

RESOLUTION No.

Authorizing Amendment to the Approved Master Plan and Schematic Design of Roosevelt High School to Include Makerspace and Authorizing use of 2012 Capital Bond Program Funds for this Effort

RECITALS

- A. Board of Education (“Board”) Resolution No. 4852 authorized the Roosevelt High School (“RHS”) Full Modernization Master Plan as part of the 2012 Capital Bond Program.
- B. Board Resolution No. 4936 approved the RHS Schematic Design, the commitment of additional funds, and initiating the Design Development phase of work.
- C. Board Resolution No. 4871 adopted District Education Specifications (“Ed Specs”) for Comprehensive High Schools.
- D. The Board acknowledges the extensive community engagement and public input that developed the PPS Education Facilities Vision, and preferred RHS Master Plan and Schematic Design.
- E. The Board seeks to expand available Science, Technology, Engineering and Math (“STEM”) as well as hands-on Career Technical Education (“CTE”) work spaces for the full modernization of RHS, which has entered its construction phase. These spaces are currently identified in the adopted Ed Specs as Career Preparation/CTE program areas.
- F. The Board seeks to include up 10,000 additional square feet of Makerspace. The first floor will house two new state-approved CTE programs of study- Manufacturing and Aviation/Transportation in partnership with local industry. A program run by a third party will be available to community members in the evenings. The upper floor will be a modern makerspace open to the whole district as a PPS makerspace HUB that will hold priority for Roosevelt students.
- G. Staff estimates the cost of this makerspace to be \$4.5 Million (at the high end) which does not include furniture, fixtures and equipment.

RESOLUTION

1. The Board authorizes staff to amend the approved master plan and schematic design of Roosevelt high school and to proceed with design and build of an up to 10,000 square foot makerspace on the Roosevelt Campus.
2. The Board authorizes use of up to \$5 million from 2012 Capital Bond to fund this work effort. The following three sources of funding have been identified for the Roosevelt makerspace:
 - a. Roosevelt contingency, if available once construction of Schematic Design approved in Board Resolution No. 4936 is complete
 - b. If there are not enough funds available in the Roosevelt contingency, the Board authorizes use of the bond premium to fund the makerspace.

T. Koehler



Board of Education Informational Report Capital Bond Committee

MEMORANDUM

Date:

To: Board of Education Capital Bond Committee

From: C.J. Sylvester, Chief of School Modernization
Michelle Platter, RHS Capital Project Director
Sarah Oaks, RHS Capital Project Coordinator

Subject: Roosevelt High School Auto Shop Retention Evaluation

EXECUTIVE SUMMARY

On August 4, 2015, the Portland Public Schools Board of Education unanimously approved Resolution No. 5131 directing staff to:

“...identify the nature and extent of improvements to the 1970 Shop Building and its relationship to other site elements that can be accomplished for \$2 million, not including furniture, fixtures and equipment, and to report back to the School Improvement Bond Committee. This information shall be provided in the context of the Shop Building’s intended future use as expanded STEM and hands-on CTE work spaces...”

To complete this report, Office of School Modernization (OSM) staff consulted with Bassetti Architects and Lease Crutcher Lewis¹. Together, comprising the Design and Construction Teams, these consultants have significant expertise on the condition of Roosevelt’s existing structures and authority on industry pricing for achieving the necessary building improvements. Their assessments are included as follows:

- Appendix I: 1970 Auto Shop Due Diligence Report – Bassetti Architects
- Appendix II: Qualifications & Assumptions Budget Assessment – Lease Crutcher Lewis

This Staff Memorandum summarizes their assessments and responds to the following directives understood from the Board approved resolution:

- I. Determine achievable outcomes for \$2 million additional investment

¹ Costs incurred to date \$56,400

- II. Evaluate feasibility of reusing the Roosevelt Auto Shop building for the purpose of STEM and hands-on CTE work space

For the Board of Education's benefit in evaluating the investment of additional funding to support the proposed project, this Memorandum also outlines:

- III. Additional financial and program costs requiring consideration to secure the success and sound investment in a STEM and hands-on CTE space at the Roosevelt Auto Shop building
- IV. Funding availability and limitations on 2012 Capital Bond Program monies
- V. Required timeline considerations to maintain the Roosevelt Modernization project schedule

History & Background

Resolution No. 5131 was realized due to interest in preserving the Roosevelt Auto Shop space and providing additional square footage for the emerging Roosevelt STEM and hands-on CTE programs.

In pursuit of this objective, several Board members met with Staff and others on July 20 and 30, 2015, and October 6, 2015, to review initial scenarios and costs for potential reuse.

This initial assessment outlined scenarios which, due to Board action on August 4, 2015, can now be quantified and understood in greater detail below.

Types of Improvements Assessed & Excluded

The Appendix I: 1970 Auto Shop Due Diligence Report details improvements falling within several categories.

- Code Requirements – Improvements necessitated by State and Local Code. While some items may have been deferrable or not mandated in other scenarios, these improvements have been triggered due to the scope of work occurring as part of the Roosevelt Modernization Project or are requirements to fulfill the proposed purpose of the renovated Shop.
- Required Repairs – While not required by Code, the Roosevelt Auto Shop does require a number of repairs to the building in order to correct existing deficiencies, improve the integrity of the structure for continued use, and connect it to systems at the Main School.
- Recommended Repairs – Includes preventative measures and adherence to PPS District Guidelines. While in some cases cost savings may be realized through substitutions or omissions, PPS Guidelines have been established to ensure that facilities are durable and

can be maintained without inordinate burden being put on the General Fund to sustain non-standard systems or materials.

While not outlined in Appendix I, the following items will require additional consideration and funding.

- Program Specific Improvements – Interior infrastructure for STEM/CTE classroom purposes such as a dust filtration ducting, additional outlets, and other upgrades which cannot be quantified at this time without additional specifications for Furniture, Fixtures, and Equipment (FF&E). FF&E is also not acknowledged by this report as directed by the Resolution.
- Additional Program Impacts – Examples include displacement of Roosevelt tennis courts, support for STEM/CTE curriculum development and delivery, and providing parity across 2012 bond-funded high schools. *(Outlined in Section III)*

I. WHAT CAN BE ACHIEVED FOR \$2 MILLION?

As detailed in Appendix II: Qualifications and Assumptions, and summarized below in Table 1: Roosevelt High School Auto Shop Retention Cost Evaluation, the \$2 Million proposed by the Board will fund only Code Required Improvements.

Securing final drawings, permits, and construction of the Code Required Scope of Work is projected to require \$2.07 Million.

Table 1: Roosevelt High School Auto Shop Retention Cost Evaluation* (incl. 10% Const. Contingency)

Scope of work (in order of requirement)	Estimated Cost	Budget = \$2.0M
Architecture & Engineering Services	\$ 360,000	
Permits, Approvals & System Development Charges	\$ 75,000	
Construction Estimate		
Integrate existing building to site - Total Estimate	\$ 83,000	
Code Required Improvements - Total Estimate	\$ 1,555,000	\$ 2,073,000
Required Repairs - Total Estimate	\$ 820,000	\$ 2,893,000
Recommended Repairs & Improvements - Total Estimate	\$ 1,109,000	\$ 4,002,000
GRAND TOTAL ESTIMATE	\$ 4,002,000	

*** This estimate includes costs to create a building shell suitable to support a STEM/Hands-on CTE program. It does not include costs to connect equipment to that shell, the equipment itself or any aesthetic improvements to align the look of the Auto Shop Building with the RHS Modernization Project Design.

II. COST TO CONVERT THE SHOP BUILDING INTO STEM / CTE

Recognizing the desire to retain the Roosevelt Auto Shop Building for the purpose of a STEM / hands-on CTE Space, this intent could be achieved through additional funding to the code

required \$2.07 Million. To make Code Required Improvements, Required Repairs, and Recommended Repairs as outlined above in Table 1, the estimated cost would be approximately \$4.0 Million.

Again, this cost is not inclusive of FF&E or interior infrastructure (such as dust filtration ducting) to support those fixtures that cannot be quantified given lack of program-specific information at this time.

As a comparison, due to the poor condition of the existing building and the extensive structural, electrical, and plumbing upgrades necessary, a new similar-sized facility, inclusive of modest interior infrastructure and FF&E could be constructed for the same \$4.0 Million.

III. ADDITIONAL PROGRAM COSTS & IMPACTS TO BE CONSIDERED

As Resolution No. 5131 acknowledged that *“renovation of the existing 1970 Shop Building ... [would require amendment of] the RHS Master Plan adopted in Resolution No. 4852,”* Staff must also acknowledge other potential impacts:

- Community Impacts:
 - Preserving the Auto Shop would be a departure from established community priorities identified during Master Planning and parameters that guided the Roosevelt Modernization public design process; additional public process meetings would be recommended to assess community response to a change in the program.
- School Operations and Management Impacts:
 - Additional FTE would be necessary to staff the Auto Shop building;
 - More security and supervision would be necessary for class transitions between the buildings—this was a preexisting issue made obsolete by the self-contained school design (existing approved plan);
 - Transition time from the Auto Shop to Main School entrance exceeds 5 minutes leaving students in the corridors during the initial minutes of class; transition time exceptions and additional hallway monitoring would be necessary.
- Tennis Program Impacts:
 - Roosevelt tennis participation has increased 20% in each of the last two years and currently draws more female athletes than male;
 - Relocating the tennis courts onsite in a standard competitive configuration is not possible without adversely impacting views of the historic facades and the Project SHPO agreement – an off-site location would appear more appropriate if the Auto Shop Building is retained;

- Off-site practice and play locations will require perpetual funding for court fees (currently estimated at \$11,000 per year) and transportation (cost not currently calculated).
- Impact to District & Peer Projects:
 - Adding additional project funding and 10,000 SF for CTE at Roosevelt would create budget and program inequities with the Franklin and Grant modernization projects.
- Design & Aesthetic Costs:
 - Exterior upgrades to blend the Auto Shop building into the overall project design aesthetic were not assessed in Appendices I & II or in this Memorandum: additional funding would be necessary to extend equal consideration to neighbors at N Smith and N Ida Streets as those on N Central and N Ida Streets.

IV. ACHIEVABILITY THROUGH 2012 CAPITAL BOND FUNDING

Funding rehabilitation of the Roosevelt Auto Shop Building with 2012 Capital dollars would require addressing the following questions:

- What are the available funds?
- What are the competing priorities for those funds?
- What is the risk of tapping into available funds at this current stage?

Available Funds

The only available funds are the \$10 million remaining in the Bond Program Reserve.

Competing 2012 Bond Program Priorities

As a result of major changes in construction market conditions and overall risk management, there are a number of issues and projects that could require financial support. They include:

- Unforeseen conditions during project construction phases
- Continued construction market escalation, specifically for IP '17, '18, and '19
- ADA projects at Lane, Ockley Green, Sunnyside, and Vestal
- Elevator projects at Arleta, Lane, Ockley Green, Sunnyside, and Vestal
- Supplementary funds for state seismic grant projects

Risk

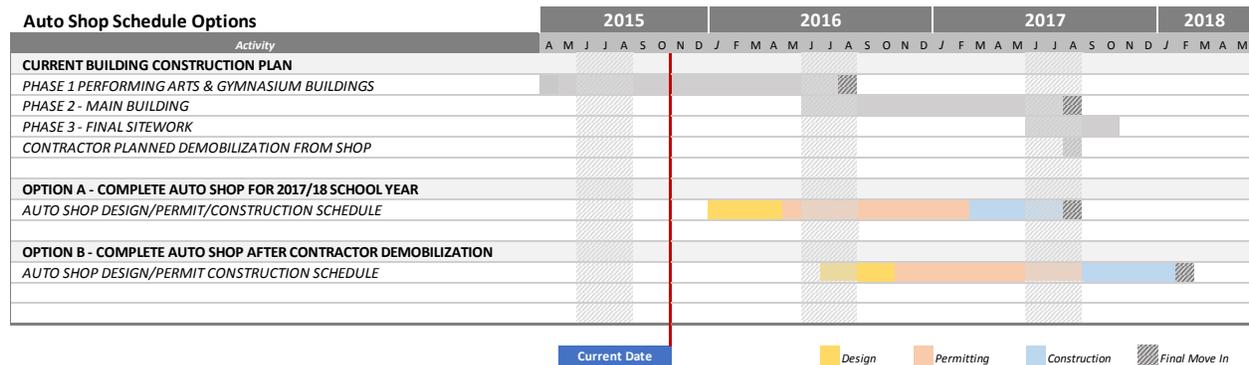
Portland Public Schools is presently three years into an eight-year program and has just entered major construction which will last an additional four years. Staff feel strongly that the \$10 million Bond Program Reserve should remain intact until after initial major construction efforts have been

completed at Grant High School (estimated 2018). Drawing down the reserve before all four (4) major construction projects have passed major milestones transfers significant risk to the General Fund.

V. SCHEDULE ADHERANCE AND IMPACTS

The Roosevelt Modernization Project is scheduled to complete all building construction in time for the start of the 2017-2018 school year. Lease Crutcher Lewis is scheduled to conduct all project construction operations from the existing Auto Shop. Appendix II: Qualifications & Assumptions anticipates extension of the Project Construction Schedule by 3 months to finish the Auto Shop, making it operational by February 2018 (*reference Option B below*). All educational decisions, a full project program and direction to the architect would need to be provided prior to July 2016.

If the Auto Shop is retained and is expected to be completed by September 2017 (Option A), the Contractor will need to vacate the Auto Shop early, there will be additional costs associated with providing an alternative location for operations; and all program decisions must be completed by January 2016.



The current Project Construction Schedule achieves completion of the new Gymnasium Building and Performing Arts Building for occupancy September 2016. This schedule is achievable but strict. A decision on the Auto Shop will impact both building and site infrastructure relative to the current construction activities. To maintain the current schedule, site impacts to the current construction and revised concept drawings for utilities and infrastructure will need to be prepared to address the current work on site commencing no later than November 2015.

SUMMARY

To pursue renovation of the existing RHS 1970s Auto Shop, OSM Staff will require supplementary action and direction from the School Board in addition to amending Resolution No. 4852 Authorizing Roosevelt High School Full Modernization Master Plan.

- How will this prospective project be paid for? To what dollar amount (scope of work)?

- What curriculum is anticipated for the Auto Shop space and what equipment/interior infrastructure is required to support it?
- Is the 1970s Auto Shop Building, with its existing structural and functional challenges, the right facility to implement the concept?
- Will the Board approve an exception to the Education Specifications to eliminate the requirement for tennis courts at RHS and will General Funds be available to support continuation of an off-site tennis program?

With the Board's guidance, District Staff will take action to achieve the Board's existing and supplementary directives.

ATTACHMENTS

Appendix I: 1970 Auto Shop Due Diligence Report – Bassetti Architects

Appendix II: Qualifications & Assumptions Budget Assessment – Lease Crutcher Lewis

Appendix III: Roosevelt High School Auto Shop Retention Cost Evaluation Expanded Summary – Portland Public Schools

Portland Public Schools Roosevelt High School Modernization

Board Report
1970 Auto Shop Due Diligence
October 2015



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Appendix

App.1	1970 Auto Shop Hazardous Materials Report
App.2	Site Grading, Stormwater and Access Studies
App.3	Structural Concept Plan

Section 1.0 Introduction

1.1 Scope

On August 4, 2015, the PPS Board of Education approved resolution 5131 authorizing analysis to understand the existing conditions viability of converting the Auto Shop building into additional STEM and CTE space. Site observations of building structure and systems have taken place during the month of September 2015.

Based on these observations, the recommendations in the report have been prioritized as follows:

Required Integration

Design components that would need to be revised to integrate with the full Modernization project:

- Site grading and changes to Stormwater Management Facilities
- Accessible pedestrian connection to main school and public way
- Integration of site and building utilities to existing facilities
- Exterior lighting for safety and security

Code Required Improvements

Parts of the building that are required to be improved to meet minimum code requirements as prescribed by the relevant code:

- Fire Alarm and Security system upgrades
- Seismic Upgrade
- Asbestos Abatement
- Upgrade and expand fire sprinkler system
- Replace Doors and windows as needed for accessibility and safety
- Reconfigure bathrooms for ADA and occupancy compliance
- Covered trash enclosure(s)
- Green Energy Technology

Required Repairs

Deficiencies in the building that require repair due to deferred maintenance, damage, or age, but are not required by code to be replaced at the onset. When repaired, the upgraded system(s) would be required to meet current codes and PPS guidelines:

- Reroofing
- Repair of water intrusion damage
- Replacement of outdated and/or damaged Mechanical, Electrical and Plumbing system components
- Exterior Pavement

Recommended Repairs

Upgrades that are neither code requirements, nor required repairs. These upgrades would respond to requirements in the PPS Guidelines, and better support the proposed program:

- Exterior Building Insulation
- New HVAC system
- New above grade plumbing system
- Emergency Generator
- Interior lighting upgrades
- Program specific infrastructure

Per the language of the resolution, this report does not include studies of architectural improvements to the exterior design and aesthetic appeal of the building that would allow it to integrate more comprehensively into the balance of the Roosevelt High School Modernization Project. The report also does not explore program specific improvements to facilitate a CTE/STEM/Maker Space Program beyond the current configuration of the current Auto Shop building.

1.2 Building History

The auto shop building was originally constructed in 1970. It is a single story structure consisting of approximately 11,000 gross square feet. The ground floor is a concrete slab-on-grade and the roof is framed with glulam girders, solid sawn wood beams, and 2x T&G wood decking with a plywood overlay. The roof is supported by a combination of CMU bearing walls and wood bearing walls.

The facility originally housed the woodshop and welding programs. In 1994, the welding shop was converted to an Auto Shop. The structure was most recently used as a clothing storage facility for the community clothes closet program and as general storage for the school. With the mobilization of the contractor on-site in 2015 for the Roosevelt High School Modernization Project, the shop was converted into a field office to facilitate construction activities. This included installation of office partitions and general furnishings.

The existing auto shop is slated for demolition in the final design, with proposed tennis courts and stormwater management facilities within the footprint of the existing auto shop.

1.3 Prevailing Codes

The Roosevelt Modernization Project is under the jurisdiction of the City of Portland and State of Oregon, which prescribe the following codes:

Building: 2014 Oregon Structural Specialty Code (OSSC)

Energy: 2014 Oregon Energy Efficiency Specialty Code (OEESC)

Fire: 2007 Portland Fire Code (OFC)

Mechanical: 2014 Oregon Mechanical Specialty Code (OMSC)

Electrical: 2014 Oregon Electrical Specialty Code (OESC)

Plumbing: 2014 Oregon Plumbing Specialty Code (OPSC)

In addition, the project must comply with all Federal regulations, such as the 2010 Americans with Disabilities Act (ADA) Standards.

If the Auto Shop were to remain, it would need to be reviewed, approved and permitted by the Portland Bureau of Development Services (BDS), using Chapter 34 of the 2014 OSSC, which prescribes requirements for Existing Buildings, under the alterations category (Section 3404 and 3411). In addition, the Building Permit, Conditional Land Use Permit, and Public Works Permit for the full Modernization project would need to be redesigned and resubmitted to BDS as revisions to the approved permits.

If the Auto Shop building were to remain it would be required to be fully integrated into the site design with accessible access. Due to the age and condition of the building, it would also require upgrades for connection to the new data, fire alarm and notification systems of the main building, be fully sprinklered to meet NFPA 13, undergo hazardous material abatement, and undergo required repairs to provide a safe watertight structure for use as an E occupancy. Chapter 34, Section 3411 also prescribes that alterations to existing buildings requires a minimum 25% upgrade to the accessible route of the primary function, including toilet facilities. Due to the repairs and updates required, it is anticipated that a 5-10% increase in structural loading could trigger the need for a seismic upgrade to the building, as prescribed in Sections 3404.3 and 3404.4. More detailed structural load calculations would be required to determine the extent of structural upgrades needed when the final design criteria and program requirements are more fully defined.

1.4 State Historical Preservation Office (SHPO)

It has been noted to SHPO that if the Auto Shop were to be retained, then either an alternate location for the tennis courts would be required or the program would need to be moved off-site. In either case, if a revision is made to the project it should be reviewed by SHPO to maintain the intent of the agreement between SHPO and PPS.

With regard to finding an alternate location on-site for the tennis courts, the only areas available that are of large enough size and not within a building footprint are the baseball/softball field and historic front lawn. SHPO's response to the use of the front lawn was that they would strongly discourage using this location. Removing obstructions to enhance the views to the 1921 Building and 1930 Auditorium was a primary rationale for mitigating the extensive renovations to these historic structures to meet educational program needs, as outlined in the submitted application and garnered through local community input.

Section 2.0 Architecture – Exterior Envelope

2.1 Existing Conditions

On September 17, 2015, Bassetti Architects performed a visual inspection of the 1970 Shop building envelope. In summary, the physical state of the Shop building's exterior envelope is in poor condition. It is evident maintenance has been deferred and many of the building systems are in need of replacement or upgrade. The biggest issue observed is water infiltration. Subsequently, portions of the structure have been damaged. The inspection of the envelope was purely visual. Additional investigation to understand the extent of water damage would require destructive demolition and is recommended if the project moves forward.

A. Physical Assessment

- 1) The exterior walls vary in condition depending on material. The brick veneer walls appear to be in good shape with no sign of cracking at the exterior although cracking was visible at the interior side of the walls. Cracking was localized and occurs mid-span of structural bays; refer to structural recommendations for additional information. Some limited damage to CMU block occurred at corners of the building. Efflorescence was witnessed along the brick portion of the south wall indicating water infiltration has occurred.
- 2) Majority of the wood siding showed signs of rot and warping indicating problems with water infiltration.
- 3) Aluminum framed single pane clerestory windows are at the end of their life and do not meet current energy codes. Standing seam metal panels located along clerestory at the roof are showing signs of aging.
- 4) The roof is a built-up modified bitumen system directly adhered to the roof structure with no insulation above or below structure. The roof appears to be original from the 1970 construction and further investigation of archived documentation indicates it was never replaced. The overall condition is poor. The roofing system has gatored throughout and failed in several places, resulting in water damage to the roof structure below. The sheet metal flashing shows signs of corrosion. It was observed the modified bitumen roofing material has cracked at the intersection of the perimeter flashing allowing water to migrate into the building. The main problem areas are located above the welding exhaust and adjacent to the three large downspouts. Wood rot is visible at the exposed roof decking. The deterioration of the roof and structure below in this area has allowed water to penetrate the building causing further damage to the interior finishes.
- 5) An exposed tube steel rain leader, located on the northeast corner of the building, does not function as intended. Water was observed leaking from the conductor head and at the top and bottom connections of the downspout during a rain storm.

The scupper is not sealed at wall penetration. Water infiltration is extensive. Further investigation is required to determine extent of water damage.

- 6) Overhead doors and man doors show signs of heavy use along with wear and tear. Several exit doors have wire glazing relites which is no longer allowed by code.

B. Code Requirements

Per the OSSC 2014 Code, the Shop building is classified as an E occupancy with a construction type of V-A. Table 503, Group E, Type V-A allows a one story structure not to exceed 18,500 sq ft. The Shop is a 10,500 square foot one story structure and is therefore under the allowable limits and meets the code criteria.

- 1) Exterior, interior and non-bearing walls are required to have a 1-hour fire resistive rating. Roof structure and associated secondary members are not required to be rated under Table 601, Exception B since the building is classified as an E occupancy.
- 2) Means of egress upgrades to the exterior involve providing accessible pathways from two exit discharge doors to the public way.
- 3) Southeast exit door is currently fixed shut. This door needs to be functional so the building meets the required number of exits based on occupant load for the space's intended use.
- 4) Current thresholds at egress doors exceed the ½" maximum in level change per OSSC 2014, 1008.1.7.
- 5) Unknowns – Current program does not identify requirements for potential use of chemicals such as welding, making bio-fuel gas fired kilns so this report does not address code requirements of these instances. If future programs utilize chemicals, additional review will need to occur in order to determine if facility meets code requirements.

C. PPS Guidelines

Relevant sections of PPS Design Guidelines dated July 1, 2014 are referenced below under recommendations involving upgrading the current building to meet minimum District requirements for new and renovated facilities.

2.2 Exterior Envelope Alterations

A. Code Required Improvements

- 1) Upgrade all exterior doors to meet OSSC 2014, Chapter 11 requirements.
- 2) Install two accessible walkways from exit doors to public right of way. Grade pathways to meet 1" per 20'-0" slope requirement.

B. Required Repairs

- 1) Clean and seal brick veneer and CMU block to prevent water infiltration and further degradation.
- 2) Replace degrading wood siding. Further investigation is needed to determine extent of water damage within wall cavity along the south side of building. Per PPS Guidelines, acceptable siding would be painted fiber cement (Hardie or Certainteed), monolithic factory colored fiber cement.
- 3) Replace storefront system with double pane insulated tempered glazing. In addition, remove any wire glass in building. Wire glass is no longer allowed by code.
- 4) Replace deteriorating standing seam metal panels and all sheet metal flashings as part of reroofing work.
- 5) Replace modified bitumen roofing to address multiple water intrusion issues. This would include inspecting the wood decking and replacing areas of water damage and rot.
- 6) Upgrade roof insulation, requiring up to 7" of rigid insulation to meet minimum R-values. Added thickness of insulation will require increasing the height of the perimeter parapet by approx. 6". Also, per PPS Guidelines, when reroofing, add overflow drains or scuppers if they do not already exist and provide fall protection at all roofs per OSHA regulations.
- 7) Replace all existing exterior overhead doors and man doors.
- 8) Clean and paint corroded exterior metal grate structure at sawdust collector.
- 9) Refer to Electrical section for related work to the exterior lighting system.
- 10) Refer to Plumbing section for related work to the exterior storm drain system.
- 11) Refer to Mechanical section for related work to the HVAC and ventilation systems.

C. Recommended Repairs

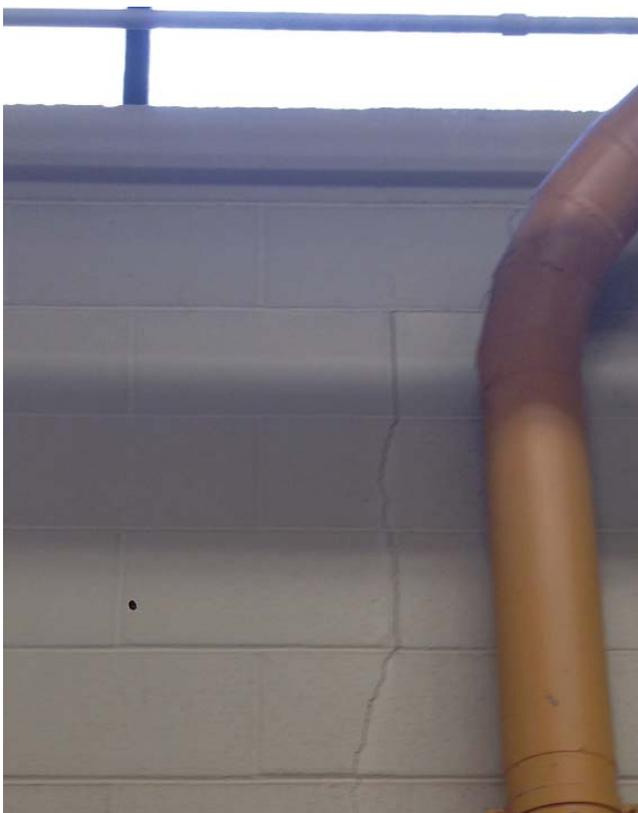
- 1) Corner guards are recommended to be installed at corners of exposed masonry walls to prevent damage from vehicular traffic typical with loading activities for these types of spaces.
- 2) Remove shipping container.
- 3) Provide exterior wall insulation and ventilated air cavity to meet current energy codes, as prescribed in PPS Guidelines for renovation projects.



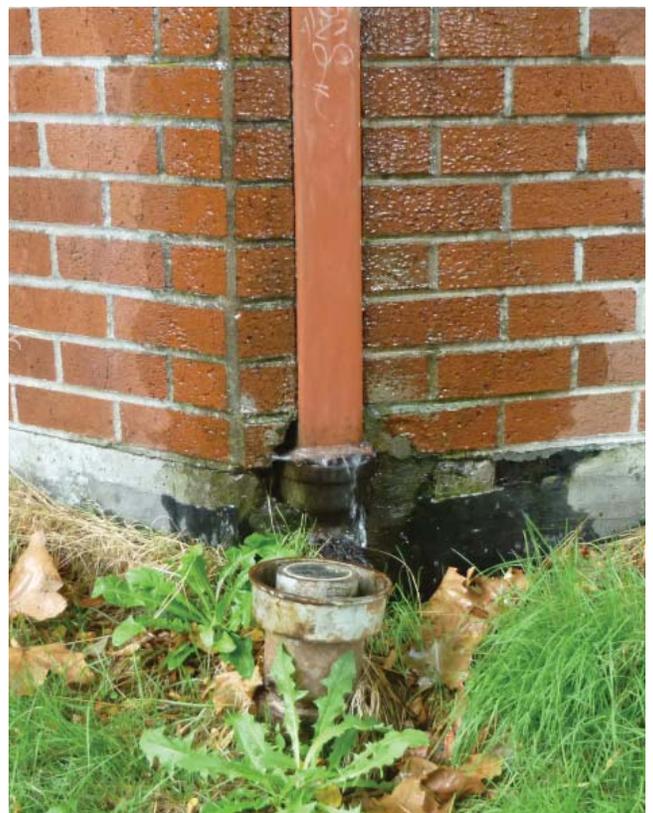
Efflorescence at brick veneer wall, typ.



Unsealed wall penetration and water overflow at conductor head



Cracking at interior side of exterior wall,typ.



Downspout to stormwater connection



Deterioration at wood siding



Flashing failure at window to metal panel siding and top of brick wall



Clerestory aluminum window system



Flashing at intersection of metal panel to top of wall



Metal panel to aluminum window and top of wall intersection

Roosevelt High School
1970 Auto Shop Due Diligence Report



Typical roof condition



Metal roofing at clerestory areas



Gatoring at roof surface



Overflow at roof edge



Internal roof drain



Edge of roof flashing



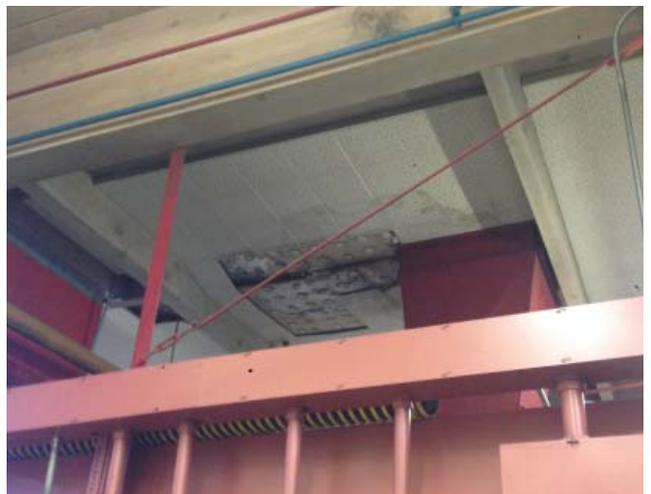
Roof deck deterioration at drainpipe



Water infiltration at interior



Deterioration at roof structure



Ceiling failure due to water infiltration

Roosevelt High School
1970 Auto Shop Due Diligence Report



Exterior light fixture



Painted metal grate enclosure at sawdust collector



Exterior hollow metal door with wire glazing



Exit door egresses directly to gravel pathway



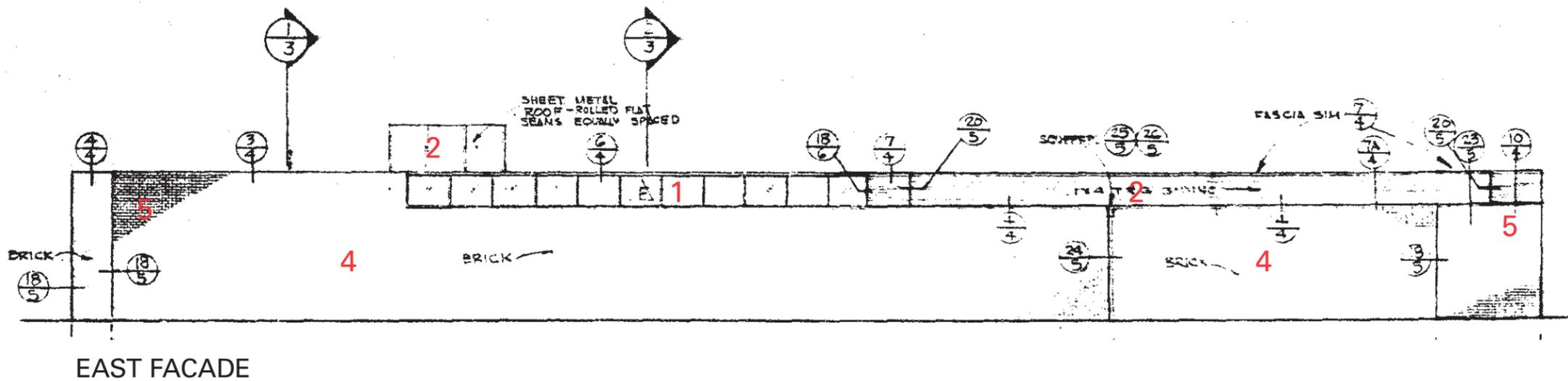
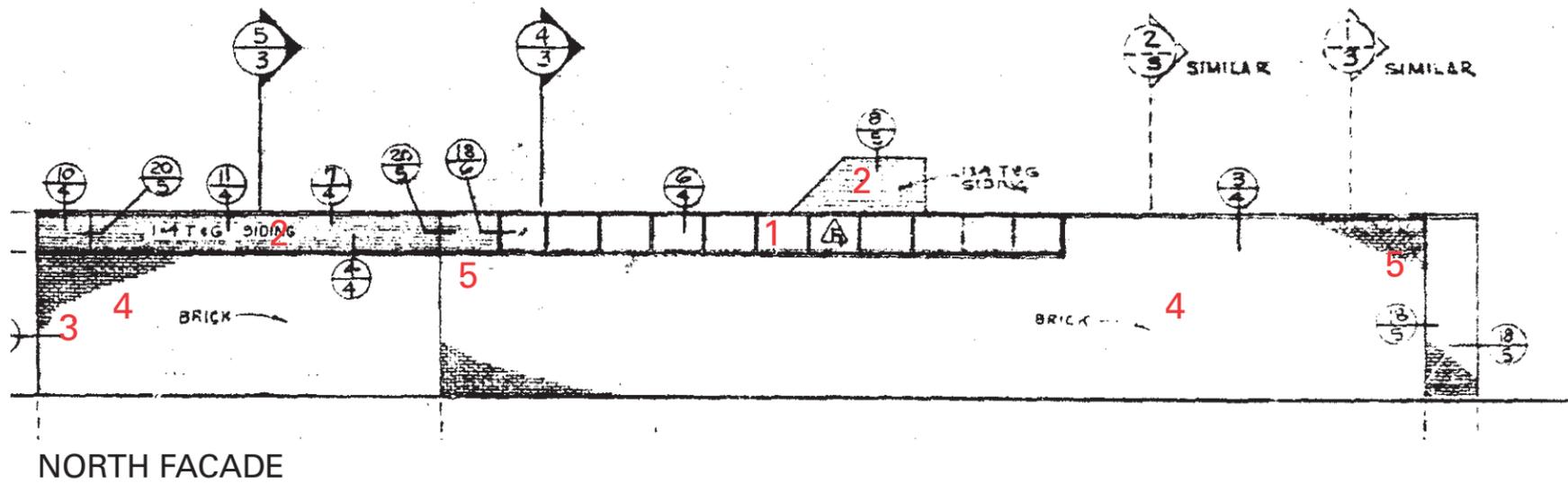
Exit door egress to lawn

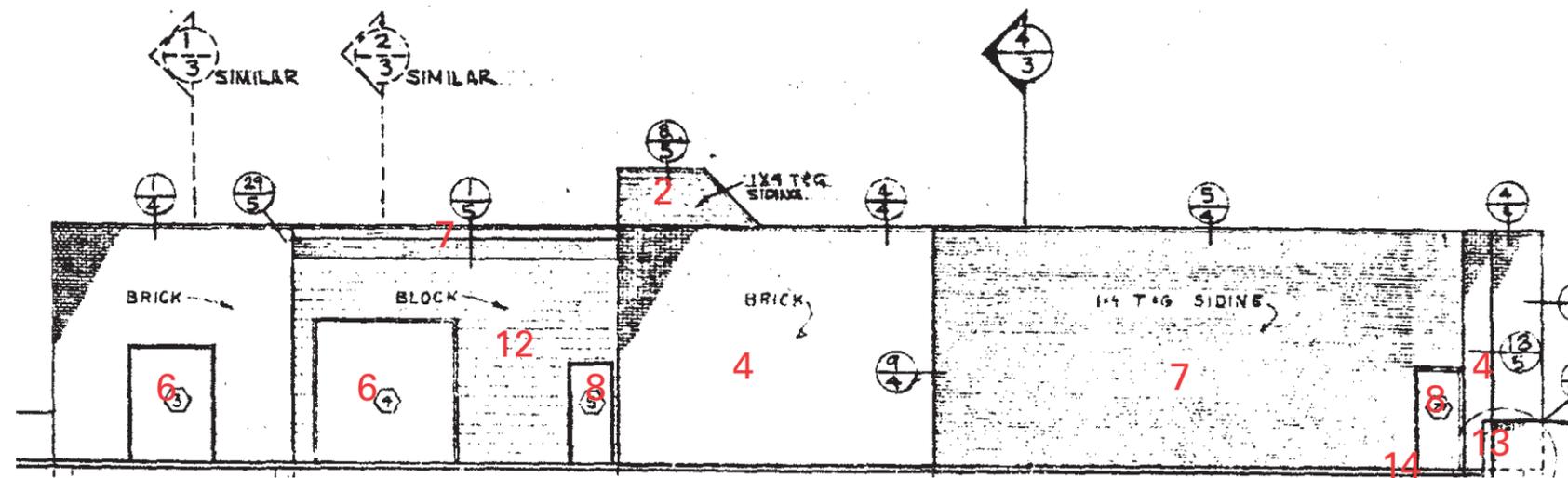


Overhead door, typical

KEYNOTES

1. REPLACE WINDOW SYSTEM
2. REPLACE STANDING SEAM METAL PANEL
3. REPAIR TUBE STEEL LEADER
4. CLEAN AND SEAL BRICK VENEER
5. CLEAN AND REPAIR LIGHT FIXTURE

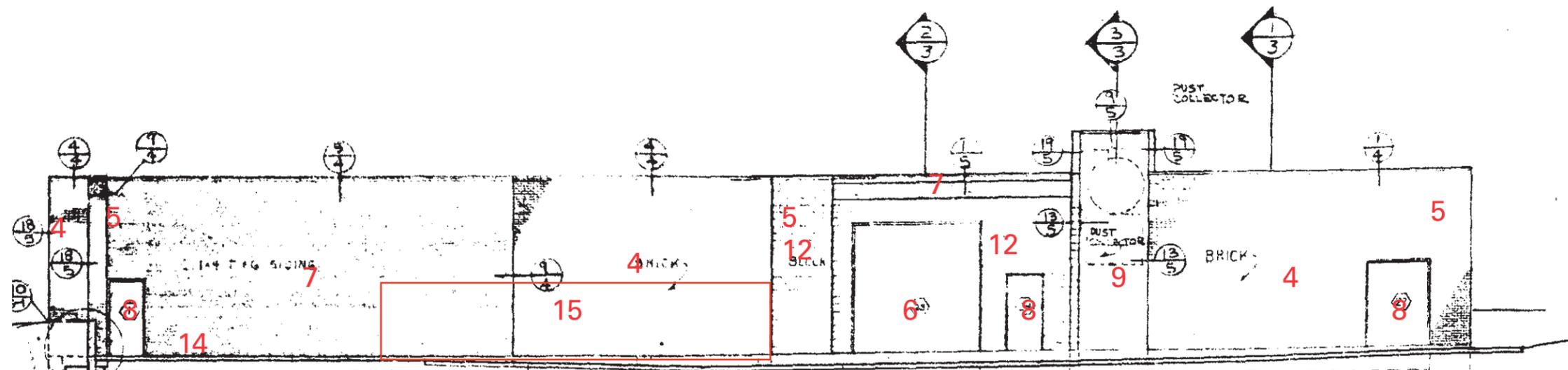




SOUTH FAÇADE

KEYNOTES

1. REPLACE WINDOW SYSTEM
2. REPLACE STANDING SEAM METAL PANEL
3. REPAIR TUBE STEEL LEADER
4. CLEAN AND SEAL BRICK VENEER
5. CLEAN AND REPAIR LIGHT FIXTURE
6. REPLACE OVERHEAD DOOR
7. REPLACE WOOD SIDING
8. REPLACE MANDOOR(S)
9. CLEAN AND PAINT METAL GRATE STRUCTURE
10. REPLACE PARAPET FLASHING
11. REPAIR EXPOSED ROOF DECK
12. CLEAN AND PAINT CMU
13. REPAIR CONCRETE BASE
14. PROVIDE CONCRETE SIDEWALK TO PUBLIC WAY
15. REMOVE SHIPPING CONTAINER



WEST FAÇADE

Section 3.0 Architecture - Interior

3.1 Interior Assessment

On September 17, 2015 and September 24, 2015, Bassetti Architects performed a visual inspection of the 1970 Shop building interior. In summary, the physical state of the Shop building's interior is in fair condition. Currently the space is being used by the contractor as a field office for the construction of the main modernization project. Thus, a number of new partitions and furnishings have been installed that would need to be removed if the space is to be used as a STEM Lab.

A. Existing Conditions

- 1) The original interior walls are all CMU, painted. Removal or reconfiguration of these walls would be difficult and would need to be assessed by the structural engineer for impact to the main gravity and lateral load bearing systems
- 2) Original shop spaces have had all equipment removed, except for a large exhaust hood in the original Auto Shop and dust collection ductwork in the original Wood Shop.
- 3) Floors are generally exposed concrete, except for mosaic tile in restrooms. Concrete floors are in fair condition, and tile floors in restrooms are in poor condition.
- 4) Ceilings are exposed Glulam and T&G decking with direct applied acoustical tiles. The decking and beams are generally in good condition, except where water intrusion has damaged from above. The acoustical tiles are in fair to poor condition, and are damaged in a few areas from water intrusion or have popped off the ceilings in areas, such as the classroom spaces. Per the HazMat Report, acoustical tiles contain asbestos and will be removed.
- 5) Perimeter walls are CMU block, with numerous areas of cracking and/or water damage (see photos at the end of this section)
- 6) Storage rooms have wood shelving (see photos)
- 7) Restrooms are in poor condition, with areas of peeling and cracking paint on walls and ceilings, damaged or missing toilet accessories, and fixtures in poor condition. The restrooms do not appear to have been maintained for a long time. The restrooms are configured with one single-use female toilet room, one men's toilet room with a stall and two urinals, and one staff toilet room. The number and configuration of fixtures do not meet code. (see photos)
- 8) Many interior and exterior doors do not meet 2010 ADA width and/or clearance requirements.
- 9) One of the required exterior exit doors from both the original Wood Shop and Auto Shop passes through an exterior carport parking area which is not allowed by code.

B. Code Required Improvements

- 1) Relocate or replace doors and walls that do not meet ADA clearance requirements. These are primarily located in the central restroom and corridor area.
- 2) Reconfigure the restrooms and corridor to accommodate ADA clearances and required number of plumbing fixtures to meet current code. This requires extension of all utilities, and all new finishes and toilet accessories.
- 3) Delineate egress paths from exterior doors that travel through exterior carports so no parking would block these pathways. This would include painting stripes on the pavement and installing concrete filled bollards at 4'-0" on center. This may require an appeal with code officials.

C. Required Repairs

- 1) Provide new acoustical ceiling panels where asbestos containing tiles are removed. 1.5" thick foam panels, similar to those specified in the main project would be used. This is required as a LEED prerequisite.
- 2) Patch and repair water damaged walls and ceilings.
- 3) Refer to Structural, Mechanical, Electrical and Fire sections for related requirements.

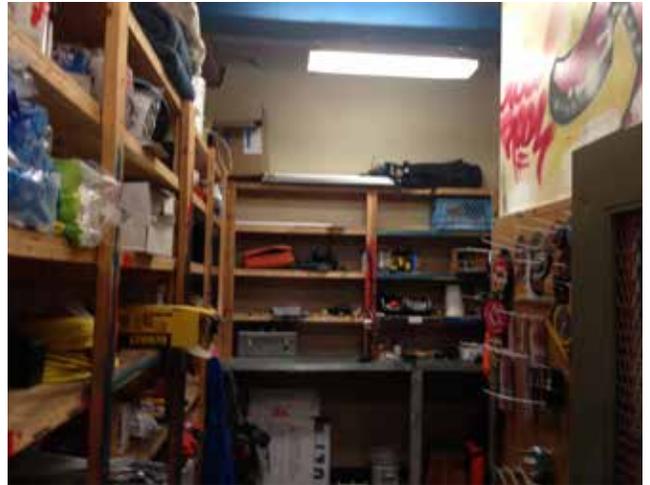
D. Recommended Repairs

- 1) Upgrade systems and equipment to meet program requirements. This would include providing adequate data, power, and plumbing utilities to supply proposed equipment. Also, provide casework, equipment and teaching walls to support learning spaces.
- 2) Repaint all interior walls.
- 3) Replace all shelving in storage rooms to be more flexible and adaptable to a greater variety of storage options.
- 4) Provide teacher planning space that supports collaboration. This would require reconfiguring or adding some walls and utilities.
- 5) Provide a greater amount of natural light and connection to the outdoors by cutting new window openings in the exterior wall.
- 6) Provide a greater amount of interior visibility by expanding interior relites.

Roosevelt High School
1970 Auto Shop Due Diligence Report



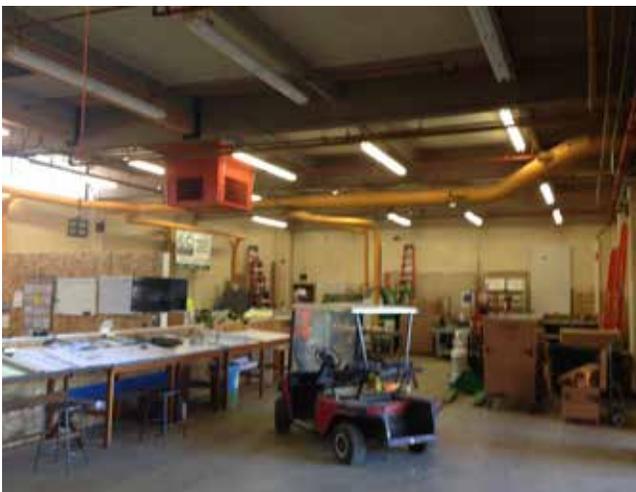
Original Auto Shop space



Typical storage room



Exhaust hood in shop



Original wood shop space



SE exit door - currently bracketed shut with no ADA access



Restroom door - does not meet OSSC nor ADA codes



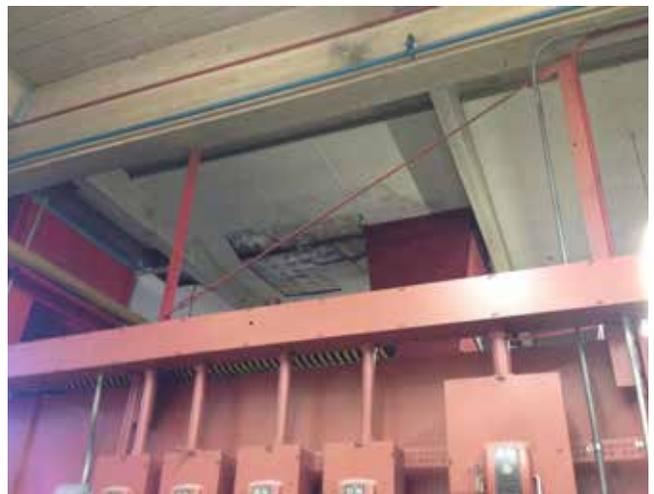
Typical restroom finishes and condition



Ceiling in restroom



Typical restroom interior



Example of ceiling damage from water intrusion, and typical acoustical panels

**Section 4.0 Structural, MEP, Fire, Civil,
Landscape, Hazardous Materials**

4.1 Structural

A. Existing Conditions

The Automotive Shop is a one-story building originally constructed circa 1970 and occupies approximately 11,000 square feet. The foundations typically consist of conventional concrete spread and strip footings. The ground floor is a 4 inch thick concrete slab on grade. The roof is framed with glulam beams, solid-sawn wood purlins, and 2x tongue and groove wood decking. The existing structural drawings indicate that 3/8" plywood sheathing exists on top of the T&G decking. The roof framing is supported by 8-inch, partially grouted concrete masonry unit (CMU) bearing walls at the exterior and interior of the building. These walls have a limited amount of horizontal and vertical reinforcing.

A more detailed seismic analysis would be required when the final design criteria is determined for the project, including roofing system weight, modified walls, and expanded interior door opening sizes. A seismic strengthening scheme is described in the next section of this report for cost estimate purposes. This design is in accordance with ASCE 41-13 "Seismic Evaluation and Retrofit of Existing Buildings". For consistency with the other existing buildings on the Roosevelt High School campus, notably the 1921 Main Building and 1930 Auditorium Building, the Automotive Shop Building has been designed to the Basic Performance Objective for Existing Buildings (BPOE) in ASCE 41-13 as a Risk Category III structure.

B. Seismic Strengthening Concept

Strengthening of the Automotive Shop consists of the following items. These are shown graphically in Exhibit App.3 in the Appendix of this report.

- 1) New reinforced concrete shear walls placed against existing concrete masonry unit (CMU) walls
- 2) New reinforced concrete grade beams beneath the new shear walls
- 3) New steel angle collectors at the roof
- 4) New plywood diaphragm at the roof
- 5) New diaphragm-to-wall connections at the perimeter of the roof
- 6) Brick veneer anchorage over existing doorways
- 7) Bracing of architectural and MEP components to meet code requirements (as occurs depending on final architectural and MEP design)

4.2 Mechanical

A. Existing Conditions

Existing building envelope is to remain as is with any PPS required upgrades to meet

the Code as required by the Bond. The existing spaces are conditioned with DX Rooftop units with gas heat. Occupancy of the space is not changing. Therefore, OEESC section 101.4 applies and the unaltered building envelope need not comply with new construction standards. Existing woodshop, auto shop, and classrooms will become new STEM Lab, classrooms, office and storage. The existing HVAC system is in poor condition and at the end of its service life. The existing system, although acceptable to remain per Code, is inappropriate for proposed function of space and therefore is required.

B. Ventilation Requirements

- 1) Tempered air will be provided by a dedicated outside air system to meet outside air requirements.
- 2) STEM Lab will include dust collection system(s), welding hood fume filtration system(s), and portable ductless paint booth(s). These systems will filter the air and recirculate the clean air back into the space; therefore avoiding the need of a makeup air unit.
- 3) Any chemical fume hood in the STEM lab will need to be connected to a rooftop exhaust fan with stainless steel welded exhaust duct. Fan will be coated for chemical resistance.
- 4) Toilets will be served by exhaust fans. These will exhaust the air through the roof and will be controlled by occupancy sensors.
- 5) There is no need for an interior mechanical equipment room for ventilation.

C. HVAC Recommendations

- 1) Demolish all existing HVAC systems, including rooftop units, exhaust fans, ductwork, wall thermostats, and unit heaters.
- 2) STEM lab and Classrooms will each be conditioned with a new rooftop unit (DX cooling and gas heat). Rooftop units will include heat recovery wheels, bypass air economizers, supply fan and exhaust fan with variable speed drives, CO2 demand control ventilation, and programmable space thermostats.
- 3) There is no need for an interior mechanical equipment room for HVAC.
- 4) Electrical and natural gas could be sub-metered to track energy use of the building in order to develop an individual energy usage index (EUI) separate from the main school building. This is an optional expense.

4.3 Electrical

A. Existing Conditions

- 1) Main Service: Building Service and Normal System Components: The existing Auto Shop electrical service is supplied by Portland General Electric (PGE) overhead

conductors from a utility pole mounted transformer located on the north side of North Smith Street. The conductors route to two roof mounted weather heads located at the northwest corner of the building and directly down into the building interior 800 Amp, 208Y /120 Volt, 3 phase, 4 wire Main Distribution Switchboard (MDS). The MDS contains integral terminal / CT cabinet and utility meter.

The existing service panel was originally sized based on future expansion, but the expansion never occurred. It is likely the power utility did not size their transformer or conductors based on the expansion at the time. Except for HVAC, loads should be similar to conditions when building was in use. The HVAC load is expected to be higher for the remodel project due to additional ventilation and air conditioning. Portland General Electric will need to review if the existing utility transformer and conductors are adequate based on new expected loads for building. Utility transformer, meter, current transformers and primary and secondary conductors will be furnished by PGE. All conduit, terminal / CT cabinet and meter base will be furnished by the contractor.

The existing MDS, panelboards, receptacles, disconnects, lighting and lighting controls are well past their life expectancy. There was some rework done by the General Contractor to temporarily use the space as the main site office during the Roosevelt High School Remodel and Addition project which has been reviewed only briefly by this author. However, it is likely that not much of the new electrical installation can be retained due to the current use of the space. It is expected that the building interior electrical components and MDS will need to be entirely stripped out and replaced matching standards set on the current project in construction.

The current location of the utility terminal / CT cabinet and meter location does not meet Portland General Electric standards. This equipment needs direct access from the exterior. In replacing the MDS, the new equipment will need to conform to PGE standards. If current location remains, a new main electrical room will need to be created with a door having direct access to the exterior. Based on the size of the building and planned use of the space, the new main service switchboard can be downsized to 600 Amps, 208Y/120 Volts, 3 phase, 4 wire.

- 2) Emergency System: All existing life safety system components at the Auto Shop currently are integral emergency battery bug-eye fixtures which will be removed. Most of the existing batteries are not functional due to lack of maintenance during unoccupied period of time the building has had. The existing coverage of emergency egress is also inadequate.

B. Code Required Improvements and Required Repairs

- 1) Main Service: The new main service switchboard will have a new main 600 Amp, 3 pole circuit breaker and feed large HVAC and shop equipment, two 125 Amp

mechanical and equipment panels, two 125 Amp receptacle panels, two 100 Amp lighting panels, the fire alarm notification appliance panel, and a 3 phase battery inverter discussed in below emergency power section. As discussed in section above, the electrical equipment is well beyond life expectancy and the emergency system is inadequate to meet Code. Three of the panels and battery inverter will be located in the main electrical room. The main electrical room located in the northwest corner of the building is estimated to be 13-feet wide by 8-feet deep. The main electrical room will also contain the building lighting control panel which will be Ethernet connected, but not slave to the other lighting control panels on campus. The lighting control panel is required to control new exterior lighting currently inadequate to meet Code and safety requirements. An electrical closet, estimated to be 7-feet wide by 3-feet deep, located to serve the southeast side of the building will house the other three panels.

- a. Panelboards will have copper bussing and utilize bolt-on circuit breakers for convenience of local resetting of overcurrent protection when a fault has been cleared and removed safely. Motor starters and VFDs will be provided by the Mechanical contractor. Disconnect switches will be provided by the Electrical contractor unless provided integral with the equipment.
- b. Available fault current will be obtained from the utility during design and estimates of the fault duty at each piece of electrical gear will be calculated. A protective device time-current coordination analysis (selective coordination study to 0.01 seconds for life-safety branch system, 0.1 seconds for all other electrical system components), fault current study, and an arc-flash study will be required from the distribution equipment manufacturer via the Contractor to verify ratings against conduit length and feeder data from the actual installation. Series rating panelboards will not be allowed.
- c. Branch circuit wiring assumes six duplex receptacles per 20-amp circuit. Self-testing GFCI outlets where required by code. Dedicated neutrals will be provided for each circuit.
 - Feeder circuit wiring: copper THWN-2.
 - Branch circuit wiring: copper THHN-2. MC Cable: allowed for 20 and 30 Amp circuits in accessible drop ceiling locations. Not allowed for final home runs to panelboard.

- 2) **Emergency System:** Egress lighting will be provided as required by code in interior and exterior areas. The life-safety load required for the building remodel is low and the cost to bring a life-safety branch feeder from the main building and downsize to 208 Volt will be expensive. We recommend using a 3.75 KW central emergency battery inverter to serve the building life safety loads. This battery inverter will be located in the main electrical room and connected to the Ethernet to report and log issues for maintenance staff.

B. Recommended Improvements

- 1) Currently there is not any standby power at the existing building. The remodel may require an IDF Room, which per the construction standards would require standby power. The question needs to be asked to the District if it is worth supplying a branch feeder to a new standby panel in the building or if a UPS at the IDF rack will suffice. If a panel is required, a 40 Amp, 208Y /120 Volt, 3 phase, 4 wire panel will be provided in the electrical room closest to the new IDF Room. The feeder will need to be upsized to account for voltage drop. It may be more cost effective to run a 480 Volt feeder and downsize to 208 Volt at the building with a 15 KVA transformer.

C. Green Energy Technology Requirement

State of Oregon Senate Bill 1533 (Oregon Administrative Rules 330-135-0010 to 330-135-0055) requires public entities in Oregon to spend 1.5 percent of the total contract price of a public improvement of a public building on green energy technology. A green energy technology budget will be required if this remodel project is either considered to be part of the main construction project or if the total contract price of the remodel is over one million dollars. The green energy technology budget can be used anywhere on site.

4.4 Fire Sprinkler System

A. Existing Conditions

- 1) The Shops Building is partially sprinklered.
- 2) The Shops Building fire sprinkler system is supplied from a 4-inch connection in N. Ida Street and passes through a 4-inch double check detector valve assembly ("DDCVA") in an underground vault near the sidewalk. The two control valves of the DDCVA are not supervised or chained in the open position, as required by NFPA 13. No sump pump or other method of draining the vault could be observed. The DDCVA and pipes within the vault are rusted.
- 3) The fire department connection ("FDC") is located on the exterior rear of the Shops Building and is identified with a large sign on the building. The FDC appears to be

located within 150 feet of a fire hydrant, however, such hydrants are located across N. Ida Street and across N. Smith Street.

- 4) The 4-inch main riser and valves are old but appear to be in good condition. No evidence of code-required annual inspection was present. There is an alarm check valve and retard chamber connected to a local water motor gong on the outside of the building. There is conduit from a flow switch to a fire alarm panel.
- 5) Fire sprinklers were observed in the Wood Shop, some offices and the classrooms adjacent to the Wood Shop. No sprinklers were observed in either carport, the Auto Shop, one office and some Storage Rooms. The Equipment Room was inaccessible for observation. No sprinklers were observed beneath an obstructing air handler in a room adjacent to the Wood Shop.
- 6) The age of the Grinnell Duraspeed fire sprinklers could not be ascertained. These sprinklers were manufactured from 1931 through the early 1990s.

B. Code Required Improvements

- 1) The existing fire sprinkler system branch lines and sprinklers inside the building need to be demolished to accommodate ceiling and HVAC revisions. Sprinkler mains need to be demolished back to the top of the main sprinkler riser to accommodate ceiling and HVAC revisions. Piping at the main sprinkler riser will be inspected for suitability of continued use.
- 2) The backflow preventer valves will be required to be provided with supervisory devices connected to the fire alarm system to comply with current building code and also provided with chains and padlocks on the valves to lock in the open position. A sump pump or drain will be provided to drain the backflow prevention vault to prevent further corrosion of the backflow preventer, valves and ladder.
- 3) The main system riser will be provided with a tamper switch on the main control OS&Y valve and a pressure relief valve piped to the main drain will be provided to comply with current code. Gauges will be tested for accuracy and, if not accurate per NFPA 25 requirements, they will be either recalibrated per NIST standards, or replaced. A minimum 3' clear space should be provided around the fire sprinkler riser for access.
- 4) New sprinkler mains and branch lines with new quick response sprinkler heads would be provided to all parts of the building per NFPA 13. Hangers, sway braces and branch line restraints would be provided per NFPA 13. Building overhangs would be protected with dry sprinkler heads or a dry sprinkler system. Sprinklers would be provided under obstructions exceeding 4-feet in width.
- 5) Materials will be UL Listed or FM Approved for their fire protection function.

4.5 Fire Alarm System

A. Existing Conditions

- 1) The existing shop building contains a Silent Knight, zone type fire alarm system
- 2) Although the shop building had been connected to the fire alarm system in the main building at some point in the past; due to reported underground wiring issues between the two buildings, the buildings' fire alarm systems were separated and the shops building was provided with its own control panel. Due to the suspect existing wiring, new conduit and wiring from the main building will need to be installed to the shop building.

B. Code Required Improvements

- 1) System power supplies would be added as needed to provide audible and visual notification to the shop building.
- 2) The fire protection system water flow, alarm pressure switches, valve supervisory switches and supervisory pressure switches would need to be monitored for status by the fire alarm system.
- 3) Automatic detection would be provided for air handling units, fire smoke dampers and in other locations required by code.
- 4) Audible and visual alarm notification appliances would be provided throughout the building to meet the audible and the visual notification requirements of NFPA 72 and the ADA. Audible notification would be provided via fire alarm speakers transmitting an alert tone followed by a prerecorded voice message. Visual notification would utilize strobe appliances.
- 5) Activation of system smoke detectors, manual pull stations, fire sprinkler waterflow, or other alarm causing devices would initiate alarm signals on the fire alarm control panel (FACP) and fire alarm annunciator (FAA), and activate the audible and visual notification appliances throughout the entire campus.
- 6) Activation of HVAC duct smoke detectors, fire sprinkler valve tamper switches, and other supervisory causing devices would initiate supervisory signals which annunciate on the FACP and the FAA.
- 7) Fire alarm, supervisory and trouble signals would be transmitted off site to a remote monitoring station.
- 8) Control outputs would be provided for fire safety functions such as air handler shut down, fire smoke damper closure and fire door release.

4.6 Lighting

A. Existing Conditions

The building interior consists of pendant strip, wrap-around and recessed acrylic lens 2' x 4' troffers using obsolete T12 lamps. A high percentage of luminaires with lenses have a missing lens. Lighting control is via only a local switch in room. The building exterior consists of surface acrylic lens luminaires at the two canopies and a handful of small lensed wall sconces at building corners. However, these luminaire light output is significantly blocked by yellowing of lens and protective metal cages. None of the exterior lighting is on emergency power.

B. Required Lighting Improvements

- 1) A number of exit signs within the space have lost illumination and need to be replaced to meet Code requirements.
- 2) Exterior building lighting is required at emergency egress paths and exit discharge doors. Pathway lighting is required connecting Auto Shop Building to campus for safety.
- 3) The pathway from the main school building to the auto shop needs to be illuminated for safe student travel between buildings. Post top luminaires, similar to the current Type SA series, located along the path will utilize LED sources with cutoff optical systems. Building mounted luminaires (similar to Type SC) will be located at exit doors.
- 4) Exterior lighting shall utilize LED sources. Luminaires shall use optical systems and sources that are in compliance with local lighting ordinances. LED sources will have color temperature no higher than 4000k and will have color-rendering index (CRI) of 80 or greater.
- 5) All exterior fixtures shall be controlled by the facility lighting control system using a photocell on/time-clock dimming/photocell off control strategy. Site lighting will dim to 35 percent after staff hours.
- 6) Exterior Design Lighting Levels - Average Maintained Illuminance:

Area	Recommended Lighting Level (Footcandles)
Exterior Lighting and Pedestrian Pathways	11-21 lux (1-2 fc)

C. Recommended Interior Lighting Improvements

- 1) Changes to interior lighting and lighting controls repairs are recommended if building room layout remains the same.
- 2) Replace all luminaires to integrate with full project, and utilize LED lamping. LED products will be certified through either the Design Lights Consortium (DLC) or Energy Star Certified.

- a. STEM Lab would utilize LED high bays, similar to Type G1.
- b. CTE / STEM Lab lighting would use a combination of LED downlights (current Type D) and pendant mounted linear LED luminaires with dimmable drivers (current Type R).
- c. Academic and staff corridors would be illuminated using suspended LED luminaires (current Type R). Wall wash or accent LED luminaires would be used in areas of visual interest and to create focal walls.
- d. Conference Rooms would use recessed 2x2 LED luminaires (current Type A). All luminaires would be dimmable to allow the occupants to adjust the light levels to suit the needs of the space.
- e. Restrooms would use recessed linear perimeter luminaires above the sink mirrors (current Type S1) and recessed LED downlights (current Type D) at the ceilings.
- f. Single and multi-occupant offices would employ recessed 2x2 LED luminaires (current Type A) with dimming drivers to allow the occupants the ability to adjust the light level.
- g. Electrical, Mechanical and Storage Rooms would use surface or pendant mounted linear LED strip lighting with lens, Type B.
- h. LED exit signs would be used at all exits and on egress path, as required by code.
- i. LED sources would have color temperature no higher than 4100k and would have color-rendering index (CRI) of 80 or greater.
- j. Interior Design Lighting Levels - Average Maintained Illuminance:

Area	Recommended Lighting Level (Footcandles)
Classrooms/Flex	323-377 lux (30-35fc)
Conference Rooms	270-323 lux (25-30fc)
Study Nook	270-323 lux (25-30fc)
Electrical/Mechanical Room	270-323 lux (25-30fc)
Storage	161 lux (15fc)
Academic Corridors	161-215 lux (15-20fc)
Staff Corridors	107-161 lux (10-15fc)
Work Shop	538-646 lux (50-60fc)
Single and Multi-Occupant Offices	270-323 lux (25-30fc)
Restrooms	161-215 lux (15-20fc)

- k. Lighting control system would use local occupancy/motion sensors (ultrasonic/infrared type) and utilized at all practicable locations. Areas / classrooms will be zoned to take advantage of natural light. All lighting will be

automatically controlled to meet the requirements of Oregon Energy Efficiency Specialty Code (OEESC).

- I. All dimmers would be compatible with the controlled loads.

4.7 Plumbing

A. Domestic Cold Water System Required Repairs

There is an existing 2-inch domestic water service to the building from the city water system in N. Ida Ave. The existing domestic cold water piping inside the building is in poor condition and will need to be replaced.

- 1) New Domestic Water Main: Copper tubing, Type L conforming to ASTM B88, copper fittings with soldered joints.
- 2) New Domestic Water Branch Lines: Cross-linked Polyethylene Tubing (PEX), Type A complying with ASTM F876 and F877, plastic fittings inserted into the expanded tubing and reinforcement rings using the "Engel Method."

B. Domestic Hot Water System Required Repairs

There is an existing water heater that is in poor condition and will need to be replaced. The existing domestic hot water piping is in poor condition and will need to be replaced.

- 1) New Domestic Hot Water Mains: Copper tubing, Type L conforming to ASTM B88, copper fittings with soldered joints.
- 2) New Domestic Hot Water Branch Lines: Cross-linked Polyethylene Tubing (PEX), Type A complying with ASTM F876 and F877, plastic fittings inserted into the expanded tubing and reinforcement rings using the "Engel Method."

C. Sanitary and Storm Drain Systems Required Repairs

There is an existing 6-inch sewer service to the building from the combined city storm/sewer system in N. Smith St. with two 4-inch sewer laterals entering the building. Existing piping is cast iron and should be scoped to verify the condition. The existing above grade sewer and vent piping is in poor condition and should be removed and replaced with new.

There is an existing 10-inch storm drain service to the building from the combined city storm/sewer system in N. Smith St. with 6" branch lines serving the building roof drainage system.

- 1) New Below Grade Sanitary and Storm Drain Waste Piping and Fittings
 - a. No-hub cast iron pipe complying to ASTM A888/CISPI 301 and heavy duty couplings complying with ASTM C1540/SED 4000.

- b. PVC pipe and fittings complying with ASTM D2665-91, Schedule 40, and solvent weld joints with solvent cement complying with ASTM D2235.
- 2) New Above Grade Sanitary Waste, Vent and Storm Drain Piping and Fittings
 - a. No-hub cast iron pipe complying to ASTM A888/CISPI 301 and heavy duty couplings complying with ASTM C1540/SED 4000.
 - b. PVC pipe and fittings complying with ASTM D2665-91, schedule 40, and solvent weld joints with solvent cement complying with ASTM D2235.

D. Natural Gas System Recommended Repairs

There is existing gas service to the building and an existing meter on the exterior of the building at the NW corner of the building that appears to be in good condition.

- 1) New Natural Gas Piping: Schedule 40, A53 black steel pipe and threaded black malleable threaded fittings as needed. Existing gas piping will have to be verified as to the condition.

E. Compressed Air System Recommended Repairs

The existing air compressor in the building will need to be verified if it is still in good working condition.

- 1) New Compressed Air Piping: Type "K" or "L" hard drawn seamless copper conforming to ASTM B-819. Wrought copper fittings conforming to ASTM B16.22.

F. Plumbing Fixtures Required Repairs

The existing plumbing fixtures are in poor condition and need to be replaced. Low flow fixtures should be installed as follows:

- 1) 1.28 gallon per flush toilets.
- 2) 0.5 gallon per minute lavatory faucets.
- 3) 1.5 – 2.0 gallon per minute shower heads.
- 4) 1.5 gallon per minute faucets at sinks.

4.8 Technology

A. Existing Conditions

The fiber backbone cabling is 62.5/125 multimode OM1. This fiber is antiquated and should be updated to 50/125 multimode OM3 fiber. The Horizontal cabling is Category 5 and needs to be replaced with Category 6. There are currently no video surveillance cameras.

B. Required Upgrades for Integration with Project

- 1) Install an audio reinforcement system (complete with 4 speakers, amplifier and wireless microphones) in each instructional space.
- 2) Install card readers and 3megapixel cameras at two main entrances.

- 3) Install wireless clocks in each office and instructional space that sync to the wireless clock system in the Main building.
- 4) A 6' x 8' Telecom Room should be included to house new horizontal and backbone terminations, Owner provided active network equipment and access control panels would be required. This room would be required to be environmentally controlled and have power receptacles for the active equipment.
 - a. Install ¾" fire rated, plywood backboards on all walls of the telecom room. Install a 19-inch by 29-inch deep 4-post equipment rack seismically braced to the floor as well as with overhead ladder rack. Provide a 48-inch vertical 15-amp power strip for the equipment rack. Provide a 10-inch wide vertical wire manager on one side of the rack.
 - b. Install a 10-inch ground bus bar with a 3/0 ground to building steel and the electrical panel. Ground the equipment rack and the ladder racking to the ground bus bar.
 - c. Install new 6-strand, multimode, 50/125 OM3 fiber from the MDF. Terminate both ends with LC connectors and place into a 1U rack mounted fiber distribution unit.
- 5) Replace the horizontal cabling with Category 6 cabling.

C. Recommended Upgrades

- 1) Install HDMI cabling from the teaching wall outlet to an OFCI short throw projector in each instructional space. Install HDMI cabling from a wall outlet to an OFCI installed 42-inch flat screen. Provide and install the mounting bracket for the flat screen.

4.9 Civil

A. Site Vehicular Access and Circulation:

- 1) Site Access and Circulation: The existing vehicular access point to the site is a 20' wide driveway apron located on N Smith Street, approximately 200' west of the N Ida Avenue intersection. An 18' wide access drive extends from the driveway apron to a 65'x70 paved outdoor yard area at the southwest face of the building. There are no designated parking spaces within the outdoor work/storage yard area.
 - a. The following two conceptual strategies would likely be explored to integrate the existing Shop building with the currently proposed Modernization project design:
 - Option 1:
 - (a) Retain existing vehicular access from N Smith Street.
 - (b) Retain approximate configuration of existing outdoor work/storage yard.
 - (c) No vehicular connection between proposed north parking lot and Shop work/storage yard (pedestrian connection only).

- Option 2:
 - (a) Create vehicular connection between Shop outdoor work/storage yard and currently proposed north parking lot.
 - (b) Reconfigure parking spaces at north parking lot to accommodate spaces lost to provide access drive to Shop.
 - (c) Remove existing vehicular access point from N Smith Street.
- 2) Land Use and Jurisdictional Issues: The currently approved building permit, Conditional Use (CU) land use application, and Public Works Permit (PWP) are based on removal of the existing Shop building and existing access from N Smith Street. Revising the design to retain the existing Shop building and existing vehicular access points will trigger the need for further jurisdictional review. A revised Transportation Impact Analysis (TIA) may be necessary. Early assistance and/or pre-application conferences are recommended to verify jurisdictional requirements.
- 3) Passenger Vehicle Drop Off: Not applicable. It is anticipated that students will access the Shop building from the main building.

B. Required Improvements

- 1) Solid Waste Collection: Depending on the selected site design, it may be necessary to establish a solid waste collection point in the vicinity of the Shop building if access to the centralized solid waste collection facility at the Performing Arts wing is not practical. New trash enclosure(s) will need to comply with Portland stormwater standards, which require covering with a roof and isolating the enclosure from stormwater runoff. Screening of trash enclosures will also be a requirement.
- 2) Pavement Condition: The existing asphalt pavement within the outdoor work yard and the access drive was in fair condition at the beginning of the project. However, these pavement areas have been subject to heavy construction traffic and are expected to be in poor condition at the end of the project. Full removal and replacement of the existing pavement is expected to be necessary.

C. Site Fire Protection

- 1) Fire Apparatus Access and Coverage: The existing adjacent public roadways (N Smith Street and N Ida Avenue) provide adequate fire apparatus access for the building. The Portland Fire Code (PFC) requires that all parts of the building be within 150' of the access road. Since the building would need to be fully sprinklered, this minimum coverage distance may be increased to 250'. The existing public roadways are within 250' of all parts of the building. However, gates and fencing will need to be reviewed further to ensure adequate access.
- 2) Aerial apparatus access: The existing building is less than 30' in height, so aerial apparatus access requirements do not apply.
- 3) Site Fire Hydrant Coverage: There are no existing fire hydrants located onsite. The nearest public fire hydrant is located at the intersection of N Ida Avenue and N Rochester Street.

- a. The PFC requires hydrants be located within 600 feet of the most distant point of a building (400' for non-sprinklered buildings). This minimum coverage is satisfied. However, further coordination of gate and fence locations will be necessary to ensure access between the building and fire hydrant is provided.

D. Site Water Systems

- 1) **Site Fire Flow:** Based on Portland Water Bureau hydraulic modeling, the existing fire flow to the site (measured at 20 psi residual pressure) is in excess of 3,000 gpm. This available flow is adequate for the existing Auto Shop building (per Oregon Fire Code Appendix B), since the building would need to be fully sprinklered.
- 2) **Site Fire Sprinkler Supply:** The existing shop building is currently partially sprinklered. The fire sprinkler supply main is served by a 4" service connection located in N Ida Avenue, east of the building. A premise isolation backflow preventer (BFP) is located at the point of service (at the property line). The BFP is a double check detector assembly in a below grade vault, installed as a retrofit in 2005. The BFP has been determined by Portland Water Bureau (PWB) to be acceptable as-is, with no retrofits required. The Fire Department Connection (FDC) is located on the outside wall of the building, at the northeast corner of the building. Refer to the Fire Suppression section of this document for additional information and recommendations for BFP valve supervision.
 - a. The existing 4" underground supply main to the building is approximately 45 years old. The pipe material and condition is unknown. Potholing to conduct visual inspection and pressure testing is recommended.
- 3) **Domestic Water Service:** Domestic water for the site is supplied through a 2" domestic service connection located in N Ida Avenue, east of the building. A premise isolation BFP is located at the point of service (the property line). The BFP is a double check assembly located in a below grade vault with the fire service BFP. The BFP has been determined by PWB to be acceptable as-is, with no retrofits required.
 - a. The existing 2" supply underground supply main to the building is approximately 45 years old. The pipe material and condition is unknown. Potholing to conduct visual inspection and pressure testing is recommended.

E. Natural Gas:

The existing natural gas service and meter is located on the west wall of the building, near the northwest corner.

F. Wastewater / Combined sewer:

Wastewater from the building is discharged at the northwest corner of the building through a 4" and 3" building connection, into a 10" combined sewer located near the northwest corner of the building. The 10" combined sewer collects surface drainage

from the paved areas surrounding the Shop as well as roof drainage from the Shop, and drains north to the public system in N Smith Street.

G. Stormwater:

- 1) Applicable City Regulatory Design Standards & Requirements: City stormwater standards apply to new or redeveloped surfaces in excess of 500 square feet. These standards require stormwater runoff to be disposed of through onsite vegetated infiltration facilities to the maximum extent practical.
 - a. It is anticipated that the majority of exterior hard surfaces surrounding the Shop building will be redeveloped and will be subject to the stormwater standards.

H. Required Displacement of Proposed Stormwater Management Facilities

- 1) A portion of the existing shop building footprint falls within the footprint of a proposed stormwater infiltration basin SB1. Under the current design, this basin receives runoff from approximately 2.73 acres of site area, which represents approximately 26% of the total on-site area draining to infiltration facilities. Additionally, stormwater basin SB1 is a component of the overflow path for several upstream stormwater facilities. This basin is an integral component of the site storm drainage system and is necessary to achieve compliance with Portland's stormwater management requirements. Any proposed design to incorporate the existing shop building into the project design needs to provide for a relocation/reconfiguration of this stormwater facility.
 - a. It should be noted that Basin SB1 was originally designed to manage runoff from the tennis courts located in the vicinity of the existing Shop building. If the shop building is retained and the hardscape surrounding the building is reconfigured it is anticipated that the net impervious surface draining to SB1 may be slightly reduced, but this is not expected to have a significant impact on the required size of Basin SB1.
 - b. In order to address potential water intrusion and flooding issues, Basin SB1 will need to be lowered to an elevation below the floor elevation of the Shop. The finished floor elevation of the shop building is considerably lower than the previously proposed surface elevations in this area. The shop building floor is approximately 2' lower than the proposed parking lot to the south, and approximately 8' lower than the existing landscape berm to the west (where the shotput is located).
- 2) Stormwater Management Concepts and Strategies: Integrating the existing Shop building with the previously proposed design has been explored through several possible site design strategies (*See Appendix App. 2*). The selected strategy is expected to incorporate the following elements:
 - a. Basin SB1 would be shifted to the west side of the shop building and outdoor paved work/storage yard, and would extend from the parking lot (at the south) to point near N Smith Street (at the north).

- b. The bottom elevation of the basin would be lowered to approximately 119.00 (SB1 was previously designed at 122.40).
 - c. There are options to split the basin into 2 or 3 smaller ponds with varying bottom elevations to better fit with site grading and save on earthwork costs. Under this concept, the ponds would step from higher to lower moving south to north. Retaining walls or curbs will likely be required if the basins are divided.
 - d. The overflow path for the 100-year storm event would be a surface drainage spill-over near the north property line, west of the building. Overflows would ultimately enter the public storm system in N Smith Street.
 - e. Stormwater from the paved surfaces surrounding the shop would sheet drain to Basin SB1 or would be conveyed through catch basins and piped into SB1.
 - f. Building roof drainage would be piped to Basin SB1.
 - g. Existing site area on the north and east sides of the shop building currently sheet-flow off-site and could continue to do so, provided improvements in these areas are limited to replanting/landscaping. Any modifications to hardscape would trigger stormwater management requirements for on-site disposal.
- 3) Applicability of LEED Requirements: Roof runoff would need to be managed in order to maintain LEED compliance.
 - 4) Infiltration Testing: To date, three infiltration tests and one boring have been performed in the vicinity of the existing shop building and SB1. One infiltration test was performed on the north side of the currently proposed SB1 and two on the north side of the existing shop. The boring was taken near the northeast corner of the shop building. Given the grading constraints resulting from the relatively low floor elevation of the shop, it is likely that any modifications to the layout and configuration of SB1 will result in a deeper basin. The infiltration testing available indicates that infiltration rates increase as depth increases. Pending confirmation from the project Geotechnical Engineer, it is not likely that any additional infiltration testing or soil investigation would be necessary to perform the required design modifications.

I. Environmental:

A Phase 1 Environmental Site Assessment (ESA) was conducted as part of the main building project. No environmental concerns in the vicinity of the Auto Shop building were noted.

4.10 Landscape Architecture

A. Existing Conditions

- 1) Pedestrian Access: A pedestrian must walk through the adjacent vehicular area to access the building's entries. There was originally a pedestrian walkway with stairs from the main school building to the auto shop vehicular area. This path was demolished during site preparation for the new building addition. The vehicular

area also connects by a driveway to Smith Street, crossing the public sidewalk. A path has been trodden through the turf cutting the corner between the sidewalks at Smith Street and Ida Avenue.

- 2) **Universal Accessibility:** The building entries are flush with external grade and are technically universally accessible. Still, as noted above, there are no routes to the building that are not through a vehicular area. There are no designated accessible parking stalls in the vehicular area adjacent to the building. The route from the school buildings is down a steep grade; originally there were steps between the track berm and the auto shop. Within the existing asphalt paving there are several slopes over 2%.
- 3) **Safety:** Access to the building is on the off-street side. The building entries and the adjacent paved area are located in an area that is surrounded on all sides by a berm, creating a secluded area that is hidden from street and site visibility.
- 4) **Drainage:** There are several catch basins in the asphalt paving. They appear to be functioning adequately.
- 5) **Paving:** The asphalt paving at the vehicular area is in fair condition. There are many cracks in it, showing weed and grass growth, especially adjacent to the building. It is also covered with debris on a majority of the southeast portion.
- 6) **Fencing:** The vehicular area (and therefore entries) is secured with six foot tall galvanized chain link fencing. This fencing will be removed as part of the modernization.
- 7) **Irrigation:** There is no perceptible automatic irrigation.
- 8) **Vegetation:** The vegetation around the building is turf with three large canopy trees. The turf is in poor condition, showing bald spots and weed growth especially against the building and other places that are hard to mow. Additionally there are many volunteer trees that could be several years old.

B. Required Integration of Building and Access

Reference Appendix App.2 (plans of existing design with overlaid existing auto shop and vehicular drive/parking area)

- 1) Tennis courts would not be able to be built.
- 2) Stormwater Planter #1 would need to be reconfigured to accommodate the southern portion of the auto shop and the vehicular area. (see Civil)
- 3) The sloped hillside to the west of the vehicular area would need to be regraded to integrate the shot put area and stormwater planter.
- 4) Accessible paths to the public way would need to be provided from each point of exit discharge.

C. Recommended Design Elements

- 1) Security fencing
- 2) Mow edge around the building

- 3) Paved path at property line between Ida and Smith
- 4) Remove top of earth mound at NW of building:
 - a. Better sight lines into the space from the street
 - b. Easier to mow
- 5) Renovation to the planting design is recommended. Though the black locust could remain, removal is still recommended due to its designation as an invasive species.

4.11 Hazardous Materials Required Abatement

In March 2014 PBS Engineering and Environmental Inc. (PBS) completed a comprehensive hazardous building materials survey of the Auto Shop as part of the Roosevelt High School Modernization Project. Asbestos-containing materials, lead-containing paint and mercury containing fluorescent light tubes were all identified in the survey. STEM Lab conversion work would likely impact some or all of these materials requiring appropriate handling procedures or abatement in accordance with regulatory requirements. A list of each specific type of hazardous materials with locations and quantities are found within the survey document. *(See Appendix App. 1)*

Appendix

- App.1 1970 Auto Shop Hazardous Materials Report
- App.2 Site Grading, Stormwater and Access Studies
- App.3 Structural Concept Plan

GENERAL NOTES

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- ALL ABATEMENT SHALL BE PERFORMED WITHIN THE SAME PHASING SEQUENCE AS THE RENOVATION OR BUILDING DEMOLITION.

ABATEMENT NOTES (THIS SHEET)

- REMOVE ALL ACCESSIBLE ASBESTOS-CONTAINING OR PRESUMED ASBESTOS-CONTAINING MATERIALS SHOWN.
- PERFORM EXPLORATORY DEMOLITION OF WALLS, CEILINGS, FIXTURES, CASEWORK, CABINETS AND PERIMETER RADIATORS TO ACCESS AND ABATE CONCEALED OR UNKNOWN ASBESTOS-CONTAINING MATERIALS. COORDINATE THIS EXPLORATORY WORK WITH THE HAZARDOUS MATERIALS CONSULTANT.
- DISASSEMBLE OR CUT ALL PIPE AND TANK FLANGES TO ACCESS AND ABATE PRESUMED ASBESTOS-CONTAINING GASKETS THROUGHOUT THIS BUILDING.
- PIPE INSULATION RISERS AND RUNS MAY EXTEND INTO FLOOR AND WALL INTERSTITIAL SPACES OR OBSTRUCTED BY OTHER MECHANICAL, ELECTRICAL OR STRUCTURAL COMPONENTS. PERFORM ALL DEMOLITION TO ACCESS AND ABATE THESE CONCEALED OR OBSTRUCTED ASBESTOS-CONTAINING MATERIALS.
- ABATEMENT CONTRACTOR IS TO INSURE ALL ASBESTOS-CONTAINING MATERIALS ARE REMOVED PRIOR TO DEMOLITION OF THIS BUILDING.

LEGEND (THIS SHEET)

- ASBESTOS-CONTAINING GUELED-ON CEILING TILES AND ASBESTOS-CONTAINING GUELED-ON MASTIC TO BE REMOVED
- GYPSUM CEILING BOARD WITH ASBESTOS-CONTAINING JOINT COMPOUND TO BE REMOVED
- GYPSUM WALLBOARD WITH ASBESTOS-CONTAINING JOINT COMPOUND TO BE REMOVED
- ASBESTOS-CONTAINING WALL PANEL MASTIC TO BE REMOVED
- CEMENT ASBESTOS CHALKBOARD AND PRESUMED UNDERLYING ASBESTOS-CONTAINING MASTIC TO BE REMOVED
- NUMBER ASBESTOS-CONTAINING "MUDDED HARD FITTING" PIPE INSULATION IN THIS AREA TO BE REMOVED

ASBESTOS SAMPLE SYMBOLS

- DRAWING REFERENCE TO BULK SAMPLE FIELD CODE. SEE INVENTORY OF SAMPLES
- MATERIAL SYMBOL
- NOT TESTED
- NEGATIVE
- POSITIVE
- THERMAL SYSTEM INSULATION
- SURFACING MATERIAL
- MISCELLANEOUS MATERIAL

INVENTORY OF ASBESTOS SAMPLES

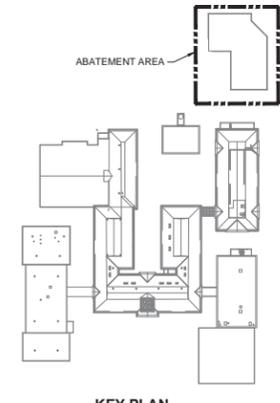
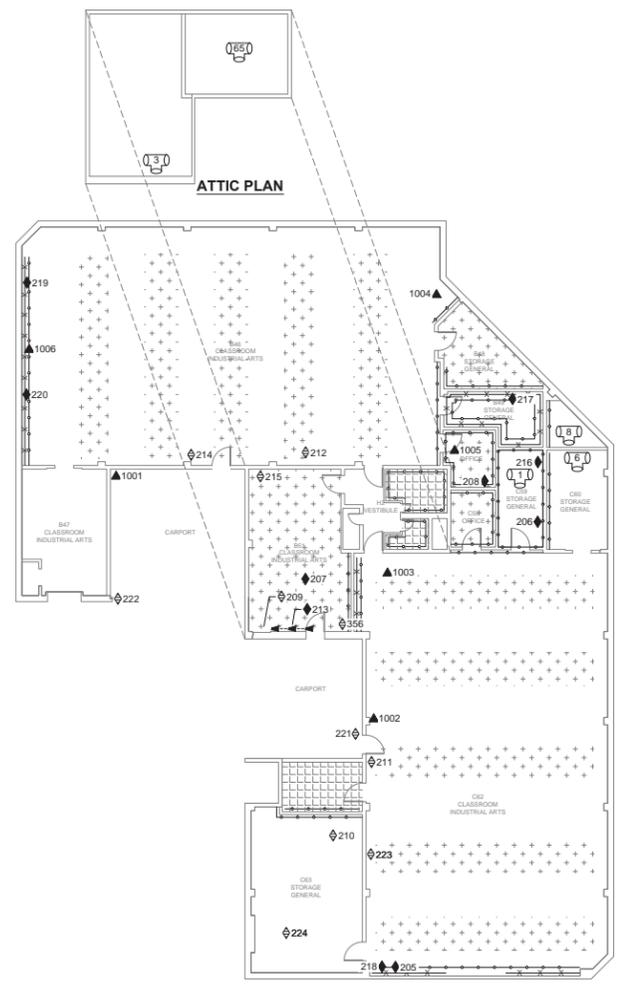
DRAWING REFERENCE	FIELD CODE	LAB RESULT	MATERIAL SAMPLED
205	25000.003-0205	(+/-)	MASTIC
206	25000.003-0206	(+)	MASTIC
207	25000.003-0207	(+/-)<1%	GLUED-ON CEILING TILES
208	25000.003-0208	(+/-)<1%	GLUED-ON CEILING TILES
209	25000.003-0209	(-/-)	VINYL FLOOR TILE/MASTIC
210	25000.003-0210	(+/-)	MASTIC
211	25000.003-0211	(+/-)	COVEBASE/MASTIC
212	25000.003-0212	(-)	WINDOW GLAZING COMPOUND
213	25000.003-0213	(+)	CHALKBOARD
214	25000.003-0214	(-)	MORTAR
215	25000.003-0215	(+/-)	COVEBASE/MASTIC
216	25000.003-0216	(+/-)	GYPSUM WALLBOARD/JOINT COMPOUND
217	25000.003-0217	(+)	MASTIC
218	25000.003-0218	(+/-)	GYPSUM WALLBOARD/JOINT COMPOUND
219	25000.003-0219	(+/-)	GYPSUM WALLBOARD/JOINT COMPOUND
220	25000.003-0220	(-/+)	MASTIC
221	25000.003-0221	(-)	CAULK
222	25000.003-0222	(+/-)	MORTAR
223	25000.003-0223	(+)	CHALKBOARD
224	25000.003-0224	(-/-)	LAY-IN CEILING TILE
356	25000.003-0356	(-/-)	VINYL FLOOR TILE/MASTIC

LEAD SAMPLE SYMBOLS

- DRAWING REFERENCE TO LEAD SAMPLE FIELD CODE. SEE INVENTORY OF SAMPLES
- MATERIAL SYMBOL
- ▲ LEAD DETECTED
- △ BELOW THE LIMIT OF DETECTION

INVENTORY OF AA LEAD SAMPLES

SAMPLE NUMBER	FIELD CODE	LAB RESULT (ppm)	MATERIAL DESCRIPTION
▲1001	25000.003-1001	256 ppm	SHOP BUILDING, WALL, CONCRETE MASONRY UNIT, WHITE, GOOD CONDITION
▲1002	25000.003-1002	21100 ppm	SHOP BUILDING, ROLL-UP DOOR, METAL, RED, GOOD CONDITION
▲1003	25000.003-1003	212 ppm	SHOP BUILDING, DOOR FRAME, METAL, GRAY, GOOD CONDITION
▲1004	25000.003-1004	398 ppm	SHOP BUILDING, WALL, CONCRETE MASONRY UNIT, BLUE, GOOD CONDITION
▲1005	25000.003-1005	1700 ppm	SHOP BUILDING, WALL, GYPSUM, BLUE, GOOD CONDITION
▲1006	25000.003-1006	17600 ppm	SHOP BUILDING, VENT HOOD, METAL, RED, GOOD CONDITION



KEY PLAN



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FOR CONSTRUCTION

NO.	REVISIONS	DATE

Portland Public Schools District
ROOSEVELT HIGH SCHOOL ADDITION AND MODERNIZATION

8841 N Central Street
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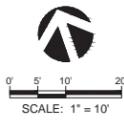
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ISSUE DATE: 09/24/15
DRAWN BY: JAB
CHECKED BY: SD

HAZARDOUS MATERIAL ABATEMENT PLAN

INDUSTRIAL ARTS BUILDING

HM15.2

SHEET: 11 OF 12



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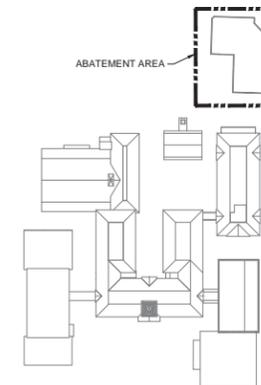
JOB NO. 13910.00
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**HAZARDOUS
MATERIAL
ABATEMENT
PLAN**

ROOFS

HM15.2R

SHEET: 12 OF 12



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- REMOVE ASBESTOS-CONTAINING PETROLEUM-BASED BUILT-UP ROOFING AND FELTS IN ALL AREAS SHOWN. THE ASBESTOS-CONTAINING ROOFING PRODUCTS COVER THE ROOFING FIELDS, PARAPETS, CURBS, CANTS, VENTS AND UNDER FLASHING.
- PETROLEUM BASED BUILT-UP ROOFING AND ASSOCIATED PETROLEUM BASED FELTS MAY BE REMOVED BY AN OSHA TRAINED QUALIFIED CONTRACTOR WITH ASBESTOS ROOF REMOVAL EXPERIENCE. REFERENCE SPECIFICATION SECTION 02077 FOR ADDITIONAL REMOVAL AND CONTRACTOR QUALIFICATION REQUIREMENTS.
- CONTRACTOR IS TO UTILIZE REMOVAL METHODS THAT MINIMIZE DUST AND DEBRIS. CONTRACTOR IS TO INSPECT AND CLEAN AROUND THE PERIMETER OF THE BUILDING ON A DAILY BASIS.
- CONTRACTOR IS TO MAKE CONTINUOUS DAILY INSPECTIONS OF THE ATTICS, CEILING INTERSTITIAL SPACES AND OCCUPIED AREAS TO INSURE NO ROOFING MATERIALS OR ROOFING DUST ENTERS AND SETTLES IN THE MAIN BUILDING THROUGH CRACKS AND VOIDS. CONTINUOUS DAILY INSPECTIONS ARE TO OCCUR DURING BOTH REMOVAL AND REPLACEMENT. IF DISCOVERED THE CONTRACTOR IS TO IMMEDIATELY CLEAN ALL SURFACES IN THE AFFECTED AREA USING HEPA VACUUMS AND WET WIPING METHODS.
- ALL VENTILATION SYSTEMS AND DUCTWORK THAT ENTER OR EXIT THE BUILDING THROUGH THE ROOF SHALL BE SEALED PRIOR TO START OF WORK.

LEGEND (THIS SHEET)

ASBESTOS-CONTAINING BUILT-UP ROOFING TO BE REMOVED

ASBESTOS SAMPLE SYMBOLS

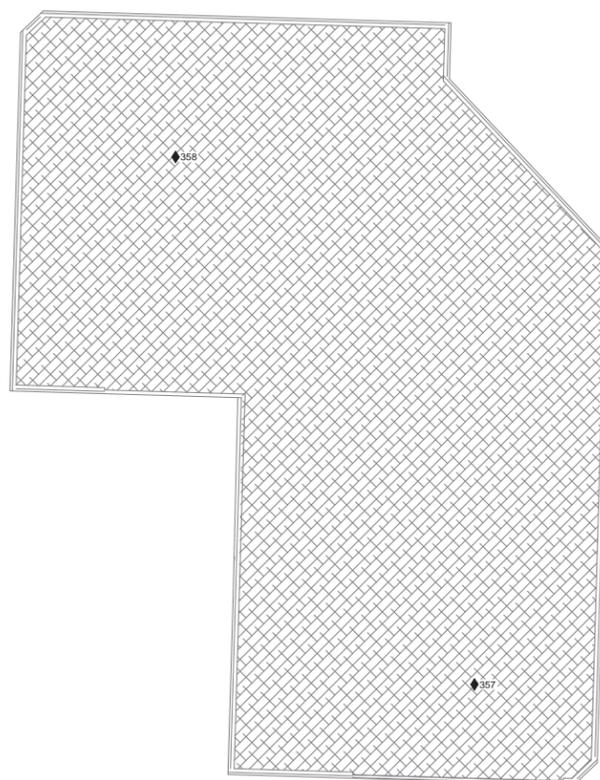
DRAWING REFERENCE TO BULK SAMPLE FIELD CODE. SEE INVENTORY OF SAMPLES

MATERIAL SYMBOL

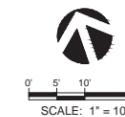
NOTE	NEGATIVE	POSITIVE	
TESTED			THERMAL SYSTEM INSULATION
			SURFACING MATERIAL
			MISCELLANEOUS MATERIAL

INVENTORY OF ASBESTOS SAMPLES

DRAWING REFERENCE	FIELD CODE	LAB RESULT	MATERIAL SAMPLED
◆357	25000.003-0357	(-)(-)(+)(+)(+)(+)(+)	BUILT-UP ROOFING
◆358	25000.003-0358	(-)(-)(+)(+)(+)(+)(+)	BUILT-UP ROOFING

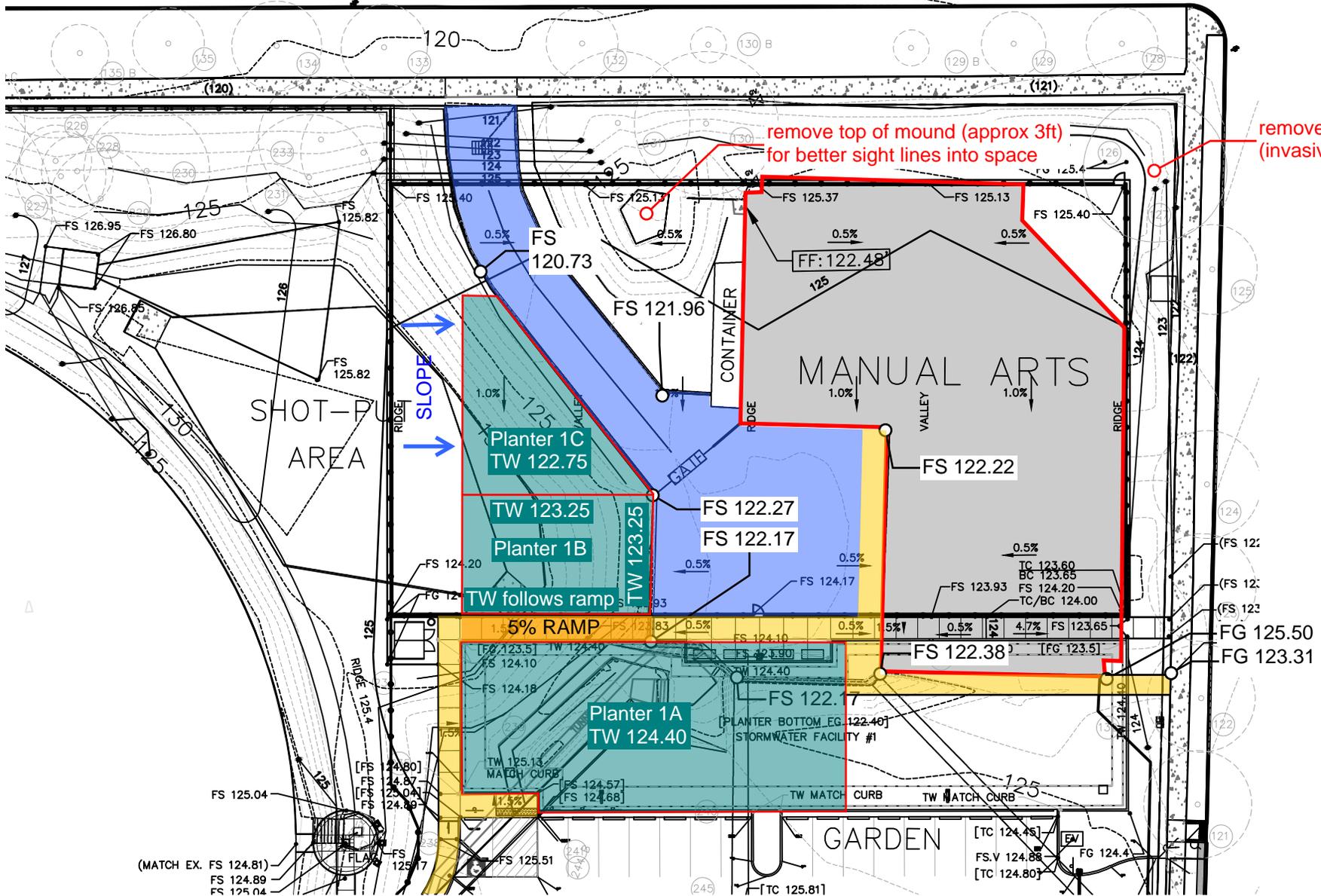


ROOF PLAN



L:\Projects\25000\25000-25095\25000_003_PERMIT_SET_25000\003_003_HM15.2R.dwg May 28, 2015 09:46am jmb

PERMIT 2

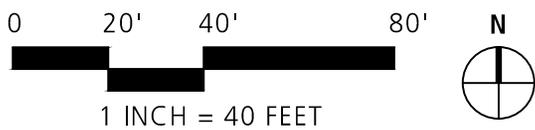


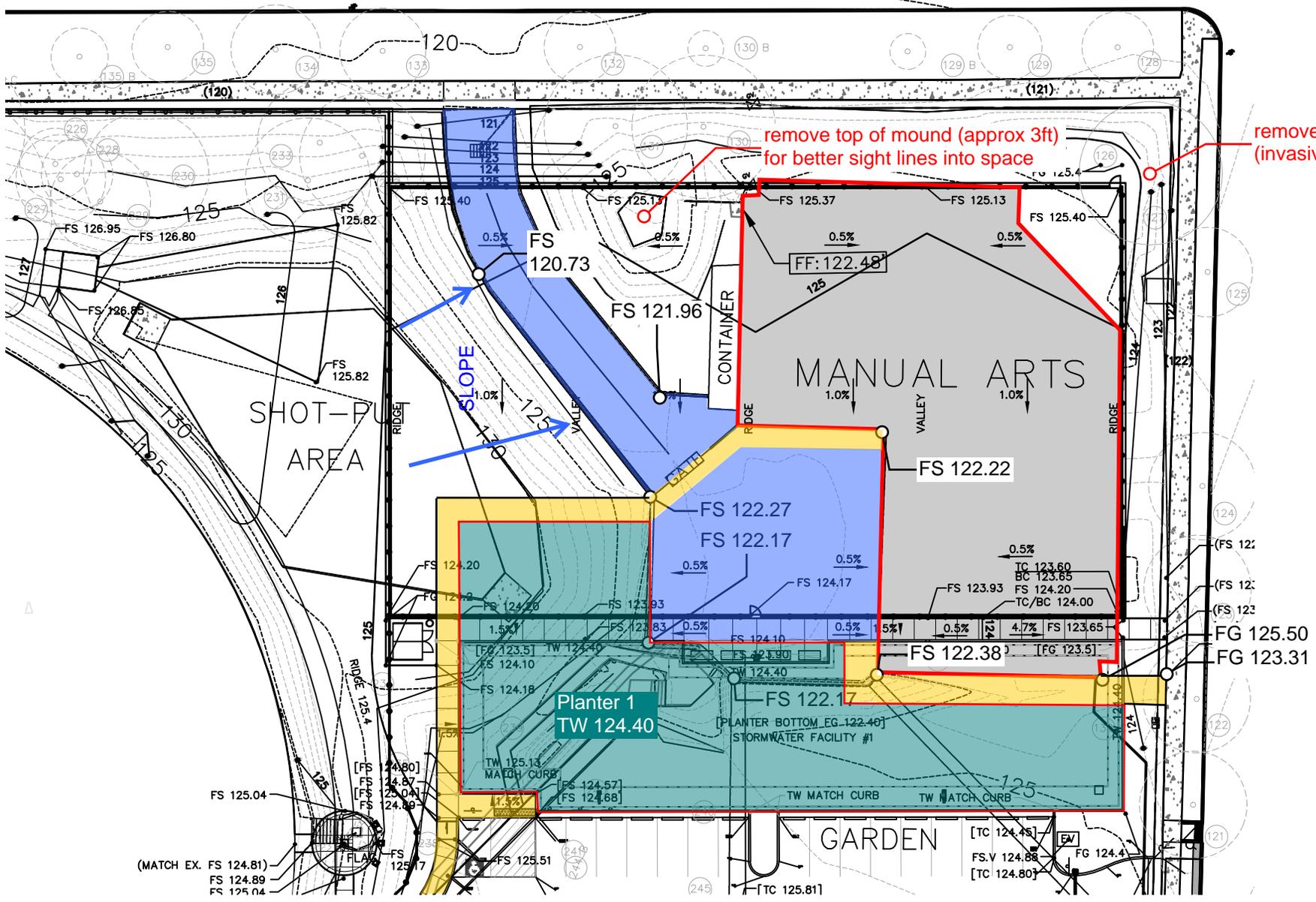
remove top of mound (approx 3ft)
for better sight lines into space

remove black locust
(invasive species)

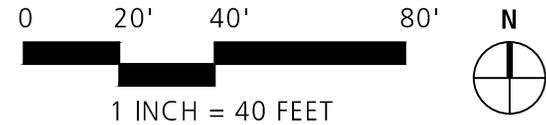
SLOPE

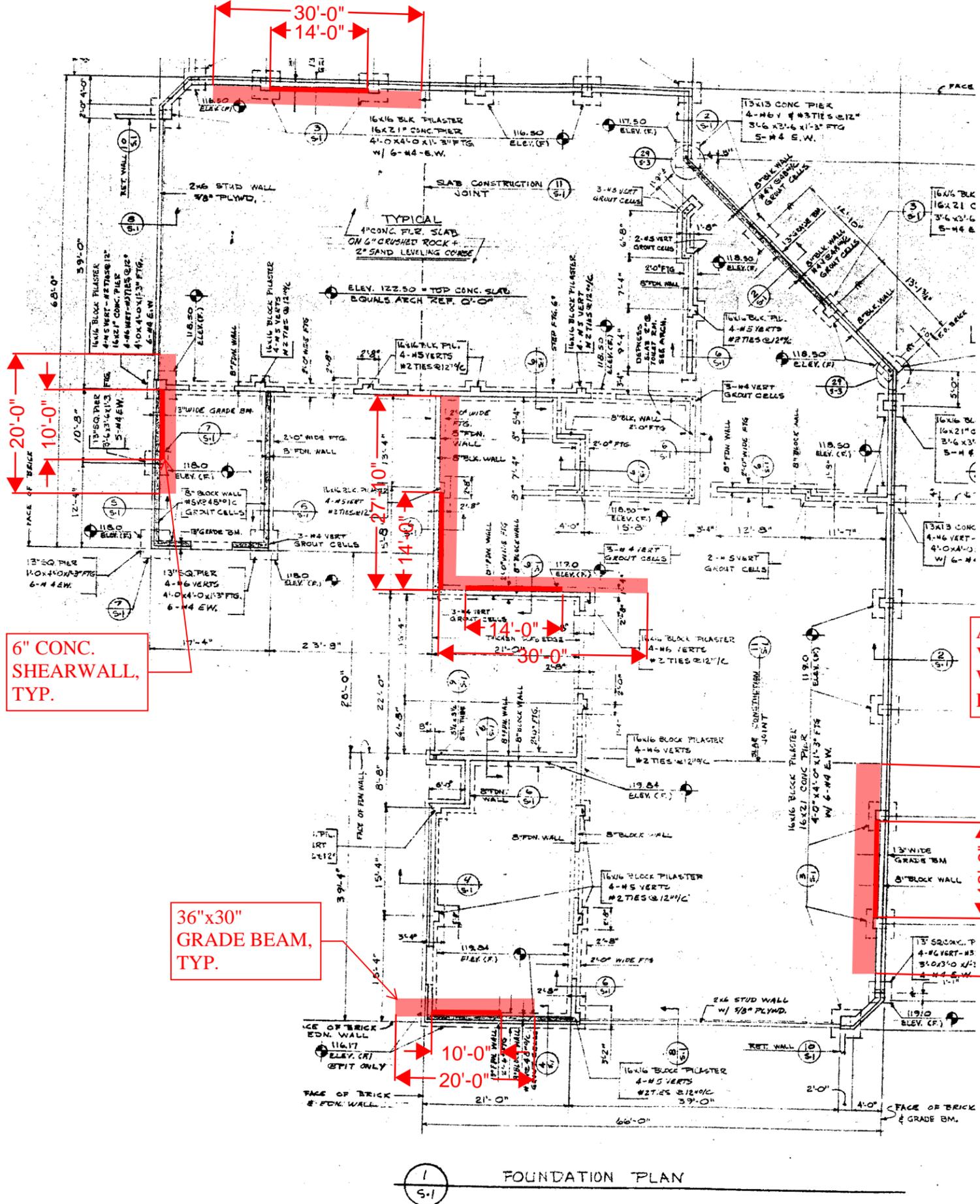
DRAFT Option A





DRAFT Option B



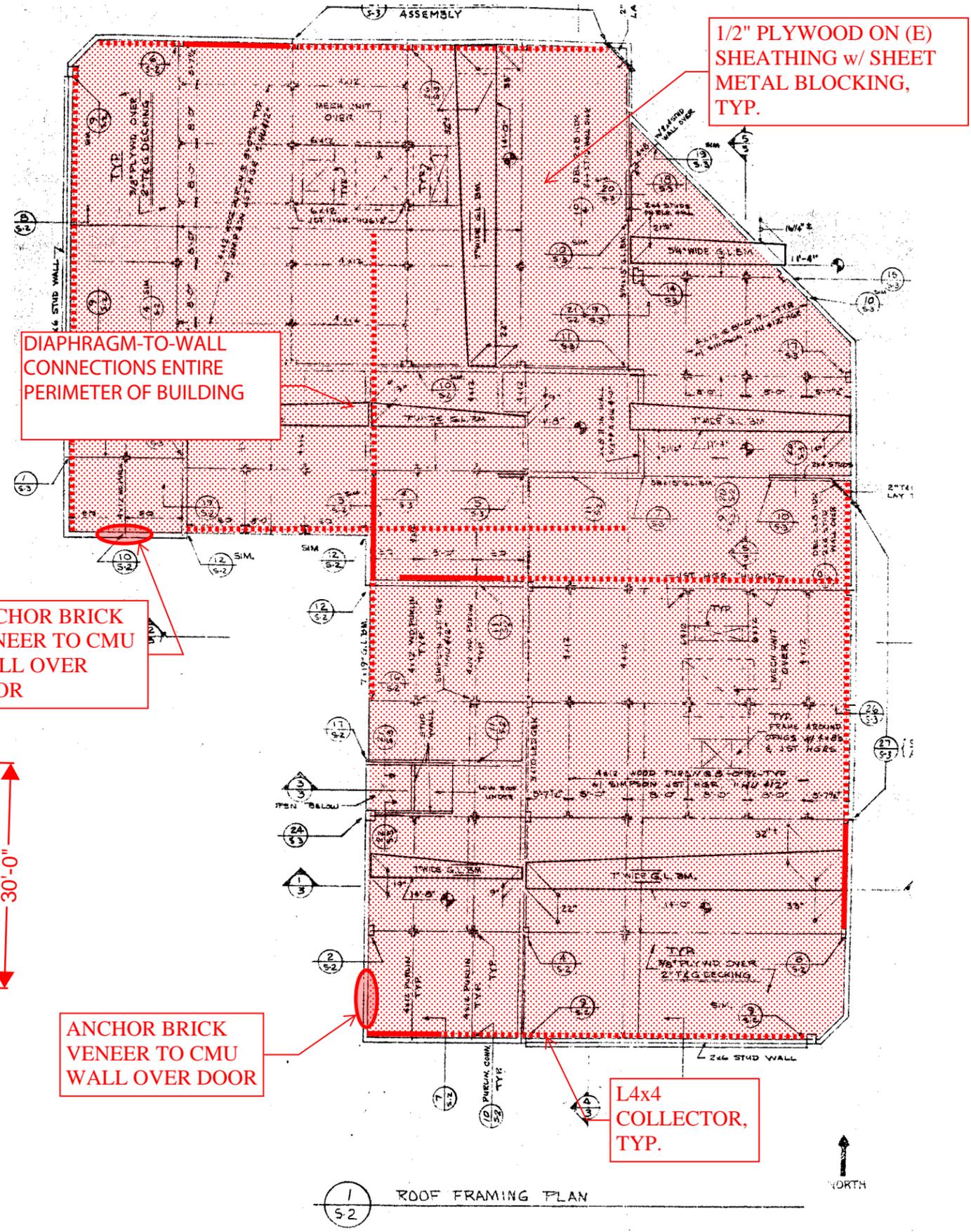


6" CONC. SHEARWALL, TYP.

36"x30" GRADE BEAM, TYP.

ANCHOR BRICK VENEER TO CMU WALL OVER DOOR

1 FOUNDATION PLAN



1/2" PLYWOOD ON (E) SHEATHING w/ SHEET METAL BLOCKING, TYP.

DIAPHRAGM-TO-WALL CONNECTIONS ENTIRE PERIMETER OF BUILDING

ANCHOR BRICK VENEER TO CMU WALL OVER DOOR

L4x4 COLLECTOR, TYP.

1 ROOF FRAMING PLAN

QUALIFICATIONS & ASSUMPTIONS
Portland Public Schools – Roosevelt High School
1970 Auto Shop Due Diligence
October 8, 2015

I. BUDGET DOCUMENTS

Budget is based on the following documents:

1. Bassetti Architects Roosevelt High School Modernization Board Report: 1970 Auto Shop Due Diligence dated 10/2015.

Note: Pricing breakouts per building and by component are approximations, provided for the client's benefit.

II. DEMOLITION

1. Abatement is in the General Contractor's GMP and has not been included as an additional cost in this estimate.
2. Code Requirements:
 - Demolition costs include selective removal of interior walls and slabs associated with bathroom and seismic upgrades. No other interior wall demolition is included.
3. Required Repairs:
 - Demolition includes the removal of existing roofs and equipment on the roof. Roof is assumed to be clean of all hazardous materials.

III. SITE/CIVIL/LANDSCAPING

1. Code Requirements:
 - A credit has been included for the removal of the tennis courts from the GMP. Credit includes tennis court surfacing, nets / equipment, and chain link fencing.
 - An allowance of \$12,500 has been included for addition of bollards and striping in the carport areas to outline paths of egress.
 - Includes required changes to the storm water detention facilities.
 - Includes new concrete pathways per Option A of the report.
 - Includes an allowance of \$7,500 to reconfigure existing fencing for new grades, pathways, egress, etc.
 - Includes new storm water piping, catch basins, regrading of adjacent hill between track and Auto Shop Building.
 - Includes an allowance of \$10,000 for solid waste collection work. No details given.
2. Required Repairs:
 - Includes an allowance of \$50,000 for removal of existing pavement, subgrade prep, and repaving in the same configuration as currently installed.
3. Desired Upgrades:

- Includes removal and relocation of (1) conex next to building.
- Includes an allowance of \$15.00/sf for plantings along north and east faces of building. No additional costs for irrigation have been included.
- Includes an allowance of \$8,500 to add new fencing and gates.
- Includes an allowance of \$5,000 to add mow strips.
- Includes and allowance of \$6,500 to remove the berm at the northwest corner of the building.

IV. STRUCTURE

1. Code Requirements:

- Includes new concrete shear walls, concrete grade beams, steel angle collectors at roof, new plywood diaphragm at roof, new diaphragm to wall connections at roof perimeter, brick veneer anchorage above doorways, and bracing of hung items to meet seismic requirements.

V. EXTERIOR WALL

1. Code Requirements:

- An allowance of \$6,000 has been included to replace the exterior HM doors and frames.

2. Required Repairs:

- \$2.50/sf has been included to clean and seal existing exterior brick / CMU walls.
- An allowance of \$6,270 has been included to repair and replace portions of damaged exterior wood siding.
- An allowance of \$4,050 has been included to replace deteriorated metal panels.
- \$22,500 has been included to replace existing OH doors. Assumed to be manually operated like existing doors.
- Includes repainting of metal grating.
- Includes replacement of downspouts.
- An allowance of \$7,980 has been included to replace wood siding with a prefinished product and provide a ventilated cavity.

3. Desired Upgrades:

- An allowance of \$9.50/sf has been included to insulate exterior walls. Construction is assumed to be 4" metal studs, batt insulation, and 5/8" drywall. Evaluation of the dewpoint in these walls has not been done and no costs have been included for venting or draining of moisture if required.

VI. ROOFING/FLASHING/JOINT SEALANTS

1. Required Repairs:

- Includes new 80 mil membrane roof with 7" of insulation.
- Includes and allowance of \$18,000 to raise parapets as needed to accommodate new roofing insulation thickness.
- Includes an allowance of \$10,000 for repair of existing roof structure.
- Includes \$7,500 to add roof overflow drains.
- Includes \$1,500/ea for 6 fall protection anchors.

VII. INTERIOR CONSTRUCTION

1. Code Requirements:

- Includes new restroom walls. Walls assumed to be metal stud framing with acoustical insulation and 5/8" drywall.
- Includes an allowance of \$15,000 to install new acoustical panels.
- Includes new doors and frames at new restrooms only.
- Includes painting of new walls only.
- Includes \$7,500 for new toilet accessories and partitions.
- Includes \$12,500 for ceramic tile floors and walls up to 4' AFF.

2. Required Repairs:

- Includes replacement of existing wire glass with tempered glazing.
- Includes an allowance of \$55,000 to patch and repair existing floors / walls / ceilings.

3. Desired Upgrades:

- Includes an allowance of \$1,500 for new corner guards.
- Includes an allowance of \$7,500 for new casework / counters.
- Includes \$8,500 to construct new teaching walls.
- Includes \$8,500 to repaint existing walls.
- Includes \$2,500 for new misc. shelving.
- Includes \$7,500 for constructing a new teacher planning space.
- An allowance of \$8,500 has been included for new exterior window openings.

VIII. ELEVATOR

1. N/A

IX. HVAC

1. Code Requirements:

- Includes new exhaust fans for new restrooms.
- Includes (1) new RTU with DX cooling and gas heat.
- Includes all required ductwork, grilles, etc. No fire smoke dampers have been included.
- Includes controls for new unit.
- Mechanical budget is based on report and may not meet all LEED and SEED requirements. Engineer to verify if additional requirements need to be met.

2. Desired Upgrades:

- Includes sub metering of gas service.
- Includes dust collection system.
- Includes welding hood and filtration.
- Includes chemical fume hood with exhaust fan.

X. PLUMBING

1. Code Requirements:

- Includes new water, waste, and vent piping associated with new bathrooms.
- Includes natural gas connection to new RTU.
- Includes new plumbing fixtures for new bathrooms.

2. Required Repairs:

- Complete replacement of existing cold water mains and branch lines.
- Complete replacement of existing hot water mains, branch lines, and water heater.
- Includes scoping existing storm / sewer laterals to the building to determine condition of piping.
- Includes replacement of all existing above grade storm, sewer, and vent piping.

3. Desired Upgrades:

- Includes compressed air system.

XI. FIRE PROTECTION

1. Code Requirements:

- Includes new wet sprinkler system at building interior.

- Includes new dry system at car ports.
- Includes new sump pump and drain at vault.
- Includes and allowance of \$7,500 for a new backflow device.
- Includes new flow and tamper devices.

XII. ELECTRICAL

1. Code Requirements:

- Includes new fire and security alarm systems with connections back to main campus.
- Includes upgrades to the existing main service.
- Includes a new fire alarm system complete.
- Includes new egress lighting.
- Includes new exterior lighting.

2. Required Repairs:

- Includes new panels, gear, branch circuiting and lighting.

3. Desired Upgrades:

- Includes sub metering of electrical system.
- Includes provisions for standby power.
- Includes new lighting throughout to match new construction on campus.
- Includes new lighting control system.
- Includes audio reinforcement system.
- Includes projectors.
- Includes access control at exterior openings.
- Includes wireless clock system.
- Includes new telecom room with fiber from main MDF, racks, Cat 6 cabling throughout, switches, etc.

XIII. EQUIPMENT

1. All equipment not noted assumed to be OFOI.

XIV. MARK-UPS AND ALLOWANCES

1. PL/PD Insurance has been included at a stipulated rate of .8%.
2. Builder's Risk Insurance is not included.

3. CM/GC Fee of 2.18% is included.
4. Performance and Payment bond is included at a rate of .52%, but will be billed as a lump sum calculated on the final GMP amount, once it is established.
5. Construction contingency of 2.5% is included.
6. This budget is preliminary in nature based on the report provided. Pricing is based on a combination of budgets from local subcontractors as well as Lewis takeoffs and historical data. However, due to the current level of documentation, we recommend and initially included an Estimating and Design Contingency equal to 15% of the cost of work, with the intent that as the design progresses, this contingency will be reduced accordingly.
7. The allowance for escalation is 11%.

xv. GENERAL

1. Price proposal excludes building permit, plan check or use fees, traffic studies or fees, and design fees, unless noted otherwise.
2. Price proposal excludes all LEED costs / fees.
3. General Conditions and Cost of Work Services are based on a 3 month schedule extension. However, final schedule shall meet mutually agreeable time constraints based on phasing, material procurement, and permits.
4. General Conditions assume the use of onsite locations for jobsite offices, GC parking, storage and laydown. Trade parking is assumed on adjacent streets.
5. Development and/or connection fees, assessments and service charges as required by governing authorities and/or utilities to be by Owner.
6. Any and all special inspections and laboratory testing shall be provided by Owner.
7. Design and engineering fees and costs are assumed to be by Owner unless specifically noted otherwise above.
8. Supply and Installation of furniture, fixtures, and/or other Owner equipment is not included.
9. Pricing assumes project will be completed during normal working hours. Overtime, shift work, and project acceleration has not been included.
10. Prevailing Wage Labor Rates are assumed to be in effect, at rates current as of July 1, 2014, and including October 1, 2014 Amendment.
11. Estimate excludes costs associated with unforeseen or concealed conditions.

Roosevelt High School Auto Shop Retention Cost Evaluation - Expanded Summary

<i>Scope of work (in order of requirement)</i>	<i>Estimated Cost</i>	Budget = \$2.0M
Architecture & Engineering Services	\$ 360,000	
Preliminary Due Diligence & Assessment	incl.	
Final Design and Building Permit Package	incl.	
Land Use Approval Package	incl.	
Permits, Approvals & System Development Charges	\$ 75,000	
Construction Estimate		
Integrate existing building to Site		
Grading & Stormwater	incl.	
Underground Utilities	incl.	
Sitework (incl. ADA Access)	incl.	
Integrate existing building to Site - Total Estimate	\$ 83,000	
Code Required Improvements		
Seismic/Structural	\$ 675,000	
Electrical	\$ 194,000	
Mechanical	\$ 256,000	
Plumbing	\$ 77,000	
Fire Sprinklers	\$ 107,000	
Building Envelope	\$ 10,000	
ADA, Interiors & Functional Requirements	\$ 236,000	
Code Required Improvements - Total Estimate	\$ 1,555,000	\$ 2,073,000
Required Repairs		
New Roof	\$ 325,000	
Electrical	\$ 196,000	
Plumbing	\$ 58,000	
Building Envelope	\$ 109,000	
Interior Construction	\$ 132,000	
Required Repairs - Total Estimate	\$ 820,000	\$ 2,893,000
Recommended Repairs & Improvements		
Site	\$ 223,000	
Exterior Walls	\$ 107,000	
Interior Construction	\$ 69,000	
HVAC	\$ 48,000	
Plumbing	\$ 381,000	
Electrical	\$ 281,000	
Recommended Repairs & Improvements - Total Estimate	\$ 1,109,000	\$ 4,002,000
GRAND TOTAL ESTIMATE	\$ 4,002,000	

*** This estimate includes costs to create a building shell suitable to support a STEM program. It does not include costs to connect equipment to that shell, the equipment itself or any aesthetic improvements to align the look of the Auto Shop Building with the RHS Modernization Project Design.

2/12/16

To: Bond and School Improvement Committee

Fr: Board Chair Tom Koehler

Re: Roosevelt Makerspace Proposal

On September 9th 2015 a task force appointed by and reporting to the Chair was given the assignment to design a Makerspace and program in the existing Roosevelt auto shop that provides high level hands-on learning for Portland Public School students during the day and be a community asset for after school hours. Further, the task force was to make sure the project is leveraged with industrial partners.

The Task Force is co-chaired by Eileen Brady and Charles McGee and includes the following members; Shay James, Kelly Roy, Joe Purkey, Aaron Bouchane, Charlene Williams, Van Truong, Susan Stoltenberg, Frank Foti, Sue Haley Paul Anthony, Filip Hristic, Daniel Malone, Amy Kohnstamm, Jeanne Yerkovich, Hilary Pickerel and Julie Rierson.

After several months of inquiry and discussion the Task Force determined that a better location would be north and adjacent to the existing Roosevelt theatre and CTE construction program. This option is the lowest cost option and does nothing to alter existing plans and schedules of the current Roosevelt buildout.

The following proposal represents the collective thinking of the Task Force and is a concept draft.

ROOSEVELT MAKERSPACE PROJECT:

The Makerspace will be a two-story 10,000 foot building, with 5,000 square feet per floor.

The ground floor will house two new state-approved CTE programs of study – Manufacturing and Aviation/Transportation in partnership with local industry. These CTE program areas comply with the Oregon Department of Education's criteria requiring CTE programming to be aligned to high wage/high demand careers and regional workforce growth areas. A program run by a third party, will be available to Community members in the evening hours and focused on skill development and job training.

The upper floor will be a modern makerspace open to the whole district as a PPS makerspace HUB that will hold priority for Roosevelt students. Makerspaces bring STEAM to life through hands-on application of the skills developed in the classroom. PPS Makerspace vision is that the it is a place for students to **experiment, discover, model, construct, and design** with the support of tools and technology not found in a typical classroom. In addition, it provides a space for teacher professional development across the district for lesson planning that incorporates design thinking, student entrepreneurial experiences and career option exploration. In addition, the MakerSpace will serve as a district site for 7th grade maker experiences.

The Makerspace will require a STEM experienced project manager to help with partnerships, logistics and launch. Furthermore, a MakerSpace TOSA would be able to support teachers and MakerSpace staff in developing learning experiences connected to content standards necessary for implementation in 2016-17 school year.

The Makerspace has the support and partnership of Vigor International, other industrial companies wanting to partner in educating our kids and increase job training opportunities to our community, ADX, IMPACTNW and many others.

NEXT STEPS: School Improvement and Bond Committee approve concept and recommend to the Board to approve OSM to initiate design for New Roosevelt Makerspace. This next step will result in a specific budget and ready the project for bidding.

PORTLAND PUBLIC SCHOOLS
Makerspace Hub Proposal
Office of Teaching & Learning
Office of School Performance

January 8, 2016

DRAFT_v3



Why Makerspace?

Makerspaces bring STEAM to life through hands-on application of the skills developed in the classroom. In Portland Public Schools, our vision is that the Makerspace is a place for students to **experiment, discover, model, construct, and design** with the support of tools and technology not found in a typical classroom. PPS is incorporating 1200 square foot Makerspaces into our high schools as the opportunity presents. We currently have floor plans for 3 of our high schools and our adding a hands on learning experience for all 7th grader to our curriculum. A **Makerspace Hub** allows PPS to offer all students the opportunity to engage in relevant and authentic experiences that provide opportunities for student learning that incorporate iterative design principles, collaborative problem solving and self-directed learning.

In addition, aligning Makerspace Hub activities to Career Clusters provides an organizing tool for curriculum design and instruction. Career Clusters help to identify essential knowledge and skills, and function as useful guides in developing programs of study, bridge secondary and postsecondary curriculum and support students in creating individual student plans of study for a complete range of career options.

A Makerspace Hub would allow PPS to:

- House large, complex equipment and laboratory workspace to the system (i.e. for construction space for solar cars or large scale rockets, workspace for aviation activities or textile programming)
- Host Makerspace hands-on professional development for instructors
- Host 7th grade Makerspace experiences
- Provide opportunities for high school students, district-wide, to access the Makerspace equipment
- Host Makerspace Fairs
- Focus on Career Development
- Expand post Secondary Alignment
- Engage parents and families and offer job trainings
- Accelerate high school graduation

A Makerspace Hub will also support the district's high-quality, state-approved Career and Technical Education (CTE) programs that teach critical academic, technical and employability skills.

Makerspaces - A Place To:



Skills for the 21st Century

According to the US Dept of Labor, 8 of the 10 fastest growing occupations in the next few years will be STEM careers. As of 2013, there were 600,000 unfilled Stem related jobs. In addition, entrepreneurs and leaders that can grow the new economy will be problem solvers and critical thinkers. In short STEM education can be the foundation by which our young people can grow into the leaders of the future. Our classrooms must be transformed into hands-on learning spaces where the tools and ideas of the future can be learned and practiced.

MakerSpace is a place where students can engage in authentic STEM experiences. Integrative STEM experiences develop students' skills with critical thinking, collaboration, creativity, science literacy, and innovation. Positively impacting students' science attitude, identity, and engagement supports students in being college & career ready.

STEM Education is *"An approach to teaching and lifelong learning that emphasizes the natural interconnectedness of the four separate STEM disciplines. The connections are made explicit through collaboration between educators resulting in real and appropriate context built into instruction, curriculum, and assessment. The common element of problem solving is emphasized across all STEM disciplines allowing students to discover, explore, and apply critical thinking skills as they learn."*¹

¹ [Oregon Department of Education](#)

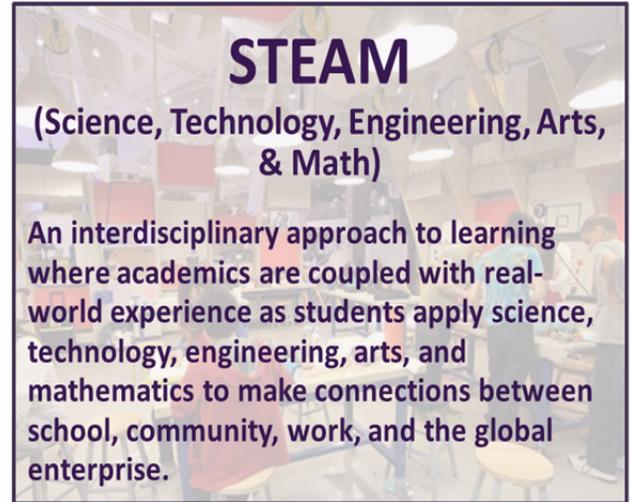
Definitions



CTE (Career & Technical Education)

A state-approved multi-year program of study that helps students gain the skills, technical knowledge, academic foundation, and real-world experience to prepare them for college & career.

**CTE Department;
Office of College & Career Readiness**



STEAM
(Science, Technology, Engineering, Arts, & Math)

An interdisciplinary approach to learning where academics are coupled with real-world experience as students apply science, technology, engineering, arts, and mathematics to make connections between school, community, work, and the global enterprise.

**Instruction, Curriculum, & Assessment;
Office of Teaching & Learning**



cte (career & technical education)

Includes elective courses and career pathways, including Arts & Communication, Business, Health, Human Resources, Industrial & Engineering, and Natural Resources



Makerspace

One of many learning environments for students to experiment, discover, model, construct, and design, with the support of tools and technology not found in a typical classroom.

Summary of Proposal

PPS Makerspace Hub

- Priority status given to RHS as defined prior to building
- Serves as Hub for all high school Makerspaces
- Serves as location for system-wide 7th grade makerspace experience
- Serves as Engineering and Manufacturing CTE strand anchor space

Areas of Investment

Staffing

Experienced STEM Expert PPS MakerSpace Project Manager & Makerspace TOSA

Professional Development

Facilities, Furniture and Equipment

Cost is dependent on model

Student Experiences

Station-oriented; not one to many

Further Considerations Needed

Transportation

Curriculum Connections

Makerspace Proposal Details:

Makerspace Hub for all PPS high schools

Potential Makerspace Activities: PPS High Schools

Career Cluster	Examples of HS Makerspace Activities	Potential Pathways Connections (Postsecondary)	Potential Pathways Connections (Industry Partners)
Architecture & Construction	<ul style="list-style-type: none"> • Project Design • Construction • Design • 3D printing & prototyping • CAD • Drafting / architecture 	<ul style="list-style-type: none"> • Portland Community College • University of Oregon • Pacific NW Carpenters Institute Apprenticeships • IBEW Electrical Apprenticeships • Oregon Institute of Technology 	<ul style="list-style-type: none"> •
Arts, AV Technology & Communications	<ul style="list-style-type: none"> • Graphic design • Digital publications • Screen printing • Broadcasting • Set Design • Costume Design • Lighting • Audio/video engineering & editing 	<ul style="list-style-type: none"> • Portland Community College • Mt. Hood Community College • University of Oregon • Art Institute of Portland 	

Computer Science	<ul style="list-style-type: none"> • Programming • Coding 	<ul style="list-style-type: none"> • Portland Community College • Portland State University • Oregon State University • 	
Engineering	<ul style="list-style-type: none"> • Robotics • Arduinos • Soldering • Circuit Design 	<ul style="list-style-type: none"> • Portland Community College • Portland State University • Oregon State University • Oregon Institute of Technology 	
Manufacturing	<ul style="list-style-type: none"> • Metals 	<ul style="list-style-type: none"> • Portland Community College • Sheet Metal Apprenticeship Training Center 	
Transportation	<ul style="list-style-type: none"> • Small Engines 	<ul style="list-style-type: none"> • Portland Community College • Mt. Hood Community College 	

Potential Activities: K8/Middle School

The proposed Makerspace site provides the opportunity for PPS to establish a dedicated “headquarters” space for delivering the 7th grade Maker Experience. The 7th grade Maker Experience will include career awareness strategies to help students get started on a successful path to high school and beyond, and includes career learning activities both in and out of the classroom. K-8 Middle schools activities will be aligned to high school feeders.

Career Cluster	Examples of K8 / Middle School Makerspace Activities	State-approved High School CTE Programs of Study	Potential Pathways Connections (Industry Partners)
Architecture & Construction	<ul style="list-style-type: none"> • Carpentry • Electrical Circuitry 	<ul style="list-style-type: none"> • Benson • Cleveland • Franklin • Roosevelt • Wilson 	
Arts, AV Technology & Communication	<ul style="list-style-type: none"> • Screen Printing 	<ul style="list-style-type: none"> • Benson • Madison 	
Business & Administration	<ul style="list-style-type: none"> • Business Simulation 	<ul style="list-style-type: none"> • Franklin • Lincoln 	
Computer Science	<ul style="list-style-type: none"> • Coding • Video Gaming 	<ul style="list-style-type: none"> • Benson • Cleveland (in process) • Franklin • Grant • Lincoln (in process) • Madison • Wilson 	
Education & Training	<ul style="list-style-type: none"> • Teaching Simulation 	<ul style="list-style-type: none"> • Roosevelt (in process) 	

Engineering	<ul style="list-style-type: none"> • Aviation • Electronics • Race Cars • Robotics • Rockets 	<ul style="list-style-type: none"> • Grant • Madison • Roosevelt 	
Hospitality & Tourism	<ul style="list-style-type: none"> • Culinary 	<ul style="list-style-type: none"> • Cleveland • Franklin • Lincoln 	
Natural Resources	<ul style="list-style-type: none"> • Environment • Water quality testing • Salmon in the Classroom • Agriculture 	<ul style="list-style-type: none"> • Alliance • Madison 	
Transportation	<ul style="list-style-type: none"> • Small Engines 	<ul style="list-style-type: none"> • Alliance • Benson 	

Potential Makerspace Activities: After School Community Engagement, Job Training & Enrichment

- Open to PPS parents/guardians, other relatives, community members and others
- Open outside of standard and after school hours
- Staff oversight to be determined

Examples of Community Makerspace Activities	Job Training & Enrichment	Partners
<ul style="list-style-type: none"> • Project design • Construction • Design • 3D printing & prototyping 	•	•
<ul style="list-style-type: none"> • Graphic design • Screen printing 	•	•
<ul style="list-style-type: none"> • Programming • Coding 	•	•
<ul style="list-style-type: none"> • Robotics • Arduinos • Soldering • Circuit design 	•	•
<ul style="list-style-type: none"> • Metals 	•	•
<ul style="list-style-type: none"> • Small engines 	•	•

Transportation

Further considerations needed to identify requirements for 7th grader Maker Experience

Staffing

Experienced STEM Expert PPS MakerSpace Project Manager (recommend for PPS budget amendment #1 to start in January 2016)

Lead the implementation, coordination and monitoring of the creation and development of the professional development, equipment training, facilities and equipment associated with district Makerspaces. This would include the following responsibilities:

- Lead design, ramp-up and implementation and launch Makerspace facility
- Collaborate with district staff, school staff and community partners to develop the design and components of the MakerSpace;
- Provide support to Facilities & Management staff with procurement of furniture and equipment;
- Coordinate and schedule professional development and equipment training for ITAs and teachers;
- Support the Office of Teaching & Learning with coordination support for curriculum & instruction needs;
- Support the Office of College and Career Readiness with curriculum & instruction needs for the 7th grade activities
- Manage and deliver communication regarding MakerSpace.
- Align feeder patterns/clusters and partnerships
- Have experience in STEAM related activities

MakerSpace TOSA (recommend for PPS budget amendment #1 to start in January 2016)

Supports improved student achievement through research-based collaborative planning and "best practice" literacy-focused professional development for the curriculum & instruction.

- Develops district curriculum and instructional policies that support MakerSpaces;
- Facilitates building-based teacher leadership development, teacher leader training and collaborative curricular and instructional planning, implementation and review for curriculum;
- Plans and conducts district-wide staff development workshops, conferences and professional day activities in support of MakerSpace.

Industrial Technology Assistant (ITA)

Lead the implementation, coordination and monitoring of the facilities and equipment associated with school MakerSpaces. This would include the following responsibilities:

- Collaborate with district staff, school staff and community partners to provide safety training of equipment;

- Provide support to staff with project-based activities that can be incorporated with content based curriculum;
- Coordinate and schedule teachers & students for use of MakerSpace;
- Provide basic maintenance of equipment and coordinate with district level and/or outside agencies as needed for more technical maintenance needs with equipment.

Professional Development

Equipment Training

Training provided by vendors for multiple pieces of equipment. This includes basic maintenance, troubleshooting, operation and safety protocols.

ITA Professional Development

Outside consultant to provide an initial set of trainings starting in September and continuing throughout the 2016-17 school year. The initial trainings would be geared toward providing the ITAs with a theoretical and hands-on background of the design process and principles of tinkering, including hands-on challenge experience. In addition, a deeper look into incorporation project-based learning in the classroom, managing materials, setting up spaces and developing partnerships with classroom teachers and community resources. Continuing professional development would focus on the design thinking methodology, ongoing design and assessment, building provocative student experiences, developing long term curriculum, hands-on work and building curriculum that aligns with Common Core and Next Generation Science Standards.

Teacher & Student Cohort

PPS Makerspace will serve as a teaching and learning laboratory to support and inform makerspace development and sustainability in Portland Public Schools, including implementation, curriculum design, consultancy, and community engagement.

Facilities, Furniture & Equipment (FFE)

Makerspaces are collaborative workshops where young people gain practical hands-on experience with new technologies and innovative processes to design and build projects. They provide a flexible environment where learning is made physical by applying science, technology, math, and creativity to solve problems and build things.

Community Access

Community access/availability to be determined

CTE Programming

A shared HUB design that includes both Makerspace activities and CTE Programming would support the district's focus on providing high-quality, state-approved Career and Technical Education (CTE) programs available for PPS students district-wide. CTE programs would be open to Roosevelt students. Targeted areas would be tied to existing Construction and Engineering programs of study. Future programming, such as manufacturing, would be determined by a variety of criteria, including:

- High wage/high demand career areas
- Industry & postsecondary partners
- Funding, staffing, equipment
- Curriculum
- Work-based learning opportunities for students (job shadows, internships, apprenticeships, etc.)