



Application for Urban Design Committee Review

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219 | (804) 646-6335
www.richmondgov.com/CommitteeUrbanDesign



Application Type (select one)

- ☒ Location, Character, & Extent
☐ Section 17.05
☐ Other:

- ☐ Encroachment
☐ Design Overlay District

Review Type (select one)

- ☒ Conceptual
☐ Final

Project Information

Submission Date: 12/17/2020

Project Name: City of Richmond Fire Station No. 12 Replacement

Project Address: 2223 West Cary Street, Richmond, VA 23220

Brief Project Description (this is not a replacement for the required detailed narrative):

Demolish existing Fire Satation 12 and replace with new Fire Station 12.

Applicant Information (a City representative must be the applicant, with an exception for encroachments)

Name: Louis Goode Email: louis.goode@richmondgov.com

City Agency: Dpt of Public Works Phone: 804-646-7531

Main Contact (if different from Applicant): _____

Company: _____ Phone: _____

Email: _____

Submittal Deadlines

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. **Late or incomplete submissions will be deferred to the next meeting.**

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. **It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.**

Submittal Deadlines

The UDC is an 11 member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission (CPC) on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06, and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.



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Submission Requirements

- An electronic copy (PDF preferred) of all application materials, which can be emailed, or delivered by FTP or USB.
- Three (3) copies of the application cover sheet and all support materials (see below).
- Plan sheets should be 11" x 17", folded to 8 1/2" x 11". If it is not possible to scale plans to these dimensions, please provide one set of larger, scaled plans.
- All applications must include the attached cover sheet and the following support materials, as applicable to the project, based on Review Type:

Conceptual Review:

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan which shows the general location and character of plant materials and notes any existing tree to be removed.

Final Review:

- A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program, and estimated construction start date (description should also provide information on the surrounding area to provide context).
- A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.
- A set of floor plans and elevations, as detailed as possible.
- A landscaping plan that includes a complete plant schedule, the precise location of all plant materials, and a landscape maintenance analysis. The plant schedule must show number, size and type of each planting proposed. If existing trees are to be removed, their size, type, and location must be noted on the landscape plan.
- The location of all lighting units should be noted on a site plan, including wall-mounted, site, and parking lot lighting. Other site details such as benches, trash containers, and special paving materials should also be located. Include specification sheets for each item.
- Samples of all proposed exterior building materials, including but not limited to brick, mortar, shingles, siding, glass, paint, and stain colors. When an actual sample cannot be provided, a product information sheet that shows the item or a photo of an existing item may be substituted.

Review and Processing

- Once an application is received, it is reviewed by Staff, who compiles a report that is sent to the UDC.
- A copy of the report and the meeting agenda will be sent to the applicant prior to the meeting.
- At the UDC meeting, the applicant or a representative should be present or the application may be deferred to the next regularly scheduled meeting. It is also strongly suggested that a representative of the City Agency which will have final responsibility for the item be present at the meeting (if the applicant and the representative are not the same).
- Once the UDC recommends action on the application, it is automatically placed on the agenda for the next City Planning Commission (CPC) meeting. Exceptions to this are encroachment applications, recommendations for which are forwarded to the Department of Public Works.
- At the CPC meeting, the applicant or a representative should be present, or the application may be deferred to the next regularly scheduled meeting.



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Regular meetings are scheduled on the Thursday after the first Monday of each month at **10:00 a.m. in the 5th floor conference room of City Hall, 900 E. Broad Street**. Special meetings are scheduled as needed.

Meeting Schedule 2021

UDC Meetings	UDC Submission Deadlines	Anticipated Date of Planning Commission Following the UDC Meeting
December 10, 2020	November 12, 2020	December 21, 2020
January 7, 2021	December 17, 2020	January 19, 2021 ¹
February 4, 2021	January 14, 2021	February 16, 2021 ²
March 4, 2021	February 11, 2021	March 15, 2021
April 8, 2021	March 11, 2021	April 19, 2021
May 6, 2021	April 15, 2021	May 17, 2021
June 10, 2021	May 13, 2021	June 21, 2021
July 8, 2021	June 17, 2021	July 19, 2021
August 5, 2021	July 15, 2021	August 16, 2021 ³
September 9, 2021	August 12, 2021	September 20, 2021
October 7, 2021	September 16, 2021	October 18, 2021
November 4, 2021	October 14, 2021	November 15, 2021
December 9, 2021	November 10, 2021 ⁴	December 20, 2021 ⁵

¹ Monday January 18, 2021 is a City of Richmond Holiday

² Monday February 15, 2021 is a City of Richmond Holiday

³ This meeting is subject to cancellation. If so, Planning Commission hearing would be Tuesday September 7, 2021.

⁴ Thursday November 11, 2021 is a City of Richmond Holiday.

⁵ This meeting of the Planning Commission is subject to cancellation.

The Richmond Urban Design Committee is an 11 member advisory committee created by City Council in 1968. Its purpose is to advise the City Planning Commission on the design of City projects. The Urban Design Committee reviews projects for appropriateness in "location, character, and extent" and for consistency with the City's Master Plan and forwards recommendations to the City Planning Commission. The Urban Design Committee also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

For more information, please contact the Planning and Preservation Division staff at (804) 646-6335 or Alex Dandridge at (804) 646-6569 or at alex.dandridge@richmondgov.com.



City of Richmond Department of Planning & Development Review

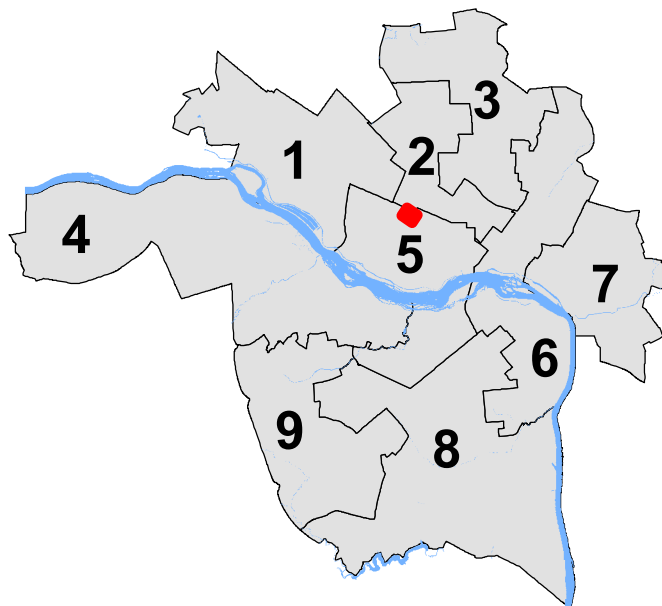
Location, Character, and Extent

LOCATION: 2223 W. Cary Street.

COUNCIL DISTRICT: 5

PROPOSAL: Conceptual Review of a new Fire Station #12.

*For questions, please contact Alex Dandridge
at 646-6569 or alex.dandridge@richmondgov.com*



SCHEMATIC DESIGN NARRATIVE



CITY OF RICHMOND FIRE STATION No. 12 REPLACEMENT

2223 West Cary Street, Richmond, VA 23220

MOSELEYARCHITECTS

ARCHITECT/ENGINEER

RICHMOND, VIRGINIA

TIMMONS GROUP

CIVIL ENGINEERS

VIRGINIA BEACH, VIRGINIA

LU + S ENGINEERS, PLLC

MEP ENGINEERS

RICHMOND, VIRGINIA

CCS INTERNATIONAL, INC.

COST ESTIMATING

BETHESDA, MARYLAND

CIVIL NARRATIVE

Existing Conditions

The existing Fire Station 12 building is located at the southeast corner of W. Cary Street and S. Addison Street. The main entrance to the building and the two bays for firetrucks is facing W. Cary Street with additional entrances on S. Addison Street and the alley behind the building.

Demolition

The existing Fire Station is to be demolished and removed from the site. Demolition will include but is not limited to the removal of concrete sidewalk, curb, light poles, utility connections and trees.

Proposed Construction

The proposed improvements to the site include the construction of a new 3-story fire station with two apparatus bays for firetrucks and a single apparatus bay for a support vehicle (Chevrolet Suburban size) with access to the back alley. The entrance to W. Cary Street from the concrete apron is to remain and no expansion is anticipated. An emergency egress metal stair tower is to be located behind the building and encroach into the south side yard setback, with the encroachment permitted per the zoning ordinance. Dumpster and generator pads are also located behind the building and can be accessed from the alley behind the proposed Fire Station 12. Sidewalk meeting ADA compliance is proposed around the fire station where existing sidewalk has been removed due to construction and demolition.

Geotechnical Analysis

A geotechnical report will be prepared following site demolition once existing soils underneath the building are available for analysis. This Geotech report will inform the final footer design.

Setbacks, Easements, Buffers, and Zoning

Yards Adjacent to Roads: Front – Min 0', Max 15'

Yards Adjacent to Agricultural & Residential Districts & Land Bays Allowing Residential Use: Side – Minimum 5'

Yards Adjacent to Other Nonresidential Districts: NA

Based on the City of Richmond's GIS, this site is zoned as R-63 Multifamily Residential. Per the County Zoning Ordinance, due to the location of this site at the Corner of West Cary and South Addison Street, the lot has two front yards on each of these streets with a yard setback of 0'. The remaining two sides of the parcel are then considered side yards, with a minimum yard setback of 5'. No buffers are specified in the zoning ordinance, and there are no easements within the parcel.

Circulation

Entrances: The existing entrance from W. Cary Street is to remain and the entrance to the south apparatus bay from the alley is not expected to impact the circulation on the alley.

Vehicle Turning Motions: A Pierce AXT6710 (fire truck) can enter West Cary Street from the fire station bays without difficulty. To return the truck to the fire station bay, the truck must reverse from West Cary Street into the fire station, which can also be completed without difficulty. Additionally, a Chevrolet Suburban ¾ ton LS (standard SUV) can enter and exit the rear apparatus bay for the Battalion Chief. There is no vehicle connection proposed between entrances due to the small size of the site. Proposed entrance locations match existing entrance locations and acceptable site distance is provided per VDOT requirements.

Grading

The proposed Fire Station 12 finished floor elevation will be roughly 220.5 feet above sea level. As previously stated, the existing entrance along W. Cary Street is to remain and ADA access across the

entrance apron is to be held. Proposed grading into the surrounding sidewalk will be limited to the greatest extent possible. The drainage pattern of this site will be preserved as to not over burden any existing inlets.

Erosion and Sediment Control

Erosion and sediment control measures for Fire Station will likely include a construction entrance, concrete wash-down area, inlet protection and silt fence surrounding the lot. It is not anticipated that a sediment trap or basin will be required.

Stormwater Management

The Fire Station is located in the portion of Richmond City that is serviced by a combined sanitary and storm sewer system. Per the Richmond City DPU no stormwater quality management is required. The quantity requirements will be met through managing the 10-year storm from the pre to post-development condition.

Fire Protection Line

There is an existing water line currently going into the building for fire protection needs from the S. Addison Street main line. It is assumed that this line sufficient to serve the fire protection needs of the building. A fire department connection is to be proposed on the building. An additional fire hydrant will be provided and must be located within 50' of the fire department connection.

Water Service

There is an existing water line currently servicing the building for domestic water needs from the S. Addison Street main line. It is assumed that the existing meter will remain, and that service will be provided to the new building from this meter.

Gas

There is an existing 4" natural gas main owned by the City of Richmond running along S. Addison Street. The existing lateral is to remain and a metered connection to the new building will be provided. The generator will have a service provided through the mechanical room and will remain on the same meter.

Dry Utilities

Telecommunications and power will be provided through existing overhead lines in the area.

Site Landscaping

A large existing tree along the rear of the building is intended for removal, and has been a nuisance in the past, both for fire apparatus and the existing utility/sidewalk infrastructure. Discussions regarding removal of this tree are ongoing, in conjunction with professional arborist services. Should the tree be removed, it is likely that it will be replaced offsite, but within reasonable proximity to the property. For the remainder of the parcel, given the building footprint filling the majority of the site, and the critical use of the facility, limited landscaping elsewhere is anticipated. Minimal greenspace will be provided in the rear around the dumpster and generator pads.

ARCHITECTURAL NARRATIVE

Fire Station No. 12 is generally described as a new construction, three-story masonry building totaling approximately 14,670 gross square feet, including a mezzanine between the first and second story. The building will be designed to meet or exceed the 2015 Virginia Construction Code. The construction classification shall be II-B. The primary use group shall be (B) Business, but shall also include (A-3) Assembly, (S-2) Low Hazard Storage, and (R-2) Residential. The maximum occupant load will be approximately 109 people. This building shall be risk category IV, an essential facility.

The building site is located at 2223 W. Cary Street, Richmond, Virginia. The building shall replace in totality the existing fire station on the same site. Two apparatus bays will be located on Cary street for the fire engines, and the Battalion Commander will have vehicular access to the rear of the building via the alley, Stones Way. The Battalion Commander vehicle is anticipated to be a Chevrolet Suburban or similar. No dedicated parking will be provided on the property – fire station staff will utilize street parking, as they do now.

The building will have two roof areas, the higher portion of which shall cover the elevator overrun and access to the roof via a shipladder. Including the parapet height, the building shall be 46' above grade, and the higher roof area shall be 50' above grade. The building will have a low-slope single-ply fully-adhered membrane roof with parapets approximately 3' higher than the roof deck.

Moseley Architects and the Owner have discussed the environmental goals for the project. The building will seek Silver certification in the Leadership in Energy and Environmental Design (LEED) Green Building Rating System as developed by the United States Green Building Council. For additional information, please reference the LEED section of this document.

Demolition

Demolition and site preparation shall include the removal of a multi-story masonry building and all associated building systems and equipment. Demolition may also include a large deciduous tree adjacent to the property; a decision will be made in conjunction with the City Arborist. The existing building will be demolished, so Richmond Fire Department staff and emergency vehicles will be housed off-site for the duration of construction. No project phasing is anticipated.

Proposed Design

Exterior walls are anticipated to be constructed of a CMU masonry core with a brick veneer. The air barrier system shall be composed of a two and a half inch layer of spray applied polyurethane foam air barrier. The building's thermal enclosure shall be a continuous insulation plane with a thermal resistance value of no less than R-13.

Low slope roof assemblies shall consist of a fully adhered thermoplastic polyolefin (TPO) membrane over gypsum cover board and a five inch minimum thickness of Extruded-Polystyrene Board Insulation (XEPS) fastened to the structural roof deck. The total roof system shall have a high Solar Reflectance Index (SRI) and contribute to the Sustainable Sites LEED credit 7.2, Heat Island Effect - Roof.

Exterior windows shall be an aluminum storefront framing system with tempered one inch insulating-glazing. Windows in brick veneer walls shall have loose steel lintels supporting brick headers. Exterior doors to storage spaces, mechanical spaces, vehicle bays, and the bay support spaces shall be painted flush steel doors in steel frames. All other exterior access doors shall be aluminum entrance doors with tempered one inch insulating-glazing mounted in aluminum storefront frames. Bi-folding apparatus bay doors shall be constructed of prefinished metal panels and shall include glass lites. Interior doors shall be

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Fire Station No. 12 Replacement – Schematic Design Narrative
December 18, 2020

solid core wood veneer doors, and some will include tempered vision glass. Most interior doors shall be mounted in painted steel frames. Interior doors shall be 3'-0" wide by 7'-0" high, except closet doors which may be smaller.

Interior partitions will be of two types: CMU and gypsum board. Gypsum walls will primarily consist of 5/8" gypsum wall board on 3 5/8" galvanized steel studs, extending 6" above the highest adjacent ceiling with sound attenuation batts. First floor rooms shall have exposed structure, while most upper levels are expected to receive acoustic tile ceilings. Interior partitions enclosing sleeping rooms and toilets shall be specified to provide a Sound Transmission Class (STC) no less than STC-55. Interior concrete masonry unit walls shall consist of six or eight inch concrete masonry units with galvanized steel furring and gypsum wall board where required.

The final exterior design will be selected with input from local community members. Moseley Architects has prepared two options as detailed below, both of which locate the main building entrance at the corner of West Cary Street & South Addison Street.

Traditional Option

This exterior option takes inspiration from the warehouses of Richmond, including the historic fabric of Shockoe Bottom and the Cary Street Athletic Center at the nearby VCU campus. Prominent exterior materials include red brick, black MCM panels, and red aluminum storefront. Black colored brick will be strategically placed to highlight openings and provide contrast. The Design Team intends to incorporate mural artistry to identify the station number and create painted artwork which relates to firefighting. Mural proposals will be discussed with the appropriate City department as the project progresses.



Contemporary Option

This exterior option combines the patterns and rhythms of historic Richmond warehouses with the contemporary materials and colors of the surrounding VCU campus, such as the recently completed Basketball Development Center. Prominent exterior materials include gray and black brick, red MCM panels, and black aluminum storefront. A mural may also be included in this option, potentially behind the storefront at the main entry, running the full height of the elevator shaft across multiple lobby walls.



Programming and Services

Vertical circulation will include one interior stairway, as well as an elevator which shall serve each level, including the mezzanine. A fire pole will be provided at each level for emergency use only, and not considered an approved means of egress. The second and third floors shall have access to an exterior emergency-egress stair, which shall be relied upon as an approved second means of egress. The exterior stair shall be constructed of galvanized steel framing, galvanized metal stairs and railings, and landings composed of either expanded metal or galvanized metal grating. It shall be covered by a corrugated metal sloped roof. Perforated metal screening panels may be provided along Addison Street to partially obscure the freestanding structure from the street, contingent upon budgetary restrictions.

The first floor shall include utility functions, such as a fire suppression room, and fire department functions, like a gear locker room. The mezzanine will include a fitness room, storage, and the watch room with visual control of both engine bays and the Battalion Commander bay. The second floor shall be residential and accessed exclusively by Richmond Fire Department staff. It shall include sleeping rooms, shower rooms, offices, and a dayroom. The dayroom shall include a kitchen for RFD staff, one pantry and one refrigerator for each of the three shifts, two sinks, counter space, and a large stove/oven combination with a griddle cooktop. The third floor shall be the community area of the building, offering conference rooms, a display area highlighting fire department history, a waiting area, and a large terrace.

Card readers and cameras will be installed throughout the building to control access. The design is not anticipated to include bullet-resistant glazing. For additional information, please refer to the Electronic Security portion of this document.

All door hardware will be barrier free. The floor shall be concrete slab-on grade poured atop an impermeable vapor barrier. Additional slab thickness will be provided near vehicular areas. For additional information, refer to the Structural section of this narrative.

Trash container(s) will be located in the alley as they are currently. Trash will either be held in multiple standard-sized containers or consolidated into a single dumpster; this will be determined in conjunction with the City Sanitation Department and the Fire Department. A generator is anticipated to be placed along the alley, adjacent to the existing power pole. Generator screening is not anticipated. The equipment will be protected from vehicular collisions with bollards, raised concrete pads, or other obstacles.

INTERIOR FINISHES

Interior finishes shall be durable and shall include materials which contribute to LEED credits. Where suitable, materials shall be specified which contain recycled and regional content. Wood material shall be certified from sustainably managed forests. Rapidly renewable materials will be used, when possible. Materials and installation methods shall include the use of compounds which emit low amounts of volatile organic compounds (VOCs).

Vestibule finishes will include porcelain paver tile, painted gypsum board walls and ceiling. An entry way walk-off mat system will be incorporated into the flooring at each main building entrance. Main Circulation corridor, Dayroom, Dining area, and Kitchen finishes will include porcelain tile flooring, painted gypsum board walls with Fiber Reinforced Plastic (FRP) wainscot and chair rail and lay-in acoustical ceiling panels. Administrative office areas and Study/Training will have porcelain tile flooring, painted gypsum walls and lay-in acoustical ceiling panels.

Laundry, Locker Rooms, Toilets, and showers will have porcelain tile flooring and base. The wall will have full height, glazed wall tile. Toilet partitions will be made from a solid phenolic material. Lavatories will be from a solid surface material with integral bowls.

Data and Fire Sprinkler Rooms shall have sealed concrete floors, painted walls, and painted exposed ceilings. Apparatus Bays shall have sealed concrete floors. Shop, Storage, Decon, and Storage Rooms shall have epoxy painted floors and base as well as epoxy paint on the walls with painted exposed ceilings.

The Exercise Room shall have rubber athletic flooring with rubber base, painted walls, with mirrors on one wall and lay-in acoustical ceiling panels. Sleep Rooms shall have carpet tile with rubber base, painted walls, and lay-in acoustical ceilings panels.

Appliances including refrigerators, stoves, cabinet mounted microwaves, dishwashers, clothes washers and dryers, and ice machines shall be included in the construction contract. Office equipment including, copiers, shredders, and postage machines shall be provided by the Owner outside of the construction contract. Furniture including workstations, chairs, open metal shelving, and file cabinets shall be provided by a separate furniture contract.

LEED NARRATIVE

The building will be designed according to the metrics in the LEED Building Design + Construction for New Construction v4 rating system, with a certification goal of LEED Silver. All minimum program requirements and prerequisites will be met. This rating system provides a robust framework within which the project team can evaluate decisions in an iterative manner over the entire course of design and construction. By beginning these evaluations in early design, the City of Richmond stands to maximize the benefits of a high-performance building.

Integrative Process

The integrative process meetings bring together the owner, architects, and mechanical, electrical, plumbing, and civil engineers to focus on the important foundational aspects of energy and water conservation, as well as indoor environmental quality. These meetings are essential to recognize synergies between disciplines that could reduce the building's first costs and to identify those strategies that are most likely to reduce the building's long-term operational costs. It is at these meetings that team members are able to question default assumptions that may unnecessarily drive up costs.

Location + Transportation

The project is avoiding the development of environmentally sensitive lands by replacing the existing fire station in the same location that it currently exists. Strategies that reduce dependence on single occupant vehicle commutes (such as being in a location that earns a Walk Score of 92, meaning daily errands do not require a car), or that reduce the project's parking footprint and promote the use of multi-occupant vehicles (such as no off-street parking) are included as part of the design solution. Bicycle lockups will also be provided for those who wish to cycle to the building instead of drive. These strategies also support the RVAgreen 2050 targets of increasing the percent of trips by mode share other than single occupancy vehicle and decreasing the number of unhealthy air quality days.

Sustainable Sites

There is very little site area outside the building footprint associated with this project. The primary points of emphasis in sustainable sites will be on maintaining or increasing the current tree canopy coverage, reducing the urban heat island impact, and reducing light pollution. The roof surface will be a white reflective material and will be ready to receive a future photovoltaic array. Lighting on the site will be sensitive to the night sky, and backlight, uplight, and glare will be minimized while still providing safety and security for the building and local pedestrians. These strategies support the RVAgreen 2050 target of increasing the number of trees planted on public property.

Water and Energy Efficiency

The project team will emphasize improved energy performance and water conservation as fundamental objectives throughout the entirety of the design process. From the earliest integrative process meeting through final building systems commissioning, any number of design decisions will be looked at through the lens of how they impact these important resources and how they impact both the up-front and long-term costs of this building.

During schematic design, our team is already exploring ways to optimize energy performance through computer modeling of the physical architecture of the building, which serves as the basis for investigating strategies to minimize HVAC, lighting, and plug load consumption. We will also draw upon our experience with daylight modeling software to provide estimates of natural daylight levels that may trigger studies of design modifications. As the design evolves, we will utilize more detailed energy modeling software to further compare the benefits of envelope and equipment options.

The amount of water required for building operations, both indoors and out, will be thoughtfully designed with minimum reduction targets set during schematic design. No irrigation with potable water is planned

for the site and a 30% reduction from baseline is the target set for indoor water use. All toilets, private lavatory faucets, and showerheads will be WaterSense labeled, and other water using appliances will be evaluated for their energy and water conservation attributes.

The Commercial Building Energy Consumption Survey (CBECS 2003) baseline site energy use intensity (EUI) for this building type is 116 kBtu/SF/year. The design target EUI is set at 40 kBtu/SF/year. If this target is met, the project will pursue a Designed to Earn the ENERGY STAR designation at the completion of design and has the option to pursue ENERGY STAR certification at one-year post occupancy. Energy conservation strategies in the building's design will include an enhanced thermal envelope, an efficient HVAC system, efficient interior lighting and controls, and plug-load management strategies.

In order to allow facility operators to effectively manage both water and energy performance, an appropriate sub-metering system will be developed. The water metering strategy will include placing submeters on water lines serving indoor fixtures and on domestic hot water. The energy submetering strategy is still under development, but will likely involve submetering individual energy end uses that represent over 10% of the total annual consumption of the building (such as space heating and cooling, lighting, receptacle equipment, service water heating, and fans/pumps). This approach will not only allow the operators to adjust equipment as needed, but will provide building users with the opportunity to understand how their behaviors impact water and energy consumption patterns, as well. The building automation system will also be configured to accept external signals from the electricity utility in the event of a demand response curtailment event, and will have the ability to power back pre-selected non-essential loads during the curtailment event. The roof will be designed to be PV-ready, although photovoltaics are not included in the scope of this project.

A commissioning agent will be brought into project activities during the design development phase, and will perform both fundamental commissioning and verification (LEED v4 prerequisite) and enhanced commissioning (LEED v4 credit; option 1 path 1). Building envelope commissioning (commissioning (LEED v4 credit; option 2) is also planned. The pursuit of monitoring-based commissioning (LEED v4 credit; option 1 path 2) will be considered during the design development phase. These strategies support the RVAgreen 2050 targets of decreasing energy consumption within the community, increasing renewable energy capacity within the community, and decreasing community greenhouse gas emissions by 80% by 2050.

Materials & Resources

The layout of the building will be conducive to the collection and temporary storage of recyclable materials, including mixed paper, corrugated cardboard, glass, plastics, metals, batteries, and electronic waste. Project specifications will extend this commitment to recycling into the construction phase, through the requirement of a construction and demolition waste management plan targeting at least five different construction waste streams for diversion from local landfills.

Specifications will require compliance with the three building product disclosure and optimization (BPDO) credits, but ultimately the contractor will be responsible for building with and documenting compliant materials. These strategies support the RVAgreen 2050 target of increasing community recycling rates.

Indoor Environmental Quality

In an effort to maintain a high level of indoor air quality in the fire station, a number of associated design strategies will be implemented. At all regularly used building entrances, permanent entryway systems that are a minimum of 10 feet in length will be installed to remove pollutants brought in on shoes. Spaces where hazardous gases or chemicals may be present (such as housekeeping areas) will be designed such that they can be maintained under negative pressure and independently exhausted. And all ventilation systems that supply outdoor air to occupied spaces will be equipped with MERV13 filtration. Paints, coatings, adhesives, sealants, flooring, composite wood, insulation, and furniture will be evaluated for general

emissions and VOC content (as applicable), and the contractor will be required to write and adhere to a construction indoor air quality management plan for the duration of construction.

The thermal and visual comfort of the building occupants is very important. Thermal comfort parameters will be in accordance with ASHRAE 55-2010, and thermal comfort controls will be provided for at least 50% of individual occupant spaces. Shared multi-occupant spaces will be provided with group thermal comfort controls, where appropriate. Similarly, lighting controls will be provided for at least 90% of individual occupant spaces. Shared multi-occupant spaces will be provided with multi-zone control systems in each such space. Lighting for presentation or projection walls will be controlled separately from general room illumination. A visual connection to nature will be of utmost importance. The design team will maximize the square footage of regularly occupied interior space that has a quality view to the outdoors.

Innovation

When a major disruption occurs, whether it is a natural disaster or a man-made event, you need to get back to business. Resilient design anticipates the impacts of potential disruptions on buildings and communities, identifies the correct strategies to protect critical systems during disruptions and equips buildings to rebound quickly after a disruption to support your operations. During schematic design, Moseley Architects will work with you to identify those hazards that are most likely to threaten your operations to identify appropriate design solutions that will keep you up and running when your communities need you.

Additional innovation credits being considered include: design for active occupants; green building education; occupant comfort survey; and walkable site.

LEED SCORECARD

ELECTRONIC SECURITY NARRATIVE

The security control system will provide perimeter and interior security protection throughout the facility and will consist of the following systems and features:

- Access control system
 - Electric locks
 - Door sensors
- IP video surveillance and recording system
- UPS System

Security control head end equipment will be housed in a secure Data/Security Electronics room.

Security Control

Primary control and monitoring will occur at a security control workstation. The security control station will have the ability to control any of the access controlled doors, activate and de-activate cards, monitor the status of alarmed doors, monitor security cameras, etc.

Since the security system is computer software-based and is networked, it can be programmed and reprogrammed to meet the needs of the operational staff.

Door Control

An access control system with proximity card readers will be utilized to control access to the building and to various areas within the building. Access-controlled doors will be equipped with electric locks or electrified panic devices.

The access control system will log all events that occur on the system, providing a record of which cards opened which doors at which times, and will permit programming of cards to provide varying levels of access.

Exiting from areas secured by card readers will typically be by automatic request-to-exit devices integral to the door hardware.

In the event of an emergency signal initiated by the fire alarm system, doors in egress paths will go into "Fail Safe" mode whereby those doors permit free ingress and egress. Doors to sensitive areas not in egress paths will go into "Fail Secure" mode for ingress only, and proper credentials, including key cards and access codes, will be required for access.

Video Surveillance System

The video surveillance system will consist of IP cameras, cabling, network switches, network video recording, and client computers for viewing live and recorded video. All IP cameras, recording devices, viewing stations, and controllers will reside on the dedicated security LAN.

The video surveillance system will integrate with access control system.

Remote viewing software will be installed on designated Owner/User-furnished PC's, for password accessible, remote network viewing of recorded video.

Cameras will be positioned to monitor the exterior doors, parking area, and immediate site as directed.

Door Monitoring

Exterior doors will be monitored for door position and will alarm when a door's programmed operation is altered by being forced open or propped open for more than a specified amount of time. Magnetic contacts will be provided on doors that need to be monitored and will be recessed-mounted for vandal resistance.

UPS System

The security control system will be protected by a dedicated uninterruptible power supply. Minimum runtime recommended for the UPS is 10 minutes.

STRUCTURAL NARRATIVE

The proposed fire station located in Richmond, Virginia shall be a three-story building, with a partial, intermediate mezzanine, founded on shallow foundations consisting of continuous strip footings for walls, and isolated spread footings for minimal columns, as required. Foundations will be at minimum depth and shall be sized for allowable soil bearing pressure, contingent on the final geotechnical report. The battalion commander and both engine bays shall have an 8" reinforced concrete slab on grade. The remainder of the building shall have a 4" reinforced concrete slab on grade.

The building shall utilize exterior load-bearing masonry cavity walls with brick veneer or metal panel, and interior masonry bearing walls. Minor steel framing shall be required in the engine bays, utilizing a wide flange steel column and wide flange steel girders. The second and third floor construction shall both consist of 3-1/2" normal weight concrete slab on 1-1/2" composite steel floor deck (5" total thickness), reinforced with 6x6-W2.9xW2.9 WWF. The floor slabs shall be supported on open web steel joists spanning between bearing walls. The intermediate mezzanine floor construction shall also consist of 3-1/2" normal weight concrete slab on 1-1/2" composite steel floor deck. The mezzanine floor slab shall be supported on open web steel joists bearing on masonry walls. The roof system shall be 1-1/2" steel deck supported open web steel joists. Lateral forces shall be resisted by reinforced masonry shear walls and steel roof deck diaphragms in both directions.

Design Loads

Design live loads shall be in accordance with the Virginia Uniform Statewide Building Code, 2015 Edition (IBC 2015); Risk Category IV.

Dead Loads: Actual calculated weight of permanent construction

Minimum Floor Live Loads:

Apparatus Bays – Per vehicle loading requirements
Mechanical/Electrical/Storage/Decon Rooms - 150 PSF
IT/Security Room - 125 PSF
Vestibules/Lobbies - 100 PSF
Conference/Community/Fitness/Day Rooms - 100 PSF
Stairs - 100 PSF
Corridors - 80 PSF
Offices - 50 PSF
Sleep Rooms - 40 PSF

Roof Loads: 20 PSF or Snow Load, whichever is greater

Snow Loads: Ground Snow Load, $P_g = 20$ PSF
Flat Roof Snow Load, $P_f = 16.8$ PSF
Sloped Roof Snow Load, $P_s = 16.8$ PSF
Snow Importance Factor, $I_s = 1.20$
Exposure Factor, $C_e = 1.0$

Thermal Factor, $C_t = 1.0$

Wind Loads: Basic Wind Speed (3 second gust), $V = 120$ MPH
Exposure = Exposure Category B
Internal Pressure Coefficient, $GC_{pi} = +0.18, -0.18$

Seismic Loads: Site Class = D (assumed, pending geotechnical report)
Seismic Importance Factor, $I_e = 1.50$
Seismic Design Category = C
Spectral Response Acceleration
at short periods, $S_s = 0.190$
Spectral Response Acceleration
at 1-second period, $S_1 = 0.062$
Basic Seismic Force-Resisting Systems:
Bearing Wall Systems: Intermediate Reinforced Masonry Shear Walls
Analysis Procedure: Equivalent Lateral Force Procedure

Applicable Codes and Standards

Virginia Uniform Statewide Building Code (VUSBC), 2015 Edition

Minimum Design Loads for Buildings and Other Structures/ASCE 7-10

American Concrete Institute (ACI) - Building Code Requirements for Structural Concrete and Commentary/318-14

American Concrete Institute (ACI) - Building Code Requirements and Specifications for Masonry Structures/530-13/530.1-13

American Institute of Steel Construction (AISC) - ASD Manual of Steel Construction/13th Edition

American Institute of Steel Construction (AISC) - Specification for Structural Steel Buildings/ AISC 360-10

Steel Joist Institute (SJI) – Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders/43rd Edition

Steel Deck Institute (SDI) - Design Manual for Composite Decks, Form Decks and Roof Decks No. 31

PLUMBING NARRATIVE

Design Basis

In general, engineering systems will comply with the Virginia Uniform Statewide Building Code (VUSBC), International Plumbing Code (IPC), International Mechanical Code (IMC), National Fire Protection Association Codes and Standards (NFPA), the National Electric Code (NEC), the Uniform Accessibility Standards (UFAS) and Leadership in Energy & Environmental Design (LEED) v4.0 Reference Guide.

General

Plumbing systems for this project shall include basic domestic cold water, domestic hot water, sanitary, waste and vent systems and storm water removal systems. In general, the materials and systems shall be as described below.

Plumbing Fixtures and Installation

The water closets in the public toilets shall be low-flow, wall mounted vitreous china with hands-free flush valves. Urinals shall be 1/8 gallon per flush, also with hands-free flush valves. Water closets will be elongated. Lavatories will be under-mount, vitreous china with sensor-operated faucets.

Electric water coolers will be wall-mounted, two-level stainless-steel meeting ADA (Americans with Disabilities Act) requirements with bottle filler. Where indicated, handicapped water closets and lavatories will meet ADA requirements.

Domestic Water Service

A 2" new Domestic Water Supply will be provided. A flow-test will be conducted to decide available pressure off the City main water supply. A duplex booster pump system will be required if pressure available from the City main is not adequate. Back-Flow Preventer (BFP) will be provided at the main cold-water supply as required. A demand meter will be provided on the water supply line serving the building and monitored through the Building Automation System. Wall hydrants shall be provided on each exterior face of the new building. Hose bibbs will be provided in the Mechanical Room. The building domestic water system will utilize "K" hard drawn copper tubing below the floor slab and type "L" hard drawn copper tubing above floor slab. Solder shall be lead free.

Natural Gas Service

Natural gas will be used for domestic water heating and cooking. If gas-fired boilers will be used in the new HVAC system. Natural gas will also be used to meet building heating demand. Natural gas pipe will be schedule 40 carbon steel. A new low-pressure gas system will be installed inside the building.

Water Heaters

Domestic hot water will be generated via new instantaneous type gas-fired condensing type water heaters in the Main Mechanical Room. A hot water recirculating system will be utilized to maintain temperature in all areas of the building. Delivered water temperature shall be set at 110°F via a thermostatic mixing valve.

Sanitary, Waste and Vent Systems

The waste and vent systems will utilize standard weight DWV cast iron for above floor piping and PVC for below floor piping. Floor drains shall be installed in all public bathrooms, laundries, custodial closets, and Mechanical Rooms. New waste piping shall connect to municipal sanitary system at the street. New vents thru the roof will be required.

Storm Water Systems

Storm water piping serving flat roofs (if applicable) will extend horizontally from the roof drains and shall extend through down conductors to the exterior storm water system. Storm piping will be the same

material as noted above for waste and vent piping. Storm water removal from pitched roofs will be accomplished with a gutter and downspout system which will also extend to the exterior storm water system.

The possibility of capturing storm water and utilizing it for toilet fixture flushing will be explored during the Design Development Phase of the project. Should it prove necessary for the Civil Engineer to employ underground storm water retention for volume control, moving some of that water into the building for flushing purposes would be an attractive option since the water storage structure would already be in place.

Insulation

All domestic water piping, condensate drain piping and horizontal storm water piping including roof drain bodies will be insulated with rigid fiberglass insulation having all service jacket. Piping in mechanical equipment rooms and exposed or finished areas will be provided with glass cloth lagging jacket.

FIRE PROTECTION NARRATIVE

Design Basis

In general, systems will comply with the Virginia Uniform Statewide Building Code (VUSBC), the Virginia Statewide Fire Prevention Code (SFPC), the International Plumbing Code (IPC), the International Mechanical Code (IMC), National Fire Protection Association Codes and Standards (NFPA), and the National Electrical Code (NEC).

Sprinkler System Type

The Building will be fully sprinklered with a wet-pipe system in accordance with the latest edition of NFPA 13.

Sprinkler System Water Supply

A new water supply to fire sprinkler system will be provided to the new building. A flow test has been performed during SD phase and a fire pump system will be required.

Sprinkler System Design Criteria

The sprinkler systems will be hydraulically designed by the successful contractor in accordance with the following criteria:

1. Residential areas: NFPA 13
2. Meeting rooms, restrooms, common rooms, corridors and other public spaces: Light Hazard, flowing 0.10 gpm/sq.ft. over the hydraulically most remote 1500 sq.ft.
3. Janitor closets, electrical/mechanical rooms: Ordinary Hazard (Group 1) flowing 0.15 gpm/sq.ft. over the hydraulically most remote 1500 sq.ft.
4. Elevator hoistway: Extra Hazard (Group 1) flowing 0.30 gpm/sq.ft. over the entire system area.

In areas with ceilings, sprinklers will be located in the center of ceiling tiles and aligned on the ceiling. In areas without ceilings, upright sprinklers will be used. Sprinklers will be located below obstructions over 48" wide. All ceiling-mounted sprinkler heads shall be concealed type.

Fire Alarm

A new digital, fully addressable central fire alarm system will be provided, designed and installed per NFPA 72.

The building will be fully sprinklered with a hydraulically calculated wet pipe sprinkler system in accordance with the IBC 2012 edition and NFPA 13 2010 edition. Any areas subject to freezing requiring protection will be served by a dry pipe type system per NFPA-13.

MECHANICAL NARRATIVE

Design Basis

In general, engineering systems will comply with the Virginia Uniform Statewide Building Code (VUSBC), International Plumbing Code (IPC), International Mechanical Code (IMC), National Fire Protection Association Codes and Standards (NFPA), National Electric Code (NEC), the Uniform Accessibility Standards (UFAS) and Leadership in Energy & Environmental Design (LEED) v4.0 Reference Guide.

1. Outdoor Design Conditions:
 Summer: 920F db/750F wb
 Winter: 140F db
2. Indoor Design Conditions:
 Sleep Rooms, Waiting Room, Toilets, Community Room & Corridors -
 Summer: 760F db
 Winter: 720F db
 No Humidity Control
 Engine Bay, Stairwells, Mechanical Rooms, Electrical Rooms -
 Summer: No Cooling
 Winter: 650F db
 No Humidity Control
3. LEED Certification Level:
 LEED v4.0 NC Silver

Heating and Cooling System

This project includes construction of a new Fire Station 12 building. The new building will include 4 levels:

- Ground floor: Engine Bays, mechanical/electrical rooms and locker rooms
- Mezzanine Level: Storage room, fitness room and watch room
- Second Floor: Day room, sleep rooms, offices, laundry and toiler rooms
- Third Floor: Community room, supplies, storage and conference room

Three type of HVAC system are considered as options for the new building. They are:

- **Option 1 – Rooftop DX units with gas furnaces and VRF (Variable Refrigerant Flow) System**
 - o (5) 5-ton rooftop units serve Community Room and public area on third floor; Dayroom and public areas on second floor; fitness room and corridors on Mezzanine level and locker room on Ground Level
 - o (1) 5-ton heat recovery type VRF system with one indoor unit per sleep room.
 - o Utility rooms and apparatus bay will be served by heated and ventilated only by electric unit heaters and gas-fired radiant heaters and plymovent vehicle exhaust system.
 - o A kitchen exhaust hood system (with gas-fired make-up air unit) will be provided to serve the stove in Day room.
- **Option 2: DX split systems with gas-fire hot water boiler system**

- o (5) Split system units with hot water heating coils will serve Community Room and public area on third floor; Dayroom and public areas on second floor; fitness room and corridors on Mezzanine level and locker room on Ground Level
 - o Gas fired condensing boilers will be located in the main mechanical room on ground floor.
 - o (1) 5-ton heat recovery type VRF system with one indoor unit per sleep room.
 - o Utility rooms and apparatus bays will be served by heated and ventilated only. Utility rooms will be served by hot water unit heaters. Apparatus bays will be served by gas-fired radiant heaters and plymovent vehicle exhaust system.
 - o A kitchen exhaust hood system (with gas-fired make-up air unit) will be provided to serve the stove in Day room.
- **Option 3: VRF system with dedicated outside air unit**
 - o (1) 35-ton heat recovery type VRF system will serve Community Room and public area on third floor; Dayroom and public areas on second floor; fitness room and corridors on Mezzanine level and locker room on Ground Level. Each sleep room will have its own indoor unit.
 - o Utility rooms and apparatus bays will be served by heated and ventilated only. Utility rooms will be served by hot water unit heaters. Apparatus bays will be served by gas-fired radiant heaters and plymovent vehicle exhaust system.
 - o A kitchen exhaust hood system (with gas-fired make-up air unit) will be provided to serve the stove in Day room.

We recommend Option 3 due to its higher energy efficiency and better controllability.

Ventilation air will be pre-conditioned and delivered directly to each space.

The preliminary estimated cooling load for the new building is 36 tons. The preliminary estimated heating load is 375 MBH.

HVAC Equipment (based on Option 3)

All areas of the building will be air conditioned except janitor closets, electrical closets, mechanical equipment rooms, apparatus bays and stairwells.

All air conditioned areas of the building will be served by either ducted or ductless indoor unit. In the sleep room, fitness room, conference room, community room and day room, either wall mounted or ceiling mounted ductless units will be installed. A limited adjustment (8 to 10 degrees) thermostat for the unit will be located the space and will include a fan switch (with a "fan off" position). Units will be provided with filtration with MERV-8 rating. High-occupancy spaces (conference room and community room) will be equipped with CO2 sensors to monitor indoor air quality. Ducted system will be provided to serve small spaces that can be grouped into a single thermal zone.

Mechanical ventilation will be provided by (1) 100% dedicated outdoor air supply (DOAS) unit located on the roof. All building general and toilet exhaust will be ducted back to the units, which will be equipped with enthalpy-type energy wheel (to recover both sensible and latent heat from the exhaust air stream). Outdoor air will be conditioned to neutral condition (63F – 68F db) with dew point at approximately 50F. Conditioned

outside air will be delivered directly to the conditioned spaces. They will contain both MERV-8 and MERV-13 filtration.

Occupancy calculations and outdoor air quantities will be based on the minimum required by the 2010 edition of ASHRAE 62.1 or the amount required to maintain the proper pressure relationships in the areas served, whichever is greater. Centrifugal, roof mounted exhaust fans or in-line centrifugal cabinet fans will provide utility exhaust for areas not tied to the DOAS units. The mechanical room and the electrical rooms will be ventilated by thermostatically controlled exhaust fans.

The duct systems will be constructed from galvanized sheet steel. They will be shop fabricated to SMACNA Standards.

Low-pressure ducts will be fabricated for 2-inch static pressure. Medium pressure ducts (if applicable) will be fabricated for 4-inch static pressure. In order to control noise in the air systems, all supply and return air ducts will be internally lined. Liner will be 1-inch thick, 1.5-lbs./cf. density thermal-acoustic liner with biocide coating. Relief air and outdoor air intake ducts will receive 2 inch thick, 1.5 lbs./cf. density fiberglass duct wrap with vapor barrier. Exhaust ducts and ventilation air supply ducts will not be lined or insulated. All duct joints and seams will be sealed to a minimum SMACNA Class "B".

Utility areas such as mechanical rooms, electrical rooms and enclosed stairwells will be heated and ventilated only, using unit heaters, cabinet heaters or baseboard radiation as applicable. Winter design temperature for these areas will be 65 degree F.

Condensate drain piping will also be copper.

Insulation for chilled and hot water piping will be fiberglass or closed cell type per ASHRAE 90.1 requirements. Insulation for cold condensate piping will be closed cell type. All piping must be labeled as to service and flow direction. All equipment must be labeled.

Automatic Temperature Controls

Building Automation System will be application-specific type with BACnet capability.

LEED Certification

This project will pursue LEED v4.0 Silver certification.

ELECTRICAL NARRATIVE

Design Basis

In general, systems will comply with the Virginia Uniform Statewide Building Code (VUSBC), National Fire Protection Association Codes and Standards (NFPA), the National Electrical Code (NEC) and Leadership in Energy & Environmental Design (LEED) v4.0 Reference Guide.

Service

A pole-mounted transformer will provide a new 600 A, 208 volt, 3 ph, 4 wire service to the new building. A demand meter will be provided on the main electrical service to the building and additional sub meters will be provided on lighting and receptacle panels. These meters will be monitored through the Building Automation System (BAS).

Power System

All conductors will be stranded copper with THHN/THWN insulation on secondary service conductors and all building wiring. Panelboards for light and power will be of the dead front, automatic circuit breaker type. Wiring devices will be specification grade 125VAC, 20A, back and side wired. Switches will be rated at 120/277 volts. In general, lighting will be fed at 120 volts, HVAC equipment will be fed at 120/208 volts, and receptacles fed at 120 volts.

Lighting Systems

All lighting will be designed to comply with IES recommended foot-candle levels. Lighting will be LED throughout the facility unless special needs dictate the use of some other lighting source. Egress and exit lighting will be provided with an emergency source from an existing generator as described below. Exit fixtures will be LED type. Lighting controls will be accomplished with occupancy sensors in the public spaces and offices. Local light switching shall incorporate dual level switching where applicable. Building exterior lighting and other exterior lighting will be controlled via building timeclock and/or photocells.

Communications Systems

The City of Richmond Telecommunications department shall provide telephone, computer and audiovisual instruments and connections. This equipment shall include wireless hubs in the data closets as required. Building contractor shall provide a complete system of empty conduit, outlets and backboards. This system shall include an empty conduit and j-box system in the hall and on room side.

Emergency Power

A whole house generator (150kW) with automatic transfer switches will provide back-up power to the entire building. The generator will be natural gas powered with Level III sound enclosure. Both generator and automatic transfer switches will be located outdoors.

Raceway & Fittings

All wiring shall be installed in intermediate metal conduit (IMC), electrical metallic tubing (EMT), or flexible metal conduit, subject to the restrictions of the National Electrical Code (NEC). Threaded rigid metal conduit shall be hot dip galvanized. Raceways shall be installed as a complete system and shall be continuous from outlet to outlet, unless noted otherwise. Raceways shall be mechanically and electrically connected to all boxes and fittings. In general, conduits 2 inches or larger and conduit in floor slabs shall be heavy wall rigid type. The minimum size conduits used shall be 3/4 inch. Larger sizes shall be used as required by the NEC. Conduit shall be run exposed in mechanical equipment and utility spaces. Elsewhere, it shall be concealed above ceilings, in shafts, and in furred spaces. A nylon pull cord shall be installed in all conduits in which conductors are not installed. A 10 inch length of the fish cord shall extend out of each end of the conduit. Flexible liquid-tight conduit shall be used for connections to all motors and any equipment where required because of vibration or relative motion. All raceways shall be concealed wherever possible. Conduit shall be the size required for the conductors but in no case shall it be smaller than 3/4 inch trade size.

Wire and Cable (600 Volts and Below)

Branch circuit wiring for power and lighting shall generally be type THW or THWN with type THHN being used in wiring space inside fluorescent fixtures and for connections to recessed fixtures. All conductors No. 10 AWG and smaller shall be solid copper. All conductors No. 8 AWG and larger shall be stranded copper. All conductors shall be insulated for 600 volts. All wire and conduit sizes shall be based upon the use of type THW insulation.

Pull and Junction Boxes

Pull boxes shall be installed at all necessary points, whether indicated on the drawings or not, to prevent injury to the insulation or other damages that might result from pulling resistance or for other reasons necessary to proper installation. Minimum dimensions shall not be less than NEC requirements and shall be increased if necessary for practical reasons or where required to fit a job condition. All boxes shall be galvanized steel, rigidly secured in position to the structure. Cabinets required for use in various systems for the mounting of accessories or terminals, relays and the like shall be constructed of code gauge galvanized steel. Backboards shall be provided for the mounting of all accessories, of minimum ¾-inch plywood and painted to match the cabinet.

Switch and Outlet Boxes

Provide boxes, complete with cover or device plate for switches, receptacles, or other devices, or where required for joining branch circuit wiring. Conduit bodies may be used on exposed conduit, where allowed by the NEC.

Wiring Devices

Wiring devices shall be complete with all mounting devices and other appurtenances where required. All wiring devices shall be the products of a single manufacturer except as specifically stated otherwise. All light switches shall be toggle type, rated 20 amps, 277 volt AC, specification grade, installed 48 inches above finished floor, unless otherwise noted. Switches shall be single pole, 3-way or 4-way as indicated. All receptacles shall be duplex outlets, 125 volt AC, 20 amp, two pole, three wire grounding type, specification grade, installed 18" above finished floor unless noted. Special and heavy-duty type receptacles shall be provided as suitable for the intended use. Pressed galvanized steel outlet boxes shall be used for indoor and dry locations. Cast iron with threaded hub outlet boxes shall be used for outdoor, exposed and wet locations.

Supporting Devices

All conduits shall be properly supported in accordance with the latest edition of the NEC. Equipment shall be installed to maintain headroom, to provide neat mechanical appearance, and to support equipment loads required.

Safety Switches

Fused and unfused safety disconnect switches shall be provided as required. Such switches shall be of the proper size and number of poles for use with the equipment requiring the switch. Safety switches shall be the enclosed, heavy-duty type with quick-make, quick break mechanism and external pad locking operating handle. All switch enclosures shall be NEMA Type 1, except switches exposed to the weather shall have NEMA Type 3R, rain-tight enclosures.

Grounding

A complete grounding and bonding system shall be provided. Grounding shall be provided and tested in accordance with the National Electrical Code and as indicated on the drawings.

Panelboards

Panelboards shall be dead front, automatic circuit breaker type. All panelboards shall conform to the requirements established by UL, NEMA and the NEC. Series rated panelboards are not acceptable. Bus bars shall be copper. Loadcenter type panelboards are not acceptable.

Molded Case Circuit Breakers

Circuit breakers shall conform to the latest edition of NEMA Publication ABI, ANSI, UL and NEC. This section applies to all MCCB whether individually enclosed, group mounted or part of other equipment. Interrupting ratings shall be as scheduled but shall not be less than 22,000 amps rms symmetrical at the applied voltage. Trips shall be thermal-magnetic with inverse time delay and instantaneous time current characteristics. Breakers shall be bolt-on type only.

Fuses

Fuses shall conform to the latest editions of NEMA, UL and NEC. Furnish and install complete sets of fuses for all switches requiring same, including those required in switchboards and motor controllers.

Motor Starters (Controllers)

All motors shall conform to the latest applicable standards of NEMA, ANSI and IEEE for type, size and duty as specifically applied. Motors shall be selected to avoid exceeding the motor's full rated load when the driven equipment is operating at specified capacity under the most severe conditions likely to be encountered. Isolated motors shall be protected by means of separate fusible combination motor starters. Motors 1/2 horsepower and larger shall be served at 208 volts, 3 phase and motors smaller than 1/2 horsepower shall be served at 120 volts, single phase. Motor starters shall be line-voltage magnetic type with suitable thermal overload relays, reset, hand off auto selector switches, and indicating lights on the cover with 120 volt AC control. Manual starters shall be provided complete with thermal overload protection in all phases. Each shall be equipped with a quick-break operating mechanism and silver contacts, in NEMA 1 enclosure.

3200 Norfolk Street, Richmond, VA 23230

PROJECT: City of Richmond Fire Station 12 Replacement 563137 DATE: 12/18/2020

SUBJECT: CoR Fire Station 12 Replacement_UDC Conceptual Review submission documents TRANSMITTAL ID: 00003

PURPOSE: For your approval VIA: Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Michael Gibson 3200 Norfolk Street Richmond, VA 23230	Moseley Architects	mgibson@moseleyarchitects.com	(804) 794-7555 x6059

TO

NAME	COMPANY	EMAIL	PHONE
alex.dandridge@richmondgov.com		alex.dandridge@richmondgov.com	

REMARKS: Alex,
Herewith are the documents requested for the UDC Conceptual Review.

Please let me know if there is anything else needed.

Thank you,
Michael Gibson
Cell 804-878-8984

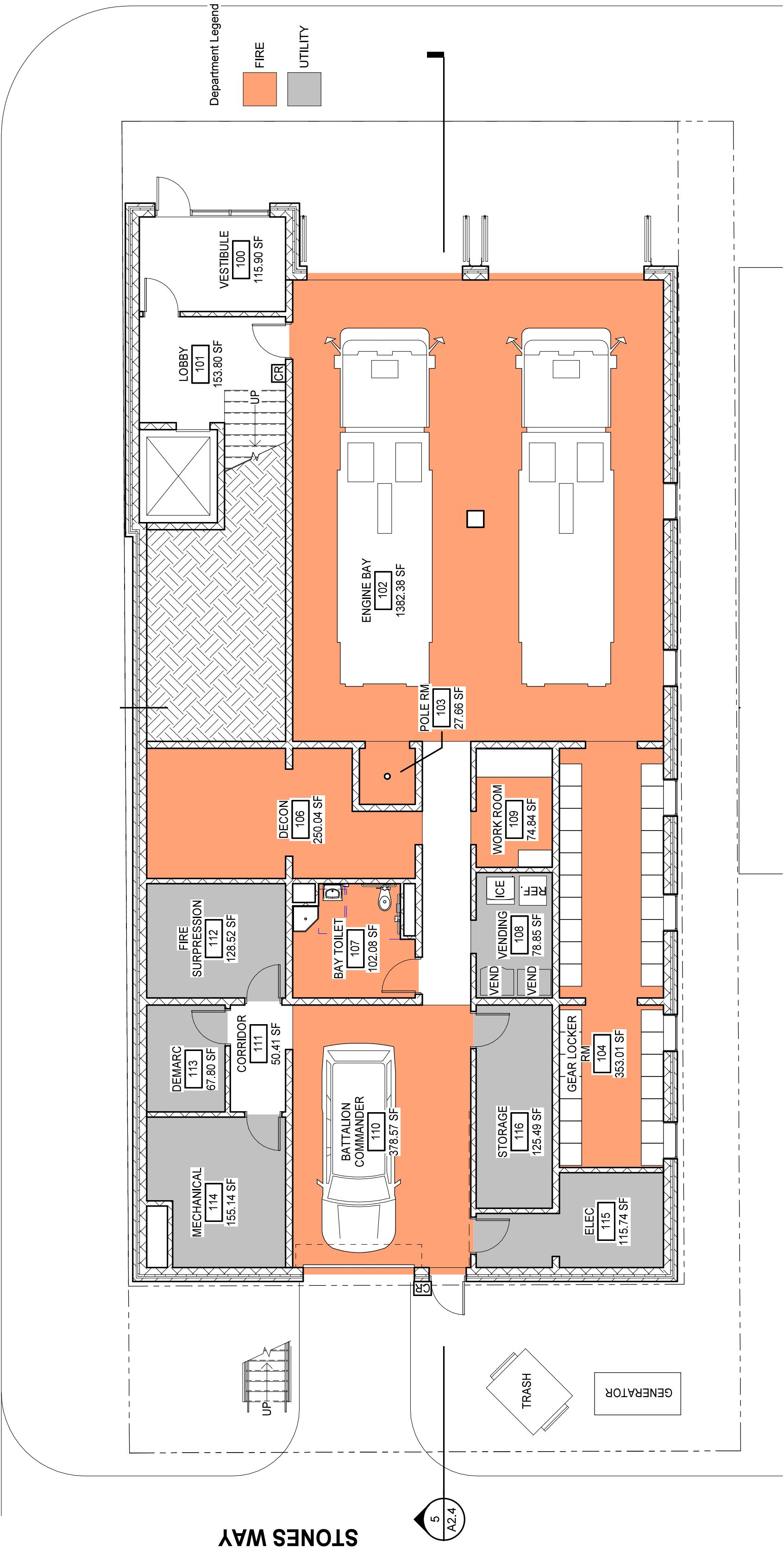
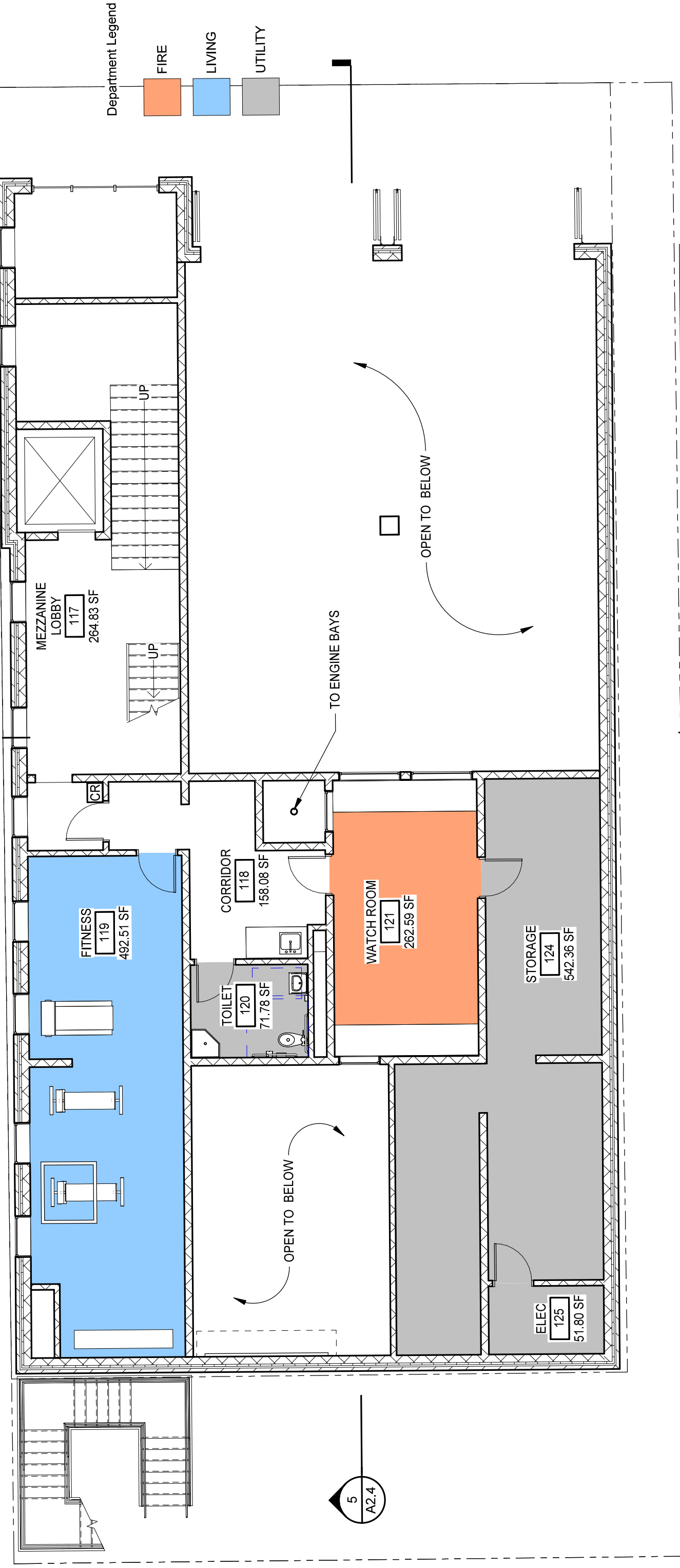
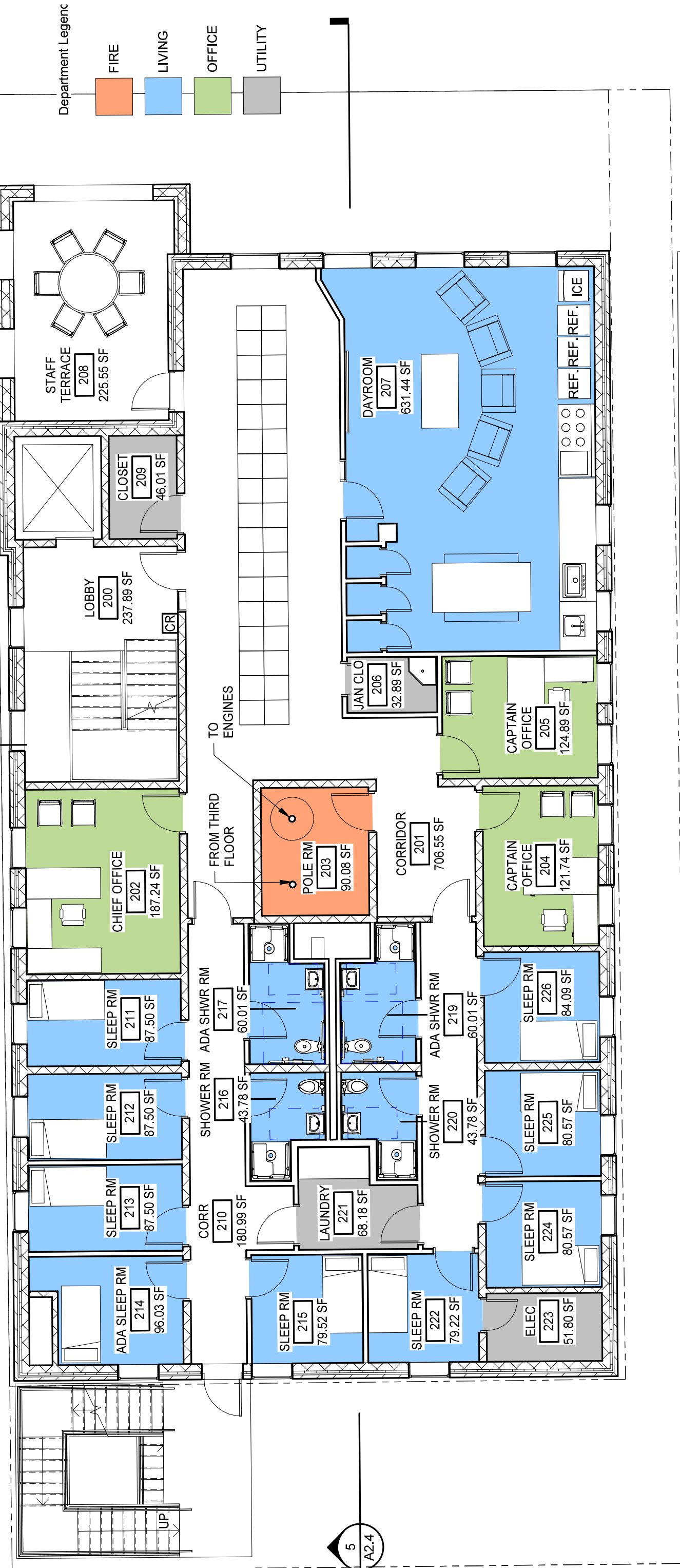
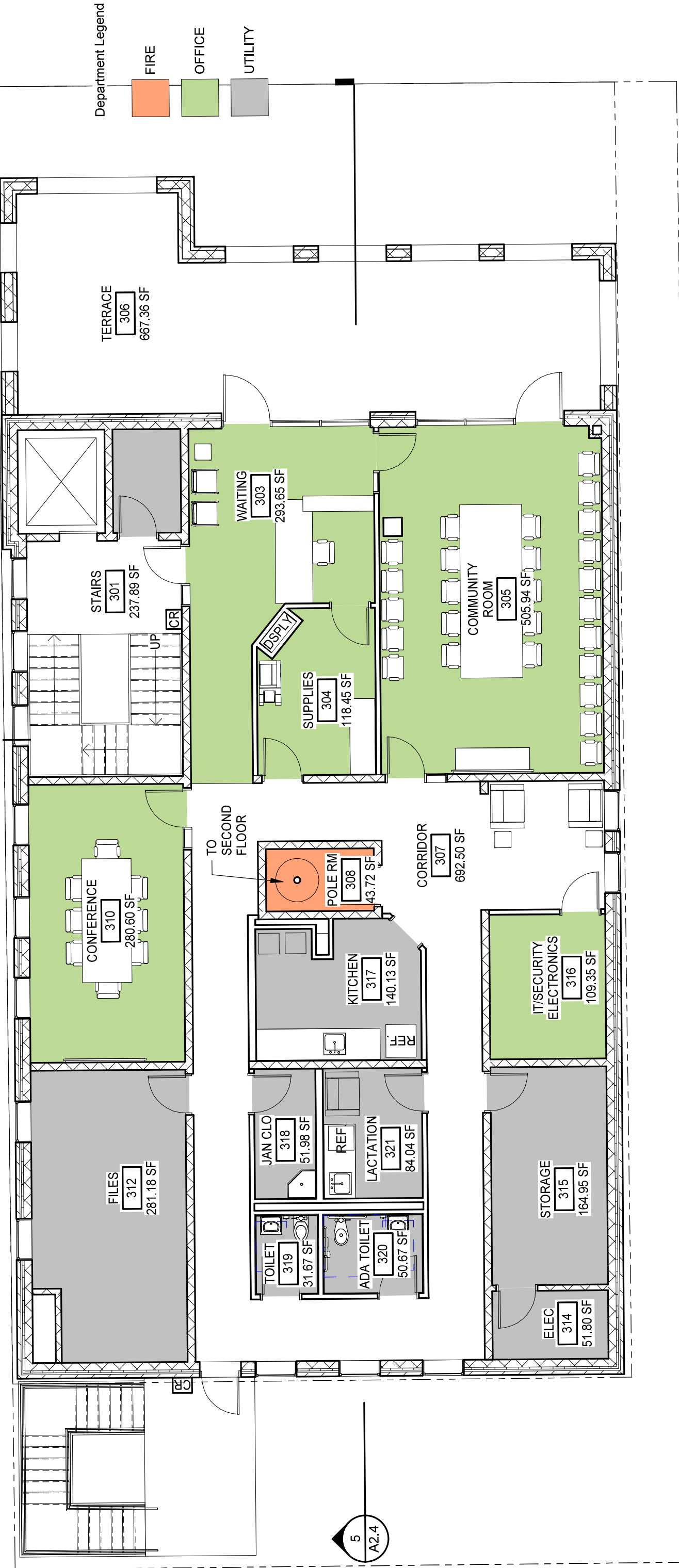
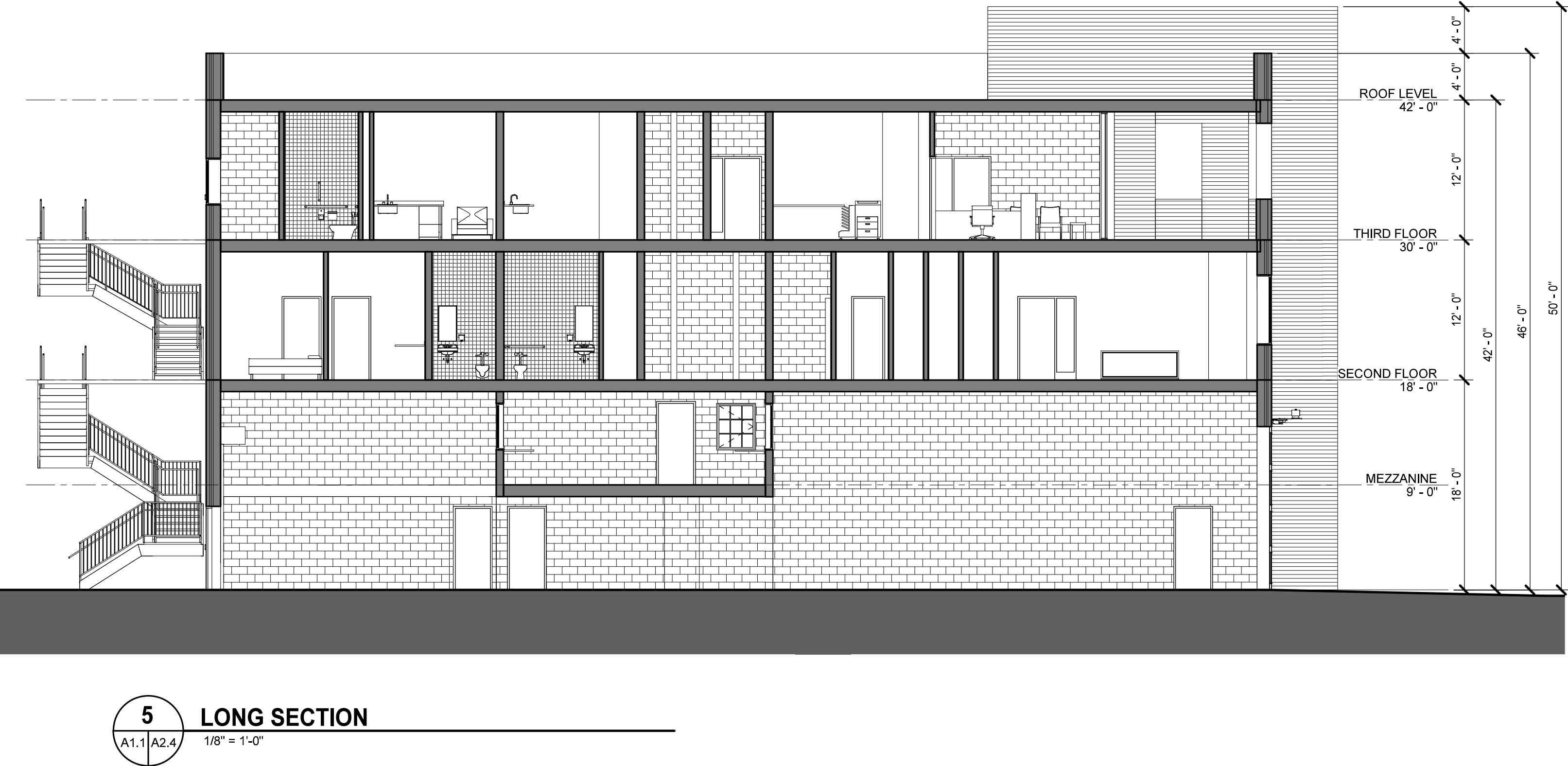
DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	12/18/2020	563137_2020.12.14 UDCf.pdf	
1	12/18/2020	563137_FS12_201218 VIEWS Smlf.pdf	
1	12/18/2020	Richmond FS 12.pdf	
1	12/18/2020	563137_SD-Narrative.pdf	

COPIES:

Josh Bennett (Moseley Architects)
Andrew McVeigh (Moseley Architects)
L. Dexter Goode (City of Richmond Special Capital Projects)

12/14/2020 12:31:59 PM PROJECT NO.: 123456



CONTEMPORARY OPTION



CORNER VIEW



ADDISON STREET FACADE



CARY STREET FACADE



ADDISON STREET ELEVATION



CARY STREET ELEVATION

TRADITIONAL OPTION



CORNER VIEW



ADDISON STREET FACADE



CARY STREET FACADE

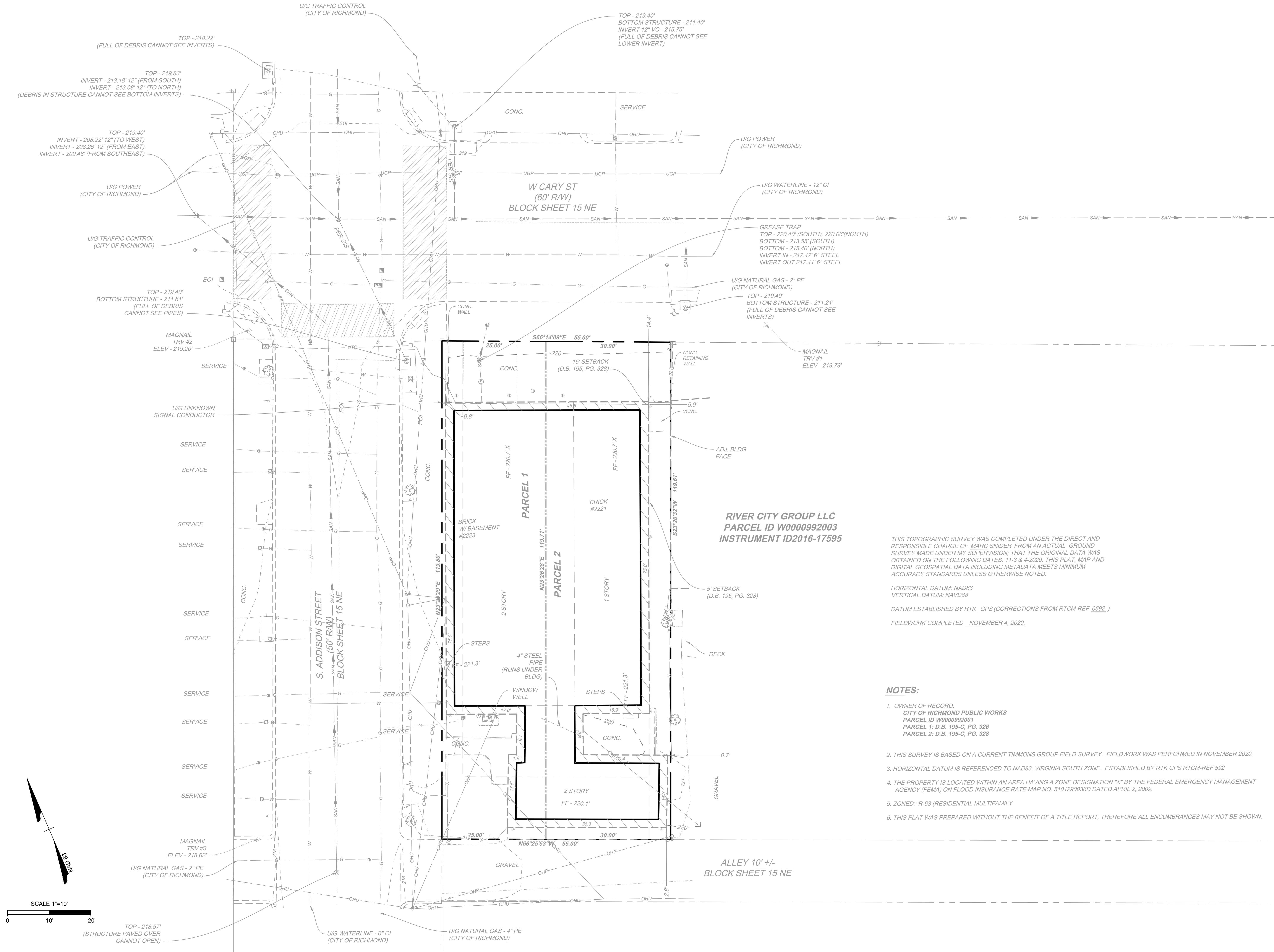


ADDISON STREET ELEVATION



CARY STREET ELEVATION

PROJECT NO:	563137
DATE:	12/18/2020
REVISIONS	
DATE	DESCRIPTION



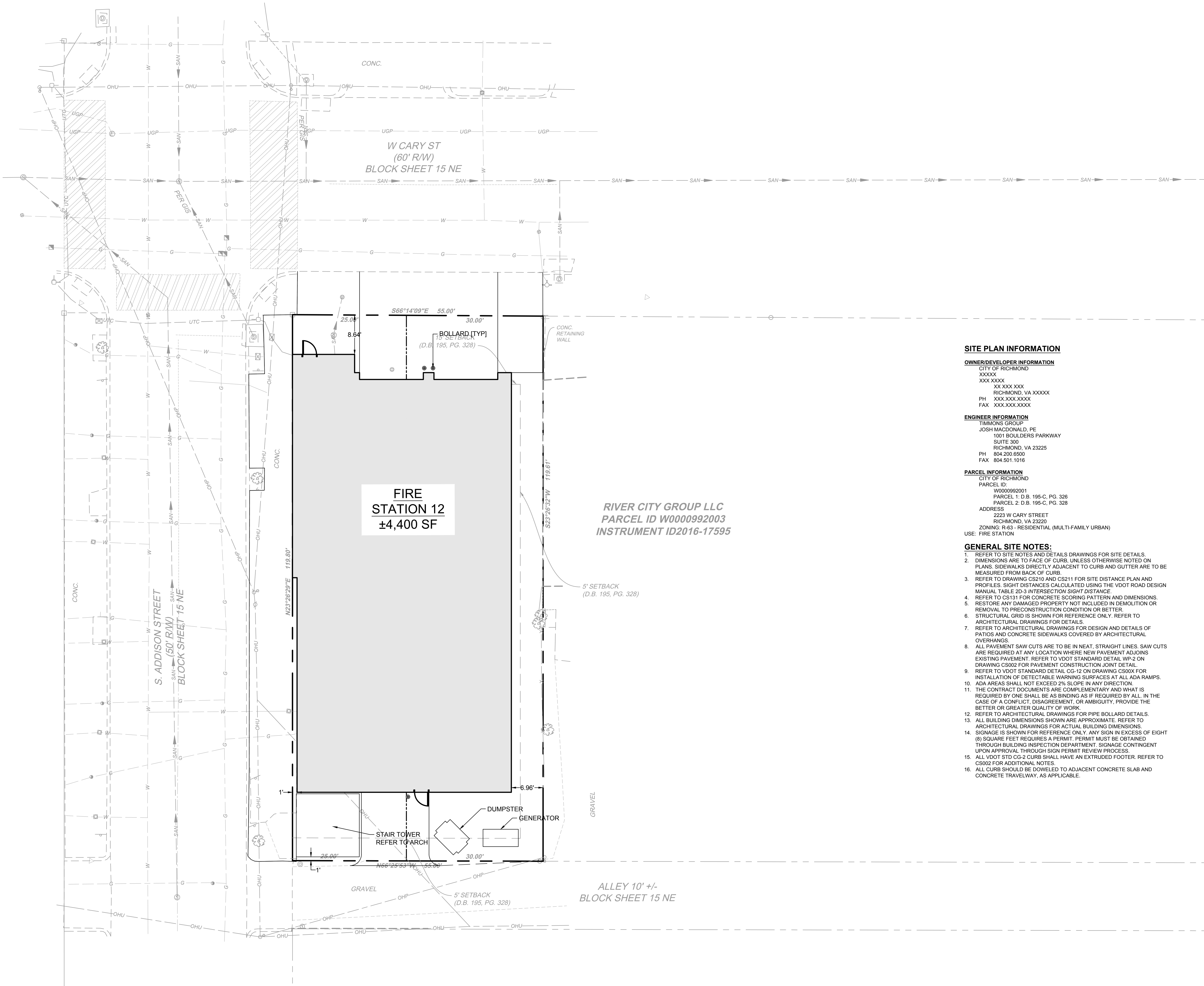
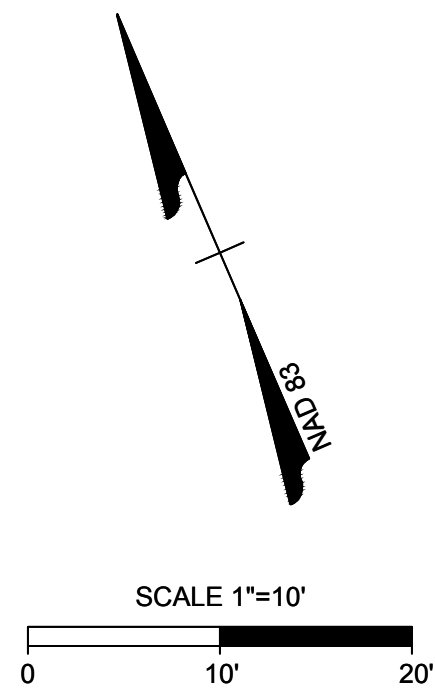
CITY OF RICHMOND FIRE STATION #12

2223 WEST CARY STREET, RICHMOND, VA 23220

PROJECT NO: 39785.005	DATE: DEC 18, 2020
REVISIONS	
DATE	DESCRIPTION

EXISTING
CONDITIONS
AND
TOPOGRAPHY
VF101

4/12/2018 9:34:35 AM



SITE PLAN INFORMATION

OWNER/DEVELOPER INFORMATION

CITY OF RICHMOND
XXXXX
XXX XXXX
XX XXX XXX
RICHMOND, VA XXXXX
PH XXX.XXX.XXXX
FAX XXX.XXX.XXXX

ENGINEER INFORMATION

TIMMONS GROUP
JOSH MACDONALD, PE
1001 BOULDERS PARKWAY
SUITE 300
RICHMOND, VA 23225
PH 804.200.6500
FAX 804.501.1016

PARCEL INFORMATION

CITY OF RICHMOND
PARCEL ID:
W0000992001
PARCEL 1: D.B. 195-C, PG. 326
PARCEL 2: D.B. 195-C, PG. 328
ADDRESS
2223 W CARY STREET
RICHMOND, VA 23220
ZONING: R-63 - RESIDENTIAL (MULTI-FAMILY URBAN)
USE: FIRE STATION

GENERAL SITE NOTES:

1. REFER TO SITE NOTES AND DETAILS DRAWINGS FOR SITE DETAILS.
2. DIMENSIONS ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED ON PLANS. SIDEWALKS DIRECTLY ADJACENT TO CURB AND GUTTER ARE TO BE MEASURED FROM BACK OF CURB.
3. REFER TO DRAWING CS210 AND CS211 FOR SITE DISTANCE PLAN AND PROFILES. SIGHT DISTANCES CALCULATED USING THE VDOT ROAD DESIGN MANUAL, TABLE 20-3 INTERSECTION SIGHT DISTANCE.
4. REFER TO CS131 FOR CONCRETE SCORING PATTERN AND DIMENSIONS.
5. RESTORE ANY DAMAGED PROPERTY NOT INCLUDED IN DEMOLITION OR REMOVAL TO PRECONSTRUCTION CONDITION OR BETTER.
6. STRUCTURAL GRID IS SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
7. REFER TO ARCHITECTURAL DRAWINGS FOR DESIGN AND DETAILS OF PATIOS AND CONCRETE SIDEWALKS COVERED BY ARCHITECTURAL OVERHANGS.
8. ALL PAVEMENT SAW CUTS ARE TO BE IN NEAT, STRAIGHT LINES. SAW CUTS ARE REQUIRED AT ANY LOCATION WHERE NEW PAVEMENT ADJOINS EXISTING PAVEMENT. REFER TO VDOT STANDARD DETAIL WP-2 ON DRAWING CS002 FOR PAVEMENT CONSTRUCTION JOINT DETAIL.
9. REFER TO VDOT STANDARD DETAIL CG-12 ON DRAWING CS00X FOR INSTALLATION OF DETECTABLE WARNING SURFACES AT ALL ADA RAMPS.
10. ADA AREAS SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
11. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER OR GREATER QUALITY OF WORK.
12. REFER TO ARCHITECTURAL DRAWINGS FOR PIPE BOLLARD DETAILS.
13. ALL BUILDING DIMENSIONS SHOWN ARE APPROXIMATE. REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL BUILDING DIMENSIONS.
14. SIGNAGE IS SHOWN FOR REFERENCE ONLY. ANY SIGN IN EXCESS OF EIGHT (8) SQUARE FEET REQUIRES A PERMIT. PERMIT MUST BE OBTAINED THROUGH BUILDING INSPECTION DEPARTMENT. SIGNAGE CONTINGENT UPON APPROVAL THROUGH SIGN PERMIT REVIEW PROCESS.
15. ALL VDOT STD CG-2 CURB SHALL HAVE AN EXTRUDED FOOTER. REFER TO CS002 FOR ADDITIONAL NOTES.
16. ALL CURB SHOULD BE DOWELED TO ADJACENT CONCRETE SLAB AND CONCRETE TRAVELWAY, AS APPLICABLE.

CITY OF RICHMOND FIRE STATION #12

2223 WEST CARY STREET, RICHMOND, VA 23220

PROJECT NO: 39765.005	DATE: DEC 18, 2020
REVISIONS	
DATE	DESCRIPTION

SITE PLAN

CS101





Madison St
100

W. Cary St
2200 2300

RICHMOND FIRE STATION 12

ROSEWOOD
POTTERY