

# ATTACHMENT

J.9

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF GENERAL SERVICES



Brian Hanlon  
Director

2000 14th St. NW  
Washington, D.C. 20009  
Phone: (202) 727-2800

**Modernization**

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**FRANK W. BALLOU SENIOR HIGH SCHOOL**



**Description:** The new 345,000-GSF Ballou Senior High School is planned for construction on the site of the existing Ballou High School in Ward 8. It will accommodate a general student population of 1,400 plus 900 STAY Academy students. In order to avoid the costs and disruption of relocating the existing school population, the new school will be constructed in two phases. During the first phase, the new school building will be built in the location of the existing football stadium. During the second phase, the existing school will be demolished and the new stadium and other site work will be constructed in the vicinity of the existing school. Construction is planned to be expedited through early site construction packages using a modified Design-Build project delivery method starting late 2012 for building occupancy in the fall of 2014, followed by site work completion.

The building is designed in 3 stories with entries and egress located on each level relative to the slope of the existing site. The building is organized into 3 wings arranged around a central courtyard. Two main entrance plazas at levels 2 and 3 serve the building and main parking lot along 4th Street SE. Upon entering the building, students and visitors move through a spacious, secure lobby to a light-filled double height Commons/Cafeteria with direct access to the athletic wing. The Media Center on level 3 is adjacent to the Commons/Cafeteria. The Commons/Cafeteria opens onto the courtyard. The Commons/Cafeteria, "Main Street" corridor and secure courtyard give clarity to the organization of the building and provide clear circulation to main classroom wing housing the Academies for each grade level, various student and community services and activity areas. The athletic wing, including gymnasium, pool, locker rooms and fitness areas on levels 2 and 3, overlooks the new football stadium with grandstand seating for 1,600 people, directly accessible from level 2 of the building. An outdoor stair and ramps lead from the entry plaza to the field level.

The classroom wing houses Academies for grades 9 through 12, the STAY Academy for older students and the Transition Academy (Arts & Technology) on all three levels. The wing parallel to 4th Street SE houses a 580-seat auditorium on all three levels, music and art programs. The auto program, service court and loading dock are

accessible from 4th Street on level one of this wing. Daycare facilities are also on level one of this wing, opening onto playground to the south. Sustainable design is a key feature of the project, targeted to LEED Gold certification or higher. Notable sustainable strategies include a geothermal water-source heat pump for heating and cooling, energy recovery units, exterior shading, high efficiency glazing, photovoltaic arrays, rainwater harvesting, and enhanced lighting controls. The existing school will be fully occupied throughout construction of the new school, for both educational and community uses, and upon completion and occupancy of the new facility the existing school will be fully demolished and new ball fields, parking, and potentially geotechnical well fields will be developed on that area of the site.

**Project Data**

- Existing Building Square Footage: 271,300
- Modernized Building Square Footage: **356,000**
- Construction Type: New Construction
- Current Enrollment: 1,100
- Modernized Capacity: 1,400

The Mechanical system for the New Ballou School Project is a simple (4) pipe heating and cooling system which provides conditioned air and water through Cooling Towers, Chillers, Gas Fire Boilers, Packaged Air Handling Units, Fan Coils Units, Unit Heaters and Split System AC units.

Heating - The heating system consists of Gas Fired Boilers, and base mounted hot water pumps that circulate hot water to the coils of the AHU's, DOAS's FCU's, UH's and the PDU.

Cooling - The cooling system consists of a Cooling Tower, Chillers base mounted condenser and chilled water pumps chilled water to the coils of the AHU's . DOAS's FCU's, UH's and the PDU. Split System AC units are located in specified areas.

Domestic Hot Water - Is achieved through two domestic water heaters with inbuilt recirculation pumps two water storage tanks located in Main Mechanical Room.

Pool Conditioning provided through Pool Dehumidification Unit with Pipe Heat Exchanger.

Schedule	Start/Completion Date	Percent Complete %
- Preconstruction	<b>7/1/11 / 5/30/13</b>	<b>75%</b>
- Construction	<b>1/23/13 / 4/1/15</b>	<b>2%</b>
- Close out	<b>4/2/15 / 6/30/15</b>	<b>0%</b>

Milestone	Date
- Design Start	<b>3/19/12</b>
- Ground Breaking	<b>3/26/13</b>
- Building Permit	<b>7/15/13</b>
- Substantial Completion	<b>8/15/14</b>

- Project Completion **6/30/15**
- Ribbon Cutting **8/15/14**

<b>Project Team</b>	<b>Firm</b>	<b>Program Manager</b>
- Program Manager	DCPEP	<b>Marcos Miranda / Hakim Chambers</b>
- Architect	<b>Bowie Gridley Architects / Perkins + Will J/V</b>	<b>Paul Lund / Curtis Clay</b>
- Contractor	<b>Chiaromonte – Hess, A J/V</b>	<b>Frank Chiaromonte / Steve Groth</b>

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**LEED/ Sustainable Design Initiatives:** The project will seek a minimum of LEED Gold accreditation, but will strive to achieve a higher LEED rating.



**OPEFM Ballou HS Cx**  
**Owner's Project Requirements**  
3401 4<sup>th</sup> Street Southeast  
District of Columbia, DC, 20032

**Presented by:**  
Department of General Services  
2400 East Capitol Street, SE  
Washington, DC 20003

**27 June 2014**

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OPEFM Ballou HS Cx  
27 June 2014



## Introduction

The District of Columbia's Ballou High School is located at 3401 4<sup>th</sup> Street SE, Washington, DC. The school is comprised of three main functional spaces, the Academic Wing, the Arts Wing, and the Athletic Wing. The Academic Wing is shown on Construction Documents as Areas A & B. It is comprised of the Classrooms and Science Labs for everyday use as well as the main mechanical room. The Arts Wing is shown as Areas E, F, & G on the Construction Documents. The Automotive Technology Lab is also included; however the Automotive Spray Paint Booth is not included in the commissioning scope. This Wing includes the large common use space such as the Cafeteria, Auditorium, Kitchen/Servery, Media Center, Band and Choir rooms, as well as the Community Offices. The Athletic Wing houses the Pool, Gymnasiums (including the indoor running track), Fitness Center, Locker Rooms, Medical Facilities, and Administrative Offices. The Athletic Wing is titled Areas C & D on the Construction Documents.

The new Ballou High School project is being constructed to replace the existing Ballou HS facility in order to meet the needs of District of Columbia Department of General Services (DGS).

## Key Owner's Project Requirements (OPR)

Several key project requirements have been identified that are absolutely critical to the success of this project. These OPR are general in nature and essentially encompass the performance criteria and detailed requirements contained throughout this document.

For base building HVAC and Lighting Control systems in this project, the key OPR are:

- 1) Project documentation requirements – in order to properly install, start-up, operate, troubleshoot, and maintain the HVAC and Controls systems for the life of the facility, accurate and accessible documentation is required. The Owner requires documentation to be electronic and tailored to the specific components installed. For these systems, the timing of completion of key documentation is essential:
  - Commissioning Plan
  - Installation Verification (Construction Checklists)
  - Equipment product data cut sheets
  - Functional Testing Procedures
  - Historical tracking project Issues Log including issues and resolutions
  - Training Material
  - O&M Manuals
  - Final Systems Manual
- 2) Appropriate heating and cooling - The installed HVAC system must provide consistent and appropriately controllable temperature, humidity, and airflow during all occupied periods.
- 3) Sustainability - The building systems must be maintainable by contracted maintenance personnel, with easy and non-disruptive access to components and systems for routine maintenance. Building Automated Systems are preferred over localized controls at individual units.

## General Project Description

The new Ballou High School project has been undertaken to meet the following:

- 1) LEED Certification – The Project is to attain LEED Gold under the requirements for LEED for Schools 2009. The Commissioning effort will include:
  - Air Handling Units (AHU)



- Make-up Air Units (MAUs)
  - Dedicated Outside Air Systems (DOAS)
  - Chiller
  - Mechanical Pumps
  - Cooling Towers
  - Boilers
  - Variable Air Volume Terminal Units (VAV)
  - Fan Coil Units (FCU)
  - Supplemental AC Units
  - Unit Heaters
  - Exhaust Fans
  - Domestic Hot Water System
  - Lighting Controls
  - Pool Dehumidification Units (PDUs)
- 2) System accessibility and maintainability - The design and construction of the building must be energy efficient to operate and maintain. The new building systems must be easily maintainable by staff maintenance personnel, with sufficient access to systems for routine maintenance.
  - 3) Heating and cooling - The heating, ventilating, and air conditioning system will provide the appropriate thermal comfort for its occupants while maintaining an environmentally sound and energy efficient status. The system must provide consistent and individually controllable temperature and airflow.
  - 4) Allowable tolerance in facility system operations – the tolerance that will be allowed in the operation of the HVAC systems is:
    - Temperature in the space shall not vary more than +/- 3°F from head to foot and from space to space.
    - System airflow shall not vary more than +/-10% from design values.
  - 5) Project is scheduled for full occupancy by 29 December 2014

### **Facility Objectives**

The requirements for the Occupied Spaces of Ballou High School are listed below. All temperature and humidity setpoints were taken from the Design Drawings, which supersedes the Design Narrative, unless otherwise noted.

### **Academic Wing**

- 1) Classrooms and Laboratories – Adequate space to facilitate the learning purposes of the room.
  - Occupied Cooling Setpoint: 75°F DB / 50% RH
  - Occupied Heating Setpoint: 70°F DB
  - Unoccupied Cooling Setpoint: 85°F DB/ 60% RH
  - Unoccupied Heating Setpoint: 60°F DB
  - Maximum CO<sub>2</sub> Concentration: 600ppm

Heating and cooling shall be provided to each classroom primarily through a fan coil unit connected to the chilled and hot water loops. Ventilation will be provided to the classroom by constant volume Dedicated Outside Air System (DOAS). The CO<sub>2</sub> concentrations in the classroom shall be maintained below 600ppm. Laboratories shall be provided will fume hoods that are ducted to roof-mounted exhaust fans, where necessary.





### **Arts Wing**

- Administrative Offices –
  - Occupied Cooling Setpoint: 75°F DB / 50% RH
  - Occupied Heating Setpoint: 70°F DB
  - Unoccupied Cooling Setpoint: 85°F DB / 60% RH
  - Unoccupied Heating Setpoint: 60°F DB

Offices shall be served by a dedicated AHU with variable air volume terminal boxes in order to provide multiple zones for optimal thermal comfort.

- Kitchen and Cafeteria – Adequate space for food preparation and serving with a common area for large group meals.
  - Occupied Cooling Setpoint: 75°F DB / 50% RH
  - Occupied Heating Setpoint: 70°F DB
  - Unoccupied Cooling Setpoint: 85°F DB / 60% RH
  - Unoccupied Heating Setpoint: 60°F DB

The kitchen and cafeteria will be conditioned by a dedicated Air Handling Unit (AHU). The kitchen stove shall be provided with an overhead exhaust hood and tempered make-up air will be provided to the space by a roof-mounted Make-Up Air unit (MAU).

- Auditorium – Adequate space for gathering and pre-function reception.
  - Occupied Cooling Setpoint: 75°F DB / 50% RH
  - Occupied Heating Setpoint: 70°F DB
  - Unoccupied Cooling Setpoint: 85°F DB / 60% RH
  - Unoccupied Heating Setpoint: 60°F DB

The Auditorium will be conditioned by a dedicated Air Handling Unit.

- Band Rooms – Area containing space for Ballou's band to practice and house their instruments.
  - Occupied Cooling Setpoint: 70°F
  - Occupied Heating Setpoint: 65°F
  - Unoccupied Cooling Setpoint: 85°F
  - Unoccupied Heating Setpoint: 55°F
- Media Center – Area containing classrooms and a library dedicated to promote art awareness and education.
  - Occupied Cooling Setpoint: 70°F
  - Occupied Heating Setpoint: 65°F
  - Unoccupied Cooling Setpoint: 85°F
  - Unoccupied Heating Setpoint: 55°F

### **Athletic Wing**

- 1) Natatorium – Area containing a swimming pool and equipment to regulate water temperature, chlorine and thermal comfort.
  - Occupied Cooling/Heating Setpoint: 84°F DB / 60% RHAir conditioning will be provided by a dedicated air handler capable of cooling, heating, and dehumidification.
- 2) Gymnasium – Large multi-purpose area most commonly utilized for physical activities.
  - Occupied Cooling Setpoint: 75°F DB / 50% RH
  - Occupied Heating Setpoint: 70°F DB
  - Unoccupied Cooling Setpoint: 85°F DB / 60% RH



- Unoccupied Heating Setpoint: 60°F DB

A dedicated air handling unit will provide the gym with up to 100% outside air to provide necessary ventilation.

- 3) Weight Rooms and Locker Rooms – Athletic locker rooms and weight rooms with adequate space for exercise activities.

- Occupied Cooling Setpoint: 75°F DB / 50% RH
- Occupied Heating Setpoint: 70°F DB
- Unoccupied Cooling Setpoint: 85°F DB / 60% RH
- Unoccupied Heating Setpoint: 60°F DB

Cooling and heating will be provided by a roof-mounted DOAS unit dedicated to these spaces.

- 4) Administrative Offices –

- Occupied Cooling Setpoint: 75°F DB / 50% RH
- Occupied Heating Setpoint: 70°F DB
- Unoccupied Cooling Setpoint: 85°F DB / 60% RH
- Unoccupied Heating Setpoint: 60°F DB

Offices shall be served by a dedicated AHU with variable air volume terminal boxes in order to provide multiple zones for optimal thermal comfort.

### **General Areas**

In addition to the functional areas defined above, the building as a whole requires a variety of support areas to allow each group to operate efficiently. These support areas include:

- 5) Corridors - Corridors on each floor provide efficient movement throughout the building and between the building user areas. The corridors should be designed to prevent blind corners and collisions. Corridors will be conditioned using the fan coil units serving adjacent spaces.
- 6) Stairways and Elevators - The stairways and elevators provide efficient movement between the floors in the building. These features should be conveniently located for building egress and accessibility requirements. Heating will be provided to stairwell from wall-mounted hot water heaters.
  - Heating Setpoint: 70°F DB
- 7) Public Restrooms - Public restrooms are needed for use by any building occupant or visitor. The restrooms must be conveniently located, clearly marked, and accessible. Adequate exhaust must be provided to meet the governing code requirements.
- 8) Custodial space - Closets or other designated custodial areas are needed on each floor to allow the janitorial staff to efficiently perform their duties without interruptions or inconveniences to other building staff.
- 9) Mechanical and Electrical Rooms - Space must be designated within the building to allow for installation of mechanical, electrical and telecommunications equipment and devices. This space should be optimally located to allow for the simplest and most efficient engineered system design.
- 10) Telecom Rooms – Due to the heat load of these rooms, a dedicated split system air conditioner will be provided to maintain each rooms cooling requirements.
  - Cooling Setpoint: 72°F DB / 45% RH
- 11) Parking – Adequate parking for employees that is safe and accessible during normal operating hours and after-hours activities. Exhaust fans will be provided to exhaust carbon monoxide and other harmful gases from the garage.



The building is regularly occupied from 7 a.m. to 10 p.m., Monday through Friday, with school hours of 8 a.m. to 5 p.m. The facility is closed for all Federal holidays, and regular school breaks. The peak occupancy requirements for Ballou High School are:

- 206 faculty members
- 1400 Students

The occupancy schedule to be used to setup the control system is detailed in Tables 2a, 2b and 2c.

**Table 2a: Occupancy Schedule – Academic Wing**

Day of Week	State	Morning Warm-up	Occupied	Unoccupied	Special Event
School Year Weekdays	On	5:00 a.m.	7:00 a.m.	10:00 p.m.	N/A
	Off	7:00 a.m.	10:00 p.m.	5:00 a.m.	N/A
School Year Weekends	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A
Summer Break	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A
Winter Break	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A

**Table 2b: Occupancy Schedule – Arts Wing**

Day of Week	State	Morning Warm-up	Occupied	Unoccupied	Special Event
School Year Weekdays	On	5:00 a.m.	6:00 a.m.	11:00 p.m.	10:00 p.m.
	Off	6:00 a.m.	11:00 p.m.	5:00 a.m.	11:00 p.m.
School Year Weekends	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A
Summer Break	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A
Winter Break	On	8:00 a.m.	8:00 a.m.	6:00 p.m.	N/A
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	N/A

**Table 2c: Occupancy Schedule – Athletic Wing**

Day of Week	State	Morning Warm-up	Occupied	Unoccupied	Special Event
School Year Weekdays	On	5:00 a.m.	6:00 a.m.	11:00 p.m.	6:00 p.m.
	Off	6:00 a.m.	11:00 p.m.	5:00 a.m.	11:00 p.m.
School Year	On	8:00 a.m.	8:00 a.m.	10:00 p.m.	8:00 a.m.



Weekends	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	10:00 p.m.
Summer Break	On	8:00 a.m.	8:00 a.m.	10:00 p.m.	8:00 a.m.
	Off	8:00 a.m.	8:00 p.m.	8:00 a.m.	10:00 p.m.
Winter Break	On	8:00 a.m.	8:00 a.m.	10:00 p.m.	8:00 a.m.
	Off	8:00 a.m.	6:00 p.m.	8:00 a.m.	10:00 p.m.

The occupants of the space require excellent indoor environmental quality to facilitate occupants' productivity by providing a comfortable environment. The primary occupant requirements are:

- 1) Temperature – consistent temperature within the space and from space to space.
- 2) Humidity – consistent humidity levels in the space that avoids a “sticky” feeling.
- 3) Noise – avoid distraction of noise from adjacent classrooms/laboratories and from equipment in or above/below the space.
- 4) Air Quality – no odors – air shall have a “fresh” feeling.
- 5) No drafts – consistent airflow throughout the space with no “drafts” or “dead spots”.
- 6) Interface with the operation and maintenance personnel – it is expected that the occupant will interface with the operation and maintenance staff through a telephone work order system, with operations and maintenance staff present during normal operating hours.
- 7) Lighting – Interior lighting shall meet an illumination goal of an average of 50 foot candles at 36 inches throughout the occupied spaces.

Health, hygiene, and indoor environment – the following are the known activities that generate pollutants in/near the facility that impact the HVAC system:

- 1) Poor circulation – build-up of pollutants due to a lack of air circulation.
- 2) Inappropriate use and maintenance of materials – materials emit pollutants or the maintenance of the materials has excessive pollutants.
- 3) Dumpster – the trash within the dumpster.
- 4) Dirty ventilation system – build-up of dust and dirt within the ventilation system (outdoor air intake).
- 5) Cooking – odors, particulates, and smoke from cooking.
- 6) Pests – pests from outdoors.
- 7) Smoking – byproducts of smoking (butts and smoke).
- 8) Noise – noise from adjacent spaces and outdoors.
- 9) Cleaning – chemicals and materials utilized during cleaning.
- 10) Lavatories – bathroom byproducts.
- 11) Mildewed ceiling tiles – growth from water build-up on materials.
- 12) Dirty filters – allowing dust and dirt to bypass filtration.
- 13) Computers – heat, noise and chemicals.
- 14) Copiers/printers – heat, noise and chemicals.
- 15) Locker Rooms – bacteria growth.

These odorous elements should be factored into the consideration and design of the building layout and mechanical airside systems.

#### Performance Criteria

The performance criteria upon which this project is being evaluated by the Commissioning Team are included in this section. Performance criterion is verified during the Pre-Design, Design, Construction,



and/or Occupancy & Operations phase(s) of the project.

- 1) Quality requirements of materials and construction – the level of quality of the HVAC materials is defined by:
  - a) Durability – high durability with resistance to damage by ambient conditions, users or operation and maintenance personnel.
  - b) Time expectancy between failures – no equipment failures during the first five years of operation.
  - c) Time expectancy between replacements – 25 years.
  - d) Owner general expectations of quality of construction – LEED Gold.
- 2) Acoustical requirements – no noise generated from the HVAC or electrical system that results in distraction of the occupants, including central systems, ductwork, unitary units, and room air distribution.
- 3) Vibration – vibration from the HVAC components shall not be transmitted where it is felt by the occupants.
- 4) Seismic – the facility is not located in a seismic zone – there are no special concerns relative to the HVAC systems.
- 5) Accessibility – the accessibility issues for the Owner include:
  - a) Occupants – system overrides shall be integrated with the zone temperature sensor and allow for after-hour system operation in 30 minute increments.
- 6) Communications – there shall be one communication system (backbone) throughout the entire facility, which the HVAC control system will use between its components.
- 7) Sustainability – a LEED Gold certification level is desired for this project. In pursuit of this certification, the following sustainability items are to be the focus:
  - a) Use of low energy system components – utilize high efficient components for installed and occupant items.
  - b) Build specific to the site – integrate site conditions to building layout and systems.
  - c) Accomplish research of real needs of project
  - d) Minimize adverse impact on the environment – utilize benchmarks for impact on the environment.
  - e) Create real incentive – have real incentives for designers, contractors, and occupants for achieving a sustainable facility.
  - f) Use fixtures and equipment with water and energy conservation – low water and energy fixtures.
  - g) Use of renewable resources (solar) – generation on-site through renewable resources.
  - h) Daylight and energy efficient lighting systems – flexibility in lighting system and maximize use of daylight. Occupancy sensor controls shall be used in at least 75% of the spaces to reduce lighting load when not required.
  - i) Ensure design of building minimizes energy loss – building envelope has very good thermal properties.
  - j) Incorporate energy control measures (ECM's) – develop and accomplish analysis to integrate energy saving measures as part of design process.
  - k) Reuse materials – reuse materials when possible.
  - l) Produce less waste – minimize waste from construction and manufacturing.
  - m) Create awareness of stakeholders – educate team members of sustainable features.
  - n) Use less toxic materials – do not use any toxic substances in the facility.
  - o) Improve indoor air quality – improve indoor air quality to result in improved worker productivity.

- p) Install automatic controls on mechanical systems – use of good controls.
  - q) Conserve resources and energy – minimize materials required and the energy used to create materials.
- 8) Energy efficiency
- a) Meeting ASHRAE Standard 62.1 – building performs per requirements in ASHRAE Standard 62.1 or better.
  - b) BTU/ sq.ft./year – the energy use for heating, cooling, and plug loads per year on a unit area basis.
  - c) Number of energy savings ideas submitted – the number of energy savings ideas that are generated by the building occupants – indicating an on-going understanding and focus on energy efficiency.
  - d) Avoid system degradation – avoid degradation of systems that leads to reduced energy efficiency.
  - e) # hot/cold calls per year – track the number of annual comfort complaints to verify that non- energy criteria are not compromised by focusing solely on energy efficiency.
  - f) Actual compared to budget – compare the actual to the budget to verify assumptions and identify opportunities to improve.



**1012006 Ballou Senior High School**

Hess Project No: 1012006

Date: 9/24/2013

**ARCHITECT:**

Bowie Gridley Architects  
 1010 Wisconsin Avenue, NW  
 Suite 400  
 Washington, DC 20007  
 Tel: (202) 337-0888 Fax: (202) 337-2626  
 Paul R. Lund

**CONTRACTOR:**

HESS  
 804 West Diamond Avenue  
 Suite 300  
 Gaithersburg, MD 20878  
 Tel: (301) 670-9000 Fax: (301) 670-9009

**SUBCONTRACTOR:**

**SUPPLIER:**

**MANUFACTURER(S):**

*This is to certify that the specification requirements have been met and all dimensions, conditions and quantities are verified as shown and/or corrected on these drawings.*

**Hess Construction + Engineering Services**

**Signed:**

Hess Representative

**Date:**

9/24/2013

**Submittal No. :**

14 21 00-002

**Review No.:** 001

**Spec Section:**

14 21 00

**Drawing No.:**

**Description:**

Elect Traction Elevator SD

Electric Traction Elevator Shop Drawings

**Remarks:**

- |   |  |
|---|--|
| <input type="checkbox"/> No Exception Taken                         | <input type="checkbox"/> No Action Required  |
| <input checked="" type="checkbox"/> Revise-No Resubmission Required | <input type="checkbox"/> Revise and Resubmit |
| <input type="checkbox"/> Submit Specified Item                      | <input type="checkbox"/> Rejected            |

Other:  
**STAMP:**

This review is only for general conformance with the design concept and the information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the plans and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades and performing all Work in a safe and satisfactory manner.

Bowie Gridley Architects, P.L.L.C.

Date: **10-15-2013** By: 

- |                       |                          |                        |                          |
|-----------------------|--------------------------|------------------------|--------------------------|
| NO EXCEPTION TAKEN    | <input type="checkbox"/> | MAKE CORRECTIONS NOTED | <input type="checkbox"/> |
| REJECTED              | <input type="checkbox"/> | REVISE AND RESUBMIT    | <input type="checkbox"/> |
| SUBMIT SPECIFIED ITEM | <input type="checkbox"/> | SEE ATTACHED LETTER    | <input type="checkbox"/> |

REVIEWED FOR INFORMATION ONLY ■

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

**SK&A** Structural Engineers, PLLC

DATE: 10/08/2013

BY: DAVIDP

Hoistway dimensions for elevator #2 do not match basis of design. Contractor to coordinate edge of slab with structural.

Jamie Krissoff

A		<b>NO EXCEPTIONS</b>
B	✘	<b>EXCEPTIONS AS NOTED</b>
C		<b>REVISE AND RESUBMIT</b>
D		<b>REJECTED</b>
E		<b>FOR INFORMATION ONLY</b>
F		<b>NOT REVIEWED</b>
<b>SUBMITTAL REVIEW</b>		
See Submittal Transmittal for important qualifications and limitations.		
Project No. <u>860312.000</u>		
<b>PERKINS + WILL</b>		By: <u>Jamie Krisso</u> Date: <u>10/14/2013</u>



## PERKINS+WILL

### Submittal Review Comments

To:	Stephen White	Date:	October 14, 2013
From:	Jamie Krissoff	Project Name:	Ballou HS
Subject:	Submittal Review	Project Number:	860312.000
Section:	14 21 00-002-0	Action:	Exceptions as Noted

*Submittal Review Comments provide information for use by the Contractor. Work Shall be completed in accordance with the Contract Requirements. This review is for the conformance with the information given and the design concept expressed in the contract documents. The contractor shall retain responsibility for: compliance with the contract documents, confirming and correlating quantities and dimensions, selection of fabrication processes and techniques of construction, coordination of this work with other trades, performing work in a safe and satisfactory manner, compliance with the construction schedule, and all other provisions of the agreements. The following notations shall not be construed as an authorization for additional work or additional costs.*



# SETTY & ASSOCIATES INTERNATIONAL, PLLC

Mechanical ♦ Electrical ♦ Plumbing ♦ Fire Protection ♦ Energy ♦ Sustainable Design  
Project Management ♦ Construction Management ♦ Consultant Design Engineers

## SUBMITTAL PROCESSING FORM

### SUBMITTAL REVIEW COMMENTS:

Corrections or comments made of the shop drawings during this review do not relieve contractor from compliance with the requirements of the drawings and specifications. This check is only for review of general compliance with the design concept of the project and general compliance with the information given in the Contract Documents. The contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication process and techniques of construction; coordinating his work with that of all other trades and performing his work in a safe and satisfactory manner. Contractor shall provide coordinated submittals for each type of equipment, fixture, work, item, or process. Coordinated submittals shall be complete, separate from non-associated submittals, and with individual submittal numbers.

Review is categorized as: Approved, Rejected, Revise and Resubmit, Submit Specified Item, and Furnish as Noted. Where the submittal is marked "Rejected", do not proceed with the work covered by the submittal. Prepare a complete new submittal for a product that complies with the Contract Documents.

PROJECT NAME: Ballou High School Modernization	PROJECT NO: SAIP12353.00
SUBMITTAL NAME: Electric Traction Elevator SD	SUBMITTAL NO: 142100-002-0
SPECIFICATION SECTION: 142100	REVIEWER: Erwin Mate
ACTION: No Action Taken	DATE: 10/14/2013

### NOTATIONS:

**The information requested on this submittal falls within the responsibility of the architect. Please address as necessary. No additional comments on the shop drawings from previous review.**

Please call **Setty & Associates International, PLLC**, at **202-393-1523** if you have any questions.

COPIES TO: File

By: Amanda Maillette, CA Coordinator



**Otis**  
A United Technologies Company

## Transmittal Form

9/17/2013

To: Hess Construction  
Address: 804 W Diamond Ave  
Gaithersburg, MD 20878  
Attn: Robert Looper

From: Martin S. Shatzer  
Otis Elevator Company  
5000-H Philadelphia Way  
Lanham, MD 20706

Job name: Ballou Senior High School Contract: 618623-625

We enclose the following:

Quantity	Document No.	Description
	618623	Elevator #1 layout shop drawings
	618624	Elevator #2 layout shop drawings
	618625	Elevator #3 layout shop drawings
	NN21251	Elevator product data approval package
		DC Elevator permit requirements

These are being submitted:

For your approval

For records only

Your approval of these items is required in order to release the elevators for manufacturing. Please return **(1)** copy approved of each submittal by **9/13/13** so we may move forward in the elevator installation process.

**Remarks:**

- Your attention is specifically directed to the highlighted sections of the Product Data package for your approval / confirmation.
- Please provide the Permit documentation requested so we can apply for our elevator permit with DCRA.

Please feel free to call me at the number below with any questions.

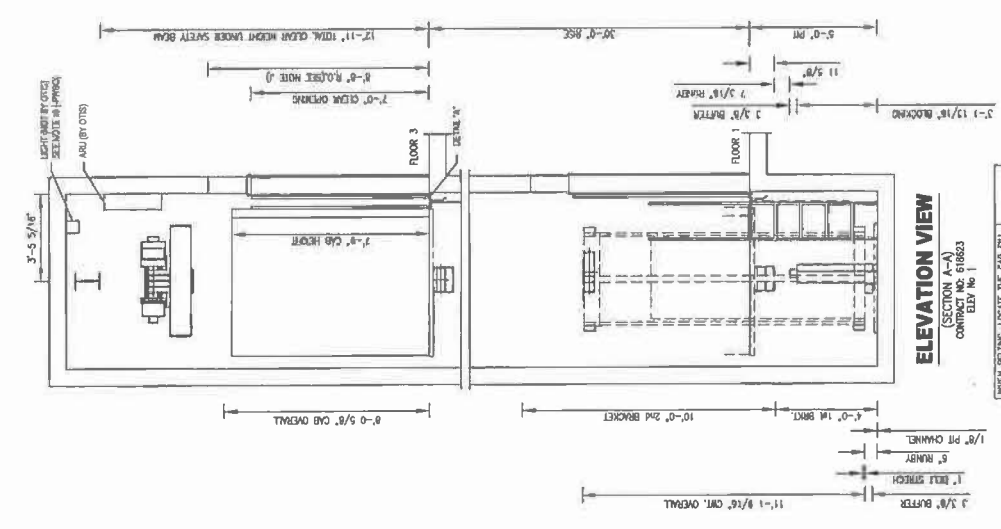
Very truly yours,

\_\_\_\_\_  
Martin S. Shatzer  
Project Manager  
301-324-4204

Spec. Section	Submitted Item	Date Received	Information				Action			O&M Review			Comments	
			Date Resubmitted	Number Received	Times Submitted	Date Reviewed	Reviewed, No Exception	Reviewed As Noted	Revise & Resubmit	Rejected, Resubmit	Reviewed, No Exception Taken	Reviewed As Notes		Revise & Resubmit
1.12.C.14	pH buffer feed system													
1.12.C.15	UV unit													
1.16.A	Record Drawings (As-Built)													
<b>2.01</b>	<b>Overflow System</b>													
2.01.B.3	Gutter Grating	5/15/14			5/21/14		x							Architect to select color
<b>2.02</b>	<b>Pumping Equipment</b>													
2.02.A.1	NSF Listing / TEFC Motor	5/15/14			5/21/14	x								
2.02.A.4	Pump Strainer	5/15/14			5/21/14	x								
2.02.A.5	Scottsdale 134	5/15/14			5/21/14	x								
2.02.A.7.a.(1)	Competition Pool Recirculation Pump	5/15/14			5/21/14		x							Provide premium efficiency motor, and coordinate 25 hp pump size with electrical contractor.
2.02.B.1	Pressure Gauges	5/15/14			5/21/14	x								
2.02.B.2	Compound Gauges	5/15/14			5/21/14	x								
<b>2.03</b>	<b>Filtration Equipment</b>													
2.03.A	NSF Listing	5/15/14			5/21/14	x								
2.03.C	Filter Tanks	5/15/14			5/21/14	x								
2.03.G	Air Relief Valve	5/15/14			5/21/14	x								
2.03.H	Filter Media	5/15/14			5/21/14	x								
<b>2.04</b>	<b>Recirculation Fittings</b>													
2.04.A	Main Drain Outlets	5/15/14			5/21/14	x								
2.04.B	Hydrostatic Relief Valve	5/15/14			5/21/14	x								
2.04.D	Wall Inlet Fittings	5/15/14			5/21/14	x								
2.04.E	Floor Inlets	5/15/14			5/21/14	x								
2.04.F	Anti-Vortex Plates	5/15/14			5/21/14	x								
<b>2.05</b>	<b>Piping Systems</b>													
2.05.B.4	Pool Piping - Sch 80	5/15/14			5/21/14	x								
2.05.B.7	Heat Piping - CPVC	5/15/14			5/21/14	x								
2.05.B.14	Waterstops	5/15/14			5/21/14	x								
2.05.B.18	Concentric Reducers	5/15/14			5/21/14	x								
2.05.C	Pipe Hangers & Supports	5/15/14			5/21/14	x								
2.05.G.1	Butterfly Valves	5/15/14			5/21/14	x								
2.05.G.2	Ball Valves	5/15/14			5/21/14	x								
2.05.G.3	Check Valves	5/15/14			5/21/14		x							Provide epoxy coating on interior of check valves
2.05.G.4	Modulating Float Valves	5/15/14			5/21/14	x								
2.05.H.1	Pipe Identification	5/15/14			5/21/14									
2.05.H.2	Valve Identification	5/15/14			5/21/14	x								

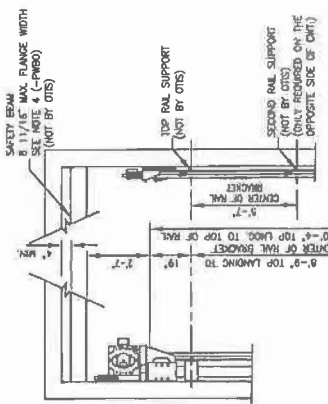
Spec. Section	Submitted Item	Date Received	Information				Action			O&M Review			Comments	
			Date Resubmitted	Number Received	Times Submitted	Date Reviewed	Reviewed, No Exception	Reviewed As Noted	Revise & Resubmit	Rejected, Resubmit	Reviewed, No Exception Taken	Reviewed As Notes		Revise & Resubmit
2.06	Chemical Treatment Systems													
2.06.A	Calcium Hypochlorite System	5/15/14			5/21/14	X								
2.06.B.7	Modular Spill Platform	5/15/14			5/21/14	X								
2.06.B.8	Low Profile Ramp	5/15/14			5/21/14	X								
2.06.B.9	Acid Vent													
2.06.B.10	Acid Feed Pumps	5/15/14			5/21/14	X								
2.06.C	Ultraviolet System	5/15/14			5/21/14		X							Contractor to confirm voltages available on site prior to ordering. Electrical to review and approve power requirements. Provide warranty letter for 0.3 ppm combined chlorine performance from UV manufacturer.
2.07	Chemical Controller													
2.07.A	Water Chemistry Controller	5/15/14			5/21/14	X								
2.08	Flow Meters													
2.08.A.1	Return Line Flow Meters	5/15/14			5/21/14	X								
2.08.A.2	Backwash Flow Meters	5/15/14			5/21/14	X								
2.09	Water Level Controllers													
2.09.A	Water Level Controller - Gutters	5/15/14			5/21/14	X								
2.09.A.2	High Water Solenoid Valve													The solenoid submitted for a make-up water solenoid is not of adequate size to work as the high water solenoid
2.09.A.6	Make-Up Water Solenoid Valve	5/15/14			5/21/14	X								
2.10	Inserts and Anchor Sockets													
2.10.A.1	Grab Rails and Railing Anchors	5/15/14			5/21/14	X								
2.10.A.2	Stanchion and WP Anchors	5/15/14			5/21/14	X								
2.10.A.3	Cup Anchors	5/15/14			5/21/14	X								
2.10.A.4	Single Post Starting Block Anchors	5/15/14			5/21/14	X								
	Diving Board Anchor	5/15/14			5/21/14	X								
2.11	Deck Equipment													
2.11.A	Grab Rails	5/15/14			5/21/14		X							Grab rails shall be 1.5" diameter, .120" thick, 316 SS
2.11.B	Step Rails	5/15/14			5/21/14		X							Step rails shall be 316 SS
2.11.C	Stanchion Posts	5/15/14			5/21/14		X							Stanchion to be .145 thickness, 316 SS
2.11.D	Starting Platforms	5/15/14			5/21/14	X								
2.11.F	Lifeguard Chairs	5/15/14			5/21/14	X								
2.11.G	Surge Tank Access Hatch	5/15/14			5/21/14	X								
2.11.H	Surge Tank Ladder Rungs	5/15/14			5/21/14	X								
	1 Meter Diving Stand	5/15/14			5/21/14	X								
	Diving Board	5/15/14			5/21/14	X								
2.12	Loose Equipment													

NOTE A: LIGHT SWITCH (LOCATED 3'-0" (914mm) ABOVE TOP LANDING) COORDINATE LOCATION WITH OTIS.  
NOTE J: ROUGH OPENING AT ALL FLOORS, EXCEPT TOP LANDING, EQUALS 7'-10". TOP LANDING EQUALS 8'-6".



**ELEVATION VIEW**  
(SECTION A-A)  
CONTRACT NO. 618623  
ELEV. NO. 1

IF GREAT BELTING, LOCATE THE CAR SILL ASSEMBLY WITHIN THE CAB HEIGHT. THE SILL ASSEMBLY SHOULD BE RESTING ON THE BARFLEX REQUIRED CHAIN ROLLER. IF BELTING IS NOT REQUIRED, CHAIN ROLLERS SHOULD BE RESTING ON THE BARFLEX.

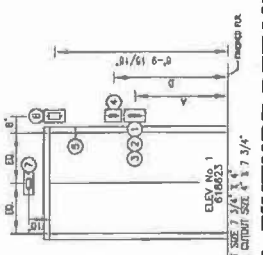
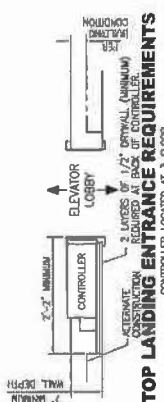


**MACHINE DETAIL**  
CONTRACT NO. 618623  
ELEV. NO. 1



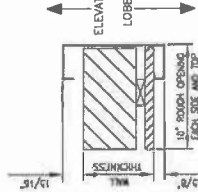
ASSEMBLY (BY OTIS) BELMONT 6141000 (-PWB) REQUIRED BY OWNER. MUST WITHSTAND A MINIMUM RULL-OUT FORCE OF 140 LBS. @ 6" FASTENING POINT. VERIFY WITH FABRICATOR FOR ANY CHANGES TO THE SILL SUPPORT BRACKET (NOT BY OTIS).

LANDING	FLOOR HEIGHT
1	16'-6"
2	16'-6"
3	16'-6"



**HALL FIXTURE DETAIL**

MAIN FIXTURE		PHONE FAILURE		
OUTPUT SIZE	OUTPUT SIZE	HEIGHT	WIDTH	D
HEIGHT 13 1/16"	HEIGHT 13 1/16"	4"	4"	4"-4 7/8"
WIDTH 4"	WIDTH 4"	E	F	



PRELIMINARY LAYOUT  
G2S 4015

DATE: 08/09/08  
DRAWN: 08/09/08  
CHECKED: 08/09/08  
APPROVED: 08/09/08

TYPE	WALL	MODEL	G2S
CONTRACT #	618623	SUPPLIER	FASSBENDER
CONTRACT DATE	08/09/08	PROJECT	CONSTRUCTION
CONTRACT NUMBER	618623	OWNER	DEPARTMENT OF GENERAL SERVICES
CONTRACT DESCRIPTION	CONTRACT 618623 IN THE ROOM LANDING	ARCHITECT	BONNE CADLEY ARCHITECTS
CONTRACT DATE	08/09/08	DATE-DRAWN	8/9/2013 FINAL
CONTRACT NUMBER	618623	DRAWN BY	GABRIEL K. PEITY
CONTRACT DESCRIPTION	CONTRACT 618623 IN THE ROOM LANDING	CHECKED	

CONTRACT NO. 618623-EL









**CONTRACT DATA**

CONTRACT NUMBER: 618624  
 MACHINE TYPE: BE21-520125W-1B6P  
 MACH. PART NUMBER: AMV2030849  
 PROJECT NUMBER: 208411  
 UNIT GOVERNOR: (1)-174-MAT120650  
 GOVERNOR HOSES-NO. DIA. TYPE: 5-65mm-80LS  
 HOSE-NO. DIA. TYPE: 5-65mm-80LS  
 APPROX. LENGTH: 114'  
 HSE HOSES-#777 40mm DIA. HOSE: 0.2833/FT-14344  
 LOAD PER BELT: 865.62/56  
 MAX. OF CONTACT: 140 DEG.  
 TRACTION-MAXIMUM REQUIRED: 1.57  
 AVAILABLE: 1.78  
 COMPENSATION-TYPE-#T/P: 1  
 APPROXIMATE LENGTH: 207.2333  
 PLATFORM-TYPE: AMV2026V  
 CHASSIS-TYPE-SAFETY: A-39507E-#P450A  
 CONTAINER-TYPE: 140  
 MAX. # STRUCK: (21)-2.83  
 CAR BUFFER IMPACT LOAD: 18000#  
 CONTAINER-#TYPERS-TYPE: 140  
 CONTAINER-TYPERS-TYPE: 140  
 CONT. D.B.G.-WIDTH: 50.0000  
 CONT. D.B.G.-HEIGHT: 48.0000  
 CONT. FILLER WEBSIDE-CNT-#T/P: 584-2296-34052  
 CAR RAIL TOLER. WTS-CNT-#T/P: 18154-198-34052  
 CAR RAIL TOLER. WTS-CNT-#T/P: 18154-198-34052  
 CWT RAILS-SIZE-#T/P: 1-1/2-183

**HEIGHT OF CWT-FILLER WEIGHTS**

TOTAL FOR WOODING PLATING AND FINISH COATING TOULING STEEL BRACKET TOULING STEEL RAILS  
 STEEL BRACKET TOULING STEEL RAILS  
 TOTAL FILLER WEIGHT HEIGHT EA. STACK WITH FINAL OVERBALANCE  
 STEEL WEIGHTS CONCRETE WEIGHTS



**RAIL FORCE DETAIL**

APPLICATION	SEISMIC	MAX. BRACKET SPACING	MAX. BRACKET SPACING
SEISMIC	500 lbs	12'-0"	12'-0"
SEISMIC	300 lbs	12'-0"	12'-0"
SEISMIC	150 lbs	12'-0"	12'-0"

**NOTES:**  
 R1 & R2 SAFETY APPLICATION LOADS  
 R1 & R2 SAFETY APPLICATION LOADS  
 V1 & V2 ARE STRESSING RAIL FORCES AT ALLOWABLE STRESS DESIGN LOAD) OR WORKING LEVEL V1 & V2 DO NOT OCCUR SIMULTANEOUSLY.  
 BUILDING RAIL SUPPORTS (NOT BY OTS) SHALL BE DESIGNED FOR A MINIMUM ALLOWABLE REDUCTION OF 1/8" (1mm).  
 BRACKET SHALL BE DESIGNED FOR A MINIMUM ALLOWABLE REDUCTION OF 1/8" (1mm).

**REFUGE NOTE 1**  
 TYPICAL TOP OF CAR REFUGE SPACE 5.4 SQ. FT. WITH NO SIDE LESS THAN 2'-0" AND HEIGHT NO LESS THAN 7'-0"  
**REFUGE NOTE 2**  
 TYPICAL PIT REFUGE SPACE 2'-0"x4'-0"x7'-0"

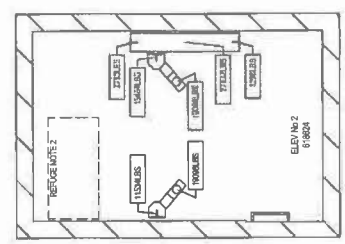
**ESTIMATED WEIGHTS ( LBS.)**  
 TOTAL OTS ENCLASURE: 1266  
 PLATFORM WITH BAL. WEIGHTS: 1199  
 TOTAL EXPOSED WEIGHT: 114  
 TOTAL EMPTY CAR: 4849  
 MINIMUM ALLOWED EMPTY CAR OVERBALANCE (LBS.): 5001  
 TOTAL COUNTERWEIGHT REQ.D.: 4928  
 TOTAL WEIGHT OF COMP.: 6658  
 TOTAL CAR WEIGHT (LBS.): 11669  
 MAX. LOG. AS TOSS RAIL LOAD: 1831  
 RESULTANT SHAFT SWAY LOAD: 1107  
 NUMBER BALANCE WEIGHTS: 1107  
 POWER A/W. 3 PHASE W. 40 HZ. LIGHT 1200V.  
 DIMENSIONAL DATA ON LAYOUT COMPLEYS WITH A17.1/CSA-844-09  
 A40/CR CC CODE. SEISMIC ZONE = ZONED

PRELIMINARY LAYOUT  
**G2S 5015R**



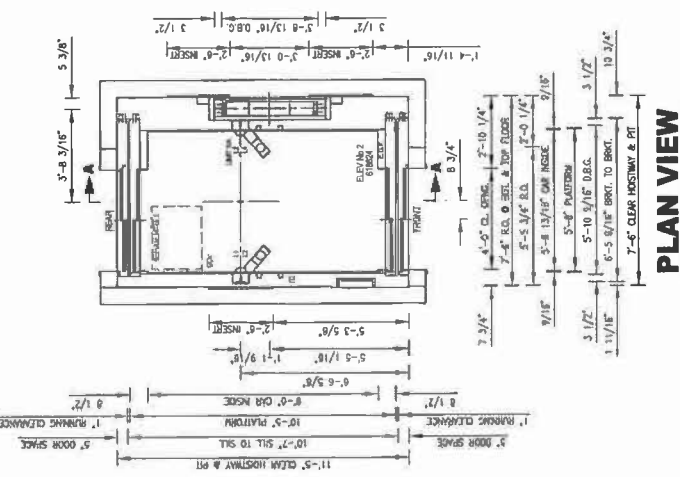
**RAIL STACK**

DESCRIPTION	PART NUMBER	LENGTH	QTY
TOP CUT RAIL	AMV500098E	13'-4"	2
CAR FULL RAILS	AMV500051	16'-0"	2
BOTTOM CUT RAIL	AMV5000512	16'-0"	2
CWT FULL RAILS	AMV5000512	16'-0"	2
BOTTOM CUT RAIL	AMV5000512	16'-0"	2

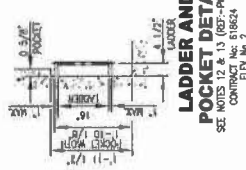


**PIT PLAN VIEW**

(FORCES SHOWN ARE DOUBLED FOR IMPACT)  
 (RAIL FORCES AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY)

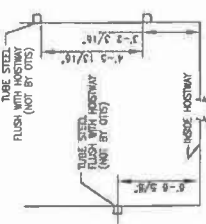


**PLAN VIEW**



**LADDER AND POCKET DETAIL**

SEE NOTES 12 & 13 (OBJ-PKBO)  
 CONTRACT NO. 618624  
 ELEV. No. 2



**TUBE STEEL RAIL BRACKET SUPPORT**

CONTRACT NUMBER 618624  
 ELEV No. 2

NOTE - DO NOT SCALE THIS DRAWING  
 REFER TO DWG'S NO. 618624-PRBO-01

**DWG. NO. 618624-PN**



**BUILDING: BULLOUG SENIOR HS**  
 ADDRESS: 3401 4TH ST SE  
 WASHINGTON, DC 20032  
 CONTRACT: WITH JESS CONSTRUCTION  
 OWNER: DEPARTMENT OF GENERAL SERVICES  
 ARCHITECT: BONE CRIBLEY ARCHITECTS  
 DESIGN-PROJ. NO. 7/9/2013 FINAL  
 DRAWING NO. 618624-PN

The following items must be performed or provided as required by OSHA 1910.119 by the Owner or General Contractor (GC) before the start of the building process. The following items must be provided as required by OSHA 1910.119 by the Owner or General Contractor (GC) before the start of the building process. The following items must be provided as required by OSHA 1910.119 by the Owner or General Contractor (GC) before the start of the building process.

- 18. Provide a means control room (MCR) with controls and ventilation in accordance with applicable code and standards. The MCR shall be located in an area with sufficient clearance around the MCR to permit access by two persons. The MCR shall be protected by a 1 1/2" fire-rated door. The MCR shall be equipped with a fire alarm pull station, a fire alarm control panel (FACP), and a fire alarm control unit (FACU). The MCR shall be equipped with a fire alarm pull station, a fire alarm control panel (FACP), and a fire alarm control unit (FACU). The MCR shall be equipped with a fire alarm pull station, a fire alarm control panel (FACP), and a fire alarm control unit (FACU).

**General Prep/Work**

- 1. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0). Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).
- 2. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).

**Hoistway & Pit Prep/Work**

- 4. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).
- 5. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).

**Shaft Protection**

- 20. Provide illumination of control room/spaces of not less than 200 lux (19 fc) as measured at the control room level. Light switch is to be located within 18" (157 mm) to the left-into side of the access door to the control room level.
- 21. Provide control room/spaces with self-closing and self-latching doors with a group 2 locking device. In addition, ensure that all air gaps around the doors are sealed (ie. threshold, weather stripping, etc.).

**Fire Protection**

- 24. Provide hallway fire doors, rail bracket fire doors, and any other penetration into the hoistway walls.
- 25. In the United States provide smoke detectors, located as required, with wiring from the sensing device to the control room/spaces.

**Electrical**

- 31. 3 Phase Power Control Room/Spaces - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/spaces, as shown on the O&S Confirmation of Power Supply form.
- 32. Provide a dedicated 125 volt, 15 ampere three-phase branch circuit with a fused disconnect switch or circuit breaker, capable of being locked in the open position. This branch circuit supplies the car lights, car top receptacle, auxiliary lighting power source, and communication system. This branch circuit shall be provided with a 20 amp, 125 volt, 15 ampere circuit breaker.

**MCR, Machine Spaces, Trench/Manholes**

- 13. Install permanent light fixture in each elevator pit with illumination of not less than 100 lx (10 fc) as measured at the pit floor level.
- 14. Glass used in hoistway construction must meet 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.
- 15. If an emergency door in a blind hoistway is required, provide an outward-opening single section type door with door closer and a self-closing device per ASME A17.1-2007, section 2.11.1.2. Contact your local O&S personnel for a detailed drawing (M089930001) showing O&S specific requirements.

The following items must be performed or provided as required by OSHA 1910.119 by the Owner or General Contractor (GC) before the start of the building process. The following items must be provided as required by OSHA 1910.119 by the Owner or General Contractor (GC) before the start of the building process.

- 19. Provide a means control room (MCR) with controls and ventilation in accordance with applicable code and standards. The MCR shall be located in an area with sufficient clearance around the MCR to permit access by two persons. The MCR shall be protected by a 1 1/2" fire-rated door. The MCR shall be equipped with a fire alarm pull station, a fire alarm control panel (FACP), and a fire alarm control unit (FACU).

- 22. Maintain the temperature at the top of the hoistway (machine spaces) between 32° F (0° C) and 104° F (40° C), as measured at the head of the standing surface on the car when the elevator is at the top landing. Light switch is to be located within 18" (157 mm) to the left-into side of the access door to the control room level.
- 23. Contact your local sales representative for assistance.

**Fire Protection**

- 24. Provide hallway fire doors, rail bracket fire doors, and any other penetration into the hoistway walls.
- 25. In the United States provide smoke detectors, located as required, with wiring from the sensing device to the control room/spaces.

**Electrical**

- 31. 3 Phase Power Control Room/Spaces - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/spaces, as shown on the O&S Confirmation of Power Supply form.
- 32. Provide a dedicated 125 volt, 15 ampere three-phase branch circuit with a fused disconnect switch or circuit breaker, capable of being locked in the open position. This branch circuit supplies the car lights, car top receptacle, auxiliary lighting power source, and communication system. This branch circuit shall be provided with a 20 amp, 125 volt, 15 ampere circuit breaker.

**MCR, Machine Spaces, Trench/Manholes**

- 13. Install permanent light fixture in each elevator pit with illumination of not less than 100 lx (10 fc) as measured at the pit floor level.
- 14. Glass used in hoistway construction must meet 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.
- 15. If an emergency door in a blind hoistway is required, provide an outward-opening single section type door with door closer and a self-closing device per ASME A17.1-2007, section 2.11.1.2. Contact your local O&S personnel for a detailed drawing (M089930001) showing O&S specific requirements.

**Hoistway & Pit Prep/Work**

- 4. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).
- 5. Provide on-site storage area for elevator equipment as follows: dry and enclosed, provide roll-off access to the site (see 2.0).

**Shaft Protection**

- 20. Provide illumination of control room/spaces of not less than 200 lux (19 fc) as measured at the control room level. Light switch is to be located within 18" (157 mm) to the left-into side of the access door to the control room level.
- 21. Provide control room/spaces with self-closing and self-latching doors with a group 2 locking device. In addition, ensure that all air gaps around the doors are sealed (ie. threshold, weather stripping, etc.).

**Fire Protection**

- 24. Provide hallway fire doors, rail bracket fire doors, and any other penetration into the hoistway walls.
- 25. In the United States provide smoke detectors, located as required, with wiring from the sensing device to the control room/spaces.

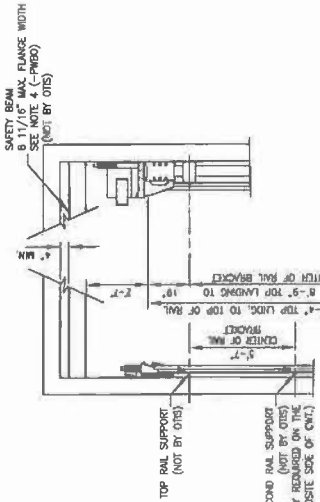
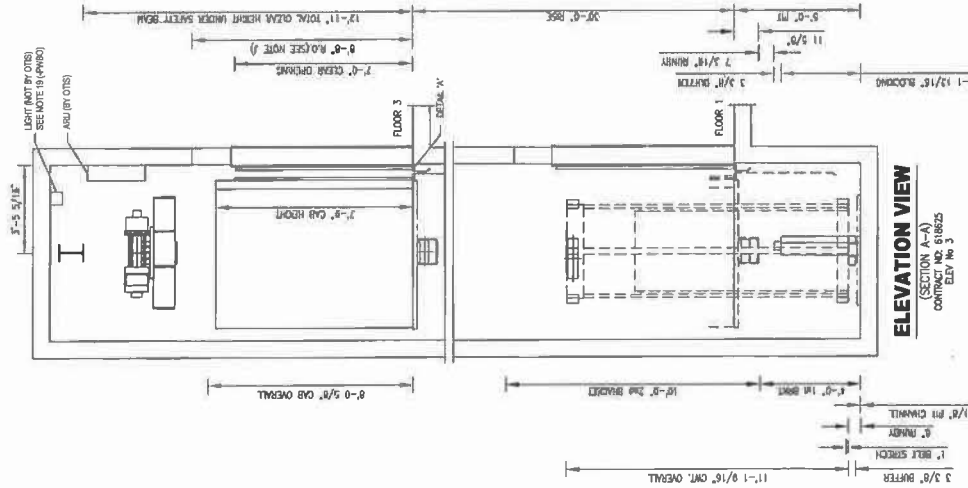
**Electrical**

- 31. 3 Phase Power Control Room/Spaces - Provide a permanent three (3) phase electrical-feeder system with a separate equipment-grounding conductor terminating in the control room/spaces, as shown on the O&S Confirmation of Power Supply form.
- 32. Provide a dedicated 125 volt, 15 ampere three-phase branch circuit with a fused disconnect switch or circuit breaker, capable of being locked in the open position. This branch circuit supplies the car lights, car top receptacle, auxiliary lighting power source, and communication system. This branch circuit shall be provided with a 20 amp, 125 volt, 15 ampere circuit breaker.

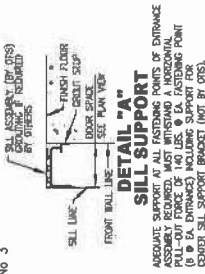
**MCR, Machine Spaces, Trench/Manholes**

- 13. Install permanent light fixture in each elevator pit with illumination of not less than 100 lx (10 fc) as measured at the pit floor level.
- 14. Glass used in hoistway construction must meet 98% or more of incident full-spectrum ultraviolet radiation for the full height of the hoistway.
- 15. If an emergency door in a blind hoistway is required, provide an outward-opening single section type door with door closer and a self-closing device per ASME A17.1-2007, section 2.11.1.2. Contact your local O&S personnel for a detailed drawing (M089930001) showing O&S specific requirements.

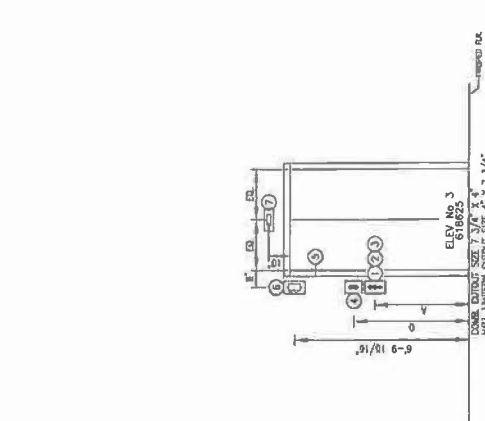
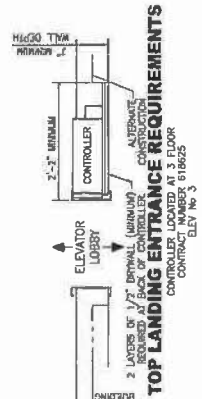
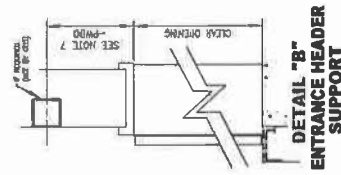
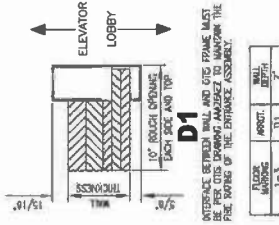
NOTE A  
HOSTWAY LIGHT SWITCH (LOCATED 3'-0" [914mm] ABOVE  
TOP LANDING) COORDINATE LOCATION WITH OTS.  
NOTE J  
ROUGH OPENING AT ALL FLOORS, EXCEPT TOP LANDING,  
EQUALS 7'-10". TOP LANDING EQUALS 8'-6".



**DETAIL "A"**  
SILL SUPPORT  
ABSOLUTE SILL SUPPORT IS REQUIRED OUTSIDE OF ENTRANCE ASSEMBLY REQUIRED. MUST WITHSTAND A HORIZONTAL PULL-OUT FORCE OF 100 LBS. @ 6" EXTENDING POINT CENTER SILL SUPPORT BRACKET (NOT BY OTS).



FINISH	FLOOR HEIGHT
1	14'-0"
2	15'-0"
3	15'-0"
TOTAL RISE	33'-0"
CONTRACT NO. 618625	



MAIN FIXTURE		PHONE FAILURE	
FLOORS	HEIGHT	HEIGHT	D
1	3'-5 1/8"	4"	4"
2	4"	4"	4"
3	4"	4"	4"
4	4"	4"	4"

PRELIMINARY LAYOUT  
G2S 4015

PROJECT INFORMATION		CLIENT INFORMATION	
TYPE WORK	MODEL G2S	BUILDING	BALLOU SENIOR HS
PROJECT #	00000000000000000000	LOCATION	3401 4TH ST SE WASHINGTON, DC 20032
OWNER	U.S. ARMY CORP. OF ENGINEERS	CONTRACTOR	U.S. ARMY CORP. OF ENGINEERS
DESIGNER	U.S. ARMY CORP. OF ENGINEERS	OWNER	U.S. ARMY CORP. OF ENGINEERS
DATE	08/20/13	ARCHITECT	BOWEN DROULEY ARCHITECTS
SCALE	AS SHOWN	DATE	9/9/2013
PROJECT NO.	00000000000000000000	DRAWN BY	DAVID R. PERRY
PROJECT NAME	BALLOU SENIOR HS	CHECKED BY	DAVID R. PERRY

DWG. NO. 618625-EL

NOTE - DO NOT SCALE THIS DRAWING REFER TO DWG. NO. 618625-PLAN

CONTRACT DATA

CONTRACT NUMBER: 618625  
 MACHINE TYPE: 5.0T  
 MOTOR TYPE: 500 HP  
 MOTOR VOLTAGE: 480V  
 MOTOR PHASES: 3  
 MOTOR SPEED: 1725 RPM  
 CAR CONSTRUCTION: STEEL  
 CAR COORDINATOR: [REDACTED]  
 CONTRACTOR: [REDACTED]  
 APPROVAL: [REDACTED]  
 APPROVAL DATE: [REDACTED]  
 APPROVAL SIGNATURE: [REDACTED]  
 CONTRACT VALUE: [REDACTED]  
 CONTRACT DATE: [REDACTED]  
 CONTRACT LOCATION: [REDACTED]  
 CONTRACT SCHEDULE: [REDACTED]

**HEIGHT OF CMT FILLER WEIGHTS**  
 CONTRACT NO. 618625

TOTAL PER WORKING PLATFORM AND HOI FOR PERMANENT CAR BUILD FROM HEIGHT FOR COMPLETE CAR RAIL CONNECTION TO MAIN FLOOR  
 1. 12" MINIMUM CLEARANCE FROM FLOOR TO BOTTOM OF RAIL  
 2. 12" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 3. 7" MINIMUM CLEARANCE FROM FLOOR TO TOP OF CMT FILLER WEIGHTS  
 4. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 5. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 6. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 7. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 8. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
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 11. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 12. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 13. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 14. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL  
 15. 3" MINIMUM CLEARANCE FROM FLOOR TO TOP OF RAIL



**RAIL FORCE DETAIL**  
 APPLICATION: SEISMIC  
 MAJOR BRACKET SPACING: 11'-0" ON CENTER

NOTES:  
 R1 & R2: SAFETY APPLICATION LOADS NORMAL RUNNING LOAD.  
 W: W & V ARE SEISMIC RAIL FORCES AT ALLOWABLE STRESS DESIGN (ASD) OR WOODING LEVEL.  
 W & V DO NOT OCCUR SIMULTANEOUSLY.  
 BUILDING RAIL SUPPORTS (NOT BY THIS) SHALL BE DESIGNED TO SUPPORT MAXIMUM ALLOWABLE FORCES WITH A MINIMUM NUMBER OF CONNECTIONS OF 1/8" (each).

**REPLACE NOTE 1**  
 TYPICAL TIP OF CAR REDUCE SPACE 5.4 SQ. FT. WITH NO SIZE LESS THAN 2'-0" AND HEIGHT NO LESS THAN 3'-0".

**REPLACE NOTE 2**  
 TYPICAL TIP REDUCE SPACE 2'-0" X 4'-0" X 0'-0" H.

DESCRIPTION	PART NUMBER	LENGTH	QTY PER CAR
CUT CUT RAIL	AAAS2000T00000	12'-0"	2
TOP CUT RAIL	AAAS2000T00000	18'-0"	2
BOTTOM CUT RAIL	AAAS2000B00000	18'-0"	2
TOP CUT RAIL	AAAS2000T00000	13'-6"	2
PULL BELT	AAAS2000P00000	16'-0"	2
BOTTOM CUT RAIL	AAAS2000B00000	18'-0"	2

**PRELIMINARY LAYOUT**  
**G2S 4015**



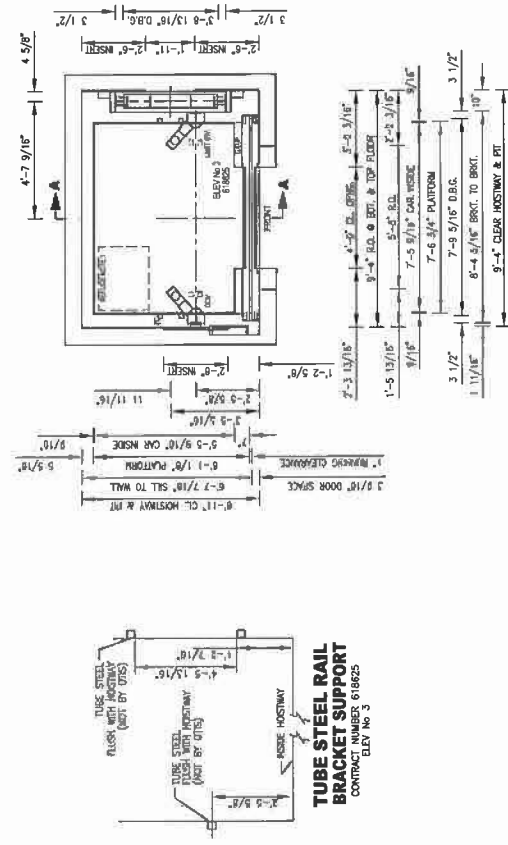
NYC MCH - MODEL G2S

CONTRACT #	DATE	BY	REVISION
618625	12/12/18	ASB	1

BUILDING: BALLOU SENIOR HS  
 LOCATION: 3401 4th ST SE  
 WASHINGTON, DC 20032

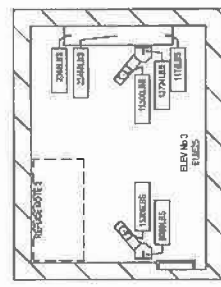
OWNER: HESS CONSTRUCTION  
 OWNER: DEPARTMENT OF GENERAL SERVICES  
 ARCHITECT: BOONE CREDLEY ARCHITECTS  
 DATE: 08/27/18  
 PROJECT NO.: 618625  
 DRAWN BY: K. FELTY  
 CHECKED BY: [REDACTED]

**DWG. NO. 618625-PN**



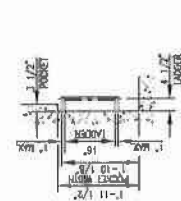
**PLAN VIEW**

(FORCES SHOWN ARE DOUBLED FOR IMPACT)  
 (RAIL FORCES AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY)



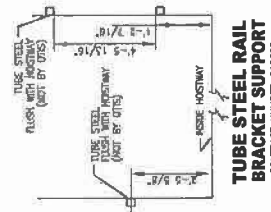
**PIT PLAN VIEW**

(FORCES SHOWN ARE DOUBLED FOR IMPACT)  
 (RAIL FORCES AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY)



**LADDER AND POCKET DETAIL**

(FORCES SHOWN ARE DOUBLED FOR IMPACT)  
 (RAIL FORCES AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY)



**TUBE STEEL RAIL BRACKET SUPPORT**

(FORCES SHOWN ARE DOUBLED FOR IMPACT)  
 (RAIL FORCES AND BUFFER FORCES DO NOT OCCUR SIMULTANEOUSLY)

REFER TO DWG. NO. 618625-PRG01 - IT



### MECHANICAL EQUIPMENT LISTS

**MECHANICAL EQUIPMENT LISTS**

1. SWIMMING POOL
2. FILTER ROOM
3. PUMP ROOM
4. CHLORINATION ROOM
5. ELECTRICAL CONTROL ROOM
6. STORAGE ROOM
7. ENTRY
8. MECHANICAL ROOM
9. MECHANICAL EQUIPMENT
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20. MECHANICAL EQUIPMENT

### SPRING COLOR SCHEDULE

(INDICATED IN PLAN)

NO.	DESCRIPTION	COLOR
1	PIPE (EXCEPT DRAIN)	PURPLE
2	PIPE (DRAIN)	GREEN
3	VALVE	RED
4	FLEXIBLE CONNECT	RED
5	CONDENSATE RETURN	YELLOW
6	EXHAUST	YELLOW
7	VENT	YELLOW
8	PLUMBING	YELLOW

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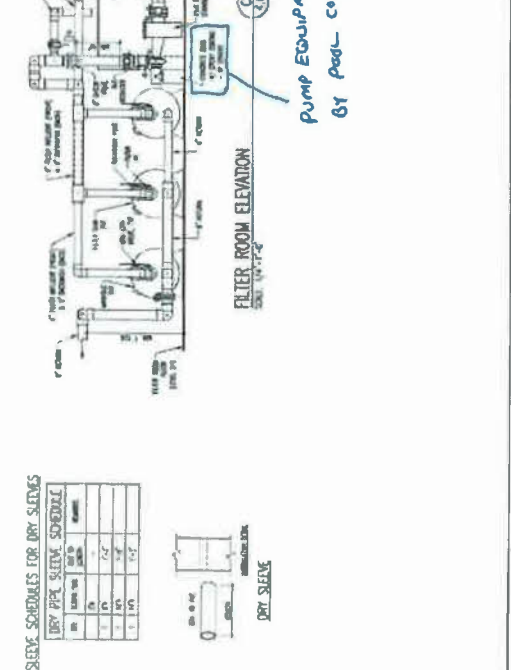
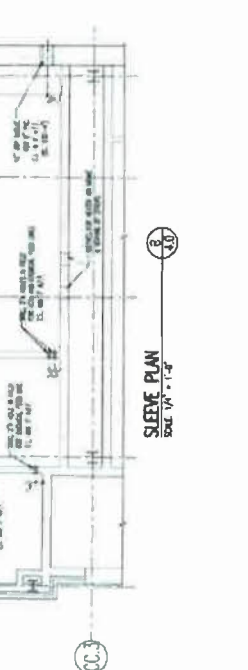
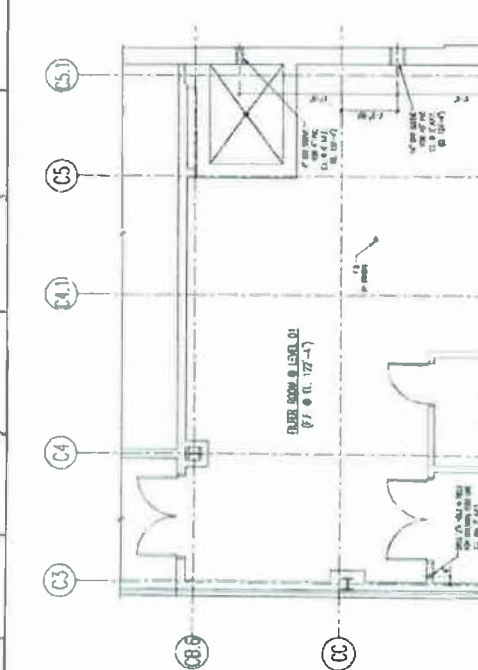
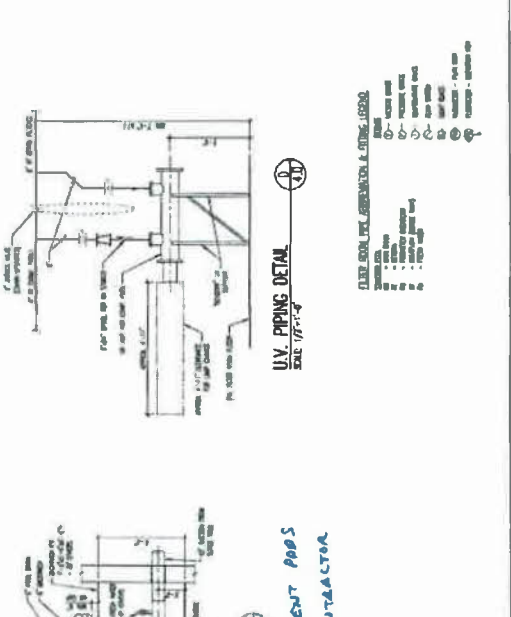
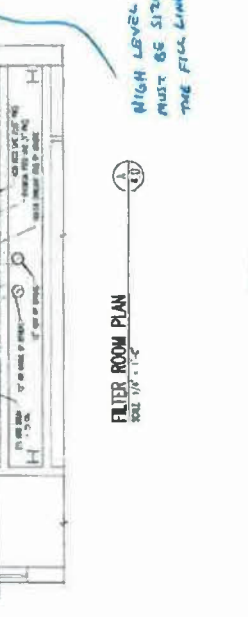
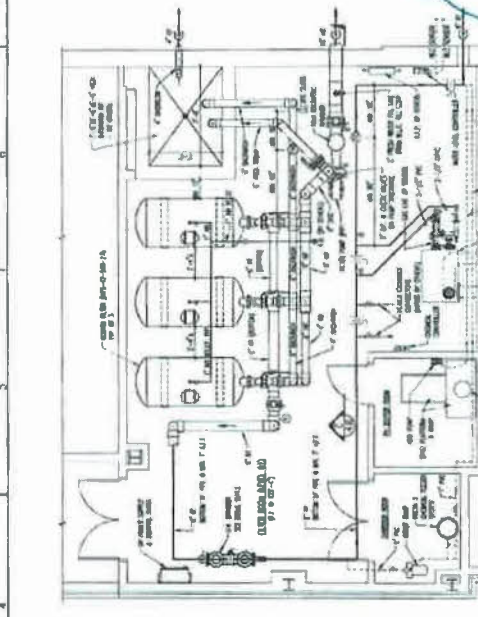
**NEW SWIMMING POOL  
BALLOU HIGH SCHOOL  
WASHINGTON, D.C. 20008**

**PADDOCK**  
ENGINEERING ARCHITECTS

401 4TH STREET, SE  
WASHINGTON, D.C. 20003  
PHONE: 555-1234

DATE: 05/15/88

PROJECT: NEW SWIMMING POOL, BALLOU HIGH SCHOOL



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