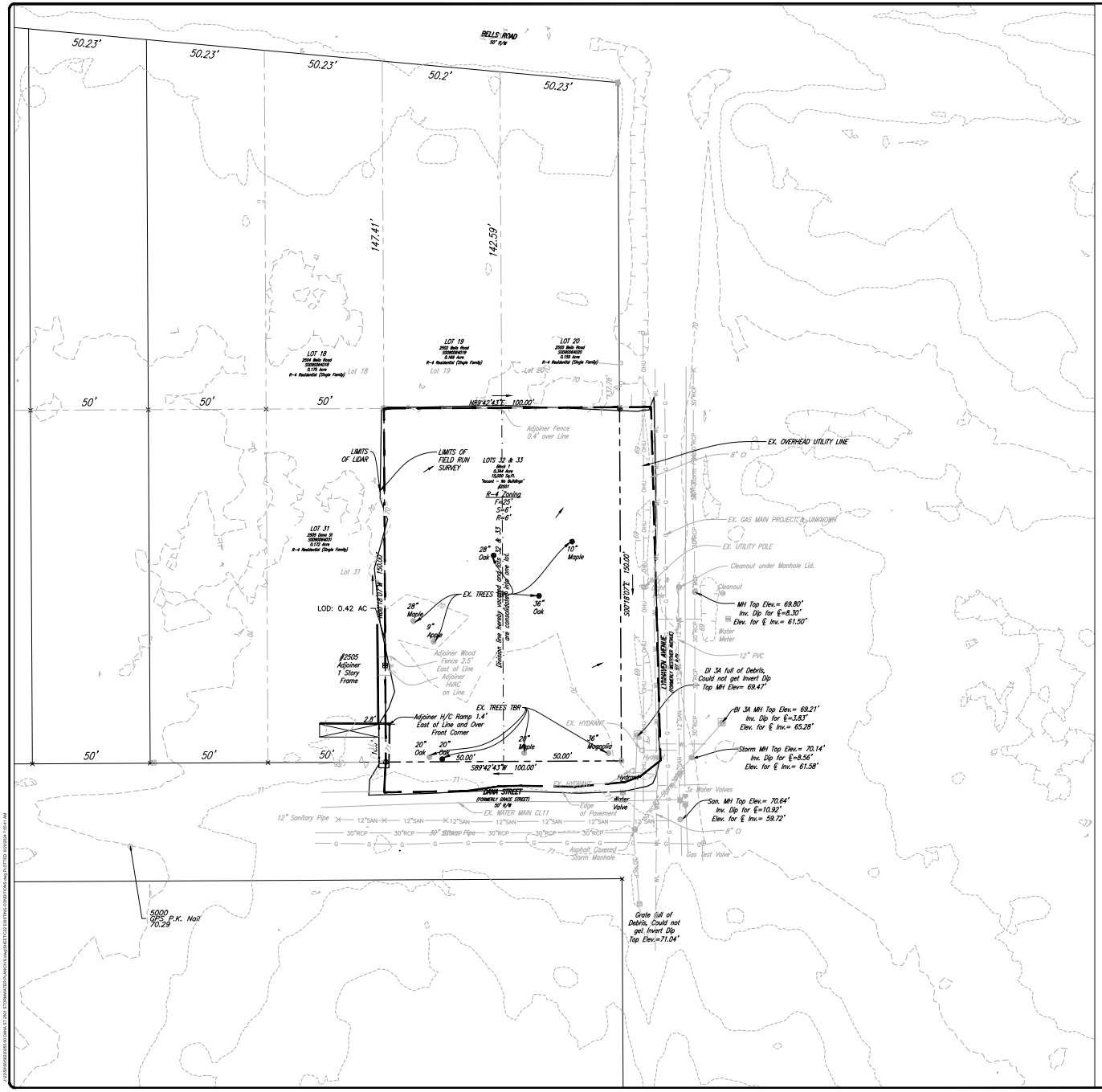
COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
GENERAL NOTES

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NONE
REVISIONS	
06-20-2024	

C01.1
PROJECT NO. 56220055.00



DEMOLITION NOTES

1. ALL EXISTING UTILITIES (I.E. WATER METERS, POWER POLES, STORM SEWER LINES AND INLETS, TELEPHONE, GAS, SANITARY LINES, ECT.) NOT USED FOR SERVICE SHALL BE ABANDONED AND OR REMOVED IN ACCORDANCE WITH COUNTY STANDARDS AND SPECIFICATIONS. ALL COST ASSOCIATED WITH THE ALTERATION OF THE UTILITIES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. ALL EXISTING ASPHALT AND CONCRETE TO BE REMOVED SHALL BE REMOVED FROM SITE AND DISPOSED OF PROPERLY.
3. THE CONTRACTOR IS TO REVIEW BUILDING, LAYOUT AND GRADING PLANS FOR MORE SPECIFIC INSTRUCTIONS REGARDING DEMOLITION OF THE SITE.
4. THE CONTRACTOR SHALL NOT LEAVE ANY OPEN HOLES OR TRENCHES, WITHIN 10' OF THE EDGE OF PAVEMENT, OVERNIGHT.
5. DISTURBED AREAS WITHIN 10' OF ANY EXISTING EDGE OF PAVEMENT SHALL BE DELINEATED WITH REFLECTORIZED DRUMS OR CONES PER CURRENT VA. WORK AREA PROTECTION MANUAL.
6. ADEQUATE PEDESTRIAN PROTECTION SHALL BE PROVIDED.
7. ALL CONSTRUCTION TO MEET OSHA SAFETY REGULATIONS.
8. THE CONTRACTOR SHALL NOTIFY MISS UTILITY (1-800-552-7001) 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING ANY EXISTING SIGNS OR PAVEMENT MARKINGS IN THE RIGHT OF WAY THAT ARE AFFECTED BY CONSTRUCTION.

NOTE:
A LAND DISTURBANCE PERMIT IS REQUIRED PRIOR TO DEMOLITION WORK.

THE TOPOGRAPHICAL SURVEY SHOWN HEREON IS FROM A FIELD SURVEY COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF CHRISTOPHER M. FINLEY FROM AN ACTUAL GROUND SURVEY MADE UNDER HIS SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON NOVEMBER 16, 2021; AND THAT THIS PLAT, MAP OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.

CONTOUR INTERVAL = 1 FOOT
HORIZONTAL DATUM = NAD 83
VERTICAL DATUM = NGVD 29

UNDERGROUND UTILITIES SHOWN HEREON BASED ON VISIBLE FIELD EVIDENCE.

20 0 20 40 60
1" = 20'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

EXISTING CONDITIONS

SOUTHSIDE 6TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 20'
REVISIONS	
06-20-2024	

C02

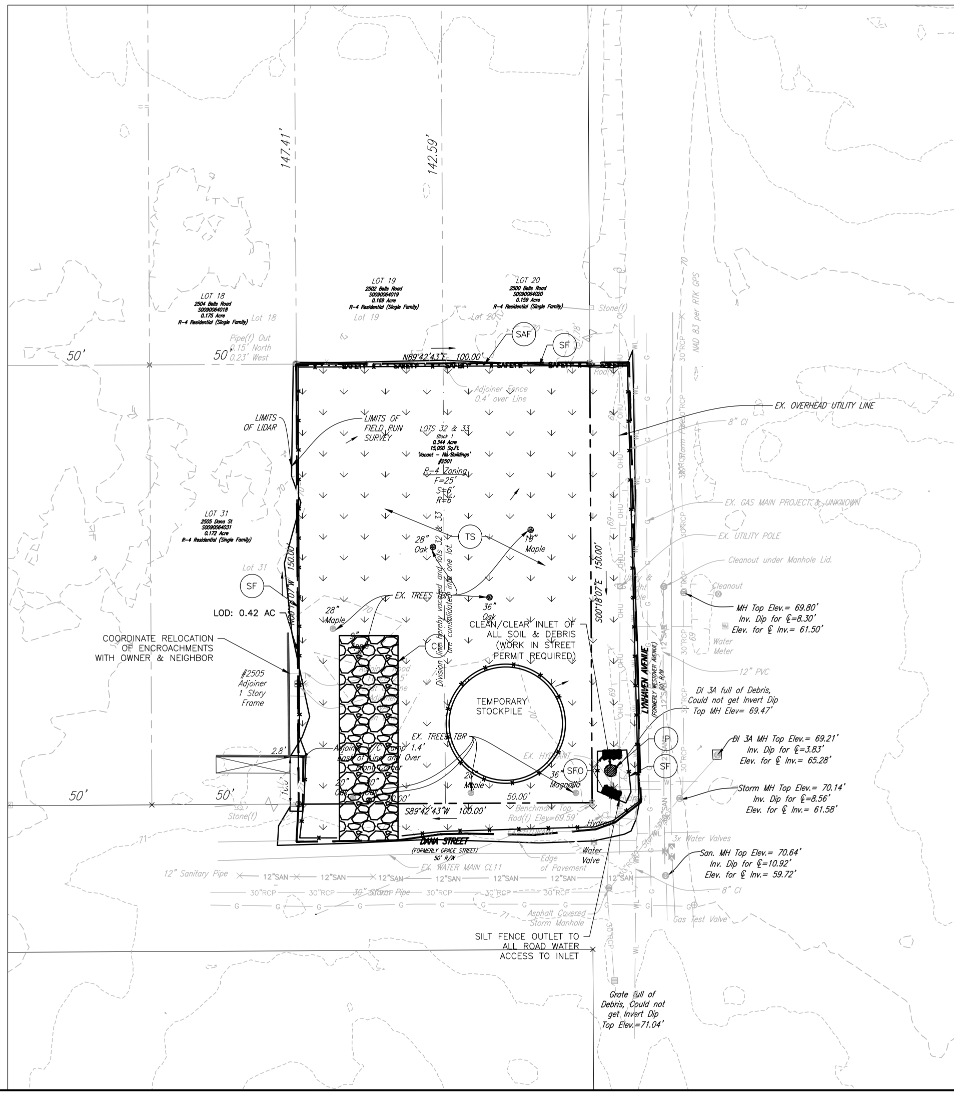
PROJECT NO. 56220055.00

PH 1 CONSTRUCTION NARRATIVE

1. THE CONTRACTOR IS TO NOTIFY THE CITY ENVIRONMENTAL ENGINEER OFFICE 48 HOURS PRIOR TO COMMENCING WITH LAND DISTURBANCE ACTIVITIES.
2. PRIOR TO BEGINNING CONSTRUCTION, AN ON SITE PRE-CONSTRUCTION MEETING SHALL BE HELD. THE CITY DPU ENVIRONMENTAL INSPECTOR, VSMP CONSTRUCTION ACTIVITY OPERATOR, THE ENGINEER, AND THE CONTRACTOR MUST ATTEND. APPROPRIATE OFFICIALS MUST RECEIVE 48 HOURS NOTICE PRIOR TO SCHEDULING.
3. CITY INSPECTOR & CLRD MUST MEET ONSITE TO INSPECT EROSION CONTROL MEASURES BEFORE PROCEEDING TO PHASE II OF THE EROSION CONTROL PLAN.
4. CLEAR AREA FOR TEMP. CONSTRUCTION ENTRANCE AND INSTALL GRAVEL CONSTRUCTION ENTRANCE AS SHOWN. ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA SITE CONSTRUCTION ENTRANCE ONLY. DURING WET WEATHER CONDITIONS, DRIVERS OF CONSTRUCTION VEHICLES SHALL BE REQUIRED TO WASH THEIR WHEELS BEFORE ENTERING HIGHWAY. THE CONSTRUCTION ENTRANCE SHALL BE USED FOR THE REMAINDER OF THE PROJECT AND SHALL NOT BE REMOVED UNLESS OTHERWISE SPECIFIED BY THE COUNTY INSPECTOR.
5. CLEAR ALONG LIMITS OF DISTURBANCE AREA FOR INSTALLATION OF SILT FENCE, SILT FENCE OUTLETS, TEMPORARY STOCKPILE AREAS, TEMPORARY SILT FENCE OUTLET.
6. INSTALL SILT FENCE, SILT FENCE OUTLETS AND TEMPORARY STOCKPILE AREAS.
7. PROVIDE TEMPORARY SEEDING AND SILT FENCE FOR STOCKPILE.
8. ONCE INITIAL ITEMS ARE INSTALLED, CLEAR REMAINING AREA.

NOTES:

1. ALL ON-SITE DRAINAGE EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF A BUILDING PERMIT FOR THIS PROJECT.
2. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE ENVIRONMENTAL ENGINEERING DEPARTMENT.
4. AT THE TIME OF THE PRE-CONSTRUCTION MEETING, TWO STANDARD SIGNS MUST BE INSTALLED ON EACH SIDE OF THE CONSTRUCTION ACCESS. THESE SIGNS SHOULD STATE EITHER "CONSTRUCTION ENTRANCE AHEAD" OR "TRUCKS ENTERING HIGHWAY".



NOTES:

A. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATION 9 VAC25-840-40.
B. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
C. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
D. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE ENVIRONMENTAL ENGINEERING DEPARTMENT.
E. AT THE TIME OF THE PRE-CONSTRUCTION MEETING, TWO STANDARD SIGNS MUST BE INSTALLED ON EACH SIDE OF THE CONSTRUCTION ACCESS. THESE SIGNS SHOULD STATE EITHER "CONSTRUCTION ENTRANCE AHEAD" OR "TRUCKS ENTERING HIGHWAY".

NOTE:
THE ROADWAYS SHALL BE KEPT FREE AND CLEAR OF DEBRIS AT ALL TIMES.

PHASE 1 EROSION & SEDIMENT CONTROL

SAFETY	113 LF	3.01	SAFETY FENCE	SAF
	1 EA	3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE
	698 LF	3.05	SILT FENCE	SF
	0.35 AC	3.31	TEMPORARY SEEDING	TS
	2 EA	--	SILT FENCE OUTLET	SFO
	1 EA	3.07	STORM DRAIN INLET PROTECTION	IP

20 0 20 40 60
1" = 20'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

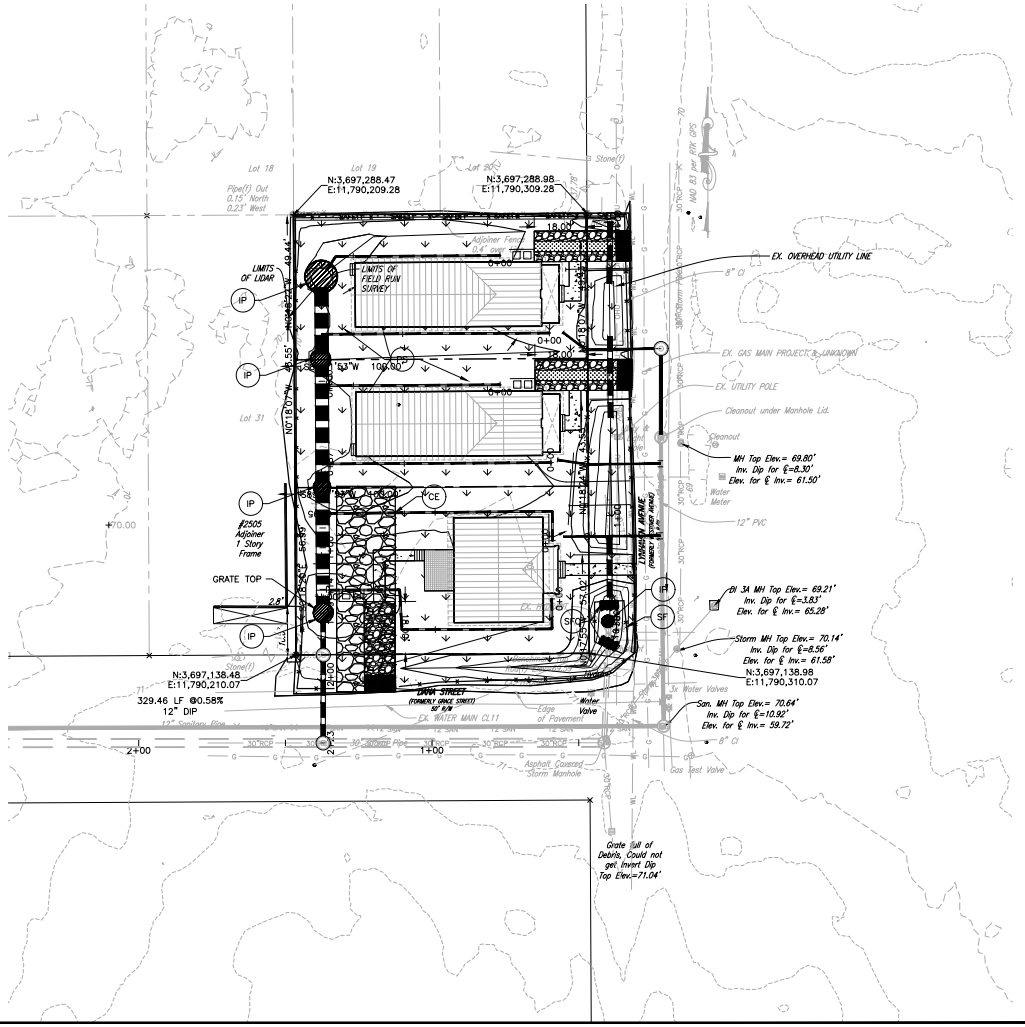
2501 DANA STREET
THREE HOUSE DEVELOPMENT
EROSION AND SEDIMENT CONTROL PLAN PHASE 1
SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 20'
REVISIONS	
06-20-2024	

C03
PROJECT NO. 56220055.00

PH 2 CONSTRUCTION NARRATIVE

1. CONTINUE CLEARING OF SITE, STRIP AND STOCKPILE TOPSOIL AT LOCATION AS SHOWN ON PLAN.
2. COMMENCE CUT AND FILL OPERATIONS.
3. CONTINUE GRADING OPERATIONS TO ESTABLISH BUILDING PAD SITE.
4. INSTALL CONCRETE WASHOUT PRIOR TO STARTING ANY CONCRETE WORK.
5. BEGIN STORM PIPE, AND UTILITY INSTALLATION. INSTALL INLET PROTECTION AS INLETS ARE INSTALLED. BEGIN BUILDING CONSTRUCTION. BRING SITE TO SUBGRADE ELEVATIONS.
6. AS AREAS ARE BROUGHT TO FINISH GRADE, PLACE STONE AND/OR TEMPORARY SEEDING.
7. COMPLETE ANY REMAINING EARTHWORK TO SUBGRADE ELEVATIONS. PLACE BASE STONE AND/OR PERMANENT SEEDING AND MULCHING.
8. COMPLETE INSTALLATION OF SITE WORK ITEMS, INSTALL ASPHALT AND CONCRETE PAVING AND PERMANENT SEEDING.
9. UPON COMPLETION OF THE PROJECT AND APPROVAL BY THE PROJECT ENGINEER AND LOCAL CITY OFFICIALS THE AREA MUST BE RESTORED TO ITS ORIGINAL CONDITION. ALL SILT FENCES ARE TO BE REMOVED FROM THE SITE, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LOCAL CITY OFFICIAL.



PHASE 2 EROSION & SEDIMENT CONTROL IN ADDITION TO PHASE 1

	0.30 AC	3.32	PERMANENT SEEDING	PS
	4 EA	3.07	STORM DRAIN INLET PROTECTION	IP

20 0 20 40 60

1" = 20'

NOTES

A. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATION 9 VAC25-840-40.

B. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

C. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

D. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY DPU ENVIRONMENTAL ENGINEERING DEPARTMENT.

E. A CITY OF RICHMOND WORK IN STREET PERMIT IS REQUIRED FOR ALL WORK WITHIN CITY OF RICHMOND RIGHT OF WAY.

F. AT THE TIME OF THE PRE-CONSTRUCTION MEETING, TWO STANDARD SIGNS MUST BE INSTALLED ON EACH SIDE OF THE CONSTRUCTION ACCESS. THESE SIGNS SHOULD STATE EITHER "CONSTRUCTION ENTRANCE AHEAD" OR "TRUCKS ENTERING HIGHWAY".

NOTE:
THE ROADWAYS SHALL BE KEPT FREE AND CLEAR OF DEBRIS AT ALL TIMES.

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

EROSION AND SEDIMENT CONTROL PLAN PHASE 2

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 20'
REVISIONS	
06-20-2024	

C04

PROJECT NO. 56220055.00

9VAC25-840-40. MINIMUM STANDARDS.

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES AND METHODS:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

   A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

   B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

14. ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

   A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

   B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

   C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

   D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

   E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.

   F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN-MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS:

   A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

   B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:

   (1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR

   (2) (A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.

   (B) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND

   (C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

   C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

   (1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL, THE BED, OR THE BANKS; OR

   (2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;

   (3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL; OR

   (4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.

   D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

   E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.

   F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

   G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

   H. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

   I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

   J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

   K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

   L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24-HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24-HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10-YEAR, 24-HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN-MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1-44.15:54 OR 62.1-44.15:65 OF THE ACT.

   M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1-44.15:52 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1-44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND-DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25-870-48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.

   N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25-870-66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

EROSION CONTROL NOTES

THE E&S INSPECTOR WILL BE NOTIFIED 48 HOURS PRIOR TO ANY CLEARING AND GRADING.

ALL ASPHALT AREAS WILL BE STABILIZED WITH BASE STONE WITHIN 30 DAYS OF FINAL GRADING.

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

ALL CUT AND FILL SLOPES CHANNELSIDE SLOPES WHICH ARE NOT TO BE PAVED SHALL BE SEEDED UNTIL A GOOD STAND OF GRASS IS OBTAINED IN ACCORDANCE WITH:

A. 100 LBS. PER 1,000 SQUARE FOOT GROUND LIMESTONE OR EQUIVALENT. NO SOIL TEST REQUIRED FOR INITIAL ESTABLISHMENT.

B. 20 LBS. OF 10-10-10 FERTILIZER OR EQUIVALENT PER 1,000 SQUARE FOOT.

C. VARIETIES TO BE SEEDED:

1. SPRING SEEDING - FEBRUARY 16 - APRIL 30; SPRING OATS 2.5 LBS. PER 1,000 SQUARE FOOT.

2. SUMMER SEEDING - MAY 1 - AUGUST 31; WEEPING LOVE GRASS AT 2 OZ. PER 1,000 SQUARE FOOT MIXED WITH 1 BUSHEL SAWDUST FOR UNIFORM SEEDING.

3. SEEDING SHALL BE MULCHED WITH STRAW, HAY, OR MULCH.

COUNTY ENGINEER AND OTHER INTERESTED AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHOD USED FOR THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN MAY BE AMENDED BY THE APPROVING AUTHORITY OF ON SITE INSPECTION INDICATED THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CANNOT BE CARRIED OUT.

CONTRACTOR SHALL LOCATE AND VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.

THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" BEFORE BEGINNING ANY EXCAVATION OR UTILITY WORK (1-800-552-7001).

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS, SPECIFICATIONS AND DETAILS OF THE LATEST EDITION OF THE VIRGINIA EROSION CONTROL HANDBOOK (THE HANDBOOK) BY THE VIRGINIA SOIL AND WATER CONSERVATION BOARD.

EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE MAINTAINED, SO THAT SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES.

PROPERTIES AND RIGHT-OF-WAY ADJOINING THE SITE SHALL BE KEPT CLEAN OF MUD OR SILT CARRIED FROM THE SITE BY VEHICULAR TRAFFIC OR RUNOFF.

ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES.

EXCAVATED MATERIAL FROM TRENCHES SHALL BE PLACED ON THE UPGRADE SITE OF THE TRENCH TO ALLOW MATERIAL TO ERODE INTO THE TRENCH.

THE APPROXIMATE TOTAL AREA OF THE LIMITS OF DISTURBANCE IS 0.42 ACRES.

EROSION & SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION: THIS PROJECT PROPOSES THE RESIDENTIAL DEVELOPMENT OF 3 HOMES.

EXISTING SITE CONDITIONS: THE SITE IS CURRENTLY FORESTED VACANT LOT.

ADJACENT AREAS:
NORTH: R-4 OCCUPIED RESIDENTIAL
SOUTH: DANA STREET
EAST: LYNHAVEN AVENUE
WEST: R-4 OCCUPIED RESIDENTIAL

OFF-SITE AREAS: NONE

SOILS: SEE MAP AND LEGEND BELOW.

CRITICAL AREAS: NONE

EROSION AND SEDIMENT CONTROL MEASURES: SEE EROSION AND SEDIMENT CONTROL PLAN, SHEETS C03 & C04

PERMANENT STABILIZATION: SEE EROSION AND SEDIMENT CONTROL PLAN PHASE II, SHEET C04

STORMWATER RUNOFF CONSIDERATIONS: C07-C10

CALCULATIONS: SEE SHEETS C10.

MAINTENANCE: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATION AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS 9VAC25-840-40.

ES-2 THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5 PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS(INCLUDING BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR THE REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7 ALL DISTURBED AREAS TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

SITE AREA

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13A	Dogue loam, 0 to 4 percent slopes, rarely flooded	3.1	26.8%
37B	Turbeville-Urban land complex, 2 to 6 percent slopes	6.4	55.5%
40	Udorthents-Dumps complex, pits	0.1	0.8%
41	Urban land	1.9	16.8%
Totals for Area of Interest		11.5	100.0%

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

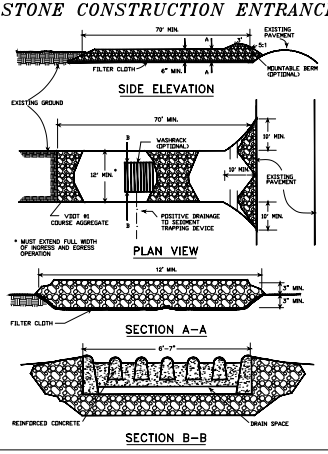
2501 DANA STREET
THREE HOUSE DEVELOPMENT
EROSION AND SEDIMENT CONTROL NOTES

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NONE
REVISIONS	
06-20-2024	

C05
PROJECT NO. 56220055.00

STONE CONSTRUCTION ENTRANCE

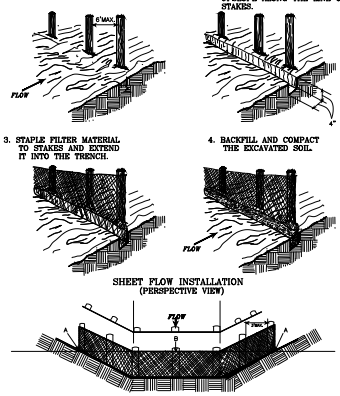


NOTE: CONTRACTOR SHALL KEEP THE RIGHT-OF-WAY FREE AND CLEAR OF DIRT AND DEBRIS AT ALL TIMES.

SOURCE: ADAPTED from 1983 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC — Plate 3.02-1

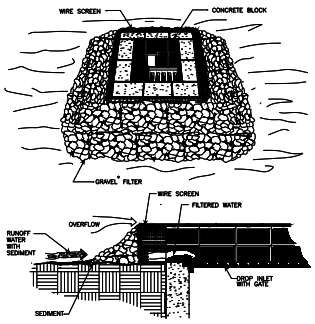
CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

1. SET THE STAKES.
2. EXCAVATE A 4"X 4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
3. STAPLE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control,VA. DSWC Sherwood and Tyrol — PLATE 3.05-2 SOURCE: VA. DSWC

BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER



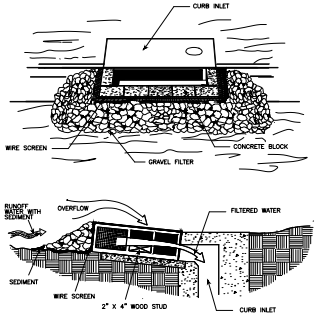
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

PLATE. 3.07-2SOURCE: VA. DSWC

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER



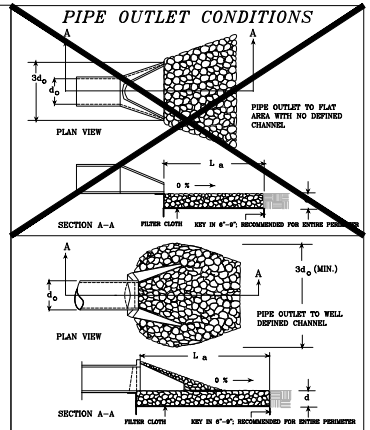
SPECIAL APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE

PLATE 3.07-8

PIPE OUTLET CONDITIONS

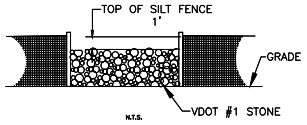


NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

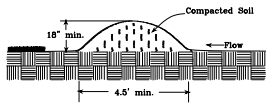
DIMENSIONS:
Lo=8'
do=12"
do=15"
d50=0.5'

Source: Va. DSWC — Plate 3.18-1

SILT FENCE OUTLET DETAIL



TEMPORARY DIVERSION DIKE



SOURCE: VA. DSWC — PLATE 3.09-1

TABLE 3.31-B
ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS
"QUICK REFERENCE FOR ALL REGIONS"

SEED

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT 1 – FEB 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MUTI-FLORUM) & CEREAL (WINTER) RYE (SECALE CEREALE)	50–100
FEB 16 – APR 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60–100
MAY 1 – AUG 31	GERMAN MILLET (SETARIA ITALICA)	50

FERTILIZER & LIME

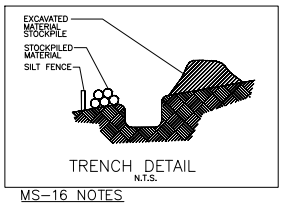
APPLY 10-10-10 FERTILIZER AT A RATE OF 450 LBS./ACRE (OR 10 LBS./1,000 SQ.FT.)
APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 90 LBS./1,000 SQ.FT.)

NOTE:
1. A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF SITE.
2. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4 – 6 INCHES OF THE SOIL BY DISKING OR BY OTHER MEANS.
3. WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETINS #4, 2003 NUTRIENT MANAGEMENT DEVELOPMENT SITE AT HTTP://WWW.DCR.STATE.VA.US/SW/EAS.HTM#PUBS

TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

	TOTAL LBS PER ACRE
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	175–200 LBS
– TALL FESCUE[1]	95–100%
– PERENNIAL RYEGRASS	0–5%
– KENTUCKY BLUEGRASS[1]	0–5%
HIGH-MAINTENANCE LAWN	
– TALL FESCUE[1]	200–250 LBS
GENERAL SLOPE (3:1 OR LESS)	
– TALL FESCUE[1]	128 LBS
– RED TOP GRASS OR CREEPING RED FESCUE	2 LBS
– SEASONAL NURSE CROP[2]	20 LBS
	150 LBS
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
– TALL FESCUE[1]	108 LBS
– RED TOP GRASS OR CREEPING RED FESCUE	2 LBS
– SEASONAL NURSE CROP[2]	20 LBS
– CROWNVETCH[3]	20 LBS
	150 LBS

1. WHEN SELECTING VARIETIES OF TURFGRASS, USE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION (VCIA) RECOMMENDEDTURFGRASS VARIETY LIST. QUALITY SEED WILL BEAR A LABEL INDICATING THAT THEY ARE APPROVED BY VCIA. A CURRENT TURFGRASSVARIETY LIST IS AVAILABLE AT THE LOCAL COUNTY EXTENSION OFFICE OR THROUGH VCIA AT 804-746-4884 OR AT HTTP://SUDAN.CSES.VT.EDU/HTML/TURF/TURF/PUBLICATIONS/PUBLICATIONS2.HTML
2. USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
   FEBRUARY 16TH THROUGH APRIL ..... ANNUAL RYE
   MAY 1ST THROUGH AUGUST 15TH ..... FOXTAIL MILLET
   AUGUST 16TH THROUGH OCTOBER ..... ANNUAL RYE
   NOVEMBER THROUGH FEBRUARY 15TH ..... WINTER RYE
3. SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWNVETCH, INCREASE RATE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS/ACRE IN MIXES.



MS-16 NOTES

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCHES.

C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.

D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

E. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

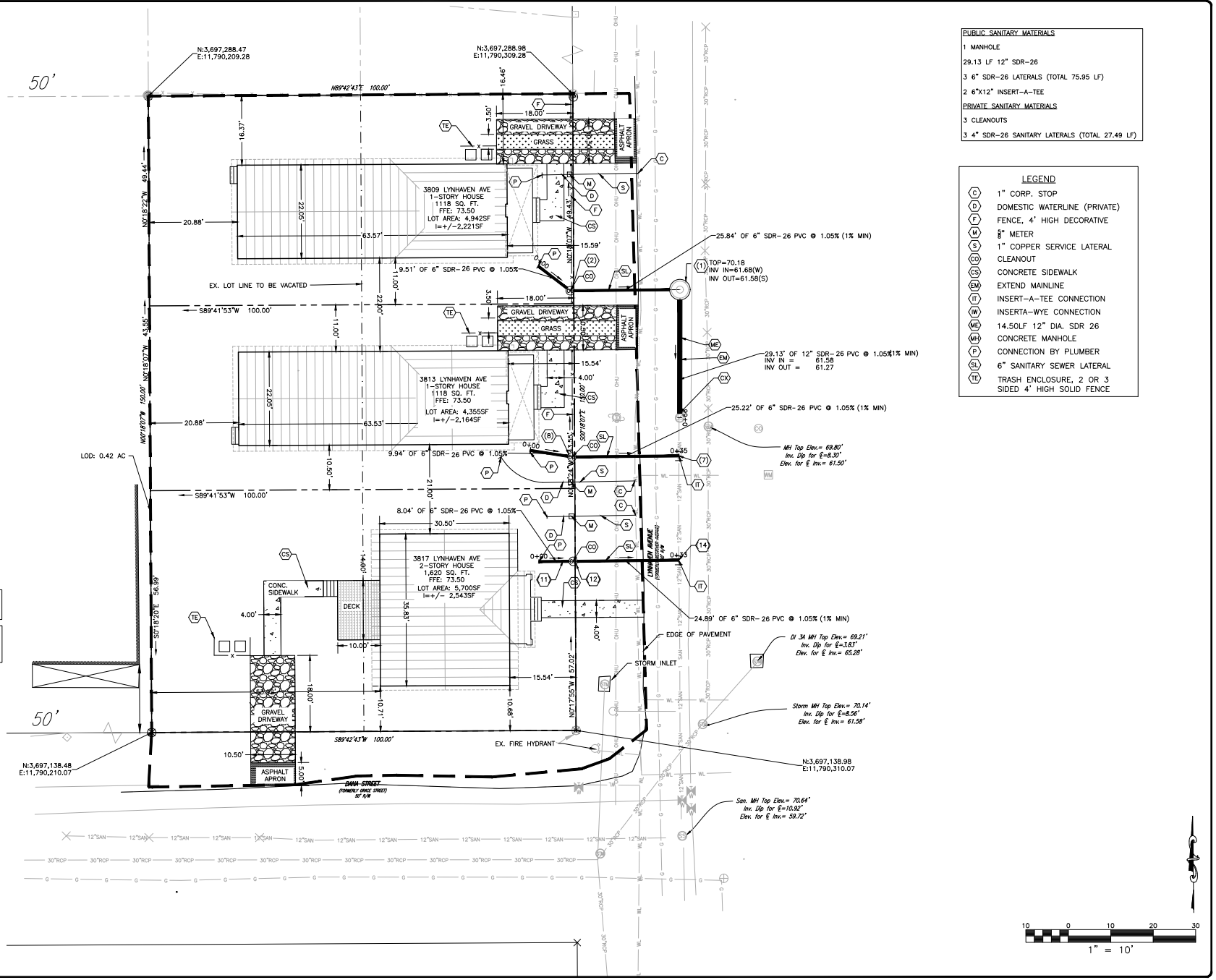
COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
EROSION AND SEDIMENT CONTROL DETAILS

SOUTHSIDE 6TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NONE
REVISIONS	
06-20-2024	

C05.1
PROJECT NO. 56220055.00



NOTE: ALL PROPOSED UTILITIES ARE TO BE INSTALLED UNDERGROUND INCLUDING ELECTRIC, TELEPHONE AND CATV.

NOTE: EXISTING UTILITIES HORIZONTAL & VERTICAL LOCATIONS TO BE VERIFIED BY CONTRACTOR. NOTIFY ENGINEER IF CONFLICTS EXIST.

PUBLIC SANITARY MATERIALS

1 MANHOLE

29.13 LF 12" SDR-26

3 6" SDR-26 LATERALS (TOTAL 75.95 LF)

2 6"X12" INSERT-A-TEE

PRIVATE SANITARY MATERIALS

3 CLEANOUTS

3 4" SDR-26 SANITARY LATERALS (TOTAL 27.49 LF)

LEGEND

C	1" CORP. STOP
D	DOMESTIC WATERLINE (PRIVATE)
F	FENCE, 4' HIGH DECORATIVE
M	5/8" METER
S	1" COPPER SERVICE LATERAL
CO	CLEANOUT
CS	CONCRETE SIDEWALK
EM	EXTEND MAINLINE
IT	INSERT-A-TEE CONNECTION
W	INSERTA-WYE CONNECTION
ME	14.50LF 12" DIA. SDR 26
MH	CONCRETE MANHOLE
P	CONNECTION BY PLUMBER
SL	6" SANITARY SEWER LATERAL
TE	TRASH ENCLOSURE, 2 OR 3 SIDED 4' HIGH SOLID FENCE

1" = 10'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

LAYOUT AND UTILITY PLAN

SOUTHSIDE 5TH DISTRICT
2501 DANA ST STREET RICHMOND, VA

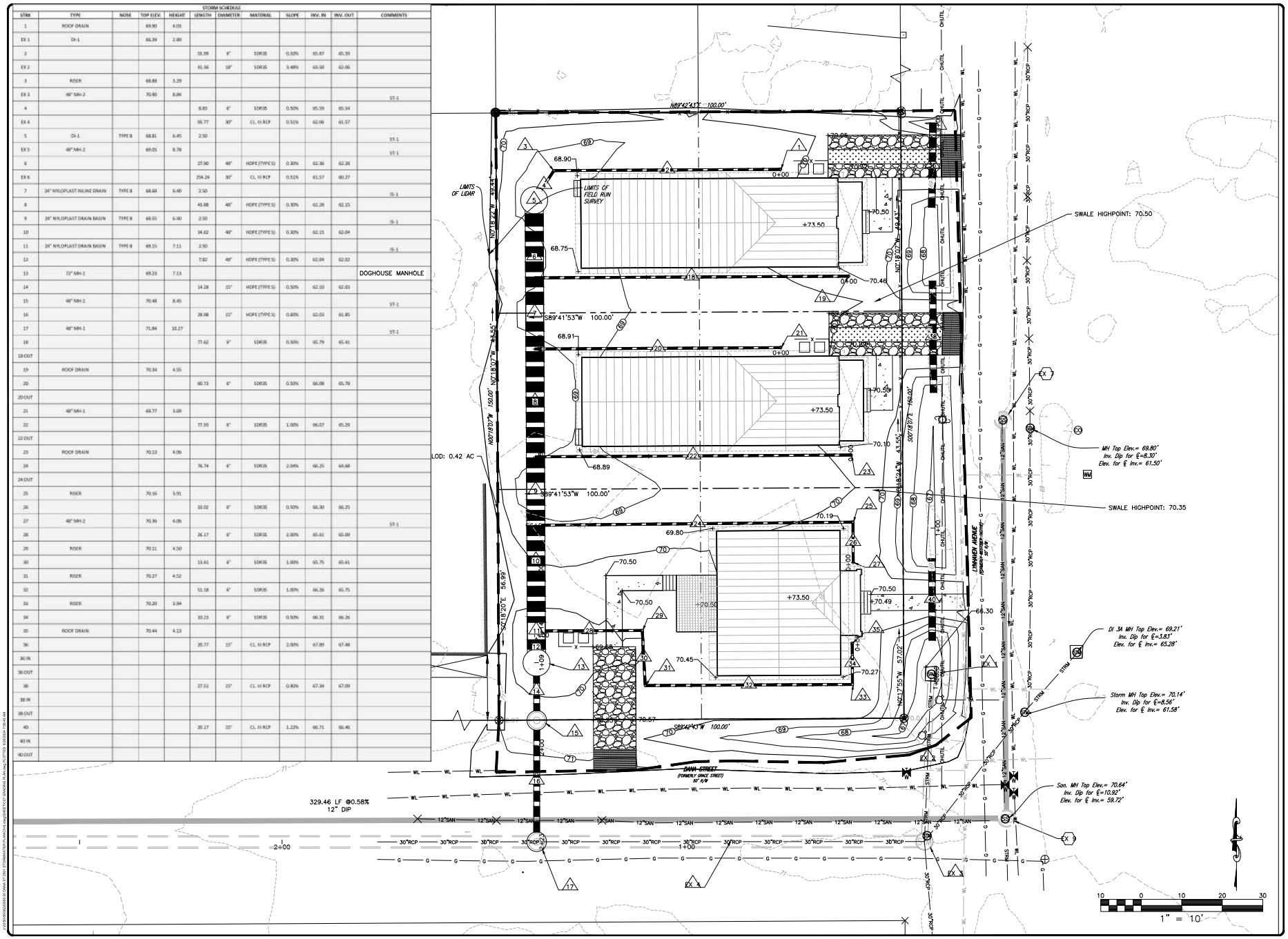
DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1"=10'
REVISIONS	
06-20-2024	

C06

PROJECT NO. 56220055.00

STORM SCHEDULE

STR#	TYPE	NOTE	TOP ELEV.	HEIGHT	LENGTH	DIAMETER	MATERIAL	SLOPE	INV. IN	INV. OUT	COMMENTS
1	ROOF DRAIN		69.90	4.03							
EX 1	DI-1		66.39	2.89							
2					55.99	6"	SDR35	0.50%	65.87	65.59	
EX 2					61.36	18"	SDR35	3.48%	62.50	62.06	
3	RISER		68.88	5.29							
EX 3	48" MH-2		70.90	8.86							ST-1
4					8.83	6"	SDR35	0.50%	65.59	65.54	
EX 4					66.77	30"	CL III RCP	0.51%	62.06	61.57	
5	DI-1	TYPE B	68.81	8.45	2.50						
EX 5	48" MH-2		69.05	8.78							ST-1
6					37.90	48"	HDPE (TYPE S)	0.30%	62.36	62.28	ST-1
EX 6					254.24	30"	CL III RCP	0.51%	61.57	60.27	
7	24" NYLOPLAST INLINE DRAIN	TYPE B	68.68	6.40	2.50						
8					43.88	48"	HDPE (TYPE S)	0.30%	62.28	62.15	DI-1
9	24" NYLOPLAST DRAIN BASIN	TYPE B	68.55	6.40	2.50						
10					34.62	48"	HDPE (TYPE S)	0.30%	62.15	62.04	DI-1
11	24" NYLOPLAST DRAIN BASIN	TYPE B	69.15	7.11	2.50						
12					7.82	48"	HDPE (TYPE S)	0.30%	62.04	62.02	DI-1
13	72" MH-1		69.23	7.13							DOGHOUSE MANHOLE
14					14.28	15"	HDPE (TYPE S)	0.50%	62.10	62.03	
15	48" MH-1		70.48	8.45							ST-1
16					28.88	15"	HDPE (TYPE S)	0.60%	62.03	61.85	
17	48" MH-1		71.84	10.27							ST-1
18					77.62	6"	SDR35	0.50%	65.79	65.41	
18 OUT											
19	ROOF DRAIN		70.34	4.55							
20					60.73	6"	SDR35	0.50%	66.08	65.78	
20 OUT											
21	48" MH-1		69.77	3.69							
22					77.55	6"	SDR35	1.90%	66.07	65.29	
22 OUT											
23	ROOF DRAIN		70.13	4.06							
24					76.74	6"	SDR35	2.04%	66.25	64.68	
24 OUT											
25	RISER		70.16	3.91							
26					10.02	6"	SDR35	0.50%	66.30	66.25	
27	48" MH-2		70.36	4.06							ST-1
28					26.17	6"	SDR35	2.00%	65.61	65.09	
29	RISER		70.11	4.50							
30					13.61	6"	SDR35	1.00%	65.75	65.61	
31	RISER		70.27	4.52							
32					51.18	6"	SDR35	1.00%	66.26	65.75	
33	RISER		70.20	3.94							
34					10.23	6"	SDR35	0.50%	66.31	66.26	
35	ROOF DRAIN		70.44	4.13							
36					20.77	15"	CL III RCP	2.00%	67.89	67.48	
36 IN											
36 OUT											
38					37.51	15"	CL III RCP	0.80%	67.34	67.09	
38 IN											
38 OUT											
40					30.17	15"	CL III RCP	1.22%	66.71	66.46	
40 IN											
40 OUT											



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS

Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

GRADING PLAN

SOUTHSIDE 6TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 10'
REVISIONS	
06-20-2024	

C07

PROJECT NO. 56220055.00

SS10

FROM POINT	TO POINT	DA (ACRES)	C	CA INCR.	ACCUM.	T_C (MINUTES)	RAINFALL (IN/HR)	RUNOFF (CFS)	LINE	INVERT IN	INVERT OUT	LENGTH (FEET)	SLOPE	DIAM. (INCHES)	MANNING'S N COEFF.	CAPACITY (CFS)	VELOCITY (FPS)	FLOW TIME (MINUTES)	PERCENT CAPACITY
	3	0.02	0.90	0.02	0.02	5.00	7.00	0.13	2	65.87	65.59	55.99	0.50%	6	0.011	0.47	2.03	0.46	0.27
	5				0.02	5.46	6.85	0.13	4	65.59	65.54	8.83	0.50%	6	0.011	0.47	2.03	0.07	0.27
	7	0.10	0.90	0.09	0.11	5.53	6.83	0.74	6	62.36	62.28	27.90	0.30%	48	0.012	85.20	2.09	0.22	0.01
	9	0.10	0.90	0.09	0.20	5.76	6.75	1.34	8	62.28	62.15	43.88	0.30%	48	0.012	85.20	2.50	0.29	0.02
	11	0.12	0.90	0.11	0.31	6.05	6.66	2.04	10	62.15	62.04	34.62	0.30%	48	0.012	85.20	2.84	0.20	0.02
	13	0.12	0.90	0.11	0.42	6.25	6.60	2.79	12	62.04	62.02	7.82	0.30%	48	0.012	85.20	3.12	0.04	0.03
	15				0.42	6.29	6.59	2.79	14	62.10	62.03	14.28	0.50%	15	0.012	4.95	4.16	0.06	0.56
	17				0.42	6.35	6.57	2.79	16	62.03	61.85	29.98	0.60%	15	0.012	5.42	4.46	0.11	0.52
	EX 5				0.51	6.46	6.54	3.34	EX 6	61.57	60.27	254.24	0.51%	30	0.013	29.28	3.97	1.07	0.11
1	EX 3	0.29	0.30	0.09	0.09	5.00	7.00	0.61	EX 2	63.50	62.06	41.36	3.48%	18	0.011	23.15	5.65	0.12	0.03
1	17				0.09	5.12	6.96	0.61	EX 4	62.06	61.57	95.77	0.51%	30	0.013	29.28	2.40	0.67	0.02
	18 OUT	0.02	0.90	0.02	0.02	5.00	7.00	0.13	18	65.79	65.41	77.62	0.50%	6	0.011	0.47	2.03	0.64	0.27
	20 OUT	0.02	0.90	0.02	0.02	5.00	7.00	0.13	20	66.08	65.78	60.73	0.50%	6	0.011	0.47	2.03	0.50	0.27
	22 OUT	0.02	0.90	0.02	0.02	5.00	7.00	0.13	22	66.07	65.29	77.93	1.00%	6	0.011	0.66	2.60	0.50	0.19
	25	0.01	0.90	0.01	0.01	5.00	7.00	0.06	26	66.30	66.25	10.02	0.50%	6	0.011	0.47	1.67	0.10	0.13
	24 OUT				0.01	5.10	6.97	0.06	24	66.25	64.68	76.74	2.04%	6	0.011	0.95	2.74	0.47	0.07
	33	0.01	0.90	0.01	0.01	5.00	7.00	0.06	34	66.31	66.26	10.23	0.50%	6	0.011	0.47	1.67	0.10	0.13
	31				0.01	5.10	6.97	0.06	32	66.26	65.75	51.18	1.00%	6	0.011	0.66	2.13	0.40	0.10
	29				0.01	5.50	6.83	0.06	30	65.75	65.61	13.61	1.00%	6	0.011	0.66	2.13	0.11	0.10
	11				0.01	5.61	6.80	0.06	28	65.61	65.09	26.17	2.00%	6	0.011	0.94	2.72	0.16	0.07
4	36 OUT					5.00	7.00		36	67.89	67.48	20.77	2.00%	15	0.013	9.13			
4	38 OUT					5.00	7.00		38	67.34	67.09	27.51	0.90%	15	0.013	6.13			
4	40 OUT					5.00	7.00		40	66.71	66.46	20.17	1.22%	15	0.013	7.13			

HGL10

INLET	OUTLET WATER SURFACE ELEV.	D_o	Q_o	L_o	S_{fo}	H_f	JUNCTION LOSS												FINAL H	INLET WATER SURFACE ELEV.	RIM ELEV.	STRUCTURE TYPE
							V_o	H_o	Q_i	V_i	$QV_{i\,max}$	$V_i^2/2g$	H_i	ANGLE	H_Δ	H_t	$1.3H_t$	$0.5H_t$				
17	62.27	30"	3.34	254.24	0.01	0.02	3.97	0.06	2.79	4.46	12.46	0.31	0.11	90	0.22	0.39			0.40	62.67	71.84	48" MH-1
15	62.85	15"	2.79	29.98	0.16	0.05	4.46	0.08	2.79	4.16	11.63	0.27	0.09	0	0.00	0.17			0.22	63.07	70.48	48" MH-1
13	63.07	15"	2.79	14.28	0.16	0.02	4.16	0.07	2.79	3.12	8.72	0.15	0.05	0	0.00	0.12			0.14	63.21	69.23	72" MH-1
11	65.22	48"	2.79	7.82	0.00	0.00	3.12	0.04	2.04	2.84	5.79	0.13	0.04	90	0.08	0.16	0.21	0.11	0.11	65.33	69.15	24" NYLOPLAST DRAIN BASIN
9	65.33	48"	2.04	34.62	0.00	0.00	2.84	0.03	1.34	2.50	3.34	0.10	0.03			0.07	0.08	0.04	0.04	65.37	68.55	24" NYLOPLAST DRAIN BASIN
7	65.37	48"	1.34	43.88	0.00	0.00	2.50	0.02	0.74	2.09	1.54	0.07	0.02			0.05	0.06	0.03	0.03	65.40	68.68	24" NYLOPLAST INLINE DRAIN
5	65.48	48"	0.74	27.90	0.00	0.00	2.09	0.02	0.13	2.03	0.26	0.06	0.02	34	0.02	0.06	0.08		0.08	65.56	68.81	DI-1
3	65.94	6"	0.13	8.83	0.04	0.00	2.03	0.02	0.13	2.03	0.26	0.06	0.02	56	0.03	0.07			0.08	66.02	68.88	RISER
1	66.02	6"	0.13	55.99	0.04	0.02	2.03	0.02								0.02	0.02		0.05	66.06	69.90	ROOF DRAIN
EX 3	63.57	30"	0.61	95.77	0.00	0.00	2.40	0.02	0.61	5.65	3.44	0.50	0.17	88	0.35	0.54			0.54	64.11	70.90	48" MH-2
EX 1	64.11	18"	0.61	41.36	0.00	0.00	5.65	0.15								0.15	0.19		0.19	64.31	66.39	DI-1
19	65.81	6"	0.13	77.62	0.04	0.03	2.03	0.02								0.02	0.02		0.05	65.86	70.34	ROOF DRAIN
21	66.18	6"	0.13	60.73	0.04	0.02	2.03	0.02								0.02	0.02		0.05	66.23	69.77	48" MH-1
23	65.69	6"	0.13	77.93	0.04	0.03	2.60	0.03								0.03	0.04		0.07	65.76	70.13	ROOF DRAIN
25	65.08	6"	0.06	76.74	0.01	0.01	2.74	0.03	0.06	1.67	0.11	0.04	0.02	90	0.03	0.07			0.08	65.16	70.16	RISER
27	66.65	6"	0.06	10.02	0.01	0.00	1.67	0.01								0.01	0.02		0.02	66.67	70.36	48" MH-2
29	65.49	6"	0.06	26.17	0.01	0.00	2.72	0.03	0.06	2.13	0.13	0.07	0.02	87	0.05	0.10			0.11	65.60	70.11	RISER
31	66.01	6"	0.06	13.61	0.01	0.00	2.13	0.02	0.06	2.13	0.13	0.07	0.02	87	0.05	0.09			0.09	66.10	70.27	RISER
33	66.15	6"	0.06	51.18	0.01	0.00	2.13	0.02	0.06	1.67	0.11	0.04	0.02	90	0.03	0.06			0.07	66.22	70.20	RISER
35	66.66	6"	0.06	10.23	0.01	0.00	1.67	0.01								0.01	0.02		0.02	66.68	70.44	ROOF DRAIN
36 IN	68.48	15"	0.00	20.77	0.00	0.00													0.00	68.48	0.00	
38 IN	68.09	15"	0.00	27.51	0.00	0.00													0.00	68.09	0.00	
40 IN	67.46	15"	0.00	20.17	0.00	0.00													0.00	67.46	0.00	

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

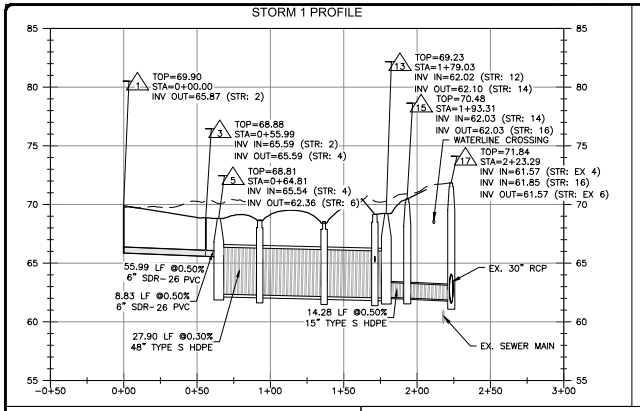
COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
STORM PIPE SCHEDULE

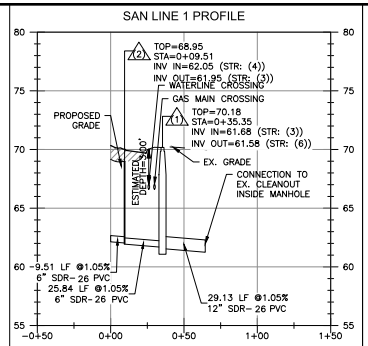
SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

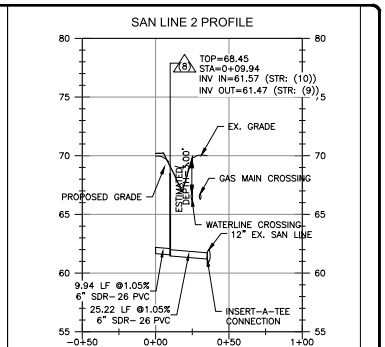
DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NTS
REVISIONS	
06-20-2024	

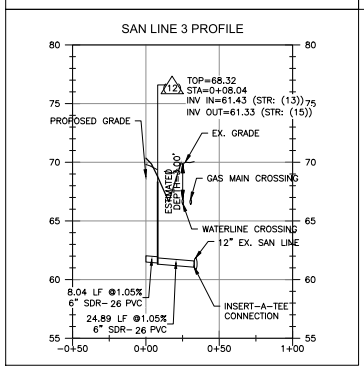
C08
PROJECT NO. 56220055.00

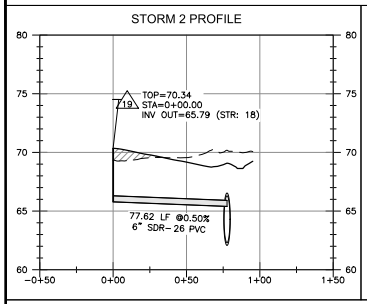


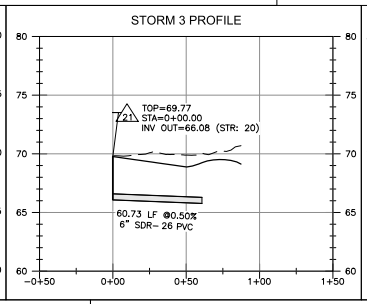
NOTE:
ELEVATIONS ARE APPROXIMATE.
CONTRACTOR TO VERIFY CROSSING DEPTH AND NOTIFY ENGINEER IF CONFLICT EXISTS.

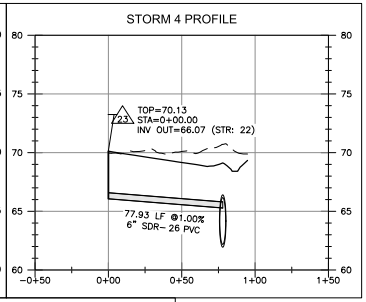


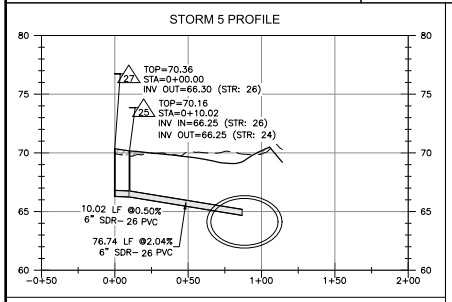


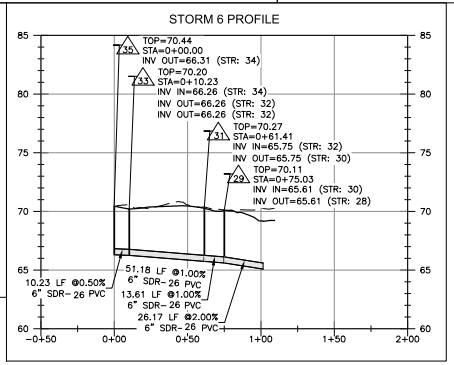


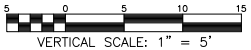


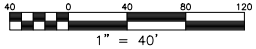












BALZER & ASSOCIATES
PLANNERS / ARCHITECTS ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

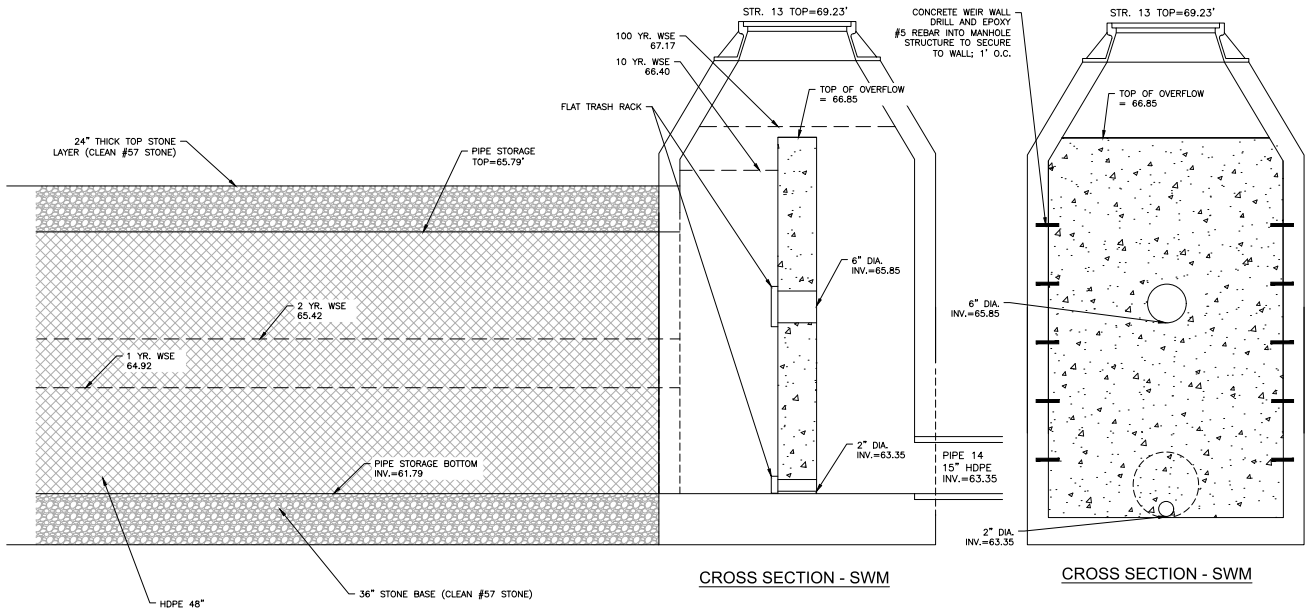
COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
PROFILES

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	AS SHOWN
REVISIONS	
06-20-2024	

C09
PROJECT NO. 56220055.00



CROSS SECTION - SWM

CROSS SECTION - SWM

40 0 40 80 120

1" = 40'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
STORMWATER DETAILS

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = ##'
REVISIONS	
06-20-2024	

C10

PROJECT NO. 56220055.00

Stormwater Compliance Table				
Site Area (acres)	0.344 AC			
Required Removal for the site (lbs)	N/A			
Total Load Removed (lbs)	N/A			
	Offset Nutrient Credit			
Offset Generating Facility	N/A			
Amount of Phosphorous Purchased (lbs)	N/A			
Equivalent Nitrogen Amount (lbs)	N/A			
8 digit HUC of Generating Facility	N/A			
	BMP #1			
BMP Type (e.g. rooftop disconnect, grass channel, bioretention)	N/A			
BMP Service Area (list sections/phases)	N/A			
Design Removal Efficiency (%)	N/A			
Drainage area used for sizing BMP (Acres)	Soil Type	Open Space	Managed Turf	Impervious
	A			
	B			
	C			
	D			
	Total			
Pervious Acres Treated	N/A			
Treatment Volume (cf)	N/A			
Load Removed (lbs)	N/A			
Location of BMP (Lat/Long)	37.408785, −77.548323			
Receiving water	JAMES RIVER—FALLING CREEK			
VAHUC6	JL02			
MS4 Operator	N/A			
TMDL	N/A			
Downstream BMP	N/A			
Location of storm sewer outfalls 30 inches in diameter and greater (excludes culverts)	N/A			

Site Area (Acres)	3.44		
	OUTFALL 2		
Drainage Area (Acres)	0.42		
Runoff Reduction (cf)	N/A		
Receiving Channel Type (Natural, Restored, or Manmade)	MANMADE		
Channel Protection Compliance Method	NON EROSIVE TO L.O.A.		
Flood Protection Compliance Method	ADEQUATE CHANNEL TO L.O.A.		
	1-year	2-year	10-year
CN Existing	70	70	70
$RV_{Existing}$ (AC-FT)	0.053	0.083	0.189
$Q_{Existing}$ (CFS)	0.66	1.13	2.75
$RV_{Forested}$ (AC-FT)			
$Q_{Forested}$ (CFS)			
CN Developed	93	93	93
$RV_{Developed}$ (AC-FT)	0.196	0.250	0.413
$Q_{developed}$ (CFS)	0.14	0.38	2.75
$Q_{allowed}$ (CFS)	0.14		2.75
$V_{developed}$ (ft/s)	N/A	N/A	N/A
Outfall Location (Lats/Longs)	37.408382, −77.548074		

NOTE: SEE SHEETS C08 FOR OVERALL DRAINAGE MAPS

STORM NARRATIVE

ON SITE DETENTION IS USED TO MEET 10/10 COMPLIANCE FOR CHANNEL AND FLOOD PROTECTION. STORMWATER OUTFALL COMPLIANCE IS ACHIEVED BY DEMONSTRATING THE SITE AREA IS LESS THAN 1% OF THE TOTAL DRAINAGE AREA AT THE POINT OF ANALYSIS. OUTFALL FROM OUR SITE TO POINT OF ANALYSIS #2 IS WITHIN A MAN MADE CHANNEL. SITE AREA IS BASED ON THE PROJECTS LIMITS OF DISTURBANCE NOT THE LIMITS OF THE PROPERTY WHICH IS SMALLER.

WATER QUALITY

NO REQUIREMENTS FOR THIS DEVELOPMENT

OUTFALL 1

OUTFALL 1 IS AT THE PROPOSED MANHOLE IN DANA STREET OFF THE SOUTHWEST CORNER OF THE PROPERTY. FLOOD PROTECTION IS MET BY THE RUNOFF BEING RELEASED AT LESS THAN EXISTING 10 YR RATES.

EXISTING DRAINAGE TO OUTFALL 1

DA=0.42 AC
CN=70, TC=5.0 MIN.
Rv1= 0.017 AC−FT
Q1= 0.27 CFS
Q10= 1.16 CFS

POST DEVELOPED DETAINED DRAINAGE AREA TO OUTFALL 1

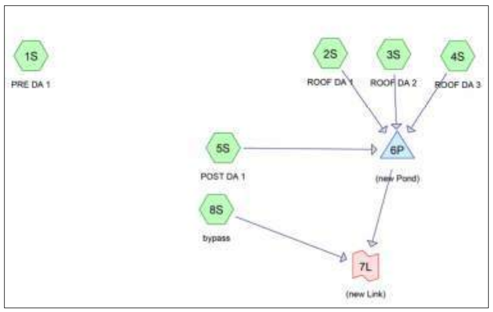
DA=0.42 AC
CN=77, TC=5 MIN.

STORMWATER OUTFALL FOR THE 1YR STORM IS MET BY DEMONSTRATING THAT OUR SITE AREA IS LESS THAN 1% OF THE DRAINAGE AREA TO POINT OF ANALYSIS AND REMAINS WITHIN A MANMADE CHANNEL, A STORM PIPE SYSTEM THAT WAS DESIGNED FOR THE 10YR STORM.

FROM SWM ROUTING
Q10=0.88 CFS (EQUAL TO OR LESS THAN Q10 PRE)

1−YEAR RUNOFF STAYS WITHIN A MANMADE CHANNEL TO POINT OF ANALYSIS (#2) WHERE SITE AREA IS LESS THAN 1% OF THE TOTAL AREA THAT DRAINS TO OUTFALL #2.

FLOOD PROTECTION FOR THIS OUTFALL POINT IS MET BY THE 10−YR RUNOFF BEING RELEASED EQUAL TO OR LESS THAN PRE 10 YR RATES.



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 9

Summary for Subcatchment 2S: ROOF DA 1

[49] Hint: Tc<2dt may require smaller dt

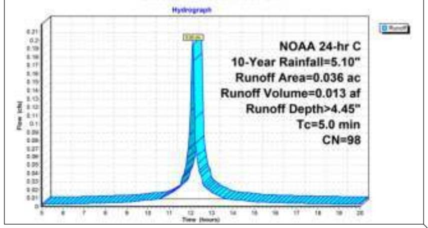
Runoff = 0.20 cfs @ 12.11 hrs, Volume= 0.013 af, Depth> 4.45"
Routed to Pond 6P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.036	98	Roofs, HSG C
0.036		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2S: ROOF DA 1



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 10

Summary for Subcatchment 3S: ROOF DA 2

[49] Hint: Tc<2dt may require smaller dt

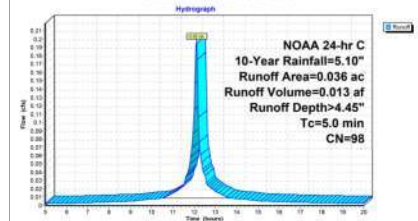
Runoff = 0.20 cfs @ 12.11 hrs, Volume= 0.013 af, Depth> 4.45"
Routed to Pond 6P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.036	98	Roofs, HSG C
0.036		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3S: ROOF DA 2



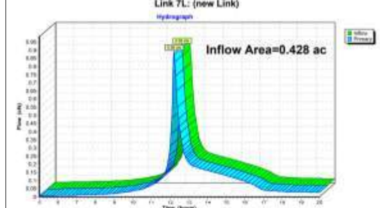
DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 16

Summary for Link 7L: (new Link)

Inflow Area = 0.428 ac, 32.24% Impervious, Inflow Depth > 3.02" for 10-Year event
Inflow = 0.88 cfs @ 12.21 hrs, Volume= 0.108 af
Primary = 0.88 cfs @ 12.21 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

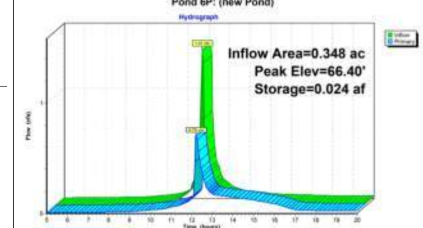
Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 7L: (new Link)



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 15

Pond 6P: (new Pond)



EXISTING CONDITIONS

DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 8

Summary for Subcatchment 1S: PRE DA 1

[49] Hint: Tc<2dt may require smaller dt

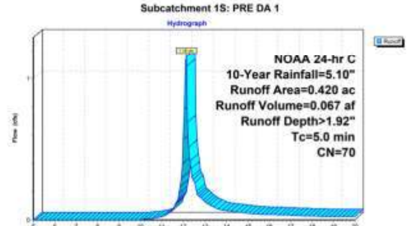
Runoff = 1.16 cfs @ 12.12 hrs, Volume= 0.067 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.420	70	Woods, Good, HSG C
0.420		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 1S: PRE DA 1



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 13

Summary for Subcatchment 8S: bypass

[49] Hint: Tc<2dt may require smaller dt

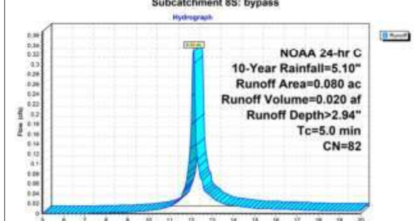
Runoff = 0.33 cfs @ 12.11 hrs, Volume= 0.020 af, Depth> 2.94"
Routed to Link 7L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.070	80	>75% Grass cover, Good, HSG D
0.010	98	Paved parking, HSG D
0.080	82	Weighted Average
0.070		87.50% Pervious Area
0.010		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 8S: bypass



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 12

Summary for Subcatchment 5S: POST DA 1

[49] Hint: Tc<2dt may require smaller dt

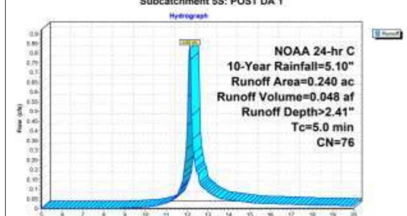
Runoff = 0.82 cfs @ 12.12 hrs, Volume= 0.048 af, Depth> 2.41"
Routed to Pond 6P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.020	98	Paved parking, HSG C
0.220	74	>75% Grass cover, Good, HSG C
0.240	76	Weighted Average
0.220		91.67% Pervious Area
0.020		8.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 5S: POST DA 1



DANA HYDROCAD — *NOAA 24-hr C 10-Year Rainfall=5.10"*
Prepared by Balzer & Associates, Inc — Printed 2/27/2024
HydroCAD® 10.20-4a s/n 07711 © 2023 HydroCAD Software Solutions LLC — Page 11

Summary for Subcatchment 4S: ROOF DA 3

[49] Hint: Tc<2dt may require smaller dt

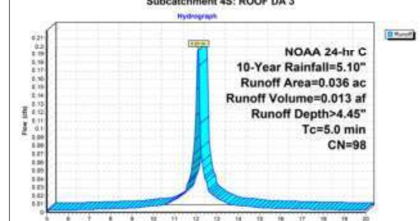
Runoff = 0.20 cfs @ 12.11 hrs, Volume= 0.013 af, Depth> 4.45"
Routed to Pond 6P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NOAA 24-hr C 10-Year Rainfall=5.10"

Area (ac)	CN	Description
0.036	98	Roofs, HSG C
0.036		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 4S: ROOF DA 3



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

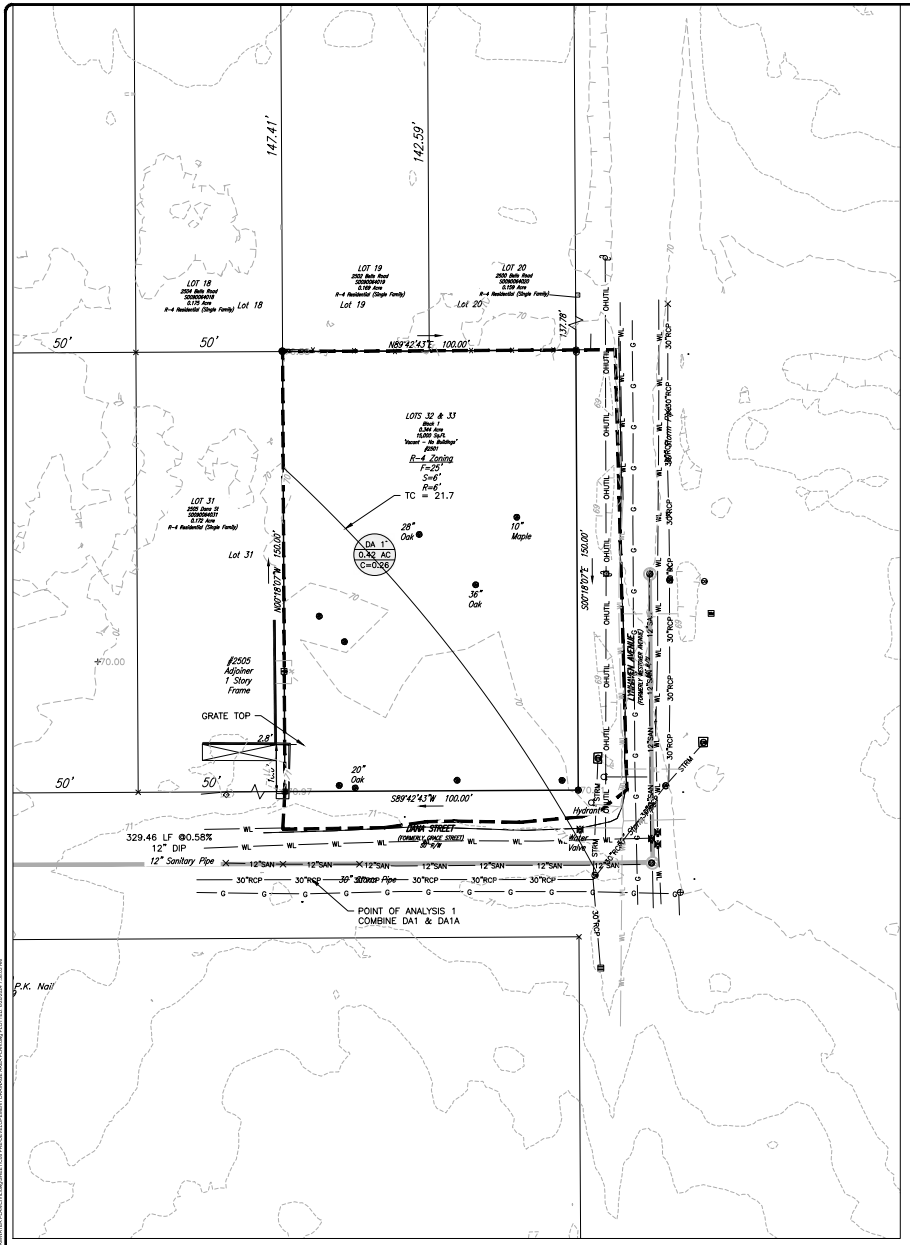
CALCULATIONS

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

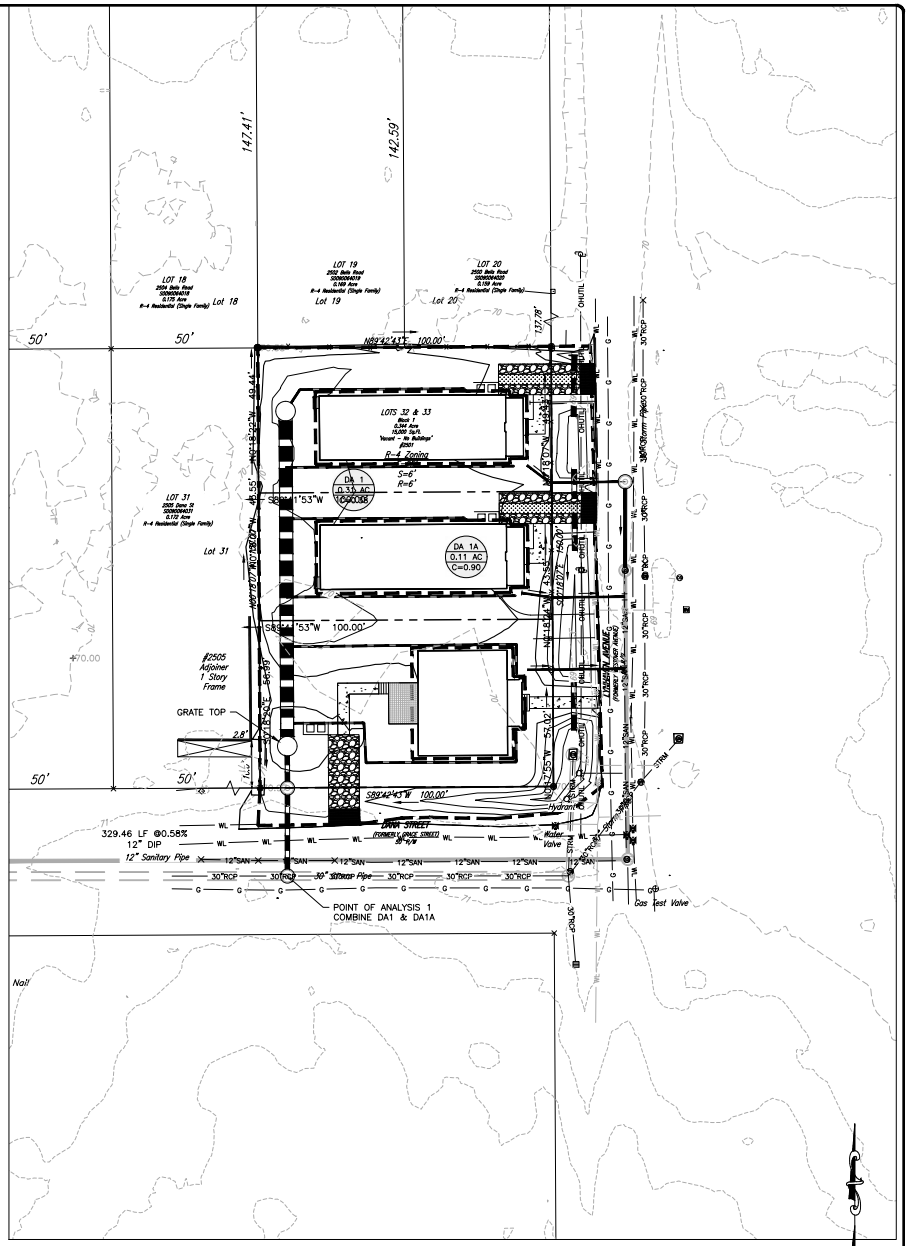
DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NTS
REVISIONS	
06-20-2024	

C11

PROJECT NO. 56220055.00



PRE DRAINAGE AREA



POST DRAINAGE AREA

20 0 20 40 60

1" = 20'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

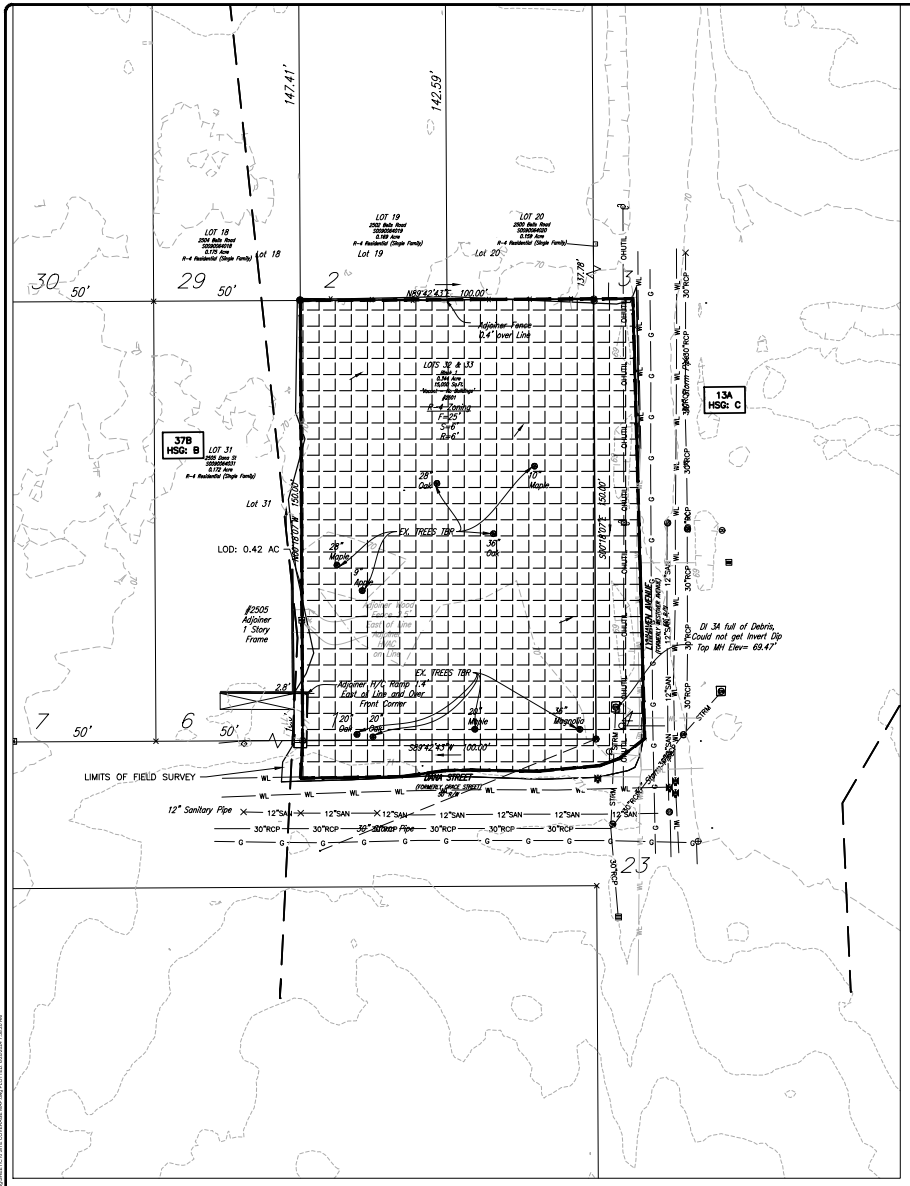
PRE & POST-DEVELOPEMENT DRAINAGE AREA PLAN

SOUTHSIDE 6TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 20'
REVISIONS	
06-20-2024	

C12

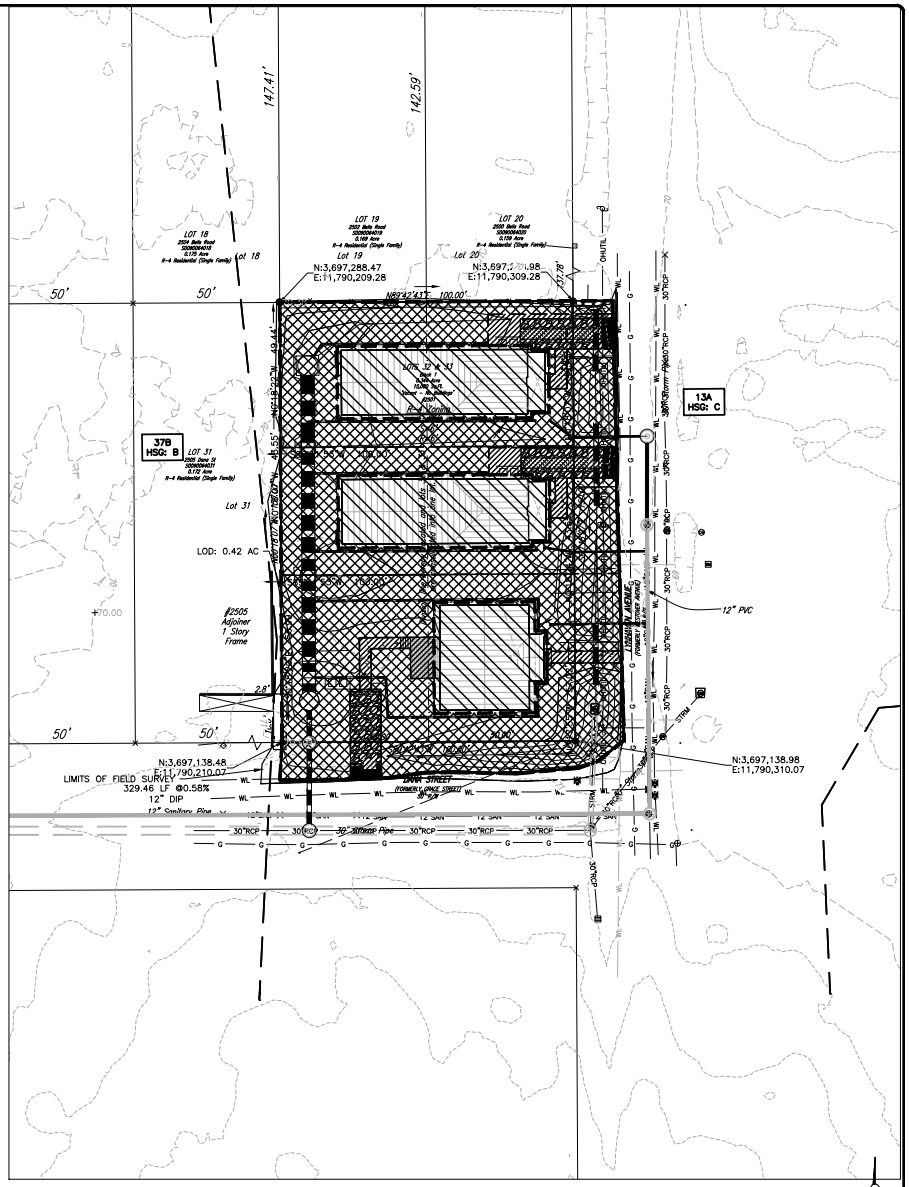
PROJECT NO. 56220055.00



PRE–DEVELOPMENT SITE COVERAGE

LEGEND

C SOILS FORESTED 0.42 AC



POST–DEVELOPMENT SITE COVERAGE

LEGEND

C SOILS ROOF IMPERVIOUS 0.11 AC

C SOILS IMPERVIOUS 0.04 AC

C SOILS MANAGED TURF 0.27 AC

20 0 20 40 60

1" = 20'

BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

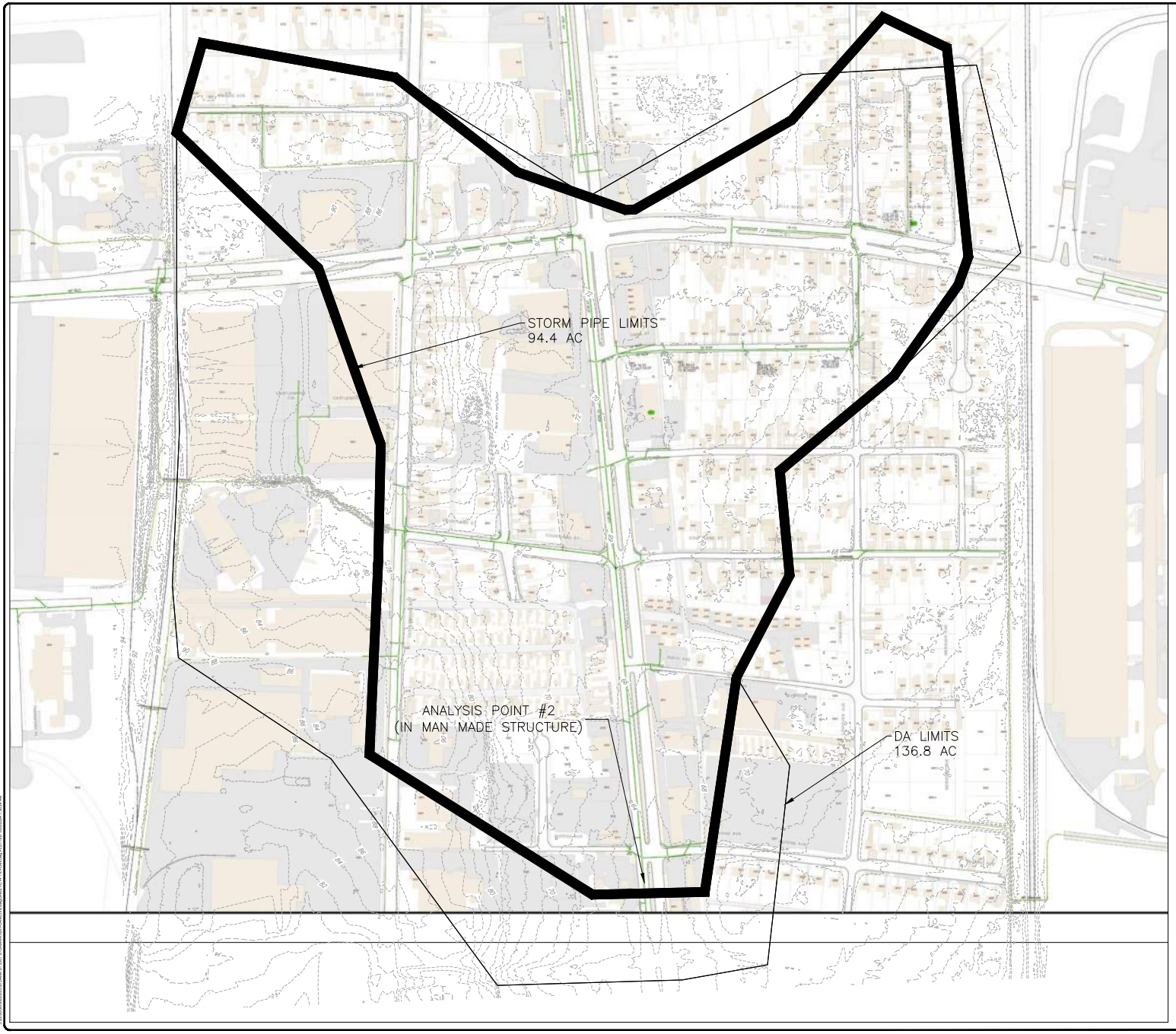
PRE AND POST SOILS PLAN

SOUTHSIDE/8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 20'
REVISIONS	
06-20-2024	

C13

PROJECT NO. 56220055.00



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

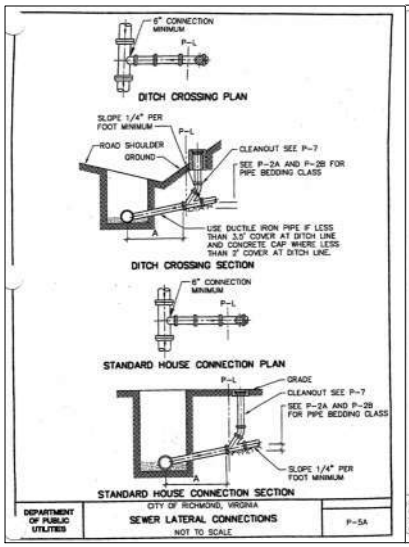
COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

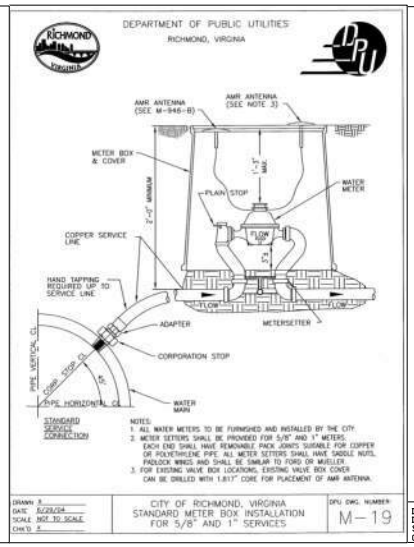
2501 DANA STREET
THREE HOUSE DEVELOPMENT
1% PLAN

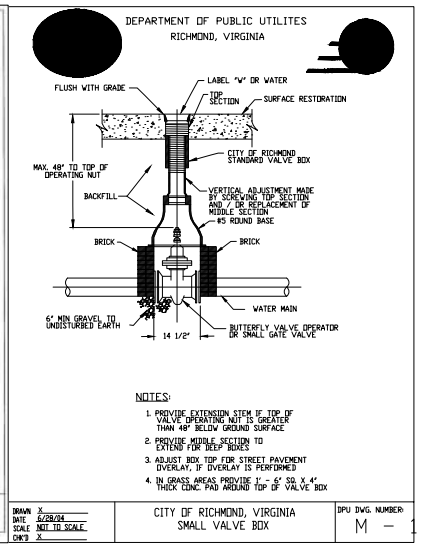
SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1"=150'
REVISIONS	
06-20-2024	

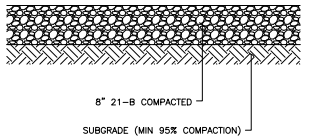
C14
PROJECT NO. 56220055.00



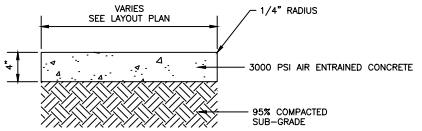




NOTES:
1. G.C. SHALL BE RESPONSIBLE FOR OBTAINING ADEQUATE COMPACTION OF SUBGRADE PRIOR TO AGGREGATE TOP COURSE.

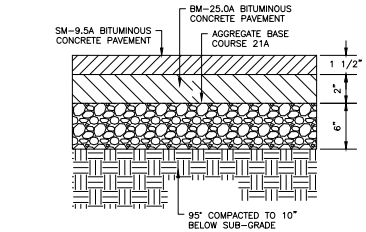


4 GRAVEL PAVEMENT SECTION - DETAIL
NTS

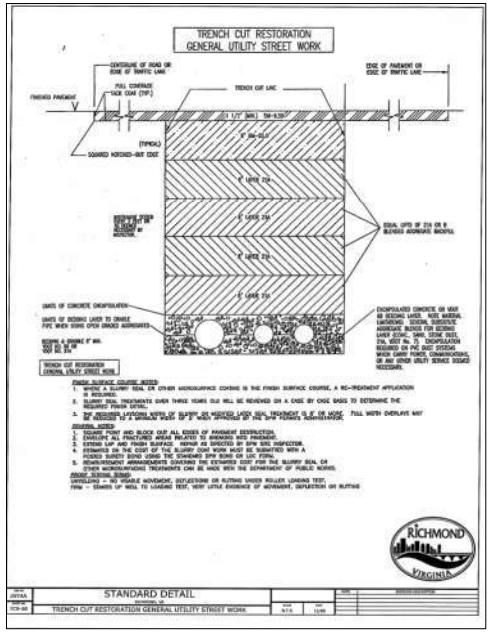


NOTES:
FINISH- TROWELED EDGES, BROOM FINISH.
SCORING EVERY 6'.
1/2" PREFORMED EXPANSION JOINT FILLER WHERE ADJACENT TO BUILDING AND EVERY 25' O.C.

8 SIDEWALK - DETAIL
NTS



1 LIGHT DUTY PAVING - DETAIL
NTS (NOT FOR USE IN R.O.W.)



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
NOTES & DETAILS

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

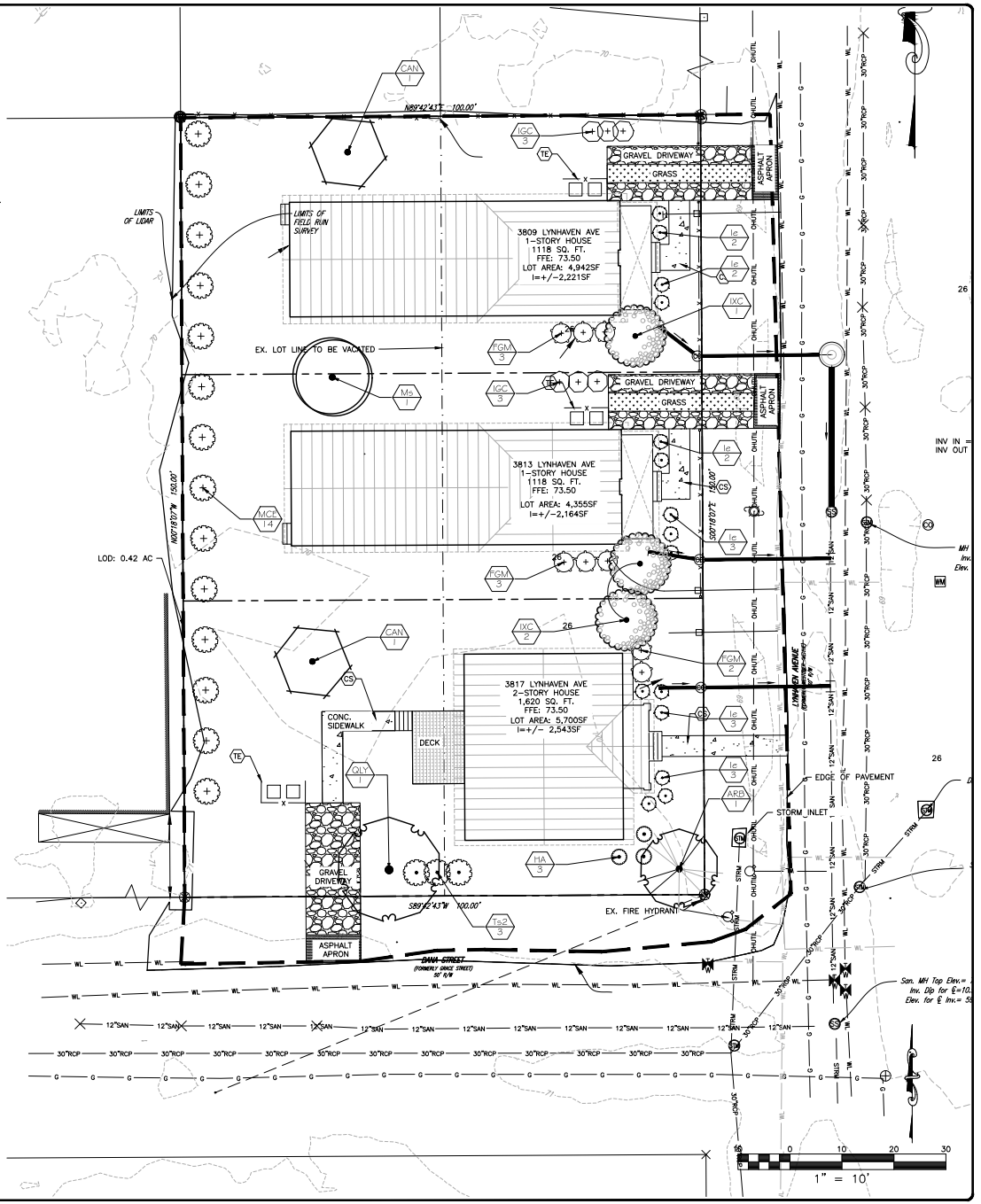
DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	NTS
REVISIONS	
06-20-2024	

C15
PROJECT NO. 56220055.00

PLANT SCHEDULE

CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	HT
LARGE TREE					
ARB	1	Acer rubrum 'Brandywine' / Red Maple	B & B	2.00" CAL. MIN.	8'-10' MIN.
Ms	1	Magnolia virginiana / Sweetbay Magnolia	B & B	3.00" CAL. MIN.	8'-10' MIN.
QLY	1	Quercus lyrata / Overcup Oak	B & B	2.00" CAL. MIN.	8'-10' MIN.
SMALL DECIDUOUS TREE					
CAN	2	Cercis canadensis / Eastern Redbud	B & B	2.00" CAL. MIN.	8' MIN.
SMALL EVERGREEN TREE					
IXC	3	Ilex x 'Conaf' TM / Oak Leaf Red Holly	B & B	1.25" CAL. MIN.	7' MIN.

CODE	QTY	BOTANICAL / COMMON NAME	CONT	HT	SPR
SHRUBS					
FGM	8	Fothergilla gardenii 'Mt. Airy' / Dwarf Witchalder	3 gal	18" MIN.	
HA	3	Hydrangea arborescens 'Annabelle' / Annabelle Hydrangea	3 gal	8"-12"	15" MIN.
IGC	6	Ilex glabra 'Compacta' / Compact Inkberry	3 gal	18" MIN.	15"-18" MIN.
Ie	15	Ilex vomitoria 'Bordeaux' / Bordeaux Holly	3 gal	18" MIN.	18" MIN.
MCE	14	Morella cerifera / Wax Myrtle	3 gal	18" MIN.	15"-18" MIN.
Ts2	3	Thuja occidentalis 'Smaragd' / Emerald Green Arborvitae	3 gal	18" MIN.	18"-24" MIN.



BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET

THREE HOUSE DEVELOPMENT

LANDSCAPE

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 10'
REVISIONS	
06-20-2024	

L01

PROJECT NO. 56220055.00

1. PLANT MATERIAL NAMES ARE IN COMPLIANCE WITH HORTUS THIRD SIZES AND GRADING ARE TO COMPLY WITH THE LATEST EDITION OF AMERICAN STANDARDS FOR NURSERY STOCK. PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMAN.

2. ALL WORK SHALL BE COORDINATED WITH TRADES.

3. USE EXISTING TOPSOIL AND/OR PROVIDE NEW TOPSOIL, WHICH IS FERTILE, FRIABLE, NATURAL LOAM, SURFACE SOIL, REASONABLY FREE OF SUBSOIL, FOREIGN MATTER AND ROOTS, STUMPS AND STONES LARGER THAN 2" IN DIMENSION.

4. CONTRACTOR SHALL ASCERTAIN LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION.

5. CONTRACTOR SHALL MAINTAIN PLANT MATERIAL DURING INSTALLATION. MAINTENANCE SHALL BECOME RESPONSIBILITY OF OWNER UPON ACCEPTANCE OF WORK.

6. WHERE THE LANDSCAPE WORK IS COMPLETED, THE OWNER'S REPRESENTATIVE WILL, UPON WRITTEN REQUEST, MAKE AN INSPECTION TO DETERMINE ACCEPTABILITY. IF WORK IS NOT ACCEPTABLE, REPLACE REJECTED WORK AND CONTINUE MAINTENANCE UNTIL REINSPECTION AND APPROVAL.

7. GUARANTEE ALL MATERIALS AND LABOR FOR 12 CALENDAR MONTHS AFTER ACCEPTANCE.
   A. MAKE REPLACEMENTS OF ALL DEAD PLANTS IN IMPAIRED CONDITIONS IN EARLY FALL FOLLOWING PLANTING.
   B. ADD ADDITIONALLY IN THE EARLY SPRING FOR THE SAME OR OTHER MATERIALS WHICH ARE DEAD OR IMPAIRED FROM THE WINTER CONDITIONS.

8. WITHIN 10 DAYS AFTER ACCEPTANCE, THE CONTRACTOR SHALL DELIVER AN OUTLINE OF MAINTENANCE PROCEDURES RECOMMENDED FOR THIS PLANTING FOR THE OWNER.

9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY DURING THE GUARANTEE PERIOD TO PROVIDE WRITTEN NOTICE TO THE OWNER OF ANY MAINTENANCE PRACTICE WHICH IN THEIR OPINION WILL AFFECT THE GUARANTEE IF NOT REMEDIED PROMPTLY.

10.DO NOT MAKE SUBSTITUTIONS. BID MATERIALS SHOWN ON PLANS. CONTRACTOR IS ENCOURAGED TO PROVIDE WRITTEN ALTERNATE LIST OF MATERIALS, SIZES AND NUMBERS SUBSTITUTION FOR COST-EFFECTIVE MAINTENANCE OF DESIGN INTEGRITY.

11.THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIAL THAT HE/SHE DEEMS UNACCEPTABLE. REJECTED MATERIAL SHALL BE REMOVED PROMPTLY FROM THE SITE.

12.IF NECESSARY SELECTIVE CUTTING AND CLEARING SHALL BE PROVIDED IN THE EXISTING WOODED AREAS OF THE DRAINAGE EASEMENT. SELECTIVE CUTTING WITHIN THESE AREAS SHALL BE LIMITED TO THE REMOVAL OF UNDERGROWTH AND TREES ABSOLUTELY NECESSARY FOR THE CONSTRUCTION OF THE DRAINAGE OUTFALL.

13.BALLED AND BURLAP PLANTS SHALL BE DUG WITH FIRM NATURAL BALLS OF EARTH. BALL SIZES SHALL BE IN ACCORDANCE WITH A.A.N. SPECIFICATIONS. ALL CONTAINER GROWN STOCK SHALL BE WELL ROOTED AND ESTABLISHED IN THE CONTAINER IN WHICH IT IS SOLD. AN ESTABLISHED CONTAINER GROWN PLANT SHALL HAVE A ROOT SYSTEM DEVELOPED SUFFICIENTLY TO RETAIN ITS SHAPE WHEN REMOVED FROM THE CONTAINER.

14.ALL PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS OTHERWISE SPECIFIED. PRUNING SHALL BE DONE BEFORE PLANTING OR DURING THE PLANTING OPERATION.

15.ALL PLANT MATERIAL SHALL BE COVERED AND PROTECTED FROM EXCESSIVE DRYING DURING TRANSIT.

16.ANTI-DESICCANTS SHALL BE APPLIED ON ALL MATERIAL DUG WHILE IN FOLIAGE.

17.MULCH MATERIAL SHALL BE EITHER SHREDDED HARDWOOD MULCH OR APPROVED EQUAL. MATERIAL SHALL BE MULCHING GRADE, UNIFORM IN SIZE AND FREE OF FOREIGN MATTER.

18.TOPSOIL MIXTURE SHALL BE 2 PARTS EXISTING SOIL MIXED EVENLY WITH 1 PART SPAGNUM PEAT MOSS OR PEAT HUMUS. EXISTING SOIL SHALL BE FREE OF STONES, LUMPS, PLANTS,ROOTS AND OTHER DEBRIS OVER 1 1/2 INCHES. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH. TOPSOIL SHALL HAVE A PH RANGE OF 5.0 TO 7.0.

19.PLANTING PROCEDURES FOR TREES AND SHRUBS
   A. PLANTING SHALL OCCUR IN ACCORDANCE WITH ALL DETAILS.
   B. TREES AND SHRUBS SHALL BE PLACED IN THE PLANTING PIT, BY LIFTING FROM THE BALL (NEVER FROM THE BRANCHES OR TRUNK). ALL PLANT MATERIAL SHALL BE PLACED IN A STRAIGHT POSITION WITHIN THE PLANTING PIT. WITH THE MOST DESIRABLE SIDE PLACED TOWARDS THE PROMINENT VIEW (SIDEWALK, STREET, ETC.).
   C. THE TREE PIT SHALL BE BACKFILLED WITH A SOIL MIXTURE AS PER SPECIFICATIONS. THE PIT SHALL BE FILLED HALFWAY INITIALLY AND TAMPED FIRMLY. ALL ROPES, WIRES, ETC. ON THE ROOTBALL SHALL BE CUT AND THE BURLAP OR BALL WRAP PULLED BACK TO THE EDGE OF THE ROOTBALL. COMPLETE BACKFILLING PLANT PIT AND TAMP FIRMLY. BACKFILL SOIL SHALL NOT COVER TOP OF ROOTBALL. MULCH ROOTBALL AND SAUCER WITH MINIMUM OF 3 INCHES SHREDDED OR CHIPPED HARDWOOD OR PINE MULCH. WATER THOROUGHLY OR UNTIL PLANT PIT IS FILLED.

STANDARD NOTES REQUIRED ON LANDSCAPE PLANS

1. PLANT MATERIAL SIZES AND GRADING ARE TO COMPLY WITH THE LATEST EDITION OF AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMAN.

2. A CONTRACTOR SHALL ASCERTAIN LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION. PRIOR TO COMMENCING ANY WORK, CONTACT "MISS UTILITY" AT 1-800-552-7001.

3. NO CHANGES TO PLANT SCHEDULE UNLESS FIRST APPROVED BY CHESTERFIELD COUNTY PLANNING DEPARTMENT PLANS REVIEWS SECTION.

4. LANDSCAPING WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREAS AND AT THE ENTRANCE/EXIT LOCATIONS.

5. PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH THE APPROVED PLANS BY A SITE REVIEW AGENT OF GOOCHLAND COUNTY PLANNING DEPARTMENT PRIOR TO RELEASE OF THE CERTIFICATE OF OCCUPANCY.

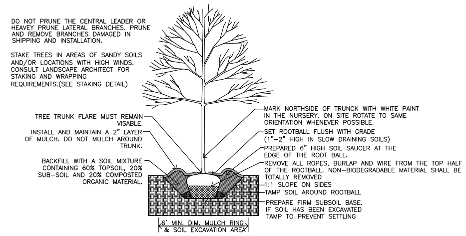
6. THE OWNER IS RESPONSIBLE FOR MAINTAINING SHRUBS AND TREES THAT ARE REQUIRED PER APPROVED LANDSCAPING PLANS. DYING OR DEAD PLANT MATERIALS ARE TO BE REPLACED DURING THE NEXT PLANTING SEASON.

7. PLANT MATERIALS SHALL HAVE ALL STRINGS OR ROPES AT THE BASE OF THE PLANT CUT AWAY FROM THE TRUNK (INCLUDING BIODEGRADABLE BRANDS OF ROPE).

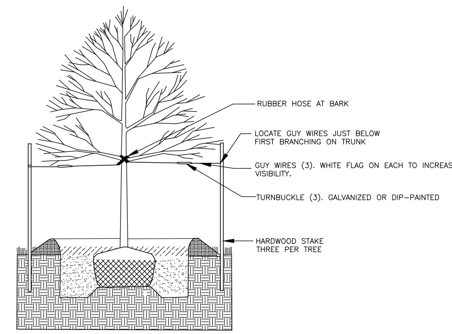
8. NO LANDSCAPING SHALL BE INSTALLED THAT WILL OBSTRUCT ACCESS TO FIRE HYDRANT OR OTHER FIRE HYDRANT CONNECTIONS. A CLEAR AREA OF 3 FEET SHALL BE MAINTAINED AROUND ALL FIRE HYDRANT CONNECTIONS.

9. TYPICAL GREEN TRANSFORMERS AND OTHER UTILITY FIXTURES NEED TO BE SCREENED ON THREE SIDES WITH LANDSCAPING (example of screening plant: Ilex cornuta 'Burfordi nana').

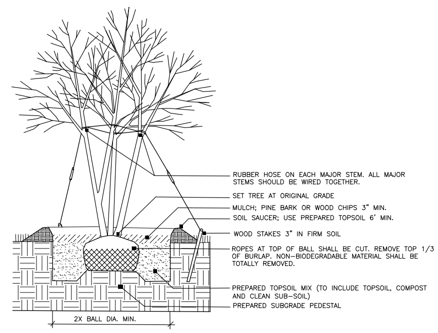
10. SEEDING AND SODDING PREPARATION AND INSTALLATION PER VIRGINIA NURSERY & LANDSCAPE ASSOCIATION STANDARDIZED LANDSCAPE SPECIFICATIONS LATEST EDITION (SEEDING SECTION 02485) (SODDING SECTION 04287)

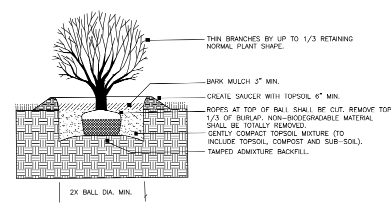


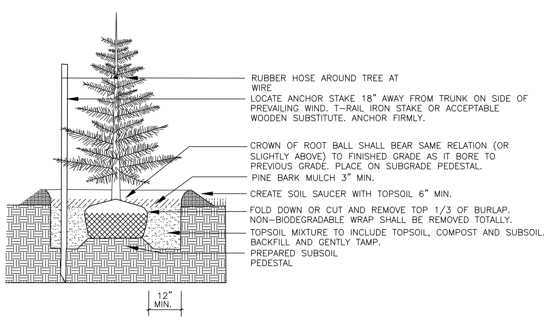
TREE PLANTING DETAIL 2" TO 4" CALIPER TREES IN UNRESTRICTED SOIL CONDITIONS.



FOR STAKING REQUIREMENTS ONLY







BALZER & ASSOCIATES
PLANNERS / ARCHITECTS
ENGINEERS / SURVEYORS
Roanoke / Richmond
New River Valley / Staunton
Harrisonburg / Lynchburg
www.balzer.cc
15871 City View Drive
Suite 200
Midlothian, VA 23113
804.794.0571

COMMONWEALTH OF VIRGINIA
CHRISTOPHER M. SHUST
Lic. No. 34028
06-20-2024
PROFESSIONAL ENGINEER

2501 DANA STREET
THREE HOUSE DEVELOPMENT
LANDSCAPE DETAILS

SOUTHSIDE 8TH DISTRICT
2501 DANA STREET RICHMOND, VA

DRAWN BY	ATD
DESIGNED BY	DJL
CHECKED BY	DJL
DATE	03-04-2024
SCALE	1" = 10'
REVISIONS	
06-20-2024	

L02

PROJECT NO. 56220055.00

DESIGN LOADS

This residence is based on the following code and loads. Client is responsible for any variations and/or applicable local requirements.

1. Building Codes
   - 1.1 2018 VA Residential Code
   - 1.2 Minimum Design Loads for Building and Other Structures, ASCE 7-10.

2	Roof Dead Load	15 PSF
3	Roof Live Load	20 PSF
4	Typical Floor Dead Load	10 PSF
5	Floor Live Loads	
	5.1 Rooms other than sleeping rooms	40 PSF
	5.2 Sleeping Rooms	30 PSF
	5.3 Stairs	40 PSF
	5.4 Decks	40 PSF
	5.5 Exterior Balconies	60 PSF
6	Wind Loads / Data	
	6.1 Ultimate Design Wind Speeds	115 MPH
	6.2 Wind Importance Factor, IW	1.00
	6.3 Exposure	B
	6.4 Walls (Component and Cladding)	25 PSF
	6.5 Roofs (Component and Cladding)	
	6.5.1 Roof Slopes 2.25/12 to 7/12	34.8 PSF
	6.5.2Roof Slopes 7/12 to 12/12	21 PSF
7	Seismic Loads/ Data	
	7.1 Seismic Use Group	0.075
	7.2 Spectral Response Coefficient, SDS	0.17g< and <0.33g
	7.3 Site Class	D
	7.4 Seismic Importance Factor, IS	1.00
	7.5 Seismic Design Category	B

FOUNDATION & FLOOR FRAMING NOTES:

1. All dimensions stretched from the outside face of the foundation wall or the center line of piers.
2. Typical pier is 16"x16" w/ 24"x24"x10"d ftg., U.N.O.
3. Typical wall ftg. is 18"w x 8"d U.N.O.
4. All girders and joist to be spf U.N.O.
5. Typical floor joists to be 2x10s @ 16" o.c. U.N.O.
6. Crawl space to be sealed - see 1/A3.1 for details
7. See sheet A1.3 & A3.1 for additional foundation & framing notes

FLOOR FRAMING NOTES

1. Floors shall be constructed in accordance with the requirements listed in the Residential Building Code Chapter 5.
2. Floors are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to TightLines Designs; TightLines Designs is not responsible for floor defects resulting from unreported conditions.
3. P denotes a point load from above. Provide solid blocking to foundation w/ the same number of studs as above.
4. Install double joists or see truss manf. dwgs. for support under parallel non load bearing partitions above typ.
5. Floor sheathing shall be APA rated sheathing exposure 1 or 2, 3/4" T&G glued and attached to its supporting framing with 1-8d CC nail at 6" O.C. At panels edges and at 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Panel end joints shall occur over framing.
6. Joists framing into the side of a girder shall be supported by a 2x2 ledger or by manuf. recommended hangers.

FLOOR PLAN NOTES:

1. All interior walls drawn @ 3 1/2" wide & exterior walls drawn w/sheathing and 1" rigid insulation @ 5" wide. All dimensions are drawn to face of stud on interior walls and to exterior sheathing on exterior walls.
2. All windows to have screens.
3. Provide plastic coated wire shelving w/clothes rod in coat closet & bedroom closets, one (1) shelf in laundry closet & four (4) shelves in pantry.
4. See above for additional framing notes.

GENERAL STRUCTURAL NOTES:

1. This structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
2. The architect is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The architect will not be held responsible for the contractor's failure to conform to the construction documents, should any non-conformities occur.
3. Verification of assumed field conditions is not the responsibility of the architect. The contractor shall verify the field conditions for accuracy and report any discrepancies to TightLines Designs before construction begins.
4. This structure and all construction shall conform to all applicable sections of the Residential Code and any local laws where the structure is to be constructed.

FOUNDATIONS & CRAWL SPACES

1. Foundations shall conform to the requirements of the Residential Building Code, Chapter 4. Should a conflict occur between these drawings and the aforementioned building code references the more stringent shall govern.
2. The architect has not received a subsurface investigation. The foundation is based upon an assumed soil bearing capacity of 2000 psf net bearing. Verification of this assumed value is the responsibility of the owner or contractor should any adverse soil condition be encountered the architect must be contacted before proceeding.
3. Foundations shall extend not less than 12 inches below the finished natural grade and in no case less than the frost line depth. Foundation walls are assumed to restrain earth pressures of 30 pcf or less, unbalanced fill and foundation wall construction shall conform to tables 404.1 of the Residential Building Code. Site topography has not been provided to TightLines Designs. Report any unusual site conditions to TightLines Designs before construction.
4. Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95 percent maximum dry density.
5. Excavation for footings shall be lined temporarily with a 6 mil polyethylene if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be poured against any subgrade containing water, ice, frost, or loose material.
7. Enlarged perimeter footings are to be poured monolithically with wall footings. Reinforcement for wall footings, if any, shall run continuously through column footings.
8. Crawl space vents to be 8"x16" w/ min. 50% free air, and shall be located within 3' of each corner unless closed crawl space. Crawl space door may serve as vent.
9. Install 6 mil. vapor barrier below all slabs and on ground area within all crawlspaces.
10. Provide min. 18x24 access panel or larger as required by the Mechanical Code when mechanical equipment is located in the crawlspace.
11. Remove earth as required to achieve a minimum clearance from ground to underside of floor joists of 18^.
12. Provide foundation drains at all foundation walls. Coordinate location to daylight with owner.

WALL FRAMING NOTES

1. Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the State Residential Code, Chapter 6. Should a conflict occur between these drawings and the aforementioned code references the more stringent shall govern.
2. Studs for wall framing shall consist of 2x nominal framing and be constructed in accordance with the requirements listed below. Studs listed in the following schedule shall have a maximum height of 10'-0":

Location	Stud Size	Grade	Spacing
2.1 Interior non-bearing walls	2x4	Stud	24" O.C.
2.2 Interior bearing walls	2x4	Stud	16" O.C.
2.3 Exterior walls	2x4 spf	no.2	16" O.C. (24" O.C. if roof trusses align.)

3. Studs shall be continuous from the sole plate to the double top plate at the ceiling or roof. Studs shall only be discontinuous at beams / headers for window or door openings. King studs shall be continuous with the same requirement as stud walls.
4. All headers at ext. openings and at bearing walls shall be (2) 2x8 (unless noted otherwise). Provide continuous king studs on each side of the jack studs. Unless otherwise noted on the drawings provide jack studs in accordance with the following schedule:

	Opening	No. of Jack Studs
4.1.	less than 4'-0"	1 ea. End
4.2.	4'-1" to 6'-0"	2 ea. End
4.3.	6'-1" to 12'-0"	3 ea. End
4.4.	over 12'-0"	4 ea. End, or see plans

5. All beam bearing on timber framing shall have full bearing for the width of the beam and supported by a minimum of three studs. Where beams bear onto a wall parallel to the beam the beam shall have a minimum bearing length of 4-1/2".
6. Individual studs forming a column shall be attached together with one 10d CC nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
7. All exterior walls shall be sheathed per section R602.10.3 of the Residential Code. Wall sheathing shall be APA rated structural 1 sheathing. Wall sheathing shall be attached to its supporting wall framing with 1-8d CC nail at 6" O.C. At panels edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall have a span rating constant with the framing spacing. Apply air infiltration barrier over the sheathing as required by the Residential Code.

CONCRETE

1. Concrete shall have normal weight aggregate and a minimum compressive strength (fc) at 28 days as listed below.
   - 1.1. Footings 3000 psi
   - 1.2. Slabs-on-grade 4000 psi
   - 1.3. Elevated Slabs 3500 psi
2. Concrete shall be proportioned, mixed, and placed in accordance with ACI 318 latest edition "Building Code Requirements for Reinforced Concrete" and ACI 301 latest edition "Specifications for Structural Concrete for Building"
3. Entrained air must be used in all concrete that will be exposed to freezing and thawing and deicing chemicals. Amount of air entrainment (percent) shall be in accordance with the following schedule with a range of -1 to +2 percentage points of the target value:
   - 3.1. Footings 5%
   - 3.2. Interior Slabs 0% see note below
   - 3.3. Exterior Slabs 5%
   - 3.4. Note: it is recommended that interior slabs to be given a smooth, dense, hard-troweled finish not contain entrained air since blistering or delamination may occur. If slab will be exposed to deicing or other aggressive chemicals contact TightLines Designs for proper air entrainment requirements.
4. No admixtures shall be added to any structural concrete without written permission of the architect.

CONCRETE SLABS ON GRADE

1. Concrete slabs on grade shall be constructed in accordance with ACI 302.1r-96 "guide for concrete slab and slab construction".
2. The architect is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions.
3. Control joints shall be spaced in slabs on grade at a maximum of 20'-0" O.C. Unless noted otherwise.
4. Control joints shall be produced using conventional processes within 4 to 12 hours after the slab has been finished.
5. Reinforcing steel shall not extend through the control joint.
6. All welded wire fabric for concrete slab on grade shall be supplied in flat sheets
7. All welded wire fabric for concrete slab on grade shall be placed 2" from top of slab. The WWF shall be securely supported during the concrete pour.

TIMBER

1. Solid sawn wood framing shall conform to the specifications as listed in the National Forest Products Association "National Design Specification for Wood Construction" latest edition (NDS). The framing shall be of the species and grade as listed below:
   - 1.1. Joists, Rafters, and Wood Girders and Beams:Spruce Pine Fir No. 2
   - 1.2. Studs: Spruce Pine Fir No. 3 or Stud Grade
2. LVL or PSL shall the following minimum design stresses:
   - 2.1. E = 1.9 x 10E6
   - 2.2. Fb = 2600 PSI
   - 2.3. Fv = 285 PSI
   - 2.4. Fc = 700 PSI
3. Lumber in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other exposed timber shall be treated in accordance with AWPA standard C-2.
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI / ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. Beams containing multiple plies of lumber shall have each ply attached to its adjacent ply with 3 12d CC nails @ 12" O.C.
7. Flitch plate beams shall be attached w/ 1/2" through bolts at 24" O.C. staggered w/ (2) bolts 6" from each End.

HANGER SCHEDULE

SIZE	SST HANGER	SIZE	SST HANGER
2x6	LUS26	(2) 1.75 x 9.25 LVL	HU410(Max)
(2) 2x6	LUS26-2	(3) 1.75 x 9.25 LVL	HHUS5.50/10
(3) 2x6	LUS26-3	(2) 1.75 x 11.25 LVL or (2) 1.75 x 11.875 LVL	HU412 (Max)
2x8	LUS28	(3) 1.75 x 11.25 LVL or (3) 1.75 x 11.875 LVL	HHUS5.50/10
(2) 2x8	LUS28-2	(2) 1.75 x 14 LVL	HU416 (Max)
(3) 2x8	LUS28-3	(3) 1.75 x 14 LVL	HHUS5.50/10
2x10	LUS210	(2) 1.75 x 16 LVL	HHUS410
(2) 2x10	HUS210-2	(3) 1.75 x 16 LVL	HHUS5.50/10
(3) 2x10	LUS210-3	(2) 1.75 x 18 LVL	HGUS414
(4) 2x10	HHUS210-4	(3) 1.75 x 18 LVL	HGUS5.50/14
2x12	LUS210	NOTES: 1. SST Denotes Simpson Strong Tie. Use hanger per schedule above (or equivalent metal hanger) unless hanger is noted on plans. 2. Install Hangers per manf. Specifications	
(2) 2x12	HUS212-2		
(3) 2x12	HU212-3 (Max)		

ROOF FRAMING NOTES

1. Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the Residential Code, Chapter 8.
2. Roofs are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to TightLines Designs; TightLines Designs is not responsible for defects resulting from unreported conditions.
3. Roofs shall be framed with roof trusses at 24" O.C. unless noted otherwise. Trusses shall be designed and/or reviewed by a licensed structural engineer.
4. At rafter and joist framing, a 2x4 collar tie (beam) shall be provided every third set of rafters. Ties shall be placed in the upper third of the roof and attached to each rafter with 4-12d CC nails.
5. Proper roof drainage shall be maintained at all roof conditions.
6. Roofs shall be sheathed with 15/32 APA rated structural sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with 1-8d CC nail at 6" O.C. At panels edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating constant with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.
7. Apply building felt over the sheathing as required by the Residential Code, with two layers for slopes 2/12 to 4/12 and one layer for slopes >4/12.
8. Attach a Simpson H2.5A Hurricane Tie at every connection between trusses and top plates.

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

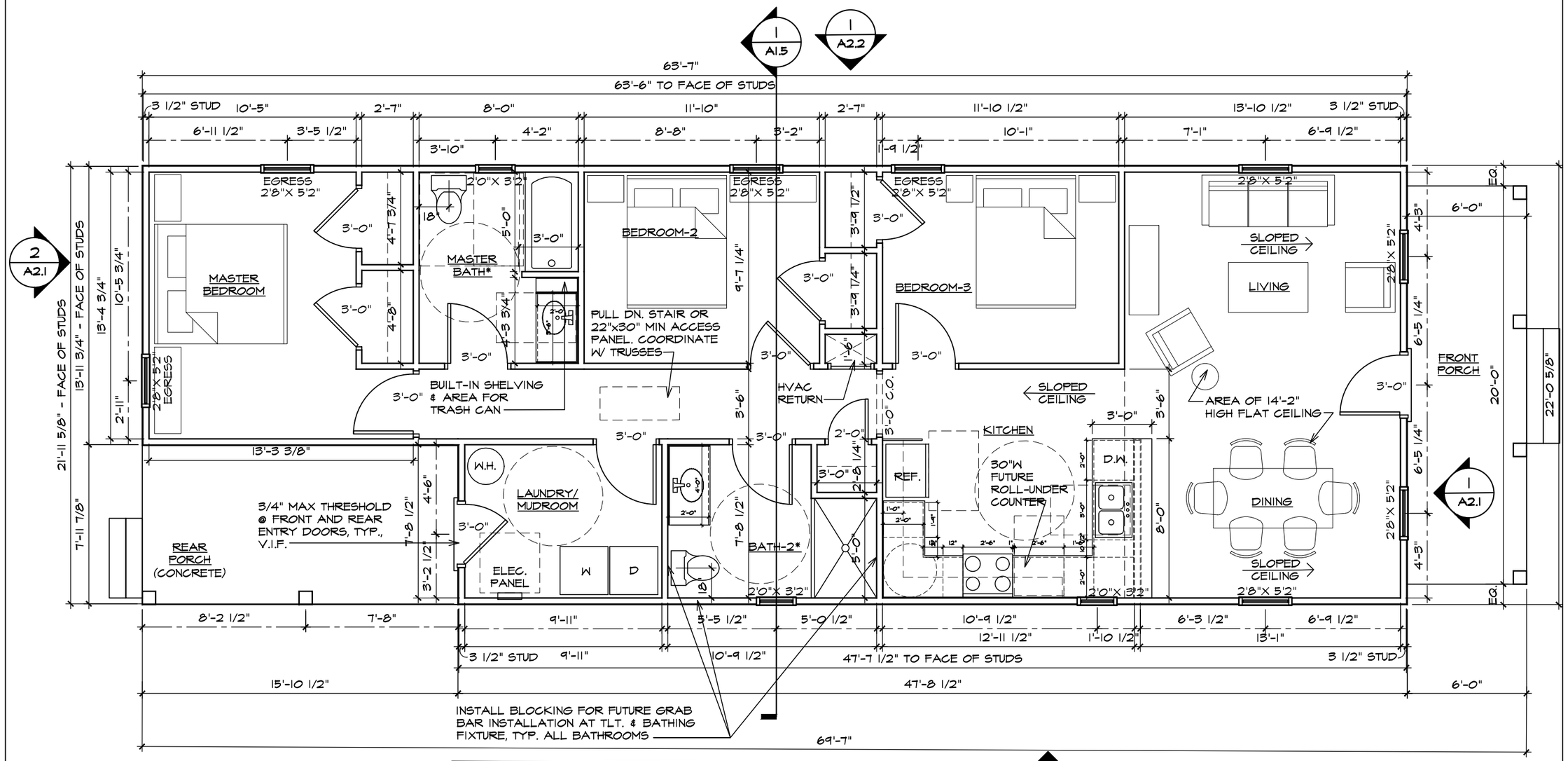
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

General Notes

A1.1



*BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS & IN SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. MIN. 6' ABOVE FLOOR

ROOM FLOORING MATERIALS:

- ALL BEDROOMS TO BE LVT.
- KITCHEN, BATHROOMS AND LAUNDRY TO BE VINYL TILE.
- ALL OTHER ROOMS TO BE 3/4" HARDWOOD FLOORING.

SQUARE FOOTAGES:

TOTAL LIVEABLE AREA - 1118 SQ. FT.

FRONT PORCH - 120 SQ. FT.
REAR PORCH - 127 SQ. FT.

1 A1.2 FIRST FLOOR PLAN
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

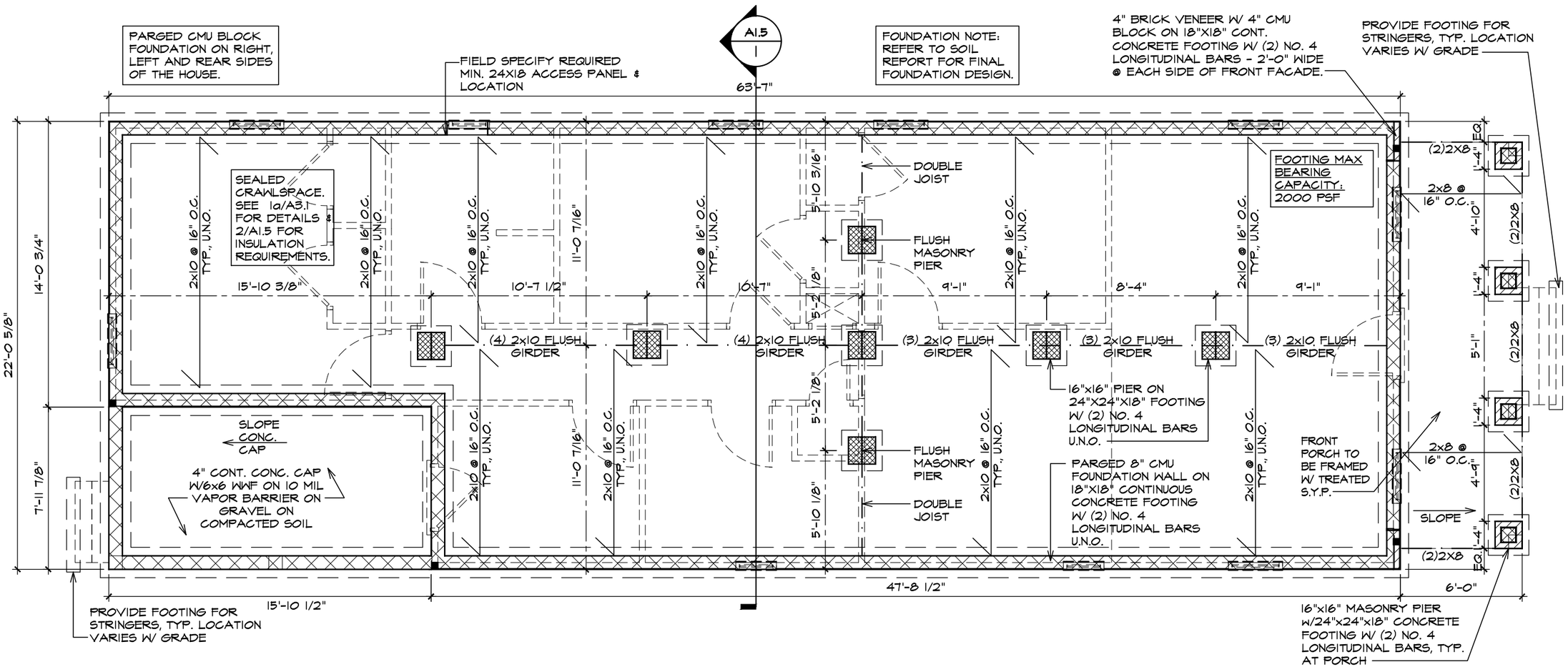
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Floor Plan

A1.2



1 A1.3 FOUNDATION PLAN

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

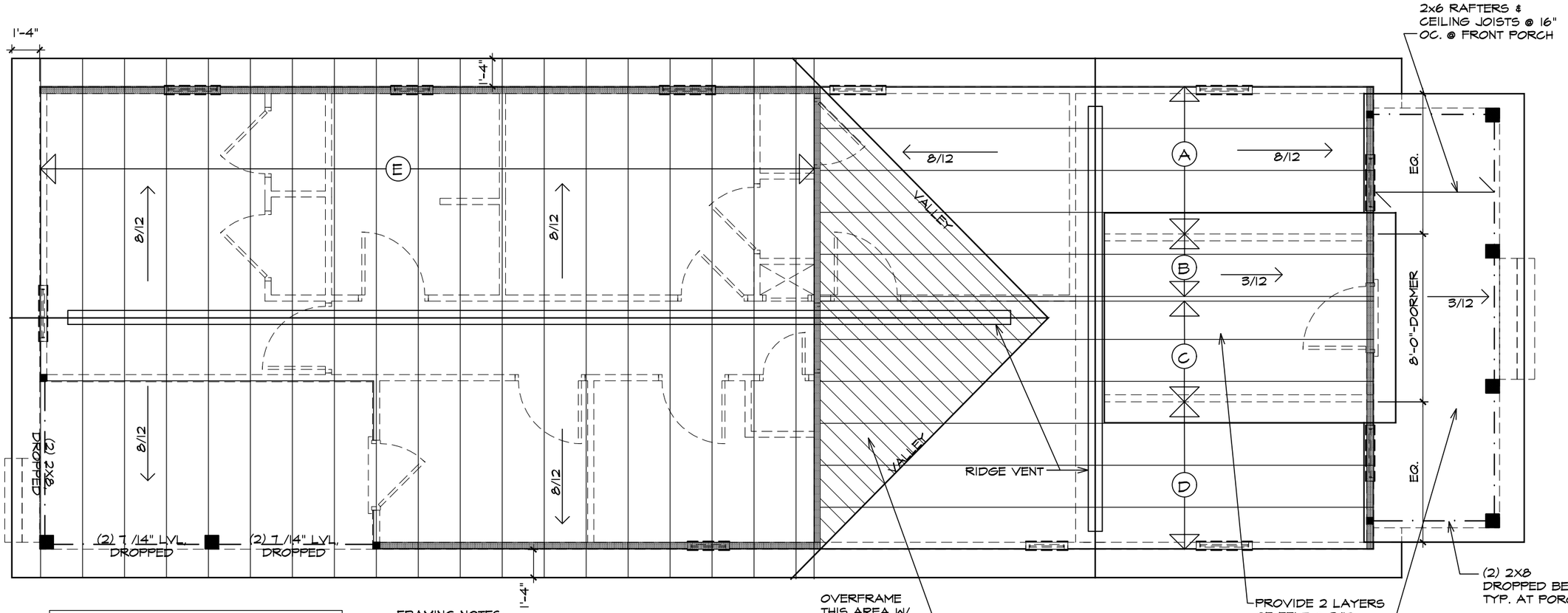
Foundation Plan

A1.3

ROOF FRAMING NOTES:
1) ROOF PLAN AND PITCHES ARE INDICATED IN ROOF PLAN. REFER TO ENGINEERED TRUSS DRAWINGS FOR FINAL ROOF CONSTRUCTION - SEE SHEET A1.1 FOR ADDITIONAL ROOF FRAMING NOTES.
2) PROVIDE TWO LAYERS 15# FELT UNDERLAYMENT FOR ROOFS 2:12 TO 4:12 AND ONE LAYER FOR ROOFS >4:12.
3) REFER TO TRUSS DIAGRAMS ON A1.5 FOR TRUSS PROFILES; MANUFACTURER TO DETERMINE FINAL CONFIGURATION & LAYOUT.

OVERHANG NOTES:
1) RECOMMENDED RAKE OVERHANG: 1'-4"
2) RECOMMENDED EAVE OVERHANG 1'-4"

ROOF VENT CALCULATIONS:
1289 SF ROOF AREA/300 = **4.30** SF VENT REQUIRED
4.30 x 50% = **2.25** SF VENT REQ'D IN UPPER ROOF AREA
64 LF HORIZ. RIDGE VENT x .08 SF/LF = **5.12** SF VENT IN UPPER ROOF AREA



■ POINT LOAD
NON LOAD-BEARING WALL
LOAD-BEARING WALL
WALL LEGEND

FRAMING NOTES:
MIN. (3)2X4 STUD COLUMNS @ ALL BEAM ENDS & POINT LOADS, TYP. U.N.O.

ALL HEADERS @ DOOR AND WINDOW OPENINGS @ BEARING WALLS TO BE (2)2X8, TYP., U.N.O.

4" STUD COLUMN BETWEEN ALL MULTIPLE WINDOWS, TYP. U.N.O.

1 A1.4 ROOF FRAMING PLAN
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

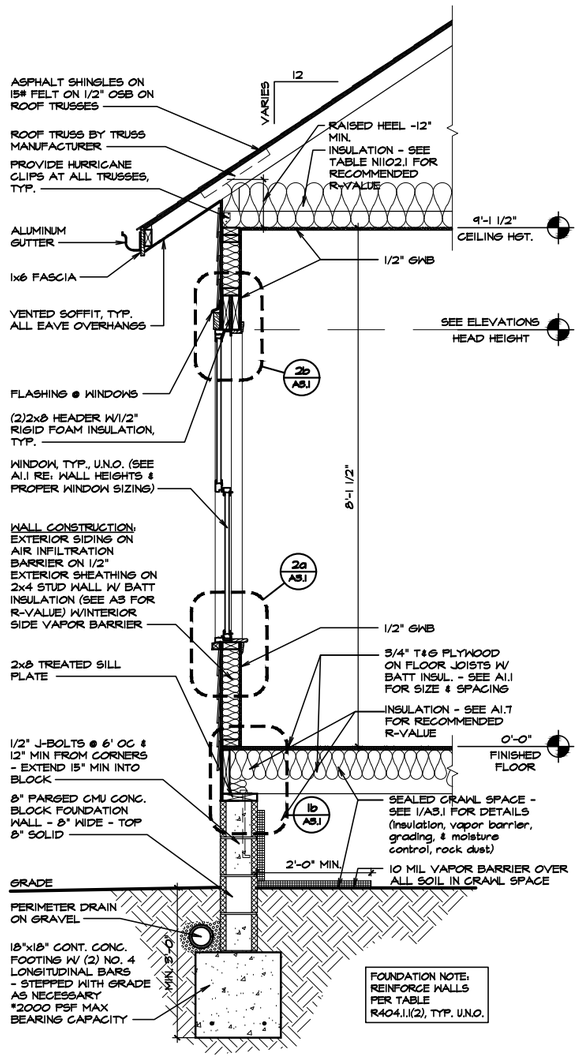
date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Roof Framing Plan

A1.4

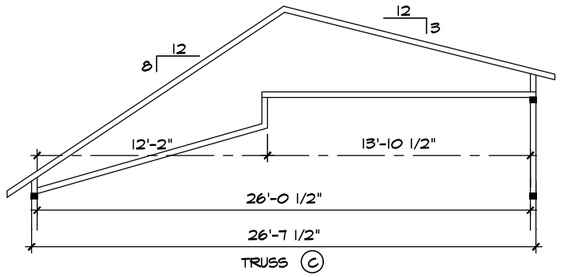
TRUSS NOTES:

1. DIMENSIONS ARE OUTSIDE TO OUTSIDE OF STUDS.
2. THESE ARE DIAGRAMMATIC TRUSS CONFIGURATIONS. REFER TO ENGINEERED TRUSS DRAWINGS FOR ALL FINAL TRUSS DIMENSIONS, LAYOUTS AND CONSTRUCTION NOTES.
3. BEAM CAN BE DROPPED, TRUSS MANUFACTURER TO CONFIRM W/ OWNER PRIOR TO MANUFACTURING & DELIVERY.
4. ROOF TRUSSES TO BE DESIGNED & ENGINEERED BY A LICENSED ENGINEER.
5. ALL TRUSS LOADS TO BEAR ON OUTSIDE WALLS ONLY U.N.O.
6. COORDINATE TRUSS LAYOUT TO PROVIDE 20"x30" MIN ATTIC ACCESS PANEL OR PULL DOWN STAIR AT LOCATION INDICATED ON 1/A1.2.

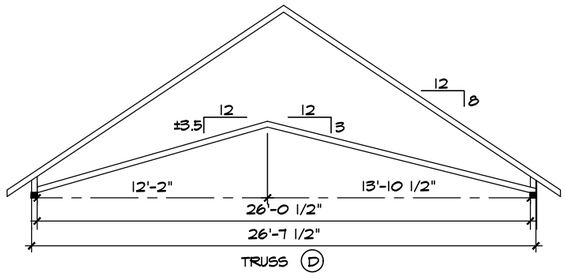


3 A1.5 TYPICAL WALL SECTION

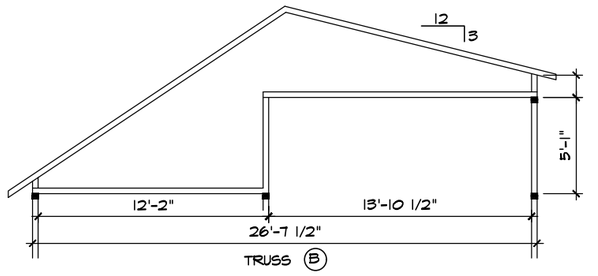
3/8" = 1'-0"



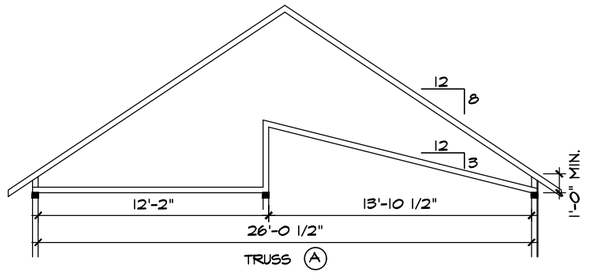
TRUSS (C)



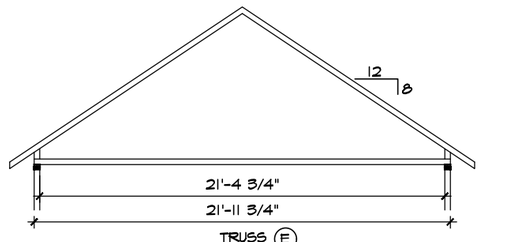
TRUSS (D)



TRUSS (B)



TRUSS (A)



TRUSS (E)

4 A1.5 ROOF TRUSS DIAGRAMS

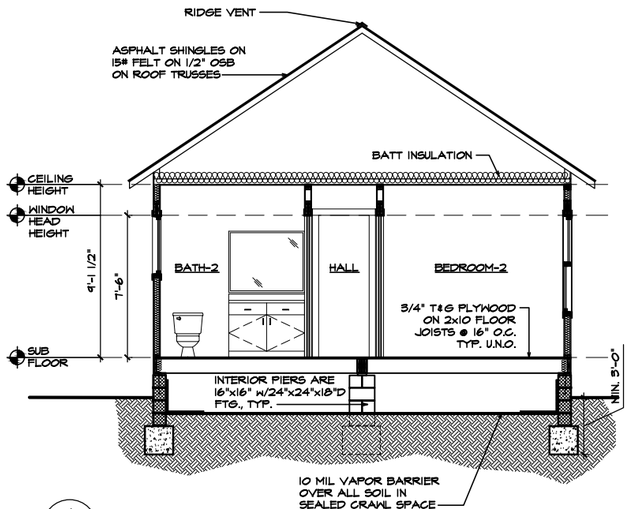
1/8" = 1'-0"

TABLE N1102.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT a

Climate Zone	Fenestration U-Factor b,j	Skylight b U-Factor	Glazed Fenestration SHGC b,k	Ceiling R-Value m	Wood Frame Wall R-Value e	Mass Wall R-Value f	Floors R-Value	Basement c,e Wall R-Value	Slab d R-Value & Depth	Crawl Space c, Wall R-Value
4	0.35	0.55	0.30	38 or 30 ci	15 or 13+2.5h	5/13 or 5/10ci	19	10/15	10	10/15

a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
b. The fenestration U-factor column excludes skylights. The solar heat gain coefficient (SHGC) column applies to all glazed fenestration.
c. "10/15" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-15 cavity insulation at the interior of the basement wall or crawl space wall.
d. R-5 shall be added to the required slab edge R-values for heated slabs. For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 24 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix O)
e. Deleted.
f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.
g. Or insulation sufficient to fill the framing cavity, R-19 minimum.
h. The first value is cavity insulation, the second value is continuous insulation, so "13+5" mean R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing cover 15 percent or less of the exterior, insulation sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
i. The second R-Value applies when more than half the insulation is on the interior of the mass wall.
j. In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
k. In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
l. R-30 shall be deemed to satisfy the ceiling insulation requirement whenever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise R-38 insulation is required where adequate clearance exists or insulation must extend to either the insulation baffle or within 1" of the attic roof deck.
m. Table value required except for roof edge where the space is limited by the pitch of the roof, there the insulation must fill the space up to the air baffle.
n. R-19 fiberglass batts compressed and installed in the nominal 2x6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall is not deemed to comply.
o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

2 A1.5 INSULATION AND FENSTRATION NOTES



1 A1.5 BUILDING SECTION

1/8" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

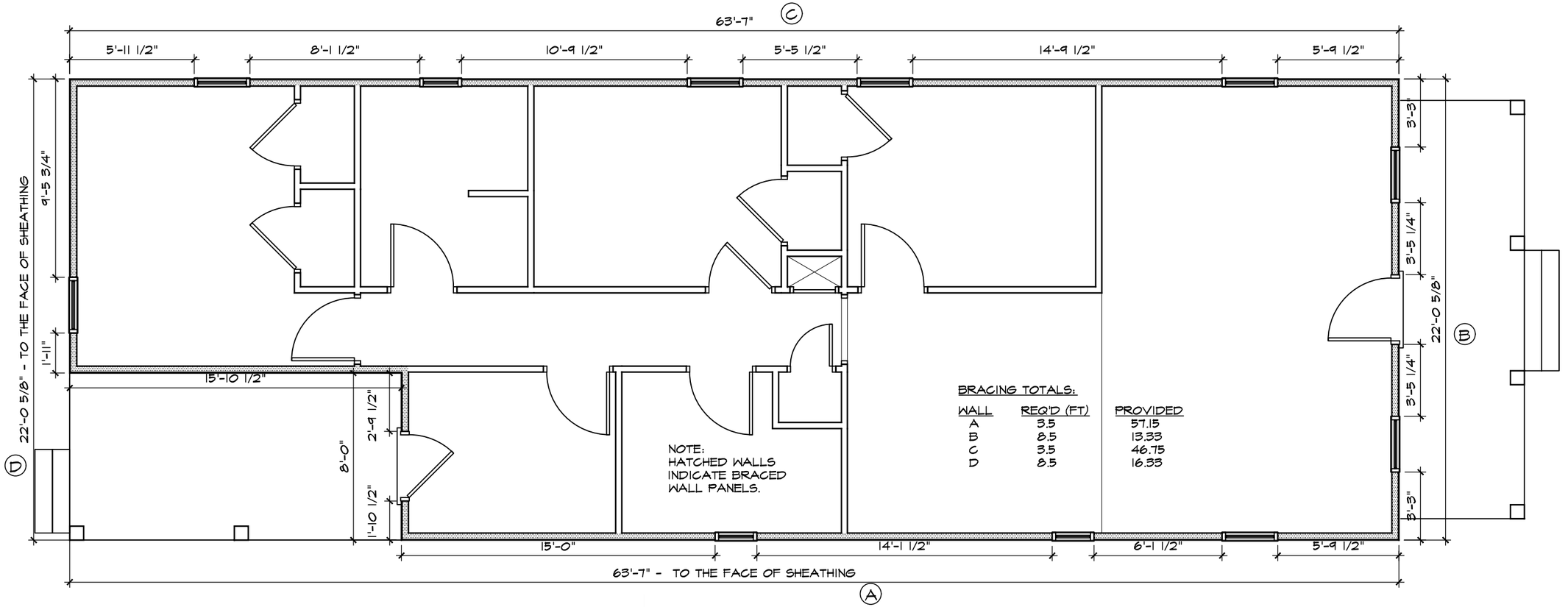
Richmond Habitat for Humanity

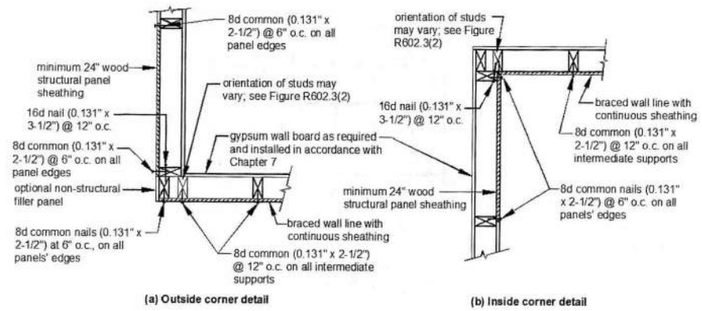
COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

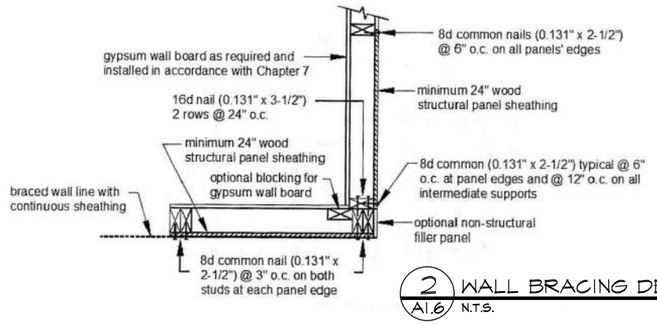
date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Bldg. & Wall Sections, Roof Truss Diagrams, Insulation Notes

A1.5







2 A1.6 WALL BRACING DETAILS
N.T.S.

NOTES:

1. STRUCTURAL BRACING TO BE 1/2" PLYWOOD OR OSB SHEATHING. WALL BRACING SHALL BE IN ACCORDANCE WITH SECTION R602.10.3 CONTINUOUS SHEATHING. BRACING METHOD CS-WSP SHALL BE USED IN ACCORDANCE WITH TABLE R602.10.1.

2. THE REQUIRED LENGTH OF BRACING FOR EACH SIDE OF A RECTANGLE CIRCUMSCRIBED AROUND THE PLAN OR A PORTION OF THE PLAN AT EACH STORY LEVEL SHALL BE IN ACCORDANCE WITH TABLE R602.10.3 AND FIGURE R60.10.3(1). UNLESS NOTED OTHERWISE, THE ENTIRE STRUCTURE IS ASSUMED TO CIRCUMSCRIBED WITHIN A SINGLE RECTANGLE.

3. MINIMUM PANEL WIDTH IS 24". SEE SECTION R602.10.3 FOR ADDITIONAL INFORMATION. CONNECTION CRITERIA SHALL BE IN ACCORDANCE WITH TABLE R602.10. PORTAL FRAME CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE R602.10.1

4. ALL BRACED WALL PANELS TO BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET W/OUT ADDITIONAL ENGINEERING CALCULATIONS.

5. WINDOW AND DOOR OPENING SIZES COINCIDE WITH ARCHITECTURAL PLANS.

6. CONTINUOUS SHEATHING METHODS REQUIRE STRUCTURAL PANEL SHEATHING TO BE USED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF A BRACED WALL LINE INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS.

7. HOLD DOWN DEVICE SHALL BE AS FOLLOWS:
SIMPSON LSTA24 STRAP (OR EQUIVALENT) BETWEEN FLOORS EXTENDING FROM BOTTOM OF FLOOR BAND UP STUDS WHERE SHOWN.
SIMPSON HD3B HOLDOWN (OR EQUIVALENT) WHERE REQUIRED TO CONNECT DIRECTLY TO FOUNDATION.

1 A1.6 WALL BRACING DIAGRAM & NOTES
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

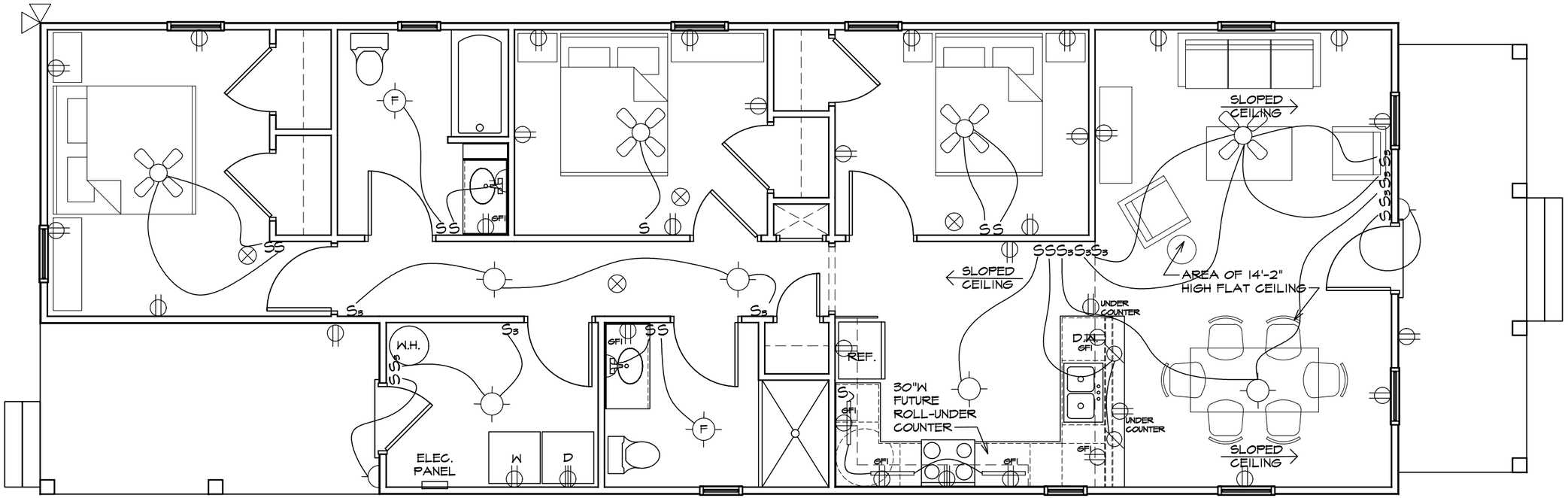
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Wall Bracing Diagram & Details

A1.6



ELECTRICAL KEY:

- CEILING FIXTURE LOCATION
- WALL SCONCE LOCATION
- LIGHT/FAN LOCATION, VENTED TO OUTSIDE
- PENDANT LIGHT LOCATION
- REVERSIBLE DIRECTION CEILING FAN W/ LIGHT, SEPARATE SWITCHING
- UNDER CABINET LIGHTING
- EXTERIOR SPOT LIGHT
- SMOKE DETECTOR LOCATION, PER R313
- S SWITCH LOCATION
- S_3 THREE-WAY SWITCH LOCATION
- DUPLEX RECEPTACLE
- 220 RECEPTACLE

ALL FIXTURES TO BE SELECTED BY OWNER.
CONFIRM ALL FIXTURE AND SWITCHING LOCATIONS W/ OWNER.

NOTE:
WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R314.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE OTHER ALARMS IN THE DWELLING UNIT.

1 / A1.7 ELECTRICAL PLAN
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Electrical Plan

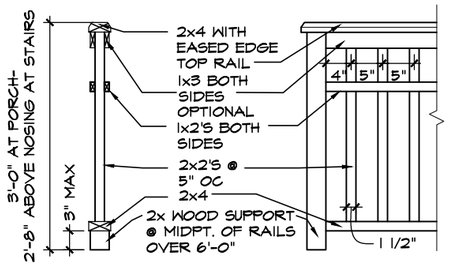
A1.7

GUARDRAIL AND HANDRAILS:
1) INSTALL HANDRAILS AND GUARDS PER 2018 RESIDENTIAL BUILDING CODE SECTIONS R311.7.2 THROUGH R312: PORCHES, BALCONIES, RAMPS OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT. OPEN SIDES OF STAIRS WITH A TOTAL RISE OF MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 34" IN HEIGHT MEASURED VERTICALLY FROM THE NOSING OF THE TREADS. REQUIRED GUARDS ON OPEN SIDES OF STAIRWAYS, RAISED FLOOR AREAS, BALCONIES AND PORCHES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL CLOSURES WHICH DO NOT ALLOW PASSAGE OF AN OBJECT 4" OR MORE IN DIAMETER. HORIZONTAL SPACING BETWEEN THE VERTICAL MEMBERS IN REQUIRED GUARDRAILS SHALL BE A MAXIMUM OF 4" AT THE NEAREST POINT BETWEEN MEMBERS.
2) INSTALL HANDRAILS PER 2018 RESIDENTIAL BUILDING CODE SECTION R311.5.6 AT ALL PORCH STAIRS WITH MORE THAN 4 RISERS. HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL NOT BE LESS THAN 34" AND NOT MORE THAN 38".

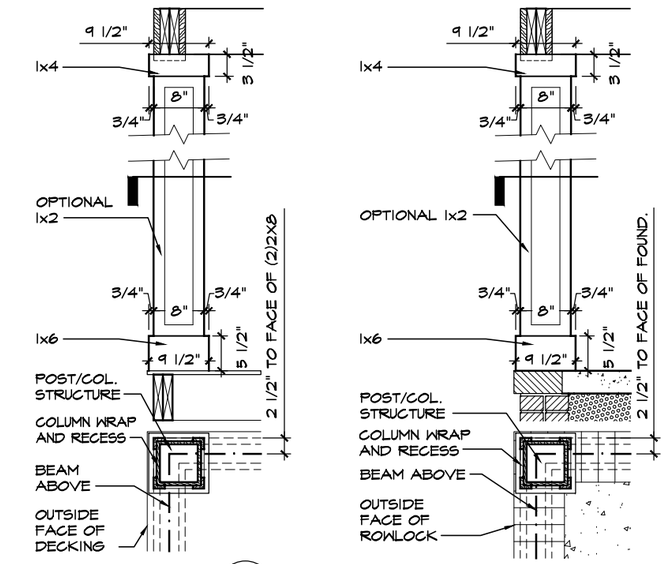
CLADDING VALUES
PROVIDE POS. AND NEG. WALL & ROOF CLADDING DESIGN VALUES. PLANS MAY STATE THAT WALL CLADDING IS DESIGNED FOR 24.1 LBS/SF OR GREATER POS. OR NEG.PRESSURE FOR HOUSES W/ MEAN ROOF HGT. OF 30 FT. OR LESS. ROOF VALUES, BOTH POS. & NEG., SHALL BE DESIGNED AS FOLLOWS:
- 45.4 LBS/SF FOR ROOF PITCHES OF 0/12 TO 2.25/12
- 24.8 LBS/SF FOR ROOF PITCHES OF 2.25/12 TO 7/12
- 21 LBS/SF FOR ROOF PITCHES OF 7/12 TO 12/12
VALUES STATED ARE FOR ROOFS WITH A MEAN HGT. OF 30 FT. OR LESS. ROOFS W/ MEAN HGTS. GREATER THAN 30 FT. MUST SHOW SPECIFIC INFORMATION FOR CLADDING.

MEAN ROOF HEIGHT: 20'-7"

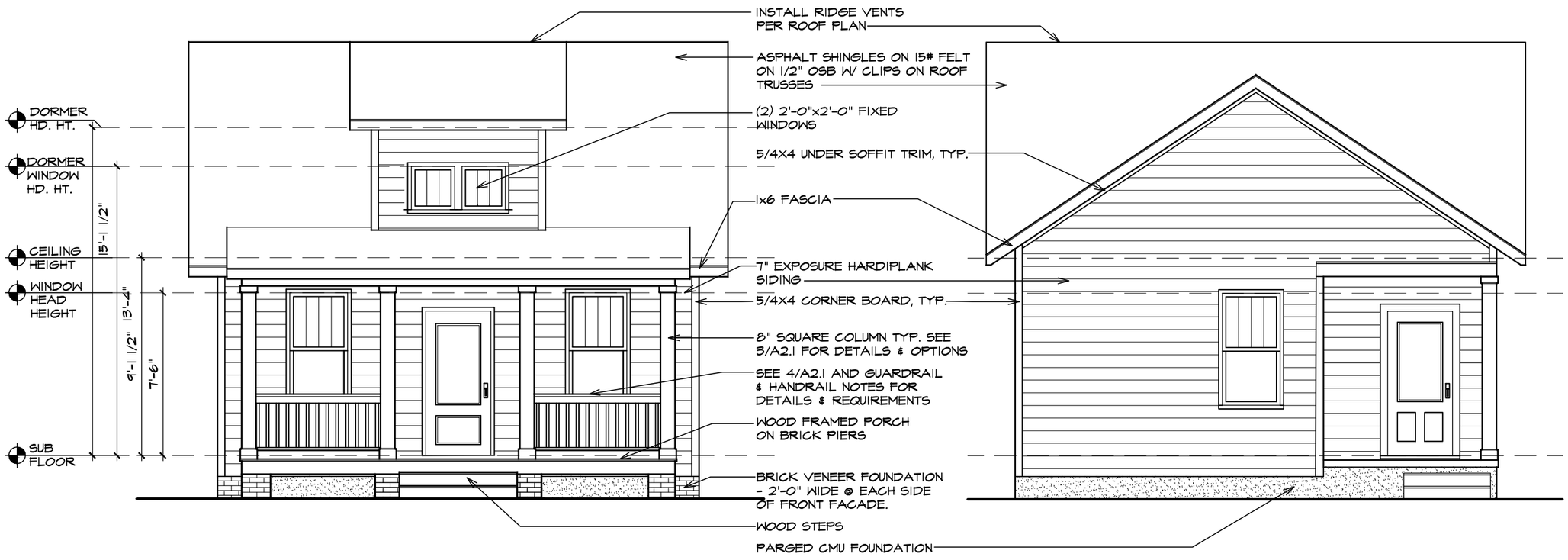
5 ELEVATION NOTES
A2.1



4 RAILING DETAIL
A2.1
1/2" = 1'-0"



3 COLUMN DETAILS
A2.1
1/2" = 1'-0"



1 FRONT ELEVATION
A2.1
3/16" = 1'-0"

2 REAR ELEVATION
A2.1
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

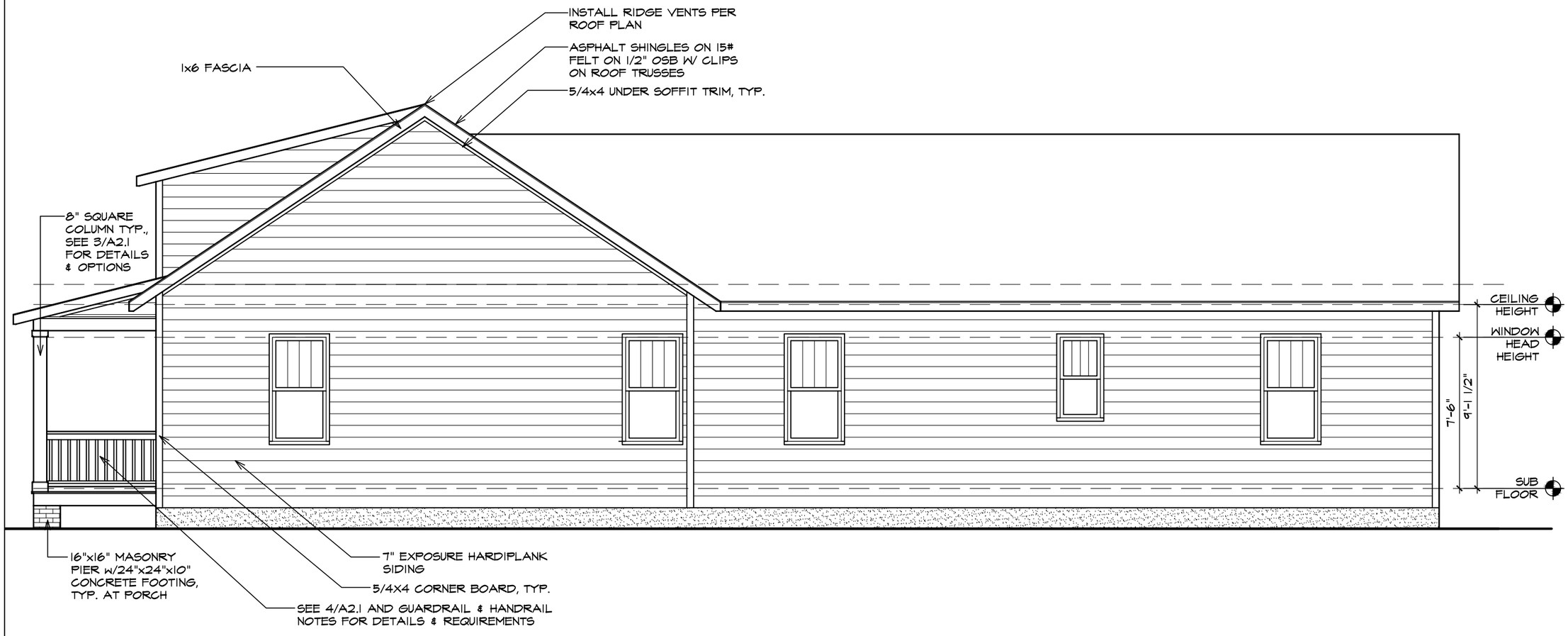
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Front & Rear Elevations

A2.1



1 / A2.2 RIGHT ELEVATION

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

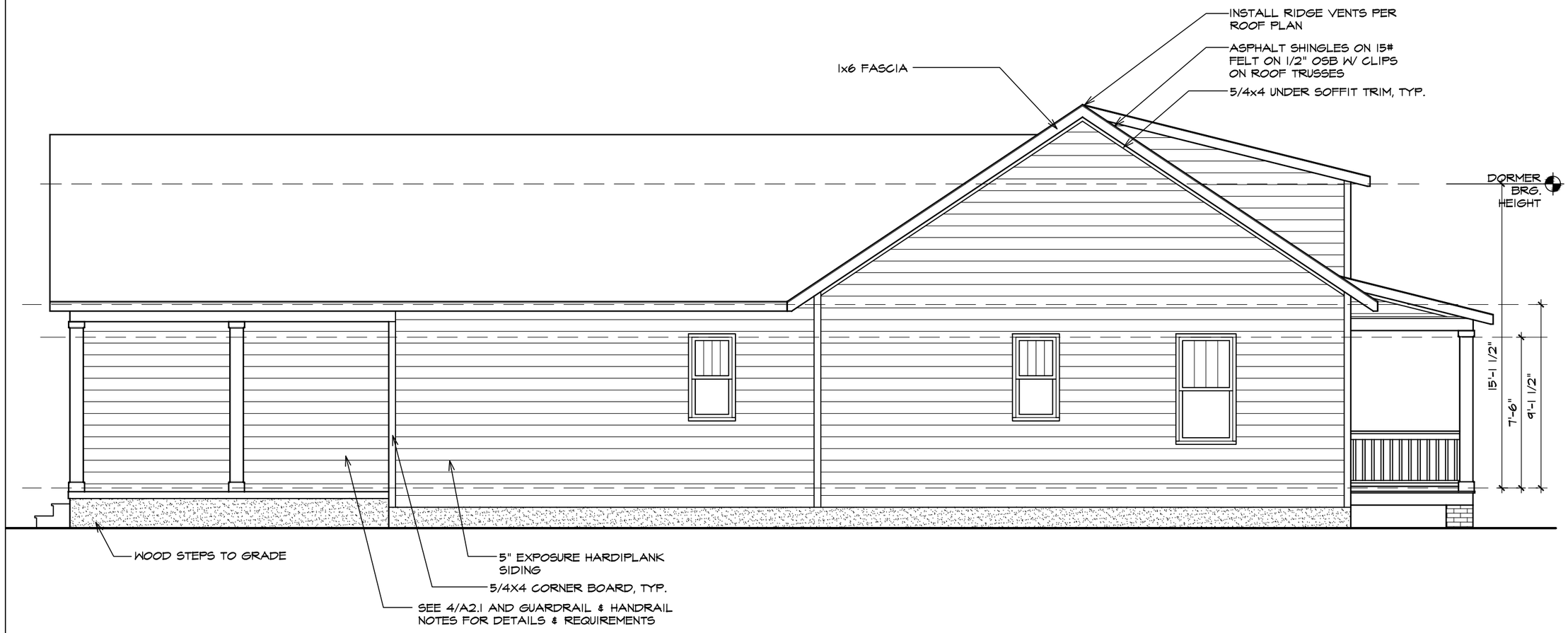
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Left Elevation

A2.2



1 / A2.3 LEFT ELEVATION

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

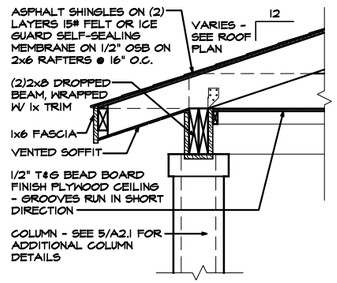
COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	D.A.S.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

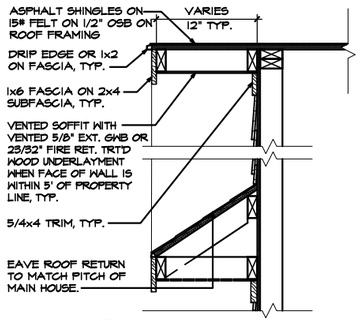
Right Elevation

A2.3

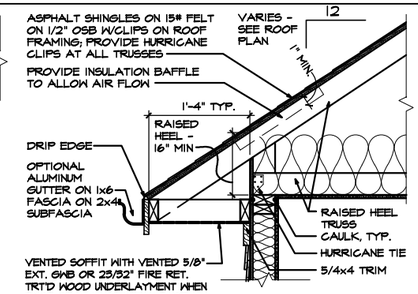
RAKE & EAVE DETAILS



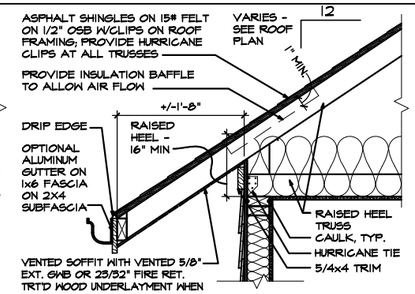
6 PORCH EAVE DETAIL (A3.1) 1" = 1'-0"



5 TYPICAL RAKE DETAIL (A3.1) 1" = 1'-0"

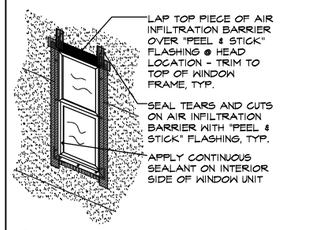


4b BOXED EAVE DETAIL W/ TRUSS (A3.1) 1" = 1'-0"

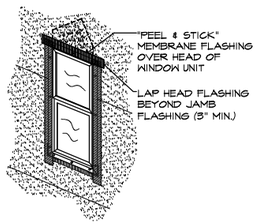


4a SLOPED EAVE DETAIL W/ TRUSS (A3.1) 1" = 1'-0"

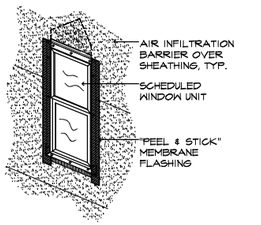
WINDOW INSTALLATION



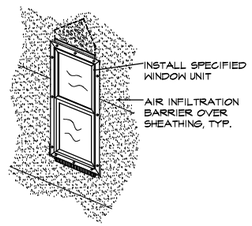
7 FINISHING
a) LAP TOP PIECE OF AIR INFILTRATION BARRIER OVER "PEEL & STICK" FLASHING @ HEAD LOCATION - TRIM TO TOP OF WINDOW FRAME, TYP.
b) INSTALL A CONTINUOUS BEAD OF POLYURETHANE SEALANT WHERE INTERIOR OF WINDOW UNIT MEETS R.O.



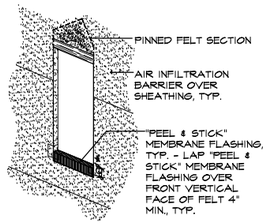
6 HEAD FLASHING
INSTALL "PEEL & STICK" MEMBRANE FLASHING OVER NAILING FLANGE OF WINDOW UNIT AT HEAD LOCATIONS.



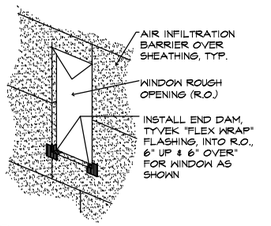
5 JAMB FLASHING
INSTALL "PEEL & STICK" MEMBRANE FLASHING OVER NAILING FLANGE OF WINDOW UNIT AT JAMB LOCATIONS.



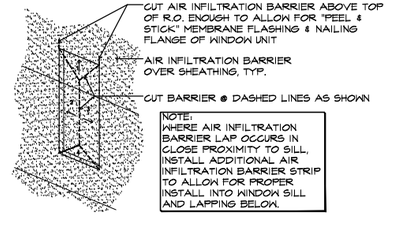
4 WINDOW INSTALLATION
INSTALL SPECIFIED WINDOW UNIT - SEE MFGR. RECOMMENDATIONS FOR INSTALLATION



3 SILL FLASHING
INSTALL "PEEL & STICK" FLASHING AT SILL LOCATION BY ADHERING TO INSIDE SILL R.O. AND EXTENDING DOWN OVER AIR INFILTRATION BARRIER

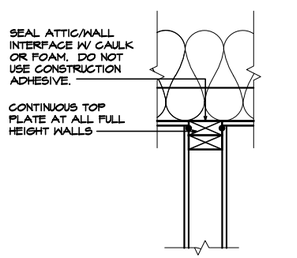


2 END DAM FLASHING
INSTALL END DAM FLASHING IN ROUGH OPENING FOR WINDOW

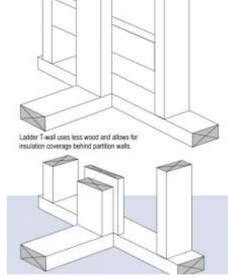


1 INSTALL AIR INFILTRATION BARRIER/CUT WINDOW R.O.
a) INSTALL AIR INFILTRATION BARRIER ON SHEATHING & OVER R.O. FOR WINDOW.
b) CUT AIR INFILTRATION BARRIER @ ALL R.O. LOCATIONS AS SHOWN.
c) FULL HEAD SECTION OF BARRIER UP AND TEMPORARILY PIN TO SHEATHING - FOLD THE JAMB SECTIONS OF THE BARRIER INTO THE R.O.

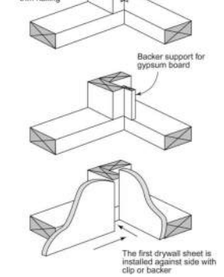
FRAMING DETAILS



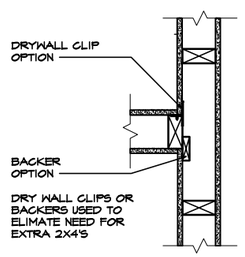
4 INT. WALL AT ATTIC (A3.1) 1-1/2" = 1'-0"



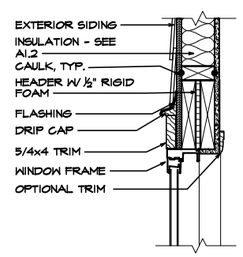
3c CORNER DETAIL (A3.1) NOT TO SCALE



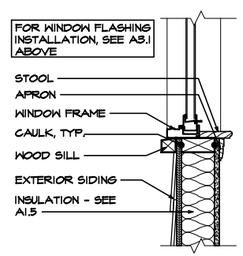
3b EXT. INSULATED T-WALL (A3.1) NOT TO SCALE



3a INTERIOR T-WALL DETAIL (A3.1) 1-1/2" = 1'-0"

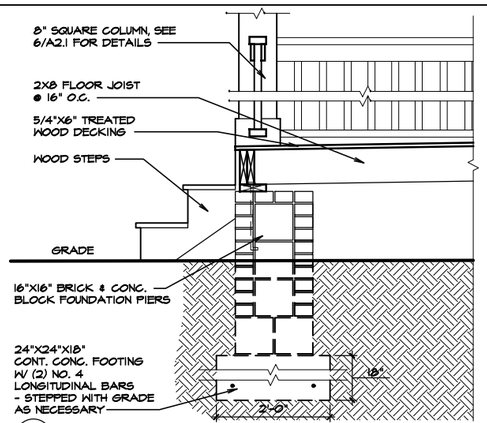


2b WINDOW AT HEAD (A3.1) 3/4" = 1'-0"

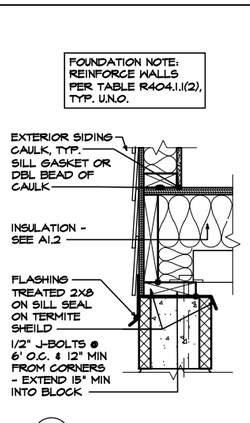


2a WINDOW AT SILL (A3.1) 3/4" = 1'-0"

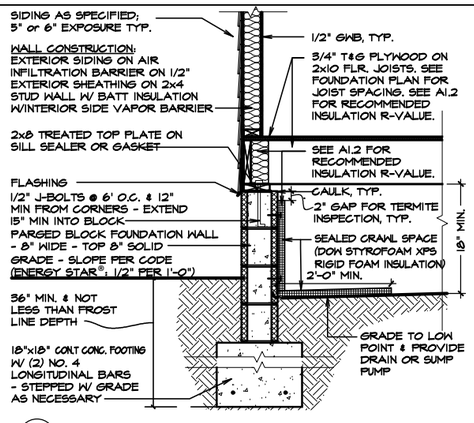
FOUNDATION DETAILS



1c FRONT PORCH DETAIL (A3.1) 3/8" = 1'-0"



1b CRAWL SPACE (A3.1) 3/4" = 1'-0"



1a SEALED CRAWL SPACE FOUNDATION (A3.1) 3/8" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St, Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	04.04.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.4
revisions	date

Foundation, Wall & Roof Framing Details

A3.1

DESIGN LOADS

This residence is based on the following code and loads. Client is responsible for any variations and/or applicable local requirements.

1. Building Codes
   - 1.1 2018 Residential Code
   - 1.2 Minimum Design Loads for Building and Other Structures, ASCE 7-10.

2	Roof Dead Load	15 PSF
3	Roof Live Load	20 PSF
4	Typical Floor Dead Load	10 PSF
5	Floor Live Loads	
5.1	Rooms other than sleeping rooms	40 PSF
5.2	Sleeping Rooms	30 PSF
5.3	Stairs	40 PSF
5.4	Decks	40 PSF
5.5	Exterior Balconies	60 PSF
6	Wind Loads / Data	
6.1	Ultimate Design Wind Speeds	115 MPH
6.2	Wind Importance Factor, IW	1.00
6.3	Exposure	B
6.4	Walls (Component and Cladding)	25 PSF
6.5	Roofs (Component and Cladding)	
6.5.1	Roof Slopes 2.25/12 to 7/12	34.8 PSF
6.5.2	Roof Slopes 7/12 to 12/12	21 PSF
7	Seismic Loads/ Data	
7.1	Seismic Use Group	0.075
7.2	Spectral Response Coefficient, SDS	0.17g< and <0.33g
7.3	Site Class	D
7.4	Seismic Importance Factor, IS	1.00
7.5	Seismic Design Category	B

FOUNDATION & FLOOR FRAMING NOTES:

1. All dimensions stretched from the outside face of the foundation wall or the center line of piers.
2. Typical pier is 16"x16" w/ 24"x24"x18"d ftg., U.N.O.
3. Typical wall ftg. is 18"w x 18"d W/ (2) No. 4 longitudinal bars U.N.O.
4. All girders and joist to be spf U.N.O.
5. Typical floor joists to be 2x10s @ 16" o.c. U.N.O.
6. Crawl space to be sealed - see 1/A3.1 for details
7. See sheet A1.4 & A3.1 for additional foundation & framing notes

FLOOR FRAMING NOTES

1. Floors shall be constructed in accordance with the requirements listed in the Residential Building Code Chapter 5.
2. Floors are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to TightLines Designs; TightLines Designs is not responsible for floor defects resulting from unreported conditions.
3. P denotes a point load from above. Provide solid blocking to foundation w/ the same number of studs as above.
4. Install double joists or see truss manf. dwgs. for support under parallel non load bearing partitions above typ.
5. Floor sheathing shall be APA rated sheathing exposure 1 or 2, 3/4" T&G glued and attached to its supporting framing with 1-8d CC nail at 6" O.C. At panels edges and at 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Panel end joints shall occur over framing.
6. Joists framing into the side of a girder shall be supported by a 2x2 ledger or by manuf. recommended hangers.

FLOOR PLAN NOTES:

1. All interior walls drawn @ 3 1/2" wide & exterior walls drawn w/sheathing and 1" rigid insulation @ 5" wide. All dimensions are drawn to face of stud on interior walls and to exterior sheathing on exterior walls.
2. All windows to have screens.
3. Provide plastic coated wire shelving w/clothes rod in coat closet & bedroom closets, one (1) shelf in laundry closet & four (4) shelves in pantry.
4. See above for additional framing notes.

GENERAL STRUCTURAL NOTES:

1. This structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
2. The architect is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The architect will not be held responsible for the contractor's failure to conform to the construction documents, should any non-conformities occur.
3. Verification of assumed field conditions is not the responsibility of the architect. The contractor shall verify the field conditions for accuracy and report any discrepancies to TightLines Designs before construction begins.
4. This structure and all construction shall conform to all applicable sections of the Residential Code and any local laws where the structure is to be constructed.

FOUNDATIONS & CRAWL SPACES

1. Foundations shall conform to the requirements of the Residential Building Code, Chapter 4. Should a conflict occur between these drawings and the aforementioned building code references the more stringent shall govern.
2. The architect has not received a subsurface investigation. The foundation is based upon an assumed soil bearing capacity of 2000 psf net bearing. Verification of this assumed value is the responsibility of the owner or contractor should any adverse soil condition be encountered the architect must be contacted before proceeding.
3. Foundations shall extend not less than 12 inches below the finished natural grade and in no case less than the frost line depth. Foundation walls are assumed to restrain earth pressures of 30 pcf or less, unbalanced fill and foundation wall construction shall conform to tables 404.1 of the Residential Building Code. Site topography has not been provided to TightLines Designs. Report any unusual site conditions to TightLines Designs before construction.
4. Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95 percent maximum dry density.
5. Excavation for footings shall be lined temporarily with a 6 mil polyethylene if placement of concrete does not occur within 24 hours of excavation.
6. No concrete shall be poured against any subgrade containing water, ice, frost, or loose material.
7. Enlarged perimeter footings are to be poured monolithically with wall footings. Reinforcement for wall footings, if any, shall run continuously through column footings.
8. Crawl space vents to be 8"x16" w/ min. 50% free air, and shall be located within 3' of each corner unless closed crawl space. Crawl space door may serve as vent.
9. Install 6 mil. vapor barrier below all slabs and on ground area within all crawlspaces.
10. Provide min. 18x24 access panel or larger as required by the Mechanical Code when mechanical equipment is located in the crawlspace.
11. Remove earth as required to achieve a minimum clearance from ground to underside of floor joists of 18".
12. Provide foundation drains at all foundation walls. Coordinate location to daylight with owner.

WALL FRAMING NOTES

1. Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the State Residential Code, Chapter 6. Should a conflict occur between these drawings and the aforementioned code references the more stringent shall govern.
2. Studs for wall framing shall consist of 2x nominal framing and be constructed in accordance with the requirements listed below. Studs listed in the following schedule shall have a maximum height of 10'-0":

Location	Stud Size	Grade	Spacing
2.1 Interior non-bearing walls	2x4	Stud	24" O.C.
2.2 Interior bearing walls	2x4	Stud	16" O.C.
2.3 Exterior walls	2x4 spf	no.2	16" O.C. (24" O.C. if roof trusses align.)

3. Studs shall be continuous from the sole plate to the double top plate at the ceiling or roof. Studs shall only be discontinuous at beams / headers for window or door openings. King studs shall be continuous with the same requirement as stud walls.
4. All headers at ext. openings and at bearing walls shall be (2) 2x8 (unless noted otherwise). Provide continuous king studs on each side of the jack studs. Unless otherwise noted on the drawings provide jack studs in accordance with the following schedule:

	Opening	No. of Jack Studs
4.1.	less than 4'-0"	1 ea. End
4.2.	4'-1" to 6'-0"	2 ea. End
4.3.	6'-1" to 12'-0"	3 ea. End
4.4.	over 12'-0"	4 ea. End, or see plans

5. All beam bearing on timber framing shall have full bearing for the width of the beam and supported by a minimum of three studs. Where beams bear onto a wall parallel to the beam the beam shall have a minimum bearing length of 4-1/2".
6. Individual studs forming a column shall be attached together with one 10d CC nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
7. All exterior walls shall be sheathed per section R602.10.3 of the Residential Code. Wall sheathing shall be APA rated structural 1 sheathing. Wall sheathing shall be attached to its supporting wall framing with 1-8d CC nail at 6" O.C. At panels edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall have a span rating constant with the framing spacing. Apply air infiltration barrier over the sheathing as required by the Residential Code.

CONCRETE

1. Concrete shall have normal weight aggregate and a minimum compressive strength (fc) at 28 days as listed below.
   - 1.1. Footings 3000 psi
   - 1.2. Slabs-on-grade 4000 psi
   - 1.3. Elevated Slabs 3500 psi
2. Concrete shall be proportioned, mixed, and placed in accordance with ACI 318 latest edition "Building Code Requirements for Reinforced Concrete" and ACI 301 latest edition "Specifications for Structural Concrete for Building"
3. Entrained air must be used in all concrete that will be exposed to freezing and thawing and deicing chemicals. Amount of air entrainment (percent) shall be in accordance with the following schedule with a range of -1 to +2 percentage points of the target value:
   - 3.1. Footings 5%
   - 3.2. Interior Slabs 0% see note below
   - 3.3. Exterior Slabs 5%
   - 3.4. Note: it is recommended that interior slabs to be given a smooth, dense, hard-troweled finish not contain entrained air since blistering or delamination may occur. If slab will be exposed to deicing or other aggressive chemicals contact TightLines Designs for proper air entrainment requirements.
4. No admixtures shall be added to any structural concrete without written permission of the architect.

CONCRETE SLABS ON GRADE

1. Concrete slabs on grade shall be constructed in accordance with ACI 302.1r-96 "guide for concrete slab and slab construction".
2. The architect is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions.
3. Control joints shall be spaced in slabs on grade at a maximum of 20'-0" O.C. Unless noted otherwise.
4. Control joints shall be produced using conventional processes within 4 to 12 hours after the slab has been finished.
5. Reinforcing steel shall not extend through the control joint.
6. All welded wire fabric for concrete slab on grade shall be supplied in flat sheets
7. All welded wire fabric for concrete slab on grade shall be placed 2" from top of slab. The WWF shall be securely supported during the concrete pour.

TIMBER

1. Solid sawn wood framing shall conform to the specifications as listed in the National Forest Products Association "National Design Specification for Wood Construction" latest edition (NDS). The framing shall be of the species and grade as listed below:
   - 1.1. Joists, Rafters, and Wood Girders and Beams:Spruce Pine Fir No. 2
   - 1.2. Studs: Spruce Pine Fir No. 3 or Stud Grade
2. LVL or PSL shall the following minimum design stresses:
   - 2.1. E = 1.9 x 10E6
   - 2.2. Fb = 2600 PSI
   - 2.3. Fv = 285 PSI
   - 2.4. Fc = 700 PSI
3. Lumber in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other exposed timber shall be treated in accordance with AWPA standard C-2.
4. Nails shall be common wire nails unless otherwise noted.
5. Lag screws shall conform to ANSI / ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
6. Beams containing multiple plies of lumber shall have each ply attached to its adjacent ply with 3 12d CC nails @ 12" O.C.
7. Flitch plate beams shall be attached w/ 1/2" through bolts at 24" O.C. staggered w/ (2) bolts 6" from each End.

HANGER SCHEDULE

SIZE	SST HANGER	SIZE	SST HANGER
2x6	LUS26	(2) 1.75 x 9.25 LVL	HU410(Max)
(2) 2x6	LUS26-2	(3) 1.75 x 9.25 LVL	HHUS5.50/10
(3) 2x6	LUS26-3	(2) 1.75 x 11.25 LVL or (2) 1.75 x 11.875 LVL	HU412 (Max)
2x8	LUS28	(3) 1.75 x 11.25 LVL or (3) 1.75 x 11.875 LVL	HHUS5.50/10
(2) 2x8	LUS28-2	(2) 1.75 x 14 LVL	HU416 (Max)
(3) 2x8	LUS28-3	(3) 1.75 x 14 LVL	HHUS5.50/10
2x10	LUS210	(2) 1.75 x 16 LVL	HHUS410
(2) 2x10	HUS210-2	(3) 1.75 x 16 LVL	HHUS5.50/10
(3) 2x10	LUS210-3	(2) 1.75 x 18 LVL	HGUS414
(4) 2x10	HHUS210-4	(3) 1.75 x 18 LVL	HGUS5.50/14
2x12	LUS210	NOTES: 1. SST Denotes Simpson Strong Tie. Use hanger per schedule above (or equivalent metal hanger) unless hanger is noted on plans. 2. Install Hangers per manf. Specifications	
(2) 2x12	HUS212-2		
(3) 2x12	HU212-3 (Max)		

ROOF FRAMING NOTES

1. Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the Residential Code, Chapter 8.
2. Roofs are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to TightLines Designs; TightLines Designs is not responsible for defects resulting from unreported conditions.
3. Roofs shall be framed with roof trusses at 24" O.C. unless noted otherwise. Trusses shall be designed and/or reviewed by a licensed structural engineer.
4. At rafter and joist framing, a 2x4 collar tie (beam) shall be provided every third set of rafters. Ties shall be placed in the upper third of the roof and attached to each rafter with 4-12d CC nails.
5. Proper roof drainage shall be maintained at all roof conditions.
6. Roofs shall be sheathed with 15/32 APA rated structural sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with 1-8d CC nail at 6" O.C. At panels edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating constant with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.
7. Apply building felt over the sheathing as required by the Residential Code, with two layers for slopes 2/12 to 4/12 and one layer for slopes >4/12.
8. Attach a Simpson H2.5A Hurricane Tie at every connection between trusses and top plates.

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

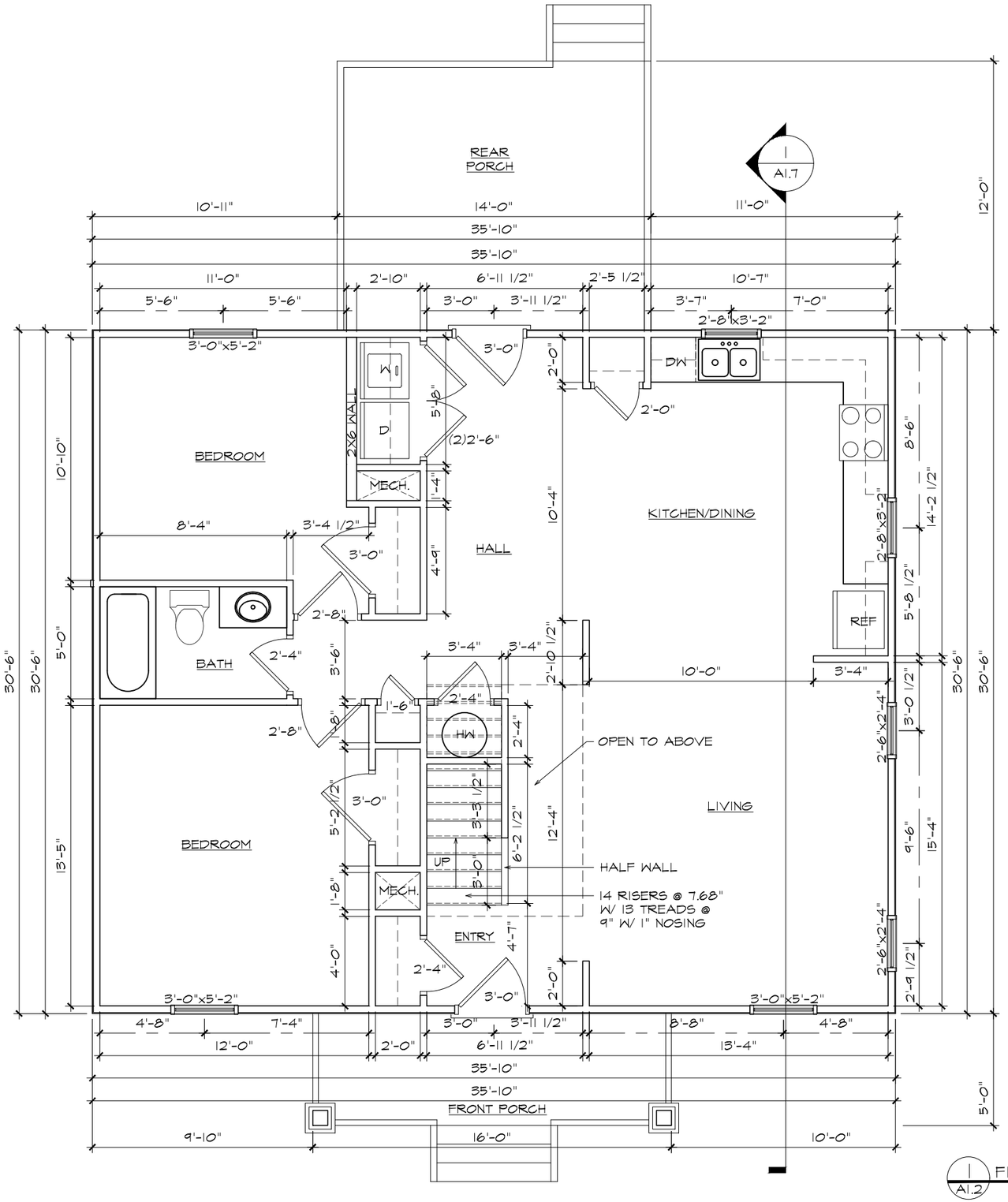
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

General Notes

A1.1



ROOM FLOORING MATERIALS:

- ALL BEDROOMS TO BE CARPET.
- KITCHEN, BATHROOMS AND LAUNDRY TO BE VINYL TILE.
- ALL OTHER ROOMS TO BE 3/4" HARDWOOD FLOORING.

SQUARE FOOTAGES:

FIRST FLOOR HEATED - 1093 SQ. FT.
SECOND FLOOR HEATED - 527 SQ. FT.
TOTAL HEATED - 1620 SQ. FT.

FRONT PORCH - 47 SQ. FT.
REAR PORCH - 168 SQ. FT.

1 / A1.2 FIRST FLOOR PLAN

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

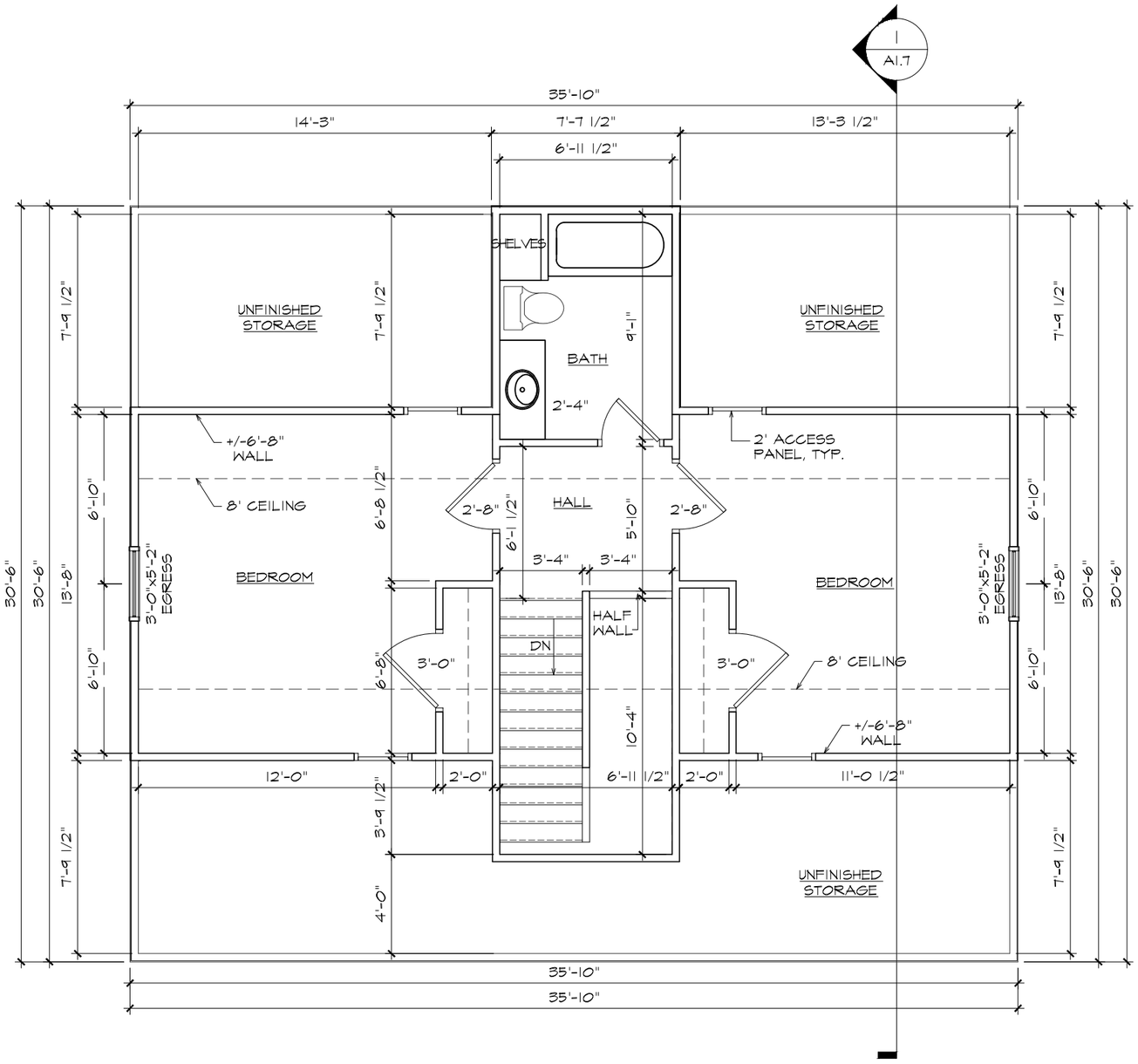
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

First Floor Plan

A1.2



ROOM FLOORING MATERIALS:

- ALL BEDROOMS TO BE CARPET.
- KITCHEN, BATHROOMS AND LAUNDRY TO BE VINYL TILE.
- ALL OTHER ROOMS TO BE 3/4" HARDWOOD FLOORING.

SQUARE FOOTAGES:

FIRST FLOOR HEATED - 1093 SQ. FT.
SECOND FLOOR HEATED - 527 SQ. FT.
TOTAL HEATED - 1620 SQ. FT.

FRONT PORCH - 47 SQ. FT.
REAR PORCH - 168 SQ. FT.

1 A1.3 SECOND FLOOR PLAN
3/16" = 1'-0"

THIS PLAN IS AUTHORIZED FOR THIS ADDRESS ONLY AND IS NOT TO BE USED FOR ANY ADDITIONAL ADDRESSES WITHOUT THE PURCHASE OF ADDITIONAL LICENSES OR WRITTEN AUTHORIZATION FROM TIGHTLINES:

Single Use License
3817 Lynhaven Ave.
Richmond, VA

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

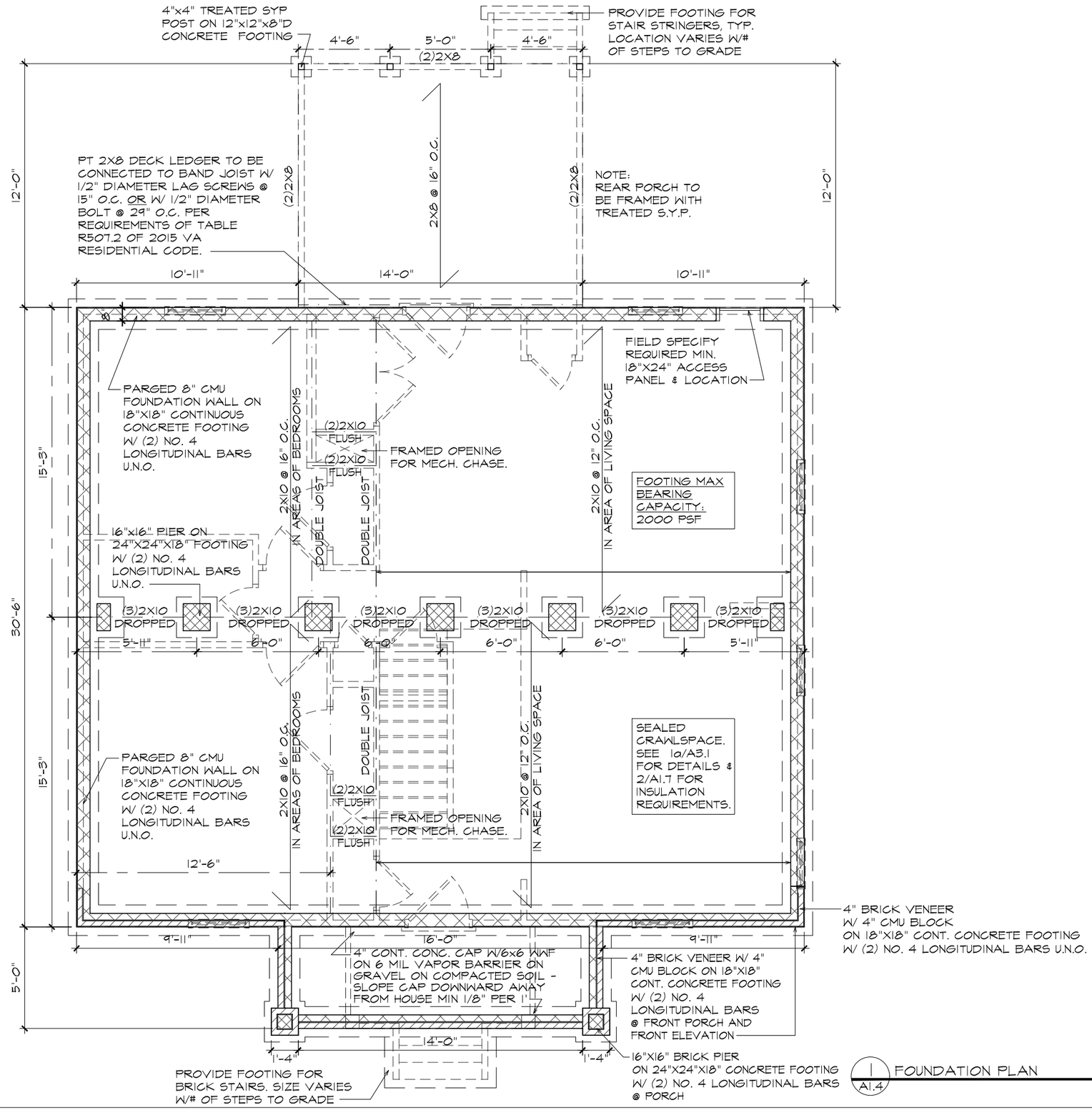
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

Second Floor Plan

A1.3



1 A1.4 FOUNDATION PLAN

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

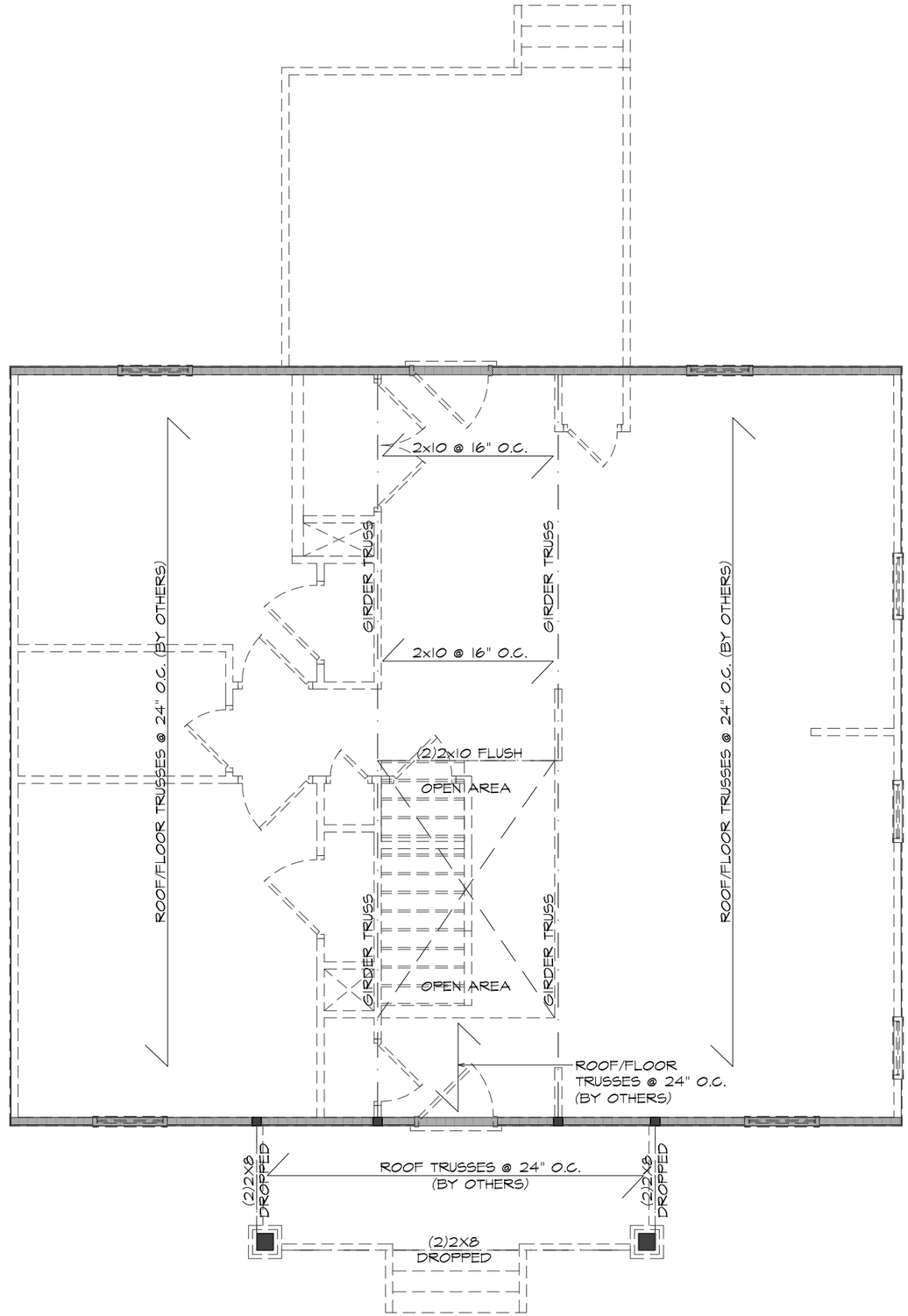
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

Foundation Plan

A1.4



WALL LEGEND

- LOAD-BEARING WALL
- NON LOAD-BEARING WALL
- POINT LOAD

NOTES:
ATTACHMENT OF TRUSSES TO BEAMS BY OTHERS, TYP.

MIN (3)2x4 STUD COLUMN @ ALL BEAM & HEADER ENDS, TYP. U.N.O.

MIN. (2)2x10 HEADERS @ ALL OPENINGS, TYP. U.N.O.

4" STUD POCKET BETWEEN ALL MULTIPLE WINDOW ASSEMBLIES.

REFER TO TRUSS DIAGRAMS ON SHEET A1.7 FOR TRUSS PROFILE. MANUFACTURER TO DETERMINE FINAL CONFIGURATION & LAYOUT.

1 / A1.5 FIRST FLOOR CEILING FRAMING PLAN
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

First Floor Ceiling Framing Plan

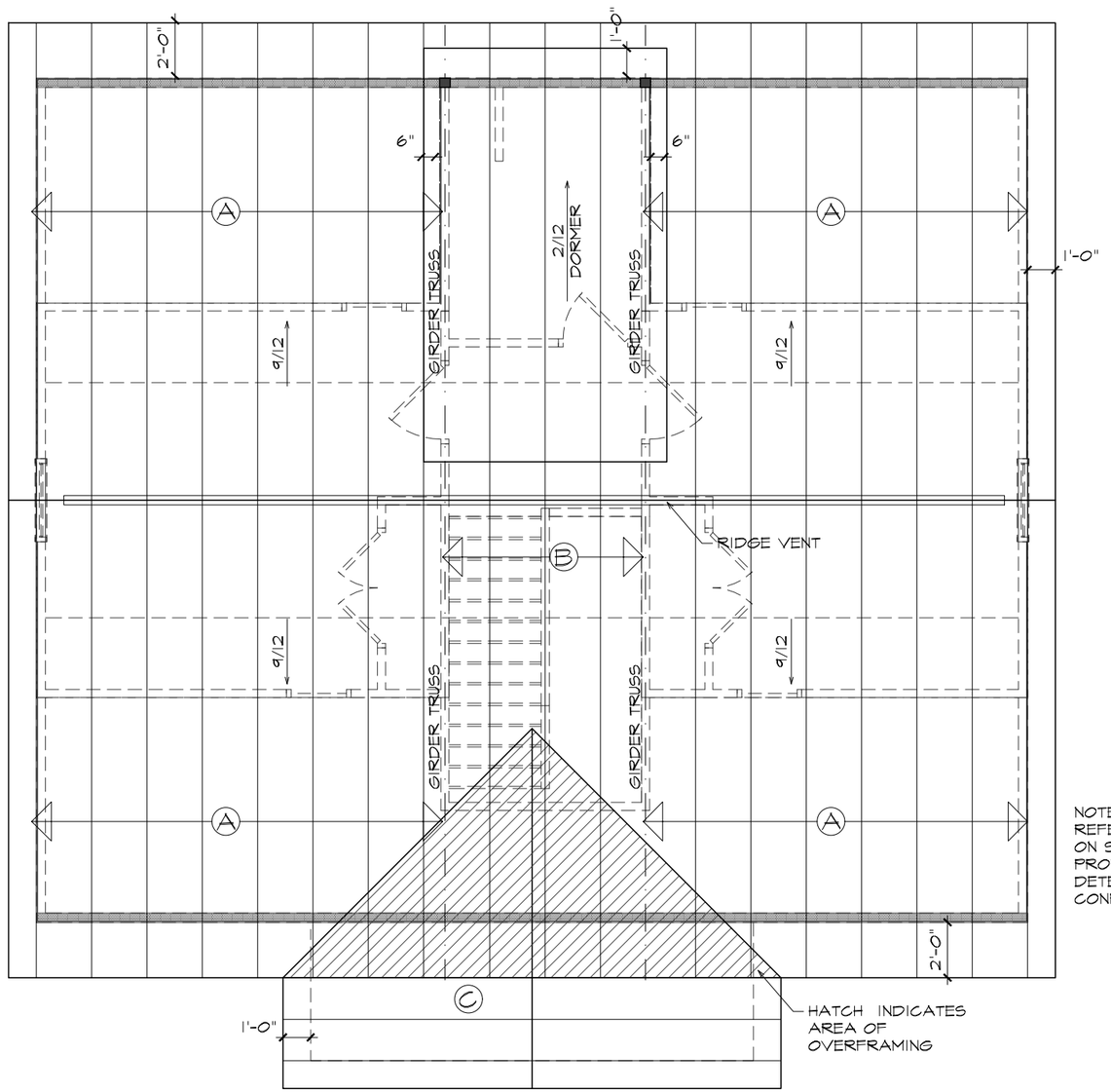
A1.5

ROOF FRAMING NOTES:
1) ROOF PLAN AND PITCHES ARE INDICATED IN ROOF PLAN. REFER TO ENGINEERED TRUSS DRAWINGS FOR FINAL ROOF CONSTRUCTION.
- SEE SHEET A1.1 FOR ADDITIONAL ROOF FRAMING NOTES.
2) PROVIDE TWO LAYERS 15# FELT UNDERLAYMENT FOR ROOFS 2:12 TO 4:12 AND ONE LAYER FOR ROOFS >4:12.

OVERHANG NOTES:
1) RECOMMENDED RAKE OVERHANG: 1'-0"
2) RECOMMENDED EAVE OVERHANG 2'-0"

ROOF VENT CALCULATIONS:
1151 SF ROOF AREA/300 = 3.84 SF VENT REQUIRED
3.84 x 50% = 1.92 SF VENT REQ'D IN UPPER ROOF AREA

34 LF HORIZ. RIDGE VENT x .08 SF/LF = 2.72 SF VENT PROVIDED IN UPPER ROOF AREA



WALL LEGEND
- LOAD-BEARING WALL
- NON LOAD-BEARING WALL
- POINT LOAD

NOTE:
REFER TO TRUSS DIAGRAMS ON SHEET A1.7 FOR TRUSS PROFILE. MANUFACTURER TO DETERMINE FINAL CONFIGURATION & LAYOUT.

1 A1.6 ROOF FRAMING PLAN
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

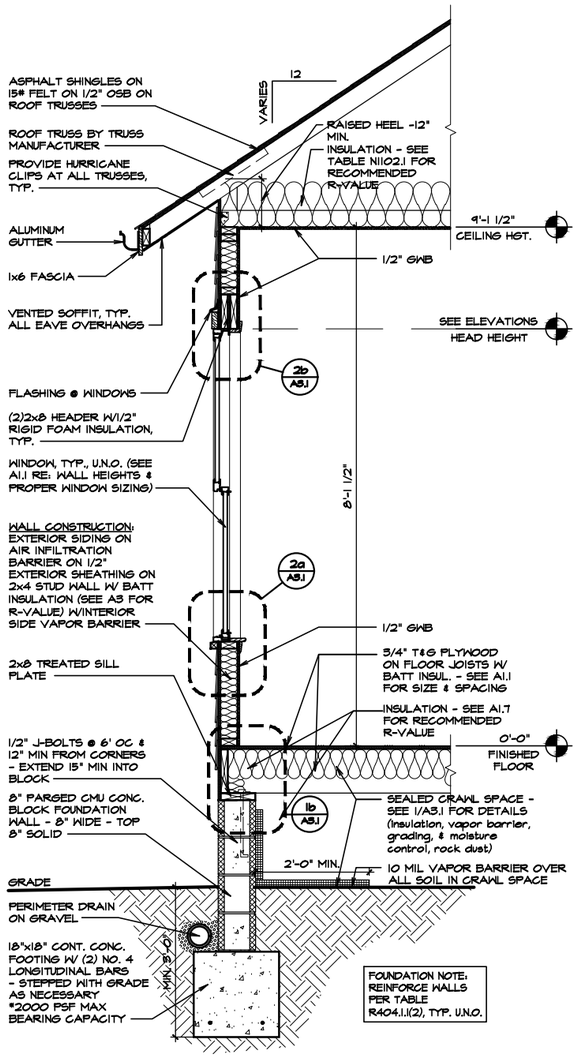
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

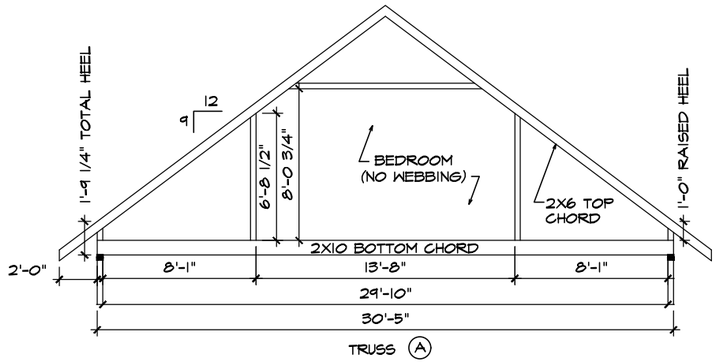
Roof Framing Plan

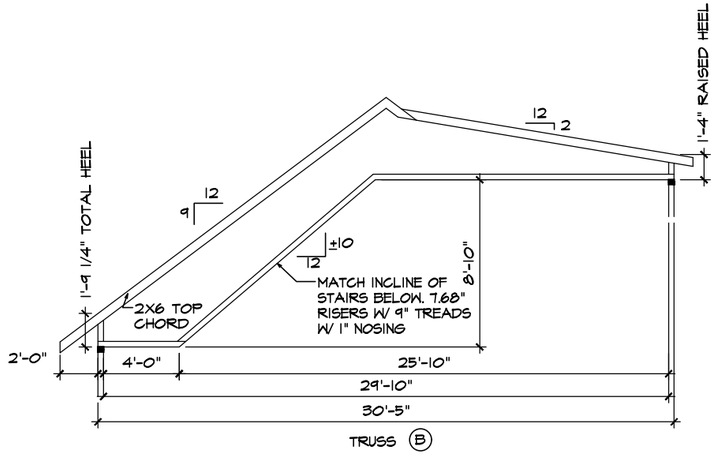
A1.6

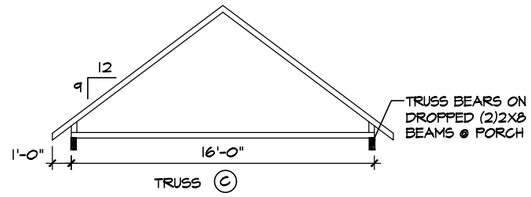


3 A1.7 TYPICAL WALL SECTION

3/8" = 1'-0"







4 A1.7 ROOF TRUSS DIAGRAMS

1/8" = 1'-0"

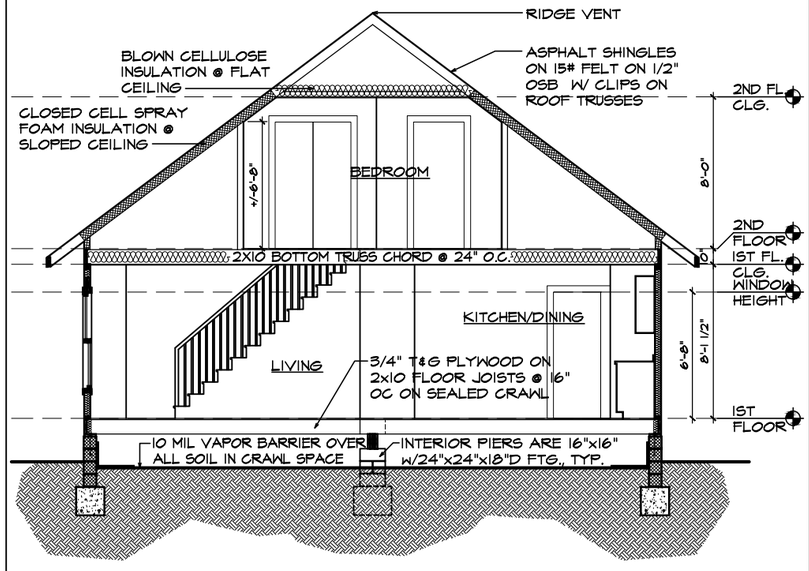
TRUSS NOTES:
1) DIMENSIONS ARE OUTSIDE TO OUTSIDE OF STUDS.
2) THESE ARE DIAGRAMATIC TRUSS CONFIGURATIONS. REFER TO ENGINEERED TRUSS DRAWINGS FOR ALL FINAL TRUSS DIMENSIONS, LAYOUTS AND CONSTRUCTION NOTES.
3) ROOF TRUSSES TO BE DESIGNED & ENGINEERED BY A LICENSED ENGINEER.
4) ALL TRUSS LOADS TO BEAR ON OUTSIDE WALLS ONLY U.N.O.

TABLE N1102.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT a

Climate Zone	Fenestration U-Factor b,j	Skylight b U-Factor	Glazed Fenestration SHGC b,k	Ceiling R-Value m	Wood Frame Wall R-Value e	Mass Wall R-Value l	Floors R-Value	Basement c,o Wall R-Value	Slab d R-Value & Depth	Crawl Space c Wall R-Value
4	0.35	0.55	0.30	38 or 30 ci	15 or 13+2.5h	5/13 or 5/10ci	19	10/15	10	10/15

a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.
b. The fenestration U-factor column excludes skylights. The solar heat gain coefficient (SHGC) column applies to all glazed fenestration.
c. "10/15" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-15 cavity insulation at the interior of the basement wall or crawl space wall.
d. R-5 shall be added to the required slab edge R-values for heated slabs. For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 24 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix O)
e. Deleted.
f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.
g. Or insulation sufficient to fill the framing cavity, R-19 minimum.
h. The first value is cavity insulation, the second value is continuous insulation, so "13+5" mean R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing cover 15 percent or less of the exterior, insulation sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
i. The second R-Value applies when more than half the insulation is on the interior of the mass wall.
j. In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
k. In addition to the exemption in Section N1102.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.
l. R-30 shall be deemed to satisfy the ceiling insulation requirement whenever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise R-38 insulation is required where adequate clearance exists or insulation must extend to either the insulation baffle or within 1" of the attic roof deck.
m. Table value required except for roof edge where the space is limited by the pitch of the roof, there the insulation must fill the space up to the air baffle.
n. R-19 fiberglass batts compressed and installed in the nominal 2x6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall is not deemed to comply.
o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

2 A1.7 INSULATION AND FENSTRATION NOTES



1 A1.7 BUILDING SECTION

1/8" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

Bldg. & Wall Sections, Roof Truss Diagrams, Insulation Notes

A1.7

NOTES:

1. STRUCTURAL BRACING TO BE 1/2" PLYWOOD OR OSB SHEATHING. WALL BRACING SHALL BE IN ACCORDANCE WITH SECTION R602.10.3 CONTINUOUS SHEATHING. BRACING METHOD CS-WSP SHALL BE USED IN ACCORDANCE WITH TABLE R602.10.1.

2. THE REQUIRED LENGTH OF BRACING FOR EACH SIDE OF A RECTANGLE CIRCUMSCRIBED AROUND THE PLAN OR A PORTION OF THE PLAN AT EACH STORY LEVEL SHALL BE IN ACCORDANCE WITH TABLE R602.10.3 AND FIGURE R60.10.3(1). UNLESS NOTED OTHERWISE, THE ENTIRE STRUCTURE IS ASSUMED TO CIRCUMSCRIBED WITHIN A SINGLE RECTANGLE.

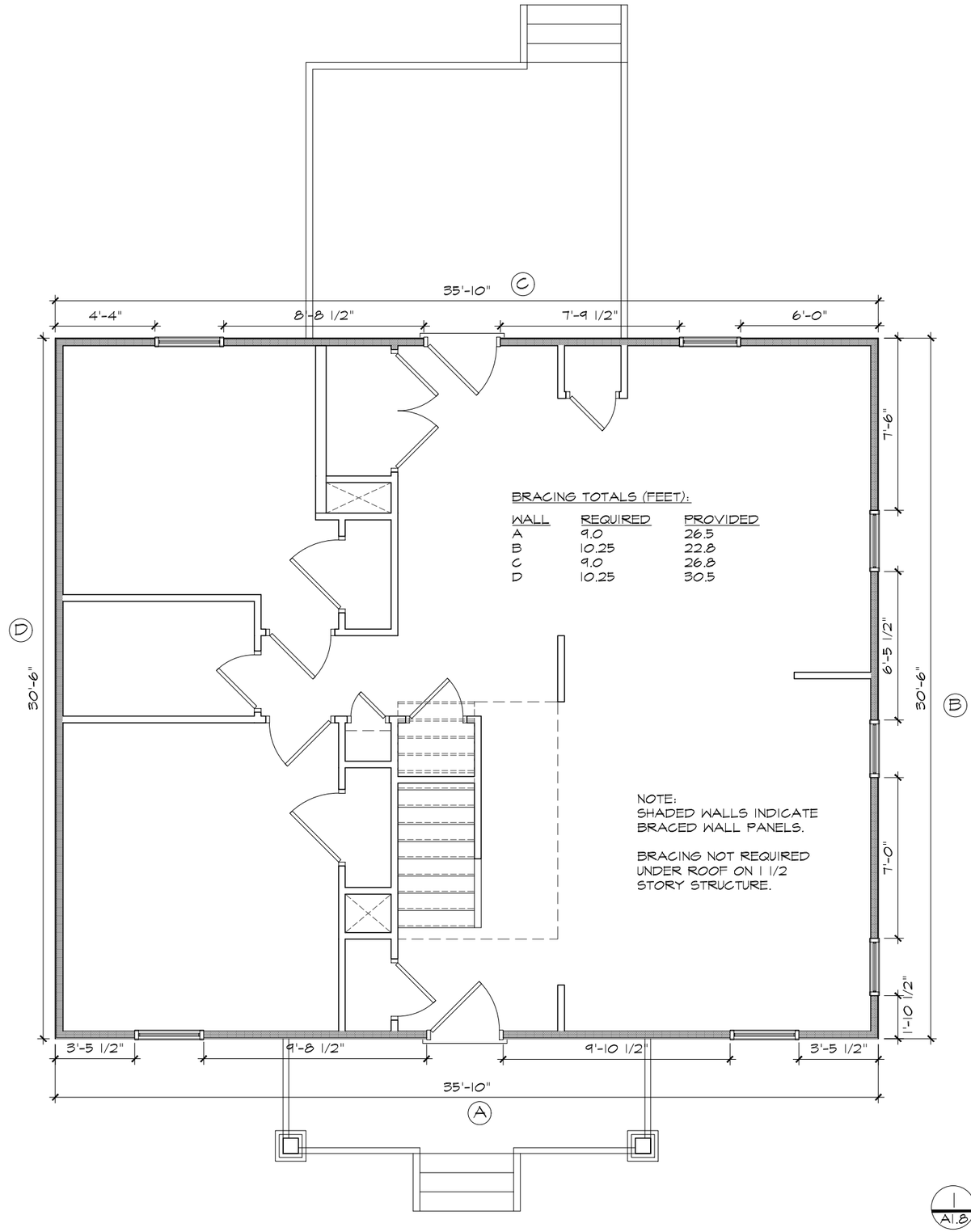
3. MINIMUM PANEL WIDTH IS 24". SEE SECTION R602.10.3 FOR ADDITIONAL INFORMATION. CONNECTION CRITERIA SHALL BE IN ACCORDANCE WITH TABLE R602.10.1. PORTAL FRAME CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE R602.10.1

4. ALL BRACED WALL PANELS TO BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET W/OUT ADDITIONAL ENGINEERING CALCULATIONS.

5. WINDOW AND DOOR OPENING SIZES COINCIDE WITH ARCH. PLANS.

6. CONTINUOUS SHEATHING METHODS REQUIRE STRUCTURAL PANEL SHEATHING TO BE USED ON ALL SHEATHABLE SURFACES ON ONE SIDE OF A BRACED WALL LINE INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS.

7. HOLD DOWN DEVICE SHALL BE AS FOLLOWS: SIMPSON LSTA24 STRAP (OR EQUIVALENT) BETWEEN FLOORS EXTENDING FROM BOTTOM OF FLOOR BAND UP STUDS WHERE SHOWN.
SIMPSON HD3B HOLDOWN (OR EQUIVALENT) WHERE REQUIRED TO CONNECT DIRECTLY TO FOUNDATION.



1 A1.8 WALL BRACING DIAGRAM

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

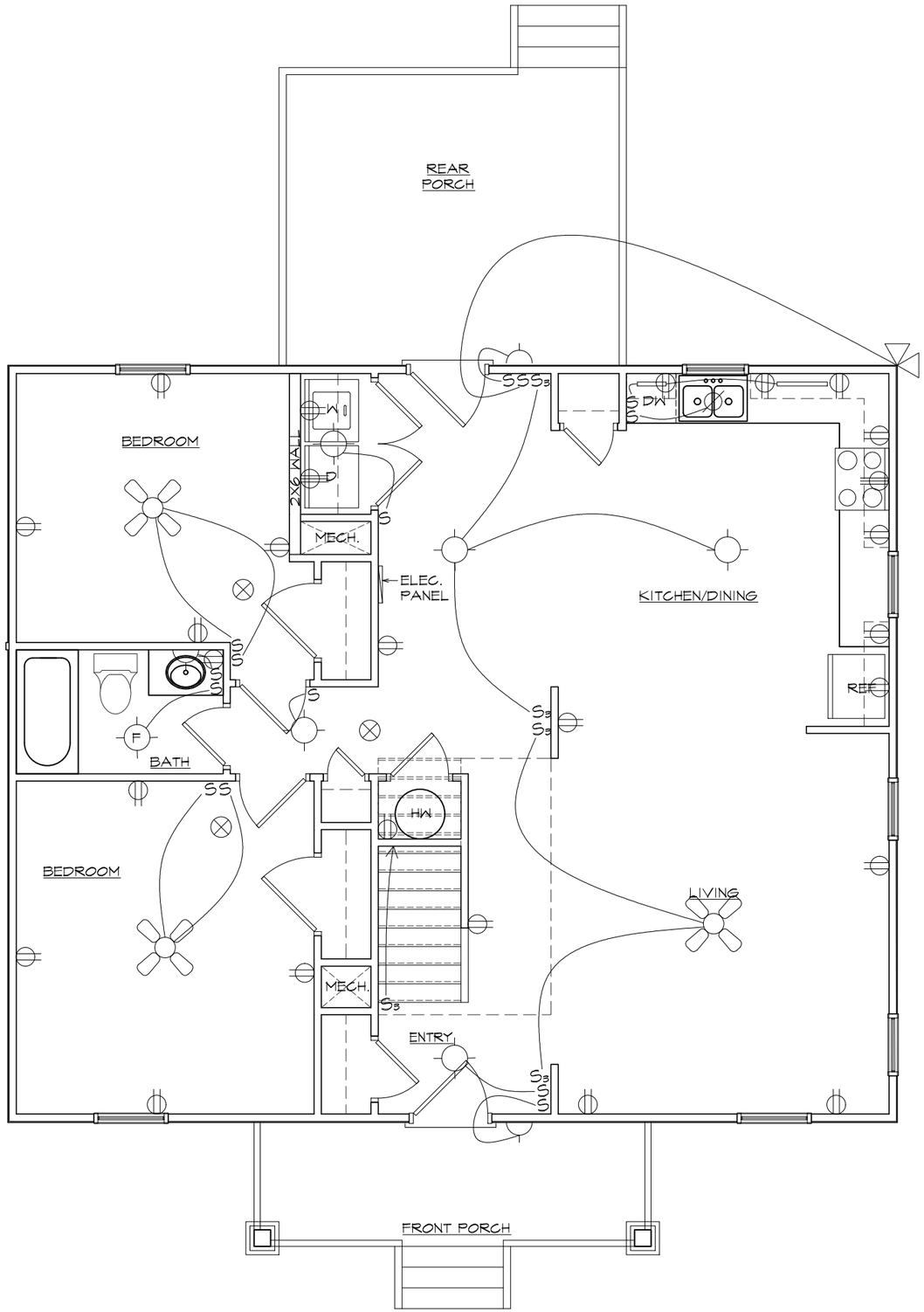
Wall Bracing Diagram

A1.8

ELECTRICAL KEY:

- CEILING FIXTURE LOCATION
- WALL SCONCE LOCATION
- (F) LIGHT/FAN LOCATION, VENTED TO OUTSIDE
- PENDANT LIGHT LOCATION
- REVERSIBLE DIRECTION CEILING FAN W/ LIGHT, SEPARATE SWITCHING
- UNDER CABINET LIGHTING
- EXTERIOR SPOT LIGHT
- SMOKE DETECTOR LOCATION, PER R313
- S SWITCH LOCATION
- DUPLEX RECEPTACLE
- 220 RECEPTACLE

ALL FIXTURES TO BE SELECTED BY OWNER.
CONFIRM ALL FIXTURE AND SWITCHING LOCATIONS W/ OWNER.



1 A1.9 FIRST FLOOR ELECTRICAL LAYOUT
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

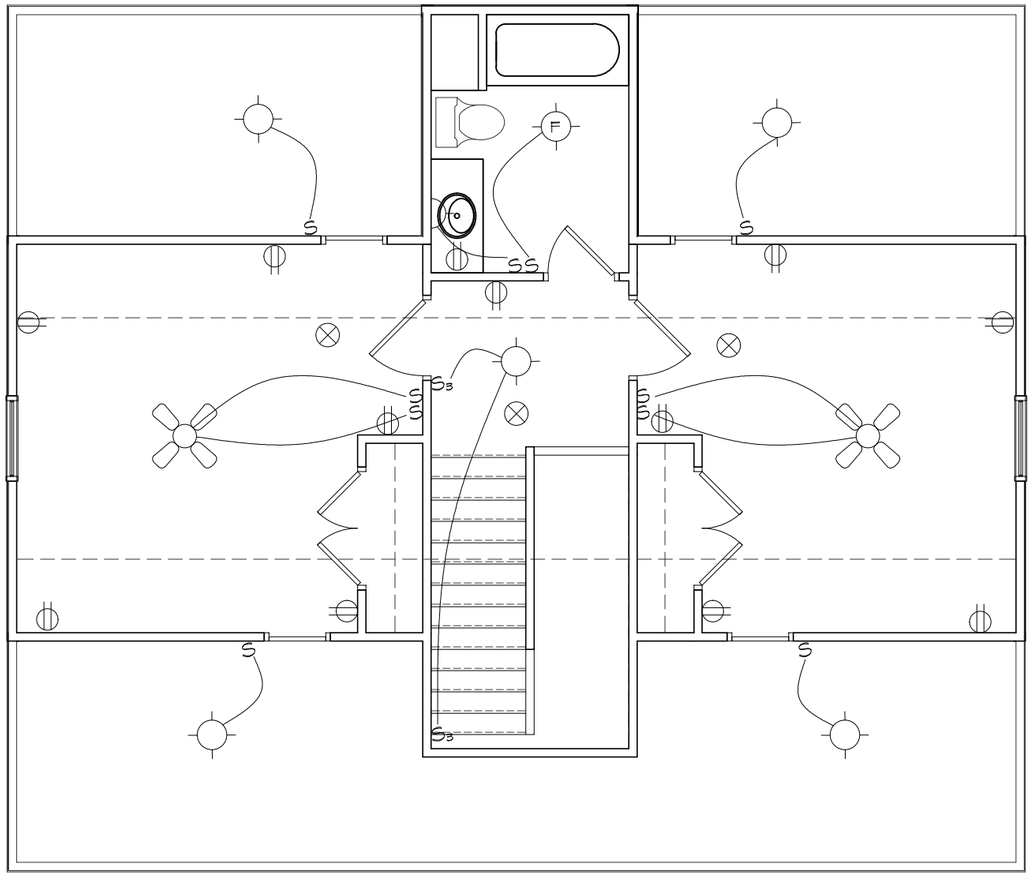
First Floor Electrical Layout

A1.9

ELECTRICAL KEY:

- CEILING FIXTURE LOCATION
- WALL SCONCE LOCATION
- (F) LIGHT/FAN LOCATION, VENTED TO OUTSIDE
- PENDANT LIGHT LOCATION
- REVERSIBLE DIRECTION CEILING FAN W/ LIGHT, SEPARATE SWITCHING
- UNDER CABINET LIGHTING
- EXTERIOR SPOT LIGHT
- SMOKE DETECTOR LOCATION, PER R313
- S SWITCH LOCATION
- DUPLEX RECEPTACLE
- 220 RECEPTACLE

ALL FIXTURES TO BE SELECTED BY OWNER.
CONFIRM ALL FIXTURE AND SWITCHING LOCATIONS W/ OWNER.



1 A1.10 SECOND FLOOR ELECTRICAL LAYOUT
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

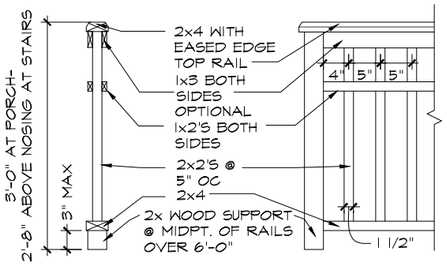
Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

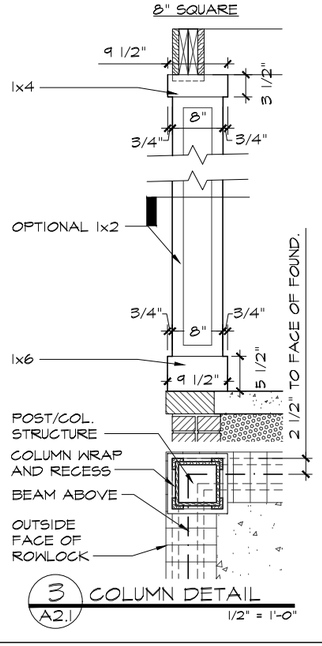
Second Floor Electrical Layout

A1.10



4 A2.1 RAILING DETAIL

1/2" = 1'-0"



3 A2.1 COLUMN DETAIL

1/2" = 1'-0"

2 A2.1 REAR ELEVATION

3/16" = 1'-0"

1 A2.1 FRONT ELEVATION

3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

Elevations & Details

A2.1

GUARDRAIL AND HANDRAILS:
1) INSTALL HANDRAILS AND GUARDS PER 2018 RESIDENTIAL BUILDING CODE SECTIONS R311.7.2 THROUGH R312: PORCHES, BALCONIES, RAMPS OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT. OPEN SIDES OF STAIRS WITH A TOTAL RISE OF MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 34" IN HEIGHT MEASURED VERTICALLY FROM THE NOSING OF THE TREADS. REQUIRED GUARDS ON OPEN SIDES OF STAIRWAYS, RAISED FLOOR AREAS, BALCONIES AND PORCHES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL CLOSURES WHICH DO NOT ALLOW PASSAGE OF AN OBJECT 4" OR MORE IN DIAMETER. HORIZONTAL SPACING BETWEEN THE VERTICAL MEMBERS IN REQUIRED GUARDRAILS SHALL BE A MAXIMUM OF 4" AT THE NEAREST POINT BETWEEN MEMBERS.
2) INSTALL HANDRAILS PER 2018 RESIDENTIAL BUILDING CODE SECTION R311.5.6 AT ALL PORCH STAIRS WITH MORE THAN 4 RISERS. HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL NOT BE LESS THAN 34" AND NOT MORE THAN 38".

CLADDING VALUES
PROVIDE POS. AND NEG. WALL & ROOF CLADDING DESIGN VALUES. PLANS MAY STATE THAT WALL CLADDING IS DESIGNED FOR 24.1 LBS/SF OR GREATER POS. OR NEG.PRESSURE FOR HOUSES W/ MEAN ROOF HGT. OF 30 FT. OR LESS. ROOF VALUES, BOTH POS. & NEG., SHALL BE DESIGNED AS FOLLOWS:
- 45.4 LBS/SF FOR ROOF PITCHES OF 0/12 TO 2.25/12
- 24.8 LBS/SF FOR ROOF PITCHES OF 2.25/12 TO 7/12
- 21 LBS/SF FOR ROOF PITCHES OF 7/12 TO 12/12
VALUES STATED ARE FOR ROOFS WITH A MEAN HGT. OF 30 FT. OR LESS. ROOFS W/ MEAN HGTS. GREATER THAN 30 FT. MUST SHOW SPECIFIC INFORMATION FOR CLADDING.

MEAN ROOF HEIGHT: 17'-6"

3 A2.2 NOTES

2 A2.2 LEFT ELEVATION
3/16" = 1'-0"

1 A2.2 RIGHT ELEVATION
3/16" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St. Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

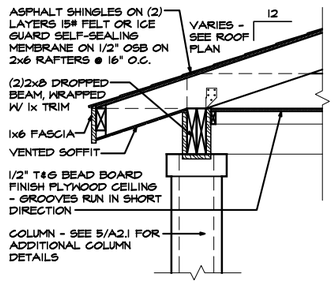
COMMONWEALTH OF VIRGINIA
DAVID SCOTT MAURER
Lic. No. 0401017072
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

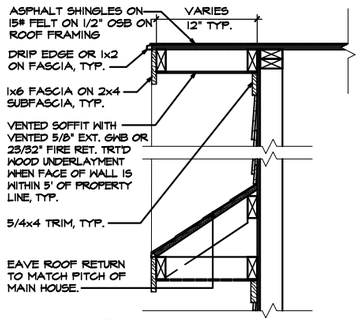
Elevations & Notes

A2.2

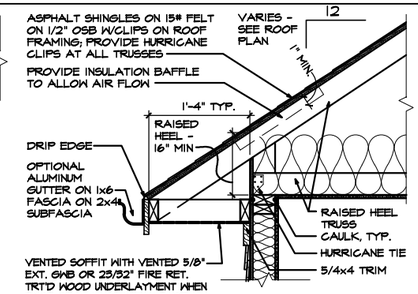
RAKE & EAVE DETAILS



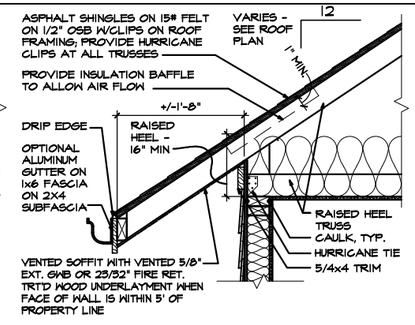
6 PORCH EAVE DETAIL (A3.1) 1" = 1'-0"



5 TYPICAL RAKE DETAIL (A3.1) 1" = 1'-0"

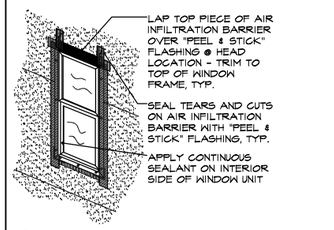


4b BOXED EAVE DETAIL W/ TRUSS (A3.1) 1" = 1'-0"

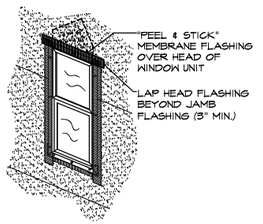


4a SLOPED EAVE DETAIL W/ TRUSS (A3.1) 1" = 1'-0"

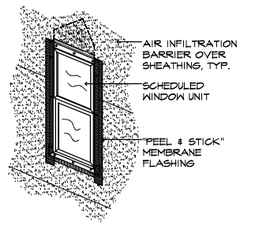
WINDOW INSTALLATION



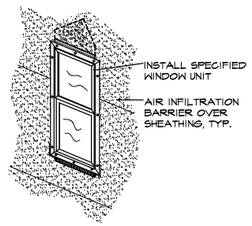
7 FINISHING
a) LAP TOP PIECE OF AIR INFILTRATION BARRIER OVER "PEEL & STICK" FLASHING @ HEAD LOCATION - TRIM TO TOP OF WINDOW FRAME, TYP.
b) INSTALL A CONTINUOUS BEAD OF POLYURETHANE SEALANT WHERE INTERIOR OF WINDOW UNIT MEETS R.O.



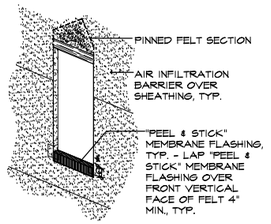
6 HEAD FLASHING
INSTALL "PEEL & STICK" MEMBRANE FLASHING OVER NAILING FLANGE OF WINDOW UNIT AT HEAD LOCATIONS.



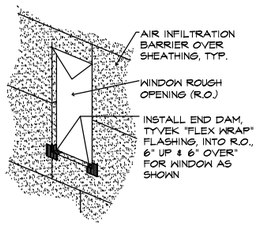
5 JAMB FLASHING
INSTALL "PEEL & STICK" MEMBRANE FLASHING OVER NAILING FLANGE OF WINDOW UNIT AT JAMB LOCATIONS.



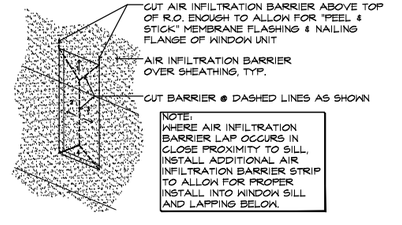
4 WINDOW INSTALLATION
INSTALL SPECIFIED WINDOW UNIT - SEE MFGR. RECOMMENDATIONS FOR INSTALLATION



3 SILL FLASHING
INSTALL "PEEL & STICK" FLASHING AT SILL LOCATION BY ADHERING TO INSIDE SILL R.O. AND EXTENDING DOWN OVER AIR INFILTRATION BARRIER

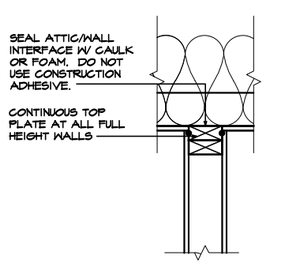


2 END DAM FLASHING
INSTALL END DAM FLASHING IN ROUGH OPENING FOR WINDOW

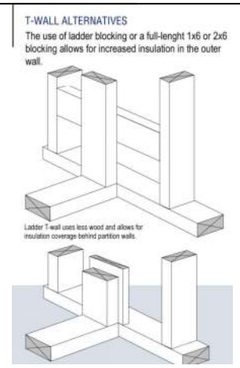


1 INSTALL AIR INFILTRATION BARRIER/CUT WINDOW R.O
a) INSTALL AIR INFILTRATION BARRIER ON SHEATHING & OVER R.O. FOR WINDOW.
b) CUT AIR INFILTRATION BARRIER @ ALL R.O. LOCATIONS AS SHOWN.
c) FULL HEAD SECTION OF BARRIER UP AND TEMPORARILY PIN TO SHEATHING - FOLD THE JAMB SECTIONS OF THE BARRIER INTO THE R.O.

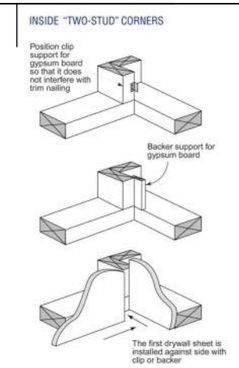
FRAMING DETAILS



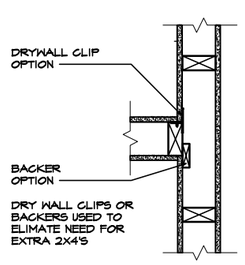
4 INT. WALL AT ATTIC (A3.1) 1-1/2" = 1'-0"



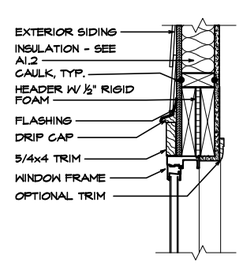
3c CORNER DETAIL (A3.1) NOT TO SCALE



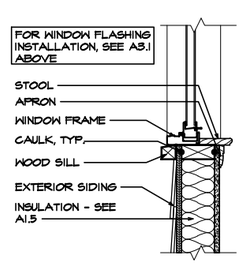
3b EXT. INSULATED T-WALL (A3.1) NOT TO SCALE



3a INTERIOR T-WALL DETAIL (A3.1) 1-1/2" = 1'-0"

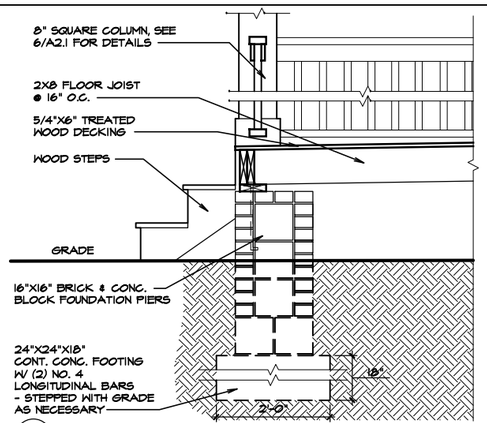


2b WINDOW AT HEAD (A3.1) 3/4" = 1'-0"

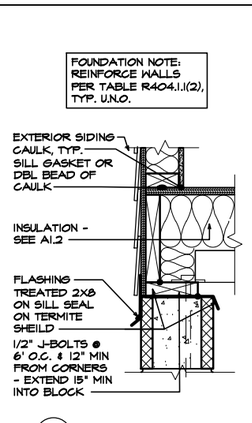


2a WINDOW AT SILL (A3.1) 3/4" = 1'-0"

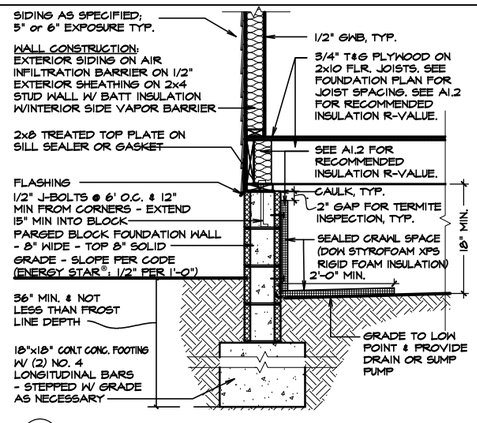
FOUNDATION DETAILS



1c FRONT PORCH DETAIL (A3.1) 3/8" = 1'-0"



1b CRAWL SPACE (A3.1) 3/4" = 1'-0"



1a SEALED CRAWL SPACE FOUNDATION (A3.1) 3/8" = 1'-0"

TightLines Designs
creating great places to live
19 W. Hargett St, Suite 501 • Raleigh, NC 27601
919.834.3600 • www.tightlinesdesigns.com

Richmond Habitat for Humanity

COMMONWEALTH OF VIRGINIA
CRAIG LAWRENCE BETHEL
Lic. No. 0401019576
ARCHITECT

date	02.22.23
drafter	N.D.H.
checked by	C.L.B.
proj. no.	T-22023.6
revisions	date

Foundation, Wall & Roof Framing Details

A3.1